

Canterbury Regional Pest Management Strategy 2005-2015

5-year Review Results



Everything is connected

Canterbury Regional Pest Management Strategy 2005- 2015

5-year Review Results

Report No. R10/38

ISBN 978-1-877574-08-5 (hard copy)

ISBN 978-1-877574-10-8 (electronic)

R Maw

June 2010



Guidelines to making your submission

Anyone is welcome to make a submission, either as an individual or on behalf of an organisation.

A submission form is provided on the following page. You may either use this form or prepare your own submission being careful to use the same headings. The following guidelines refer to each separate part of the submission form.

Part A Personal details are important to enable Environment Canterbury to contact you during the processing of submissions. Print clearly giving full details.

If you are writing on behalf of an organisation, make sure you provide an address and telephone number where we can contact you personally.

Part B After all submissions have been analysed Environment Canterbury will hold Hearings to consider the submissions and make decisions. Tick the first box if you would like to take part in these Hearings.

If other people have made similar submissions you may be invited by Environment Canterbury to contribute to a joint presentation. Tick the second box if you are happy to do this.

Part C Follow steps (1), (2) and (3) of this section for each comment you are making on the Plan.

(1) The specific provisions of the Proposed Strategy that my submission relates to are:

While general comments are appreciated, your submission will be more effective if you can refer your comments to specific points in the document.

For example p 69, 5.1.2 Adverse effects

(2) My submission is that:

This should be a brief explanation of your concerns about this point in the document. You need to cover the following concerns in your explanation:

- (a) Indicate whether you
- (i) support
 - (ii) oppose
 - (iii) wish to change the point
 - (iv) wish to add a new point

(b) State your reasons briefly

For example

I support/oppose Objective 5.1.3 because (give reasons).

I would support Objective 5.1.3 if certain changes are made (give reasons).

I would like to see a new "section" added (identify type and position in document).

(3) I seek the following decision from Environment Canterbury

State precisely the type of change and the final wording you wish to suggest.

For example

- (a) *If supporting: "Retain the existing principal measure"*
- (b) *If opposing: "Delete Rule 5.1.6"*
- (c) *If changing: "Reword to read (give suggested wording)"*
- (d) *If adding: "Insert new objective (give title and suggested wording)"*

Remember – the clearer you can be, the easier it will be for Environment Canterbury to understand your concerns and take them into account.

SUBMISSIONS ON THE 5-YEAR REVIEW RESULTS OF CANTERBURY REGIONAL PEST MANAGEMENT STRATEGY 2005-2015

A

Full Name: _____ Phone: _____

Organisation: _____ Phone: _____

Postal Address: _____ Fax: _____

Postal address for service of person making submission (If different from above):

Signature: _____ Date: _____

(Signature of person making submission or person authorised to sign on behalf of person making submission)



**Environment
Canterbury
Regional Council**

**Submissions on the 5-Year Review Results of
Canterbury Regional Pest Management
Strategy 2005-2015 under Section 78 of the
Biosecurity Act 1993.**

B

Tick this box if you wish to be heard in support of your submission.

Tick this box if you would be prepared to consider presenting your submission in a joint case with others making a similar submission at any hearing.

Return your submissions by 5pm, Monday 30 August 2010 to:

*Canterbury Regional Pest Management Strategy – 5-Year Review
Environment Canterbury
P O Box 345, Christchurch
Freepost 1201*

C (1) The specific provisions of the changes that my submission relates to are: (Specify point and page number)	(2) My submission is that. (State concisely: the nature of your submission, and clearly indicate whether you support or oppose the specific provisions or wish to have amendments made, giving reasons)	(3) I seek the following decisions from Environment Canterbury: (Please give precise details. The more specific you can be the easier it will be for Environment Canterbury to understand your concerns.)

Continue over page

Table of Contents

PART I	REPORT STRUCTURE AND EXECUTIVE SUMMARY OF REVIEW	
	RESULTS	1
1.1	Report Structure	1
1.2	Executive Summary of Review Results	1
PART II	REVIEW RESULTS	3
2.1	Background	3
2.2	Mandatory review	3
2.3	Review framing	3
2.4	Analysis of information	4
PART III	APPENDICES	11
Appendix 3.1:	Canterbury Regional Pest Management Strategy 2005-2015 – A summary	13
Appendix 3.2:	Minor Changes to the RPMS	17
Appendix 3.3:	Responses to Questions raised in the Discussion Paper	35
Appendix 3.4:	Proposed Regional Pest Management Strategy – Chilean needle grass	55

Part I Report Structure and Executive Summary of Review Results

1.1 Report Structure

This report consists of three parts.

Part I: Outlines the report structure and provides a summary of the review findings.

Part II: Details the range of matters pinpointed during the consultation processes used in framing the review and the responses to the matters raised.

Part III: Contains the appendices

1.2 Executive Summary of Review Results

Environment Canterbury is of the opinion that the Canterbury Regional Pest Management Strategy (2005-2015) (RPMS) should continue generally without change until it is due to expiry on 30 June 2015. That conclusion is based on the following reasons:

- (a) Monitoring data gathered to date and published in the annual Operational Plan Reports indicates the RPMS purpose and objectives remain consistent with its 10 year duration.
- (b) There is support to continue with the RPMS for its full term.
- (c) Extensive consultation resulted in a wide range of suggested amendments that are capable of being treated in various ways.
- (d) Some of the suggested amendments can be accommodated by making adjustments to the practices used to implement the RPMS. Those procedures sit outside of the RPMS and changes to it are therefore unnecessary.
- (e) A number of the suggested changes can be adopted without formality in accordance with section 88A of the Biosecurity Act (the Act) because they do not cause significant change to the costs or obligations of affected parties. Included in the minor changes is a rule regarding the control of 'post-1989' wilding conifers to enable intent of the RPMS to fit within forest land use arising from the introduction of the Emissions Trading Scheme on 1 July 2010.
- (f) Many of suggested changes require the completion of investigation and monitoring studies or further community response testing. Those programmes have been structured and financed around the 10-year duration of the RPMS. To make adjustments now would therefore be premature.
- (g) Several suggestions fall outside of the scope of what can be achieved under the Act.
- (h) Amendment to the RPMS is necessary in one area, namely to incorporate a new pest. The presence of the Chilean needle grass (CNG) in Canterbury was first detected in 2008. This unwanted organism has been subject to a small-scale management programme under s100 provisions of the Act. Those provisions expire

5 Year Review Results

in December 2011 and further CNG management can only proceed if it is incorporated into a regional pest management strategy. It is considered opportune to do that as part of the five-year review of the RPMS.

Part II Review results

2.1 Background

On 1 July 2005, the Canterbury Regional Council (known as Environment Canterbury) made the Canterbury Regional Pest Management Strategy 2005-2015 (RPMS) operative following extensive public participation and in accordance with the provisions of the Biosecurity Act 1993 (the Act). The RPMS provides a 10-year framework for efficient and effective management or eradication of specified animals and plants in the Canterbury Region. It empowers Environment Canterbury to exercise the relevant advisory, regulatory, service delivery and funding provisions available under the Act in accordance with the specific objectives identified in Part II of the RPMS. A summary of the RPMS is provided in Appendix 3.1.

2.2 Mandatory review

Where a regional pest management strategy has been in force for five years or more, and it is more than five years since it has been reviewed, the Act requires the regional council to proceed to review the strategy. In the case of the RPMS, that requirement occurs on 30 June 2010. Following the review, Environment Canterbury may amend or revoke the RPMS or leave it unchanged.

Environment Canterbury must publicly notify the result of the review and the reasons for amending, revoking or leaving the RPMS unchanged. Should the review result in a proposal to amend the RPMS, the proposal must show:

- (i) that the benefits of the proposal outweigh the costs;
- (ii) that the benefits of regional intervention outweigh the costs of individual action;
- (iii) evidence that any additional organism to be added to the RPMS is capable of causing a serious adverse effect; and
- (iv) how the proposal will be funded.

2.3 Review framing

Environment Canterbury has gathered data from a variety of sources for framing this review. Contributing sources include:

- A document entitled *Canterbury Regional Pest Management Strategy (2005-2015): Discussion Paper – 5-yr Review* was circulated in July 2009 to the Pest Management Liaison Committees, affected and interested parties, iwi, industry organisations, territorial authorities, and neighbouring regional councils. It was also posted on Environment Canterbury's website. Suggestions have been received in response to the Discussion Paper.
- The annual Operational Plan Reports containing information regarding the progress towards meeting the RPMS's objectives;
- Information about potential pests gathered by, or is available to, Environment Canterbury through surveillance programmes;
- Views provided at the eight public meetings held during November and December 2009; and
- Staff experience in implementing the RPMS.

2.4 Analysis of information

The information gathered and suggestions made have been sorted into six categories:

- (i) Matters contained in the RPMS that are supported;
- (ii) Matters that can be incorporated by minor changes in accordance with section 88A of the Biosecurity Act 1993 (the Act).
- (iii) Matters that can be addressed through adjusting RPMS implementation procedures but not requiring an amendment to the RPMS, e.g. extending the Community Initiative Programmes for possums;
- (iv) Matters that require further data gathering and analysis with a view to making amendments in 2015, e.g. changes to the management for gorse and broom, including but not limited to either greater or lesser regulatory intensity;
- (v) Matters that are beyond the scope of the Act and hence the review, e.g. make the farming of goats a controlled activity; and
- (vi) Matters requiring the RPMS to be amended, e.g. introducing Chilean needle grass as a pest.

2.4.1 Support to continue the RPMS

There is widespread implicit support from the major users of the RPMS, namely the Pest Management Liaison Committees that represent the rural ratepayers and Environment Canterbury staff who implement it. This view is drawn from the comments that are made at the regular meetings of the committees. This implicit support is backed in some instances by written suggestions.

The written suggestions span across a sufficient range of the RPMS to conclude that there is general support for the RPMS in its current form.

A schedule of specific matters supported is set out in Appendix 3.3.

2.4.2 Changes of a minor nature

Section 88A of the Act provides for minor changes to be undertaken without formality provided the regional council is satisfied that the changes will not have any significant effect on the rights and obligations (including obligations to contribute to the costs of the strategy) of any person.

Minor changes are considered appropriate for dealing with the following matters.

- (a) A strategy rule is needed to require control of “post-1989” self-seeded wilding conifers in certain situations. Government has introduced an Emissions Trading Scheme (ETS) whereby “post 1989” wilding conifers may be retained for the purpose of carbon credit entitlements. This situation may hinder landowner participation in the collaborative approach embraced by the RPMS for managing wilding conifers. Also, addressing the hindrance is not about preventing landowners from availing themselves of the ETS entitlements. Rather, it is about ensuring spill-over or externality effects on neighbouring landowners are considered when a landowner chooses to enter the ETS.

This rule is designed to maintain the capacity and integrity of the collaborative approach taken in the Strategy to bring about control in high-value environmental areas (HVEA) in the light of a newly introduced Emissions Trading Scheme. Maintaining the partnership principle of working with willing landowners in determining

the priority HVEA's will mean that the rule does not significantly affect the rights and obligations of any person.

Including "post-1989" self-seeded wilding conifers as pests, changes to the text in the RPMS at Chapter 8.13 along with the introduction of a strategy rule, along with exemption provisions and an explanation are required to maintain the integrity of the collaborative approach. The detailed changes are set out in Appendix 3.2

- (b) There exists national and stakeholder criticism that regional councils do not describe pest classifications consistently. A stock take of pest categorisation used by regional councils identified 18 major and 28 minor categories. One of the reasons for this inter-regional inconsistency is that the Act is permissive rather than prescriptive; with few defined classes of organisms. Work was commissioned by several regional councils that resulted in a nationally consistent category framework. Benefits of using this framework arise from, among others:
- Greater common logic applied by regions;
 - Greater public understanding of that logic from region to region;
 - Opportunities to streamline processes such as a consistent section 72 analysis for each pest; and
 - The ability to nationally aggregate, utilise and report regional council information.
- (c) Aligning pest status categories with national conventions.. This inconsistency results in confusion for some national stakeholders and in particular those who need to report on the state of pests at the national scale. to alleviate this confusion and it is recommended that regional pest management strategies embrace an inter-regional pest classification.

Four categories are recommended and the present categories contained in the RPMS can be embraced in a straightforward manner. They are as follows:

- **Exclusion Pest:** Not used in the RPMS;
- **Eradication Pest:** The present Total Control Pests; in the RPMS;
- **Containment Pest:** The Progressive Control, Containment Control and Biodiversity Pest categories in the RPMS; and
- **Restricted Pests:** As per the category that already exists in the RPMS.

Changes can be made at the pest categorisation set out in Chapter 3, including a definition and explanation of the categories. The assignment of pests, once classified, to the types of programmes detailed in Chapters 5 to 9 remains unchanged apart from the removal of the word 'pest', for example total control pest programme becomes total control programme. Such changes meet the test of s88 of the Act because they do not change the obligations of any affected parties.

- (d) Expanding the capacity of the site-led biodiversity programmes to deal with all appropriate pests included in the RPMS, unwanted organisms and other plants and animals to be controlled as set out in the RPMS. The dynamic nature of interactions between species, their different impacts on different site values at different population densities dictates that the focus of biodiversity protection is site-led rather than species-led. The need to consider integrated pest control (multiple species pest management) at high value environmental sites, by necessity, needs flexibility around what species pose the threat.

Providing access to any of the pests declared in the RPMS, any unwanted organism contained in the Unwanted Organisms Register administered by MAF Biosecurity and

other plants and animals to be controlled set out in the RPMS will provide the needed flexibility.

Financing the expanded flexibility will be achieved by prioritising the programmes to fit within the existing funding envelope signalled in the Long Term Community Consultation Plan (2009-2019). The community agreed to this envelope prior to this proposed expansion. Thus the requirement under s88A to avoid significantly increasing the cost of the strategy to any person is met.

Making this change meets the requests to add a number of additional organisms or to reassign some pests to other programmes. The additional organisms have been independently assessed to determine that they meet the s72 requirement that they represent a significant adverse effect. The s72 assessments for the existing pests are taken to still stand.

- (e) Typographical corrections to spelling errors, current national classifications of organisms and consequential changes brought about by the other minor changes.

The changes to be made under s88A are set out in detail in Appendix 3.2.

2.4.3 Operational matters identified

A number of the matters raised during the review are considered to be of an operational nature. The matters raised are grouped under the following RPMS actions.

1. Amend the Principal Measures to incorporate the following:
 - a) Community Initiative Programmes (CIP) for possums should be extended to include Godley Head and Mid Canterbury. Also, CIP's should be better explained and involve wider community participation;
 - b) Increase surveillance of potential problem pests and take s100 or RPMS action;
 - c) Improve media coverage of RPMS pests and their management;
 - d) Make home gardeners more aware of the risks to biodiversity from plant disposal;
 - e) Improve access to rabbit control tools for peri-urban landowners; and
 - f) Prioritise the 'other organisms to be controlled'.
2. Make adjustment to rules:
 - a) Increase boundary distance for nodding thistles on Banks Peninsula
 - b) Have variable rules across the region and map accordingly; and
 - c) Increase follow up provisions post poisoning for rabbits.
3. Improve regulatory management procedures:
 - a) Decrease time to achieve compliance and increase prosecutions;
 - b) Outline the exemption process and speed up exemptions;
 - c) Increase the costs and intensity of inspections; and
 - d) Take into account 'biodiversity context' of sites when administering RPMS rules.
4. Increase the precision and level of monitoring.
5. Increase the level of funding for:
 - a) Biodiversity weed control;
 - b) Collaboration with other agencies; and

5 Year Review Results

- c) Pest control on the eastern bays of Banks Peninsula and Lyttelton Harbour basin.
6. Other matters
- a) Provide Department of Conservation with the opportunity to participate in the 2015 review; and
 - b) Provide Banks Peninsula Community Boards the opportunity to submit on the 2010 review.

Environment Canterbury can make the above changes without formally changing the RPMS should it agree and secure the funding to do so. The avenues available include:

- (i) Adjustments to the Annual Plan provisions, including recommendations from Pest management Liaison Committees;
- (ii) More extensive use can be made of the Community Initiative Programme framework as set out in Chapter 4.4 of the RPMS;
- (iii) Adjusting the Operational Plan or Operational Procedures;
- (iv) Making greater use of the Regulatory Management framework set out in Chapter 12 of the RPMS;
- (v) Increasing the environmental awareness of Biosecurity staff, and
- (vi) Amending Council policy regarding the terms of reference applying to Pest Management Liaison Committees.

A schedule of the above matters and the responses is set out in Appendix 3.3.

2.4.4 Matters to be considered in the future

The Biosecurity Act 1993 originally prescribed a five-year duration for regional pest management strategies. Subsequently, the Act was amended in 1997 and regional councils are now free to stipulate the duration. If the duration is to extend beyond five years, the strategy must be reviewed no later than five years after the date of it becoming operative.

The following suggested matters fall into the future review category.

1. Consider alternative management approaches for gorse and broom, including but not limited to either greater or lesser regulatory intensity.
2. Explore the basis for controlling wallaby and the different control options available.
3. Explore alternative models for funding rabbit control and researching improved RHD virus efficacy.
4. Explore alternative management approaches for rooks, namely bounty payments, and feral pigs.
5. Explore alternative management approaches for biodiversity pests, namely types of programmes, regulation options and explicitly identifying high-value environmental areas.
6. Change the regulatory management regime for Nassella tussock, eg grubbing dates and property inspections.
7. Introduce sycamore, ash, and rowan as biodiversity pests.
8. Examine the funding rationale around wider community contributions.

5 Year Review Results

9. Investigate the purpose and effectiveness of Pest Management Liaison Committees including their boundaries, election procedures, representation, meeting procedures and delegated powers.
10. Explore alternative responsibility for roadsides and the regulatory management of road reserve activities that contribute to pest movement.
11. Add bacterial nodules (in lakes) as pests.
12. Explore overall coordination of pest and biodiversity activities on Banks Peninsula.

Pest management involves a complex mix of coalescing individual and collective community aspirations and their willingness to fund/undertake work with the biological and ecological response systems of plants and animals. Successful management often requires long term commitment and is not always easily measured. Finding a balance between setting shorter more obtainable objectives and longer less quantifiable ones comes down to efficiency and effectiveness considerations. To that end, the Proposed Regional Pest Management Strategy (2003) signalled a ten-year duration and public submissions unanimously supported that duration period. Hence its adoption in the Canterbury Regional Pest Management Strategy 2005-2015.

A number of the matters raised during the discussions surrounding the mandatory 5-year review are considered to be more relevant to the review that will take place at the expiry of the RPMS in 2015. The reason is that informed decision-making about changes or otherwise involves collecting sufficient data, engaging with affected communities or appraising control tools or programmes. To that end, it would be premature to best guess the outcomes and make adjustments under this review for any of the above suggestions. Also, the annual Operational Plan Reports do not show any significant trends that are inconsistent with the RPMS purpose and objectives.

A detailed schedule of the above matters and the reasons for placing them in this category is set out in Appendix 3.3.

2.4.5 Issues raised but rejected for inclusion.

A range of issues have been requested for inclusion in the RPMS under this review. They have been rejected for one or more of the following reasons:

- (i) The request lies outside of the scope of the Biosecurity Act;
- (ii) The matter is already addressed in the RPMS;
- (iii) It is addressed by alternative biosecurity action, e.g. surveillance programmes; or
- (iv) It is addressed by alternative legislation, e.g. Resource Management Act, Wildlife Act or others.

A schedule of the issues raised and the responses set out in Appendix 3.3.

2.4.6 Additional species to be included

Chilean needle grass (CNG) was first recorded in New Zealand in the 1930's and currently there are two extensive infestation areas in the country - in Hawkes Bay and in Marlborough. However, a further infestation was discovered on a property in North Canterbury in November 2008. This infestation is considered to have originated from Marlborough. The plant is extremely difficult to detect outside of the summer flowering period.

5 Year Review Results

As a result of its discovery in Canterbury, and its absence as a pest within the RPMS, a small-scale management programme to eradicate it was instigated in accordance with s100 of the Act. Such programmes enable work to be undertaken for up to 3 years at a maximum cost of \$100,000. While the maximum allowable cost has since been amended to \$500,000, it is now considered that eradication will not be possible inside the 3 years and a long term management under the RPMS is appropriate. It is therefore timely that it be introduced into the RPMS at this five-year review stage.

Support for such an approach has been clearly signalled by the community. Its inclusion under a containment regime is not inconsistent with the Regional Pest Management Strategy for the Marlborough region. Neither the Otago nor West Coast Regional Councils include Chilean needle grass in their respective Regional Pest Management Strategies because the plant is not known to be present in those areas.

The objective for CNG is to progressively reduce the spatial extent and the overall population density over time. While eradication of the plant is desirable, the resources necessary, both monetary and technical, are limited and so a staged approach is proposed. There is still a risk that there are further undetected infestations within the Canterbury area and further amendments to the strategy may be necessary in the future.

Circumstances dictate that the strategy rule does not impose sole responsibility for control on the land occupier on whose property Chilean needle grass was found. Rather, Environment Canterbury, in conjunction with the land owner, has developed an implementation plan that involves a joint approach to control and movement control of people and vectors (machinery and produce). The property is predominantly used as a vineyard, grazing stock are minimal and long term ownership by the present owners is considered secure.

Extensive searching and public awareness initiatives have failed to locate any further infestations of CNG beyond what is present within the Containment Zone in North Canterbury. The Proposed RPMS has been prepared on that basis. Should further infestations be located in the future, further amendments to the RPMS may need to be undertaken.

Inclusion of CNG requires the preparation of a proposed pest management strategy in accordance with sections 71-77 of the Act. Notification procedures and subsequent processes set out in sections 78-83 will be followed in due course. It is intended that the proposed pest management strategy will be incorporated within the Canterbury Regional Pest Management Strategy 2005-2015 if and when it completes the stages necessary to make it operative.

The Proposed RPMS, prepared in the prescribed form, is set out in full in Appendix 3.4.

2.5 Conclusions

It is concluded that the results of the review show there is no need to change the Canterbury Regional Pest Management Strategy 2005-2015 with the exception of an amendment to incorporate the inclusion of Chilean needle grass as an additional pest. The reasons to support that conclusion include:

- (a) Monitoring data gathered to date and published in the annual Operational Plan Reports indicates the RPMS purpose and objectives remain consistent with its 10 year duration.

