

Biosecurity Activities 2019-20

Report on the 2019-20 Operational Plan

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



PREPARED UNDER THE BIOSECURITY ACT 1993

This Report on the Operational Plan 2019-20 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 Strategy (CRPMP 2018-2038). 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 2019-20 for the implementation of the Canterbury Regional Pest Management Strategy (2018-2038).

The Operational Plan was prepared in accordance with the requirements Section 85 (1)(c) of the Biosecurity Act 1993.



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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 become 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 are 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 customer services on 0800 324636 and ask for a copy of our free pamphlets or brochures, including Biosecurity Bites, Nassella News and the CRPMP Quick Guide. Alternatively, go to our website www.ecan.govt.nz for a full copy of the CRPMP and 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, which provide technical information for the implementation of programmes, including monitoring and surveillance projects, which support the outcomes of CRPMP. 2019-20 is the first year of a 20-year plan. Overall, the results of this year's work programme indicate the programme being implemented will achieve CRPMP objectives.

The 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 are reported on in this report, 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 2019-20 identifies:

- the levels of service expected (targets and outputs),
- whether the outputs were achieved, and
- 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; National Wallaby Management programme; National Wilding Conifer Control programme; regional engagement initiatives; National Special Interest groups (Biosecurity Managers and Biosecurity Working Group); Chatham Islands RPMP 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 Canterbury 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

Australian sedge
Broomsedge
Hornwort
Kangaroo grass
Koi carp
Noogoora bur
Nutgrass (purple nutsedge)
Oxylobium
Palm grass
Spiny broom
Woolly nightshade

Botanical Name

Carex longebrachiata
Andropogon virginicus
Ceratophyllum demersum
Themeda triandra
Cyprinus carpio
Xanthium strumarium
Cyperus rotundus
Oxylobium lanceolatum
Setaria palmifolia
Calicotome spinose
Solanum mauritianum

Programme Summary

Annual Targets

1. Undertake research work to determine highest risk pests.
2. Identify pathways.
3. Identify habitat at risk.

Annual Outputs

1. Raising awareness for pests identified.
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 2019-20

- **Achieved:** General awareness: Public displays and presentations as part of an overview of the CRPMP 2018–2038.
- **Not applicable:** No incursions were recorded.
- **Achieved:** Science support has been engaged to determine the most likely sites of initial occurrence.

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.

Environment Canterbury commissioned AgResearch to answer these questions for the top four (of 11) invasive pests in the exclusion programme. Using Environment Canterbury’s limited resources for this programme combined with funding from the Ministry for Business Innovation and Employment under the AgResearch Strategic Science Investment Fund research programme ‘Pasture Weeds’, AgResearch mapped the global distribution, constructed a climate niche model (using the CLIMEX modelling software), and determined the dispersal pathway(s) for each of the four species below, considered to be the most invasive:

Common name

Broomsedge
Kangaroo grass
Nutgrass
Palm grass

Botanical Name

Andropogon virginicus
Themeda triandra
Cyperus rotundus
Setaria palmifolia

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

2. Eradication Programme

Eradication Programme Pests

Common name.

Egeria
Entire marshwort
Knotweed (Asiatic and Giant)

Moth plant
Phragmites
Rook
Yellow bristle grass
Yellow water lily

Scientific name

Egeria densa
Nymphoides geminata
Fallopia japonica x sachalinensis
Fallopia sachalinensis
Araujia hortorum
Phragmites australis
Corvus frugilegus
Setaria pumila
Nuphar lutea

CRPMP Objective 2

Within 20 years of the commencement of the Plan, reduce all infestations of eradication pests 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 is 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 to immediate spread are searched annually.
6. An annual report on each pest is completed by 30 June.

What was achieved in 2019-20

- **Achieved:** Awareness work undertaken.
- **Achieved:** All sites inspected.
- **Achieved:** All pest plants controlled before seeding or reproducing.
- **Achieved:** Responded to reports of occurrence.
- **Achieved:** High risk areas searched.
- **Achieved:** Population trend report completed.

Eradication Programme

Summary of work

Egeria: 1 active site (of 9) at Kerr's Reach, Avon River with plants present but at low levels. Egeria occupies approximately 5 hectares in the Avon river from the point at which sea water meets fresh water for approximately one kilometre upstream. Planned surveillance in 2019-20 by the National Institute of Water and Atmospheric Research did not occur due to the impact of COVID-19. Subsequently herbicide applications to control Egeria by Christchurch City Council did not occur. Periodic weed clearance by mechanical cutting generally did occur. Inspections of machinery by biosecurity officers confirmed the presence of Egeria.

