

REGIONAL BIOSECURITY UPDATE – September 2021

Feral animals in Canterbury

Concerns are being shared by the community to Environment Canterbury about an increased population of feral animals across the Canterbury Region.

Increasingly people are citing issues with feral deer and pigs impacting on indigenous biodiversity and production values.

Feral animals can have differing impacts on community values, varying amounts of impact between species, and varied control methods can be used for each species.

Neither deer or pigs are included as declared pests in the Canterbury Regional Pest Management Plan 2018 – 2038.

Deer and pigs are identified as 'wild animals to be controlled' by the Wild Animal Control Act 1977. The Act states wild animals are property of the Crown until killed.

Environment Canterbury is organising a hui to discuss what actions can address the communities' concerns.

It is important to have many views from key organisations, interest groups and representatives of community to gain a collective overview of the feral deer and pig issue, to understand roles and responsibilities and what outcomes may be desired.

A critical part of any discussion will be to emerge with an understanding of how any objectives can be achieved, where the critical areas of work might be, who will undertake the work necessary to meet any objectives, timeframes for this work and how this work could be resourced.

Marine Biosecurity in Whakaraupō\Lyttelton Harbour

Mediterranean Fan Worm or *Sabella spallanzanii* was originally found in Whakaraupō in 2008. The fanworm has the potential to significantly effect Kai moana, production and biodiversity.

In 2008/2009 MPI undertook an effort to eliminate the fanworm with the help of NIWA, which has resulted in a significant reduction. Whakaraupō is a part of the Marine High Risk Site Surveillance programme and fanworm along with other organisms are surveyed biannually.

The last five surveys have showed the numbers increasing 1, 10, 32, 86 and 315. After the recent summer survey, MPI contacted ECan to see if we would be interested in going into partnership to undertake a further delimiting survey, splitting costs 50/50, due to these increasing numbers.

Initial meetings were held with ECan, MPI, Lyttelton Port Company and Ngāti Wheke. A brief survey was undertaken based on those meetings but due to weather, time constraints and numbers found it raised further questions with another 452 worms found and not enough of the harbour covered.

ECan, MPI, Ngāti Wheke, NIWA and LPC are all now working together to put together a complete surveillance programme and an initial communication and engagement package.

On completion of the next surveillance round a stage gate will occur where we will need to make a decision what action we will take based on having all of the necessary information in front of us.

Alongside this, ECan has attended the first of a series of workshops held by MPI to create a National Marine Biosecurity Strategy with the intention of it being finalised in Q4 of 2022.

Through the LTP we had allowed for 60k general rates to undertake marine surveys starting in year two and in year three we had allowed for a new position to work for marine biosecurity.

We had also allowed an estimated further 60k through fees and charges should a marine pest make it into the CRPMP, noting this is not a given as the CRPMP is only one tool available for this sort of work (marine pests may not make it into the plan) and would only occur if a rule was required to be complied with by boat owners.

<https://www.marinebiosecurity.org.nz/sabella-spallanzanii/>

New Advisory Groups

Specific draft Terms of Reference have been developed for both the Nassella Advisory Group and the Technical Advisory Group. Once these have been finalised advertising and media will alert the public to their proposed formation and invite people to apply to be considered for selection.

The Nassella Advisory Group will support Environment Canterbury by providing advice and feedback that helps Environment Canterbury run an efficient, effective, and relevant Nassella programmes, *Nassella Trichotoma*, *Nassella Neesiana* and *Nassella tenuissima*, and by promoting public support for pest management in Canterbury.

The group will have a region wide geographical spread of members, liaising with local communities and providing Environment Canterbury with community feedback and recommendations on Nassella programme matters (including policy, operational plans and on- the-ground activities)

The Technical Advisory Group will support Environment Canterbury in its biosecurity leadership role. The Group do this by providing technical expertise and advice on existing and future pest threats invasive organisms pose to the Canterbury Region and make

recommendations for future inclusion in pest management programmes including but not restricted to the Canterbury Regional Pest Management Plan.

Both groups will participate in Biosecurity Advisory Group meetings, providing information and seeking feedback.

Biosecurity Advisor – Invasive Organisms

This position is being advertised at present, with applications closing on 24 September 2021.

Key components of the role will be the dissemination of information, reporting on findings, reviewing and implementing a pest sale inspection programme, responding to reports of invasive organisms and advising on research and development needs.

Nassella tussock

A selection of properties known to have Nassella tussock has been made across the Canterbury region. Environment Canterbury has promoted early control of Nassella tussock so landowners can avoid having to do this work in the spring when farming activities become congested.

On receipt of a Nassella tussock compliance return (either hard copy or electronically) Environment Canterbury will carry out an inspection as soon as possible of selected properties. 158 properties were inspected in the period July - August 2021. None of these properties have been formally asked to carry out further work to comply with CRPMP rules.

Chilean needle grass

Preparations are underway for the 2021 – 22 Chilean needle grass season. Property visits are being undertaken to renew containment agreements and to discuss this year's control programme with individual landowners. 23 properties have an occurrence of CNG in Canterbury.

For further news on Nassella tussock and CNG follow this [link](#).

Great Willowherb - Situation Update as of 26 July 2021

Sixteen areas of interest are present across Canterbury. Most of these sites are either undergoing treatment or surveillance. The Waipara River was surveyed late in the season

(post-flowering) and options for treatment are to be determined, as access is difficult in many parts. Assessment post-May flooding yet to be conducted.

Machinery was utilised to successfully clear gorse with GWH present. The option to graze post-clearance has been ruled out – the land is too wet and boggy for grazing.

Ongoing surveillance at the Amberley site has determined GWH is more prevalent than initially determined – control options will be discussed at inter-agency meeting.

Several detections have arisen through monitoring of the iNaturalist site but Biosecurity New Zealand is not being notified which results in delay in surveillance and treatment.

