

# Biosecurity Activities 2022-2023

## Report on the 2022-2023 Operational Plan

IMPLEMENTING THE CANTERBURY REGIONAL  
PEST MANAGEMENT PLAN (2018-2038)



## Prepared under the Biosecurity Act 1993

This Report on the Operational Plan 2022-23 compares annual targets (expected to be achieved) with annual outputs (levels of service achieved) for each pest programme which contribute to meeting the objectives in the Canterbury Regional Pest Management Plan 2018-2038 (CRPMP). Budgets are reviewed through the annual plan process, and then summarised in the Report on the Annual Plan.

I hereby certify that this is a correct copy of the Report on the Operational Plan 2022-23 for the implementation of the Canterbury Regional Pest Management Plan (2018-2038).

The Report on the Operational Plan was prepared in accordance with the requirements Section 100B (2)(a) of the Biosecurity Act 1993.



*Dr. Stefanie Rixecker  
Chief Executive  
Canterbury Regional Council  
31 July 2023*

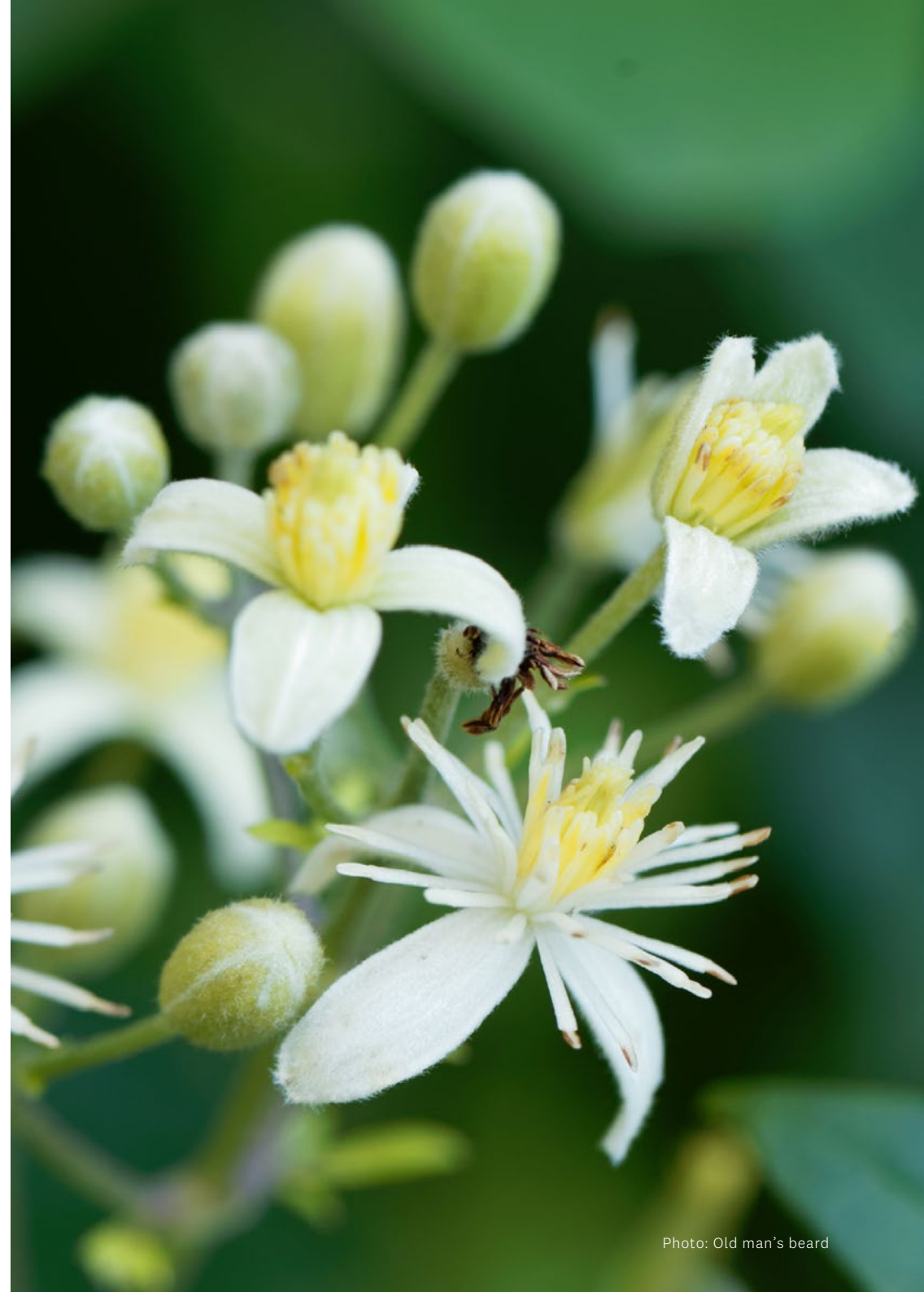






Photo: Gorse

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# Canterbury Regional Pest Management Plan 2018–2038

Environment Canterbury is mandated under Part 2 of the Biosecurity Act 1993 (the Act) to provide regional leadership in activities that prevent, reduce, or eliminate adverse effects from harmful organisms that are present in their region. Environment Canterbury/Kaunihera Taiao ki Waitaha therefore has this leadership role in the Canterbury region.

The Canterbury Regional Pest Management Plan 2018-2038 (CRPMP) is the result of a public process that determines what plants and animals are managed within the region, those included significantly threaten our economy, Māori tikanga, health, recreation, or natural ecosystems (biodiversity). The CRPMP must be reviewed at least once every 10 years and this work was last completed during 2017-18.

The CRPMP 2018–2038 became operative on 1 July 2018 and includes plant and animal pests managed under the five key programmes in accordance with the National Policy Direction for Pest Management 2015. The programmes are Exclusion, Eradication, Progressive Containment, Sustained Control and Site-Led.

The CRPMP utilises different management programmes depending on the most likely outcome for managing a pest, considering the pest's occurrence in the region (i.e., from not present yet but likely to appear in the region, within the region albeit very limited in occurrence, to widespread across the region).

The five programmes and their intermediate outcomes for each programme are described below.

- **Exclusion Programme:** to prevent the establishment of a pest which is present in New Zealand, but not yet established in the region.
- **Eradication Programme:** to reduce the incidence or density of a pest to zero levels in an area in the short to medium term.
- **Progressive Containment Programme:** to contain or reduce the geographic distribution of a pest over time.
- **Sustained Control Programme:** to ensure pests are being controlled, and to reduce its impact on values and spread to other properties.
- **Site-led Programme:** to exclude, eradicate, reduce, or contain pests to protect primarily natural biodiversity at specified sites.

For further information, contact Environment Canterbury customer services on 0800 324636 and ask for a copy of our free pamphlets or brochures, including the Biosecurity Bulletin and the CRPMP Quick Guide. Alternatively, go to our website [ecan.govt.nz](http://ecan.govt.nz) for a full copy of the CRPMP and further information on pest management and farm biosecurity.

# Operational Plan for the CRPMP 2018–2038

The Biosecurity Act requires the preparation of, and annual reporting on, an operational plan in accordance with Section 100B. These are internal Environment Canterbury documents that provide technical information for the implementation of programmes, including monitoring and surveillance projects, which support the outcomes of the CRPMP.

This is the fifth year of a 20-year plan, and overall the results of this year's work programme indicate CRPMP objectives are being achieved.

This operational plan identifies and outlines the nature and scope of activities that Environment Canterbury intends to undertake in the implementation of the CRPMP.

Progress on the achievement of annual outputs is reported on in this report, which is designed to enable key stakeholders and the community to judge the performance of Environment Canterbury as the management agency for the CRPMP.

## **The Report on the Operational Plan 2022-2023 identifies:**

- **the levels of service expected (targets and outputs)**
- **whether the outputs were achieved**
- **the activities or principal measures undertaken.**

Landholders are principally responsible for the control of pests on their land. Environment Canterbury controls pests when they are new to the region, when they are of very limited occurrence, when control methods require specialised technical expertise (e.g., biological control), and when coordinated control gives benefits to a specific area or the region. Environment Canterbury regulates when pest control is mandatory and monitors the operational efficiency and effectiveness of control programmes.

Other biosecurity and pest management activities are undertaken by Environment Canterbury outside the scope of the CRPMP. Some of these activities do however have some crossover with the CRPMP. Examples include: pathway management and surveillance programmes; the National Wallaby Management programme; the National Wilding Conifer Management programme; regional engagement initiatives; national special interest groups (Biosecurity Managers and Biosecurity Working Group); Chatham Islands Regional Pest Management Plan delivery; National Biological Control Collective participation; regional reporting; biosecurity toolbox (e.g. control tools and research); Lakes Weed Surveillance Programme; Check Clean Dry; on-farm Biosecurity Project; alignment with the National Capability Network; involvement with incursion response activities; ongoing rabbit haemorrhagic disease virus investigations; and Biosecurity Advisory Groups.

