



**MARLBOROUGH
DISTRICT COUNCIL**

Regional Pest Management Plan 2018

Review Proposal

August 2019

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Part One

1. Introduction

1.1 Strategic Alignment

The intent of this Proposal aligns with two key pieces of strategic material that relate to the management of pest conifers and is also driven by the goals of Council's Biosecurity Strategy. The key pieces of strategic material are Council's Proposed Marlborough Environment Plan (MEP) under the Resource Management Act 1991 and also the National Wilding Conifer Management Strategy 2015-2030 (National Strategy) which was developed collaboratively between all major stakeholders.

Under the MEP, the impact of pest conifers on landscape is explicitly made reference to under Policy 7.2.10 with intent to "reduce the impact of wilding pines on the landscape".

The vision of the National Strategy is "The Right Tree in the Right Place". This acknowledges both the invasive nature of pest conifers (wrong tree, wrong place) while balancing the economic, social, environmental, and cultural benefits from the right tree in the right place.

While acknowledging some critical dependencies within this Proposal, it aligns with the aim of the National Strategy that pest conifers are to be contained and reduced. This Proposal also aligns with a number of the objectives outlined within the National Strategy in that it seeks to clarify roles, allocated costs fairly, coordinate regional and local operations across organisations and seek to enhance the consistency of monitoring and mapping.

1.2 Proposer

The Marlborough District Council (Council) has a regional leadership role under section 12B of the Biosecurity Act 1993 (the Act). As such, in accordance with section 100D(2)(b) of the Act, Council proposes to undertake a review of the Regional Pest Management Plan 2018 (RPMP) that becomes operative on 1 October 2018, by way of amending it to incorporate an additional programme. This is due to a change in circumstances occurring, being the advent of a National Wilding Conifer Control Programme.

Due to the limited scope of the review, in accordance with section 100D(5)(d) of the Act, Council will only applying section 70 in this Proposal as so far as it relates to the specific proposed programme for inclusion. No other part of the operational RPMP is subject to review.

1.3 Consultation on the Proposal

A final draft of this Proposal was used to engage and consult with the following parties:

Party	Type	Date	Feedback Received
Iwi/Runanga			
Ngāti Kōata Trust	Copy of draft Proposal and offer of hui	7 December 2018	nil
Te Rūnanga o Kaikōura Inc	Copy of draft Proposal and offer of hui	7 December 2018	Engagement via Mahaanui Kurataiao Limited. Report received 1 February 2019 and taken into consideration within Proposal.
Ngāti Apā ki te Rā Tō Trust	Copy of draft Proposal and offer of hui	7 December 2018	nil
Te Ātiawa o Te Waka-a-Māui Trust	Copy of draft Proposal and offer of hui	7 December 2018	nil

Te Rūnanga a Rangitāne O Wairau	Copy of draft Proposal and offer of hui	7 December 2018	nil
Te Rūnanga O Ngāti Kuia	Copy of draft Proposal and offer of hui	7 December 2018	nil
Ngāti Toa Rangatira Manawhenua Ki Te Tau Ihu Trust	Copy of draft Proposal and offer of hui	7 December 2018	nil
Ngāti Rārua Trust	Copy of draft Proposal and offer of hui	7 December 2018	nil
Ngāti Tama ki Te Waipounamu Trust	Copy of draft Proposal and offer of hui	7 December 2018	nil
Key Stakeholders/Previous Submitters			
Biosecurity New Zealand/Ministry for Primary Industries	Joint workshop and subsequent email/verbal correspondence	22 November 2018	Verbal feedback
Department of Conservation	Joint workshop and subsequent email/verbal correspondence	22 November 2018	Verbal feedback
Land Information NZ (C/O Boffa Miskell as partner and previous submitter)	Copy of draft Proposal	7 December 2018	nil
Nelson City Council	Copy of draft Proposal	7 February 2019	nil
Tasman District Council	Copy of draft Proposal	7 February 2019	Contact but no feedback
Environment Canterbury	Copy of draft Proposal	7 February 2019	nil
Marlborough Forest Industry Association (including all members)	Copy of draft Proposal	7 February 2019	Written feedback
Nelson Forests Limited	Copy of draft Proposal	7 December 2018	Written feedback
Marlborough Environment Centre	Copy of draft Proposal	7 December 2018	nil
Federated Farmers	Copy of draft Proposal	7 December 2018	nil
The Westervelt Company (NZ)	Copy of draft Proposal	7 December 2018	Contact but no feedback
Community Organisations			
Waihopai Valley Residents	Meeting and discussion	29 January 2019	Verbal feedback
Marlborough Tramping Club	Meeting and discussion with Chairperson	18 December 2018	Verbal feedback
Marlborough Sounds Restoration Trust	Joint workshop and subsequent email/verbal correspondence Discussion at Trustee quarterly meeting	22 November 2018 31 January 2019	Verbal feedback
South Marlborough Resotration Trust	Joint workshop and subsequent email/verbal correspondence	22 November 2018	Verbal feedback

Specific landholders			
Landholders adjoining the Wye Reserve conifer infestation	Face to face discussion with subsequent dialogue	15 January 2019	Verbal and written feedback
		30 January 2019	Verbal feedback

All feedback was used to finalise the Proposal as it currently stands.

Part Two

2. Proposal material

Where applicable, content that may result in an addition or change to the RPMP will be highlighted.

Where specific section numbers or the numbering of Tables and Figures are yet to be determined, this will be denoted by the use of “xx”.

How the proposed programme would look inserted into Part 2 of the operative RPMP can also be seen in Appendix 2.

2.1 An amended section 4

4. Pests

The plants, animals and organisms listed in Table 2 are to be managed through programmes within the Plan for Marlborough. As a result, these organisms are declared pests in accordance with the Act. The table also indicates what management programme or programmes will apply to the pest and if a Good Neighbour Rule (GNR) applies.