5 Year Review Results

- (b) There is support to continue with the RPMS for its full term.
- (c) Extensive consultation resulted in a wide range of suggested amendments that are capable of being treated in ways without amending the RPMS.
- (d) Some of the suggested amendments can be accommodated by making adjustments to the practices used to implement the RPMS. Those procedures sit outside of the RPMS and changes to it are therefore unnecessary.
- (e) A number of the suggested changes can be adopted without formality in accordance with section 88A of the Biosecurity Act (the Act) because they do not cause significant change to the costs or obligations of affected parties. Included in the minor changes is a rule regarding the control of “post-1989” wilding conifers to enable the intent of the RPMS to fit within forest land use arising from the introduction of the Emissions Trading Scheme on 1 July 2010.
- (f) Many of the suggested changes require the completion of investigation and monitoring studies or further community response testing. Those programmes have been structured and financed around the 10-year duration of the RPMS. To make adjustments now would therefore be premature.
- (g) Several suggestions fall outside of the scope of what can be achieved under the Act.
- (h) Amendment to the RPMS is necessary in one area, namely to incorporate a new pest. The presence of the Chilean needle grass in Canterbury was first detected in 2008. This unwanted organism has been subject to a small-scale management programme under s100 provisions of the Act. Those provisions have been exhausted and further management can only proceed if it is incorporated into a regional pest management strategy. It is considered opportune to do that as part of the five-year review of the RPMS.

Part III Appendices

Appendix 3.1: Canterbury Regional Pest Management Strategy 2005-2015 – A summary

A complete copy of the RPMS can be located on Environment Canterbury's website at [www.ecan.govt.nz/Our Responsibilities/Pests & Biodiversity/Related Documents](http://www.ecan.govt.nz/Our%20Responsibilities/Pests%20&%20Biodiversity/Related%20Documents). A summary of the key contents is provided below.

3.1.1 Pests and control programmes

The RPMS lists 21 plants and three animals as pests throughout the region, along with 14 more plants and eight more animals as pests within targeted or high-value environmental areas (HVEA). Control action is required for all of them.

A further 46 plants are listed as pests subject only to a ban on their sale, propagation or distribution. Also included in the RPMS are nine plants and four animals classified as 'other organisms to be controlled' under control action in targeted areas as part of the biodiversity pest programme.

The RPMS utilises different management programmes depending on the pest. The programmes are as follows.

(a) total control programmes:

These target nine pests that occur in low numbers or are limited to a few areas within the region. The objective is to eradicate these pests in the long term, although this may not be achievable in all cases over the 10-year duration of the RPMS. Environment Canterbury is largely responsible for managing the programmes, including control work.

(b) progressive control programme:

This programme targets only Nassella tussock, with the objective of progressively reducing populations over the 10-year duration of the RPMS. Land occupiers are generally responsible for carrying out control work and Environment Canterbury enforces that responsibility where necessary through inspection and monitoring work.

(c) containment control programmes:

These target eight pests that are well established and widely distributed across the region.

The objectives for rabbits, wallabies and possums seek to prevent populations exceeding specified levels (Level 3 on the Modified McLean Scale for rabbits, Level 3 on the Guilford Scale for wallabies within the Wallaby Containment Zone and 10% Residual Trap Catch for possums in the Banks Peninsula Possum Control Area.

The objectives for broom, gorse, nodding thistle, variegated thistle and ragwort is to prevent them establishing on land currently free of them.

Land occupiers are generally responsible for undertaking the control of the pests under these programmes, and Environment Canterbury enforces that responsibility where necessary through inspection and monitoring work. In the Banks Peninsula Pest District, rabbit control is still managed under a rating district with control undertaken by contractors on behalf of the land occupiers.

Environment Canterbury assists with the transfer of biological control agents for broom, gorse, nodding thistle, variegated thistle and ragwort.

(d) biodiversity programmes:

These target pest plants and animals that pose significant threats to biodiversity values in targeted or high-value environmental areas (HVEA) where landowners are willing to allow control to take place. The programmes also enable a number of plants or animals described as 'other organisms to be controlled' to be incorporated into work programmes. Environment Canterbury undertakes control work in the targeted or HVEA's in partnership with landowners and occupiers.

(e) Community Initiative Programmes (CIP):

Provision is made in the RPMS for land owners, occupiers and community groups to apply area-specific approaches to dealing with pests. For example, the Banks Peninsula Pest Management Liaison Committee initiated a possum control programme for its Pest District. Environment Canterbury may facilitate the process of establishing a CIP, the pests to be included, the level and sources of funding and the pest control activities that will be undertaken.

(f) restricted pest programme:

This programme targets 46 plant pests listed as restricted pests in the RPMS with the sole purpose of ensuring land occupiers do not propagate, distribute or sell them.

Various measures are used to carry out the programmes:

- Environment Canterbury may undertake control operations itself, or by contract, on behalf of land occupiers where it is cost effective to do so. However, in most situations landowners or occupiers are generally responsible for carrying out control work.
- Property inspections are carried out by Environment Canterbury to determine the presence and numbers of pests, to monitor population trends and to check on compliance with the rules of the RPMS.
- Environment Canterbury supports pest investigations to provide information on probable areas of high risk, and factors influencing control effectiveness, along with the development and application of new control and monitoring tools including biological control. Current investigations include the ecology of Nassella tussock, the effectiveness of Rabbit Haemorrhagic Disease (RHD) and supporting Landcare Research's biological control research for pest plants.
- Environment Canterbury provides general pest information, education and advice, and encourages community involvement. Up to four public meetings and/or field days are provided annually on request, and at least two pest displays are mounted at Agricultural and Pastoral shows.

A summary of the measures used for each pest is provided in the following table.

5 Year Review Results

Table 3.1.1: Programme measures

	ECan Control Operations	Owner/ occupier control	Inspections	Monitoring	Advice/ education	Investigations	RPMS Rules
Total control							
Rook	√			√			√
African feather grass	√		√		√		
African love grass	√		√		√		
Baccharis	√		√		√		
Bur daisy	√		√		√		
Coltsfoot	√		√		√		
Entire marshwort	√		√		√		
Saffron Thistle	√		√		√		
White-edged nightshade	√		√		√		
Progressive control							
Nassella tussock		√	√	√	√	√	√
Containment control							
Rabbit	Banks Peninsula only	√	√	√	√	√	√
Possum	CIP			√			
Bennett's wallaby	HVEA	√	√	√	√	√	√
Gorse	Bio-control	√	√	√	√	√	√
Broom	Bio-control	√	√	√	√	√	√
Ragwort	Bio-control	√		√		√	√
Variiegated thistle	Bio-control	√		√			
Nodding thistle	Bio-control	√		√		√	√
Restricted Pests							
46 Plants			√				
Biodiversity Pests							
Feral cat	In HVEA's			√		√	
Feral goat	In HVEA's			√		√	
Ferret	In HVEA's			√		√	
Weasel	In HVEA's			√		√	
Stoat	In HVEA's			√		√	
German wasp	In HVEA's			√		√	
European wasp	In HVEA's			√		√	
Possum	In HVEA's			√		√	
Banana passionfruit	In HVEA's		√	√	√	√	
Bell heather	Targeted		√		√		
Boneseed	Targeted		√		√	√	
Darwin's barberry	In HVEA's		√		√	√	
Egeria	Targeted		√		√		
Hieracium	In HVEA's					√	
Lagarosiphon	In HVEA's		√		√		
Old Man's Beard	In HVEA's	√	√	√	√	√	√
Phragmites	√		√		√		
Lodgepole pine	In HVEA's				√		
Wild thyme	In HVEA's				√		

Table 3.1.1 continued

	ECan Control Operations	Owner/ occupier control	Inspections	Monitoring	Advice/ education	Investigations	RPMS Rules
Other organisms to be controlled							
Magpies	In HVEA's				√		
Feral Deer	In HVEA's			√	√	√	
Feral Pigs	In HVEA's			√	√	√	
Ash	In HVEA's						
Holly	In HVEA's		√		√		
Red-flowering current	In HVEA's		√		√		
Sycamore	In HVEA's		√		√		
Mountain Pine	In HVEA's		√		√		
Corsican Pine	In HVEA's		√		√		
Scots Pine	In HVEA's		√		√		
Larch	In HVEA's		√		√		
Douglas Fir	In HVEA's		√		√		

Note: All pests are subject to a rule banning their sale, propagation and distribution.

3.1.2 Other organisms and strategies

Environment Canterbury undertakes a targeted surveillance programme to check for any incursions of potential pests likely to establish in the Canterbury region. This activity is undertaken independently of the RPMS and provides useful information to support their inclusion in the RPMS at some stage. An example of this is the recent discovery of Chilean Needle Grass in North Canterbury.

The Animal Health Board (AHB) administers a National Pest Management Strategy (NPMS) for Bovine Tb, with the objective of controlling Bovine Tb in cattle and deer. That strategy specifies possums and other suspected carriers of Bovine Tb (e.g. ferrets) to be pest agents. Funding for Tb control is shared between the Crown (50%), farmers (40%), and Regional Councils (10%). A review of the NPMS has commenced and depending on its outcome, there may be implications at the regional level.

Many organisms such as common weeds are dealt with effectively by individuals or small groups of people. They do so because they impinge on such things as their livelihoods or personal enjoyment. Regional intervention does not add value to individual action in those cases. The trigger for regional intervention is often where inaction by an individual could result in weeds or animals spreading to a neighbour's land.

3.1.3 Pest Management Liaison Committees

The purpose of these committees is to provide advice to Environment Canterbury on implementing and funding the Strategy. Advice on implementation covers the operational and policy needs to successfully bring about local inspection requirements, information and service delivery needs and suggestions of any new pests. Funding advice is given on the level of financial resources that meet affordability and quality standards expected by the local community, while taking into account the need to ensure the Strategy objectives are met.

The committees provide a forum for discussion on a wide range of pest management matters and bring an element of impartiality to many situations. This often enables potential problems to be diffused before they get out of hand. The chairperson of Pest Management Liaison Committees may also play a disputes resolution role.

Appendix 3.2: Minor Changes to the RPMS

Section 88A of the Biosecurity Act provides for minor changes to be undertaken without formality provided the regional council is satisfied that the amendment/s will not have any significant effect on the rights and obligations (including obligations to contribute to the costs of the strategy) of any person. The following changes can be addressed in accordance with s88A(3 and 4).

The changes follow the page order as set out in the RPMS.

RPMS Page number	Change
Page 8: 3.1 Organisms to which the Strategy applies	Amend to be consistent with the national pest classification.
Page 9: Table 3.3 Ragwort	Amend <i>jacobaea</i> to <i>vulgaris</i>
Page 10: Table 3.4	Amend <i>Plant Pests</i> to Plant Pests Amend <i>pilosella</i> to <i>officinarum</i> Amend Comments column for hieracium to include In targeted areas. Add <i>post 1989 self-seeded</i> to Wilding conifers in column 1 and <i>All Coniferae</i> in column 2. Reformat all text to non-italics in Comments column
Page 11: Table 3.5	Amend <i>Xanthium occidentale</i> to <i>Xanthium strumarium</i> . Remove restricted plants now declared as unwanted organisms. Change footnote bullet to * Remove bullet and =
Page 12: Table 3.6:	Add <i>Argentine ant</i> <i>European hedgehog</i> <i>Norway Rat</i> <i>Ship Rat</i> <i>Barberry</i> <i>Boxthorn</i> <i>Carex pendula</i> <i>Common polypody</i> <i>Puna grass</i> <i>Russell lupin</i> <i>Vipers bugloss</i>
Page 13: Table 3.7	Delete Ships rat and all terrestrial plants now declared unwanted organisms.

Text now reads (~~strikethrough is text deletion~~, additions are underlined and in italics)

3.1 Organisms classified as pests ~~Organisms to which the Strategy applies~~

The animals and plants listed in Tables 3.1 to 3.4 are classified as pests and assigned a New Zealand-wide control designation embraced by regional councils. An **eradication pest** is present in low density or distribution in the region for which the long term objective is eradication. A **containment pest** is widespread in suitable habitats for which the on going objective is to minimise the actual or potential externality impacts of the pest or to prevent their spread to new or neighbouring areas or properties. A **restricted pest** identifies organisms for which further spread can be reduced via pathway management, particularly human assisted spread. Table 3.5 lists other harmful organisms not

5 Year Review Results

classified as pests but sanctioned for control under the strategy through site-led programmes in targeted or high-value environmental areas. There are also other organisms that are not formally included in the Strategy but are to be monitored through a Surveillance Project undertaken by Environment Canterbury (see section 3.2).

The pests... distribute them.

Table 3.1 Eradication Pests Pests under the Total Control Pest Programme

Common Name	Scientific Name
Animal Pests	
Rook	<i>Corvus frugilegus</i>
Plant Pests	
African feather grass	<i>Pennisetum macrourum</i>
African love grass	<i>Eragrostis curvula</i>
Baccharis	<i>Baccharis halimifolia</i>
Bur daisy	<i>Calotis lappulacea</i>
Coltsfoot	<i>Tussilago farfara</i>
Entire marshwort	<i>Nymphoides geminata</i>
<u>Phragmites</u>	<u><i>Phragmites australis</i></u>
Saffron thistle	<i>Carthamus lanatus</i>
White-edged nightshade	<i>Solanum marginatum</i>
<u>Wild Thyme</u>	<u><i>Thymus vulgaris</i></u>

Table 3.2 Pests under the Progressive Control Pest Programme

Common Name	Scientific Name	Comments
Nassella tussock	<i>Nassella trichotoma</i>	

Table 3.2 3-3: Containment Animal Pests under the Containment Control Programme

Common Name	Scientific Name	Comments
Bennett's wallaby	<i>Macropus rufogriseus rufogriseus</i>	
Rabbit.	<i>Oryctolagus cuniculus</i>	
<u>Feral Cats</u>	<u><i>Felis catus</i></u>	<u>High-value Environmental Areas only.</u>
<u>Feral Goats</u>	<u><i>Capra hircus</i></u>	<u>High-value Environmental Areas only.</u>
<u>Mustelids</u>		<u>High-value Environmental Areas only.</u>
<u>Ferret</u>	<u><i>Mustela furo</i></u>	
<u>Stoat</u>	<u><i>Mustela erminea</i></u>	
<u>Weasel</u>	<u><i>Mustela nivalis</i></u>	
Possum	<i>Trichosurus vulpecula</i>	Community Initiative Programmes or High-value Environmental Areas only.
<u>Wasp</u>		<u>High-value Environmental Areas only.</u>
<u>German</u>	<u><i>Vespula germanica</i></u>	
<u>European</u>	<u><i>Vespula vulgaris</i></u>	
Plant Pests		
Broom	<i>Cytisus scorparius</i>	
Montpellier broom	<i>Teline monspessulana</i>	
White broom	<i>Cytisus multiflorus</i>	
Gorse	<i>Europaeus</i>	
Nodding Thistle	<i>Carduus nutans</i>	
Ragwort	<i>Senecio jacobaea</i>	
Variegated thistle	<i>Silybum marianum</i>	

Table 3.3 Containment Plant Pests

Common Name	Scientific Name	Comments
<u>Broom</u> - <u>Common</u> - <u>Montpellier</u> - <u>White</u>	<u>Cytisus scoparius</u> <u>Teline monspessulana</u> <u>Cytisus multiflorus</u>	
<u>Chilean needle grass</u>	<u>Nassella neesiana</u>	
<u>Gorse</u>	<u>Ulex europaeus</u>	
<u>Nassella tussock</u>	<u>Nassella trichotoma</u>	
<u>Nodding thistle</u>	<u>Carduus nutans</u>	
<u>Ragwort</u>	<u>Senecio vulgaris</u>	
<u>Variegated thistle</u>	<u>Silybum marianum</u>	
<u>Banana passionfruit</u>	<u>Passiflora tripartita var mollissima</u> <u>P. tripartita var azuayansis</u> <u>P. tarminiana</u> <u>P. pinnatistipula</u> <u>Passiflora x rosea</u> <u>P. caerulea</u>	<u>High-value Environmental Areas only.</u>
<u>Bell heather</u>	<u>Erica cinerea</u>	<u>High-value Environmental Areas only.</u>
<u>Boneseed</u>	<u>Chrysanthemoides monilifera</u>	<u>In targeted areas.</u>
<u>Darwin's barberry</u>	<u>Berberis darwinii</u>	<u>High-value Environmental Areas only.</u>
<u>Egeria</u>	<u>Egeria densa</u>	<u>In targeted areas.</u>
<u>Hieracium:</u> <u>Mouse-ear hawkweed;</u> <u>King-devil hawkweed;</u> <u>Tussock hawkweed; Field hawkweed.</u>	<u>Hieracium officinarum</u> <u>Hieracium praealtum</u> <u>Hieracium lepidulum</u> <u>Hieracium caespitosum</u>	<u>In targeted areas.</u>
<u>Laqarosiphon</u>	<u>Laqarosiphon major</u>	<u>In targeted areas.</u>
<u>Old Man's beard</u>	<u>Clematis vitalba</u>	
<u>Wilding Conifer:</u> - <u>Lodgepole Pine</u> - <u>post 1989 self-seeded</u>	<u>Pinus contorta</u> <u>All Coniferae species</u>	<u>High-value Environmental Areas only.</u>

Delete Table 3.4 Pests under the Biodiversity Pests Programme (and all its contents)

Table 3.4 3-5: Restricted Pests

Common Name	Scientific Name
Australian sedge	<i>Carex longebrachiata</i>
Barberry*	<i>Berberis glaucocarpa</i>
Bathurst bur*	<i>Xanthium spinosum</i>
Blackberry (wild aggregates)*	<i>Rubus fruticosus</i> agg.
Boxthorn*	<i>Lycium ferocissimum</i>
Broomsedge	<i>Andropogon virginicus</i>
Buddleja*	<i>Buddleja davidii</i> (excluding hybrids)
Burdock*	<i>Arctium minus</i>
Cape honey flower*	<i>Melianthus major</i>
Cape ivy*	<i>Senecio angulatus</i>
German ivy*	<i>Senecio mikanioides</i>
Goats rue*	<i>Galega officinalis</i>
Hawthorn*	<i>Crataegus monogyna</i>
Hemlock*	<i>Conium maculatum</i>
Himalayan honeysuckle*	<i>Leycesteria formosa</i>
Mistflower*	<i>Ageratina riparia</i>
Nardoo*	<i>Marsilea mutica</i>
Noogoora bur	<i>Xanthium occidentale</i>
Nutgrass (Purple nutsedge)	<i>Cyperus rotundus</i>
Oxylobium	<i>Oxylobium lanceolatum</i>
Palm grass	<i>Setaria palmifolia</i>
Perennial nettle*	<i>Urtica dioica</i>
Plectranthus*	<i>Plectranthus ecklonii</i> <i>Plectranthus grandis</i>
Plumeless thistle*	<i>Carduus acanthoides</i>
Privet – Chinese*	<i>Ligustrum sinense</i>
Sheeps bur*	<i>Acaena agnipila</i>
Skeleton weed	<i>Chondrilla juncea</i>
Spanish heath*	<i>Erica lusitanica</i> (excluding double flowered cultivars)
Spartina*	<i>Spartina</i> spp.
Spiny broom	<i>Calicotome spinosa</i>
St Johns wort*	<i>Hypericum perforatum</i>
Sweet briar*	<i>Rosa rubiginosa</i>
Velvet groundsel*	<i>Senecio petasitis</i>
Wild cotoneaster*	<i>Cotoneaster glaucophyllus</i> , <i>Cotoneaster franchetii</i>
Wild elaeagnus*	<i>Elaeagnus x reflexa</i>
Woolly nightshade	<i>Solanum mauritianum</i>

* Known to be present in Canterbury as at 1 June 2003.

Delete organisms from Table 3.5 as they now are classified as unwanted organisms

All <i>Stipa</i> (except natives)*	<i>Stipa</i> spp.
Artillery plant*	<i>Galeobdolon luteum</i>
Blue passion flower*	<i>Passiflora caerulea</i>
Chilean needle grass	<i>Nassella neesiana</i>
Chinese pennisetum (U.O)	<i>Pennisetum alopecuroides</i>
Japanese spindle tree*	<i>Euonymus japonicus</i>
Port Jackson fig	<i>Ficus rubiginosa</i>
Sweet pea shrub*	<i>Polygala myrtifolia</i> (excluding cultivar "Grandiflora")
Tuber ladder fern*	<i>Nephrolepis cordifolia</i>
Tutsan*	<i>Hypericum androsaemum</i>

3.2 Other organisms to be controlled

Section 76(1)(b) of the Biosecurity Act 1993 provides for the specification of any other organisms intended to be controlled. While there are many organisms that can harm biodiversity values, a number pose a significantly greater risk and warrant explicit listing in the Strategy. Such organisms are not accorded pest status and control of them will only be undertaken in conjunction with co-operating land occupiers, it is Environment Canterbury's intention to control the organisms listed in Table 3.6 in high-value environmental areas under its. In addition, the site-led biodiversity pests-protection programmes may incorporate control of any plant listed in the Unwanted Organisms Register administered by MAFBNZ, or any Eradication, Containment or Restricted Pest listed in section 3.1,

Table 3.56: Other organisms to be controlled in targeted or high-value environmental areas as part of the site-led Biodiversity Protection Pest Programme.

Common Name	Scientific Name
<u>Argentine ant</u>	<u>Linepithema humile</u>
<u>European hedgehog</u>	<u>Erinaceus europaeus</u>
Feral Deer: Red Deer (including hybrids) Fallow Deer	<i>Cervus elaphus</i> <i>Dama dama</i>
Feral Pigs	<i>Sus scrofa</i>
Magpie	<i>Gymnorhina tibicen</i>
<u>Norway Rat</u>	<u>Rattus norvegicus</u>
<u>Ship Rat</u>	<u>Rattus rattus</u>
Ash	<i>Fraxinus excelsior</i>
<u>Barberry</u>	<u>Berberis glaucocarpa</u>
<u>Boxthorn</u>	<u>Lycium ferocissimum</u>
<u>Carex pendula</u>	<u>Carex pendula</u>
<u>Common polypody</u>	<u>Polypodium vulgare</u>
Holly	<i>Ilex aquifolium</i>
<u>Puna grass</u>	<u>Achnatherum caudatum</u>
Red-flowering currant	<i>Ribes sanguineum</i>
<u>Russell lupin</u>	<u>Lupinus polyphyllus</u>
Sycamore	<i>Acer pseudoplatanus</i>
<u>Vipers bugloss</u>	<u>Echium vulgare</u>
Wilding Conifers: Mountain Pine Corsican Pine Scots Pine Larch Douglas Fir	<i>Pinus mugo</i> <i>Pinus nigra ssp laricio</i> <i>Pinus sylvestris</i> <i>Larix deciduas</i> <i>Pseudotsuga menziesii</i>

The pests and other organisms will be managed under one of five different programmes; total control, progressive control, containment control, biodiversity protection or restricted sale. Full descriptions of the respective programmes are found in Chapters 5-9.

