

Revised Tasman-Nelson Proposed
Regional Pest Management Plan -
Supporting Document - Cost Benefit
Analysis.

Executive Summary

This document presents the analysis benefits and costs (CBA) for the pests that appear in the revised Proposed Tasman Nelson Regional Pest Management Plan 2019-2029 (Plan). In most instances, the level of analysis required by the National Policy Direction for Pest Management (NDP) is rated as “low”, and, as such, this report presents the CBAs in a qualitative form.

For pests that require medium level CBAs, or pests where potentially high occupier costs may affect the conclusions of the CBA, a quantitative analysis is included. Pests with quantitative analyses are: broom (Howard – St Arnaud); broom (outside Howard-St Arnaud); gorse (Howard – St Arnaud); gorse (outside Howard- St Arnaud); nassella tussock (Cape Soucis), Queensland poplar, and yellow bristle grass.

This document updates the assessment of those pests that have changed status or assumptions as a result of recommendations of the Joint Committee. These species are: banana passion vine (Golden Bay); banana passion vine (Upper Riwaka); bomarea; broom (outside Howard – St Arnaud); Cape tulip; Chinese pennisetum; climbing asparagus; cotoneaster species (Abel Tasman); Douglas fir (wildings only - Abel Tasman); European holly (Abel Tasman and St Arnaud); gorse (outside Howard – St Arnaud); *Gunnera*; Johnson grass; knotweeds (Asiatic, Giant and hybrids); Kūmarahou (Abel Tasman); purple loosestrife; Queensland poplar; rats (south part of Waimea Estuary); rosemary grevillea (Abel Tasman); reed sweetgrass, *Sabella*; sycamore (St Arnaud and Abel Tasman); Taiwan cherry; variegated thistle; water hyacinth; white edged nightshade; woolly nightshade; yellow bristle grass and yellow jasmine.

This document contains an updated assessment for feral rabbits as a result of submitter observations for a fault in the original CBA.

To complete the picture, for those pests where the status has not changed, this document presents the analyses that were released with the CBA that accompanied the original proposed Plan (*Tasman Nelson Proposed RPMP Cost Benefit Analysis*), including exclusion pests.

This report does not include the results of the benefits and costs analysis work undertaken for Argentine/Darwin’s ants, boneseed, and purple pampas. The Joint Committee has decided not to include programmes for these pests due to expense or because they are not cost beneficial.

For the pests that appear in the Plan, the benefits of the preferred pest management programme outweigh the costs.

Background to the Biosecurity Act Process for Analysing Costs and Benefits

In compliance with Biosecurity Act 1993 (the Act) when deciding to form a regional pest management plan under Section 75 of the Act, the Tasman District Council and Nelson City Council must consider whether they remain satisfied that the benefits of the Plan outweigh the costs after taking account of the likely consequences of inaction or other courses of action.

Costs and benefits considerations are directed by Section 6 (Directions on Analysis Benefits and Costs) of the National Policy Direction for Pest Management 2015 (NPD).

When determining the appropriate level of analysis of the benefits and costs of the plan, Section 6(1) of the NPD requires that the councils consider:

- a) the level of uncertainty of the impacts of the subject, or an organism being spread by the subject, and of the effectiveness of measures; and
- b) the likely significance of the subject, or an organism being spread by the subject, or of the proposed measures, in terms of stakeholder interest and contention, and total costs of the proposed plan; and
- c) the likely costs of the programme relative to the likely benefits; and
- d) the level of certainty and the quality of the available data.

Appendix 1: *Determining the level of costs and benefits analysis to be applied* [NPD 6(1)] presents the analysis of these considerations for each pest in the Plan.

In most instances, the NPD 6(1) analysis concludes that only a low level (predominantly qualitative) analysis is needed. This report presents a qualitative analysis for the pests in the Plan with the exception of for broom (Howard – St Arnaud), gorse (Howard – St Arnaud), nassella tussock (Cape Soucis), Queensland poplar, and yellow bristle grass. For these species a medium level of analysis (largely quantitative) is warranted. This report also presents a quantitative analysis for broom (outside Howard – St Arnaud) and gorse (outside Howard – St Arnaud) to check that introducing a Good Neighbour Rule for these species remains cost beneficial.