Attention is also drawn to:

- The general administrative powers of inspection and entry, contained in Part 6 of the Act, which would be made available to the Council; and
- The statutory obligations of any person under sections 52 and 53 of the Act. These sections prohibit anyone from selling, propagating or distributing any pest, or part of a pest, should they be specified as such in a Plan. Not complying with sections 52 and 53 is an offence under the Act and may result in the penalties noted in section 157(1) of the Act.

Table 2: Subjects to be managed within the Plan for Marlborough

Subject	Scientific Name	Management Programme	GNR Applies?
African feather grass	<i>Cenchrus macrourus</i>	Sustained Control	
Bathurst bur	<i>Xanthium spinosum</i>	Sustained Control	
Boneseed	<i>Chrysanthemoides monilifera</i>	Sustained Control	
Broom	<i>Cytisus scoparius</i>	Sustained Control	Yes
Brushtail possum	<i>Trichosurus vulpecula</i>	Exclusion	
Bur daisy	<i>Calotis lappulacea</i>	Eradication	
Cathedral bells	<i>Cobaea scandens</i>	Sustained Control	
Chilean needle grass	<i>Nassella neesiana</i>	Sustained Control	
Chinese pennisetum	<i>Pennisetum alpecuroides</i>	Sustained Control	
Climbing spindleberry	<i>Celastrus orbiculatus</i>	Eradication	
Cotton thistle	<i>Onopordum acanthium</i>	Sustained Control	
Eel grass	<i>Vallisneria australis</i>	Sustained Control	
Evergreen buckthorn	<i>Rhamnus alaternus</i>	Sustained Control	
Giant needle grass	<i>Austristipa rudis</i>	Sustained Control	
Gorse	<i>Ulex europaeus</i>	Sustained Control	Yes
Kangaroo grass	<i>Themeda triandra</i>	Sustained Control	

Subject	Scientific Name	Management Programme	GNR Applies?
Madeira vine	Anredera cordifolia	Sustained Control	
Mediterranean fanworm	Sabella spallanzanii	Exclusion	
Moth plant	Araujia hortorum	Sustained Control	
Nassella tussock	Nassella trichotoma	Sustained Control	
Parrots feather	Myriophyllum aquaticum	Sustained Control	
Pest conifers	Various sp. - see programme for detail	Progressive Containment	Yes
Purple loosestrife	Lythrum salicaria	Sustained Control	
Rabbits	Oryctolagus cuniculus	Sustained Control	
Reed sweet grass	Glyceria maxima	Sustained Control	
Rooks	Corvus frugilegus	Exclusion	
Rough horsetail	Equisetum hyemale	Sustained Control	
Saffron thistle	Carthamus lanatus	Sustained Control	
Senegal tea	Gymnocoronis spilanthoides	Exclusion	
Spartina	Spartina anglica	Eradication	
Tall wheat grass	Thinopyrum ponticum	Sustained Control	
Wallabies	Various sp. - see programme for detail	Exclusion	
White-edged nightshade	Solanum marginatum	Sustained Control	
Willow-leaved hakea	Hakea salicifolia	Eradication	
Woolly nightshade	Solanum mauritianum	Sustained Control	

2.2 The new proposed programme to be inserted into section 5

Note: While the proposed programme is outlined below is to be inserted as section 5.22, the numbering and references for existing RPMP programmes will be adjusted accordingly (along with all associated Tables, Figures and Maps).

5.22 Pest conifers

The subjects listed in Table 1 are to be managed as part of the pest conifer programme:

Table 1: Subjects of the pest conifer programme

Individual subjects	
Common Name	Scientific Name
Lodgepole or contorta pine	<i>Pinus contorta</i>
Scots pine	<i>Pinus sylvestris</i>
Mountain pine	<i>Pinus.mugo (including sub-species and botanical variants)</i>
Bishops pine	<i>Pinus muricata</i>
Maritime pine	<i>Pinus pinaster</i>
Mexican weeping pine	<i>Pinus patula</i>

Ponderosa pine	<i>Pinus ponderosa</i>
Corsican pine	<i>Pinus nigra</i>
European larch	<i>Larix decidua</i>
Western white pine	<i>Pinus monticola</i>
Class of subjects	
Wilding conifers	
Description	
Wilding conifers means any introduced conifer tree, of the individual species listed as subjects in Table 1 and those species listed Table 2, established by natural means, unless it is located within a plantation forest, and does not create any greater risk or wilding conifer spread to adjacent or nearby land than the plantation forest that it is part of.	

Table 2: Species for the purposes of the wilding conifers class description

Common Name	Scientific Name
Douglas fir	<i>Pseudotsuga menziesii</i>
Radiata pine	<i>Pinus radiata</i>

Why are they a threat?

Pest conifers can have significant impacts on native ecosystems, particularly those low in stature such as tussock and indigenous grasslands, alpine ecosystems and subalpine scrub. In some cases, for example the regenerating scrub/forest of the Marlborough Sounds, pest conifers can act as a pioneering species and alter the natural succession process. Pest conifers grow faster and taller than low-stature vegetation so can easily out-compete these species. Soil and soil fauna are also altered when pest conifers replace native ecosystems.

Pest conifers can also adversely affect visual amenity and landscape values. This can be for example establishing upon ridgelines/skylines in natural alpine landscapes or in amongst natural tussock grasslands.

In areas where there is long term, seasonal soil moisture deficits, dense pest conifer stands can contribute to reductions in surface water flows, potentially impacting on water availability and associated aquatic ecosystems.