Entire marshwort: 1 known site in Canterbury at Claremont near Timaru where it occurs in a large pond. Recent controls by Environment Canterbury have reduced the infestation to 5% coverage area of the pond affected. Revised control methods were considered in 2019-20, however due to unforeseen circumstances and the advent of COVID-19 lockdown no control was undertaken.

Knotweed (Asiatic and Giant): Of 11 known sites in Christchurch, 1 site remains active, 2 sites were active. Knotweed plants were controlled (stem injected herbicide, hand pulled) 5 times throughout the year. Excavation and deep burial of plant material will be considered in 2020-21.

Moth plant: 11 known sites (Christchurch and Rangiora) visited with no plants found present.

Phragmites: There are 10 known occurrences (with the addition of 1 new site in 2019-20) of Phragmites in the Canterbury Region, 8 within or near Christchurch and 2 near Ashburton. 5 sites had plants present in the past year with 1 plant each at 3 sites, with an approximately 10 square metres patch of mature plants being controlled at a new site in Heathcote. The remaining site contains several infestations covering about 200 square metres. MPI was approached this year for more funding (\$25,000) to speed up eradication at this site. This will be done by excavating plants and leaving them to dry for a year before disposal in 2020-21.

Rook: The known population of rooks within Canterbury is currently remains at 1 bird. There were no reported sightings of a Rook in 2019-20.

Yellow bristle grass: Yellow Bristle Grass (YBG) work carried out in the year 2019-20 was focused on the Railway corridor areas of interest identified during helicopter flight 2018-19. Samples of bristle grasses were collected on the railway line between the Waitaki and Rolleston/Arthurs Pass and sent to Landcare Research for identification with 2 samples identified as YBG. This brings the total number of known active sites to 3 in Canterbury.

Yellow water lily: Known to be present in one South Canterbury stream at low densities over 4.5 kilometres across 6 properties. Contractors were engaged and controlled Yellow water lily in the known area of waterway with herbicide in 2019-20.

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

3. Progressive Containment Programme

Progressive Containment Programme Pests

Common name.

African feather grass
African love grass
Baccharis
Puna grass

Scientific name

Pennisetum macrourum
Eragrostis curvula
Baccharis halimifolia
Achnatherum caudatum

Wilding conifers:

Contorta
Corsican
Scots
Mountain (including dwarf)
Larch

Pinus contorta
P. nigra
P. sylvestris
P. uncinata, *P. mugo*
Larix decidua

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 to immediate spread is searched annually.
5. Respond to reports of occurrence.
6. An annual report on a management programme is completed by 30 June.

*(except Wilding Conifer)

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

Progressive Containment Programme

What was achieved in 2019-20

- **Achieved:** Awareness undertaken.
- **Achieved:** All sites inspected. *
- **Achieved:** All pest plants controlled before seeding *
- **Achieved:** High risk land searched. *
- **Achieved:** Respond to reports of occurrence. *
- **Not applicable** Require boundary control of Wilding conifer is not required at this stage in the programme.
- **Achieved:** Progress report completed.

*(except Wilding Conifer)

Summary of work

African feather grass: There are currently 144 properties with previously known occurrences of African Feather Grass in Canterbury over an area of approximately 130 hectares. Most sites have been inactive for several years. 24 properties where plants have occurred in recent years were inspected in 2019-20. 12 properties were found to have live plants. >100 plants (records show 66 plants and a small patch) were controlled in total across all active sites. Plant numbers continue to reduce annually.

African love grass: 5 known sites of African Love Grass occur across the Canterbury region with 2 small sites occurring, 1 each in the Hurunui District and Christchurch with the remaining 3 extensive sites occurring in South Canterbury. 613 plants were controlled at 3 active sites in South Canterbury, 7 plants at the Hurunui District site while the Christchurch site is inactive). Plants seed at about 6-week intervals through the spring/summer. Numerous control efforts are required. Herbicide trials are currently being conducted to assess control options and improved detection techniques (detection dogs) are being considered for 2020-21.

Baccharis: There are 49 properties with a record of Baccharis occurrence. 21 properties with a recent history of active plants were inspected in 2019-20 and no Baccharis plants were found. The sites were located mainly in the Sumner and Lyttleton localities.

Puna grass: There are two known sites of Puna Grass in Canterbury (and NZ). One occurs on farmland near Amberley, while the other occurs on grazed land at Bromley in Christchurch. Inspections and control were undertaken this year at both sites to prevent aerial seeding. At the North Canterbury site plant numbers remain relatively stable over a 5-hectare area. At the Bromley site plants were found over 74 hectares.

Wilding conifers: There are currently no procedural processes for the implementation of Canterbury Regional Pest Management Plan rules for Wilding Conifers. Control is being undertaken at present within the National Wilding Conifer Control Programme. Discussions are being held with land occupiers within the Twizel and Castle Hill Villages about the removal of Wilding Conifers and Pest Agent Conifers with reference to CRPMP rules as these villages fall within areas programmed for conifer removal.