Total control is the treatment of a particular pest by recognised methods at intervals necessary to destroy them and prevent their reappearance. Progressive control is the treatment of a particular pest by recognised methods at intervals necessary to ensure systematic progress towards eradication. Containment control aims to restrict the distribution or density of particular (often widespread) pests to a specified area or density threshold with the aim to minimise their impacts.

The biodiversity protection programmes incorporate organisms whose principal threat is to biodiversity values in the Canterbury region. It is a site-led approach and deals with all pests and any other organisms that pose a significant biodiversity threat to a particular targeted or high-value environmental area. Provision is made for targeted control to be undertaken in areas that may not

5 Year Review Results

necessarily meet the high-value criteria set out in 8.2.1 but for some other meritorious reason warrant action. For example, an area of low level of infestation close to but not adjacent to a high-value area.

Restricted sale pests are managed under a programme whereby land occupiers and other persons are banned from selling, propagating, or distributing them. Such treatment is similar to the way that those species designated by the Government as “unwanted organisms” are managed.

3.23 Assessing...Strategy

Page 21: 5	Remove “pest” from phrase ‘total control pest programmes’.
Page 23: 5.3.2	Change Description of problem to read Adverse effects
Page 25: 5.5.4 (a), (b), (c) and (d) 5.5.4.(b)	Change Baccahris to Bacharis Change bullets to (i), (ii) and (iii)
Page 27: Coltsfoot photo	Photo is upside down.
Page 32 6	Remove “pest” from phrase ‘progressive control pest programme’.
Page 33: 6.2.5 Nasella Explanation	Change to Nassella Change 6.2.6 to 6.2.5
Page 34 7	Remove “pest” from phrase ‘containment control pest programme’.
Page 34: 7.2.1	Change Wallaby to wallaby
Page 35: 7.2.4(d)	Change Wallabies to wallabies
Page 36: 7.2.5	Change Wallaby to wallaby
Page 52: 8.1 Introduction	Amend to incorporate programme description and all pests and unwanted organisms.
Page 53: 8.2 1 st paragraph line 6	Amend to read their-sale...the plants pests and...areas

Text now reads (~~strikethrough is text deletion~~, additions are underlined and in italics)

8 Biodiversity Protection Pest Programmes

8.1 Introduction

The site-led biodiversity ~~pest-protection~~ programme...inclusion as a pest in a (2002).

The need to consider integrated pest control (multiple species pest management) at high value environmental sites arises from the dynamic nature of interactions between species, their different impacts on different site values at different population densities, their different rates of recovery following control, and the need to optimise control solutions. Minimum desirable animal densities may depend on the exact nature of site values to be protected (such as flora versus birds). Also, several studies have found that a reduction in possum or stoat numbers results in increased rat numbers. A reduction in rat or mice numbers can result in increased predation by stoats on indigenous birds. A suite of animals may influence forest floor regeneration, mice, rats, feral pigs and deer, and with time this may affect forest succession trajectories, with consequences for both indigenous flora and fauna. Thus effective pest management involves identifying the values to be protected as the first step, the threats (abiotic and biotic) to those values are then identified, and the required management action (that is, how to manage the threats) is then decided.

These considerations may also apply to pest plants, where removal of one undesirable species (for example, old mans beard) may result in invasion by other species (present in low densities until release) such as German ivy, and so a multi-species approach to site management should be considered.

5 Year Review Results

Again, because all harmful organisms to be considered for control or integration may not qualify as 'pests' for management under the Biosecurity Act, Environment Canterbury will manage these other harmful organisms pursuant to its mandate under the Local Government Act 2002. The combination of the requirement to secure the agreement of occupiers of affected sites and the financial constraints set out in the LGA will ensure a disciplined fiscal and technical approach is taken to the level of activity under this programme.

This section...specified pests, along with any other appropriate pest listed in the RPMS and any unwanted organism. Each... outlined.

For...Strategy, site-led biodiversity pest-programmes...following:

- Any organism listed as a pest in Tables 3.1, 3.2, 3.3 or 3.4 of the Strategy;
- Any other organism to be controlled listed in Table 3.5 of the Strategy; and
- Any unwanted organism as declared by Ministry of Agriculture and Forestry (see [www.biosecurity.govt.nz/pest and diseases/registers/unwanted organisms register](http://www.biosecurity.govt.nz/pest%20and%20diseases/registers/unwanted%20organisms%20register))

Animal pests...(~~Pinus mugo~~)

8.2 Programme areas

The programme...that prohibit their sale,...areas.

Page 55: Figure 8.1	Amend to read Relationship...the High-Value Environmental ecological -Area identification...Plan
Page 56: Possums	Delete this section (already covered at 7.3).
Page 61: 8.3	Insert Argentine ants, European hedgehog, Norway rat and ships rat as other animals to be controlled and amend 8.3.13 Objectives and 8.3.14 Principal measures as a consequence.

Text now reads (~~strikethrough is text deletion~~, additions are underlined and in italics)

Argentine Ants



8.3.13 Description of Argentine ants

Argentine ant workers are small (2 – 3mm long), and they are a uniform honey-brown colour but can look brown/grey when foraging in urban areas. They are a similar size and colour to some of our native ants, but unlike native ants which only live outdoors, Argentine ants can be found both inside and outside of buildings. Most common household ants in New Zealand are black.

Argentine ants (Linepithema humile) look similar to another pest species – Darwin's ant, but can be told apart from these by the squash and sniff test. When squashed between the fingers Darwin's ants have a distinctive formic acid smell, Argentine ants do not. Argentine ants eat a wide range of foods including nectar, insects, seeds, carrion, and honeydew secreted by aphids and scale insects. Workers have a mostly sugar based diet, while larvae and queens feed mostly on protein.

8.3.14 Adverse effects of Argentine ants

Argentine ants have invaded sites across Africa, Europe, North America, Australia and New Zealand. Although controlled by parasitoids in the native range of Southern Brazil, it effectively eliminates native

5 Year Review Results

ant and other arthropod species within introduced ranges. There is strong evidence that this ant can become prolific in fragmented areas, near urban development and areas dominated by exotic vegetation, especially where soils are sandy, sandy loam or clay loam. Other abiotic factors restricting the distribution and daily activity patterns of the argentine ant are soil and air temperature and relative humidity.

The ants spread quite slowly naturally, but are great hitch-hikers. They establish nests in anything from potted plants and garden mulch to rubbish and recycling bins to cars and aircraft. When their homes are moved to a new location, the ants get to ride along too. Often the ants are not noticed until they become a nuisance, by which time they have been there for several years and have already spread into the surrounding areas.

Although Argentine ants don't sting, they can bite, causing a reaction in some people. In urban areas they invade homes, gardens, commercial and industrial buildings. Residents in affected areas report a notable absence of most common garden insects following the establishment of the ants. They also notice a rise in the number of aphids and scale insects, as the ants actively farm these, protecting them from predators and even moving them to safety.

Argentine ants have been reported to attack nesting birds and kill nestlings and have the potential to spread into sensitive ecosystems such as coastal conservation areas. They out-compete native ants and other invertebrates for food, as well as preying on their eggs, larvae and adults. They also compete for nectar affecting pollination.

European hedgehogs



8.3.14 Description of European hedgehogs

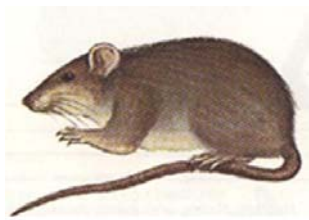
Hedgehogs are small, spiny, mainly insectivorous nocturnal animals, most closely related to shrews and moles. They have the ability to roll into a tight prickly ball for defensive purposes. They are mostly abundant throughout lowland districts where food is plentiful, less numerous in the hills and rare in mountainous areas. Lowland stream and river sides are also favoured habitats. Cities and suburbs also support dense populations of hedgehogs, because invertebrates and dry sites for hibernating are available, as well as extra food purposely provided by householders.

Hedgehogs may eat 160 g of invertebrates per animal per day. Diets vary depending on site and season, but beetles are important foods in most habitats. In suburban areas and lowland farms, hedgehogs eat mainly slugs, snails and a great variety of ground insects and larvae. Earthworms are commonly eaten in pasture, but rarely in forest or drylands where weta and grasshoppers are more important. Earwigs and Lepidopteran larvae are eaten in large numbers where available. Hedgehogs also feed on mice, lizards, frogs, eggs and chicks of ground-nesting birds, and scavenge carrion.

8.3.15 Adverse effects of European hedgehogs

The effects of hedgehogs on indigenous fauna in New Zealand have not been quantified although they clearly have the potential to contribute significantly to the decline of numerous taxa, including threatened ground-nesting birds. For example, in the Mackenzie Basin between 1994 and 1999, hedgehogs were responsible for 19 percent of all recorded lethal events at 172 monitored banded dotterel, black stilt, and black-backed tern nests on braided river beds.

Ships rat, Norway rats



8.3.16 Description of ships and Norway rats

There are two introduced European rat species in New Zealand. The ship rat has a pointed muzzle, large eyes and ears. The tail is longer than the combined length of the head and body. The body is quite sleek, with a scaly, sparsely haired tail. Ship rats are smaller than Norway rats, weighing 130–170g. The Norway rat is the largest rat in New Zealand (often weighing 150–300g), but can grow to more than 500g. It has a short body and a heavy tail, which is slightly shorter than the combined length of the head and body. The coat of both sexes is coarse and quite shaggy, greyish brown on the flanks with a darker brown along the back. The stomach and throat are pale grey. Norway rats are competent swimmers and are commonly called 'water rats'. This ability enables them to colonise offshore islands. In favourable conditions a crossing of 600m is possible. They can also jump up to 77cm vertically or 120cm horizontally.

Ship rats are found from sea level to tree line, and in a broad range of habitats, including urban areas, farmland, both native and exotic forests, and shrubland. They are nocturnal, excellent climbers and are probably the most widespread mammal predator found in non-beech forests on the New Zealand mainland. They reach their highest densities in lowland podocarp-broadleaved forests.

8.3.17 Adverse effects of ships and Norway rats

Rats have been responsible for the extinction of a number of native species and they continue to have a major impact on New Zealand's flora and fauna. They consume seeds and foliage, birds, eggs, invertebrates, snails and lizards. Ship rats eat seeds, fruits, flowers and other plant parts, which make up 80 per cent (by volume) of their diet. The damage they cause is difficult to separate out from the damage caused by the suite of other rodents and herbivores also occupying their range. Norway rats tend to occupy coastal margins, but are also found in forests.

In mixed podocarp-hardwood forest a common sign of ship rats is the cached and gnawed remnants of miro (*Prumnopitys ferruginea*) or hinau (*Elaeocarpus dentatus*) seeds. Although they destroy many seeds, ship rats may also help to disperse some seeds, as shown in captive feeding trials. On the mainland, historical damage to fauna by ship rats is difficult to distinguish from the damage from kiore, Norway rat and mustelid invasions that preceded them.

Insects including beetles, moths, stick insects, cicadas and especially weta, are always eaten when available. Only in New Zealand is there a seasonal predominance of arthropods in the diet. In areas where rat control has taken place, increases in insect abundance have been observed.

8.3.18 Objectives...controlled

Over...reduce ~~possums...wasps~~ animal pests and other animals to be controlled to...Region.

8.3.194 Principal measures...objectives

- (a) Environment...controlled;
- (b) Where ~~possums...wasps~~ animal pests and other animals to be controlled are adversely...Canterbury;
 - (i) Environment...whether ~~possums...wasps~~ animal pests and other animals to be controlled have...values;
 - (ii) Environment...the problems from ~~possums...wasps~~ animal pests and other animals to be controlled.
- (c) Environment...destroy ~~possums...wasps~~ animal pests and other animals to be controlled particularly...operations.

5 Year Review Results

Page 62: Objective 8.4.3	Insert <i>targeted</i> before high-value
Page 63: 8.5 Bell Heather	Insert correct picture
Page 68: (e)	Increase font to 10
Page 69: <i>H. pilosella</i>	Amend <i>pilosella</i> to <i>officinarum</i>
Page 74: 8.11.5(b)	Amend bears to beard
Page 76: (c)	Increase font to 10
Page 77:	Amend 8.13 to incorporate post 1989 wilding conifers and ETS implications

Text now reads (~~strikethrough is text deletion~~, additions are underlined and in italics)

8.13 Wilding Conifers

8.13.1 Introduction



Managed introduced conifers have a definite and positive role to play in the commercial and environmental future of the Canterbury region. However, natural regeneration of wilding spread into unmanaged areas with existing land use values, or where future land use options have yet to be decided, can cause problems.

The purpose of the Strategy is to ~~address wilding conifer spread, particularly *Pinus contorta*~~ facilitate voluntary partnerships

with landowners to clear targeted high value environmental areas of self-seeded wilding conifers associated with the plantings that have taken place over the last one hundred years. Territorial local authorities are presently developing district plans under the Resource Management Act 1991 and it is in their power to have land use provisions and non-regulatory measures to address wilding tree spread issues associated with new plantings.

The Climate Change Response (Emissions Trading) Amendment Act 2008 (CCR Act) created an Emissions Trading Scheme (ETS). The ETS entitles people carrying out greenhouse gas removal activities to receive carbon credits, and requires people carrying out greenhouse gas producing activities to obtain carbon credits. Owning "post-1989 forest land" is a greenhouse gas removal activity, provided the land is not de-forested. Deforesting "pre-1990 forest land" is a greenhouse gas producing activity.

"Forest land" is defined as an area of land of at least 1 hectare that has or is likely to have tree crown cover from forest species of more than 30% in each hectare. The Act does not require the tree coverage to have been put in place on purpose; it may be self-seeded. Any land which met those qualifications as at 31 December 1989 is "pre-1990 forest land". Any land which did not meet those statutory qualifications as at 31 December 1989, but does now, is "post-1989 forest land".

Provision by way of regulations accompanying the CCR Act provide for the removal of tree weeds (including conifers) under certain circumstances from pre-1990 forest land without occurring emission liabilities. On the other hand, under section 188 of the CCR Act, the owner of post-1989 forest land may (but does not have to) register as a participant in the Emissions Trading Scheme created by the CCR Act. Registration enables the participant to claim carbon credits for the greenhouse gas removal activity of owning the post-1989 forest land, in a state of continuing forestation. However, an application must carry a compliance declaration in respect to any requirements of a pest management strategy prepared under the Biosecurity Act.

This situation may create an added impediment for the collaborative approach embraced for managing wilding conifers. Addressing the impediment is not so much about preventing landowners from availing

5 Year Review Results

themselves of the ETS entitlements but rather it is about ensuring spill-over or externality effects to neighbouring landowners are given due consideration when committing to a greenhouse gas removal activity.

~~*Pinus contorta* is a particular problem. This is because it has little commercial value and is generally not pruned or thinned. It also seeds earlier and thus can spread more vigorously. It has been declared a “pest” rather than simply “an organism to be controlled”.~~

8.13.2 Description

Self-seeded wilding conifers are those trees that occur through natural regeneration beyond areas of managed trees, and in Canterbury pose sufficient concerns to warrant inclusion in this Strategy. Within Canterbury, most river catchments have some wilding spread. The worst affected areas are the Mackenzie basin, the Rakaia and Waimakiriri river catchments, and the Amuri Range near Hanmer Springs.

Wilding spread is limited by factors such as the location of seed sources, prevailing winds, seed size and surrounding land use. Establishment is limited by altitude, climatic conditions, soil types, vegetation, and grazing. As a result, establishment is likely to be periodic in nature.

Most wilding conifers require open, low intensity grazing environments to establish successfully. However, corsican pine is less palatable than other conifers and can therefore be less limited by grazing. Douglas-fir is more limited by site and climatic conditions than the pines, but it is more shade tolerant and therefore able to invade canopy gaps in regenerating forest / shrublands.

8.13.3 Adverse effects

Potential adverse effects on biodiversity values include out-competing and terminally smothering indigenous plant communities, altering environments favourable to indigenous fauna and flora, and drying out wetlands and riparian areas. The threat to biodiversity values can usefully be divided into communities above and below tree line.

Above tree line, wildings of some species, such as lodgepole and mugo, are a significant problem as they are capable of growing at altitudes above the native forest communities. The potential exists therefore for them to replace native alpine scrub and alpine tussock communities, with resulting severe damage to these ecosystems. Typically wildings would not be expected to establish in healthy dense scrub or tussock grasslands, although opportunities for invasion are present and can be enhanced by the dynamic nature of these communities with slips and erosion creating bare ground openings for colonising plants.

Subsequent seed pressure and the ability to overtop will eventually lead to a general conversion of these habitat types to conifer canopies. With no alternate native species capable of overtopping lodgepole or mugo, the likelihood is that introduced conifers above the native treeline can form the canopy species.

Below treeline, the situation is more complex because the majority of the vegetation types that are invaded by wildings are not climax communities and have been maintained as low grassland or scrub communities by continual intervention such as grazing or burning, and/or by the absence of seed sources for successional species. In these situations, wildings are a successional species, and since they are not shade tolerant (with the exception of Douglas-fir), are unlikely to form the canopy species. It is likely therefore that they will eventually be replaced by other species, including natives, although the time frame could be two hundred or more years.

When it comes to invasiveness, Douglas-fir differs from the pines in that it is more shade tolerant than the pines and is capable of regenerating in light wells within native forest, particularly where other native understorey species are not well represented. Most susceptible are open shrublands and regenerating native forest areas. As such, compared with the pines, it represents a different level of threat to conservation values below the tree line.

5 Year Review Results

The establishment of a conifer forest in areas of tussock grassland that is at risk to wilding conifer spread has a number of implications, which need to be considered at the forest planning stage if wilding conifer species are involved. There are a number of ways to minimise the risk of spread and to deal with any spread that does occur.

The native communities that are replaced could represent important communities both as climax communities such as wetlands, and as part of natural seral succession pathways. These native communities could be valuable reservoirs of indigenous biodiversity, and may contain threatened species such as native wetas and grasshoppers. The key issue with biodiversity is that the full range of New Zealand's biodiversity is not understood, and the only certain way of retaining as much as possible is to retain whole ecosystems. Loss of such ecosystems results in a loss of an unknown level of biodiversity, even if key known species are retained.

In summary, there is a greater risk of wildings impacting negatively on biodiversity values, than there is with planned tree planting. While wildings could provide benefits in terms of greater biomass and protection against erosion, improved soil structure and nutrient availability, better habitats for some species, and a potential successional pathway for native forest communities, there is a risk that this could be outweighed by damage to flora and fauna communities.

Landscape values are difficult to define let alone quantify. Limited studies do not draw strong conclusions relating to the landscape effects of wildings. It is clear that the question is not a simple trees/no trees preference – neither within individuals nor across groups of individuals. Indeed in some situations and for some individuals wildings will enhance the landscape values, while in others they will be viewed detrimentally. Therefore, it is not possible to conclude that all wilding spread adversely affects landscape values.

Wilding conifers can displace pasture on country where conditions are favourable to their spread, and this displacement results in a loss of pastoral production from those land types. Typically, wilding conifers invade pastures that are of low development status and only lightly grazed. Furthermore, once wildings are established it becomes expensive to convert the land to pasture or other land uses, limiting the option values for that land.

Pinus contorta is a particular problem. This is because it has little commercial value and is generally not pruned or thinned. It also seeds earlier and thus can spread more vigorously. As a result, the plant and any self-seeded wildings are declared pests.

8.13.4 Objective

Over the duration of the strategy, protect biodiversity values in targeted areas of the Canterbury Region by eradicating all self-~~sown~~-seeded wilding conifers, prior to seed dispersal, in targeted high value environmental areas.

8.13.5 Principal measures to achieve the objective

Environment Canterbury will take the following principal measures to achieve the stated objective:

- (a) Environment Canterbury will progressively identify high value environmental areas and prioritise the need for wilding control programmes in consultation with land occupiers and community groups.
- (b) Environment Canterbury will facilitate or carry out control operations of fringe-spread wilding trees particularly, and other wilding trees where it is appropriate, within the targeted high-value areas in consultation with land occupiers and community groups. Control will involve efficient and cost-effective control options utilising appropriate physical or chemical methods.
- (c) Environment Canterbury will regularly inspect areas at risk to wilding conifers to determine their presence. The frequency of inspection will depend on the proneness of the area to wilding spread.
- (d) Land occupiers and other persons will be encouraged to report the presence of wilding trees on any land to Environment Canterbury.

5 Year Review Results

- (e) Environment Canterbury will provide advice and education to land occupiers and the community to increase the awareness for the removal of wilding conifers.
- (f) Environment Canterbury will facilitate community and land occupier self-help programmes to destroy outlier wilding trees particularly in or adjacent to areas of high environmental value subject to control programmes.
- (g) Environment Canterbury will encourage land occupiers to remove existing high-risk plantations shelterbelts and amenity plantings from areas in or adjacent to areas containing of high environmental values or to develop management plans to prevent wilding spread from the plantations shelterbelts or amenity plantings.
- (h) Environment Canterbury will advocate to territorial local authorities that they include appropriate measures in their district plans and conditions on resource consents and through non-regulatory measures to ensure wilding conifer spread arising from planned conifer establishment is controlled or prevented.

8.13.6 Strategy rule for self-seeded wilding conifers

Land occupiers shall take all steps, in relation to self-seeded wilding conifers on their land, as are reasonably necessary to prevent the communication, release or other spread of those self-seeded wilding conifers.

Land occupiers may apply for an exemption from the above rule in accordance with the procedures set out in Chapter 12.

Explanation

The purpose of this rule is to ensure that land occupiers fully consider the implications of utilising “post 1989” self-seeded wilding conifers as a permanent forest land use option when choosing not to participate in collaborative control partnerships with Environment Canterbury. Specifically, adjoining or downwind land occupiers should not have to bear the consequences of wind-borne seed spilling out from such deliberately established forest land. However, exemption provisions are available where wilding conifer tree spread can be successfully managed within a property, or it is not a problem to neighbouring land occupiers.

Page 80: 8.14.3 (i) and (ii)	Amend “10” to 8
Page 82: 8.15.4(b)	Insert environmental before areas
Page 83: 8.16.4(b)	Insert environmental before areas
Page 83:	Insert barberry, boxthorn, carex pendula, common polypody, puna grass, Russell lupin and vipers bugloss as other plants to be controlled and objectives and principal measures as a consequence.