All the impacts outlined above can adversely affect values held by iwi, rūngana and hapū across the Top of the South. In particular, feedback from Te Rūnanga o Kaikōura outlined they consider pest conifers as an issue of concern due to their widespread impact on indigenous species and cultural landscape values. They consider all indigenous biodiversity as taonga and want to ensure that all management decisions take into account the protection and survival of all indigenous species of flora and fauna.

In areas of extensive pastoral farming, pest conifer infestations adversely impact economic wellbeing by reducing available grazing and limiting the options for future land use related to livestock production.

Reasons for proposing a Plan

In Marlborough, it is recognised the first up task of managing pest conifers is one best carried out through large scale collaborative programmes. These collaborative programmes require an overarching clear regional objective and centralised focus. A programme within a Plan can provide for this along with regulatory backstops to ensure investment that goes into management can be protected from future inaction.

In the absence of cohesive and collaborative management, the spread and further establishment of pest conifers over time presents the greatest transformational change to Marlborough’s landscapes that are vulnerable to pest conifer invasion. The impact of pest conifers left unmanaged (a no RPMP scenario) cuts across all values from environmental, cultural, landscapes, water quantity and economic production.

Why the Plan is more appropriate than relying on voluntary actions

In essence, the majority of collaborative pest conifer management programmes are voluntary actions. Interested parties, including Council, the Department of Conservation, Ministry for Primary Industries (MPI), Land Information New Zealand, the community at large and other organisations recognise the importance of managing pest conifers. This culminated in the development of the New Zealand Wilding Conifer Management Strategy (2015) where these parties, plus the New Zealand Forest Owners Association, came together to formulate the Strategy. This led to the subsequent Crown Funding administered by MPI to invest in the issue (the National Wilding Conifer Management Programme). Prior to this, local trusts such as the Marlborough Sounds Restoration Trust and South Marlborough Landscape Restoration Trust established through a community desire to take action for community good.

All of these aspects of pest conifer management are occurring under the banner of voluntary action.

However, management of pest conifers needs to be viewed as a long term commitment to prevent the reversal of gains made. Under all of the scenarios of intervention, there is a concern that up-front investment could be put at risk by a lack of voluntary actions being undertaken at an individual land occupier level. As such, it is proposed that this Plan acknowledges the success of voluntary action in one respect but the regulatory backstops within the Plan are more appropriate to address the long term sustainability of achievements made.

5.22.1 Objective

Over the duration of this Plan, progressively contain pest conifers through containing and reducing, where feasible, the geographic distribution of pest conifers within the Marlborough region to reduce adverse effects on the environment, enjoyment of the natural environment and economic wellbeing.

Intermediate Outcome:

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

1) Providing Regional Leadership

Council will play a leadership role in facilitating, establishing, and subsequently supporting as a partner, collaborative programmes that carry out the on-ground management of pest conifers. It will also be responsible for overseeing progress against the programme objective for the Marlborough region.

A major component in Marlborough will include Council actively supporting community-led initiatives such as those driven by the community Trusts.

2) National Wilding Conifer Control Programme

The outcome of the programme will be heavily reliant on the successful ongoing implementation of the National Wilding Conifer Control Programme (NWCCP) - a collaborative model for wilding conifer control. Significant joint Crown funding from the Ministry for Primary Industries, Department of Conservation and Land Information New Zealand came into effect in 2016 but requires ongoing successful Crown budget support to continue.

This programme will see substantial investment an operational management for control operations primarily within the High Risk Conifer Management Area. This may also occur also outside this area should it be prioritised and resources made available by the NWCCP.

3) Council Inspection and/or Service Delivery

Inspection and/or service by Council may include staff, contractors or other authorised persons:

- a) Carrying out inspections to ensure occupiers are meeting obligations, if there are any;
- b) Undertaking service delivery to manage pest conifers;
- c) Visiting properties or doing surveys to determine whether pests are present;
- d) Monitoring effectiveness of control;
- e) Using administrative powers of the Biosecurity Act 1993, if necessary, which could include:
 - i) Issuing a Notice of Direction to an occupier or person under section 122;
 - ii) Undertaking default works and recovering the cost under section 128;

For the full range of administrative powers available to Council as management agency, see section 8.

4) Advocacy and Education

Council in conjunction with the many parties involved in pest conifer management may:

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

5.22.2 Rules

Rule 5.22.2.1

Occupiers shall destroy all pest conifers present on land they occupy, prior to cone bearing, if the pest conifers are located within an area on that land which has had a control operation carried out on it.

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

Note: For the purposes of Rule 5.22.2.1, control operation means an operation to remove pest conifers from the land to a point where there are no mature, coning trees remaining and also no seed rain from adjacent land that could cause unreasonable levels of re-infestation. Occupiers will be notified by the management agency should a control operation meet this threshold, triggering the obligation under Rule 5.22.2.1.

Rule 5.22.2.2

Occupiers shall destroy all pest conifers listed as individual subjects in Table 1, present on land they occupy, prior to cone bearing, unless the land they occupy falls within the High Risk Pest Conifer Management Area identified in Map 10.

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

Note: The High Risk Pest Conifer Management Area identifies an area of land that contains infestations of high risk pest conifer species where an obligation on occupiers to destroy them is considered unreasonable given the history and nature of infestations. However, should a control operation occur within the High Risk Pest Conifer Management Area, Rule 5.22.2.1 takes precedence over Rule 5.22.2.2.

Rule 5.22.2.3 (Good Neighbour Rule)

Occupiers shall destroy all pest conifers present on land they occupy within 200m of an adjoining property boundary, prior to cone bearing, where that adjoining property has previously been cleared through control operations and that adjoining occupier is taking reasonable steps to manage wilding conifers, within 200m of the boundary.

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

Rule 5.22.2.4 (Pest Agent Rule)

Occupiers shall destroy any Pest Agent Conifer present on land they occupy within 200m of adjoining property, if pest conifers have been destroyed through control operations on the adjoining property, within 200m of the boundary, and that adjoining occupier is taking reasonable steps to manage pest conifers, within 200m of the boundary.