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

4. Sustained Control Programme

Sustained Control Programme Pests

Common name.

Bell heather
Bennett's wallaby
Boneseed
Broom:
- Common
- Montpellier
- White
Bur daisy
Chilean needle grass
Coltsfoot
Darwin's barberry
Feral rabbit
Gorse
Nassella tussock
Old man's beard
Purple loosestrife
Saffron thistle

Scientific name

Erica cinerea
Macropus rufogriseus rufogriseus
Chrysanthemoides monilifera

Cytisus scoparius
Teline monspessulana,
C.multiflorus
Calotis lappulacea
Nassella neesiana
Tussilago farfara
Berberis darwinii
Oryctolagus cuniculus
Ulex europaeus
Nassella trichotoma
Clematis vitalba
Lythrum salicaria
Carthamus lanatus

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.

Bell Heather

Programme Summary

Bell heather is confined to one site in the Hunter Hills in South Canterbury and is spread over 375 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.

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 and eliminate all isolated bell heather plants on outer periphery of the known site.
3. Control 20% of the bell heather area annually.
4. A report on bell heather population trends is completed by 30 June annually.

What was achieved in 2019-20

- **Achieved:** Awareness undertaken.
- **Achieved:** Search and eliminate all isolated bell heather plants on outer periphery of the known site.
- **Achieved:** Eliminate 20% of bell heather annually.
- **Achieved:** A report on bell heather population trends is completed by 30 June annually.
- **Achieved:** Progress report completed by 30 June 2020.

Summary of work

Control work was completed over 14.3% of the bell heather infestation area (375 ha). This season bell heather was not in flower in early January during control which made identifying plants slightly harder and slowed down the control work so not as much ground was able to be covered as previous years. Sheep appear to be the main vector for spread. Consideration will be given to controlling bell heather when flowering in 2020-21 and the possibility of a wider delimiting survey of outlying areas using detection dogs to ensure spread is not beyond the current area of extent.

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

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

Bennett's Wallaby

Programme Summary – Within the Wallaby Containment Area

Wallabies now occupy over 600,000 hectares of the 900,000 hectare wallaby containment area. Areas they are yet to fully occupy are in the northwest corner of the containment area against the Rangitata River and generally the coastal fringe country of South Canterbury where farming and land use is more intensive and wallaby holding cover uncommon or fragmented.

Targets

1. Where wallaby population densities exceed GS3 actions are taken to reduce densities to at or below level 3 GS.
2. A programme of work is undertaken to prevent further spread out of the containment area.

Outputs

1. All enquiries/complaints received about wallaby are reacted to within 10 working days.
2. 25 properties are inspected (based on agreed criteria) to ensure wallaby densities comply with CRPMP rules.
3. Working with land occupiers to create a buffer around and within the boundary of the containment area.
4. A report on Bennett's wallaby population trends is completed by 30 June annually.

What was achieved in 2019 - 2020

- **Achieved:** All complaints/enquiries were contacted within 10 days.
- **Achieved:** 34 inspections undertaken including buffer properties.
- **Achieved:** Work undertaken on buffer areas over 4,300 hectares on 4 properties.
- **Achieved:** A report on wallaby population trends was completed by 30 June 2020.

Summary of work

34 compliance inspections completed in 2019-20 financial year. Significantly more resources were spent arranging coordinated control operations on the containment area boundary to prevent spread to the northwest and south. 3,500 ha of primary control over 2 buffer properties was cancelled due to COVID-19. Wallaby trend monitoring completed on 11 lines that were established in 2008 on the periphery of the containment area. Additional monitoring lines put in the Te Manahuna Aoraki project area and thermal drone monitoring trials completed. More concerning is the continued spread of wallaby both within and from the containment area further south. With the Government announcement of increased funding through the National Wallaby Management Programme in 2020-21, large gains are expected.

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 Map 2 in Appendix 3 CRPMP)

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

Bennett's Wallaby

Programme Summary – Outside the Wallaby Containment Area

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

Targets

1. Prevent further establishment of Bennett's wallaby populations outside of the Bennett's wallaby containment area.
2. Reduce Bennett's wallaby populations outside of the Bennett's wallaby containment area.

Outputs

1. Record and respond to reports of Bennett's wallaby within 10 working days.
2. Bennett's wallaby reported outside the Bennett's wallaby containment area are destroyed where technically feasible.
3. Control programmes are completed to reduce the extent and population density of wallaby outside and south of the wallaby containment area. South Bank Waitaki, Ben Ohau Range, Gamack Conservation area.
4. A partnership with Otago Regional Council is maintained.
5. A report on progress outside the containment area is completed by 30 June annually.