Partnerships are an important component of Environment Canterbury's biosecurity programme. All five CRPMP programmes contain partnerships which range from agreements to control, contain or otherwise manage pests, to funding agreements, memorandums of understanding between regions or nationally, or participation in industry or nationally led programmes. Environment Canterbury strives to expand future partnerships and use collective knowledge and resources to provide more effective and efficient biosecurity across the Canterbury region to achieve biosecurity outcomes.

# 1. Exclusion Programme

Prevent the establishment of a pest that is present in New Zealand but not yet established in the region.

## Exclusion programme pests

Common name	Botanical Name
Australian sedge	Carex longibrachiata
Broomsedge	Andropogon virginicus
Hornwort	Ceratophyllum demersum
Kangaroo grass	Themeda triandra
Koi carp	Cyprinus carpio
Noogoora bur	Xanthium strumarium
Nutgrass (purple nutsedge)	Cyperus rotundus
Oxylobium	Oxylobium lanceolatum
Palm grass	Setaria palmifolia
Spiny broom	Calicotome spinose
Woolly nightshade	Solanum mauritianum

## Programme summary

### Annual Targets

1. Undertake research work to determine highest risk, impacts, dispersal mechanisms, pathways, and arrival points.

### Annual Outputs

1. Raising awareness.
2. Incursion response if necessary.
3. Report on all activities in relation to preventing the establishment of exclusion pests.

## CRPMP Objective 1

Over the duration of the Plan, preclude the establishment of exclusion pests within the Canterbury region to prevent adverse effects on economic well-being and environmental values.



# Exclusion Programme

## What was achieved in 2022-2023

✓ <b>Achieved</b>	Ongoing research work to compare Exclusion Programme pests with other invasive species to determine future priorities.
✓ <b>Achieved</b>	Specific awareness: public displays, media, articles, and presentations.
✓ <b>Achieved</b>	Monitoring of national databases to determine if there have been any reports or incursions of Exclusion Programme pests.

## Summary of work

Organisms declared as ‘exclusion’ pests are not known to presently occur in the Canterbury region. Eleven species have been declared as exclusion pests, all of which occur elsewhere in New Zealand. Exclusion pests are potentially able to spread on various vectors from other regions of New Zealand on risk pathways. Before embarking on surveillance inspections to determine if any exclusion pests have spread to our region, we must first identify these pathways, the potential risk area in Canterbury and where the most likely point of occurrence may be. This will ensure the most efficient, cost-effective, and accurate surveillance programme.

This information is being compiled in conjunction with other invasive species.

Exclusion pests are currently being assessed alongside almost 1200 other species to determine current risk of potential climatic suitability and future potential impacts on the region’s values. These species will be prioritised for future prevention or management initiatives.

This information will assist with the prioritisation of species considered invasive across the Canterbury Region.

✓ Progressing towards achieving CRPMP objective/s



Photo: Wild Russell Lupin

## 2. Eradication Programme

### Eradication programme pests

Common name	Botanical Name
Egeria	Egeria densa
Entire marshwort	Nymphoides geminata
Knotweed (Asiatic and giant)	Fallopia japonica x sachalinensis Fallopia sachalinensis
Moth plant	Araujia hortorum
Phragmites	Phragmites australis
Rook	Corvus frugilegus
Yellow bristle grass	Setaria pumila
Yellow water lily	Nuphar lutea

### CRPMP Objective 2

Within 20 years of the commencement of the Plan, reduce all infestations of eradication pests to zero levels within the Canterbury region

### Programme summary

#### Targets

1. Seeding or reproduction is prevented or reduced.

#### Outputs

1. Awareness.
2. All known sites which have an incidence of eradication pests are inspected.
3. Pest plants are controlled prior to seeding or reproducing.
4. All reports of eradication pest occurrence are followed up.
5. All areas at high risk of immediate spread are searched annually.
6. An annual report on each pest is completed by 30 June.

### What was achieved in 2022-23

✓ <b>Achieved</b>	Awareness undertaken.
✓ <b>Achieved</b>	All sites inspected.
✓ <b>Achieved</b>	All pest plants controlled before seeding or reproducing.
✓ <b>Achieved</b>	Responded to reports of occurrence.
✓ <b>Achieved</b>	High risk areas searched.
✓ <b>Achieved</b>	Annual report on each pest completed.



# Eradication Programme

## Summary of work

**Egeria:** There are 10 sites of egeria in Canterbury, all located near Christchurch. seven of these sites have been egeria free for over 15 years and are inspected on a three to five yearly basis. Of the remaining three sites, two had no plants found in 2022-23. Currently there is only one active site in Canterbury, located along Kerrs Reach in the Avon River.

This site expands 13ha and was controlled with an aquatic herbicide in June 2022. An aquatic survey was undertaken in 2022-23 to determine the effectiveness of this control operation and carry out additional surveillance. Results of this survey showed effective control was achieved but re-growth was beginning to emerge and required further control. No plants were found outside of the known area.

Another spray operation was due to be undertaken by Christchurch City Council, however, they were unable to undertake this work before the end of the financial year. The next round of control will be undertaken in the 2023 calendar year when conditions are suitable. Christchurch City Council have engaged a contractor to project manage egeria in the Avon River and Environment Canterbury will continue to provide support, along with the Department of Conservation.

**Entire marshwort:** There is one known site in Canterbury, at Claremont near Timaru, where it occurs in a large pond that is 1,270 square metres in size. Control by the land occupier was undertaken in the 2021-22 financial year. Inspections by Environment Canterbury biosecurity officers for the pasts two seasons have found no plants to be present at the site.

**Knotweed (Asiatic and Giant):** Control consists of digging out the stalk and rhizome if possible or cutting the stalks of the plant at soil level and treating with herbicide gel. The aim is to reduce the plant's ability to photosynthesize by removing its vegetation as soon as growth is observed, hopefully exhausting the knotweed's energy bank, this is a containment approach as eradicating would require excavation which would be difficult due to location. Only three sites are active, one in the Botanical Gardens Christchurch and two growing underneath a fence in Rountree St in Ilam. The active sites were inspected during 2022-23, with eight inspections between November and March, historic sites receive factsheets for awareness. Control methods consisted of cutting and pasting herbicide or digging and removing rhizomes growth where possible. A total of >20 stems were controlled.

**Moth plant:** There are 12 known Moth plant sites in Canterbury. Occurring in urban gardens in Christchurch, and Rangiora. This season 2022-23, no sites were checked as they are considered historic and will be searched every two — three years. Alternatively, an awareness campaign was implemented, placing advertisements in local newspapers and on Facebook at the appropriate time in the season when this species is most visible to landowners.

**Phragmites:** Phragmites is part of the National Interest Pest Responses programme, led by the Ministry for Primary Industries, who provide some annual funding for this project. There are 12 known occurrences of phragmites in the Canterbury region, 10 near Christchurch and two near Ashburton. Of these 12 sites, three are historic and are checked on a two to three yearly basis. A total of five sites had plants found in 2022-23, four of which had plants covering less than 10m<sup>2</sup>.

The largest site of phragmites is at Lake Rua near Christchurch Airport. It contains several infestations covering about 130m<sup>2</sup> and has been controlled with herbicide since its discovery in 2015. Attempts to eradicate phragmites using this method have proven unsuccessful, although spraying has appeared to prevent further spread and plant growth.

Following a successful trial, plants were excavated around a portion of the lake in 2022-23. A significant quantity of healthy rhizomes was removed, further supporting this method as the best way to achieve eradication. Further excavation will depend on the budget available in the coming years. This site will be monitored for any re-growth and alternative methods will be explored for remaining plants.

Alternative methods were trialled at other sites, such as stem injection and spading. These sites will be monitored and controlled as required. Continued surveillance is essential to prevent undetected plants being left to spread.

**Rook:** There was one reported sighting of a rook in 2022-23. The sighting north of Parnassus on 4 April 2023 was of a single bird in pine and gum trees by a person on a property. A biosecurity officer investigated and confirmed the sighting. A person employed by the property owner shot a single rook on morning of the 7 April 2023.

The Rook was autopsied at the South Island Wildlife Hospital in Christchurch, to determine sex and age. An x-ray determined adult bones and autopsy revealed small testicles, indicating the Rook was a male out of the breeding season.

It is thought this was the last remaining Rook, in the wild in Canterbury.

**Yellow water lily:** Known to be present in one South Canterbury stream at low densities over 4.5 kilometres, across six properties with a total of 1 hectare effected. Previous years' herbicide control does not appear to have been effective at reducing the infestations.

During the 2022-23 year, a different (and new) herbicide was used in a trial site at the top of the infestation for feasibility purposes, with the rest of the stream and infestation controlled using the method from previous years. Control effectiveness will be clear in summer of 2023-24 when assessing whether the lilies regrow.

A search was also completed upstream of the known infestations, with an additional infestation found, roughly 450m upstream of the known sites. Further search will be undertaken next financial year.