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

Explanation of the rules:

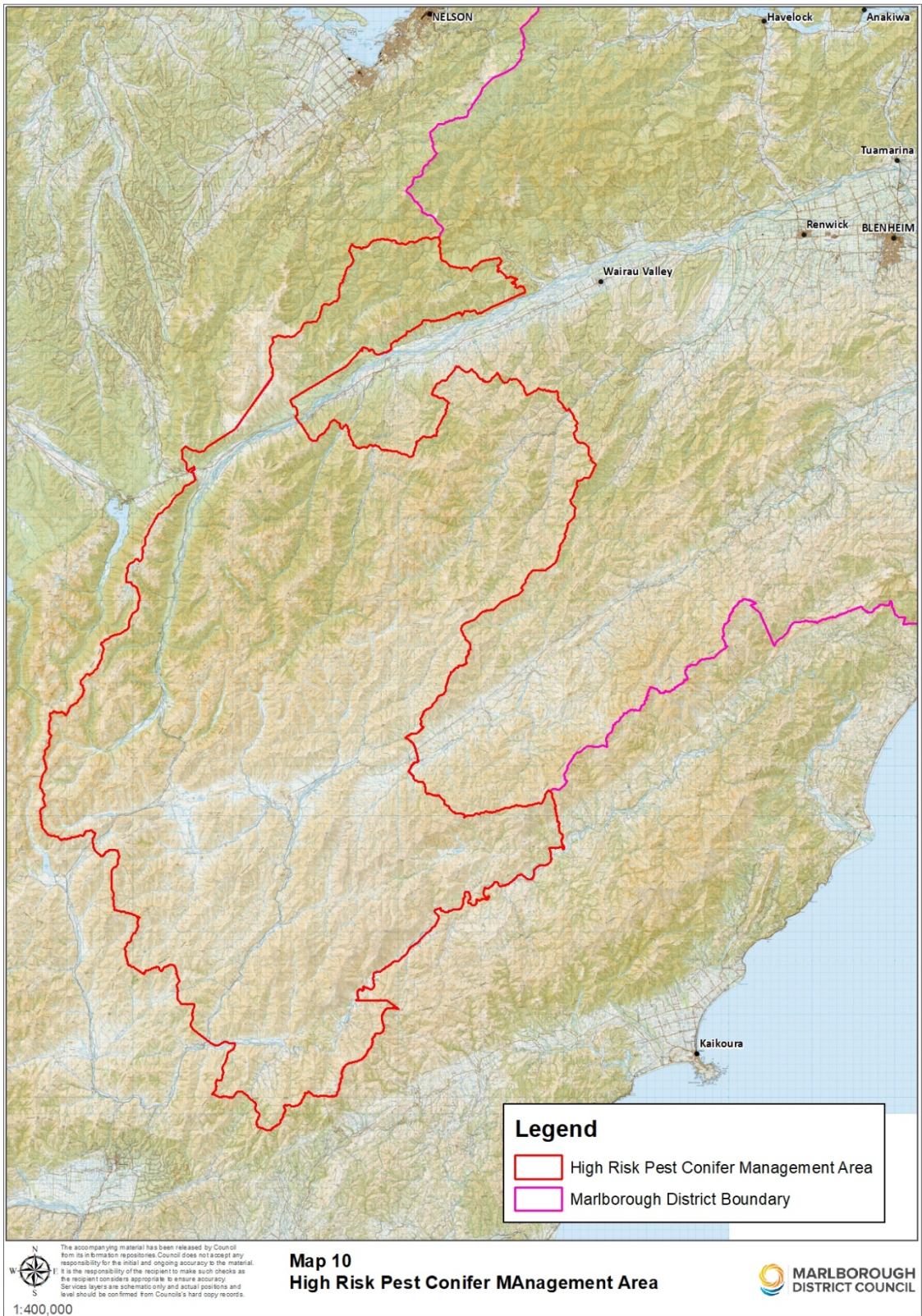
The purpose of Rule 5.22.2.1 is in accordance with section 73(5)(h) in that occupiers of land within areas that have been subject to operations to destroy pest conifers are required to take specified actions to prevent the pest re-establishing on that land.

The purpose of Rule 5.22.2.2 is in accordance with section 73(5)(h) in that occupiers of land that have the high-risk species of pest conifers present, are required to take specified actions to destroy those pest conifers, should they occur outside of the High Risk Pest Conifer Management Area.

The purpose of Rule 5.22.2.3 is in accordance with section 73(5)(h) in that occupiers of land adjacent to areas that have been subject to control operations are required to take specified actions to prevent inaction on their property causing cross-boundary re-establishment of the pest on land that has been subject to control.

The purpose of Rule 5.22.2.4 is in accordance with section 73(5)(h) in that occupiers of land adjacent to areas that have been subject to control operations are required to take specified actions to prevent a pest agent on their property causing cross-boundary re-establishment of the pest on land that has been subject to control.

Council as the management agency will administer the rules.



Map 10: High Risk Pest Conifer Management Area

2.3 Analysis of the benefits and costs for the proposed programme

Background

Pest conifers are sourced from various parent trees planted for various reasons across most of Marlborough. In the highly prone areas of Marlborough, primarily south of the Wairau River, species were planted during the era of soil conservation and forest research efforts. As these trees thrived and subsequently matured, they gave rise to a wave of wilding progeny spreading prolifically onto surrounding land. Seed from pest conifers that grow and reach cone bearing age can be blown long distances during high wind events and the cycle begins again.