What was achieved in 2019 - 2020

- **Achieved:** All people making complaints/enquiries are contacted within 10 days.
- **Achieved:** Control operations for reported wallaby carried out.
- **Achieved:** Planned control operations carried out.
- **Achieved:** Meetings with Otago Regional Council to discuss a joint wallaby programme.
- **Achieved:** A report on wallaby sightings and search & destroy operations completed by 30/10/2020.

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

Total number of wallabies reported outside of the CRPMP wallaby containment area for 2019-20 year was 332. There were 208 wallabies destroyed. Over 1557 contractor hours spent on wallaby search and destroy operations. Wallaby detection trial work is ongoing with Landcare Research, to gauge precision. Otago Regional Council and ECan biosecurity staff meet regularly to exchange information and align work programmes which has resulted in a Memorandum of Understanding at a Governance level.

With the Government announcement of increased funding through the National Wallaby Management Programme in 2020-21 it is expected that large gains will be made over the next four years and we are optimistic that wallaby will be locally eradicated outside containment.

- **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/Lyttleton Zone and as small scattered infestations and isolated plants around the remainder of Banks Peninsula and primarily along the coastline on foreshores and beach communities to north of Kaikōura.

Targets

1. Seeding is prevented at known infested land outside the Port Hills/Lyttleton Zone annually.
2. Within the Port Hills/Lyttleton 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 PH/L Zone to prevent spread.
3. Land at high risk of immediate spread is searched annually.
4. An annual report on population trends is completed by 30 June.

CRPMP Objective 7

Over the duration of the Plan: (i) ensure the current population levels of Boneseed do not increase within the Port Hills/Lyttleton Harbour Zone as shown on Map 3 in Appendix 3; (ii) progressively reduce the densities of Boneseed by 10% outside of the Port Hills/Lyttleton Harbour Zone to reduce adverse effects on biodiversity values.

What was achieved in 2019 - 2020

- **Achieved:** 20% infested land inspected and boneseed eliminated outside the Boneseed Containment Zone.
- **Not Achieved:** Boneseed spread contained within the Port Hills/Lyttleton Zone. See below.
- **Achieved:** High risk land searched in conjunction with control areas.
- **Achieved:** A report on annual boneseed control work was completed by 30 June 2020.

Summary of work

Work to control Boneseed continued this year with ongoing emphasis being placed on maintenance of outlying and isolated sites throughout Canterbury where substantial investment has been made over the previous 15 years over the duration of the programme. This included ground control work at Kaikōura, Motunau, coastal sites south of Banks Peninsula, Akaroa and the Eastern Bays on Banks Peninsula. Areas with a high risk of spread on Banks Peninsula were investigated both on the ground and aerially including an aerial survey of the Boneseed Containment Area to identify areas of low incidence where partnership work could be developed and to inspect containment lines. Searching of some key locations in the South Canterbury area was carried out to ensure the single known site at Glenavy still remained the solitary Boneseed location in the area. An area which has seen a significant increase in Boneseed is the Christchurch Adventure Park. This is due to the fire in 2017 which bared the ground and possibly caused the germination of dormant seed previously spread into the park by birds.

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

Broom: Common, Montpellier, Spanish, White

Programme Summary

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

Targets

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

Outputs:

1. All reports about broom on adjoining property boundaries are investigated.
2. 350 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 2019-20

- **Achieved:** All reports of broom on boundaries investigated.
- **Not Achieved:** 288 properties were inspected.
- **Achieved:** A report on inspection outcomes has been completed by 30 June 2020.

Summary of work

All reports of broom and gorse on boundaries were investigated. 288 inspections were carried out in conjunction with gorse. Inspection numbers can fluctuate from year to year due to property size, location and resources needed to communicate with landowners. A change to inspecting only hill and high-country properties in 2018-19 reduced the numbers of inspections as many of these properties are larger and take more time to inspect. This included 210 initial inspections, 49 second inspections and 29 instances where re-inspections were required to ensure a Notice of Direction under the provisions of the Biosecurity Act 1993 were complied with. 163 (57% of total inspections for broom and gorse) inspections recorded more work was required to comply with CRPMP rules at the time of inspection. Statistics for second and additional inspections often relate to first inspections from previous financial years and can be unrelated to the current financial year. While less inspections than planned were achieved a future targeted programme will ensure CRPMP objectives are met. COVID-19 also impacted on the gorse and broom inspection programme. The gorse and broom inspection programme is currently being reviewed. Thought is being given to a more targeted approach and the possibility of a property grading system to support this.

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.