✓ Progressing towards achieving CRPMP objective/s



## Summary of work

**Yellow bristle grass:** Yellow bristle grass currently occurs at 21 locations on properties owned by five separate land occupiers. This includes KiwiRail (seven), Waka Kotahi New Zealand Transport Agency (nine) Hurunui District Council (three) and two private properties. Two of the sites were found in the 2022-23 year, on one private property and one Hurunui District Council property. Inspections found plants present at all properties in 2022-23. All plants found were controlled by spray or hand removal.

Note: seven sites were not checked due to an access issue (Kiwi Rail).

Surveillance work to detect the presence of Yellow bristle grass plants outside the known areas consisted of searching roads and land adjacent to a new site. Two of the 21 sites were found during surveillance operations.

Machinery movement to undertake road and rail repairs is the most likely pathway for moving seed. The time lapse between movement of seed on contaminated goods and machinery from other regions, combined with the numerous sites of potential distribution across the region may result in a reconsideration of the CRPMP programme most applicable to this species.

A key part of this programme is ensuring contractors (earthworks, agricultural contractors etc.) are aware of yellow bristle grass, its impacts, how to identify it and how to mitigate the risk of spreading seed. There were two examples of these contractors on roads and railways disturbing sites in or just after the yellow bristle grass growing season.

✗ CRPMP objective unlikely to be met



Photo: Yellow bristle grass

### 3. Progressive Containment Programme

#### Progressive containment programme pests

Common name	Botanical Name
African feather grass	Pennisetum macrourum
African love grass	Eragrostis curvula
Baccharis	Baccharis halimifolia
Puna grass	Achnatherum caudatum
Wilding conifers – Contorta	Pinus contorta
Wilding conifers – Corsican	P. nigra
Wilding conifers – Scots	P.sylvestris
Wilding conifers – Mountain (including dwarf)	P. uncinata, P. mugo
Wilding conifers – Larch	Larix decidua

#### CRPMP Objective 3

Over the duration of the Plan, progressively contain and reduce the geographic distribution or extent of African feather grass, African love grass, baccharis and puna grass within the Canterbury region to prevent adverse effects on economic well-being and the environment.

Within the Canterbury region, the extent of African feather grass, African love grass, baccharis and puna grass will each be reduced by 10% within 10 years of the commencement of the Plan.

#### CRPMP Objective 4

Over the duration of the Plan, progressively contain by reducing the geographic distribution and extent of wilding conifers (contorta, Corsican, Scots, mountain and dwarf mountain pines, and larch) within the Canterbury region to reduce adverse effects on economic well-being and the environment.

Within the Wilding Conifer Containment Area, 900,000 hectares of land will be cleared of wilding conifers within 10 years of the commencement of the Plan. This may involve the destruction of contorta, Corsican, Scots, mountain and dwarf mountain pines and larch.

#### Programme summary

##### Targets

1. Contain and reduce progressive containment pests.

##### Annual Outputs

1. Raising awareness.
2. All sites known to have Progressive Containment pests are inspected.\*
3. Progressive Containment pests are eliminated prior to seeding.\*
4. All land at high risk of immediate spread are searched annually.
5. Respond to reports of occurrence.
6. An annual report on a management programme is completed by 30 June.

\*(except wilding conifer)



# Progressive Containment Programme

## What was achieved in 2022 - 2023

✓ <b>Achieved</b>	Awareness undertaken.
✓ <b>Achieved</b>	All sites inspected.*
✓ <b>Achieved</b>	All pest plants controlled before seeding.*
✓ <b>Achieved</b>	High risk land searched.*
✓ <b>Achieved</b>	Respond to reports of occurrence.*
✓ <b>Achieved</b>	Progress report completed.

\*(except wilding conifer)

## Summary of work

**African feather grass:** There are currently 147 properties with previously known occurrences of African feather grass in Canterbury, over an area of approximately 130 hectares. Most sites have been reduced to zero plants. In 2022-23, 15 properties that have had plant occurrences in recent years were inspected, and 13 were found to have live plants. Ground search of infestation perimeters was carried out in addition to some wider aerial search. Control methods included hand grubbing, and hand knapsack and aerial application of herbicide. Flower/seed was removed and bagged prior to the plants being sprayed (not applicable to aerial sites).

**African love grass:** There are 6 known properties of African love grass across the Canterbury region. There are three small sites in the Hurunui district and Christchurch with two smaller sites and one extensive site in South Canterbury. 452 plants were controlled at one site in South Canterbury, while no plants were found at any other sites across the region. One site on KiwiRail land was not searched this season due to access issues with KiwiRail.

Additional searching for African love grass was undertaken on 18 properties not previously known to have an occurrence of this pest species, primarily relating to movement of machinery across South Canterbury, with no plants found.

There are concerns over the potential movement of seed on pathways and a lack of hygiene practices. Increased surveillance is needed of land at high risk through proximity and the movement of vehicles and machinery.

**Baccharis:** There are 55 properties with a record of Baccharis occurrence over <0.01 hectares in total. 19 properties with a recent history of active plants were inspected in 2022-23, with Baccharis plants found and controlled at three sites. Approximately 188 plants were controlled using cutting plants, and application of herbicide to stumps. Seedlings were pulled out of the ground by hand. The sites were in the Sumner and Evans Pass localities of Christchurch. Furthermore, drone surveillance was undertaken in rockfall areas of Scarborough Hill with no sightings of Baccharis plants.

**Puna grass:** There are two known locations where Puna grass occurs in New Zealand, both of which are in Canterbury. one location is on farmland near Amberley, the other on grazed land at Bromley in Christchurch. Inspections and control were undertaken this year at both locations to prevent seeding.

There are a total of seven properties where Puna grass has been found with a total of 44 hectares affected. All properties known to have had an occurrence of Puna grass were inspected. Puna Grass was found five of the seven properties in 2022-23 with 1771 plants were controlled in total. These plants were eliminated by hand grubbing and bagging for disposal. Puna Grass was not found on two properties.

**Wilding conifers:** Environment Canterbury have been actively involved in wilding conifer control since 2003. ECan partnered with the MPI-led National Wilding Conifer Control Programme in 2016, delivering control in Canterbury via 16 active management units (MU) that cover over 2.8 million hectares.

Most of the areas controlled between 2016 and 2023 are now in the maintenance phase and have had one sweep. Some areas are receiving a mix of initial and maintenance works each year.

Canterbury has been the recipient of approximately 48.7 per cent of the available national funding to date. This funding has been used to directly engage contractors for wilding conifer control.

**The National Programme funding allocation for Canterbury is as follows:**

2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
\$2,771,350	\$3,797,119	\$200,000	\$8,102,103	\$20,460,547	\$13,978,627	\$7,922,707	\$3,580,000

\*Please note that the 2023/24 allocation is provisional only at the time of writing.

The Canterbury programme’s success to date is not purely dependent on financial support from central government. Landholders, trusts and other agencies also contribute financially and with ‘work in kind’. In this financial year Environment Canterbury contributed \$1,500,311 and Land Information NZ contributed \$170,000.

With the reduced funding, a prioritised strategic approach is being worked on. Instead of 16, there will be 12 active management units.

All stakeholders, including MPI, acknowledge that this amount is insufficient to maintain the gains we’ve made since 2016, in one financial year.

Our team of contractors and management staff have exceeded annual targets every year since 2016 and ECan has employed between approximately 100 and 200 people every month.

The programme works closely with local wilding pine community trusts including Waimakariri Ecological Land Restoration Alliance (WELRA) and Wilding Free Mackenzie Trust (WFMT).

Community trusts are critical to the programme success in terms of community engagement – WFMT logged over 1167 volunteer hours this year.

Operational Plans and costings for 2023/24 have been submitted to the Ministry for Primary Industries.

✓ Progressing towards achieving CRPMP objective/s

## 4. Sustained Control Programme

### Sustained control programme pests

Common name	Botanical Name
Bell heather	<i>Erica cinerea</i>
Bennett's wallaby	<i>Macropus rufogriseus rufogriseus</i>
Boneseed	<i>Chrysanthemoides monilifera</i>
Broom – Common	<i>Cytisus scoparius</i>
Broom – Montpellier	<i>Teline monspessulana</i>
Broom – White	<i>C. multiflorus</i>
Bur daisy	<i>Calotis lappulacea</i>
Chilean needle grass	<i>Nassella neesiana</i>
Coltsfoot	<i>Tussilago farfara</i>
Darwin's barberry	<i>Berberis darwinii</i>
Feral rabbit	<i>Oryctolagus cuniculus</i>
Gorse	<i>Ulex europaeus</i>
Nassella tussock	<i>Nassella trichotoma</i>
Old man's beard	<i>Clematis vitalba</i>
Purple loosestrife	<i>Lythrum salicaria</i>
Saffron thistle	<i>Carthamus lanatus</i>

### CRPMP Sustainable Control Programme Objective

To provide for ongoing control of the subject, or an organism being spread by the subject, to reduce its impacts on values and spread to other properties.