8.17 Barberry, Boxthorn, Carex pendula, Common Polypody, Puna Grass, Russell lupin and Vipers bugloss

Barberry



8.17.1 Description of barberry

Barberry (*Berberis glaucocarpa*) is an evergreen or semi-deciduous spiny shrub that grows up to 5m in height. It has yellow flowers and reddish-black berries with a whitish bloom. It is a long-lived tree that produces many seeds. It tolerates a wide range of environments including poor soils, salt, wind, temperature variations and wet or dry conditions. However it is only tolerant of a small amount of shade.

Barberry has been planted as hedges in many parts of the country and has spread out of control in many areas. Trees are often present around old homesteads and near plantation forests. It produces copious seed which remain viable for a long time. The seed is spread by birds over large distances.

8.17.2 Adverse effects of barberry

Barberry can invade disturbed forest and shrubland, short tussock grassland and bare stony ground. It is regarded as one of the least desirable exotic species on Banks Peninsula. Scattered plants and occasionally dense stands can replace native species. However, it is intolerant of deep shade so it is only competitive on the margins of forest or in forest with a poor canopy. In open environments like tussock grassland it does compete with native species.

Boxthorn



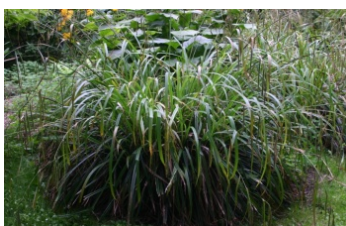
8.17.3 Description of boxthorn

Boxthorn (*Lycium ferocissimum*) is a densely branched spiny evergreen shrub from South Africa. It can grow up to 6m tall and has orange red berries. The plant tolerates a wide variety of soil types (sand to rocky cliffs), drought, salt, wind and a wide range of temperatures. It is a long-lived shrub that forms dense tall stands, excluding most other vegetation. Because of its tolerance to salt spray and its ability to grow on unstable sand dunes it is often the only woody plant present on some coastal sites.

8.17.4 Adverse effects of boxthorn

Boxthorn is an aggressive coloniser of sand dunes, gravel, coastal pasture, scrub and waste places. Boxthorn berries are spread by birds from farm hedges and waste places and is largely unpalatable to stock. It can overtop native plants, excluding light and absorbing water and nutrients to the detriment of the native species. Limestone rock outcrops may harbour threatened plants. *Heliohebe maccaskillii* and *Gentianella calcis ssp. waipara* are nationally threatened species and occur only on some North Canterbury limestone outcrops. Boxthorn may entrap petrels and other seabirds that become entangled in the thorny trees.

Carex pendula



8.17.5 Description of carex pendula

Carex pendula is a tall, exotic, shade tolerant, perennial sedge which grows in damp areas. It is the tallest sedge growing in New Zealand with stems up to 2.5m long. It has distinctive drooping flower spikes crowded with many seeds. This large sedge looks similar to some

native sedges *Carex lessoniana* and *Carex geminata* but the native sedges are smaller (to 1.5m tall). *Carex pendula* is typically found on river banks but appears to thrive in other wetland areas and in open forest.

The first New Zealand collection of *Carex pendula* was in 1962 at Otahuna near Tai Tapu It is a garden escape and is classified as fully naturalised. Although it is native to Europe, Asia and North Africa there are many reports of it recently expanding its range in England. It is sold as an ornamental plant but gardeners are discovering its weedy tendencies. It matures and sets seed rapidly with thousands of seeds germinating.

8.17.6 Adverse effects of *Carex pendula*

Its large size and prolific seeding can result in displacement of native species in a range of habitats. It is a threat to natural areas and restoration projects, especially near waterways and wetlands. Because it is shade tolerant it can form dense swathes under forest thereby preventing regeneration of native species in the understorey.

Common polypody



8.17.7 Description of common polypody

Common polypody (*Polypodium vulgare*) is a small hardy evergreen fern. It has a creeping rhizome but probably spreads mainly by its spores. Common polypody was first recorded as naturalised in New Zealand on the Port Hills near Lyttelton during the 1960s and 1970s, but was probably present earlier. It is now widespread, occurring from Godley Head to Gebbies Pass.

8.17.8 Adverse effects

Common polypody is a very significant threat to small and sparse populations of rare plants on rock outcrops. It occupies a full range of habitats from dry sunny sites to shady wet mossy sites on rock outcrops and cliffs. These are the specific habitats of several threatened plants. On the Port Hills rock outcrops it is competing with rare and threatened plants including the rare blanket fern (*Pleurosorus rutifolius*) and Lyttelton forget-me-not (*Myosotis australis* var. *lytteltonensis*), the iconic prostrate kowhai (*Sophora prostrata*) and several regionally endemic species such as the Banks Peninsula hebe (*Heliohebe lavaudiana*), Banks Peninsula blue tussock (*Festuca actae*), Banks Peninsula hebe (*Hebe strictissima*) and a diverse range of other rock outcrop plants. As it is also shade tolerant common polypody can also affect the forest understorey structure and prevent regeneration. There are no native species of the genus *Polypodium* in New Zealand but common polypody belongs to the same family as one of our common native ferns, hound's tongue (*Microsorium pustulatum* subsp. *pustulatum*).

Puna grass



8.17.9 Description of puna grass

Puna grass (*Achnatherum caudatum*) is a tall tussock-like grass that grows up to 1m tall with flower heads similar in appearance to nassella tussock. Its country of origin is South America. The plant is a weed of grasslands and riparian vegetation, as well as waste areas and roadsides, but only occupies two known sites in Canterbury.

8.17.10 Adverse effects of puna grass

Puna grass is considered to be similar in threat-potential to nassella tussock. It is not particularly palatable to stock and, as a consequence, it is capable of displacing other palatable grass species. Stock can spread the seed and it is difficult to control once established. The soils at the two infestation sites are sandy and so the coastal areas in Canterbury would be vulnerable to invasion.

Russell lupin



8.17.11 Description of Russell lupin

Russell lupin (*Lupinus polyphyllus*) is a perennial that can grow up to 1.5 metres tall. It flowers and sets seed in the summer and dies back to the stem base over winter. Russell lupins produce long, colourful flower heads. The flowers are pea-like and come in a variety of colours. Stout seedpods are produced that explode in the summer heat, releasing many dark brown seeds.

8.17.12 Adverse effects of Russell lupin

Although Russell lupins have attractive flowers, they can be an aggressive weed. Of particular concern is the invasion of Russell lupins into Canterbury's braided riverbeds, and the impacts they have on these ecosystems. Lupins are well adapted to living in the challenging environments of braided rivers. They can produce their own nutrients (nitrogen) and are very effective at dispersing their seeds. The seeds are dropped close to the parent plant, allowing the population to spread a couple of metres each year. Seeds also spread further if they are carried in waterways, allowing Russell lupins to creep down riverbeds and invade new areas.

Canterbury's braided rivers are home to unique native plant communities. Special plants such as the cushion-forming forget-me-not (*Myosotis uniflora*) and rare, tiny woodrush (*Luzula celata*) are mostly confined to riverbeds. Whole plant communities are especially adapted to growing in the challenging environment of shifting gravels, extreme temperatures and limited nutrients. This natural vegetation is often low-lying and sparse, leaving plenty of room for Russell lupins to move into. Dense stands of lupins eventually shade out and displace these special threatened plants and whole native plant communities.

Unique birds live and breed in the braided riverbeds of Canterbury. Birds such as the vulnerable wrybill and black-fronted tern have adapted to nesting and feeding in unstable braided river environments. One of the world's rarest wading birds, the black stilt, also feeds in shallow river braids. Russell lupins change these unstable braided river environments by forming dense stands on the bare gravel areas. Their roots become entwined and hold the gravel together, forming stable areas. The river erodes the edges, forming steep banks which drop into deep, fast-flowing channels, unsuitable for wading birds to feed in. The dense stands also take over the open spaces braided river birds like to nest in.

Vipers bugloss



8.17.13 Description of vipers bugloss

Vipers bugloss (*Echium vulgare*) is a bristly annual or biennial herb which can grow to nearly 1m high. It has blue funnel-shaped flowers and small seeds that are easily dispersed. Vipers bugloss grows and matures quickly and like many annual/biennials produces many long-lived seeds. It tolerates poor soils, wind and dry conditions. It is not particularly palatable but stock will graze it if food is scarce. Vipers bugloss grows on roadsides, river beds and on pasture and open waste land in dry areas. It is sometimes so abundant that in early summer, when it is flowering, roadsides and hillsides may be a sea of blue.

8.17.14 Adverse effects of vipers bugloss

Vipers bugloss is widespread and common on disturbed sites throughout Canterbury especially inland dry places. It tends to invade dry disturbed land but as with most annual/biennials it is dependent on favourable conditions for good germination and growth and may vary in cover from year to year. Vipers bugloss may have a temporary smothering effect in open, disturbed, low growing indigenous plant communities. However as it is an annual or biennial this effect is temporary and dependent on suitable conditions for good seed germination. It threatens high value environmental areas where those areas are still clear of infestations.

8.17.15 Objective

Over the duration of the Strategy, reduce barberry, boxthorn, carex pendula, common polypody, puna grass, Russell lupin and vipers bugloss to ensure that biodiversity values in high-value environmental areas are protected in the Canterbury region.

8.17.16 Principal measures to achieve the objective

The following principal measures will be undertaken:

- (a) Environment Canterbury will progressively identify high-value environmental areas and prioritise the need for barberry, boxthorn, carex pendula, common polypody, puna grass, Russell lupin and vipers bugloss control programmes in consultation with land occupiers and community groups.
- (b) Environment Canterbury will facilitate or carry out control operations to destroy barberry, boxthorn, carex pendula, common polypody, puna grass, Russell lupin and vipers bugloss within the targeted high-value areas in consultation with land occupiers and community groups. Control will involve efficient and cost-effective control options using appropriate physical or chemical methods.
- (c) Environment Canterbury will inspect areas at risk to barberry, boxthorn, carex pendula, common polypody, puna grass, Russell lupin and vipers bugloss to determine its presence. The frequency of inspection will depend on the threat posed by sycamore and red-flowering currant to high-value environmental areas.
- (d) Land occupiers and other persons will be encouraged to report the presence of barberry, boxthorn, carex pendula, common polypody, puna grass, Russell lupin and vipers bugloss on any land to Environment Canterbury.
- (e) Environment Canterbury will provide advice and education to land occupiers and the community to increase the awareness for the removal of barberry, boxthorn, carex pendula, common polypody, puna grass, Russell lupin and vipers bugloss.

Page 86: Table 9.1 cont	Amend <i>Iris psuedacorus</i> to read <i>Iris pseudacorus</i>
Page 86: Table 9.2	Delete All Stipa, Artillery Plant, Blue Passion Flower, Chinese Pennisetum, Japanese Spindle Tree, Port Jackson

5 Year Review Results

	Fig, Skeleton Weed, Sweet Pea Scrub, Tuber Ladder Fern, Tutsan and Woolly Nightshade from Table 9.2 and insert in Table 9.2 as all these organisms are now declared unwanted organisms. Delete Chilean Needle Grass, as it is now assigned containment pest status in the RPMS.
Page 87: Noogoora Bur	Amend <i>Xanthium occidentale</i> to <i>Xanthium strumarium</i> .
Page 101: 11 Powers conferred	Amend "VI" to 6 and "IX" to 9
Page 120: Kurow	Amend Awamoke to Awamokaho
Throughout the Strategy	Amend Total control pest programmes to read Total control programmes. Amend Progressive control pest programmes to read Progressive control programmes. Amend Containment control pest programmes to read Containment control programmes. Amend Biodiversity pest programmes to read Biodiversity protection programmes. Amend Restricted pest pest programmes to read Restricted sale programmes.

Appendix 3.3: Responses to Questions raised in the Discussion Paper

Five questions were specifically raised in the Discussion Paper. Those questions were:

- (i) What new organisms should be included?
- (ii) What changes are necessary (the Objectives) and how they should be made (the Principal Measures and RPMS Rules)?
- (iii) Are there changes to regulatory management that would improve fairness without compromising effectiveness?
- (iv) Are changes needed to enhance the purpose and arrangements of Pest Management Liaison Committees? and
- (v) Are there any other RPMS matters requiring review?

Interested persons or parties answered by making requests. The requests and the responses to them are grouped into five categories and are set out as follows.

3.3.1 Matters that can be accommodated without amending the RPMS

(i) Principal measures

Request	Response
Some interest expressed in a CIP in mid Canterbury for possums.	The RPMS provides a pathway to pick up this expression of interest. The matter can be further developed by the Ashburton Pest Management Liaison Committee.
Recommendation	<i>The request is passed onto the Ashburton PMLC and no further action undertaken as part of the RPMS review.</i>
The CIP for possums should be extended out to Godley Head.	Operations under this programme are scheduled for completion by June 2011. A review of the programme, including the programme area, will be provided for in the proposed Annual Plan for 2010/11.
Community Initiative Programmes should be better explained, made more achievable and provide for greater community involvement in all aspects.	There is a full explanation of the purpose and procedures of the CIP's in the RPMS. It must also be realised that the use of CIP's is not provided to circumnavigate the justifications for, and the public process to be followed, with a RPMS. While it may appear that the overall CIP package is cumbersome, it is necessary to ensure that the parties involved are fairly treated, especially if requirements are placed upon them. It is not the intention for Environment Canterbury to be the principal party initiating CIPs. However Environment Canterbury should take every opportunity to publicise the CIP opportunities.
Extend ECan surveillance programme to increase the investigation of potential problem species with a view to taking action against the worst threats under section 100 of the Biosecurity Act or under a strategy.	The financial resources for this programme are subject to Annual Plan provisions and requests to increase provisions should be made as part of the public submission process to it. Determining any action under section 100 or RPMS inclusion follows the procedures set out in the Biosecurity Act. Each threat is treated on its merit and appropriate action considered by Council.
Need better media coverage of what pests are included in RPMS and how they are dealt with.	The financial resources for this programme are subject to Annual Plan provisions and requests to increase the level of activity should be made as part of the public submission process to it.

Principal measures cont.

Request	Response
Provide information and access to control tools for rabbits on the urban fringe.	The matter can be further developed by the relevant Pest Management Liaison Committees. The financial resources for this programme are subject to Annual Plan provisions and requests to increase the level of activity should be made as part of the public submission process to it.
Greater education of home gardeners is required for plants that threaten biodiversity, such as displays in malls and shopping areas.	The cost of this activity is subject to Annual Plan provisions and requests to increase the level of activity should be made as part of the public submission process to it.
Of the 'other organisms' listed on page 5, top priority for effective action be given to feral pigs, feral deer, sycamore and douglas fir.	To date, the number of projects where there have been willing land owners has matched available funds and priority issues have not arisen. Needless to say, the first consideration must be the quality of the site to be protected rather than the particular pest or 'other organism' that threatens the site.
Recommendation	<i>The requests are noted and no further action undertaken as part of the RPMS review.</i>

(ii) Rules

Requests	Response
Significantly increase the boundary rule for nodding thistle on Banks Peninsula.	The first step to address this request involves investigating a Community Initiative Programme as provided for in the RPMS. The response to a CIP would give an indication of the collective level of support for expanding the boundary clearance requirements. The matter can be further developed by the Banks Peninsula and Selwyn Pest Management Liaison Committees in the first instance.
Need more follow up work on areas that have been poisoned in last couple of years (rabbits).	The long-term success of any poisoning operation is sensitive to the degree of follow up work. However, the farming community has clearly signalled that they are best placed to make decisions about the degree of follow up that should be undertaken. The matter should still be passed onto the relevant Pest Management Liaison Committees nonetheless.
Have different control rules according to the region and draw lines on maps to show containment boundaries for pest/weeds.	The RPMS currently provides for alternative approaches such as those requested through the use of Community Initiative Programmes.
Recommendation	<i>The requests are noted and no further action undertaken as part of the RPMS review.</i>

(iii) Monitoring

Requests	Response
Provide regular and adequate monitoring of weed and animal pests. Give more precision as to the extent of the current monitoring carried out.	It is a requirement that an Operational Plan is prepared for a RPMS and it is reviewed and reported on each year. Those documents define the monitoring regime and the resultant trends towards achieving the objectives of the RPMS. The level of monitoring activity is subject to the financial provisions of the Annual Plan. Scientific advice is sought on the appropriate monitoring techniques that are used.

5 Year Review Results

Monitoring cont.

Requests	Response
Increase the level of monitoring on Banks Peninsula.	The cost and intensity of monitoring is a matter that the Banks Peninsula Pest Management Liaison Committee considers on an annual basis. Advice on maintaining or increasing previous levels is provided to Environment Canterbury and the financial implications signalled in the Annual Plan. Public submissions can then be made to the Annual Plan.
Recommendation	<i>That no further action undertaken as part of the RPMS review.</i>

(iv) Regulatory Management

Request	Response
It appears that ECan takes too long for some landowners to comply with the rules of the RPMS. Prosecute those who blatantly ignore the rules.	There is a prescribed procedure to follow in the event of non-compliance which is laid down in the Biosecurity Act. The RPMS clearly outlines the procedures and expands them where necessary. Those procedures incorporate: natural justice principles; dispute resolution provisions; and where it is relevant specific timing to ensure successful compliance. The ability to prosecute is provided for in the RPMS but is rarely used because priority is given to ensuring the work is carried out.
Clearly outline the exemption process and deal with exemption applications more expeditiously.	The RPMS states which rules carry provision for exemption. However, the merit of each application is treated on a case by case basis and the process and timing may vary accordingly.
Increase the costs and intensity of inspections to prevent repeat offending.	The cost and intensity of inspection is a matter that the Pest Management Liaison Committees for each district consider on an annual basis. Advice on maintaining or increasing previous levels is provided to Environment Canterbury and the financial implications signalled in the Annual Plan. Public submissions can then be made to the Annual Plan.
Recommendation	<i>That no further action undertaken as part of the RPMS review.</i>
Change the follow-up regarding weed populations that breach CRPMS rules so that the 'biodiversity context' of those weeds (i.e. where they share habitat with significant biodiversity values) is accommodated in Environment Canterbury's response to a breach of the rules by a landowner.	Environment Canterbury is exploring ways to make its Biosecurity staff better informed about the location of threatened indigenous plants and to communicate this into the advice given to landowners, particularly when directing them to undertake work. However, there is no current legislative requirement to prevent private landowners removing indigenous plants outside of covenanted areas. Until RMA plans direct otherwise, education remains the principal measure to address the request.
Include an independent appeals review committee with some local representation. There should be an ability for negotiation to resolve issues prior to considering prosecution.	The regulatory framework laid out in Chapter 12 provides for such requests
Recommendation	<i>The request is noted and no further action undertaken as part of the RPMS review.</i>

(v) Pest Management Liaison Committees

Requests	Response
<p>Good representation on PMLC's and Improved representative processes needed from rate paying community covering production and biodiversity values, urban and rural with an opportunity to co opt specialists.</p> <p>Pest Liaison Committees need to be democratically run, given more autonomy and decision making powers around local priorities, and decisions be given more weight.</p> <p>Encourage PMLC to take a wider view of pest management including the management of Biodiversity Pest Programmes.</p> <p>Need a purpose to achieve a goal.</p> <p>Separate Pest Liaison Committees could be set up specifically for the Biodiversity Pest Programmes.</p> <p>Improve the community's awareness of the PMLC through better publicity. Provide funding in the LTCCP for a review of the structures and functions of the Pest Management Liaison Committees. There needs to be stronger recognition within communities of the role of the Committees and the power they have been delegated.</p>	<p>The RPMS provides for the use of Pest Management Liaison Committees as a method for receiving advice on implementing and funding the strategy. It does not prescribe their functions, roles or powers because that prerogative lies with Council policy-making under its Local Government Act responsibilities. The matters highlighted in the requests would suggest that an appraisal of the terms of reference for the PMLC's should be considered and it would be appropriate to do so prior to the triennial committee elections due in 2011.</p>
<p>Recommendation</p>	<p><i>The requests are noted and no further action undertaken as part of the RPMS review.</i></p>

(vi) Funding

Request	Response
<p>Increase funding allocated to biodiversity weed control.</p> <p>Increase funding for developing and implementing strategies, monitoring and increased interaction and collaboration with other agencies in Canterbury</p>	<p>The costs of the activities are subject to the overall spending priorities of Environment Canterbury. Current costs are considered to be adequate and they are notified in the Annual Plan. Public submissions can be made to the Annual Plan.</p>
<p>Retain funding for the community-initiated programme for possum control in Eastern Banks Peninsula or for other pest management work in the Lyttelton Harbour basin and Port Levy.</p> <p>Expand possum CIP funding base to encompass the urban areas as well.</p>	<p>The CIP will be reviewed in 2010/11 to coincide with the completion of the first full cycle of the works programme. The matters raised in the requests will be considered as part of that review.</p>
<p>Recommendation</p>	<p><i>The requests are noted and no further action undertaken as part of the RPMS review.</i></p>

(vii) Other matters

Requests	Response
<p>Would like to get involved in discussion for the review in 2015 re:</p> <ul style="list-style-type: none"> - Incorporating research into new control regimes for nassella infestation reduction; - Future of broom and gorse control for large areas of land considering land use objectives and using new mapping techniques; - Contributing to analysis in regards to rabbit and wallabies problem; - Community Initiative Programme, criteria for High Value Environmental Areas; and - The implementation of the Biodiversity Strategy. 	<p>The request is noted and the party concerned (Department of Conservation) has been, and will continue to be, consulted as an affected party in accordance with s73 of the Biosecurity Act.</p>
<p>Provide Lyttelton-Mt Herbert & Akaroa-Wairewa Boards with an opportunity to submit on RPMS 5-year review.</p>	<p>The results of the review will be publicly notified and submissions called for. The respective Boards can submit at that time.</p>
<p>Recommendation</p>	<p><i>The requests are noted and no further action undertaken as part of the RPMS review.</i></p>

3.3.2 Matters to be looked under the 2015 review

(i) Gorse/Broom

Requests	Response
<p>Consider implementing a sub regional approach with different objectives and rules for different parts of the region for gorse and broom.</p> <p>Stop the spread of gorse and broom.</p> <p>Either remove “scattered gorse and broom within properties: (preferable) or readily grant exemptions for native forest restoration eg. add “(iii) the requirement to eliminate gorse or broom where the occupier intends to regenerate native bush (note does not extend to boundary requirements of 7.5.5(b) and 7.6.5(b)”.</p> <p>Increase the boundary provision to 20 metres for the Port Hills.</p> <p>A rapid reaction team is needed, especially in spring, for when gorse and broom flowers appear as isolated splashes of yellow in high country grey scrub, so they can be strategically removed.</p>	<p>The 2015 review will be a more wide-ranging examination of the objectives, principal measures and the overall effectiveness of the RPMS because it will coincide with the expiry of the RPMS. The information required to make a thorough assessment of the RPMS’s effectiveness and the community’s future aspirations is still being collected. The matters requested would fall more appropriately into a more wide-ranging examination of gorse and broom options planned sometime in the next three years.</p>
<p>Recommendation</p>	<p><i>The requests are noted and no further action undertaken as part of the RPMS review.</i></p>