In the higher rainfall areas of the Marlborough Sounds, the situation is more one of pest conifers acting as a transformative pioneering species. Originating primarily from woodlots and homestead plantings, pest conifers have taken hold in the early stages of vegetation succession. The key difference in this landscape is that if effectively managed, that same successional process where native vegetation returns rapidly if let to do so, results in habitat less conducive to invasion and the cycle can be broken.

Current situation in 2019

Pest conifers can be observed across most of Marlborough. However, the impact (current or potential) and further spread propensity varies greatly. As a result, there is often prioritisation based on this varying threat but also common resource limitations by occupiers and agencies to manage all infestations.

A major shift came with the development of a NZ Wilding Conifer Management Strategy in 2015 following by a Crown-funded national control programme which begun in 2016. This both shaped a clearer picture of priorities at a national scale, matched with a substantial investment of Crown funding in an attempt to arrest the issue.

Given the substantial investment of public funds into pest conifer management in Marlborough, with this likely to increase over time in response to the growing problem, a clear regional framework for management is required. This provides a degree of clarity for the direction of management and long term protection of funds invested.

Baseline: No RPMP

In this scenario, the management of pest conifers is only that which occurs voluntarily by land occupiers as they see fit, and the assumption is made that pest conifers will establish in new areas and no attempt is made to control legacy source infestations.

Control option(s):

1. **Eradication Programme:** In which the intermediate outcome for the programme is to reduce the infestation level of the subject to zero levels in an area in the short to medium term.
2. **Progressive Containment Programme:** In which the intermediate outcome for the programme is to contain or reduce the geographic distribution of the subject, or an organism being spread by the subject, to an area over time. This option would result in Council as management agency for the RPMP having an oversight role for all control actions and reporting upon them.

The actual control actions themselves are likely to be delivered by numerous different parties in Marlborough and, on occasions, Council itself. However, Council's oversight role will mean it will be responsible for gathering and ensuring information is collected in order to demonstrate the overarching Progressive Containment objective is being met.

Level of analysis for pest conifers

Council has determined that a medium level of analysis be undertaken for pest conifers. However, quantifying the benefits is not practicable. As a result, these will not be quantified in this programme Proposal.

The justification for this decision is documented in Appendix 1 - Proposal Risk and National Policy Direction Analysis.

Impacts

Identify impact	Quantify impact
<p><i>Environmental</i></p> <p>Pest conifers grows faster and taller than low-stature indigenous vegetation. Indigenous ecosystems that are at particular risk of invasion include: tussock and other indigenous grasslands; alpine ecosystems; subalpine, dryland and other scrub and shrublands; wetlands; turf communities and coastal margins, cliffs and bluffs.</p> <p>Once they have invaded, trees can shade out many native plant communities and can also change soil characteristics¹.</p>	<p>An exercise to assess vulnerability of invasion by wilding conifers was conducted as part of the National Wilding Conifer Programme. This took into account the nature of land cover coupled with an assessment of how vulnerable that land cover is to invasion.</p> <p>For Marlborough, a total of 433,259 hectares was assessed as being either high or very high in terms of vulnerability to invasion. This is approximately 39% of the land area of the Marlborough region.</p>
<p><i>Landscape Values</i></p> <p>Impacts on landscape values can be dependent on perception and preference. However, through RMA processes and district plans, areas can be designated Outstanding Natural Landscapes (ONL) or Visual Amenity Landscapes (VAL). There is concern that spreading pest conifers could so alter the basic characteristics of the local landscapes so that they become forest dominated.</p>	<p>Significant areas of the Marlborough region have been identified as being areas of Outstanding Natural Landscape value. This includes both areas in the Marlborough Sounds and inland Marlborough that both have impacts from changes to the landscape due to wilding conifer invasion.</p>
<p><i>Cultural impact</i></p> <p>Impacts on cultural landscape values, adverse impacts on natural resources - water (waterways, waipuna (springs), groundwater, wetlands); indigenous flora and fauna and cultural landscapes and land. These are taonga to manawhenua and have concern for activities potentially adversely affecting these.</p>	<p>See specific quantification under Landscape Values and Environmental.</p>
<p><i>Water Quantity</i></p> <p>Where there are significant changes to land cover within a catchment, such as a domination of wilding conifers, surface water flows can be negatively affected. This is more pronounced in dry South Island catchments.</p>	<p>A good summary of current knowledge (in 2005²) reinforced earlier studies that increasing the vegetation cover in a catchment does lead to a decrease in water yield. However, there is much spatial and temporal variation that needs to be taken into account.</p> <p>Data from studies on surface water yield has shown that pasture dominated catchments were replaced by radiata pine forest, there was a reduction in annual surface water yields of 30-81%^{3, 4}. A recent long term study at Glendu calculated a reduction of 33%⁵.</p>

¹ Froude, V.A. 2011. Wilding conifers in New Zealand: Status Report. Prepared for the Ministry of Agriculture and Forestry.

² Davie, T, Fahey, B 2005. Forestry and water yield - current knowledge and further work. New Zealand Journal of Forestry, February 2005.

³ Duncan MJ 1996. A methodology for identification of areas vulnerable to flow reductions because of afforestation. NIWA Christchurch Consultancy Report No CRC60512. Cited in Environment Canterbury Regional Council 2011. Christchurch.

⁴ Environment Canterbury Regional Council 2011. Canterbury Natural Resources Regional Plan. Chapter 5: water quantity. <http://ecan.govt.nz/publications/Plans/nrrp-chapter-5-cover-main-text-operative-110611.pdf>, Environment Canterbury Regional Council. 214 p.