Photo: Darwin's barberry

# Bell Heather

## Programme summary

Bell heather is confined to two properties in the Hunter Hills of South Canterbury and is spread over 385 hectares.

This is the only recorded site in the South Island. The priority is to contain bell heather to its current extent by preventing spread.

### CRPMP Objective 5

Over the duration of the Plan, sustainably control bell heather in the Canterbury region to ensure its extent does not increase and environmental values are not adversely affected.

### Targets

1. Control bell heather to prevent spread and reduce its density (as at 1 July 2018).
2. High risk sites are searched.

### Outputs

1. Awareness
2. Search for and eliminate all isolated bell heather plants on outer periphery of the known site.
3. A pathway management plan is in place.
4. A report on bell heather population trends is completed by 30 June annually.

## What was achieved in 2022 - 2023

✓ <b>Achieved</b>	Awareness undertaken.
✓ <b>Achieved</b>	Search and eliminate all isolated bell heather plants on outer periphery of the known site.
✗ <b>Not achieved</b>	A pathway management plan is in place.
✓ <b>Achieved</b>	A report on bell heather population trends is completed by 30 June annually.

## Summary of work

In 2021 – 2022 bell heather plants were identified outside the previously known affected area, increasing the affected area to approximately 401 hectares. In 2022 - 2023 surveillance was conducted outside this area, covering an additional area of approximately 218 hectares. No further bell heather was found to be present.

Plants are found in steep hill country that is covered by thick snow tussock, which makes control very slow and is a costly process to cover the ground required. Containing bell heather to the existing two properties is a top priority to protect the region from spread. Available resources will enable annual surveillance on land surrounding the known infested areas, however this will not be sufficient to prevent an increasing density and spread within these properties.

With difficult and costly control means, working with the current landowners to implement containment and hygiene protocols to improve risk pathway management may be key to containing the spread of bell heather.

✓ **Progressing towards achieving CRPMP objective/s**



# Bennett's wallaby

## Programme summary

Wallabies now occupy around 1,000,000ha of land, mostly in South Canterbury, centred around the Hunter Hills. They are less common in areas with less cover such as the coastal fringe of South Canterbury where farming and land use is more intensive.

### CRPMP Objective 6 (i)

Over the duration of the Plan:

Sustainably control Bennett's wallaby to ensure population densities remain at or below Level 3 on the Guilford Scale within the Wallaby Containment Area (refer to Map 2 in Appendix 3 of the CRPMP)

## Targets

1. Where wallaby population densities exceed Guildford Scale 3, advice is given to land occupiers to reduce densities to at or below this level.
2. A programme of work is undertaken to prevent further spread out of the containment area.

## Outputs

1. Education is provided to land occupiers on wallaby management.
2. A selection of properties within the Wallaby Containment Area are inspected to assess wallaby population densities.
3. Eliminate wallaby populations outside the Wallaby Containment Area and prevent the further spread of wallabies from the Containment Area.

## What was achieved in 2022 - 2023

✓ Achieved	Education and awareness.
✓ Achieved	Inspections undertaken.
✓ Achieved	Wallabies eliminated outside the containment area.
✓ Achieved	Quarterly stakeholder reports.

## Summary of work

Work has started on constructing the wallaby exclusion fence down the Takapō/ Tekapo River, this is expected to reduce continued spread further, work is targeted to the areas where the existing fence has been compromised due to flood damage.

The remainder of the budget was spent on control inside the containment area buffer to limit spread opportunity and reducing levels substantially, an additional 25,000 hectares was baited in winter (landowners paying 10% of this work), with ground and aerial control as both primary and follow up control on the more intensively farmed blocks. Landowners are expected and encouraged to implement continued maintenance work to secure this investment.

2022 – 2023 wallaby compliance inspections within the CRPMP containment area: 15 property inspections (some involving more than one day) have been completed in areas outside of the National Wallaby Eradication Programme focus area. Only two have been found compliant. The Environment Canterbury Guide to wallaby management and control booklets have been provided along with verbal advice from the officers on recommendations for those properties.

✓ Progressing towards achieving CRPMP objective/s

# Bennett's wallaby

## Programme summary – continued

Wallabies occur as isolated populations west and south of the Two Thumb Range and the Waitaki River, and the purpose of the work programme is to contain and remove these populations.

### CRPMP Objective 6 (ii)

Preclude the establishment of Bennett's wallaby populations in the Canterbury region outside of the Wallaby Containment Area to minimise or prevent adverse effects to environmental and production values.

## Summary of work

In 2022 - 2023 was the third year of the Tipu Matoro, National Wallaby Eradication Programme delivery. Programme funding this year (\$2.9 million) has seen a significant step change in search and control work for wallabies within Canterbury. Around, half of the budget was targeted to stopping continued spread outside of the containment area, primarily in the South Waitaki, Mackenzie and Te Manahuna Aoraki Management units, which are the areas where over 98% of reports have occurred since 1998.

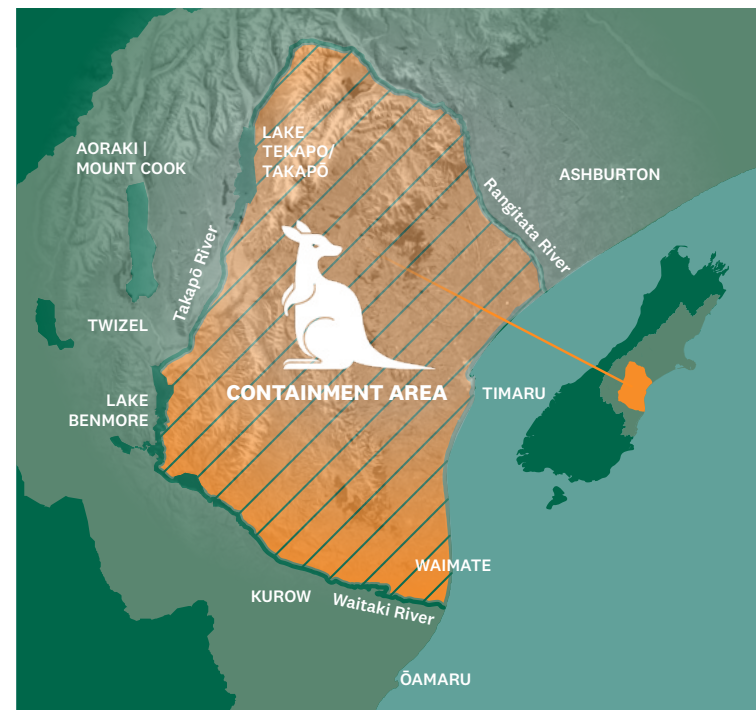
The number of reported sightings and the number of wallabies destroyed have declined from the previous year, even with increased labour hours put into search and control. The complexities and problems of effective detection and control of wallabies with the currently available toolbox cannot be understated.

## What was achieved in 2022 - 2023

Strategy combined with good operational effectiveness will be essential to eliminate outlier populations from outside the Canterbury Regional Pest Management Plan (CRPMP) containment area.

Once achieved, we intend to progressively reduce densities within containment towards the aspirational goal of eradication when such tools arrive. This will be a huge task, agencies and especially landowners will need to be heavily involved with maintaining control to low levels.

✗ CRPMP objective unlikely to be met with the current tools (detection and control)



# Boneseed

## Programme summary

Boneseed occurs as dense infestations within parts of the Port Hills/Lyttelton Zone, as small, scattered infestations around the remainder of Banks Peninsula, and along the coastline on foreshores and beach communities to north of Kaikōura.

### CRPMP Objective 7

Over the duration of the Plan: (i) ensure the current population levels of boneseed do not increase within the Port Hills/Lyttelton Harbour Zone as shown on Map 3 in Appendix 3 of the CRPMP;

(ii) progressively reduce the densities of boneseed by 10% outside of the Port Hills/Lyttelton Harbour Zone to reduce adverse effects on biodiversity values.

### Targets

1. Seeding is prevented at known infested land outside the Port Hills/Lyttelton Zone annually.
2. Within the Port Hills/Lyttelton Zone boneseed is contained to known areas.
3. High risk sites are searched.

### Outputs

1. 20% of land known to have an incidence of boneseed is inspected annually and plants eliminated outside the Containment Zone.
2. Boneseed plants are eliminated in partnership with land occupiers prior to seeding or reproducing within the Port Hills/Lyttelton Zone to prevent spread.
3. Land at high risk of immediate spread is searched annually.
4. An annual report is completed by 30 June.

## What was achieved in 2022 - 2023

✓ Achieved	20% of infested land inspected, and boneseed eliminated outside the Boneseed Containment Zone.
✓ Achieved	Boneseed spread contained within the Port Hills/Lyttelton Zone.
✓ Achieved	High risk land searched in conjunction with control areas.
✓ Achieved	A report on annual boneseed control work was completed by 30 June 2021.