Within Sections 6(2) to 6(4), the NPD requires that the analysis of benefits and costs take account any risks that each option will not achieve the stated objectives of the Plan. This report presents the risk analysis for each pest as part of the qualitative analysis.

Section 6(2) of the NPD also requires that the analysis of the benefits and costs for each pest identify and quantify (if practicable) the benefits and costs of each option and state the assumptions on which these assessments are based. This assessment is largely covered by the qualitative. For pests where a medium level of assessment is required, dollar figures representing benefits and costs assumptions are presented in a quantitative analysis.

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African Feather Grass

Preferred Option: Eradication

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

Programme Options	Eradication	Progressive Containment
Objective	Over the duration of this Plan, eradicate the pests listed in the Eradication Programme to eliminate their adverse effects.	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.
Intermediate outcome	To reduce the infestation level of the pest, or an organism being spread by the pest, to zero levels in an area in the short to medium term.	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.
Technical and operational risks	Low	Low
The risk that the option cannot be implemented and of non-compliance	Low There is a low risk that inspection and control operations cannot be carried out annually.	Low There is a low risk that the inspection and control operations cannot be carried out annually.
The risk that compliance with other legislation will adversely affect implementation of the option	Low African feather grass is an aggressive rhizomatous perennial grass that forms dense tussocks. This grass is unpalatable and highly invasive, displacing other desirable plants. It is very persistent and difficult to eradicate. It spreads through movement of seeds distributed by wind, water, animals and machinery, and by rhizome growth. Its tussocks can inhibit movement by people, farm animals, and small machinery, block drains and restrict roadside visibility.	Low African feather grass is an aggressive rhizomatous perennial grass that forms dense tussocks. This grass is unpalatable and highly invasive, displacing other desirable plants. It is very persistent and difficult to eradicate. It spreads through movement of seeds distributed by wind, water, animals and machinery, and by rhizome growth. Its tussocks can inhibit movement by people, farm animals, and small machinery, block drains and restrict roadside visibility.

Programme Options	Eradication	Progressive Containment
The risk that public or political concerns will adversely affect implementation of the option	Low It is assessed at 1 (out of 10) on the Infestation Curve.	Low It is assessed at 1 (out of 10) on the Infestation Curve.
Other material risks	None identified	None identified

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

Eradication: Low

The risk of not achieving the Eradication objective within the next 10 years is rated as low. Experience with intensive management of African feather grass over time has highlighted the difficulty of eradicating this pest plant but good progress has been made by committed staff with no live plants being detected on four of the five sites in recent years.

Progressive containment: Low

The risk of not achieving the Progressive Containment objective within the next 10 years is also rated as low.

Beneficiaries of the programme [NPD 7(2)(b)]

The prime beneficiaries are considered to be occupiers but there are benefits to the whole community from completing eradication on the one remaining site.

Exacerbators of the programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

This plant can spread by seed carried by wind, water and animals, as well as vegetatively through root (rhizome) growth. Active and passive exacerbators are occupiers with this plant on their land and those who move animals that are carrying the seed to new sites.

Best mechanism to impose cost allocation [NPD 7(2)(e)]

The simplest and most efficient method of allocating the cost of a very small programme is to incorporate it into the general rate.

Effects of not intervening

This grass will spread rapidly, with its seed being carried by wind, water, animals and machinery, invading pasture and reducing its palatability, and blocking farm drains.

Rationale

As there is only one site of African feather grass on which live plants have recently been detected, it is appropriate to include it in the Eradication programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to ensure its eradication is not considered viable. It is a difficult plant to detect and treat and it is important to utilise the experience and skills of the biosecurity team to achieve eradication. Its inclusion in the Plan should ensure this.

Adverse effects [Section 71(d)]

Is African Feather Grass capable of causing an adverse effect on:		Comments
Economic well-being?	Yes	It is an aggressive unpalatable grass that can outcompete pasture and become a major pest of roadsides and wasteland.
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?	Yes	Invasion and transformation of natural habitat.
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 well-being?	Yes	Loss of valued natural ecosystems.
The enjoyment of the recreational value of the natural environment?	Yes	Impedes access and restricts roadside vision.
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?	Yes	Invasion of natural ecosystems.