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

Bur Daisy

Programme Summary

Bur daisy occurs at 15 sites over 3,500 hectares in the Canterbury region. Bur daisy is declared a pest in the CRPMP Sustained Control Programme. Eliminating bur daisy plants prior to seeding will reduce the number of plants and the seed bank over time.

Targets

1. Seeding is prevented at all known sites.
2. High risk land (in 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 to immediate spread of bur daisy is searched annually.
5. An annual report on population trends is completed by 30 June.

What was achieved in 2019-20

- **Achieved:** Education and awareness undertaken.
- **Achieved:** All known sites were inspected several times throughout the year.
 - **Not achieved:** Seeding prevented at all known sites.
- **Achieved:** High risk land was searched in the vicinity of known sites.
- **Achieved:** An annual report has been completed.

Summary of work

There are currently 28 properties where Bur daisy occurs across Canterbury covering a combined area of 171.5 hectares. All 28 sites were inspected in 2019-20 with 1368 bur daisy plants controlled or removed from 9 properties. Live plants observed at one site at Sumner seeded as part of this site was unable to be accessed and controlled due to earthquake damage precautions still being in place. The earthquake affected area is being contained. Sheep are the primary mover of bur daisy seed and this area is grazed sporadically. Discussions are ongoing with the landowner about future access to this site, which is not possible at present due to health and safety issues.

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.

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

Chilean Needle Grass

Programme Summary

Chilean needle grass occurs at 6 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.

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 2 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 2019-20

- **Achieved:** Education and awareness was undertaken.
- **Achieved:** All known sites were inspected and controlled.
- **Achieved:** Reports of potential incidence were followed up.
- **Achieved:** Containment programmes in place where applicable.
- **Achieved:** A report on progress with Chilean needle grass was completed.

Summary of work

Awareness: media releases, shows, displays, public meetings, one on one with individual landowners. 25 properties (including 2 new) affected with infestations over a combined 330 hectares inspected. Both new sites are thought to be from seed spread pre finding Chilean needle grass in Canterbury (2008). Chilean needle grass controlled

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

at all sites. Search of land adjacent to all sites undertaken. All reports of potential Chilean needle grass responded to either via email (photo), identification in person, and/or field inspection. All properties with a significant infestation have a containment programme in place.

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

Coltsfoot

Programme Summary

Coltsfoot occurs at 3 locations and 27 sites in Canterbury over approximately 1,100 hectares. Containing and reducing existing infestations is essential in preventing further spread to protect natural biodiversity values.

Targets

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

Outputs

1. All known sites with an incidence of coltsfoot within the last 5 years is inspected and plants found were eliminated.
2. Reports of coltsfoot incidence is followed up.
3. A report on progress is completed by 30 June annually.

What was achieved in 2019-20

- **Achieved:** Coltsfoot was contained to existing areas of infestation.
- **Achieved:** Reports of occurrence followed up.
- **Achieved:** Annual report completed.

Summary of work

There are 3 known locations in Canterbury, on Crown land in the Arthur's Pass and Rakaia catchments, and in the Eyre River west of Oxford. Five recently active sites were inspected with a total of 10 Coltsfoot plants found and controlled. Environment Canterbury staff plan to meet with Department of Conservation to establish a collaborative partnership for future control for this area. Environment Canterbury has previously taken responsibility for all control at this expansive site (>1100 ha) with >\$500k spent over >20 years.

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

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.

Darwin's Barberry

Programme Summary

Darwin's barberry is widespread in the Canterbury Region, occurring at >250 known sites over 2500 hectares. Working 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.

Targets

1. Presence or absence of Darwins 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 2020.

What was achieved in 2019-20

- **Achieved:** 43 properties were assessed to determine the presence or absence of Darwin's Barberry.
- **Achieved:** Sites with a high risk to biodiversity values were prioritised for control.
- **Achieved:** Annual report completed.
-

Summary of work

An assessment of 43 sites previously known to have an occurrence Darwin's barberry sites was undertaken in 2019-20. Darwin's barberry was found at approximately 50% of the 43 sites inspected. Due to the time of inspections it was not possible to determine the presence of Darwin's Barberry (not flowering, dense scrub etc) so some follow-up site visits will be necessary. Priority work at sites to protect biodiversity values is planned for 2020-21 as a result of the assessments. Further site assessments are planned for 2020-21.

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

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.

Feral Rabbit

Programme Summary

Feral rabbits occur throughout the Canterbury region. Population densities fluctuate due to the impact of Rabbit Haemorrhagic Disease Virus and to a lesser degree by traditional control methods undertaken by land occupiers. Environment Canterbury inspects land designated as highly prone annually to ensure land occupiers are keeping rabbits at required levels and reacts to complaints about rabbits from land occupiers directly affected by neighbouring properties. Inspections are indicative of the general need for the level of inspection activity required annually.