## Summary of work

An ongoing emphasis on controlling boneseed continued with maintenance of outlying and isolated sites outside the Port Hills/Lyttelton Containment Area from Kaikōura to Christchurch and on Banks Peninsula. Substantial investment has been made over the previous 20 years of the programme on these sites.

Strategic control work continued in the Boneseed Containment Area in the Heathcote Valley and Moepuku Peninsula to progress the formation of buffer areas.

Searching of areas to determine absence or presence of boneseed occurred on the Kaikōura Peninsula, at Gore Bay, Motunau, Amberley Beach, Leithfield, Scarborough, Godley Beach Park, and the Banks Peninsula shoreline. Plants were controlled applying herbicides using unmanned aerial vehicle, hand knapsack, cut and paste, and hand-pulling.

Overall, 142 properties were inspected with more than 4500 plants eliminated.

✓ Progressing towards achieving CRPMP objective/s

# Broom: Common, Montpellier, Spanish, White

## Programme summary

Broom occurs throughout Canterbury. The CRPMP focus for broom in the Sustained Control Programme is to ensure land occupiers manage broom on productive land in highly vulnerable hill and high country, with an emphasis on land remaining clear of it.

### CRPMP Objective 8

Over the duration of the Plan, sustainably control broom to preclude land that is free of, or being cleared of, broom becoming infested, to prevent adverse effects on production values and economic well-being.

## Targets

- 1. Broom is controlled on property boundaries.
- 2. Land in the hill and high country is significantly clear of broom and kept clear.

## Outputs

- 1. All reports about broom on adjoining property boundaries are investigated.
- 2. 200 properties are subject to initial inspections (based on agreed criteria) annually in conjunction with gorse.
- 3. An annual report on inspection outcomes is completed by 31 July annually.

## What was achieved in 2022 - 2023

✓ Achieved	All reports of broom on boundaries investigated.
✗ Not achieved	114 initial property inspections occurred.
✓ Achieved	A report on inspection outcomes has been completed by 30 June 2022.

## Summary of work

A total of 114 inspections were undertaken for gorse and broom across Canterbury under the CRPMP compliance programme. This consisted of 89 initial inspections, 15 follow-up and 10 re-inspections. Inspection numbers are lower than what they have been historically, mainly due to project work and smaller pest incidence-related work taking priority.

The focus for gorse and broom inspections have changed more to the hill and high-country areas that are predominantly clear, with the aim to keep these areas clean.

Out of the inspections undertaken, 61% were non-compliant. The majority of these were for initial inspections, however, three Notices of Direction were issued, and one property was acted on by default by Environment Canterbury.

✓ Progressing towards achieving CRPMP objective/s



# Bur Daisy

## Programme summary

Bur daisy occurs at 20 sites over 127.3 hectares in the Canterbury region and eliminating plants prior to seeding will reduce the number of plants and the seed bank over time.

### CRPMP Objective 9

Over the duration of the Plan, sustainably control bur daisy within the Canterbury region to ensure its extent does not increase and production values on adjacent land are not adversely affected.

### Targets

1. Seeding is prevented at all known sites.
2. High risk land in the vicinity of known infestations is searched.

### Outputs

1. Raising awareness.
2. All sites known to have an incidence of bur daisy are inspected.
3. Bur daisy plants are eliminated prior to seeding.
4. All land at high risk of immediate spread of bur daisy are searched annually.
5. An annual report on population trends is completed by 30 June.

## What was achieved in 2022 - 2023

✓ <b>Achieved</b>	Education and awareness undertaken.
✓ <b>Achieved</b>	All known sites were inspected several times throughout the year.
✓ <b>Achieved</b>	Seeding prevented at all known sites.
✓ <b>Achieved</b>	High risk land was searched in the vicinity of known sites.
✓ <b>Achieved</b>	An annual report has been completed.

## Summary of work

There are 19 properties where bur daisy is known to occur or has occurred. Bur daisy is known to infest a combined area of 127 hectares. 14 properties were inspected in 2022-23, with a combined 1009 plants eliminated over 10 properties. Plant numbers are up by 600 this year, last year's mild moist winter and spring will have had a bearing on these numbers, as most weeds had an excellent growing season.

Department of Conservation contractors controlled 32 plants at Godley Head. Christchurch City Council contractors controlled 118 plants on faces above Heberden Ave Scarborough. Plant numbers were not recorded last year. This has also attributed to recorded higher numbers.

All sites have similar terrain, ranging from steep to medium gradient, rocky out crops, scrub, and grass cover.

Due to communication breakdown, five properties were not inspected. Four of those properties have had no plants found for 10 years plus.

Surveillance on land at risk, but not known to have bur daisy was carried out on 114 ha of land above Redcliffs on the Port Hills, this is continuing west from ground searched in 2021/22.

✓ Progressing towards achieving CRPMP objective/s

# Chilean needle grass

## Programme summary

Chilean needle grass occurs at six locations on 25 properties in Canterbury, occupying an infestation area of 330 hectares. Containing existing infestations and investing in surveillance, research and partnerships is essential in detecting new sites, preventing further spread and improving control tools. Educational activities resulting in reports of Chilean needle grass will assist in detecting new infestations annually.

### CRPMP Objective 10

Over the duration of the Plan, sustainably control Chilean needle grass within the Canterbury region to ensure:

- (i) that current infestation levels do not increase; and
- (ii) any spread to other properties is prevented to minimise its adverse impacts on pastoral production values.

## Targets

1. Seeding (aerial) is prevented.
2. High risk (adjacent to known sites and known pathway end points) sites are searched.

## Outputs

1. Awareness.
2. All known Chilean needle grass sites are subject to a control programme to eliminate Chilean needle grass.
3. Respond to reports of Chilean needle grass within two working days.
4. Highly susceptible land is searched.

5. Containment programmes are in place for high density properties.
6. A report on trends in incidence of Chilean needle grass is completed by 30 June annually.

## What was achieved in 2022 - 2023

✓ <b>Achieved</b>	Education and awareness was undertaken.
✓ <b>Achieved</b>	All known sites were inspected and controlled.
✓ <b>Achieved</b>	Reports of potential incidence were followed up.
✓ <b>Achieved</b>	Highly susceptible land is searched.
✓ <b>Achieved</b>	Containment programmes in place where applicable.
✓ <b>Achieved</b>	A report on progress with Chilean needle grass was completed.

## Summary of work

There are 26 properties (additional one in 2022 - 2023) in Canterbury where Chilean needle grass is known to occur, covering a total area of approximately 330 hectares.

Of these properties, 25 are in Hurunui district, and one is 30km west of Christchurch in West Melton.

At four of the properties Chilean needle grass is managed primarily by the land occupiers and the remaining 22 properties are primarily managed by Environment Canterbury due to low plant numbers.

In 2022 - 2023, no plants were found on two of the 26 properties where Chilean needle grass has occurred. The new find was a result of surveillance work to detect the presence or absence of Chilean needle grass. The infestation consisted of two patches totaling approximately 8 square metres in total area.

✓ Progressing towards achieving CRPMP objective/s

# Coltsfoot

## Programme summary

Coltsfoot occurs at three locations and 27 sites in Canterbury over approximately 1,118 hectares. Containing and reducing existing infestations is essential in preventing further spread to protect natural biodiversity values.

### CRPMP Objective 11

Over the duration of the Plan, sustainably control coltsfoot within the Canterbury region, to ensure its extent does not increase and biodiversity values on adjacent land are not adversely affected.

## Targets

1. Coltsfoot is contained to known areas.
2. Seeding is prevented or reduced.

## Outputs

1. An awareness programme encouraging community reporting.
2. All known sites with an incidence of coltsfoot within the last five years are inspected and plants found were eliminated.
3. Reports of coltsfoot incidence is followed up.
4. A report on progress is completed by 30 June annually.

## What was achieved in 2022 - 2023

✓ <b>Achieved</b>	An awareness programme encouraging community reporting.
✓ <b>Achieved</b>	Coltsfoot was controlled at sites with an incidence during the last five years.
✓ <b>Achieved</b>	Reports of occurrence followed up.
✓ <b>Achieved</b>	Annual report completed.

## Summary of work

There are three known locations with a combined 1118 hectares where coltsfoot has occurred in past years in Canterbury. These include Crown land in the Waimakariri and Rakaia catchments and at the Eyre River west of the Oxford township in North Canterbury.

Of known 27 sites, seven recently active sites (Broken River, Hamilton River, Cockayne Stream, Harper River, Edwards River, Coral track and Red Beech stream) were inspected in 2022-23. No plants were found at these sites.

Environment Canterbury has previously taken responsibility for all control at this expansive area with over \$550k spent over the last 20 years, primarily on Crown land.

✓ Progressing towards achieving CRPMP objective/s

# Darwin’s barberry

## Programme summary

Darwin’s barberry is widespread in the Canterbury region, occurring at > 250 known sites over 2500 hectares. Environment Canterbury works in partnership with land occupiers, Crown agencies and district councils to contain the incidence of Darwin’s barberry where it can impact on natural biodiversity.