Other than Amberley, sites generally show GWH reduction.

Velvetleaf

Velvetleaf seed (*Abutilon Theophrasti*) has been found in four lines of radish seed (*Raphanus Sativus*) imports at the border inspection, with four different countries of origin:

There is no known incursion to date. Proactive mitigation of risk follows, due to possibility of missing one single seed in an inspection.

Velvetleaf is self-pollinating and a plant can produce up to 30,000 seeds. The seeds remain viable following digestion, passing through birds and mammals (Warwick and Black, 1988). The propagation and reproduction through seed can result in a long 'lag' phase after introduction, where a plant may not appear to be a significant weed for considerable lengths of time (decades), but once a seed bank develops, control becomes increasingly difficult and crop losses/effects become more apparent. Seeds are spread by water, farm machinery when harvesting grain (e.g., maize), through livestock and as a contaminant of grain.

The Velvetleaf steering group have recently met and are working through a programme to inform growers and ask them to report any finds of Velvetleaf in future.

Southern Biosecurity Collaborative Partnership

Environment Canterbury, together with Otago and Southland Regional Council are developing a Southern Biosecurity Alliance to develop joint work programmes where efficiencies can benefit all parties on matters such as data sharing and management, processes and protocols, detection tools, Plan development, and cross border business processes.

The partnership will progress, overtime, a 'whole of South Island' collaborative approach.

The next meeting of the partnership will finalise draft Terms of reference and a Memorandum of Understanding between the Councils.

African Love Grass - Detector Dog

John Taylor and his dog Wink have been contracted to search for African Love Grass in Canterbury this year. John and Wink will be working with Biosecurity officers to carry out delimiting surveys and search potential high-risk sites.

For further information, follow this [link](#).

Find a Pest

Environment Canterbury (Rich Langley and Paige Lawson) are working closely with Abigail Evans, Project Outreach and Engagement - Find a Pest.

Abigail met recently with Biosecurity officers at an online meeting to talk about Find a Pest and providing officers information on the applications use and promoting Find a Pest to landowners. Landowners (or anyone) can download and use the application to identify organisms.

Environment Canterbury will be reviewing the information on declared pests and organisms of interest in Find a Pest for Canterbury, including the addition of some marine pests.

Biosecurity Advisory Group members using Find a Pest and encouraging people to also use the application would be very helpful as more people using this will greatly assist Biosecurity's surveillance programme. <http://www.findapest.nz/>

Implementing a system for categorizing the outcomes of weed biological control

Manaaki Whenua Landcare Research recently held an exercise to use a novel framework to score outcomes of weed biocontrol programmes in NZ.

Researchers in South Africa have recently developed a new framework for assessing success of weed biocontrol programmes (attached). They look at the outcomes of biocontrol in different habitats and at several categories of suppression: density, biomass, cover and rate of spread. By scoring combinations of these factors for each weed they come up with a more objective and defensible score. These scores can more easily be compared between programmes and between countries.

Manaaki Whenua Landcare Research are keen to adopt this scoring system for NZ. That requires the best collection of long-term memory we can bring together to recall how weeds were decades ago, pre-biocontrol.

Canterbury National Wallaby Eradication Programme end of financial year update

Following the 2020 budget announcement, the National Wallaby Eradication Programme (NWEPP) has successfully planned and implemented a major strategic programme targeting Bennett's wallaby within its first twelve months of operation.

Over 320,000 hectares have been covered during this time, using a range of control methods. A search and destroy programme of this nature and scale is a historic first for New Zealand.

Part of its success can be attributed to the collaborative partnership model, which includes Environment Canterbury as fund holder, the Ministry for Primary Industries (MPI), Land Information New Zealand (LINZ), rūnaka (Arowhenua, Moeraki and Waihao), Department of Conservation (DOC), district councils, Federated Farmers, contractors and all landowners involved.

Landowner acceptance and engagement also continues to be very good overall, as they understand the impact of us collectively failing to "reign in" the spread of Bennett's wallaby.

The complexities and problems of effectively dealing with a largely secretive, nocturnal, highly mobile vertebrate pest with the currently available toolbox cannot be understated. Strategy combined with good operational effectiveness will be essential to progressively push the current wallaby range back to the Canterbury Regional Pest Management Plan (CRPMP) containment area, and to then shrink this range back over time will be a considerable challenge. The high-level aim of a wallaby free New Zealand will require new technology and innovation to be successful.



This image is from South Waitaki looking north. While the scenery is outstanding and a great place on a calm day, to work these extensive, steep and largely untracked landscapes with dog and rifle in pursuit of very low wallaby numbers is hard work. This management unit averages one wallaby for every 26 hours of search.

Wallaby - Annual trend graph:

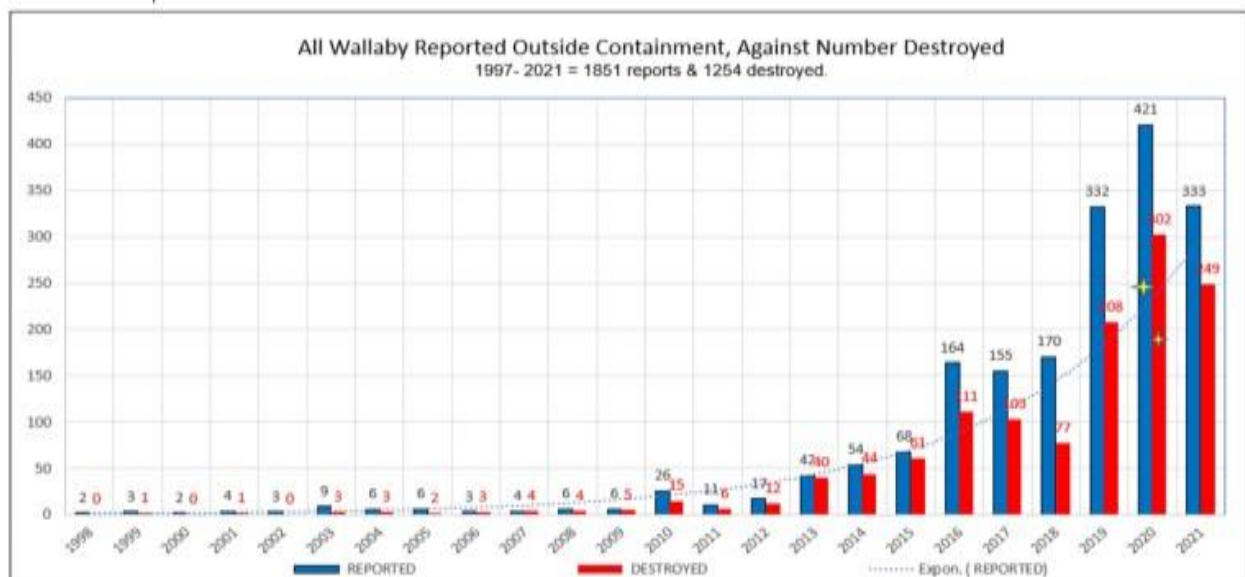
The graph below indicates the alarming spread of wallaby over the past twenty years. As of June 2021, wallaby reports (333) against those destroyed (249) exceeds the numbers encountered for the same time period over the previous two years.

We predict the final number in 2021 to exceed 500 reports, which is expected with the change in delivery through the NWEF. An increase in funding, additional labour and a greater area covered will equal more wallaby detected and destroyed. The yellow stars on the 2020 bars indicate the reports at the commencement of the NWEF.

Effective wallaby control has seasonal limitations for the best use of our primary tools, and also requires tailoring to the level of pest present.

For example, dog and rifle teams have our strongest detection rate and best results with wallaby at very low numbers. Cooler temperatures are essential for dog welfare and continued work performance, and equipment like thermal scopes and cameras are also most effective during cooler temperatures.

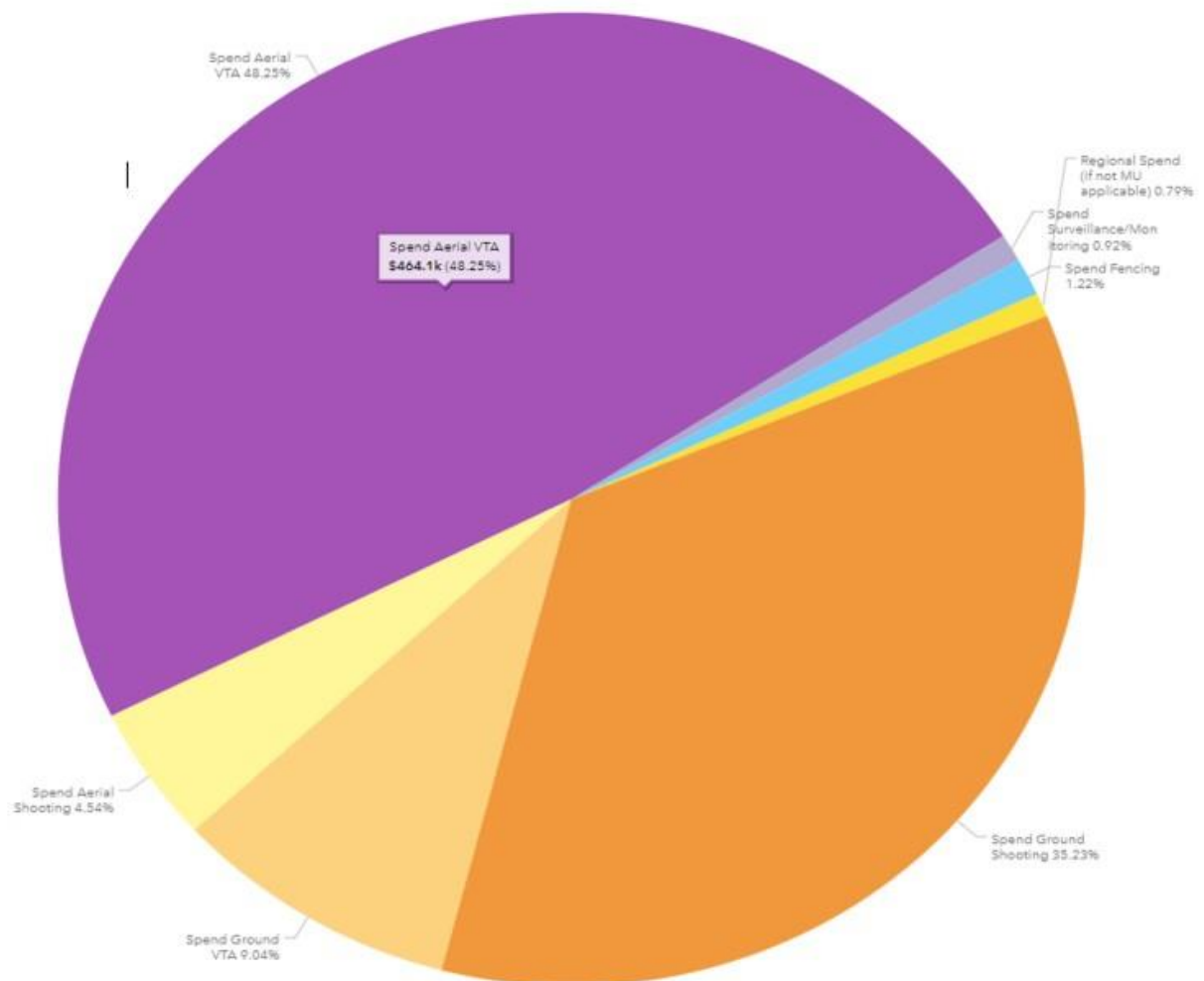
Likewise, the winter period is considered optimal for baiting, as seasonal availability of food is low, and demand is high. This method is very weather dependent, and operations can be extremely hard to accurately schedule and align. The vertebrate toxic agent (VTA) programme confirmed for this season is 28,000 hectares, with just over half of this having been completed at 30 June 2021.