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. All reports of rabbits are investigated.
2. A selection of high rabbit prone properties are inspected.
3. A report on population trends of feral rabbit is completed by 30 June annually.

What was achieved in 2019-20

- **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

- 26 properties were inspected (22 Southern, 1 Northern, 3 Central) for compliance for CRPMP rules in 2019-20. Spring 2019 monitoring indicated rabbit levels have increased in only one pest district from the previous year - Waikari. Leaving 7 areas where reductions in mean rabbit levels occurred, Kaikoura, Āmuri, Selwyn, Mackenzie, South Canterbury, Omarama and Kurow. 3 districts rabbit levels remained the same Ashburton, Ashley and Banks Peninsula.

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.

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

Gorse

Programme Summary

Gorse occurs throughout Canterbury. The CRPMP emphasis for broom 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, remains clear of gorse.

Targets

1. Gorse is controlled on property boundaries.
2. Land in the hill and high country is significantly clear of gorse is kept clear.

Outputs:

1. All reports about gorse on adjoining property boundaries are investigated.
2. 350 properties are subject to initial inspections (based on agreed criteria) annually in conjunction with broom.
3. An annual report on inspection outcomes is completed by 31 July annually.

What was achieved in 2019 - 2020

Outcome:

- **Achieved:** All reports of gorse on boundaries investigated.
- **Not Achieved:** 288 properties were inspected.
- **Achieved:** A report on inspection outcomes has been completed by 30 June 2019.

Summary of work

All reports of broom and gorse on boundaries were investigated. 288 inspections were carried out in conjunction with gorse. Inspections numbers can fluctuate from year to year due to property size, location and resources needed to communicate with landowners. A change to inspecting only hill and high-country properties in 2018-19 reduced the numbers of inspections as many of these properties are larger and take more time to inspect. This included 210 initial inspections, 49 second inspections and 29 instances where re-inspections were required to ensure a Notice of Direction under the provisions of the Biosecurity Act 1993 were complied with. 163 (57% of total inspections for broom and gorse) inspections recorded more work was required to comply with CRPMP rules at the time of inspection. Statistics for second and additional inspections often relate to first inspections from previous financial years and can be unrelated to the current financial year. While less inspections than planned were achieved a future targeted programme will ensure CRPMP objectives are met. COVID-19 also impacted on the gorse and broom inspection programme. The gorse and broom inspection programme is currently being reviewed. Thought is being given to a more targeted approach and the possibility of a property grading system to support this.

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.

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

Nassella Tussock

Programme Summary

Nassella tussock occurs throughout Canterbury with >1400 properties with 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 nassella tussock on their land to prevent spread and ensure population levels do not increase. A significant area of Canterbury remains susceptible to nassella tussock. Searching to detect new infestations will be carried out annually.

Targets

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

Outputs

1. Awareness.
2. 40% of all properties in the Canterbury Region with known infestations of Nassella tussock are inspected.
3. 10% of land that is highly susceptible to infestation to 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 2019-20

- **Achieved:** Education and awareness undertaken.
- **Not Achieved:** 40% (560) of known properties inspected.
- **Achieved:** 10% of highly susceptible land searched.
- **Achieved:** A population trend report is completed.

Summary of work

Of the 560 (40%) target of properties to be inspected to ensure compliance with CRPMP rules, 473 properties were inspected (31.4%). This was due to a move to more thorough inspections on targeted properties (which meant more time spent on quality inspections but fewer overall inspections) to either ensure Nassella tussock was controlled or to establish presence or absence. 53 (9.5%) properties required further work to bring about compliance with CRPMP rules. 157 properties on land not known to have Nassella tussock resulted in being searched resulting in new finds of nassella tussock on 2 properties. Annual trend monitoring data for 2019-20 has been delayed. Data from 2018-19 estimated the density of plants remaining after annual control efforts on 746 land occupier control properties in the Hurunui District at 11.8 plants/hectare. This equates to 3.7 million plants. 92.6% of plants are estimated to have seeded (+/- 8.5 billion seeds). Of these, 152 medium to high density properties, densities are estimated at an average of 24.5 plants/hectare and 97.4% seeding (+/- 7.3 billion seeds) and up to 38 plants/hectare and up to 100% seeded on the highest density properties. The remainder of Canterbury's 492 properties had an estimated average of 4.3 plants/hectare remaining of which 94.5% are estimated to have seeded. Improvements to Environment Canterbury's nassella tussock programme are being investigated in conjunction with several farming group clusters being set up in the Hurunui District. Environment Canterbury will engage with farmers in each cluster and work together to improve outcomes for containing or reducing nassella tussock densities.

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.