### CRPMP Objective 12

Over the duration of the Plan, sustainably control Darwin’s barberry to ensure that the extent of its infestations does not increase at the known 254 sites in the Canterbury Region and that biodiversity and environmental values on adjacent land are not adversely affected.

### Targets

- 1. Presence or absence of Darwin’s barberry at known sites (private land) is established.

### Outputs

- 1. An assessment (presence/absence/immediate threat) to biodiversity values is undertaken.
- 2. Sites with a high risk of impacting on biodiversity values are prioritised.
- 3. A report on incidence of Darwin’s barberry is completed by 30 June 2023.

## What was achieved in 2022 - 2023

✓ Achieved	45 properties were assessed to determine the presence or absence of Darwin’s barberry.
✓ Achieved	24 sites with a high risk to biodiversity values were prioritised for control.
✓ Achieved	Annual report completed.

## Summary of work

45 Darwin’s barberry sites were inspected in 2022 – 2023. Control work was undertaken to sustainably control Darwin’s barberry at 24 sites to prevent further impact on biodiversity values.

At some properties there was a collaborative effort, between the Department of Conservation, Environment Canterbury’s biosecurity and biodiversity teams, contractors and landowners to control Darwin’s barberry.

More inspections and collaboration with biodiversity team is required to understand the wider extent of Darwin’s barberry. Once all high value biodiversity sites have been identified and inspected, there will be a better understanding about whether CRPMP objectives are on track to be met. Sites need to be prioritised based on their biodiversity value and investment from landowners and other agencies. Surveillance is required so priorities can be reassessed.

✗ Uncertain whether progressing towards achieving CRPMP objective/s



# Feral rabbit

## Programme summary

Feral rabbits occur throughout the Canterbury region. Population densities fluctuate due to the impact of Rabbit Haemorrhagic Disease, and to a lesser degree by traditional control methods undertaken by land occupiers.

Environment Canterbury annually inspects land designated as highly prone to rabbits to ensure occupiers are keeping populations at required levels and reacts to reports from land occupiers directly affected by population numbers on neighbouring properties. Inspections are indicative of the general need for the level of inspection activity required annually.

### CRPMP Objective 13

Over the duration of the Plan, sustainably control feral rabbits to ensure population levels do not exceed Level 3 on the Modified McLean Scale in order to minimise adverse effects on production and environmental values within the Canterbury region.

## Targets

1. A sample of land considered high rabbit prone is inspected.
2. Where rabbit population densities exceed Modified McLean Scale 3 actions are taken by land occupiers to reduce densities.

## Outputs

1. Education is provided to land occupiers on rabbit management.
1. All reports of rabbits are investigated.
2. A selection of high rabbit prone properties are inspected.
3. A report on population trends of feral rabbits is completed by 30 June annually.

## What was achieved in 2022 - 2023

✓ Achieved	Education is provided to land occupiers on rabbit management.
✓ Achieved	Rabbit reports were investigated.
✓ Achieved	High prone rabbit properties were inspected.
✓ Achieved	A report on population trends of feral rabbit was completed.

## Summary of work

A total of 54 rabbit compliance inspections were undertaken during the 2022-23 financial year, for CRPMP compliance programme; 51 inspections in South Canterbury and three in North Canterbury. Out of the properties inspected, 16 were required to undertake control work under the Pest Management Plan rules, all of which are located in the Mackenzie Basin.

Spring rabbit population monitoring for 2022-23 indicated decreased rabbit levels in all districts. Data was collected from Mackenzie, Ōmarama, Kurow, Waikari, Amuri and the Kaikōura districts. As there have been relatively low rabbit numbers recorded in South Canterbury, Selwyn, Banks Peninsula and Ashley in recent years, there was no night count data recorded this year.

✓ Progressing towards achieving CRPMP objective/s

# Gorse

## Programme summary

Gorse occurs throughout Canterbury. The CRPMP emphasis for gorse in the Sustained Control Programme is to ensure land occupiers manage gorse on productive land in highly vulnerable hill and high country, which is substantially clear of gorse and remains so.

### CRPMP Objective 14

Over the duration of the Plan, sustainably control broom to preclude land that is free of, or being cleared of gorse becoming infested, to prevent adverse effects on production values and economic well-being.

## Targets

1. Gorse is controlled on property boundaries.
2. Land occupiers in the hill and high country are advised of the CRPMP requirements to eliminate broom occurring on property boundaries and as isolated plants and patches.

## Outputs

1. Education is provided to land occupiers on gorse management.
2. All reports about gorse on adjoining property boundaries are investigated.
3. 200 properties are subject to initial inspections (based on agreed criteria) annually in conjunction with broom.
4. An annual report on inspection outcomes is completed by 31 July annually.

## What was achieved in 2022 - 2023

✓ <b>Achieved</b>	Education is provided to land occupiers on gorse management.
✓ <b>Achieved</b>	All reports of gorse on boundaries investigated.
✗ <b>Not achieved</b>	114 initial property inspections occurred in conjunction with broom.
✓ <b>Achieved</b>	A report on inspection outcomes was completed by 30 June 2021.

## Summary of work

A total of 114 inspections were undertaken for gorse and broom across the Canterbury Region under the CRPMP compliance programme. This consisted of 89 initial inspections, 15 follow-up and 10 re-inspections.

Inspections numbers are lower than what they have been historically, mainly due to project work and smaller pest incidence-related work taking priority. The focus for gorse and broom inspections has changed more to the hill and high-country areas that are predominantly clear, with the aim of keeping these areas clean.

Out of the inspections undertaken, 61% were non-compliant. The majority of these were for initial inspections, however, three Notices of Direction were issued, and one property was acted on by default by Environment Canterbury.

✓ Progressing towards achieving CRPMP objective/s

# Nassella tussock

## Programme summary

Nassella tussock occurs throughout Canterbury with approximately 1460 properties having a known history of occurrence, predominately in the northern half of the region. The CRPMP emphasis for nassella tussock in the Sustained Control Programme is to ensure land occupiers manage the plant on their land to prevent spread and ensure population levels do not increase. A significant area of Canterbury remains susceptible to nassella tussock, and searches to detect new infestations will be carried out annually.

### CRPMP Objective 15

Over the duration of the Plan, sustainably control nassella tussock within the Canterbury region to ensure current population levels do not increase in order to minimise adverse effects on production values.

## Targets

1. An inspection programme to ensure nassella tussock is being managed occurs.
2. Highly prone land that is a risk to nassella tussock occurrence is inspected.

## Outputs

1. Education is provided to land occupiers with nassella tussock
2. 30% of all properties in the Canterbury region with known infestations of nassella tussock are inspected.
3. 5% of land that is highly susceptible to infestation of nassella tussock is identified and searched annually.
4. A report on the population trends of nassella tussock is completed by 31 July annually.

## What was achieved in 2022 - 2023

✓ <b>Achieved</b>	Education and awareness undertaken.
✓ <b>Achieved</b>	33.6% (491) of known properties inspected.
✓ <b>Achieved</b>	5% of highly susceptible land searched.
✓ <b>Achieved</b>	A population trend report is completed.

## Summary of work

1460 properties in Canterbury are known to have or have had nassella tussock. A minimum of 438 (30%) properties were planned to be inspected to ensure land occupier compliance with CRPMP rules in 2022-2023. 491 properties were inspected (33.6%).

On 84 (of 491) properties initially inspected, land occupiers were asked to carry out further work to comply with CRPMP rules. 13 land occupiers were required to carry out work to comply with CRPMP rules after a second inspection, and three of these required more work after a third inspection.

26 land occupiers were issued with a Notice of Direction under the provisions of Section 122 of the Biosecurity Act 1993. The Notices directed the land occupiers to eliminate nassella tussock within a specified timeframe due to failure to comply with the CRPMP rules. There are usually more than 20 communications with a land occupier prior to getting to the stage of issuing this Notice.

There were two instances where Environment Canterbury took action to control nassella tussock due to non-compliance with a Notice of Direction. These costs will be recovered from the land occupiers concerned.

Searching of land highly susceptible to nassella tussock on 69 properties found to the presence of nassella tussock. A second significant find of nassella tussock has occurred in South Canterbury. The extent of plants over three properties was substantial with thousands of plants present over approximately 300 hectares. These plants had been present for several decades. At least 10 new occurrences of nassella tussock have been found over the past two — three years, some involving substantial numbers of mature plants, predominantly in South Canterbury.

✓ Progressing towards achieving CRPMP objective/s

# Old man's beard

## Programme summary

The CRPMP emphasis for old man's beard in the Sustained Control Programme is to ensure land occupiers manage the plant on their land, preventing its spread to areas of natural biodiversity. Searching to detect new infestations will be carried out annually.

### CRPMP Objective 16

Over the duration of the Plan, sustainably control old man's beard within the Canterbury region, to ensure current plant numbers or density levels do not increase in order to minimise adverse impacts on environmental values.

## Targets

1. Areas of high natural biodiversity are protected.
2. An inspection programme to determine rules compliance is undertaken.