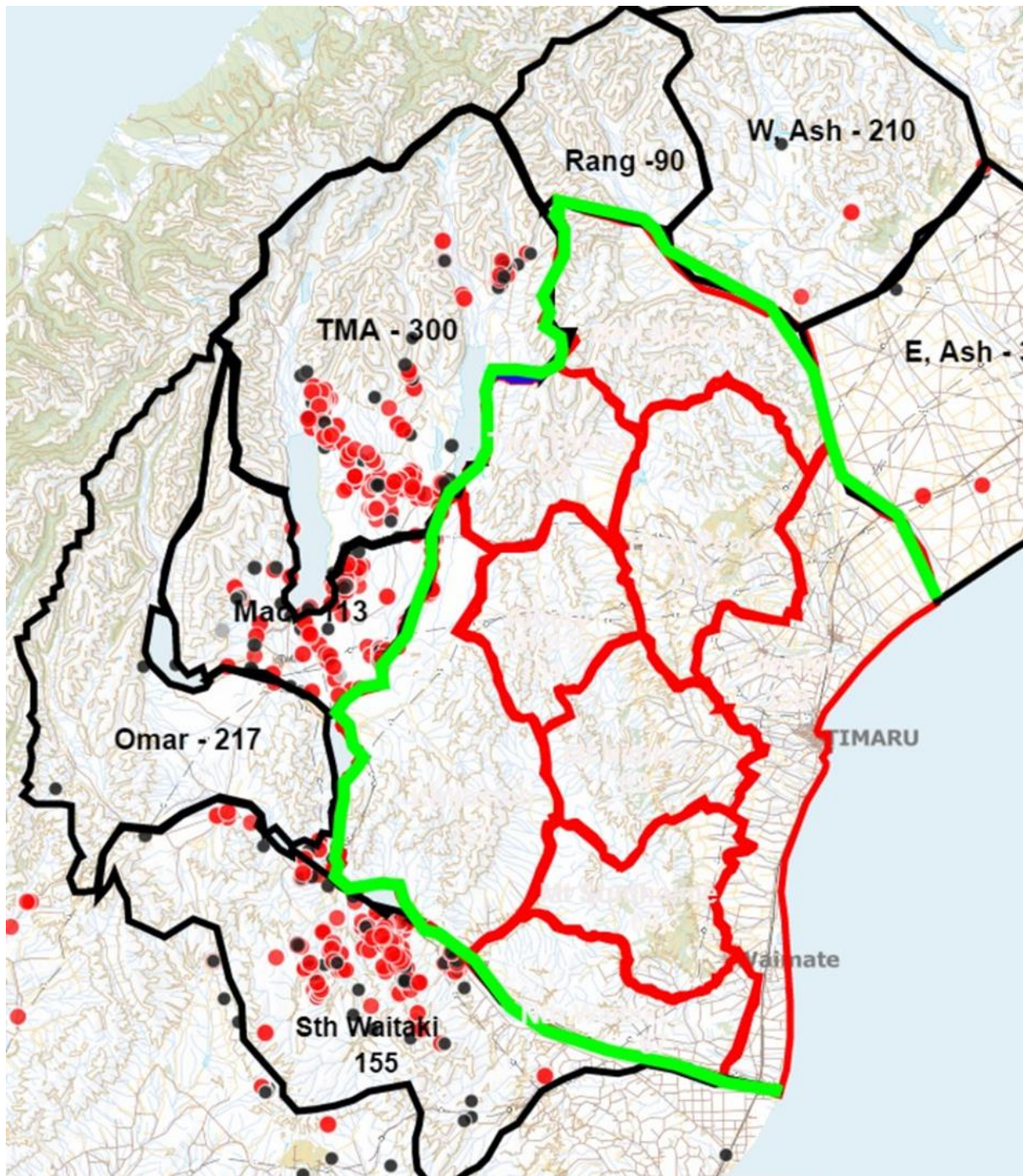
Wallaby - Funding and expenditure

The below graph indicates the percentage of expenditure to date by control method. Around 57% has been spent on VTA application that has been within the southwest boundary of the containment area, reducing the potential for continued leakage and spread.