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

Old Man's Beard

Programme Summary

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

Targets

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

Outputs

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

What was achieved in 2019-20

- **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

53 inspections occurred in 2019-20 for old man's beard at sites which threaten biodiversity values. 15 of these were to ensure compliance with CRPMP rules while the remaining 38 inspections were to assess sites for the presence/absence of old man's beard, visits to old man's beard site-led areas and to organise contractors to carry out control works at these sites.

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

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.

Purple Loosestrife

Programme Summary

Purple loosestrife occurs sporadically throughout Canterbury. The CRPMP emphasis for purple loosestrife in the Sustained Control Programme is to eliminate all plants annually in partnership with land occupiers and other agencies 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. 72 sites are recorded as Environment Canterbury responsibility with Christchurch City Council and the Department of Conservation taking responsibility for remaining sites.

Targets

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

Outputs

1. Awareness.
2. Purple loosestrife sites Environment Canterbury are responsible for are inspected annually.
3. Purple loosestrife is eliminated where found.
4. A report on the annual control programme is completed by 30 June.

What was achieved in 2019 - 2020

- **Achieved:** Education and awareness undertaken.
- **Achieved:** Sites of ECan responsibility inspected.
- **Achieved:** All plants found on inspection were eliminated.
- **Achieved:** An annual report was completed.

Summary of work

5 known recently active Purple Loosestrife sites were inspected. 26 plants were removed by biosecurity officers on inspection. This was on a priority approach with wet sites (e.g. ponds, streams, drains etc), due to the potential for plants to spread. A contractor engaged by Environment Canterbury completed search and control along an ECan drain from Cossars Road to McCartneys Road. This drain feeds into the Halswell River and eventually Lake Te Waihora (Ellesmere).

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

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.

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.

Targets

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

Outputs

1. Awareness.
2. All sites known to have an incidence of saffron thistle is 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 2019-20

- **Achieved:** Education and awareness undertaken.
- **Achieved:** ECan responsibility inspected.
- **Achieved:** Active sites all plants eliminated annually.
- **Achieved:** An annual report.

Summary of work

10 properties where saffron thistle has occurred in recent years were inspected. 5922 saffron thistle plants were eliminated at 8 of these properties. Each of these properties were visited at least once and those with significant plant numbers of the first visit were inspected a minimum of twice during the summer of 2019-20. Any seed found was removed for disposal prior to release. Land in the immediate vicinity of areas containing saffron thistle plants was searched.

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

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.

Wild Russell Lupin

Programme Summary

Wild russell lupin is known to occur in several high-country catchments the Canterbury Region. Initially the priority for this programme will be 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.

Targets

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

Outputs

1. Awareness.
2. Determine the distribution of wild russell lupin in Canterbury.
3. Control of Wild russell lupin to prevent spread at priority sites.
4. Monitor the effectiveness of control sites.

What was achieved in 2019 - 2020

- **Achieved:** Education and awareness undertaken.
- **Achieved:** Distribution information was obtained.
- **Achieved:** Control of wild russell lupin in the upper Ōhau catchment.
- **Not applicable:** Monitoring of controlled sites.

Summary of work

Prior to any inspection work to ensure boundary rules are adhered to on wild russell lupin Environment Canterbury is working with other partners, both internal (biodiversity teams) and external (Department of Conservation, District Councils and Land Information New Zealand) to establish the plant's full extent and occurrence in the Canterbury Region. Control at priority sites will occur once extent is established. Control work was undertaken in conjunction with Environment Canterbury's biodiversity team in the upper Ōhau catchment where the occurrence of wild russell lupin is very limited.

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

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.

5. Site-led Programme

Programme Summary

Sites to be managed under the site-led programmes may range in extent 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 will be necessary.

Common name

Banana passionfruit*

Broom

- common
- Montpellier
- Spanish
- white

Cathedral bells

Feral goats

Gorse

Lagarosiphon*

Old man's beard*

Possum

Spartina

White-edged nightshade*

Wild thyme

Scientific name

Passiflora tripartita var *mollissima*

P. tripartita var *azuayansis*

P. tarminiana

P. pinnatistipula

Passiflora x *rosea*

P. caerulea

Cytisus scoparius

Teline monspessulana

Spartium junceum

Cytisus multiflorus

Cobaea scandens

Capra aegagrus hircus

Ulex europaeus

Lagarosiphon major

Clematis vitalba

Trichosurus vulpecula

Spartina alterniflora,

S. anglica,

S. gracilis,

S. maritime,

S. × townsendii

Solanum marginatum

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%

Targets

1. Sites identified within the site led programme of the CRPMP.
2. Identify other organisms which may threaten site led initiatives.