## Outputs

1. Education and awareness provided to land occupiers.
2. Land where old man's beard threatens sites of high natural biodiversity value inspected.
3. Land occupiers are asked to undertake work where required by CRPMP rules where old man's beard threatens high value natural biodiversity.
4. An annual report on compliance inspections is completed by 30 June.

## What was achieved in 2022 - 2023

✓ Achieved	High value biodiversity areas inspected.
✓ Achieved	Control at high value biodiversity sites.
✓ Achieved	Reports about old man's beard investigated.
✓ Achieved	An annual report completed.

## Summary of work

In 2022-23, there were 76 properties inspected for old man's beard at sites where the plant threatens biodiversity values. 50 inspections were to ensure compliance with CRPMP rules, of these 21 were asked to carry out more work to comply with CRPMP rules. Overall, 37 inspections were undertaken within Site-led areas and 39 inspections were completed outside of Site-led areas.

Old man's beard inspections occur only where high value native biodiversity is being impacted or threatened. Where complaints are received about old man's beard where there are no known biodiversity values being impacted a letter providing advice on control is sent.

✓ Progressing towards achieving CRPMP objective/s



# Purple loosestrife

## Programme summary

Purple loosestrife occurs sporadically throughout Canterbury. The CRPMP emphasis for the plant in the Sustained Control Programme is to eliminate all plants annually. This work is carried out in partnership with land occupiers to reduce population density and prevent spread to areas of natural biodiversity. Educational activities resulting in reports of purple loosestrife will assist in detecting new infestations annually.

There are 72 sites in the region that are Environment Canterbury's responsibility to monitor, with Christchurch City Council and the Department of Conservation taking responsibility for remaining sites.

## CRPMP Objective 17

Over the duration of the Plan, sustainably control purple loosestrife to ensure its extent does not increase and biodiversity values on adjacent land are not adversely affected.

## Targets

1. Contain purple loosestrife by preventing seeding.
2. Purple loosestrife is eliminated when found upon inspection.

## Outputs

1. Awareness.
2. Lead the Purple Loosestrife programme in Canterbury.
3. Purple loosestrife is eliminated where found.
4. A report on the annual control programme is completed by 30 June.

## What was achieved in 2022 - 2023

✓ <b>Achieved</b>	Education and awareness undertaken.
✓ <b>Achieved</b>	Leadership of the programme.
✓ <b>Achieved</b>	All plants found on inspection were eliminated.
✓ <b>Achieved</b>	An annual report was completed.

## Summary of work

The control of purple loosestrife throughout Canterbury is led by Environment Canterbury, partnering with Christchurch City Council and the Department of Conservation. A total of approximately 264 sites that Environment Canterbury is responsible for have been recorded as having purple loosestrife. The majority of these are considered inactive, as no plants have been found on these sites since at least 2015 thought to be due to depletion of seeds in the ground.

Sites are spread through both urban and rural areas, usually in shallow waterways, wetlands, lakesides, streams, drains, and swamps. During the 2022-23-year, Environment Canterbury staff inspected 20 properties, of which eight contained no plants.

There were approximately 345 plants controlled on the remaining 12 properties, and contractors were engaged to control plants along Burkes Creek, and a private property in Halswell. Surveillance operations to detect the presence or absence of plants was carried out, using contractors, to search Taylors Drain in Merivale and using a drone to search Tūtaepatu Lagoon in Woodend. In both instances, no plants were found.

✓ Progressing towards achieving CRPMP objective/s

# Saffron thistle

## Programme summary

Saffron thistle occurs or has occurred at 23 properties throughout Canterbury. The CRPMP emphasis for saffron thistle in the Sustained Control Programme is to eliminate all plants annually to reduce population density and prevent spread. Educational activities resulting in reports of saffron thistle will assist in detecting new infestations annually.

## CRPMP Objective 18

Over the duration of the Plan, sustainably control saffron thistle within the Canterbury region to ensure current plant numbers or density levels do not increase in order to minimise adverse effects on production values.

## Targets

1. Seeding is prevented.
2. Land immediately near known sites is searched.

## Outputs

1. Education is provided to land occupiers on saffron thistle management.
2. All sites known to have an incidence of saffron thistle are inspected.
3. Saffron thistle plants are eliminated prior to seeding in partnership with land occupiers.
4. Land in the immediate vicinity of known sites is searched.
5. A report on the annual control programme is completed by 30 June.

## What was achieved in 2022 - 2023

✓ <b>Achieved</b>	Education undertaken.
✓ <b>Achieved</b>	All Saffron thistle sites were inspected.
✓ <b>Achieved</b>	All saffron thistles found were eliminated.
✓ <b>Achieved</b>	Land searched around active sites.
✓ <b>Achieved</b>	An annual report was completed on progress to contain and reduce saffron thistle.

## Summary of work

There are currently 15 properties where saffron thistle occurs in Canterbury, or has occurred, covering a total of 495 hectares. In 2022-23, all sites were inspected, most at least twice or more especially where significant numbers were found.

4630 plants were found and eliminated over a combined area of 495 hectares from 13 properties. Control included hand grubbing.

✓ Progressing towards achieving CRPMP objective/s

# Wild Russell lupin

## Programme summary

Wild Russell lupin is known to occur in several high-country catchments in the Canterbury region. Initially the priority for this programme is to assist in protecting existing biodiversity work being undertaken in high country catchments and to gather information to determine the full extent of wild Russell lupin in or around waterways. This information will assist in determining priorities for future control work.

### CRPMP Objective 19

Over the duration of the Plan, sustainably control the extent of wild Russell lupin to preclude land that is free of wild Russell lupin, and being cleared of Russell lupin becoming infested, and also preclude establishment of Russell lupin within specified distances from waterways to prevent adverse effects on environmental values.

## Targets

1. Prevent establishment of wild Russell lupin in and around waterways wherever possible.
2. Prevent spread of wild Russell lupin to adjoining properties.

## Outputs

1. Education is provided to land occupiers on Wild russell lupin management.
2. Determine the distribution of wild Russell lupin in Canterbury.
3. React to complaints where Wild Russell Lupin contravenes CRPMP rules.
4. Monitor the effectiveness of control sites.

## What was achieved in 2022 - 2023

✓ <b>Achieved</b>	Education and awareness undertaken.
✗ <b>Not achieved</b>	Distribution information not obtained.
✓ <b>Achieved</b>	Control of wild Russell lupin in the upper Ōhau catchment was undertaken.
— <b>Not applicable</b>	Monitoring of controlled sites.

## Summary of work

Control work was undertaken in conjunction with Environment Canterbury's Biodiversity Section in the upper Ōhau catchment where the occurrence of wild Russell lupin is very limited.

The biosecurity section sent letters to all adjoining landowners to State Highway 8 in the Mackenzie Basin, requesting landowners to undertake boundary clearance of lupins, following a complaint from Waka Kotahi (NZTA). Compliance inspections were not undertaken. The biosecurity team took the opportunity to discuss this with landowners in an educational manner.

✓ Progressing towards achieving CRPMP objective/s

## 5. Site-led Programme

### Programme summary

Sites to be managed under the site-led programme may range from small areas within a property to larger areas covering multiple properties. Their values can be threatened by individual or multiple organisms. Therefore, pest management regimes specifically tailored to each site is necessary.

Common name	Botanical Name
Banana passionfruit	Passiflora tripartita var mollissima P. tripartita var azuayensis P. tarminiana P. pinnatistipula Passiflora x rosea P. caerulea
Broom – Common	Cytisus scoparius
Broom – Montpellier	Teline monspessulana
Broom – Spanish	Spartium junceum
Broom – White	Cytisus multiflorus
Cathedral bells	Cobaea scandens
Feral goats	Capra aegagrus hircus
Gorse	Ulex europaeus
Lagarosiphon	Lagarosiphon major
Old man's beard	Clematis vitalba
Possum	Trichosurus vulpecula
Spartina	Spartina alterniflora, S. anglica, S. gracilis, S. maritime, S. x townsendii

White-edged nightshade	Solanum marginatum
Wild thyme	Thymus vulgaris

### CRPMP Objective 20

For each site in the Canterbury region listed in Appendix 4, progressively control, where present:

- (i) Cathedral bells
- (ii) Banana passionfruit;
- (iii) Old man's beard;
- (iv) White-edged nightshade; and
- (v) Wild thyme;

to avoid, mitigate or prevent damage to the specific values particular to each site.

For each site, the first 10 years of the Plan's operation will result in the:

- (i) Extent of Cathedral bells being reduced by 30%;
- (ii) Extent of banana passionfruit is reduced by 50%;
- (iii) Extent of old man's beard being reduced by 75%;
- (iv) Extent of white-edged nightshade being reduced by 10%;
- (v) Extent of wild thyme being reduced by 50%.