Identify impact	Quantify impact
<p><i>Economic</i></p> <p>Once pest conifers spread onto extensive or marginal farmland, active control required may be difficult for the land owner/occupier to justify financially given the marginal worth of the land for grazing.</p> <p>This can result in a compounding reduction on land area available for extensive grazing.</p>	<p>There are three categories of land cover within the Land Cover Database (2012)⁶ that is associated with extensive grazing. These are low producing grassland, depleted grassland and tall tussock grassland. These three land cover classes total 246,583 hectares in the Marlborough region.</p>

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

Grouping	Beneficiaries		Exacerbators	
	Major	Minor	Major	Minor
1	Regional community	Occupiers of susceptible land	Occupiers undertaking afforestation activities using potentially spread prone species	Occupiers allowing pest conifers to grow and spread unmanaged
2	Occupiers of susceptible land		Occupiers of land with the pest present	
3	Occupiers of susceptible land	Regional community	Occupiers of land with the pest present	
4	Regional community			Occupiers of land with the pest present

⁵ Fahey, B, Payne, J 2016. The Glendhu experimental catchment study, upland east Otago, New Zealand; 34 years of hydrological observations on the afforestation of tussock grasslands.

⁶ https://iris.scinfo.org.nz/layer/412/SourceLCDB_v4.0 Landcare Research Creative Commons Attribution 3.0 New Zealand. Accessed 7 August 2017.

Benefits of each option

Benefit	Option		
	No RPMP	Eradication	Progressive Containment
The prevention of pest conifers re-establishing and the resulting impact of that on environmental values.	No programme cost	The benefit under an Eradication Programme will increase to an end point when the objective is able to be achieved. It is not practicable to quantify this benefit other than so say it would be very large.	The benefit under a Progressive Containment Programme will increase to a point where the organism is within designated 'containment areas' then remains constant throughout the life of the Plan. It is not practicable to quantify this benefit other than so say it would be very large.
The prevention of pest conifers re-establishing and the resulting impact of that on landscape values.			
The prevention of pest conifers re-establishing and the resulting impact of that on catchment water yields.			
The prevention of pest conifers re-establishing and the resulting impact of that on production values of pastoral land.			
The sequestration sale of carbon from self-propagating pest conifer infestations.	The benefit would grow exponentially as infestations grow unmanaged.	The benefit would not be realised.	The benefit would not be realised.

Costs of each option

Estimated programme costs (per annum over a minimum of the first 5 years)	Option		
	No RPMP	Eradication	Progressive Containment
Costs <ul style="list-style-type: none"> • Surveillance • Administration • Education/awareness 	-	MDC \$100,000 NWCCP (via MPI) \$300,000+	MDC \$50,000 NWCCP (via MPI) \$120,000+
Costs <ul style="list-style-type: none"> • Service delivery 		MDC \$350,000 NWCCP (via MPI) \$25,000,000+	MDC \$85,000 NWCCP (via MPI) \$1,640,000+
Land occupier costs	-	Private \$400,000+ DOC \$500,000+	Private \$200,000+ DOC \$250,000+
Total per annum	-	\$26,650,000+	\$2,345,000+
Costs of effects on values	Low, but increases exponentially over time	Insignificant, although there could be potential medium term effects through increased erosion and decreased water quality with the wide-scale removal of dense stands.	Insignificant

Proposed allocation of costs

As outlined, costs have been allocated across land occupiers, the regional community (Council), the Department of Conservation (as a major occupier and Crown agency) and the National Wilding Conifer Control Programme (administered by MPI on behalf of all Crown agencies).

The proposed programme costs for Council are to be allocated across the various rating districts used in Marlborough under the Local Government (Rating) Act 2002.

While there are suggested cost allocation models outlined within the National Wilding Conifer Strategy (2015), there are often not the mechanisms available to align allocations explicitly and efficiently in 'real-life'. As a result, the allocations within this Proposal are those that are intended to satisfy the tests surrounding efficiency and effectiveness within the National Policy Direction for Pest Management first and foremost.

Rationale for the allocation of costs

Allocation of costs (funding) for the implementation of the proposed programme can be sourced through three distinct avenues:

1. By placing an obligation, and resulting cost, on occupiers (of land or vessels) through Plan rules;
2. Directly collecting funds from ratepayers within the region via the Local Government (Rating) Act 2002 to cover Council costs identified within the Proposal;
3. Other direct funding sources; for example, Crown contributions or direct actions toward the programme implementation (i.e. National Wilding Conifer Programme).

The proposed programme for pest conifers is to utilise all three of these sources. However, in terms of the life of the proposed programme, they will be utilised by way of programme sequencing in opposite order to that listed above. In the early stages of the programme, the bulk of programme costs will be falling on other direct funding sources (Crown contributions through the National Wilding Conifer Control Programme and Department of Conservation core funding) and funds collected by Council. By the nature of pest conifer management, the long term maintenance required to keep areas free from infestation will see costs transitioned on occupiers of the land as by that point, they are both a beneficiary and potential future exacerbator should no early intervention control occur.

The Council costs for implementing the proposed programme are to be funded through general rates collected under the Local Government (Rating) Act 2002. In making this decision, Council is given regard to section 100T as outlined within the existing RPMP.

The Council funds attributed to implementing this programme are to be spread across the various rating districts used in Marlborough in accordance with the model outlined within the operative RPMP, under Grouping 1. The resulting impact of this will be ratified through the appropriate Annual Plan or Long Term Plan process under the Local Government Act (Rating) 2002.

Assumptions on which the impacts, benefits and costs are based

1. That National Wilding Conifer Control Programme funding is available at an adequate level to implement the programme. Should this funding not be available, it is highly unlikely that adequate resources would be available to successfully implement the programme.
2. That under a No RPMP scenario, voluntary control will not cause any reduction in the future spread and/or impact over time.

Risk that each option will not achieve the objective

Appendix 1 contains the full, detailed information to support this analysis.