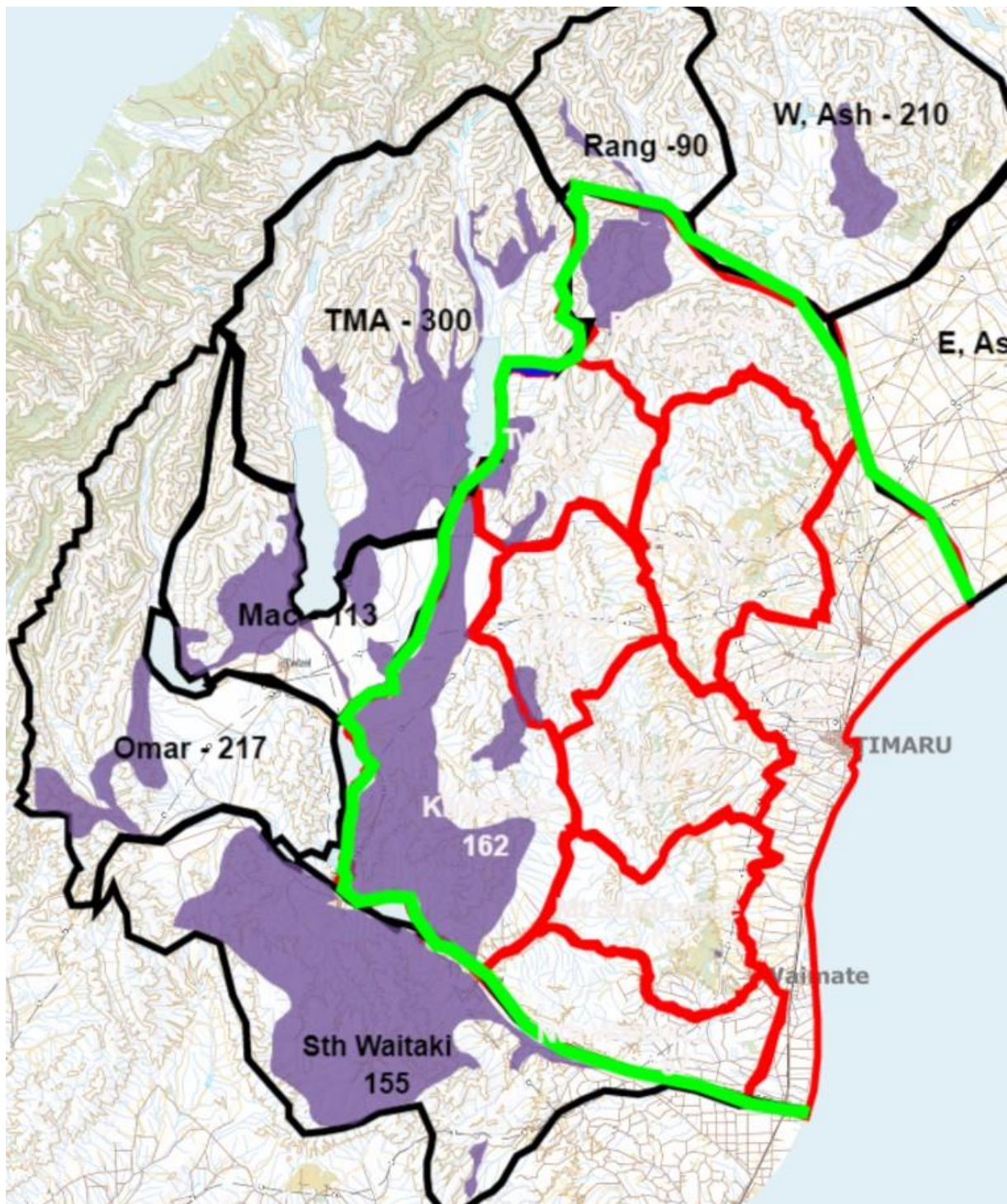
A further 35% (orange) has been utilized for ground shooting, primarily with dog and rifle teams, including some infra-red/thermal night work on those management units outside of the containment area where low numbers of wallaby exist.



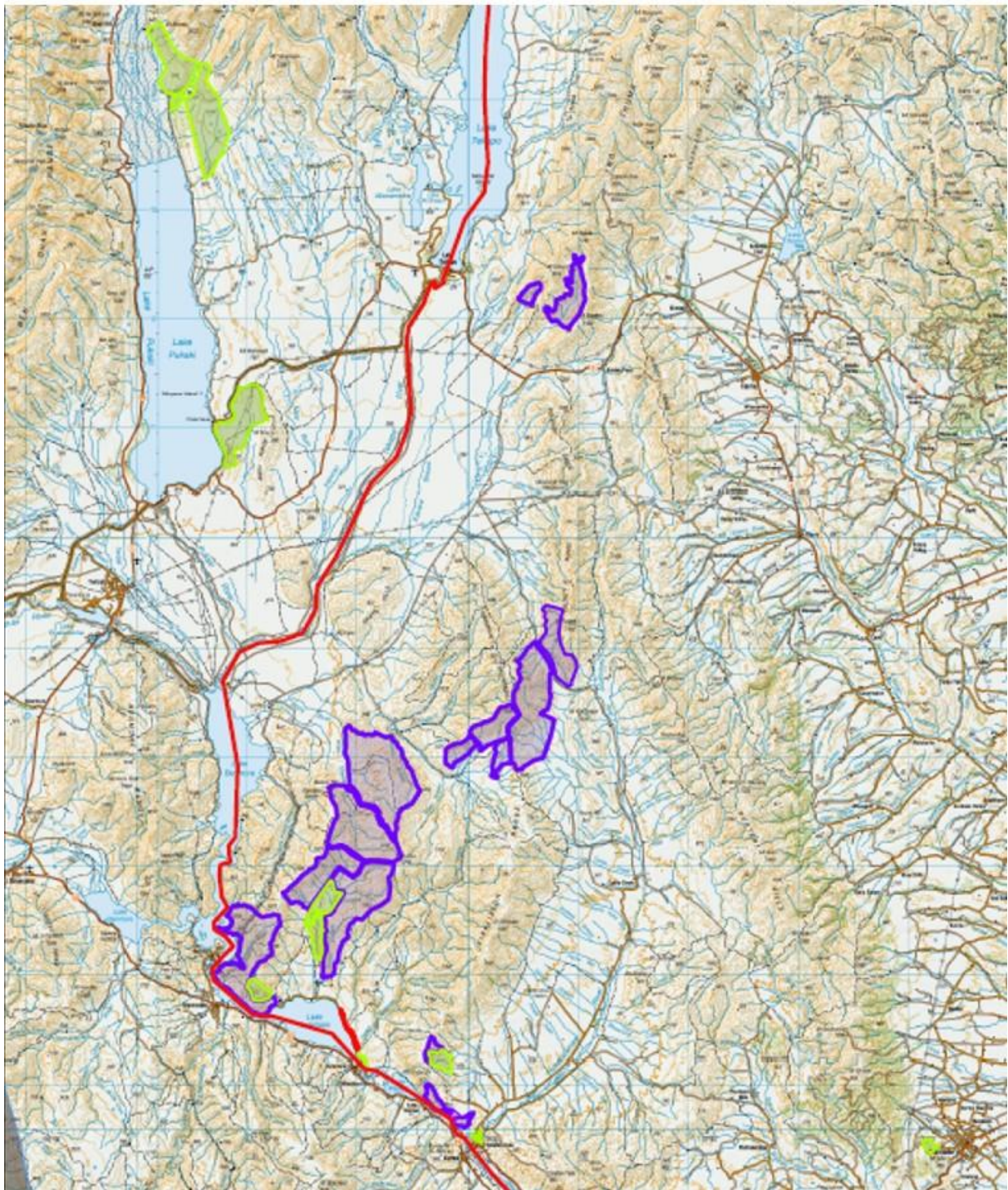
Management Units (MUs) outlined, CRPMP wallaby containment area shown in green:



(A.) Wallaby destroyed shown with red dots, while black dots show lost wallaby.



(B.) Areas of contractor coverage search and destroy work 2020/21 are shown in purple.



Map showing VTA operations. Feratox is shown in green, while 1080 is in purple.

Wallaby – Short-lived baits context and update:

The need for a wallaby cereal bait that degrades more quickly has been recognised for a number of years now (was also trialled aurally in the early 80s on the Kirkliston range).

There are more advantages than disadvantages in terms of its use, but the limiting factor of investigation and production is commercially driven and stem largely from the previous demand for the product at all.

This is one of the overlooked disadvantages of shifting to user pays, that was unrealised to landowners at the time this shift was made.

The Waimate poison factory closed after user pays arrived, as it was not supported at all. They made wallaby baits on our back door.

From then until recently, there was only one factory in NZ who produced wallaby cereal baits which was based in the North Island.

There was no incentive for that factory to commit to the very large associated cost to investigate this potential, as under the user pays model of wallaby control no one was ordering bait in the subsequent twenty years. And (except for the last year), only a few tonnes of bait has been used per year over the last decade.

Now there is a new factory in Christchurch and more bait has been used this year, around 43 tonnes this winter under the National Wallaby Eradication Programme (NWEPE).

New bait has now been developed and we are working with the factory on trials, to help gather the required information to submit to EPA before it can be registered and approved for use.

Wallaby - Operations and current work areas:

- Ground contractor teams on wallaby search and destroy operations are working in the following areas:
- South Waitaki MU: Two to three dog teams, with some ground thermal night work when required.
- Te Manahuna Aoraki MU: Two dog teams, with some ground thermal night work when required.
- Mackenzie MU: Two dog teams, with some ground thermal night work when required.
- Omarama MU: One dog team, short schedule.
- Mackenzie MU: Aerial search and destroy at Simons Hill Station and public conservation land; DOC partnership.
- Two Thumb/Kirkliston MUs: Ground shoot using thermal equipment.
- Rangitata/Mackenzie/South Waitaki MUs: Heli thermal.

Wallaby Control Team, Environment Canterbury:

Brent Glentworth – programme lead

Jason Hawker – operations manager

Luke McIver – biosecurity officer

Zoe Hopkins – operational analyst (both national programmes)

Stephanie Mercer – project coordinator (both national programmes)

Wilding Conifers

In this update:

- Highlights for the quarter
- Upcoming work
- Funding and expenditure
- Trusts and volunteer days

Project lead summary

Fourth quarter highlights

Moving into the fourth quarter, we anticipated having sufficient funding for contractors to complete work by mid-June. However, it transpired that the 2020/21 fourth quarter was our busiest period yet, and we received additional funding from three sources to complete extra work by the end of June:

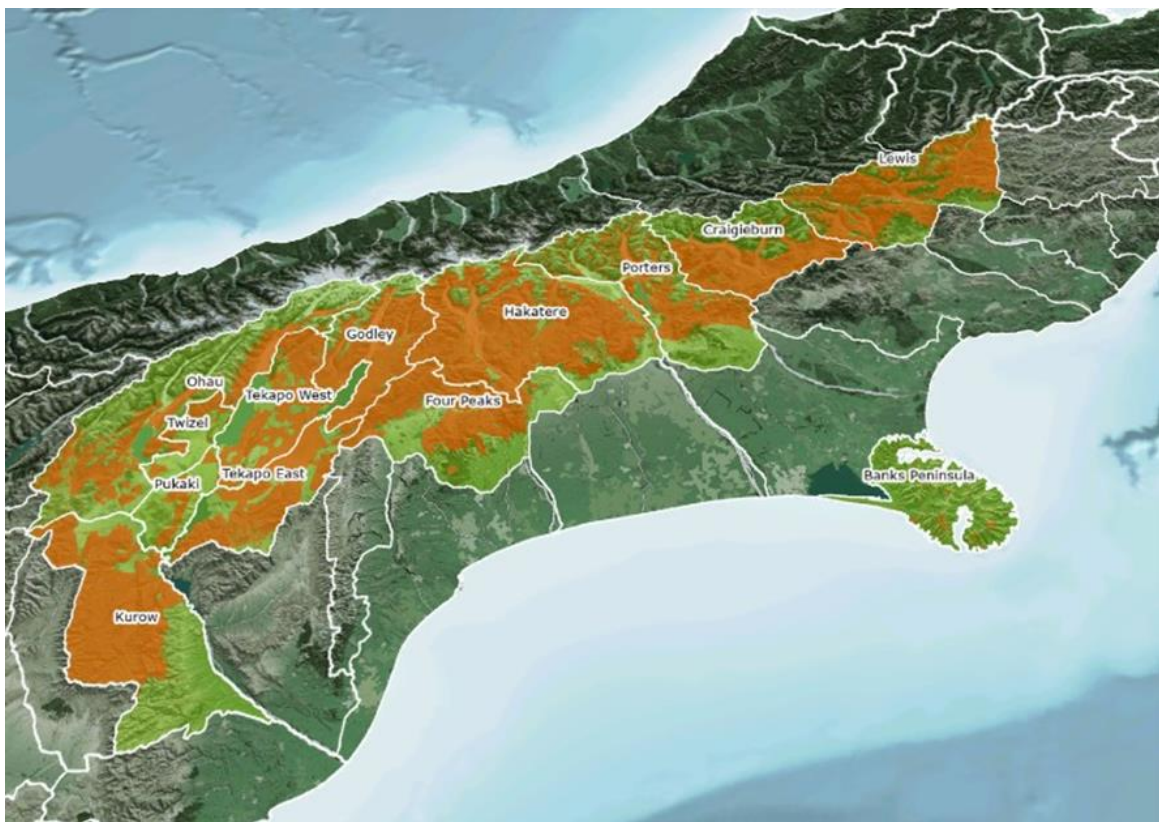
- \$1,220,634 from the New Zealand Defence Force (NZDF)
- \$300,000 from Land Information New Zealand (LINZ)
- \$805,000 from Ministry for Primary Industries (MPI), sourced from underspend in other regions.