Banana Passion Vine (Golden Bay)

Preferred Option: Sustained Control

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

Programme Options	Progressive Containment	Sustained Control
Objective	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects	Over the duration of this Plan, control the pests listed in the Sustained Control Programme to minimise their adverse effects.
Intermediate outcome	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.	To provide for ongoing control of the pest, or an organism being spread by the pest, to reduce its impacts on values and its spread to other properties.
Technical and operational risks	<p>Moderate</p> <p>Banana passion vine is a vigorous scrambling evergreen vine capable of climbing to 10 m or higher. This vine can smother native trees and shrubs on forest margins and in light wells. It can topple trees and smother natural regeneration. Within 2 years of establishment, it can produce viable seed inside yellow cylindrical fruit that is distributed by birds, possums and pigs. It has the potential to spread rapidly into scrubland and the margins of indigenous forest and into light wells if left untreated. There is strong support for management of it in this part of Golden Bay and significant progress has been made in recent years in reducing its density and its geographical distribution.</p>	<p>Moderate</p> <p>Banana passion vine is a vigorous scrambling evergreen vine capable of climbing to 10 m or higher. This vine can smother native trees and shrubs on forest margins and in light wells. It can topple trees and smother natural regeneration. Within 2 years of establishment, it can produce viable seed inside yellow cylindrical fruit that is distributed by birds, possums and pigs. It has the potential to spread rapidly into scrubland and the margins of indigenous forest and into light wells if left untreated. There is strong support for management of it in this part of Golden Bay and significant progress has been made in recent years in reducing its density and its geographical distribution.</p>

Programme Options	Progressive Containment	Sustained Control
The risk that the option cannot be implemented and the risk of non-compliance with rules	<p>Moderate</p> <p>It is assessed at 4 (out of 10) on the Infestation Curve in this part of Golden Bay.</p> <p>The control programme is dependent on external funding and a co-ordinated approach by Project De-Vine has been very successful in raising funds from external sources to undertake the initial knockdown on a range of pest plants. The risk is that local occupiers may be reluctant or unable to maintain the level of control required to reduce its distribution.</p>	<p>Moderate</p> <p>It is assessed at 4 (out of 10) on the Infestation Curve in this part of Golden Bay.</p> <p>The control programme is dependent on external funding and a co-ordinated approach by Project De-Vine has been very successful in raising funds from external sources to undertake the initial knockdown on a range of pest plants. The risk is that local occupiers may be reluctant or unable to maintain the level of control required to reduce its distribution.</p>
The risk that compliance with other legislation will adversely affect implementation of the option	<p>Low</p> <p>Treatment usually involves hand application of widely used herbicides.</p>	<p>Low</p> <p>Treatment usually involves hand application of widely used herbicides.</p>
The risk that public or political concerns will adversely affect implementation of the option	<p>Low</p> <p>Inclusion in the RPMP provides strong support for funding applications and to ensure participation by all occupiers.</p>	<p>Low</p> <p>Inclusion in the RPMP provides strong support for funding applications and to ensure participation by all occupiers.</p>
Other material risks	None identified	None identified

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

Progressive Containment: Moderate

The risk of not achieving the Progressive Containment objective for Golden Bay within the next 10 years is rated as moderate. Project De-Vine has shown what can be achieved on a range of pest plants with well-organised control programmes focussed on Golden Bay. Supporting this work by including it in this programme is justified by what has been achieved in the last 5 years. However, Progressive Containment across the whole region is not viable.

Sustained Control: Low

The risk of not achieving the Sustained Control objective across the region within the next 10 years is rated as low.

Beneficiaries of the programme [NPD 7(2)(b)]

The beneficiary is considered to be the whole community.

Exacerbators of the programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

This plant produces viable seed from an early age in palatable fruit and this is distributed by birds, possums and pigs. Exacerbators are occupiers with this plant on their land who fail to control it. It is difficult to control on steep and rugged terrain.