(ii) Roadsides

Requests	Response
<p>Land owners with adjacent roadsides are unfairly left to deal with problem weeds as a result of roading authority activities and other users.</p> <p>Require all road gravel to be weed-free.</p> <p>Cleaning of vehicles and machinery, which are moved from areas of broom and gorse to up country free of these weed pests, should be promoted or mandatory.</p> <p>Councils should be responsible for roadsides. This would greater clarity on who is responsible for pest control on road reserves on Banks Peninsula.</p>	<p>Roadside plant pests are the responsibility of adjoining landowners with the exception of the territorial areas of Hurunui, Waitaki and Christchurch City (prior to its amalgamation with Banks Peninsula District). The RPMS signalled that liaison with road controlling authorities would continue over the effectiveness of this policy, including issues around gravel movement. Therefore, it is considered more appropriate to use the outcome of the further liaison to be part of the 2015 review of the RPMS.</p>
<p>Recommendation</p>	<p><i>The requests are noted and no further action undertaken as part of the RPMS review.</i></p>

(iii) Wallaby

Requests	Response
<p>Consider other methods to control wallaby numbers as little progress is being made.</p> <p>Retain wallabies in the strategy. An advisory committee needs a strategic approach because there is a consensus that there is a problem but where do we start to fix it?</p> <p>Prior to the 2015 review of the RPMS, commission and complete technical investigations and research into the ecological impacts of wallabies on biodiversity values in representative areas within the feral range and effective control tools. Make this information available prior to public consultation on the RPMS review.</p> <p>Liaise with Environment Bay of Plenty to learn from their effective wallaby control work.</p> <p>Take steps to establish a community programme, similar to that which has controlled goats and possums on Banks Peninsula, with the Council organising professional contractors to undertake control. Investigate whether other agencies such as the Department of Conservation and Land Information NZ can contribute to control costs.</p> <p>Provide information on what investigations Environment Canterbury has undertaken to reduce the Wallaby Containment Area as provided for in RPMS measure 7.2.4 (g).</p> <p>Undertake a public awareness and communications campaign about wallaby impacts so the public recognise the need for more effective control and population reduction.</p>	<p>The RPMS signalled that the establishment of an advisory committee to provide advice on further shaping wallaby management would take place soon after the RPMS become operative. Community meetings aimed at forming a committee were unsuccessful because of wide-ranging differences around the need for wallaby management. However, a further attempt will be made to establish an advisory committee to help with the framing and evaluating options for wallaby management. The outcome of this attempt would be used as part of the 2015 review of the RPMS.</p>
<p>Recommendation</p>	<p><i>The requests are noted and no further action undertaken as part of the RPMS review.</i></p>

(iv) Rooks

Request	Response
<p>Replace total control programme for rooks with a bounty scheme.</p>	<p>Rooks are easily dispersed by human activity and require a settled environment for successful control operations. Current knowledge does not support changing this approach at this time. However, data will continue to be collected and analysed for use during the 2015 RPMS.</p>
<p>Recommendation</p>	<p><i>The request is noted and no further action undertaken as part of this RPMS review.</i></p>

(v) Pest Management Liaison Committees

Requests	Response
<p>Pest Districts: currently the Port Hills is included in the Selwyn Pest District. We see that the Port Hills is clearly part of Banks Peninsula and should be included in this District and not Selwyn. BP Pest District boundary should logically be all of Banks Peninsula.</p> <p>That metropolitan Christchurch becomes a discrete pest management area.</p> <p>That PMLC's be constituted so that each community board from within its catchment is officially represented.</p> <p>Consider making both sides of the Port Hills a High Value Environmental Area (HVEA). This suggestion is offered as an alternative and would mean that existing pest management boundaries could be retained, and a very focused approach could be made to pest management on the Port Hills.</p>	<p>Further detailed analysis and consultation of the overall shape and operations of PMLC's is necessary and should take place prior to the 2015 review.</p>
<p>Recommendation</p>	<p><i>The requests are noted and no further action undertaken as part of the RPMS review.</i></p>

(vi) Feral pigs

Requests	Response
<p>Consider other methods to control pig numbers.</p>	<p>Flexibility for methods of pig control is currently provided in the RPMS on a site-led basis under the biodiversity programme. Data will be collected to test the effectiveness of the programme over the 10-year duration of the RPMS. It will then be used as part of the 2015 review.</p>
<p>Recommendation</p>	<p><i>That no further action is undertaken as part of this RPMS review.</i></p>

(vii) Sycamore, ash and rowan

Request	Response
<p>Investigate including sycamore, ash and rowan in the RPMS as biodiversity pests prior to the full Strategy review in 2015.</p>	<p>Sycamore and ash are currently pests in the RPMS and they are included in the biodiversity programme. Rowan is not and there is little pest evidence to support its inclusion under this review.</p>
<p>Recommendation</p>	<p><i>That no further action undertaken as part of this RPMS review.</i></p>

(viii) Nassella tussock

Requests	Response
<p>Change the compliance date for grubbing Nassella tussock to 30 September for all properties and allow application for exemptions until 31 October for larger hill properties with a good compliance history.</p> <p>Introduce part-property inspections for Nassella tussock.</p>	<p>Considerable progress is being made in understanding the ecology of Nassella tussock to optimise the timing of grubbing operations. In the near future, sufficient data will have been collected to computer-model different grubbing date and inspection scenarios against possible objectives. The economic impacts can be matched against what can be achieved and so enable the most robust schedule to be developed. Assembling and analysing the options generated from the computer modelling is a crucial step in framing any future changes to the control regime. Such analysis requires more time than is available for the present review and it would therefore be more appropriate to use the analysis as part of the 2015 review of the RPMS.</p>
<p>Recommendation</p>	<p><i>The requests are noted and no further action undertaken as part of this RPMS review.</i></p>

(ix) Biodiversity Pests

Requests	Response
<p>Identify High Value Environmental Areas, consult with NGO's and DoC, and place in a schedule in the RPMS.</p> <p>Introduce regulatory measures for biodiversity programme pests.</p> <p>We need to have an holistic approach for work in HVEA's where we see how various weed pests and animal pests interact together.</p> <p>Consider utilising the six key control objective programmes (i.e. total, progressive, containment, restricted control, biodiversity and CIP) for the range of biodiversity pests.</p> <p>Amend the status of old man's beard (<i>Clematis vitalba</i>) and banana passion fruit (<i>Passiflora</i> spp.) from the Biodiversity Programme to the Containment or Progressive programme.</p>	<p>Widespread community support was forthcoming for introducing a biodiversity pest programme into the RPMS based upon working with willing landowners and other community partners. The parameters for determining HVEA's is clearly set out in the RPMS. Embarking on the approach requested at this time would risk alienating that overall community support.</p> <p>Allowing the policy to run its full ten-year course is a more appropriate time period to test its effectiveness. It would also allow other biodiversity protection initiatives under the Resource Management Act (SNA protection) and QE II Trust (covenanting on private land) to be developed.</p> <p>This is an important principle associated with managing species. However, while every endeavour is taken to accommodate the principle, the Biosecurity Act's 'single species' emphasis place limitations on its adoption. The CIP does provide a site-led opportunity for solutions that incorporate the species interaction approach.</p> <p>Biodiversity pests are managed on a site-led basis and the type of control, be it containment or total etc., is determined on a case by case basis. Applying what has been suggested may result in a loss of site-led flexibility. However, it is acknowledged that confusion is possible when some pests fall into programmes on the basis of their management regime (eg agricultural pests) while others are based on the environment that they threaten (eg the biodiversity pests). The review of the RPMS in 2015 that coincides with the expiry of the duration of the strategy would be a more appropriate time to consider the matters requested.</p>
<p>Recommendation</p>	<p><i>The requests are noted and no further action undertaken as part of this RPMS review.</i></p>

(x) Rabbits

Requests	Response
<p>Support should be given to research into engineering a fertility inhibitor to hitch-hike on the RHD virus.</p> <p>The RPMS be amended to provide for a 50% general rate contribution to the operational cost of rabbit control.</p> <p>Concern expressed about the increasing inability of land holders to fund rabbit control. Suggest approaching Govt for assistance in funding rabbit control, especially larger scale poisoning operations.</p> <p>Life of rabbit netting put in under Rabbit and Land Management Programme is coming to an end.</p> <p>Approach the MfE for funding in lieu of Carbon sequestration benefits arising from farmers controlling rabbits and thus protecting native vegetation.</p>	<p>There is an upward trend in populations of rabbits with immunity to RHD. This highlights the importance of integrating conventional control techniques within an RHD environment and the need for attention to coordinated control programmes within a 'user-pays' model. There is also a greater government interest in wider pest management principles that may have a bearing on rabbit management.</p> <p>Assembling and analysing the options that are evolving for rabbit control is a crucial step in framing any future changes to the control regime. Such analysis requires more time than is available for the present review and it would therefore be more appropriate to use the analysis as part of the 2015 review of the RPMS.</p>
Recommendation	<i>The requests are noted and no further action undertaken as part of the RPMS review.</i>

(xi) Funding

Request	Response
<p>There may be some circumstances where a special rate could be targeted if a community benefited over and above what a general rate would cost. For example a possum control project.</p>	<p>The cost of funding pest control is not determined by the level of benefit. Rather, it is the size of the operation. Once the size of the operation is determined, the degree of exacerbation and/or benefit is used to apportion the costs between individuals or sectors of the community accordingly. This review does not extend to revisiting the funding rationale for the pests currently included in the RPMS, that task is a matter for the 2015 review.</p>
Recommendation	<i>That no further action is undertaken as part of this RPMS review.</i>

(xii) Other

Request	Response
<p>Establish a team to oversee and manage what is happening on BP. We need someone with the ability to keep the community energized, the capability to bring all the work programmes together, a good understanding of the issues and well skilled with community engagement etc.</p> <p>Need sustainable integrated programmes over the whole of Banks Peninsula urban and rural with the option of CIP's.</p> <p>Consideration should be given to control of the bacterial nodules in lakes.</p>	<p>This request suggests the need for a coordination type measure similar to that which is currently used for rabbit control. However, the request is somewhat broader because it extends to cover work undertaken by various organisations. Further investigations into the needs, costs and benefits of such action are required before incorporating what is requested. That exercise is more appropriate for the 2015 review.</p> <p>Further investigations into the needs, costs and benefits of such actions are required before incorporating what is requested. That exercise is more appropriate for the 2015 review.</p>
Recommendation	<i>The request is noted and no further action undertaken as part of this RPMS review.</i>

3.3.3 Issues raised but rejected for inclusion

(i) Requests for additional organisms

Requests	Response
Add the requirement to control rank vegetation on property boundaries for the Port Hills area	This request is a matter that Christchurch City Council has jurisdiction over. It is a fire safety issue rather than a pest management issue.
Do something about cats both pets and feral.	Feral cats are currently included in the RPMS to the extent that control is undertaken when warranted in high value environmental areas. Widening control to other areas, as well as encompassing domestic cats, cannot be justified because the benefit to biodiversity values is outweighed by the costs to both individuals and the regional community.
<p>Have sulphur crested cockatoos classified as pests by DoC and MfE</p> <p>Eradicate all sulphur crested cockatoos</p>	<p>Such a request is best taken up directly with the respective departments even though such a classification is not a prerequisite for inclusion in a regional pest management strategy.</p> <p>The cockatoo population has been monitored since 2002. The results indicate a stable population and landowners are undertaking adequate control action.</p>
<p>Have Canada geese classified as pests by DoC</p> <p>Eradicate all Canada geese by taking control off Fish and Game's hand and giving it to ECan and DoC.</p> <p>Add Canada goose</p>	Canada goose is classified as a game bird under Schedule 1 of the Wildlife Act 1953. Responsibility for their control is vested in Fish and Game. To include a species from Schedule1 in a RPMS requires permission from the Minister of Conservation. The Minister is presently considering the status of Canada goose and its future management. It would be premature to promote inclusion in the RPMS at this stage.
Add crack willow	Crack willow is managed for flood control purposes under the Soil Conservation and Rivers Control Act 1941. It is also classified as an unwanted organism and the proposed NRRP prohibits any further plantings in the beds and margins of riverbeds. Therefore, further intervention under .the Biosecurity Act is not warranted.
Increase number of plant species threatening biodiversity.	The current species specified in the RPMS is based on the collective knowledge of biosecurity personnel, botanists, ecologists and public members. The species are also tested against the prerequisite requirements set out in the Biosecurity Act for inclusion in a RPMS. The request does not indicate specific plant species.
Recommendation	<i>No action be taken</i>

(ii) Objectives

Requests	Response
Add objectives in the Strategy to achieve biodiversity gains, which the strategy lamentably lacks.	Enhancing biodiversity is not the principle purpose of the RPMS. Rather it addresses the issue of pest threat to biodiversity. Responsibility for preparing objectives for biodiversity protection and enhancement lies within the mandate of the Resource Management Act and the plans, both statutory and non-statutory developed under it.
There is an inadequate response to new threats. Include a process for identifying new plant pests, and establishing a method for addressing problems immediately and effectively.	Adequate processes exist outside of the RPMS for dealing with new threats. A surveillance programme is in place, for example the presence of Chilean Needle Grass was detected under this programme. Small scale-management provisions under the Biosecurity Act provide for control action prior to inclusion in a RPMS if that is necessary.
Choose early weed eradication over late control.	This principle is adopted wherever it is technically possible. However, community support still exists for the containment of a number of established pests, eg gorse and rabbits.
Review the categorisation of pests and the relevant objectives and rules to give greater emphasis to pests with biodiversity impacts.	The Biosecurity Act does not require a hierarchy of emphasis for pest management and the community did not suggest such an approach when the RPMS was formulated. Neither is there compelling evidence to support what is requested. However, the species that can be incorporated in site-led control under the biodiversity programme is being considered.
<p>Amend regulations controlling old man's beard as follows:</p> <ul style="list-style-type: none"> • Gazette as a prohibited plant; • Land owners are required to eradicate all specimens on their property; • Sale and propagation of old man's beard is made illegal. <p>Old Man's Beard should be moved from the Containment to Progressive Control Programme.</p> <p>Objective 8.11.3 old man's beard – needs to be consistent with the statement in the introduction of Programme Areas (8.2).</p>	<p>The power to prohibit old mans beard is not available to Environment Canterbury but the RPMS contains a rule that makes the sale, propagation or distribution illegal. The widespread occurrence of the plant would mean that an eradication programme would be technically and financially impossible.</p> <p>There are opportunities under the Community Initiative Programme provisions of the RPMS to manage sites where progressive control is acceptable to the landowners and is technically feasible.</p> <p>The RPMS places emphasis on controlling OMB in targeted areas. However, it does not exclude dealing with boundary issues in other parts of the region where land occupiers complain. This does not compromise Objective 8.11.3.</p>
Recommendation	<i>No action be taken</i>

(iii) Principal measures

Requests	Response
<p>Include some measures to stop habitat reduction by dealing with the following:</p> <ul style="list-style-type: none"> • Weed invasion of shingle areas (nesting sites); • Introduced predators; • Disturbance by humans including vehicles, shooting and dogs; • Vandalism; and • Reduced flows 	<p>The measures requested largely fall outside the scope of the RPMS. However, action to deal with specified weed invasion or bird predators where there is community support is provided for in for high-value environmental areas as defined in the RPMS. Such areas may include riverbeds.</p>
<p>Education as a measure should have its own section in the RPMS.</p>	<p>It is a requirement under s76(f) to specify for each organism in the RPMS the principal measures to be undertaken. Rather than describe education overall as requested, and then have to repeat it organism by organism is not considered to be efficient.</p>
<p>Encourage the use of sycamores for timber production in enclosed valleys but with nylon or Kevlar nets to catch the seed</p>	<p>The RPMS is not the instrument for furthering land use initiatives. Currently, it does not impede such an initiative should a landowner wish to use sycamores for timber production.</p>
<p>Prior to the full RPMS review develop standards for goat fencing and informally consult on these for inclusion in a revised RPMS.</p>	<p>Jurisdiction for goat fencing lies with the Minister of Conservation under the Wild Animal Control Act.</p>
<p>Threats from weed pests are considered when embarking on new biodiversity plantings. Community initiatives may well be able to deal with localised infestations.</p>	<p>The promotion and funding of new plantings is not driven from the provisions of the RPMS.</p>
<p>Amend the RPMS to direct more resources and effort to increasing surveillance work to prevent the establishment and spread of new pests.</p>	<p>Surveillance activities are a function that is provided for outside of the RPMS and its funding is subject to LGA processes. Submissions on resourcing this activity can be made to ECan's Annual Plan.</p>
<p>Address the issue of spray drift onto non-target species</p>	<p>Spray drift is subject to the Resource Management Act and is addressed in the Natural Resources Regional Plan. Biosecurity staff do ensure that chemicals are safely applied when ever they are directly responsible for their use.</p>
<p>Recommendation</p>	<p><i>No action be taken</i></p>

5 Year Review Results

(iv) Rules

Requests	Response
In the strategy it talks about keeping new pests out yet ragwort has really got into Canterbury in the last 5 years, what's been done? nothing	Ragwort is subject to containment requirements under the RPMS, an active biological programme is in place and there has been an overall reduction in the extent of ragwort in the region.
Consider adding rules for some of the pests where advice and education have been the focus so far.	While the request does not specify which pests, it is probably referring to the majority of species subject to the biodiversity programme. There is no obvious need at this time for regulation to be used.
Treat pests in HV areas differently from the rest of the region.	The request does not specify what differences are sought. The Biosecurity Act does not provide a strong mandate for the management of species at a site level. However the RPMS does treat pest threats to biodiversity at the site level nonetheless.
Special enforcement measures are put in place to ensure a clean buffer zone exists around all reserves and significant areas of native vegetation	The provision in the RPMS for CIP's enables activities in the buffer zones to be considered. The presence of a reserve or significant area of native vegetation does not in itself justify establishing enforcement measures around them. Many of the areas are in public ownership and neighbourly relationships are sufficient to deal with buffer matters.
Recommendation	<i>No action be taken</i>

(v) Regulatory Management

Request	Response
So much of the strategy is totally ignored by landowners especially council and DOC. Just look at any local riverbed, old mans beard, barberry, gorse, rabbits, possums, cats etc etc. Apply the rules consistently to all in the region.	The RPMS defines the pests and the principal measures required of landowners in order to achieve the management objectives. Where principal measure includes a rule, enforcement is undertaken. Rules do not apply to Crown land, such as riverbeds in a number of situations, so there may be locations where it would appear that RPMS provisions are not being complied with. A change in legislation to bind the Crown to RPMS is required.
Provide an exemption to the 10 metre buffer zone rule along roading corridors through a reserve.	Where the reserve owner is the same on both sides of the road there is no enforceable "boundary" requirement. Where ownership is different, provision already exists in the RPMS for exemption applications to be considered.
Recommendation	<i>No action be taken</i>

(vi) Funding

Requests	Response
A coordinated approach involving government funding for rabbit and wilding tree control be signalled in the strategy.	Section 10.5 of the RPMS indicates that ECan will seek funds as an alternative to rating or to add value to rated funds. In some instances in-kind contributions are also made. Success at attracting government funding has been limited to date.
<p>Provide greater clarity to the funding basis for biodiversity programmes and species.</p> <p>Funding base should include urban landowners.</p> <p>Embrace a more equitable system of cost/benefit analysis that provides for greater acknowledgment of the public good created for biodiversity by the private control of pests, including operations on agricultural lands.</p> <p>Approach DoC for funding in lieu of the biodiversity benefits arising from farmers controlling rabbits.</p>	<p>In accordance with the Biosecurity Act and the Local Government (Rating) Act, a rigorous and independent analysis of the costs and benefits of implementing the RPMS accompanied its adoption. Full public scrutiny was provided for during the adoption process. Section 10 of the RPMS (pages 89-103) describes the analysis and how the costs and benefits are apportioned, particularly how private and public good is accounted for.</p> <p>Access to Crown public good is limited by the Act not binding the Crown.</p>
Recommendation	<i>No action be taken</i>

(vii) Monitoring

Request	Response
Research needs to be done to estimate the economic, environmental and social value of the biodiversity programmes.	It is a requirement under s72 of the Biosecurity Act to assess the values requested and such an investigation was carried out as part of preparing the RPMS. Such studies will need to be reviewed when the RPMS completes its ten-year duration.
Recommendation	<i>No action be taken</i>

(viii) Other matters

Requests	Response
<p>Review needs to expand its scope to incorporate a robust and effective biodiversity pest strategy because it will be necessary for the Biodiversity Strategy review in 2013.</p> <p>Should have strong links to Christchurch City Council Biodiversity Strategy.</p>	<p>The request assumes that the RPMS and the Biodiversity Strategies are companion documents. Rather, they are separate documents prepared under the Biosecurity Act and the Resource Management Act respectively. They do complement each other nonetheless. The biodiversity pest programme in the RPMS has been developed with widespread community support and it meets the requirements of the BS Act. Pests and biodiversity are managed within Environment Canterbury under one programme in order to achieve the most effective outcomes for both.</p>
<p>The CRPMS does not provide an adequate mechanism to enhance and protect biodiversity values.</p>	<p>Enhancing biodiversity is not the principle purpose of the RPMS. Rather it addresses the issue of pest threat to biodiversity. Responsibility for preparing objectives for biodiversity protection and enhancement lies within the mandate of the Resource Management Act and the plans, both statutory and non-statutory developed under it.</p>
<p>Consideration should be given to separate strategies for agricultural and biodiversity pest control.</p>	<p>Separate strategies existed prior to 2005. This caused confusion amongst the parties using the strategies and those subject to regulatory requirements. The Regional Pest Management Strategy – Biodiversity Pests (2003) was reviewed with the explicit purpose of amalgamation with the RPMS 2005-2015. There were a number of supporting submissions and no opposing submissions. No evidence has been forthcoming to reverse the situation.</p>
<p>The RPMS is acknowledged but it is seen as a subset of the Regional Biodiversity Strategy.</p>	<p>The strategies are separate documents prepared under the Biosecurity Act and the Resource Management Act respectively. As a result, there is no hierarchical relationship that deems one a subset of the other. They do nonetheless complement each other.</p>
<p>Environment Canterbury to reduce the costs of consents associated with the use of control tools.</p>	<p>This request is beyond the scope of the BS Act because it is a matter for the RMA. Land occupiers are free to use what ever control tool best suits their need. Environment Canterbury is currently seeking a regional resource consent to cover 1080 and pindone applications for rabbit and wallaby control. This will help to minimise the overall consent cost.</p>
<p>Give consideration to make the farming of goats a controlled activity.</p>	<p>This request falls under is a Resource Management Act and is a land use matter for which District Councils are responsible.</p>
<p>One approach to the carbon storage in exotic trees is to have a long term replacement programme so that extensive stands of conifers are progressively replaced, by interplanting or underplanting thinned forests with mountain totara, celery pine, beech and in the west, cedar. Perhaps 5% per year could be replaced in this way.</p>	<p>This suggestion is beyond the scope of the review.</p>

Other matters cont.