Level of Risk	Option		
	No RPMP	Eradication	Progressive Containment
	N/A	High	Medium
Reason	While this option does not have an objective, the risk of no cohesive management carries a very large degree of risk that the full weight of the impacts will be felt in time.	There are significant risks in not being able to achieve an eradication objective. They include the political risk of sourcing the required level of resources to achieve eradication and the technical ability to completely eradicate large scale infestations to zero density.	While there still remains levels of risk with a Progressive Containment programme - most notably the level of resourcing required - the fact that the objective is to contain and reduce infestations means that overall, the level of resourcing and also political risk is at a lower level.

Mitigation options

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

Most preferred option

Progressive Containment Programme

Council has determined that the level of benefit that could be attributed to a successful Progressive Containment programme in the long term outweighs the proposed and estimated \$1.75 million+ cost of the programme per annum over the first 5 years of the programme. The benefit of intervening also outweighs any benefits accrued from not intervening.

2.4 An amended section 6.1

The table in section 6.1 will be amended to detail the monitoring method for the proposed pest conifer programme.

Table x: Programme monitoring methods summary

Common Name	Monitoring method	Frequency		
African feather grass	Outputs as a proxy for population	Annually during operations		
Bathurst bur				
Boneseed				
Broom				
Brushtail possum	Detections/Reports	Summarised annually		
Bur daisy	Outputs as a proxy for population	Annually during operations		
Cathedral bells				
Chilean needle grass	Population assessments	Annually		
Chinese pennisetum	Outputs as a proxy for population	Annually during operations		
Climbing spindleberry				
Cotton thistle				
Eel grass				
Evergreen buckthorn				
Giant needle grass				
Gorse				
Kangaroo grass				
Madeira vine or mignonette vine				
Mediterranean fanworm				
Moth plant				
Nassella tussock			Population assessments	Annually
Parrots feather			Outputs as a proxy for population	Annually during operations
Pest conifers	National Wilding Conifer Programme methods including analysis of infestation data within the Wilding Conifer Information System (WCIS)	Summarised annually		
Purple loosestrife	Outputs as a proxy for population	Annually during operations		
Rabbits - feral	Population assessments	Annually		
Reed sweet grass	Outputs as a proxy for population	Annually during operations		
Rooks	Detections/Reports	Summarised annually		
Rough horsetail	Outputs as a proxy for population	Annually during operations		
Saffron thistle				
Senegal tea				

Common Name	Monitoring method	Frequency
Spartina		
Tall wheat grass		
Wallabies	Detections/Reports	Summarised annually
White-edged nightshade	Outputs as a proxy for population	Annually during operations
Willow-leaved hakea		
Woolly nightshade		

2.5 An amended section 9.2

The proposal to include a programme pest conifers has large ramifications for the overall anticipated cost of implementing the RPMP. As a result, exiting Table 8 and Table 9 are proposed to be amended as follows.

It needs to be noted that both the costs allocated to MPI (for the National Wilding Conifer Control Programme) and Council are subject to the outcomes of the Budget 2019 process and the 2019 Council Annual Process respectively.

These processes to secure adequate resources to implement the proposed programme will have a large bearing when Council is making the final decision on whether to amend the RPMP in accordance with this Proposal.

Table xx: Anticipated costs - by group (excl GST)

Associated proposed Plan programme	Group					
	Vessel owners that enter Marlborough waters (estimated)	Occupiers subject to rule obligations to control pests (estimated)	MPI (estimated)	DOC (estimated)	Marlborough District Council	Total
Mediterranean fanworm	\$390,515		\$28,000		\$135,000	\$553,515
Pest conifers		\$200,000	\$1,760,000	\$250,000	\$135,000	\$2,345,000
Broom, Chilean needle grass, gorse, kangaroo grass, nassella tussock, rabbits, white-edged nightshade		\$2,139,925			\$762,500	\$2,902,425
Boneseed, cathedral bells, climbing spindleberry, evergreen buckthorn, madeira vine, spartina				\$64,200	\$59,850	\$124,050
All remaining programmes					\$274,412	\$274,412

Associated proposed Plan programme	Group					Total
	Vessel owners that enter Marlborough waters (estimated)	Occupiers subject to rule obligations to control pests (estimated)	MPI (estimated)	DOC (estimated)	Marlborough District Council	
Total	\$390,515	\$2,339,925	\$1,788,000	\$314,200	\$1,366,762	\$6,199,402
Proportion of total anticipated cost	6%	38%	29%	5%	22%	

2.6 Amendments to the Glossary

The following definitions are proposed to be included into the glossary of the RPMP.

Plantation forest means a forest deliberately established for commercial purposes, being at least 1 hectare of continuous forest cover of forest species that has been planted and has or will be harvested or replanted.

Pest Agent Conifer means any introduced conifer species that is capable of helping the spread of wilding conifers and is not otherwise specified as a pest within the RPMP and is not located within a plantation forest.

APPENDIX 1 - Proposal Risk and National Policy Direction Analyses

Level of analysis for benefits and costs (National Policy Direction)

Subject	Assessment Criteria 1: The likely significance of the pest or the proposed measures			Assessment Criteria 2: Likely costs relative to likely benefits			Assessment Criteria 3: Uncertainty of the impacts of the pest and effectiveness of measures			Assessment Criteria 4: Level and quality of data available			Level of Analysis Decision
	High	Medium	Low	High	Medium	Low	High uncertainty	Medium uncertainty	Low uncertainty	High	Medium	Low	
	Potential for significant interest, or Strong opposing viewpoints in community or High total costs.	Potential for moderate interest, or Opposing viewpoints in some groups within community or Moderate total costs.	Not generally likely to be an issue for community public or organisation or Low total costs.	Costs for the programme are likely to be similar to the benefits of the programme	Costs for the programme are likely to be lower than the benefits of the programme in most scenarios.	Costs for the programme are likely to be substantially lower than the benefits of the programme even if the objectives are not fully achieved.	Not much known about the pest's impacts. Measures are untested.	Known to have impacts elsewhere in similar situations. Similar measures have been effective in other areas, or Measures have only been somewhat effective.	Known to have significant impacts, spread risk known and the effectiveness of measures is well-known.	Very high-quality current distribution data; costs and impacts well established.	Some historical information or data from other sources (outside of the region or NZ). No specific targeted monitoring data. Costs and impacts capable of being estimated from case studies.	Little information available.	
Pest conifers	✓				✓				✓		✓		Medium

Assessment of the level of analysis - Clause 6(2)(g)

Although a medium level of analysis is the most appropriate for the proposed programme (and an economic analysis is suggested) Council has determined that it is not practicable for Council to quantify the benefits. As a result, these will not be quantified in the programme Proposal.