# Programme summary – Site-led continued

## CRPMP Objective 21

For each site in the Canterbury region listed in Appendix 4, sustainably control, where present:

- (i) Spartina;
- (ii) Broom;
- (iii) Gorse;
- (iv) Possum;
- (v) Lagarosiphon (sites 1 and 2 of Appendix 4A).

To avoid, mitigate or prevent damage to the specific values particular to each site.

For each site, the first 10 years of the Plan's operation will result in the:

- (i) The area of spartina being reduced by 75%;
- (ii) The extent of broom being reduced by 10%;
- (iii) The extent of gorse being reduced by 10%;
- (iv) The number of possums being reduced to 5% Residual Trap Catch (RTC);
- (v) Prevention of the spread of Lagarosiphon from locations 1 and 2 of Appendix 4A.

## Targets

1. Pests at sites identified within the site-led programme of the CRPMP are controlled.
2. Identify other organisms which may threaten site-led initiatives.

## Outputs

1. Inspect sites identified as Site led initiatives.
2. Facilitate control work.
3. Contribute to annual control on a pro-rata basis.
4. An annual report on progress at site led projects is completed by 30 June.

## What was achieved in 2022-23

✓ <b>Achieved</b>	Inspection of all sites except those where work was not planned.
✓ <b>Achieved</b>	Work by land occupiers facilitated.
✓ <b>Achieved</b>	Contributed to control programmes.
✓ <b>Achieved</b>	An annual report.

## Summary of work

**Banana passionfruit:** There are two site-led projects for banana passionfruit in the RPMP. At one of these, Kelsey's Bush near Waimate, control work ceased two to three years ago. This was due to the land occupier's unwillingness to contribute resources to the project, and multiple surrounding properties with banana passionfruit infestations.

Work at the Gore Bay site concentrated on eliminating peripheral banana passionfruit infestations with much of the work being carried out by community members and a Department of Conservation funded worker to protect past investment into control at this site-led location. The continued wet conditions have impeded planned contract work at one of the topographically challenging locations and is planned to be carried out in early spring this year.

**Cathedral bells:** Cathedral bells is known to occur at six sites in Canterbury, with three at the Waimangarara, Hapuku and Puhi Puhi Rivers in the Kaikoura District, and three in Akaroa, Banks Peninsula.

A combined 23 hectares are affected. All sites are in a riverbed or adjacent to a river or stream, and all are likely to be the result of green waste dumping. All known sites were inspected in 2022 - 2023, with 255 plants eliminated in Akaroa and many more near Kaikōura (not counted).

Surveillance was also carried out at adjoining properties in Akaroa and around known sites in Kaikoura. Department of Conservation staff discovered and controlled a new site during the year on the banks of the Hapuku River, and further searching revealed additional scattered sites downstream.

Additional surveillance is recommended in the affected area of Kaikōura and will include the investigation of a recent report of another significant site north-west of the Waimangarara site.

**Broom/Gorse:** Environment Canterbury initiated control of gorse and broom across two sites in South Canterbury – within the Ōhau (Ōhau lakeshore) and Hakataramea (Hakataramea Downs) site-led areas. Funding was also contributed to the Rangitata Revival Programme for control of gorse and broom in the Rangitata site-led programme on the northern bank.

**Feral Goats:** Biosecurity staff have met regularly with the Goat Working Group (Banks Peninsula Conservation Trust, Department of Conservation, Christchurch City Council) in a CRPMP rules support capacity. Many of the properties known to have goat herds were visited by biosecurity staff and land occupiers were spoken to about CRPMP rules and provided a fencing guide.

## CRPMP Objective 22

Over the duration of the Plan, for sites 3-15 of Appendix 4B, preclude the establishment of lagarosiphon, to prevent damage and adverse effects to biodiversity and environmental values at these sites.

## CRPMP Objective 23

Manage domestic and farmed goats and remove the population of feral goats within the Containment Area shown on Map 14 in Appendix 4 to prevent adverse effects on environmental values.

Within the Containment Area shown on Map 14 in Appendix 4, the population of feral goats will be reduced by at least 50% in the first 10 years of the Plan.

2022-23 Control operations as part of the Pest Free Banks Peninsula Feral Goat Eradication Programme have been undertaken by a specialist contractor in the Prices Valley and McQueens Valley Catchments of Banks Peninsula.

This concludes the eradication programme. Educational and communication initiatives will be undertaken to ensure land occupiers with domestic goat herds are aware of the need to contain goats and identify goats within properties.

**Lagarosiphon:** The lagarosiphon site consists of the Willowburn (also known as Buscot Stream), located north of Ōmarama. The stream flows into the Ahuriri next to the SH8 bridge, which feeds into Lake Benmore. Lagarosiphon is known to affect 700m of the waterway, only on Buscot Station.

No control was undertaken by Environment Canterbury during the 2022 - 2023 financial year. The landowner did, however, do some control by digging out the stream to open the waterway up for flood events.

Three searches were undertaken during this year. The initial search during October 2022 resulted in no lagarosiphon sighted. During February, another search found scattered lagarosiphon throughout the stream. This search was undertaken to determine presence/absence. Control did not take place due to the availability of contractors and ecological values of the waterway. Following this decision, a third search was undertaken during June to determine the exact infestation densities in this site. This will allow us to develop a robust control plan for the upcoming financial year.

**Old man's beard:** Old man's beard is identified in the CRPMP at 12 sites. Control and/or surveillance was carried out in 2022 - 2023 at all 12 sites by a mixture of contractors, biosecurity staff and land occupiers. Contractor control included both aerial and groundwork, and at locations where this was undertaken. Some control was undertaken in areas surrounding sites that are identified as having the potential to act as a seed source for reinfestation. Overall, there was less old man's beard at the sites than in previous years.

**Possum:** The rotational programme for possum control on Banks Peninsula has ceased and is now managed through the Pest Free Banks Peninsula programme. This programme is concentrating on possum control within a 22,000-hectare area on the east side of the Peninsula encompassing The Wildside Conservation Area. Possum control outcomes for the 2022-23 year are unknown, and this work will not enable the objective of the CRPMP to be met for possum control across Banks Peninsula.

**Spartina:** Spartina is known to occur at low levels in the greater Christchurch area in three distinct locations: Lyttelton Harbour, the Avon Heathcote Estuary and Brooklands Lagoon. There are no other known infestations in the Canterbury region.

In 2022-23, Environment Canterbury coordinated the management programme as well as the contracted services of a scent detection dog to search areas where spartina has been known to occur, including McCormacks Bay, the Avon Heathcote Estuary and Brooklands Lagoon. As well as search at sites outside known areas around Kaiapoi River, Saltwater Creek and Washdyke Lagoon in Timaru. Labour was also allocated for ground search at Brooklands Lagoon, Avon Heathcote Estuary and McCormacks Bay.

The Department of Conservation provided labour allocated for the search and control of spartina around Lyttelton Harbour.

The Christchurch City Council provided labour for the control of spartina concurrently with the dog search around McCormacks Bay and the Avon Heathcote Estuary. The Christchurch City Council also provided labour for follow up search and control around the known sites in the Avon/Heathcote Estuary and McCormacks Bay.

2022/23 marked the fourth year in which this MOU between organisations was implemented.

Searching resulted in no plants being found in Lyttelton Harbour or Brooklands lagoon. 10 plants were found totalling 0.55m<sup>2</sup> in the Avon Heathcote Estuary – McCormacks Bay area, five small patches totalling 2m<sup>2</sup> were found at the Tunnel Road Salt Marsh and several small emerging plants covering a total area of 0.5m<sup>2</sup> were found scattered in a mown area at the South New Brighton Reserve in March 2023.

This brings the total area of Spartina found in 2022 – 2023 to 2.55m<sup>2</sup>.

**White-edged nightshade:** White-edged nightshade is only found on the north-eastern side of Banks Peninsula, scattered across 650 hectares and 16 properties. All 16 properties were inspected, with 169 plants controlled in the 2022 – 23 season, which is higher than last year's total of 87 due to soil disturbance from a new fence. Plants were controlled by cutting stems and pasting a herbicide gel, while smaller plants were hand grubbed. Seedpods were bagged and removed for deep burial at Kate Valley.

There is also a historic site in Motunau where no plants have been found since 1998, however significant recent soil disturbance at this site may stir up the seedbank resulting in plant establishment.

**Wild thyme:** Wild thyme occurs at six properties over a combined 40 hectares in North and South Canterbury. All properties were inspected, and plants controlled using herbicide applied by knapsack and hand sprayer. Abseiling control was completed this year with the help of funds through Environment Canterbury's biodiversity team and the Department of Conservation. 3023 plants were eliminated. Wild thyme occurs on limestone bluff faces, dry terraces, and stony riverbeds.

✓ Progressing towards achieving CRPMP objective/s

**Environment Canterbury offices**

**Christchurch**  
200 Tuam Street  
PO Box 345  
Christchurch 8140  
03 365 3828

**Timaru**  
75 Church Street  
Timaru 7940  
03 687 7800

**Kaikōura**  
96 West End  
Kaikōura 7340  
03 319 5781

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