Requests	Response
<p>There are a number of plant species that need a higher risk status and should be prevented from further sale or spread and should be progressively eliminated or replaced by more suitable species – sycamore, rowan, Douglas fir, birch, cotoneaster, etc.</p>	<p>Higher risk status, in the first instance can involve an organism being declared an 'Unwanted Organism'. This would prevent its sale, propagation or distribution. In the second instance, the organism could be included in a national pest management strategy. However, both approaches are managed by Government through Biosecurity New Zealand (BNZ) under the requirements of the Biosecurity Act. Should BNZ choose not to manage an organism, a regional pest management strategy is needed to bring about intervention. Like the national approach, a regional strategy must conform to the BS Act requirements. A pest under a strategy is automatically banned from sale, propagation or distribution.</p> <p>The review is considering a number of changes that may lead to an increase in the species included in the RPMS.</p>
<p>Clarify how a pest becomes part of a RPMS</p>	<p>Chapter 3 of the RPMS (pages 9-14) sets out explicitly the way an organism becomes a pest under a regional pest management strategy.</p>
<p>A full review rather than a maintenance check is required.</p>	<p>It would require some irreversible failure to undertake a full review and there is no evidence currently available to suggest that. The ten-year duration is an efficient and cost effective time planning period to fully assess whether the RPMS is achieving its stated purpose.</p>
<p>Objectives, policies and rules should work in conjunction with policies and procedures of local territorial authorities in Canterbury.</p>	<p>While every endeavour should be taken to action this request, the legislative basis from which they are derived differ e.g. Biosecurity Act versus Resource Management Act versus Reserves Act etc.</p>
<p>Recommendation</p>	<p><i>No action be taken</i></p>

3.3.4 Support for the CRPMS

Request	Response
Support the present PMLC structure and the operation of the CRPMS.	The support is noted.
Maintain current level of community input.	The support is noted.
Supports existing total control progressive control and monitoring programmes.	The support is noted.
Supports Community Initiated Programmes, including possum control on Banks Peninsula.	The support is noted.
Supports the present operation of the CRPMS although the associated costs can still be high.	The support is noted.
Supports the current pest programmes, especially the wilding conifer programmes.	The support is noted.
Favour status quo for roadside responsibility.	The support is noted.
Supports the inspections of nurseries and other plant- selling outlets.	The support is noted.
Supports the regulatory regimes.	The support is noted.
Supports current rabbit programme.	The support is noted.
Supports inclusion of Chilean Needle Grass.	The support is noted.
Supports research being carried out on Nassella tussock to enable more effective control.	The support is noted.
Recommendation	<i>Note the support for not making any change to the RPMS</i>

3.3.5 Additions to the Strategy

(i) Additional species

Requests	Response
<p>Include the following unwanted organisms:</p> <p>African club moss (<i>Selaginella kraussiana</i>), Asiatic knotweed (<i>Reynoutria japonica</i>) Bomarea (<i>Bomarea caldasii</i>), Chilean flame creeper (<i>Tropaeolum speciosum</i>), Chilean rhubarb (<i>Gunnera tinctoria</i>), Climbing asparagus (<i>Asparagus scandens</i>), False tamarisk (<i>Myricaria germanica</i>), Giant hogweed <i>Heracleum mantegazzianum</i>, Giant knotweed (<i>Reynoutria sachalinensis</i>),</p> <p>Green goddess (<i>Zantedeschia</i> sp), Grey willow (<i>Salix cinerea</i>). Horsetail (<i>Equisetum hyemale</i>), Madeira vine (<i>Anredera cordifolia</i>), Moth plant (<i>Araujia sericifera</i>), Purple loosestrife (<i>Lythrum salicaria</i>), Royal fern <i>Osmunda regalis</i>, Smilax (<i>Asparagus asparagoides</i>) Yellow flag iris (<i>Iris pseudacorus</i>), Yellow waterlily (<i>Nuphar lutea</i>),</p>	<p><i>Inclusion undertaken via s88A minor changes.</i></p>
<p>Add the following to the RPMS for HVEA: Elm, rats, mice, <i>Polypodium vulgare</i> (common polypody), <i>Cotoneaster simonsii</i>, <i>Berberis glaucarpa</i> and spindleberry</p>	<p><i>Inclusion undertaken via s88A minor changes with the exception of mice.</i></p>
<p>Include: Boxthorn, Pigs ear (<i>Cotelydon orbiculatus</i>), Vipers bugloss, Russell lupin, Townsville stillo, <i>Pinus radiata</i> for Banks Peninsula and douglas fir (arising from the commercial plantings in the foothills).</p>	<p><i>Inclusion undertaken via s88A minor changes with the exception of Townsville stilo and P radiata.</i></p>

(ii) Principal Measures

Requests	Response
<p>Provide a definition of targeted areas to clarify their distinction from HVEA (Table 3.6).</p> <p>Clarify whether control of ash, holly, currant and sycamore is only in HVEA's.</p> <p>All organisms declared pests should also be defined as pests that are able to be controlled in biodiversity programmes.</p>	<p><i>Addressed via s88A minor changes.</i></p>

(iii) Other matters

Requests	Response
<p>Amend the following: p86, table 9.2, restricted plants, under this strategy: some of these plants are now declared unwanted organisms;</p> <p>Page 115, Appendix 2, update the National Pest Plant accord with the new species.</p>	<p><i>Addressed via s88A minor changes.</i></p>

**Appendix 3.4: Proposed Regional Pest Management Strategy – Chilean
needle grass**

Proposed Regional Pest Management Strategy (Chilean needle grass)

Prepared under the Biosecurity Act
1993

30 June 2010

I hereby certify that this is a correct copy of the Proposed Regional Pest Management Strategy 2010 of the Canterbury Regional Council.

This document has been prepared by the Canterbury Regional Council in accordance with the requirements of the Biosecurity Act 1993.

This Strategy was adopted at a meeting of the Canterbury Regional Council on 24 June 2010.

**Dame Margaret Bazley
CHAIRPERSON
CANTERBURY REGIONAL COUNCIL
2010**

Contents

PART I	INTRODUCTION AND BACKGROUND.....	61
1	Introduction	61
1.1	Title	61
1.2	Proposer.....	61
1.3	Purpose.....	61
1.4	Coverage.....	61
1.5	Duration.....	61
1.6	Structure.....	62
2	Planning framework	63
2.1	Legislative background	63
2.2	Prerequisites for proposal	64
2.3	Consultation	64
2.4	Relationship with other legislation and strategies.....	65
PART II	PEST MANAGEMENT PROGRAMMES.....	67
3	Strategy Pests	67
3.1	Organisms to which the Strategy applies	67
3.2	The management agency	67
4	Strategy overview	68
4.1	Reasons for the Strategy	68
4.2	Strategy outline	70
5	Progressive Control Programme	71
5.1	Introduction	71
6	Effects and Benefit/Cost Analysis	74
6.1	Introduction	74
6.2	Effects on Māori	74
6.3	Effects on the environment	74
6.4	Effects on the marketing overseas of New Zealand products	75
6.5	An analysis of the benefits and costs of the Strategy.....	75
PART III	PROCESSES.....	77
7	Funding	77
7.1	Introduction	77
7.2	Beneficiaries and exacerbators.....	77
7.3	Cost allocation and funding rationale.....	78
7.4	Pest Management Rates – Description	81
7.5	The anticipated costs of implementing the Strategy	82
8	Powers conferred	84
9	Regulatory management	85
9.1	Policy for enforcement	85
9.2	Regulatory procedures.....	85
9.3	Exemption power	86
10	Monitoring and Review	88
10.1	Measuring the extent to which the objectives are being achieved.	88
10.2	Monitoring management agency performance	88

5 Year Review Results

10.3 Review of the Strategy 88
11 **Coordination with other Pest Management Strategies** **89**
12 **Compensation and disposal of receipts** **89**
Appendix 1 **Glossary of Terms** **90**
Appendix 2 **Map 1: Chilean Needle Grass** **94**
Appendix 3 **Pest Rating Districts** **95**

Table and Figures

Table 3.1 **Containment Pest** 67
Table 6.1: **Section 72 analysis** 75
Table 7.1: **Beneficiaries and exacerbators of the Strategy** 78
Table 7.2: **Funding formulae under this Strategy** 80
Table 7.3: **Economic analysis of benefits accruing from activities** 80
Table 7.4: **Anticipated annual costs and revenue** 83
Table 8.1: **Powers to be used from Part 6 of the Act** 84
Table 10.1: **Monitoring objectives** 88

Part I Introduction and Background

1 Introduction

1.1 Title

This document is known as the Proposed Regional Pest Management Strategy (2010) for the Canterbury Region. Throughout the document it will be referred to as the Strategy or PRPMS.

1.2 Proposer

The proposer of the Strategy is the Canterbury Regional Council (Environment Canterbury).

1.3 Purpose

The purpose of the Strategy is to provide a framework for efficient and effective management or eradication of specified plants in the Canterbury Region. Once operative, the Strategy will empower Environment Canterbury to exercise the relevant advisory, service delivery, regulatory and funding provisions available under the Biosecurity Act 1993 (the Act). During the duration of the Strategy, (which is the period for which the Strategy will remain in force), its implementation will enable Environment Canterbury and the community to address the threats posed by the plant in accordance with the specific objective identified in Part II of the Strategy.

It is also intended that the PRPMS will be integrated into the Canterbury Regional Pest Management Strategy (2005-2015) once it is capable of being made operative.

1.4 Coverage

The Strategy has effect within the administrative boundaries of the Canterbury Region as defined by the Local Government (Canterbury Region) Reorganisation Order 1989 and the Local Government Amendment Act 1992.

1.5 Duration

The Strategy will take effect on the date that it is made operative in accordance with section 79F of the Act and will remain in force until 30 June 2015. The Strategy may cease at an earlier date if Environment Canterbury declares by public notice that it has achieved its purpose or, following a review, the Strategy is revoked.

Environment Canterbury may review the Strategy if it believes it is failing to achieve its purpose or if there is a significant change in circumstances. However, where the Strategy has been in force for five years or more and it is more than five years since a review of the Strategy, then Environment Canterbury must proceed to review the Strategy. Any review may result in the amendment or revocation of the Strategy, no change to the Strategy, or to an extension to its duration.

1.6 Structure

The Proposed Regional Pest Management Strategy is in three parts:

Part I Introduction and Background

- Chapter 1 provides an introduction to the Strategy. It contains the structure, the purpose, the area covered by the Strategy and its duration.
- Chapter 2 sets out the statutory basis of the Strategy and the required prerequisites for its proposal. It describes consultation undertaken and the relationship with other legislation and strategies.

Part II Pest Management Programmes

- Chapter 3 defines organisms to be included. It describes the functions and responsibilities of Environment Canterbury as the management agency.
- Chapter 4 is an overview of the Strategy. It sets out the reasons for the Strategy; parties affected; and contain an outline of the Strategy.
- Chapter 5 covers the progressive control programme. It describes the location and distribution of the organism; adverse effects; identifies objectives and the principal measures to be taken to achieve those objectives; and the reasons as to why any other reasonable alternative measures are not considered.

Part III Processes

- Chapter 6 provides for the funding of the Strategy. It states the funding requirements of the Act; identifies beneficiaries and exacerbators; and allocates costs. Details of funding levels are specified.
- Chapter 7 sets out the powers from the Act incorporated into the Strategy.
- Chapter 8 describes the procedure that is followed in the event of land occupiers or other persons not complying with the strategy rules of the Strategy. It details policies for enforcement and consequential regulatory procedures.
- Chapter 9 sets out the requirements for monitoring the Strategy and for the performance of the Management Agency. Review procedures are specified.
- Chapter 10 provides for co-ordination with other pest management strategies.
- Chapter 11 contains statements on compensation and disposal of receipts.
- Appendix 1 contains the glossary of terms.
- Appendix 2 details the maps for defining specified control zones for Chilean needle grass.
- Appendix 3 describes the pest districts.

2 Planning framework

2.1 Legislative background

The Biosecurity Act 1993 is the statute under which a regional council can address pest management issues in its region. It is an “...Act to restate and reform the law relating to the exclusion, eradication, and effective management of pests and unwanted organisms”. Unlike previous pest management legislation, the Act is enabling rather than prescriptive. This means that there is no legal obligation for a regional council to take on the role of managing a pest or other organism to be controlled unless it chooses to do so.

A number of amendments to the Act have occurred since 1993. Of particular importance is the Biosecurity Amendment Act 1997. This provides for, among other things, the inclusion of strategy rules and making it an offence against the Act should any person breach such rules. Decisions on submissions are also subject to reference to the Environment Court.

One of the primary purposes of the Act “...is to provide for the effective management or eradication of pests” (Section 54). Harmful organisms become pests by becoming the focus of a pest management strategy. However, certain requirements of the Act must be satisfied in the preparation of a pest management strategy. These include the relevant parts of:

- (a) Part 5 – Sections 56 to 99 that specify the content of a strategy, the way in which it is to be prepared and funding aspects; and
- (b) Part 6 – Sections 101 to 142 that specify administrative provisions.

The Act requires that for each organism, or class of organism, a proposed strategy shall state an objective and the principal measures for achieving that objective. It also requires a strategy to specify the extent to which any persons are likely to benefit from the Strategy and the extent (if any) to which any persons by their activities or inaction contribute to the creation, continuance or exacerbation of the problems proposed to be resolved by a strategy. Regional councils must ensure that the funding mechanisms encompass the principles of equity and efficiency.

Under the Act, a regional council is the administering agency responsible for any regional pest management strategy in its region. Regional councils:

- (a) may be responsible for proposing and preparing a regional pest management strategy;
- (b) may be the pest management agency appointed to implement any strategy; and
- (c) must evaluate any proposal from any other persons for a regional pest management strategy.

2.2 Prerequisites for proposal

This Strategy has been prepared because Environment Canterbury is of the opinion that the organisms under consideration are capable of causing serious adverse and unintended effects in relation to the Canterbury Region on one or more of the following:

- (a) economic wellbeing; or
- (b) the viability of threatened species of organisms, the survival and distribution of indigenous plants or animals, or the sustainability of natural and developed ecosystems, ecological processes, and biological diversity; or
- (c) soil resources or water quality; or
- (d) human health or enjoyment of the recreational value of the natural environment; or
- (e) the relationship of Māori and their culture and traditions with their ancestral lands, waters, sites, wāhi tapu, and taonga.

Organisms are covered by the Strategy because they are capable of having significant effects on economic well-being, spillover effects on neighbouring properties or are capable of having significant adverse effects on conservation or other values that are not necessarily shared by land occupiers.

Environment Canterbury is of the opinion that:

- (i) the benefits of having a regional pest management strategy in relation to the organisms concerned outweigh the costs, after taking account of the likely consequences of inaction or alternative courses of action; and
- (ii) the net benefits of regional intervention exceed the net benefits of an individual's intervention.

Three reports have been commissioned to support the above opinion. They are:

- *Meeting the Requirements of the Biosecurity Act 1993*, Harris Consulting March 2003;
- *Funding Analysis Regional Pest Management Options*, Harris Consulting February 2003;
- *Assessment of the potential habitat extent in Canterbury of Chilean needle grass and its adverse effects*, G Bourdot, Agresearch Ltd, Lincoln.

2.3 Consultation

Environment Canterbury has consulted with a wide range of groups during 2009, including:

- (a) Pest Liaison Committees of Environment Canterbury;
- (b) Federated Farmers;
- (c) The Department of Conservation;
- (d) Land Information New Zealand;
- (e) Territorial local authorities in the Canterbury Region;
- (f) Royal Forest and Bird Protection Society of New Zealand;
- (g) Tangata Whenua of the Canterbury Region; and
- (h) Other individual parties.

A discussion paper, titled *Canterbury Regional Pest Management (2005-2015) 5-year Review*, was made available for public comment over the consultation period. Comments received from the key groups and the public were evaluated and have aided the development of the objectives and preferred measures to achieve the objectives contained in the Strategy

2.4 Relationship with other legislation and strategies

2.4.1 Resource Management Act 1991

Activities undertaken to implement the Strategy that may have an adverse effect on the environment may come under the ambit of the Resource Management Act. For example, the application of contaminants that may enter water requires a resource consent to discharge, unless permitted by a rule in a regional plan. It is not anticipated that any activities under the Proposed Strategy will require consent. However, consultation processes associated with consent applications and the obligations of Environment Canterbury as a consent authority, ensure consideration of Tangata Whenua concerns and those of other parties is taken into account.

Environment Canterbury's Regional Policy Statement (RPS), Chapter 7 Policy 5, recognises the effects that pests can have on soil conservation and the spillover effects of pests moving between properties. Chapter 8 of the RPS recognises the effects that pests can have on conservation values. The RPS specifies a range of methods for addressing these problems, one of which is the preparation of regional pest management strategies under the Biosecurity Act to enable control to occur. The RPS also contains policies that help ensure that any adverse effects arising from control operations are managed appropriately.

2.4.2 Other strategies prepared under the Biosecurity Act 1993

A regional pest management strategy must not be inconsistent with:

- (i) any national or regional pest management strategy (whether relating to the same region or any other region or regions) concerning the same organism; or
- (ii) any regulation;

Chilean needle grass is present in the Marlborough region and is categorised as a pest under the Regional Pest Management Strategy for Marlborough 2007. The management objective is to contain the incidence to a specified part of their region and land occupiers are generally required to destroy all plants prior to seeding. Land occupiers are also required to notify Marlborough District Council of any infestations and to refrain from knowingly causing the spread of the plant. Chilean Needle grass is not known to exist in the West Coast or Otago regions and is not included in their regional pest management strategies.

The objectives and measures to manage Chilean needle grass under the PRPMS is considered complimentary with Marlborough's RPMS and likely to help prevent infestations spreading to the West Coast or Otago regions.

Part II Pest Management Programmes

3 Strategy Pests

The Act enables pest management strategies to be developed for the management of animals and plants that are considered harmful or where small-scale management of 'unwanted organisms' is not appropriate. The Act specifies the contents of a strategy and lists other matters that are to be considered in developing a strategy. Chapter 3 describes the organisms considered for inclusion and the management agency.

3.1 Organisms to which the Strategy applies

The plant listed in Tables 3.1 is classified as a pest and is assigned a New Zealand-wide control designation embraced by regional councils. Its management control programme is also listed.

Table 3.1 Containment Pest

Pest Category	Common Name	Scientific Name	Control Programme
Containment Pest	Chilean Needle Grass*	<i>Nassella neesiana</i> .	Progressive Control.

* Declared an unwanted organism

3.2 The management agency

It is proposed that Environment Canterbury be responsible for implementing the Strategy. It is considered that Environment Canterbury meets the requirements of Section 84(3) of the Act in that:

- (a) it is accountable to the Strategy funders, including Crown agencies, through the requirements of the Local Government Act 2002;
- (b) the acceptability of Environment Canterbury as the Management Agency has been supported through the implementation of the Canterbury Regional Pest Management Strategy (2001-2015) by the funders and those person(s) subject to management provisions of the Strategy; and
- (c) Environment Canterbury has the capacity, competency and expertise to carry out the implementation of the Strategy.

Environment Canterbury will:

- (i) within 3 months of the Strategy being made and becoming operative, prepare an operational plan for Strategy implementation; and
- (ii) review the operational plan annually, and, if it thinks fit, amend it; and
- (iii) prepare a report on the operational plan and its implementation not later than 5 months after the end of each financial year; and
- (iv) make copies of the operational plan and report on its implementation available to the public .

The principal measures by which Environment Canterbury will implement the Strategy are identified in relation to individual animal and plant pests and other organisms to be controlled in chapter 5.. The detailed manner in which Environment Canterbury will undertake its management responsibilities is set out in Part III (Processes) of the Strategy.

4 Strategy overview

4.1 Reasons for the Strategy

4.1.1 Strategy pests and other organisms to be controlled and their problems, location and distribution

The plant covered by the Strategy is capable of causing serious adverse and unintended effects. In particular, the effects impact upon: the economic well-being of producers; the survival and distribution of indigenous plants; the sustainability of natural and developed ecosystems; ecological processes; biological diversity (commonly known as biodiversity); use and enjoyment of the recreational value of the natural environment; and the relationship of Māori and their culture and traditions with their ancestral lands, water, sites, wāhi tapu and taonga. It also has the potential to cause serious adverse and unintended effects beyond the boundaries of properties from which it originates (spillover effects).

The location and distribution of the plant to be controlled and a description of the problems to be resolved are detailed on an individual basis in Chapters 5.

4.1.2 Affected parties and the necessity to act

Under the Strategy, Environment Canterbury will carry out or facilitate pest control because it has the expertise to do so. However, in some particular instances landowners will be responsible for carrying out the specified activities that aid control, for example washing down machinery and managing the movement of people within their properties.

A regional pest management strategy is able to specify the party responsible for pest management on roadsides. The options include:

- (a) The road controlling authority (territorial authorities and, where there is agreement, the New Zealand Transport Authority);
- (b) The adjacent land occupier;
- (c) No obligation on any party (the Strategy remains silent); or
- (d) A combination of any of the above.

There are a number of matters that are peculiar to road reserves containing formed roads. As parcels of land, their primary purpose is to facilitate vehicle movement. However, the carriageway does not usually extend across the whole of the road reserve. There are also power, telecommunication and drainage facilities that utilise the road reserve. Road reserves are seen to provide a shop window in terms of the general appearance of an area.

The management of pests and plant pests in particular, does not always equate to the needs of road management. The level of the control of a plant to prevent it from spreading may not be the same as that required for traffic safety or landscape purposes. The activities of roading authorities and other utility operators may be contributing to the establishment or spread of plants. On the other hand, if a roading authority is carrying out pest control it is reasonable that protection is provided to it from pests spilling over from adjoining properties.