Best mechanism to impose cost allocation [NPD 7(2)(e)]

The simplest and most efficient method of allocating the cost of a very small programme is to incorporate it into the general rate.

Effects of not intervening

This vine will spread rapidly, as the seeds inside the yellow fruit are carried by birds, possums and pigs, into scrubland and young forest, onto forest margins and into gaps, smothering trees and shrubs.

Rationale

The commitment and expertise of the Project De-Vine team to reduce the extent of this pest in some parts of the region, and the non-statutory (i.e. no Plan rules) status of this pest in the rest of the region make it appropriate to include it in the Sustained Control programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers in the Golden Bay area with this pest on their land to take voluntary action is not considered viable. For many occupiers, it has established on steep terrain that is difficult to access and is considered an impossible task. A co-ordinated campaign is underway that utilises external funding and experienced operators. The pest's inclusion in the Plan should ensure that all properties can be treated and its geographic distribution in Golden Bay is reduced, achieving sustained control across the region.

Adverse effects [Section 71(d)]

Is Banana Passion Vine capable of causing an adverse effect on:		Comments
Economic well-being?		
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?	Yes	It is a vigorous evergreen vine capable of invading and smothering indigenous

Is Banana Passion Vine capable of causing an adverse effect on:		Comments
		scrubland and margins of indigenous forest.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	It is capable of disrupting natural scrubland and forest ecosystems.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?	Yes	Loss of valued natural ecosystems.
The enjoyment of the recreational value of the natural environment?	Yes	Impedes access and restricts roadside vision.
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?	Yes	Invasion of natural ecosystems.
Animal welfare?		

Banana Passion Vine (Upper Riwaka)

Preferred Option: Sustained Control

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

Programme Options	Progressive Containment	Sustained Control
Objective	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects	Over the duration of this Plan, control the pests listed in the Sustained Control Programme to minimise their adverse effects.
Intermediate outcome	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.	To provide for ongoing control of the pest, or an organism being spread by the pest, to reduce its impacts on values and its spread to other properties.
Technical and operational risks	<p>Moderate</p> <p>Banana passion vine is a vigorous scrambling evergreen vine capable of climbing to 10 m or higher. This vine can smother native trees and shrubs on forest margins and in light wells. It can topple trees and smother natural regeneration. Within 2 years of establishment, it can produce viable seed inside yellow cylindrical fruit that is distributed by birds, possums and pigs. It has the potential to spread rapidly into scrubland and the margins of indigenous forest and into light wells if left untreated. Even with support for management from voluntary groups, it may be difficult to show a reduction in density within the 10-year life of the Plan.</p>	<p>Moderate</p> <p>Banana passion vine is a vigorous scrambling evergreen vine capable of climbing to 10 m or higher. This vine can smother native trees and shrubs on forest margins and in light wells. It can topple trees and smother natural regeneration. Within 2 years of establishment, it can produce viable seed inside yellow cylindrical fruit that is distributed by birds, possums and pigs. It has the potential to spread rapidly into scrubland and the margins of indigenous forest and into light wells if left untreated. With support for management from voluntary groups, it may be possible to stop the spread.</p>

Programme Options	Progressive Containment	Sustained Control
The risk that the option cannot be implemented and the risk of non-compliance with rules	High A progressive containment programme would be highly dependent on external funding and a co-ordinated approach by volunteers. After the initial work by volunteers, there is a high risk is that local occupiers may be reluctant or unable to maintain the level of control required to reduce its distribution.	Moderate There is a risk that that local occupiers may be reluctant initially, but it is feasible that occupier-led control can be maintained enough to reduce further spread.
The risk that compliance with other legislation will adversely affect implementation of the option	Low Treatment usually involves hand application of widely used herbicides.	Low Treatment usually involves hand application of widely used herbicides.
The risk that public or political concerns will adversely affect implementation of the option	Low Inclusion in the RPMP provides strong support for funding applications and to ensure participation by all occupiers.	Low Inclusion in the RPMP provides strong support for funding applications and to ensure participation by all occupiers.
Other material risks	None identified	None identified

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

Progressive Containment: High

The risk of not achieving the Progressive Containment objective within Upper Riwaka within the next 10 years is rated as high due to the level of commitment need by volunteer groups and occupiers to reduce the level of infestation.

