

7.6 Bur daisy (*Calotis lappulacea*)

Why is it a threat?

Bur daisy is an erect perennial herb, which originates from Australia. It grows up to 30 centimetres high and has small yellow flower heads, which form spiny burs. It displaces desirable pasture species and the spiny burs contaminate wool. It has the potential to spread throughout Marlborough's dry grassland country.

Reasons for proposing a Plan

Bur daisy has in the past been classified as a noxious plant then subsequently as a pest under early Regional Pest Management Strategies. It has been actively managed by Council and former authorities. There has only been one property in Marlborough that has been identified as having an infestation of bur daisy. The level of infestation on that property has dramatically reduced to a point where intensive searching is now only finding a small number of plants per year. This demonstrates the importance of vigilance associated with a structured programme within a Plan.

There is a significant net benefit to the control of bur daisy based on the potential for damage to Marlborough's pastoral farming economy.

Why the Plan is more appropriate than relying on voluntary actions

If control was left to the voluntary actions of occupiers and no dedicated control was undertaken, then the plant would build in density on the infested property and likely result in spread throughout the region. It would ultimately result in impacts to the pastoral industries that rely on sheep. The inclusion of bur daisy in the Plan will ensure this pest plant is kept under control and managed to zero density.

7.6.1 Objectives

- 7.6.1.1 By 2035, bur daisy (*Calotis lappulacea*) will be controlled to zero density, where no plants are found in the preceding 5 years, in the Marlborough district to prevent adverse effects on the economy.
- 7.6.1.2 By the end of the term of this Plan, bur daisy (*Calotis lappulacea*) will only be found at densities less than or equal to 0.05 plants per man hour effort in the Marlborough district to prevent adverse effects on the economy.

Intermediate Outcome:

Exclusion	Eradication	Progressive Containment	Sustained Control	Site-led
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Principle measures to achieve the objective

1) Council Inspection and Service Delivery

Inspection by Council may include staff or contractors:

- a) Delivering a service to control bur daisy in liaison with the occupier.
- b) Visiting properties or doing surveys to determine whether pests are present.
- c) Monitoring effectiveness of control.
- d) Carry out control using administrative powers of the Biosecurity Act 1993, if necessary.

2) Requirement to Act

Land owners and/or occupiers or other persons may be required to act where rules or statutory obligations dictate:

- a) The presence of pests is to be reported.
- b) Pests are not to be spread (propagated, sold or distributed).

3) **Advocacy and Education**

Council may:

- a) Provide general purpose education, advice, awareness and publicity activities to land owners and/or occupiers and the public about pests and pathways (and control of them).
- b) Encourage land owners and/or occupiers to control pests.
- c) Promote industry requirements and best practice to contractors and land owners and/or occupiers.
- d) Encourage land owners and/or occupiers and other persons to report any pests they find.
- e) Facilitate or commission research.

7.6.2 **Rules**

Rule 7.6.2.1

Occupiers are required to notify Council of any new infestation of bur daisy (*Calotis lappulacea*) on land that they occupy.

A breach of this rule will create an offence under section 154N(19) of the Biosecurity Act.

Note: Current distribution data is able to be viewed online via Council's Smart Maps service.

Explanation of the rule:

The purpose of this rule is for occupiers to assist Council with surveillance. Requiring occupiers to notify Council of new sites and plants on their properties in addition to Council's own surveillance will assist Council in achieving the objective of the programme. New infestations will be able to be controlled and incorporated into the programme.

Notifying the Council of the presence of the specified pest will enable the Council to:

- Update its records.
- Map new sites of this pest.
- Carry out control work before they spread.
- Determine whether new control regimes should be considered.
- Provide advice and information to occupiers where appropriate.

Council as the management agency will administer the rule.

7.6.3 **Analysis of the benefits and costs for bur daisy**

Background

Bur daisy became a Total Control pest plant in the Regional Pest Management Strategy for Marlborough in 1996.

It is only known to be present on one property in the lower Waihopai Valley. Infestations at this site were extensive in the mid-1990s. In 1999, 12,500 plants were sprayed with the herbicide. Up until 2002 a contractor used knapsack spraying as the preferred method of control. Seedling numbers have declined substantially since 2002 and now a contractor grubs and bags any plants and then spreads prills over the area for residual control.

Council has controlled bur daisy infestations annually since 1996. In 2001 an impact and economic analysis was undertaken to justify its continued inclusion in the Regional Pest Management Strategy for Marlborough 2001.

Bur daisy continued to be included in the Regional Pest Management Strategy for Marlborough 2007 and is declared a Total Control pest plant in the current Regional Pest Management Strategy for Marlborough 2012.

Current situation in 2017

The single property in the lower Waihopai Valley remains as the only known site of bur daisy in Marlborough.

This property is visited annually and ranged thoroughly. In recent years, the number of plants found has been consistently less than 50. Whilst trending downward, it is believed the longevity of the seed burs will mean emergence of new plants will continue for many years. However, the ranging carried out by Council staff and/or contractors is very thorough and is timed to prevent new burs from forming.