Equally, adjoining land occupiers may not see that it is their responsibility to deal with pest problems arising from roading and other utility operations.

The most effective and efficient control of pests occurs when the landowner takes responsibility for undertaking the work on their property. This principle also applies to the owners of road reserves. However, the historic situations surrounding pest control within road reserves precludes an immediate move to have all territorial authorities and the New Zealand Transport Authority responsible for specified pest control on road reserves in the Canterbury region. Instead, the following schedule sets out the arrangement for the responsibility of controlling plant pests on road reserves that have formed carriageways.

Territorial Authority Area	Adjoining Property Owner Responsibility	Roading Authority Responsibility
Hurunui District Council	No responsibility	Full responsibility
Christchurch City Council (City ward)	No responsibility	Full responsibility
Waitaki District Council	No responsibility	Full responsibility
Timaru District Council	No responsibility	Full responsibility
Waimakariri District Council	Full responsibility	No responsibility
Kaikoura District Council	Full responsibility	No responsibility
Mackenzie District Council	Full responsibility	No responsibility
Christchurch City Council (Banks Peninsula ward)	Full responsibility	No responsibility
Selwyn District Council	Full responsibility	No responsibility
Waimate District Council	Full responsibility	No responsibility
Ashburton District Council	Full responsibility	No responsibility
State Highways	No responsibility	Full responsibility

4.1.3 Crown Land

A number of agencies are significant occupiers of Crown land in the Canterbury Region. They are New Zealand Transport Authority, Department of Conservation, Land Information New Zealand, Defence Force New Zealand, and New Zealand Railways Corporation (owner) and New Zealand Rail Corporation. Under Section 87 of the Act, the Strategy can only impose obligations and costs on the Crown by agreement. The Strategy is prepared on the basis that it applies to the Crown by agreement and that this will be confirmed by Order in Council. However, an agreement with Crown agencies is finalised it would not be appropriate to budget for a Crown contribution in lieu of rates.

Occupiers of land generally benefit from controlling animals and plants that adversely affect productivity. However, there are also situations where wider community benefits accrue from control of certain organisms through avoiding the wide range of adverse effects described in Chapter 10. Persons by their activities or inaction may also contribute to the creation, continuance or exacerbation of animal and plant problems affecting neighbouring land occupiers.

4.2 Strategy outline

4.2.1 General outline

Chapter 1 outlines the structure of the Strategy and describes the contents of each chapter. Section 76 of the Act specifies the required content of a proposed regional pest management strategy. This Strategy seeks to contain and increase the extent of land clear of Chilean needle grass.

It will generally impose obligations upon occupiers of land that will internalise the cost of pest control within production or management responsibilities associated with land ownership. It will also specify a funding regime based upon the identification of those who benefit from pest management or those who contribute to the creation of pest problems or a combination of both.

Chapter 5 of this Strategy describe the problems caused by Chilean needle grass and the objective of Environment Canterbury in dealing with it. The measures employed by Environment Canterbury are specified and any alternative measures are outlined.

4.2.2 Funding overview

The rating base for the Strategy is a combination of:

- (a) the capital value of rateable properties in the Canterbury Region; and
- (b) the land value of rural rateable properties;

This rating base reflects the benefits derived by the community as a whole and landowners who are directly affected by this Strategy in proportion to the benefits received. Capital value rating has traditionally been shown to be an efficient and effective way of funding projects with wider community benefit. Rural land value generally reflects the land assets at risk from pests. Additional funding sources will be pursued wherever appropriate.

5 Progressive Control Programme

5.1 Introduction

This section describes the management programme for the specified pests. The programme includes a description of the pest and the likely adverse effects they cause. An objective is stated and the principal measures to be taken to achieve the objective are outlined, along with any alternative measures that could be reasonably undertaken.

For the purpose of this Strategy, a progressive control programme applies to:

Chilean needle grass (*Nassella neesiana*)

Progressive control is the treatment of a particular pest by recognised methods at intervals necessary to ensure systematic progress towards eradication. While eradication is not possible during the duration of this Strategy, continued reductions in the source of plants that contribute to re-seeding will occur. Thus a progressive trend towards eradication will result.

5.1.1 Description

Chilean needle grass was first recorded in New Zealand in the 1930's and currently there are two extensive infestation areas in the country - in Hawkes Bay and in Marlborough. However, a further infestation was discovered on a property in North Canterbury in November 2008. This infestation is considered to have originated from Marlborough.

Chilean needle grass is a tufted perennial plant growing to one metre in the absence of grazing. Its leaves are bright green and harsh to the touch. Identification in grazed pasture is difficult prior to flower emergence in October.

The flowers have a purple tinge and ripen into hard, sharp seeds with long twisting tails. These aid the seed in the penetration of the animal's skin and the soil. It also produces viable seeds in its mid and basal stem regions (cleistogenes).



5.1.2 Adverse effects

Plants will grow into dense stands and exclude other indigenous and exotic grassland species. It reduces the livestock carrying capacity of pastures due to the production of masses of unpalatable flower stalks. The sharp penetrating seeds injure livestock and result in the downgrading of wool, skins and hides. The seed can move through an animal's skin into body muscles, causing abscesses and the downgrading of carcasses. Lambs are particularly vulnerable to seeds penetrating their eyes causing blindness.

The point of the seed is extremely sharp and hairy so catches onto passing animals, vehicles, and humans. As a result it can be transported considerable distances to new sites.

5.1.3 Objective

Over the duration of the Strategy, reduce the density of Chilean needle grass by 10% within the containment zone (Map 1 Appendix 2).

5.1.4 Principal measures to achieve the objective

The following principal measures will be undertaken:

- (a) Environment Canterbury will inspect land to determine the presence and density of Chilean needle grass.
- (b) Environment Canterbury will carry out control programmes in partnership with landowners to prevent Chilean needle grass from seeding.
- (c) Environment Canterbury will provide advice and education to the community to increase awareness of Chilean needle grass. Methods may include:
 - (i) responding to public enquiries;
 - (ii) discussions with runanga, participating in discussion groups, field days, Agricultural and Pastoral Association shows and other appropriate public events;
 - (iii) producing and distributing pamphlets and using media opportunities to convey relevant information; and
 - (iv) advising landowners on technical matters in association with inspections, ensuring new landowners are informed about Chilean needle grass and their responsibilities, preparing programmes to assist them to address their pest problem and encouraging group activities that will be of assistance in meeting the desired outcomes of this Strategy.
- (d) Environment Canterbury will monitor land with Chilean needle grass to determine whether the objective is being met.
- (e) Environment Canterbury will support continuing research into the ecology of Chilean needle grass and the development and application of new control tools including biological control. This may also include co-ordinating the release of biological control agents.
- (f) Environment Canterbury will administer rules where it is necessary to achieve the objective.

5.1.5 Alternative measures to achieve the objective

An alternative measure to achieve the objective would be for land occupiers to be responsible for undertaking the control programme instead of Environment Canterbury undertaking or facilitating control. However, Chilean needle grass is extremely difficult to identify and control requirements are prolonged and intensive. The extent of present infestations is limited and a collaborative approach through funding from a wider group of beneficiaries is favoured. Therefore, the above alternative is rejected.

There are no alternative measures that provide for satisfactory inspection, monitoring, education and advice outcomes. It is also cost effective to undertake control at the same time as inspection and monitoring is carried out.

5.1.6 Strategy rule for Chilean needle grass

- (a) Land occupiers and other persons shall not sell, propagate or distribute any Chilean needle grass plant or part thereof.

A breach of this rule creates an offence under Section 154(r) of the Biosecurity Act 1993 and may initiate the regulatory procedures set out in Chapter 12.

In accordance with section 80D(5) of the Biosecurity Act 1993, exemption to rule 5.1.5 may only be granted for the purpose of scientific research.

Explanation

The purpose of rule 5.1.6 is to prevent areas of Chilean needle grass infesting land through human-assisted activities. Examples of such activities include transporting seed outside of the containment area, selling plants commercially or at fairs, the multiplication of plants for personal or commercial use or any distribution of the plants.

6 Effects and Benefit/Cost Analysis

6.1 Introduction

The Act requires a proposed regional pest management strategy to specify:

- (a) the actual or potential effects, beneficial or detrimental, that the implementation of the strategy might (in Environment Canterbury's opinion) have on the relationship of Māori and their culture and traditions with their ancestral lands, waters, sites, wāhi tapu, and taonga; and
- (b) the actual or potential effects, beneficial or detrimental, that the implementation of the strategy might (in Environment Canterbury's opinion) have on:
 - (i) the environment; and
 - (ii) the marketing overseas of New Zealand products.

6.2 Effects on Māori

The Strategy is expected to have overall beneficial effects in terms of Māori culture and traditions. Specifically this Strategy will prevent or reduce plant pest infestations and, consequentially, degradation to wāhi tapu and taonga sites from future invasions. Tangata Whenua have general concerns about the application of toxins and the possibility that contamination of soils or other natural and physical resources might occur. Similarly, mahinga kai, e.g., tuna, inanga, wai koura and water cress, in or adjacent to waterways, may be at risk from control programmes where toxins are used. These concerns will be addressed through:

- (i) the registration process for all toxins;
- (ii) procedures, manuals and guidelines that will, amongst other matters, provide for the use of toxins, weapons and other equipment in an environmentally sensitive manner as far as practicable; and
- (iii) by complying with the requirements of the Resource Management Act 1991.

6.3 Effects on the environment

The successful implementation of this Strategy will enhance conservation, production, recreation and aesthetic values in the Region by avoiding or minimising the adverse and unintended effects that Chilean needle grass may have on the environment. Detrimental effects are principally associated with the any inappropriate use of herbicides where these adversely affect non-target species. Environment Canterbury will use its best endeavours to minimise these effects, for example, by using sound operational procedures, skilled operators and requiring adherence to technical standards. On balance, Environment Canterbury considers the detrimental effects on non-target species to be minimal.

Of the technical methods proposed to control Chilean needle grass, the safe and efficient use of herbicides is of particular interest to the public. Addressing the concerns will occur through implementing the provisions of:

- (a) the Health and Safety in Employment Act 1992;
- (b) the Resource Management Act 1991;
- (c) operational plans;
- (d) procedures, manuals and guidelines;
- (e) the Hazardous Substances and New Organisms Act 1996; and

(f) the Agricultural Compounds and Veterinary Medicines Act 1997.

6.4 Effects on the marketing overseas of New Zealand products

The control of Chilean needle grass will be beneficial to the maintenance of future agricultural production arising from grazing and arable land uses. Consequently, this Strategy is expected to have some beneficial effects for the marketing overseas of New Zealand products through the generation of greater world market share of the trade in such products. The control of the pest could also further enhance New Zealand’s reputation as a “clean green” nation.

In the future, however, there could be increasing concerns from international markets and consumers regarding the use of chemical and biological control. These concerns would largely involve residues and product purity.

6.5 An analysis of the benefits and costs of the Strategy

The Act requires a proposed regional pest management strategy to contain an analysis of the benefits and costs of the strategy (including the reasons why the strategy is more appropriate than relying on the voluntary actions of persons) in relation to each organism to which the strategy would apply.

An independent resource economist has undertaken an economic analysis of the Strategy. Full details of the analysis can be found in the report ‘*Meeting the Requirements of the Biosecurity Act 1993: Economic Evaluation of the Regional Pest Management Strategy*’ prepared by Harris Consulting, June 2010. A copy of the report is available from the customer services section of Environment Canterbury. A summary of the findings is contained in Table 6.1.

Table 6.1: Section 72 analysis

Pest	Section 72(a)	Section 72(b)	Section 72(ba)	Section 72(c)
	<i>Do the benefits of the Strategy outweigh the costs?</i>	<i>Is there a net regional benefit (prevention of externalities at a reasonable cost)?</i>	<i>Do those who directly benefit or contribute to the problem pay?</i>	<i>Is the pest a serious threat in relation to the region?</i>
Chilean Needle Grass	Yes, under all the main scenarios of spread and infestation	Yes for region overall.	Yes	Yes, economic values – part (i)

Chilean needle grass description and effects

Chilean needle grass is an erect, tufted perennial grass, which can grow up to one metre tall in the absence of grazing. It can exclude grassland species and is unpalatable to stock during the flowering season (November to April). The seeds possess a sharp tip which can bore into the eyes and pelts of grazing animals. The seeds are moved predominantly by animals, by water, machinery, farm products and humans. Wind does not play a large role in seed movement.

Costs of the Strategy

It is estimated that the Strategy will cost \$45,000 per annum for inspections, control and education. This will reduce over time. In addition, the landowner on whose land the plant is present is contributing to the cost for control.

Benefits of the Strategy

Landowners that adjoin areas infested with Chilean needle grass will receive immediate protection from the spillover effects associated with the spread of this plant. The regional landowners owning community derives benefits associated with the protection of conservation values.

The implications of no Strategy

In the absence of the Strategy it is anticipated that Chilean needle grass would spread throughout an estimated 1.2 million hectares of the region. Modelling indicates that the absence of regional control will cost a Net Present Value of between \$0.2 and \$0.8 million, predominantly to the pastoral industry. Identification of, and access to, a needle grass specific herbicide with residual action would reduce the cost by about two thirds. Grassland biodiversity values would also be threatened.

Part III Processes

7 Funding

7.1 Introduction

The provisions of the Act in relation to funding are complex. To facilitate understanding of the requirements, they are set out in detail below.

The Act requires that the following matters be specified in a strategy in relation to any organism:

- (a) the extent to which any person or persons of any class, kind, or description are likely to benefit from the strategy;
- (b) the extent (if any) to which any persons or persons of any class, kind, or description by their activities or inaction contribute to the creation, continuance, or exacerbation of the problems proposed to be resolved by the strategy;
- (c) the rationale for the proposed allocation of costs;
- (d) whether any unusual administrative problems or costs are expected in recovering the costs allocated to any of the persons who are required to pay.

7.2 Beneficiaries and exacerbators

The extent to which any person benefits or is likely to benefit from a strategy depends on the organism to be controlled and the area for which expenditure is being incurred. Beneficiaries include land occupiers and the community as a whole. Land occupiers may benefit from increased productivity as a result of the effects of a strategy on their own property and from reduced risk of spillover effects from other properties. The community as a whole may obtain non-producer benefits from the implementation of a strategy.

Non-producer benefits include a reduction in the actual and potential effects of pests and other organisms to be controlled on one or more of the following:

- (a) the viability of rare or endangered species or organisms;
- (b) the survival and distribution of indigenous plants or animals;
- (c) the sustainability of natural and developed ecosystems, ecological processes and biological diversity;
- (d) soil resources or water quality;
- (e) human health or enjoyment of the recreational value of the natural environment;
- (f) the relationship of Maori and their culture and traditions with their ancestral lands, waters, sites, wahi tapu, and taonga;
- (g) New Zealand's international obligations, assurances and reputation; and
- (h) other aspects of the environment including amenity and landscape values.

Spillover effects result in costs or benefits to people other than the land occupier on whose property the pests are located. They include the effects of the spread of plant or animal pests onto neighbouring properties and environmental effects that have costs or benefits to the community as a whole. For example, the spread of rabbits or seeds of plants onto neighbouring properties or damage to indigenous ecology are spillover effects. The reduced risk of spillover occurs because the strategy brings about the control of pests, thereby reducing the risk to neighbouring properties and the risk of non-producer values being affected.

The non-spillover benefit (producer benefit) that producers receive by way of extra production and lower control costs, when they control pests on their property, occurs regardless of whether a Regional Pest Management Strategy is in place.

The extent to which persons contribute to the problems to be resolved by the Strategy depends on whether their inaction has the potential to result in spillover effects that cause significant harm to other persons or to the environment generally.

Table 7.1 provides a summary of the identified beneficiaries and exacerbators.

Table 7.1: Beneficiaries and exacerbators of the Strategy

Pest	Beneficiaries	Exacerbators
Chilean needle grass	<ul style="list-style-type: none"> • Rural landowners for the long-term protection of economic values. • Neighbouring properties for the prevention of spillover. • Regional community for the protection of grassland biodiversity values. 	<ul style="list-style-type: none"> • Landowners not controlling Chilean needle grass on their properties. • Persons who knowingly sell, propagate or distribute Chilean needle grass.

7.3 Cost allocation and funding rationale

In giving effect to this Strategy, both the Biosecurity Act 1993 and the Local Government (Rating) Act 2002 require that funding should be sought from:

- Those people who have an interest in the strategy;
- Those who benefit from the strategy;
- Those who contribute to the pest problem;

and in a way which reflects economic efficiency, equity, the ability to target those funding the Strategy and the costs of collecting the funding.

In general, efficiency is best achieved by targeting the costs to those closest to a particular set of works where those paying have the power to act in respect of those works. If a decision maker has to pay for the results of their action (or inaction), it may alter their behaviour to minimise any such resulting costs. This will lead to the least cost outcome for society as a whole. However, if the costs resulting from their actions are borne by another party, there is little incentive for any change in behaviour, and this may result in a higher cost for society as a whole. Efficiency includes close targeting of costs to benefits as well as to those contributing to the problem (exacerbators). Equity is difficult to establish, particularly where there is a public good component. In general there are no universally applicable guidelines.

Practicality will determine the extent to which different beneficiaries can be targeted. There is generally a point at which the transaction costs of recovering costs from a smaller group of beneficiaries will exceed the benefits of more closely targeting that group. Alternatively, the mechanisms available may not be able to target a particular group, for example particular land uses such as dairying, and a larger aggregate such as all rural land must be used.

The aim of the funding system should be to maximise the efficiency of resource decision making by participants. There are two ways in which this happens:

- (a) Charging beneficiaries ensures that the decisions on whether an activity is worthwhile are closely related to the benefits received. If the beneficiaries are charged for the activity, but do not perceive the level of benefit that has been ascribed to them, they will act to reduce the charge and therefore the level of the activity. Similarly where stakeholders demand more of an activity where they are required to pay, the council can be assured that the level of benefit from the activity exceeds the costs, and that the activity is being undertaken at an appropriate level.
- (b) Charging exacerbators ensures that where a management action causes problems for other parties, the costs of those problems are fully integrated into the decision on whether the management activity is worthwhile. Thus for pest management the land use decisions by landowners affects the level and type of pest problem. By charging land managers directly for these effects in a way that encourages them to take account of pest problems in their management, the most efficient resource allocation decisions are made. Ideally this leads to land managers seeking the most efficient means of achieving pest management objectives.

A key feature of exacerbator payments, however, is that it only achieves greater efficiency where the incentive exists for landowners to take account of the objective in their decision – rating does not achieve this because the landowner experiences the cost regardless of whether they change their management decision to take account of the objective. Direct charges, which reflect the level of contribution to the problem, are therefore preferred.

The funding rationale incorporates the principle that those who fund the Strategy should not pay for activities within the Strategy for which they receive no benefit or for which another party would normally consider is its role to fund. For instance, education is offered as part of the Strategy but environmental education is also offered by Environment Canterbury from regionally collected funds. It may therefore be inequitable to fund the environmental education component of the Strategy from a rate on rural land. The rationale therefore adopts an activity-based approach where funding shares are identified by Strategy activity. An activity-based approach allows the incremental benefit from specific activities, as opposed to pest management generally, to be assessed.

The Strategy outlines measures to achieve the objectives. The activities involved in each of the measures are as follows:

- (a) Inspections
Environment Canterbury will inspect properties to ascertain infestation levels of Chilean needle grass and to establish compliance with the rules of the Strategy. The frequency of inspections will depend on the population dynamics of the pests and the proneness of the land to infestations.
The activity may also include Environment Canterbury undertaking destruction of Chilean needle grass during inspection where it is cost effective to do so.
- (b) Advice and Education
Advice and education is undertaken to encourage the efficient and effective control of pests. Activities include responding to public enquiries about pests, producing and distributing pamphlets, participating in discussion groups, field days and appropriate public events.
- (c) Monitoring
Environment Canterbury will monitor pest population trends to determine the effectiveness of the objectives contained in the Strategy. The information gathered provides regional trends and is not used for property-specific activities.

(d) Investigations

Environment Canterbury will support continuing research into the development and application of existing and new control tools, including biological control. Co-ordinating the release of biological control agents may also be undertaken.

(e) Enforcement

Environment Canterbury will use enforcement measures where land occupiers or other persons do not comply with the rules in the Strategy.

For cost allocation purposes, Environment Canterbury has assigned funding formulae according to Table 7.2. The rationale for the funding formulae is to both encourage an efficient and effective response by individual property owners to the Strategy and to equitably allocate to beneficiaries the costs which are not directly affected by, or attributable to, the actions of individual property occupiers.

Table 7.2: Funding formulae under this Strategy

	Funding formulae	
	Rural land occupiers %	The regional community %
Main Activities		
Inspection	50	50
Monitoring	50	50
Education and Advice	50	50
Control	50	50
Other Activities		
Enforcement	User pays wherever possible	General rate where it is not possible
Investigations	50	50

Environment Canterbury commissioned an economic analysis¹ of the levels of benefit accruing to rural and regional rate paying beneficiaries and exacerbators from the activities undertaken to achieve the objectives of the Strategy. The results of that analysis are set out in Table 7.3 below.

Table 7.3: Economic analysis of benefits accruing from activities

	Benefit accruing to rural land occupiers %	Benefit accruing to the regional community %
Chilean needle grass		
Activities (Inspection and Control)	0-100	25-50

The overall level of inspection, monitoring, advice and education is determined by Environment Canterbury as part of the Strategy independently of the pest problem on any particular property. On the other hand, control will vary directly with both the pest problem and the landowner's response to it on a particular property. It is important that landowners

¹ Meeting the requirements of the Biosecurity Act 1993, Harris Consulting.

directly bear the full consequences of their actions. This is likely to promote the best or optimal response from the point of view of the community as a whole.

There are no unusual administrative problems or costs expected in recovering costs from any of the persons who are required to pay. It is recognised that there may be a need to recover enforcement costs for some exacerbators through the courts. In some cases, for example where not all exacerbators can be identified, full cost recovery will not be realised and a rating contribution will be required.

The funding of costs allocated to rural land occupiers will be through targeted rates applied to occupiers of rateable rural land. Where there is an agreed rating district for possum control, costs are allocated to land occupiers via a targeted rate applying to all rateable land. The rating base is land value, which reflects the potential effects of pests on land assets. Land area is an alternative rating base but it is less equitable for larger properties in the Region because much of the land is not affected by spillover of pests from neighbouring properties. However, in the case of the service delivery for rabbits in rating pool areas, land area is appropriate given the differential assessment work previously undertaken.

7.4 Pest Management Rates – Description

Rateable land will be land that is included in a valuation roll prepared for Environment Canterbury by Valuation New Zealand.