Within the whole region, the programme employed 244 staff, including contractors and administrative staff, working in 12 active management units (MUs).

Notable landscape changes are now becoming visible, particularly in the Mackenzie Basin, as we continue to address dense infestations.

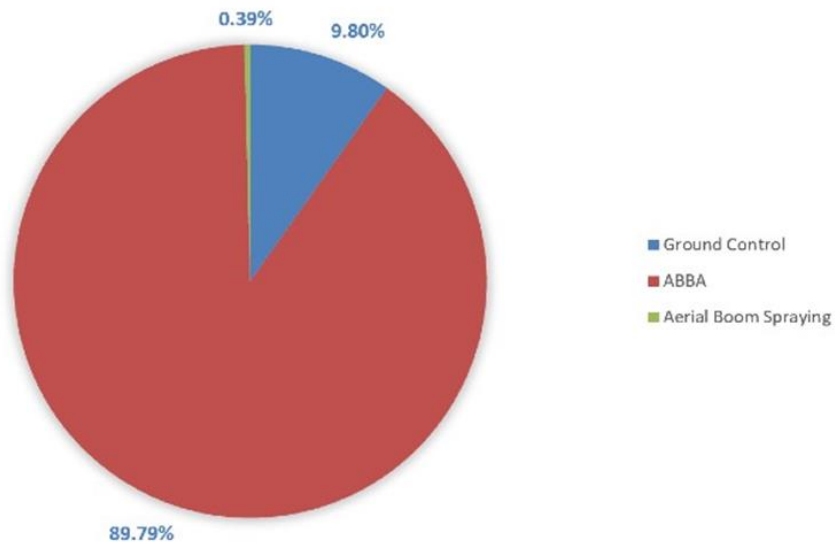


Operational MUs from 2016-2021 (green) and new MUs for 2021/22 (blue).



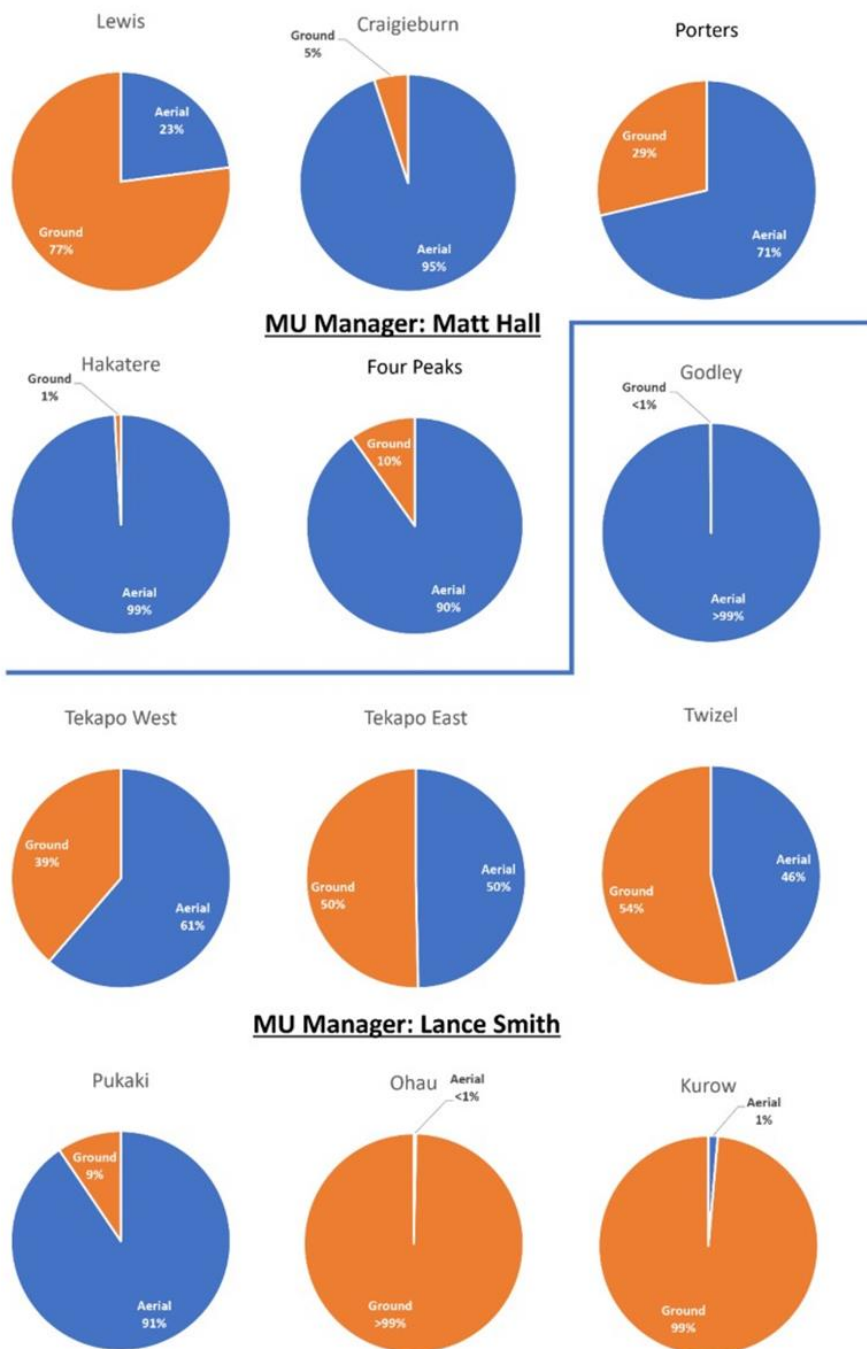
Areas of operation shaded red, within operational MUs from 2016-2021.