Outputs

1. Inspect sites identified in the CRPMP as site-led initiatives.
2. Facilitate annual control work by land occupiers.
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 2019-20

- **Achieved:** Inspection of sites.
- **Achieved:** Work by land occupiers facilitated.
- **Achieved:** Contribute to control programmes.
- **Achieved:** An annual report.

Summary of work

Banana Passionfruit: 2 sites in the programme. A major delimiting survey was undertaken at Kelsey's Bush near Waimate and on surrounding land. Banana passionfruit was found to be widespread in the local area on many adjoining properties. Before continuing with further control is undertake at this Department of Conservation reserve Environment Canterbury will assess buy-in from all landowners in the area. A delimiting survey carried out at Gore Bay/Port Robinson/Manuka Bay has found Banana Passionfruit far more widespread than originally thought. Control at Gore Bay was carried out at Gore Bay village by a local resident and biosecurity officers.

Cathedral Bells: Until earlier this year there were four fully naturalised cathedral bells sites in Canterbury, all in the Kaikoura district and all controlled annually. All sites are in a riverbed or adjacent to a river and all are likely to be the result of green waste dumping. Recently a new site was confirmed close to Akaroa where an area of about 1000m² was found to contain patches of cathedral bells. Contractors undertook search and control of Cathedral bells at all sites in early January 2020. Inspection in February revealed a good standard of control had been achieved with just a small number of seedlings remaining in some areas.

Broom/Gorse: A financial contribution was made to the existing Rangitata and Rakaia braided river upper catchment programmes for gorse and broom control. Gorse and broom was controlled in the Hakataramea catchment in 2017-18 and maintenance control will be undertaken in 2020-21. Control of gorse and broom in the Ōhau site led area was undertaken in 2019-20.

CRPMP Objective 20

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.

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. A media release, fencing guide and letter to people who farm or have feral goats has been reviewed for release in 2020-21. Feral goat control and asking people to report sightings of feral goats was highlighted at a display at the Little River Agricultural and Pastoral Show. Control operations as part of the Pest-Free Banks Peninsula programme were delayed until 2020-21, due to COVID-19.

Lagarosiphon: The current site-led project is in the Upper Waitaki, South Canterbury, primarily at Buscot Station, and previous control and on-going search also takes place at Willowburn Station. The Buscot stream flows into the Willowburn stream, both of which flowing into the Ahuriri River which leads into Lake Benmore. Due to COVID-19 no control work was carried out this season. Control is planned for 2020-21.

Old Man's Beard: Old man's beard is identified in the CRPMP at 11 of 12 sites which threaten biodiversity values. Work to control old man's beard at sites has been undertaken by either ECan staff, contractors or in partnership at sites in 2019-20. Reductions in old man's beard is occurring at the 11 sites.

Possum: Possums in previous years were controlled over approximately 33% (33000 hectares) of Banks Peninsula's 100,000 hectares annually. Each annual area contained 5 designated control areas. Possum control on the peninsula is now undertaken as part of the Pest-Free Banks Peninsula programme. In 2019-20 the programme concentrated on a 6275 area known as the Southern Bays, comprising of land between Te Oka Bay and Akaroa Harbour. The programme consisted of a pre-monitor and control. 1387 possums were killed in total.

Spartina: Spartina is found at 3 sites (Brooklands Lagoon, Avon Heathcote Estuary (including McCormack's Bay) and Lyttleton harbour over an area >1400 hectares.

In 2019-20 all 3 areas were searched by detector dog and plants found controlled by a contractor. No plants were found at Lyttleton Harbour or Brooklands Lagoon. In the Avon Heathcote Estuary, a total of 17 small plants/patches were found in total during searching in November 2019 and then again in February 2020. 5 of the plants/patches found underwent control by means of continuous cutting while the remaining 12 were controlled with very small amounts of herbicide at low tide. This is a marked reduction in the numbers and distribution of Spartina in Canterbury over the past 2 years. This programme has a strong partnership with Christchurch City Council and Department of Conservation.

White edge nightshade: White edge nightshade is now known to occur across 350 hectares (previously 260 hectares 2017-18). Search and control occurred across the known area of occurrence with all plants found controlled prior to seeding.

Wild thyme: Wild thyme occurs at 9 sites over 70 hectares in Canterbury. In North Canterbury there are 5 active sites over 3 properties with wild thyme. Covering around 30 hectares of non-productive land that has high biodiversity values. 3 active sites in South Canterbury the largest of which occurs in braided riverbeds. All active sites were inspected, and plants controlled. 14806 plants were controlled on the ground and a large patch aerial sprayed at 7 of the 8 sites. All but 94 plants were within the North Canterbury sites. Search of high-risk land around known sites was also undertaken.

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.

- **Progressing towards achieving CRPMP objective**

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