The preferred programme option will take into account the costs of the proposed programme and make a determination by way of statement, that the likely benefits outweigh the quantifiable (but estimated) costs.

Assessment of risk

Risks that each option will not achieve its objective NPD 6(3)

Option	No RPMP	Eradication	Progressive Containment
<i>Risk</i> <i>Objective</i>	<i>NA</i>	<i>To reduce the infestation level of the subject to zero levels in an area in the short to medium term.</i>	<i>To contain or reduce the geographic distribution of the subject, or an organism being spread by the subject, to an area over time.</i>
Technical and operation risks.		Medium Under this proposed programme, wide scale management would need to take place on infestations that have poor access, are large contiguous infestations and challenging to effectively manage.	Medium Under this proposed programme, targeted management would need to take place on infestations that have poor access, are mixed density and challenging to effectively manage.
The extent to which the option will be implemented and complied with.		Low There is a small risk that the control operations may not be carried out by land occupiers (which would only be at a maintenance phase).	Low There is a small risk that the control operations may not be carried out by land occupiers (which would only be at a maintenance phase).
The risk that compliance with other legislation will adversely affect implementation of the option.		High The control techniques and resulting destruction of large conifer stands could result in undesirable consequences with respect to soil erosion and water quality. Impacts with respect to alignment with ETS objectives would also come into question.	Medium Key programme targets would be to work back towards large, intractable infestations. This lowers the degree of risk but will still mean the removal of large stands that are feasible to remove. As a result, there may be some risk of other legislation implementation.
The risk that public or political concerns will adversely affect implementation of the option.		High The primary political risk is the ability to source and justify the resources that would be needed to achieve an eradication programme objective.	Medium A significant political risk is the ability to source and justify the resources that would be needed to achieve a progressive containment programme objective.
Other material risks.			

Risks that each option will not achieve its objective NPD 6(4)(b)

Option: Eradication

The residual risk of this option not achieving its objective remains high. However, it is not practicable to indicate the likelihood and impact of this residual risk.

Option: Progressive Containment

The residual risk of this option not achieving its objective remains at a medium level. However, it is not practicable to indicate the likelihood and impact of this residual risk.

Good Neighbour Rule assessment (National Policy Direction)

Proposed subject	Pest conifers
Proposed Good Neighbour Rule Rule 5.22.2.2 (Good Neighbour Rule) Occupiers shall destroy all pest conifers present on land they occupy within 200m of an adjoining property boundary prior to cone bearing where that adjoining property has previously been cleared through control operations and that adjoining occupier is taking reasonable steps to manage wilding conifers, within 200m of the boundary. A breach of this rule will create an offence under section 154N(19) of the Biosecurity Act.	
Criteria (paraphrased from National Policy Direction)	Assessment
In the absence of the rule, the pest would spread to land that is adjacent or nearby within the life of the plan and would cause unreasonable costs to an occupier of that land. Taking into account: <ol style="list-style-type: none"> The proximity and characteristics of the adjacent or nearby land, and; The biological characteristics and behaviour of the particular pest. 	Pest conifers are known to readily spread to land that is adjacent or nearby once they reach coning age. Pest conifers have seed that is wind-blown and wilding spread is known to occur over distances up to 10km+. However, the bulk of spread occurs within 200m of source trees. As a result, this distance has been used in the proposed Good Neighbour rule.
The occupier of the land that is adjacent or nearby, is taking reasonable measures to manage the pest or its impacts	The Rule is triggered by way of control operations taking place on the land that that is adjacent or nearby. As a result, this can be easily justified as taking reasonable measures to manage pest conifers.
The rule does not set a requirement on an occupier that is greater than that required to manage the spread of the pest to adjacent or nearby land. Taking into account: <ol style="list-style-type: none"> The biological characteristics and behaviour of the particular pest. Whether the costs of compliance with the rule are reasonable relative to the costs that such an occupier would incur, from the pest spreading, in the absence of a rule. 	The Rule places an obligation of an occupier to destroy pest conifers within 200m of the property boundary. This does not place an onerous requirement and will be adequate to minimise (but not eliminate) the spread of pest conifers across the boundary. This is due to the fact pest conifers are wind-spread and there are adequate and cost effective methods to destroy pest conifers. The cost to undertake the 200m clearance are reasonable when assessing the cost of removing pest conifers from potentially very large areas of land that could be receiving spread.

APPENDIX 2 - Assessment of adverse effects

Assessment for section 71(d)

Are pest conifers capable of causing an adverse effect on:		Comments:
Economic wellbeing?	Yes	Can reduce area used for extensive grazing
The viability of threatened species or organisms?	Yes	
The survival and distribution of indigenous plants or animals?	Yes	Habitat transformation.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	Competition and displacement.
Soil resources?		
Water quality?		
Human health?		
Social and cultural wellbeing?	Yes	On taonga and cultural landscape
The enjoyment of the recreational value of the natural environment?	Yes	Change to aesthetic values of ecosystems.
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?	Yes	Change toward natural ecosystems becoming dominated by exotic species.
Animal welfare?		