Pest management rates are to be set and levied to reflect the required contributions from the beneficiaries of this Strategy. The pest management rates are to be consolidated from the following components:

- (a) **Targeted Pest Management Rate – Pest Rating Districts**
A rate levied on occupiers of rateable rural land in specified pest rating districts. The rate is levied on the basis of land value.
This rate funds the rural land occupiers' share of pest management costs assigned on a pest rating district basis.

- (b) **Targeted Pest Management Rate – Uniform**
A rate levied on occupiers of rateable rural land in the Region. The rate is levied on the basis of land value.
This rate funds the rural land occupiers' share of pest management costs not assigned on a pest rating district basis.

- (c) **Pest Management Rate – General**
A rate levied on all ratepayers in the region on capital value. This rate funds the non-producer share of the costs of the strategy.

Pest rating districts are described in Appendix 3.

5 Year Review Results

Pest management rates are used in proportion to the funding formulae in the following manner:

Targeted pest management rate - pest district basis	Inspections, advice and education associated Chilean needle grass
Targeted pest management rate - uniform basis	Monitoring Chilean needle grass.
Pest management rate - general basis	Inspections, monitoring, advice, education and control for all pests in proportion to the funding formulae.
User Pays	Enforcement and control where requested by landowners.

7.5 The anticipated costs of implementing the Strategy

The anticipated costs of the Strategy reflect a best estimate of the level of expenditure required. However if the circumstances change and pest levels alter, the funding levels will need to be adjusted accordingly. The use of any alternative funds will be sought by Environment Canterbury and used as an alternative to rate funding, or as a value added component to rate funding in appropriate circumstances.

The expenditure and revenue estimates in the Strategy are those budgeted for 2003/2004 and are expressed in 2002/2003-dollar values. Table 11.5 sets out the funding revenue source and the anticipated annual costs for the pests and other organisms to be controlled included in the strategy. The anticipated annual costs set out in the table indicate the overall level of expenditure required in present value terms. Some cost escalation may be unavoidable but the annual planning process undertaken by Environment Canterbury should serve to constrain any significant increase in the scale of activity authorised under this strategy.

Table 7.4: Anticipated annual costs and revenue

Activity	Cost (\$)	Revenue by Source (\$)*					General	User Pays
		Targeted Pest Management Rate				Possums		
		Pest Rating Districts	Uniform	Differential				
Inspection	35,000	17,500				17,500		
Advice and Education	5,000	2,500				2,500		
Trend Monitoring	5,000		2,500			2,500		
Total	45,000	20,000	2,500			22,500		

*No allowance has been made for any contributions that the Crown may agree to which may result in a reduction in the Pest Management Rates.

8 Powers conferred

Environment Canterbury will use the statutory powers from Part 6 of the Act as shown in Table 12.1 together with any other powers from the Act and powers given to Environment Canterbury by Regulations made under Part 9 of the Act for the purposes of implementing the Strategy.

The Principal Officer (Chief Executive) of the Environment Canterbury may appoint authorised persons for the purpose of exercising functions, powers and duties under the Act. Set out in Table 12.1 are the Sections from Part 6 of the Act under which the Principal Officer will confer one or more powers upon authorised persons, and those Sections under which powers will be sought from other parties for authorised persons.

Table 8.1: Powers to be used from Part 6 of the Act

Administrative Power	Reference in the Biosecurity Act (1993)
The appointment of authorised and accredited persons	Section 103(3) & (7)
Delegation to authorised persons	Section 105
Power to require assistance	Section 106
Power of inspection	Section 109, 110 & 112
Power to record information	Section 113
General powers	Section 114, 114A
Use of dogs and devices	Section 115
Power to intercept baggage etc	Section 120
Power to examine organisms	Section 121
Power to give directions	Section 122
Power to act on default	Section 128
Liens	Section 129
Declaration of restricted area	Section 130
Declaration of controlled area	Section 131
Options for cost recovery	Section 135
Failure to pay	Section 136
Prosecution	Section 154

Environment Canterbury also has the power to enforce restrictions on the sale, propagation and distribution of pests in accordance with section 52 and section 53 of the Act. Authorised persons also have the power to request information from occupiers of land under Section 43 of the Act.

9 Regulatory management

This chapter describes the procedure that is followed in the event of land occupiers or other persons not complying with the strategy rules or other general duties under the Act in relation to declared pests. It details policies for enforcement and consequential regulatory procedures.

9.1 Policy for enforcement

In the event of a land occupier or other persons failing to comply with any strategy rule prescribed in Part II of the Strategy or with any provisions of the Biosecurity Act 1993 in relation to declared pests, an authorised person of Environment Canterbury will:

- (a) advise the land occupier or other person of their non-compliance, advise they take remedial action and initiate the regulatory procedures set out in Section 9.2 of the Strategy; or
- (b) advise the land occupier or other person that they have committed an offence against the Act and initiate Court proceedings.

9.2 Regulatory procedures

9.2.1 Issue of direction

If an occupier of land or any other person fails to comply with any rule prescribed in Part II of the Strategy, an authorised person will issue a direction under section 122 of the Biosecurity Act 1993. The direction will be given in a Notice of Direction, which is a legal document, and will include the following matters:

- (a) a description of the land on which works or measures are to be undertaken;
- (b) the pest for which the works or measures are required;
- (c) the strategy rule or provision of the Act;
- (d) the works or measures to be undertaken to comply with any strategy rule or provision of the Act;
- (e) the time within which the works or measures are to be undertaken;
- (f) actions that may be undertaken by Environment Canterbury if the land occupier fails to comply with any part of the direction;
- (g) the name of the authorised person issuing the direction; and
- (h) the contact address, telephone or fax number of the issuer.

9.2.2 Extension or variation of direction

Where, upon the representation of an occupier of land issued with a direction, an authorised person is satisfied that:

- (a) appropriate steps have been taken to comply with the direction; and/or
- (b) the land occupier has been prevented by reasonable cause from completing the necessary works or measures;

the authorised person may extend the time specified for a further period, or vary the requirements of the legal direction, as considered appropriate.

9.2.3 Cancellation of direction

When an authorised person is satisfied that:

- (i) works or measures have been undertaken in accordance with the direction; or
- (ii) for some other reason it is no longer appropriate to enforce the direction;

the authorised person may cancel that direction in writing.

9.2.4 Failure to comply

Where a direction has been given to an occupier of land under Section 122 of the Act and described in section 9.2.1 of the Strategy, and the land occupier has not complied with the requirements of the direction within the time specified, then Environment Canterbury may enter onto the land specified in the direction under section 128 of the Act and carry out, or cause to be carried out, the works or measures specified in the direction, or such other works or measures (including prosecution action) as are reasonably necessary or appropriate for the purpose of giving effect to the requirements of the direction.

9.2.5 Recovery of costs incurred

In accordance with Section 128 of the Act, Environment Canterbury will recover actual and reasonable costs where Environment Canterbury has entered onto the land specified in the legal direction and ascertained that the legal direction has not been complied with.

Environment Canterbury may recover further costs and expenses reasonably incurred by it in carrying out the works and measures as a debt due from the land occupier to whom the direction was given.

9.2.6 Modes of service

A direction to an occupier of land under Section 13.2.1 of the Strategy is to be served in accordance with Section 164A of the Act.

9.2.7 Offences

Any person who contravenes Section 154 of the Biosecurity Act 1993, including but not limited to, breaching a rule in the Strategy or without reasonable excuse failing to comply with a direction or failing to comply with the Act, commits an offence against the Act. For the purpose of clarity, the existence of rules in the Strategy in no way limits the application of any provision of the Act.

Environment Canterbury will, at its discretion, bring a prosecution against any person who commits an offence against the Act.

9.3 Exemption power

Any occupier or other person may, upon representation to the Environment Canterbury, seek an exemption from any provision of a strategy rule prescribed in Part II of this strategy (for Chilean needle grass exemption applications will only be considered for research purposes). Such exemption will be considered as follows:

- (i) Environment Canterbury Council may, if Environment Canterbury considers it appropriate and upon such conditions as Environment Canterbury considers

appropriate, exempt any person from any specified requirement in any rule included in this Strategy in accordance with this Act.

- (ii) Before granting an exemption under this section, Environment Canterbury must be satisfied in the circumstances of each case that:
 - (i) The requirement has been substantially complied with and that further compliance is unnecessary; or
 - (ii) The action taken or provision made in respect of the matter to which the requirement relates is as effective or more effective than actual compliance with the requirement; or
 - (iii) The prescribed requirements are clearly unreasonable or inappropriate in the particular case; or
 - (iv) Events have occurred that make the prescribed requirements unnecessary or inappropriate in the particular case, and
 - (v) That the granting of the exemption will not significantly prejudice the attainment of the objectives of this Strategy.

Environment Canterbury will maintain a register recording the number and nature of exemptions granted. This register will be available for public inspection during normal office hours.

10 Monitoring and Review

10.1 Measuring the extent to which the objectives are being achieved.

Table 10.1 outlines how the Environment Canterbury will undertake monitoring to measure the extent to which the objectives of the Strategy are being met.

Table 10.1: Monitoring objectives

Anticipated result	Indicator	Method of Monitoring	Frequency of Monitoring	Reporting to Council
Progressive Control Pest Programme				
Progressive reduction in Chilean needle grass plants	5-year rolling average decrease in the number of plants	Population assessment	As reported.	Annual.
		As reported from land occupiers or other persons.	As reported	Annual

10.2 Monitoring management agency performance

The monitoring of Environment Canterbury's performance, as the management agency, will be carried out as part of Environment Canterbury's annual planning and reporting process, and will include the following performance measures:

- (a) Preparation of an operational plan within three months of the Strategy being approved;
- (b) Review of the operational plan and, if necessary, amendment;
- (c) Report on the operational plan annually within five months of the end of each financial year;
- (d) Achievement of a programme of education and advice, inspections, enforcement measures and pest control to implement the Strategy in accordance with the operational plan; and
- (e) Maintenance of up-to-date databases of complaints, pest levels and densities, and Regional Council and land occupier responses.

10.3 Review of the Strategy

Monitoring the effects of the Strategy will ensure that it is continuing to achieve its purpose and that relevant circumstances have not changed to such a significant extent that a review of the Strategy is required. A review of the Strategy may be needed if:

- (a) there are changes to the Act and a review is needed to ensure that the Strategy is not inconsistent with it;
- (b) other harmful organisms create problems, or have the potential to create problems, that can be resolved through integrating them into the Strategy;

- (c) monitoring shows a significant change in the problems posed by pests or other organisms to be controlled covered by the Strategy; or
- (d) circumstances change to such a significant extent that Environment Canterbury believes that a review would be appropriate.

Failing the need to review the Strategy under any of the above circumstances, the Strategy will be reviewed in accordance with section 88 of the Act. Such a review may extend, amend, revoke or leave the strategy unchanged.

The procedures to be used to review the Strategy will include:

- (i) an assessment by officers of Environment Canterbury of the efficiency and effectiveness of the measures of achievement (specified for each individual pest and other organisms to be controlled or group of pests or other organisms to be controlled) for achieving the objectives of the Strategy;
- (ii) an assessment by officers of Environment Canterbury of the impact of the organism covered by the Strategy on the Region and any other harmful organisms that should be considered for inclusion in the Strategy; and
- (iii) liaison with public authorities and key interest groups on the effectiveness of the Strategy.

11 Coordination with other Pest Management Strategies

Environment Canterbury will carry out consultation with other persons or parties to ensure that the Strategy is not inconsistent with:

- (i) any other Regional or National Pest Management Strategies ; or
- (ii) any regulation or any regional policy statement or regional plan prepared under the Resource Management Act 1991.

Consultation will also ensure the resolution of cross boundary issues relating to pest management.

Chilean needle grass is classified as a pest in Marlborough's Regional Pest Management Strategy 2007. That Strategy seeks to prevent any increase in the distribution and density of the plant and reduce infestation levels where possible. Landowners are subject to rules requiring them to undertake control, to notify its presence and not to knowingly spread the plant. Successful implementation of that Strategy will compliment the PRPMS by reducing the potential for vectors to move the plant from Marlborough to Canterbury.

12 Compensation and disposal of receipts

The Strategy does not provide for compensation under Section 86 of the Act to be paid to any persons as a result of obligations imposed by the Strategy.

Whilst the Strategy provides for the destruction of Chilean needle grass, it does not provide for the seizure and subsequent disposal of any goods. Information concerning the disposal of the proceeds of any receipts arising in the course of implementing the Strategy is therefore not needed.

Appendix 1: Glossary of Terms

The use of italics indicates meanings taken from Section 2 of the Biosecurity Act 1993. Where a term has an asterisk (*) its definition is taken from Environment Canterbury's Regional Policy Statement.

Appropriate	means as determined to be appropriate by Environment Canterbury or its officers acting under delegated authority.
Authorised Person	has the same meaning as in the Biosecurity Act 1993.
Benefits*	includes benefits of any kind, whether monetary or non-monetary.
Beneficiaries	means the receivers of benefits accruing from the implementation of a pest management measure or strategy.
Biodiversity *	means the variability among living organisms from all sources including, among other things, terrestrial, marine, and other aquatic ecosystems, and the ecological complexes of which they are part. This includes diversity within species, between species, and of ecosystems.
Biological Control	means the introduction and establishment of natural enemies that will prey on or adversely affect a pest or other organisms to be controlled.
Capital Value	has the same meaning as in the Valuation of Land Act 1951.
Crown	means the New Zealand Government.
Costs*	includes costs of any kind, whether monetary or non-monetary.
Destroy	means pull, breakdown, demolish, make useless, kill, cause to cease to exist.
Direction	means a notice issued in accordance with section 122 of the Act requesting a person or land occupier to carry out certain work or measures.
Distribute	means to transport or in any way spread a pest.
Ecosystem	means a dynamic complex of plant, animal and micro-organism communities and their non-living environment, interacting as a functioning unit.

Effect*	unless the context otherwise requires, the term “effect” includes: any positive or adverse effect; any temporary or permanent effect; any past, present or future effect; any cumulative effect which arises over time or in combination with other effects - regardless of the scale, intensity, duration or frequency of the effect, and also includes - any potential effect of high probability; and any potential effect of low probability which has a high potential impact.
Environment Environment Canterbury	has the same meaning as in the Biosecurity Act 1993. means the name used to refer to the Canterbury Regional Council.
Eradicate	means to completely remove from the region.
Exacerbator	means the person aggravating or contributing to a particular pest management problem by action or inaction.
Financial Envelope	means the financial provision adopted by Environment Canterbury in its Annual Plan.
Habitat	means the place or type of site where an organism or population normally occurs.
Indigenous	means produced by, or naturally belonging to, a particular region or area.
Landowner	has the same meaning as occupier in the Biosecurity Act 1993
Management Agency	has the same meaning as in the Biosecurity Act 1993. For the purposes of this document, Environment Canterbury is the management agency for pests and other organisms to be controlled in the Canterbury Region.
Monitoring	in relation to a pest or other organisms to be controlled means to observe and measure the occurrence or non-occurrence of a pest or other organisms to be controlled.
Net Present Value	means the difference between the total benefits in present day terms and the total costs in present day terms at a specified discount rate.
Occupier	has the same meaning as in the Biosecurity Act 1993.
Operational Plan	means a plan prepared by the Management Agency under Section 85 of the Act.

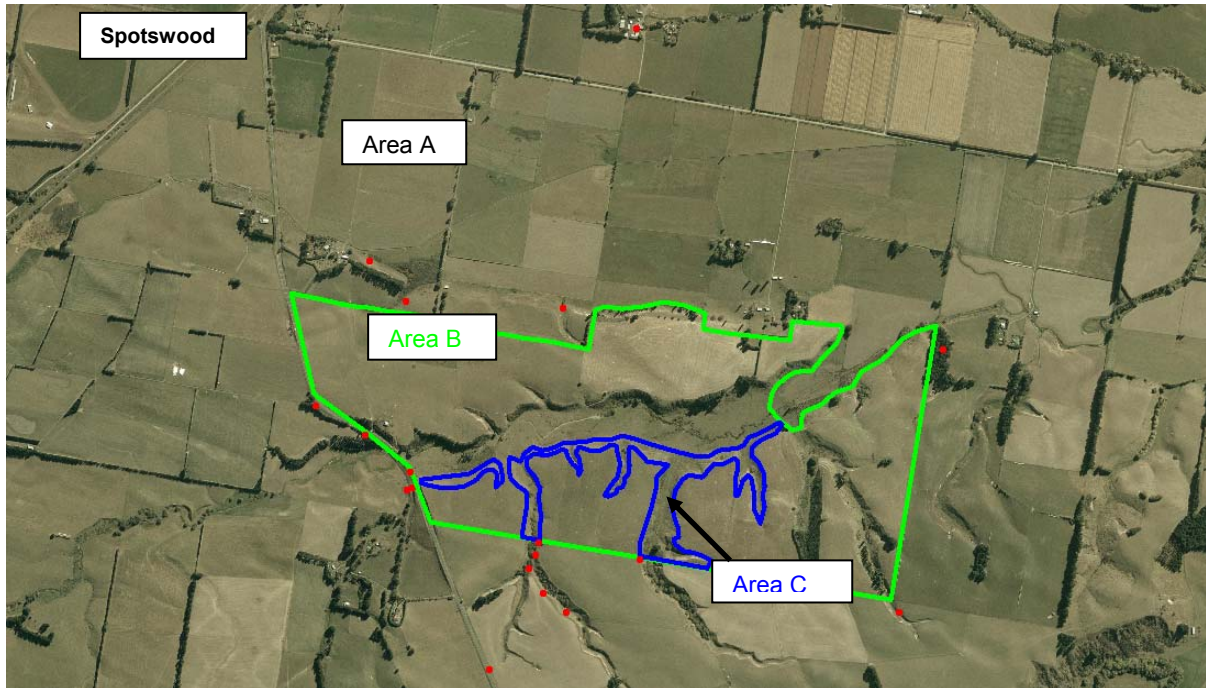
Organism	has the same meaning as in the Biosecurity Act 1993.
Person	has the same meaning as in the Biosecurity Act 1993.
Pest	has the same meaning as in the Biosecurity Act 1993.
Pest Management Liaison Committee	is a committee established by Environment Canterbury in a pest rating district to provide advice on the extent of pest management activity and its cost in a pest rating district.
Pest Management Strategy	has the same meaning as in the Biosecurity Act 1993.
Plant	means any plant, tree, shrub, herb, flower, nursery stock, culture, vegetable, or other vegetation; and also includes fruit, seed, spore and portion or product of any plant; and also includes all aquatic plants.
Plant Pest	any plant that is the subject of a regional pest management strategy.
Propagate	means to multiply or reproduce by sowing, grafting, breeding or any other way.
Rule	means a rule included in a pest management strategy in accordance with section 80B.
Sale	includes bartering; offering for sale; exposing, or attempting to sell; or having in possession for sale; or sending or delivery for sale; causing or allowing to be sold, offered, or exposed for sale; and also includes any disposal whether for valuable consideration or not. "Sell" has a corresponding meaning.
Spillover Effects	these result in costs or benefits to people other than the land occupier on whose property the pests or other organisms to be controlled are located. They include the effects of the spread of plant or animal pests or other organisms to be controlled onto neighbouring properties and environmental effects that have costs or benefits to the community as a whole.
Tangata Whenua*	means people of the land, the people who hold the turangawaewae and the manawhenua in an area, according to tribal and hapu custom.
Taonga*	means treasured possessions of Tangata Whenua including both tangible and intangible treasures.
Toxin	means a poison, whether produced by a living organism or not.

5 Year Review Results

Wahi Tapu* means places of sacred and extreme importance to Tangata Whenua.

Wai koura means freshwater crayfish.

Appendix 2 : Map 1: Chilean Needle Grass



■ Eliminated infestations as at 1 May 2010



Management Areas within the Containment Zone

Area A: Total control, all plants eliminated using knockdown and residual herbicide. Fence isolated sites wherever possible.

Area B: Progressive control, spraying (knockdown herbicide) or mowing of all CNG to prevent panicle seed production. This will require ongoing work from October – May.

Area C: 'No go' areas. Restricted access containment zones. Spray (knockdown herbicide) peripheries periodically and remainder of area once annually. If possible fence and plant trees to eventually shade out CNG.

Appendix 3 Pest Rating Districts

The following is a general description of the pest rating districts within the Canterbury region:

- (i) Plant and Animal Pest Rating Districts:
- | | |
|------------------|---|
| Kaikoura | land north of the Conway River. |
| Amuri | land between the Conway and Hurunui Rivers. |
| Waikari | land between the Hurunui and the Waipara River (South Branch). |
| Ashley | land between the Waipara (South Branch) and Waimakariri Rivers bounded to the west by the main ridge of the Puketaraki range. |
| Selwyn | land between the Waimakariri and Rakaia Rivers bounded by Banks Peninsula. |
| Banks Peninsula | land on Banks Peninsula within the Banks Peninsula District Council area with the exception of land lying to the north of a line running from Lyttelton Harbour along Gebbies Pass Road and the Christchurch Akaroa Road to its intersection with the Halswell River. |
| Ashburton | land between the Rakaia and the Rangitata Rivers. |
| South Canterbury | land between the Rangitata and Waitaki Rivers bounded to the west by a line running along the main ridges of the Hunter Hills and the Rollesby Range to Burkes Pass and thence along the main ridge of the Two Thumbs Range to the Main Divide. |
| Mackenzie | land south west of a line running south along the main ridge of the Two Thumbs Range to Firewood Stream and down Firewood Stream to the foot of Mt Dobson and then straight across to Albury Range, down Albury Range and then down the western side into Duck Creek, down Duck Creek to Tengawai confluence with Lockhart Creek, up Lockhart Creek to Lockhart Saddle to the Kirkleston Range and thence west to Lake Benmore, thence along the north shore of Lake Benmore to the Ohau River, and thence along the Ohau River to Lake Ohau and thence along the Hopkins River to the Main Divide. |
| Omarama | land south west of the Hopkins River and Lake Ohau, and south of the Ohau River, and west of Lake Benmore and the Otematata River. |
| Kurow | land within a line running from the Waitaki River mouth upstream to its confluence with the Awamoke Stream and thence north from the Waitaki River along the Hunter Hills, thence west through the Hakataramea Pass and along the main ridge of the Kirkleston Mountains to Lake Benmore, thence along the eastern shore of Lake Benmore to the Waitaki River and thence south along the Otematata River. |
- (ii) Hurunui Nassella Tussock Pest Rating District
Generally all land within the Hurunui District Council area but excluding that land within the Kaikoura Pest District.