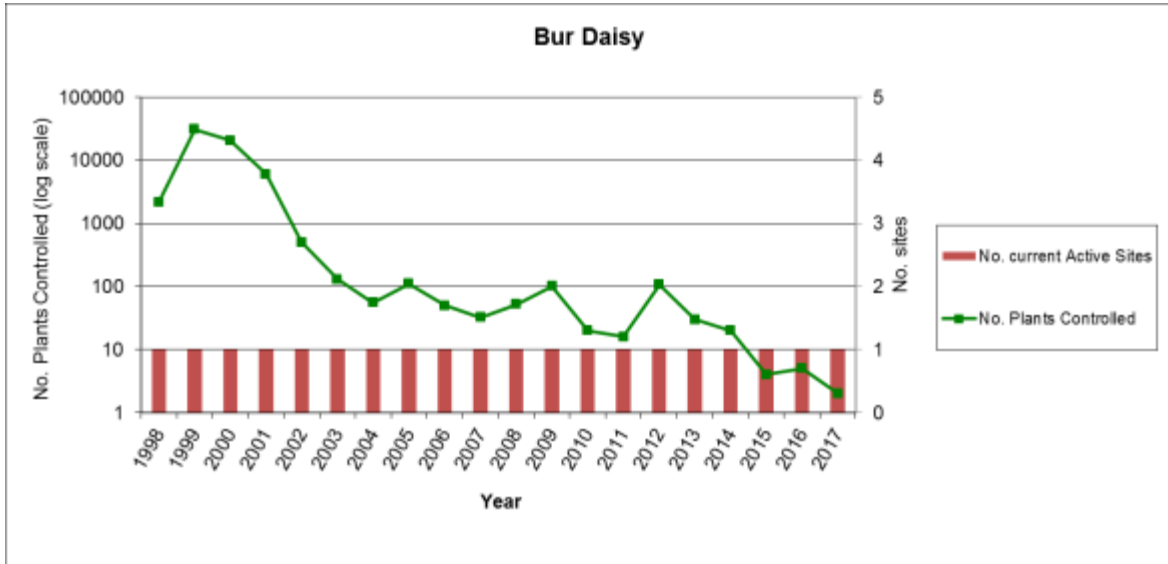


Figure 5: The trend in infestation levels of bur daisy in Marlborough

Options to respond to bur daisy

Baseline: No RPMP

No RPMP: In this scenario no control of bur daisy is undertaken, and the assumption is made that the plant becomes well-established and progresses toward full naturalisation in all susceptible areas in the long term.

Control option(s):

Eradication Programme: In which the intermediate outcome for the programme is to reduce the infestation level of the subject to zero levels in an area in the short to medium term.

This programme would most closely align to the current Total Control programme in the Regional Pest Management Strategy for Marlborough 2012.

Continue the bur daisy programme as an Eradication Programme given the single site, the lower number of plants being found, and a through ranging operation each year timed to prevent new seed entering the system.

Level of analysis for bur daisy

Council has determined that a low level of analysis be undertaken for bur daisy. The justification for this decision is documented in the supporting information document to this Proposal. That document also contains information about the risks that the objectives will not be reached.

Impacts

Bur daisy is an erect perennial herb, which originates from Australia. It grows up to 30 centimetres high and has small yellow flower heads, which form spiny burs. It displaces desirable pasture species and the spiny burs contaminate wool. It has the potential to spread throughout Marlborough’s dry grassland country.

Identify impact	Quantify impact
<p><i>Economic</i></p> <p>The economic impacts of bur daisy are likely to occur to landholders in the dry pastoral areas of Marlborough.</p> <p>Diminished pasture and livestock production.</p>	<p>Control of bur daisy will prevent damage to 210,000 hectares of pastoral habitat.</p> <p>It is estimated that bur daisy will infest pastoral and tussock land covers, including up to 10% of hill country land uses (LUC Classes IV and V), and 5% of high country land (Class VI). Modelling of this scenario assumed spread characteristics of between 1 and 10 kilometres for mature plants, and between 30 and 60 years to reach its maximum density at a site in an uncontrolled situation.</p>

The extent to which any persons are likely to benefit from the Plan and the extent to which any persons contribute to the creation, continuance or exacerbation of the problem

Grouping	Beneficiaries		Exacerbators	
	Major	Minor	Major	Minor
1	Regional community	Occupiers of susceptible land		
2	Occupiers of susceptible land		Occupiers with the pest present	
3	Occupiers of susceptible land	Regional community	Occupiers with the pest present	
4	Regional community			Occupiers with the pest present

Benefits of each option

Benefit	Option	
	No RPMP	Eradication
<p>The prevention of bur daisy infesting new areas and the resulting impact of that on pastoral production values.</p>	<p>No programme cost</p>	<p>The values protected by the control of bur daisy are largely pastoral production values. The eradication of bur daisy will prevent damage to 210,000 hectares of pastoral habitat.</p> <p>The benefit under an Eradication Programme will increase to an end point when the objective is able to be achieved.</p>

Costs of each option

Programme Costs	Option	
	No RPMP Annual cost (excl GST)	Eradication Annual cost (excl GST)
Council costs <ul style="list-style-type: none"> • Control • Surveillance • Administration • Education/awareness 	-	\$6,100
Land occupier costs	-	-
Total	-	\$6,100
Costs of effects on values	Low, but increases exponentially over time	Insignificant

Proposed allocation of costs

The proposed programme costs are to be 100% Council costs, allocated across the various rating districts used in Marlborough under the Local Government (Rating) Act 2002. For further detail, see sections 11.3 and 11.4.

Rationale for the allocation of costs

For this detail, see sections 11.3 and 11.4.

Assumptions on which the impacts, benefits and costs are based

That under a No RPMP scenario, voluntary control will not cause any reduction in the future spread and/or impact over time.

Risk that each option will not achieve the objective

The supporting information document to this Proposal contains information to support this analysis.

Level of Risk	Option	
	No RPMP	Eradication
	N/A	Medium
Reason		Bur daisy is very limited in distribution. Council will continue to visit the site where plants continue to be found, undertake control, and search surrounding areas. Given there are so few active sites, they are readily accessible the level of risk is not high. However, it is evident the seed is long-lived and the plants that have been found are scattered over a large, steep hillside. This results in the residual operational risk being not low.

Mitigation options

No mitigation options are assessed as being available to adjust the level of risk of options not achieving the objective.

Most preferred option

Eradication Programme