Within the Canterbury region, ground control, mechanical and aerial crews were all active throughout the fourth quarter. The following pie graph gives a breakdown of control methods for the entire financial year (please note that mechanical control is incorporated into the ground control segment):



Proportion of control method throughout Canterbury for the 2020/21 financial year: ground, aerial basal back application (ABBA) or aerial boom spraying.

Since the outset of the national programme, the Canterbury team determined that boom spraying of dense infestations would be a last resort control method. Our first option is always to assess if there is any commercial viability. This is often driven by accessibility, tree species and age.



Proportion of control method by hectares covered (ground or aerial) by MU, with MU managers indicated.

Trusts and volunteer days

Environment Canterbury engage with and support three trusts within Canterbury:

- Waimakariri Ecological Landscape Restoration Alliance (WELRA)
- Amuri Range Wilding Tree Trust
- Wilding Free Mackenzie Trust

We engage Neil Walkinshaw from New Environmental Services to apply for grants on behalf of these trusts. These grants are not accessible to local government organisations. Over the past three years, Neil has secured over \$440,000 in grants for these trusts for wilding conifer control.

PGG Wrightson have also provided sponsorship in the form of supplying chemical and volunteer kits, which include saws, loppers, gloves, and other personal protective equipment.

Wilding Free Mackenzie (previously called the Mackenzie Basin Wilding Tree Trust) have been particularly active and with grant funding have employed Haeleigh Turner as a community coordinator. In association with Environment Canterbury, Haeleigh has organised two very successful volunteer days in the Mackenzie Basin.

WELRA also had a very well-attended volunteer day in the Craigieburn MU, which was reported in the last stakeholder report.

In 2021/22 we plan to foster closer relationships with the Ohau Conservation Trust and the Hanmer Springs Conservation Trust.



The recent volunteer days in Twizel (pictured) and Tekapo were highly successful and well-received by volunteers, contractors and Environment Canterbury staff alike

Funding and expenditure 2020/21

Funding:

MPI budget 2020/21	\$18,409,321
MPI budget 2019/20 carried forward	\$1,118,261
Environment Canterbury budget	\$1,192,729
COVID-19 relief worker funding	\$1,346,375
NZDF budget	\$1,220,634
LINZ budget	\$300,000
Department of Conservation (DOC), Geraldine office	\$10,000
Total*	\$23.5m

**In addition, landowner, in-kind and other contributions totalled more than \$3m. In Canterbury, these contributions are only sought to help pay for ground control.*

Total expenditure: \$22.5m





Mechanical harvest operations are currently underway on two large sites near Lake Pukaki.

Upcoming work

Upon request from MPI, the Canterbury team submitted costings and operational plans for proposed work in the 2021/22 financial year in March 2021. The total funding request was approximately \$23m.

These plans and budgets have since been reviewed three times by MPI and it is now likely our MPI operational budget for 2021/22 will be in the vicinity of \$14.2m due to changes to national allocations. Confirmation of this is expected in August 2021.

Work has already commenced in some MUs but will ramp up significantly once budgets are confirmed.

A major component of these budgets is the maintenance of areas controlled since 2016. This is critical to the efficacy of the whole programme.

The Wilding Conifer Control Team, Environment Canterbury

- Steve Palmer - project lead and technical liaison to MPI
- Graham Sullivan - fund holder and contract manager
- Lance Smith - area manager, Mackenzie Basin/South Canterbury MUs
- Matt Hall - area manager, Central and Northern Canterbury MUs
- Zoe Hopkins - operational Analyst
- Stephanie Mercer- project coordinator

SOUTHERN AREA UPDATE

Gorse and Broom

Gorse and broom inspections have continued with focus on hill and high-country areas. Recent rain events have meant compliance inspections have been delayed in affected areas.

Officers have continued to provide advice to landowners on control and implementing quality control programmes to ensure gorse and broom does not spread onto neighbouring properties and to ensure that clear land is maintained to ensure productivity.

Nassella Tussock

Over half of the known 47 southern Nassella sites have been inspected to date. Most remaining sites will be visited in the next fortnight.

Several phone calls have also been undertaken to remind land occupiers of the ability to have an early Nassella inspection so that this work can be completed prior to spring when farms are generally quite busy. This work has also meant that some early Nassella inspections have taken place.

Rabbits

All poison control jobs have been completed on eight properties which are under Notice of Direction and have submitted rabbit control programmes. Due to the covid lockdown compliance inspections have been delayed and will now commence in coming months so landowners can plan for next year.

Darwin's Barberry

The southern Biosecurity team are working on a partnership programme with landowners, community groups and other areas of Environment Canterbury to focus on Darwin's Barberry where it is growing in those areas of ecological significance in the district. Contractors have been engaged in sustained control.

African Love Grass

A scent detection dog has been trained in identifying African Love Grass and was due to begin searching at the site near Ōmārama at the end of August, however this has been delayed due to the covid lockdown. This work will recommence in the new year.