Sustained Control: Moderate to Low

The risk of not achieving the Sustained Control objective within Upper Riwaka the next 10 years is rated as moderate. It is feasible that it can be achieved through volunteer groups and occupier-led control. The risk of not achieving Sustained Control across the region is rated low.

Beneficiaries of the programme [NPD 7(2)(b)]

The beneficiary is considered to be the whole community.

Exacerbators of the programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

This plant produces viable seed from an early age in palatable fruit and this is distributed by birds, possums and pigs. Exacerbators are occupiers with this plant on their land who fail to control it. It is difficult to control on steep and rugged terrain.

Best mechanism to impose cost allocation [NPD 7(2)(e)]

The simplest and most efficient method of allocating the cost of a very small programme is to incorporate it into the general rate.

Effects of not intervening

This vine will spread rapidly, as the seeds inside the yellow fruit are carried by birds, possums and pigs, into scrubland and young forest, onto forest margins and into gaps, smothering trees and shrubs.

Rationale

Occupier-led control to reduce spread of this pest in the Upper Riwaka area is feasible. To do nothing risks further damage to the environment in the Upper Riwaka area. The non-statutory (i.e. no Plan rules) status of this pest in the rest of the region make it appropriate to include it in the Sustained Control programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers in the Upper Riwaka area with this pest on their land to take voluntary action is not considered viable. For many occupiers, it has established on steep terrain that is difficult to access and is considered an impossible task. A co-ordinated campaign is underway that utilises external funding and experienced operators. The pest's inclusion in the Plan should ensure that all properties can be treated in the Upper Riwaka area and sustained control across the region can be achieved.

Adverse effects [Section 71(d)]

Is Banana Passion Vine capable of causing an adverse effect on:		Comments
Economic well-being?	No	
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?	Yes	It is a vigorous evergreen vine capable of invading and smothering indigenous scrubland and margins of indigenous forest.

Is Banana Passion Vine capable of causing an adverse effect on:		Comments
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	It is capable of disrupting natural scrubland and forest ecosystems.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?	Yes	Loss of valued natural ecosystems.
The enjoyment of the recreational value of the natural environment?	Yes	Impedes access and restricts roadside vision.
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?	Yes	Invasion of natural ecosystems.
Animal welfare?		

Bathurst Bur

Preferred Option: Eradication

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

Programme Options	Eradication	Progressive Containment
Objective	Over the duration of this Plan, eradicate the pests listed in the Eradication Programme to eliminate their adverse effects.	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects
Intermediate outcome	To reduce the infestation level of the pest, or an organism being spread by the pest, to zero levels in an area in the short to medium term.	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.
Technical and operational risks	<p>Low</p> <p>Bathurst bur is a shrubby annual herb with upright stems containing triple spines grouped in pairs. It produces fruit equipped with hooked spines that attaches to animals but can also be spread in produce and by water. The burs and spines can damage the feet of livestock and irritate the skin of sheep and devalue their wool. This pest can compete with many summer crops and pasture species. Its seedlings are toxic to many farm animals and can cause dermatitis in humans.</p>	<p>Low</p> <p>Bathurst bur is a shrubby annual herb with upright stems containing triple spines grouped in pairs. It produces fruit equipped with hooked spines that attaches to animals but can also be spread in produce and by water. The burs and spines can damage the feet of livestock and irritate the skin of sheep and devalue their wool. This pest can compete with many summer crops and pasture species. Its seedlings are toxic to many farm animals and can cause dermatitis in humans.</p>
The risk that the option cannot be implemented and of non-compliance	<p>Low</p> <p>It is assessed at 2 out of 10 (long seed viability) and all known sites are inspected regularly.</p>	<p>Low</p> <p>It has long seed viability and known sites are inspected regularly.</p>

Programme Options	Eradication	Progressive Containment
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Eradication: Low

The risk of not achieving the Eradication objective within the next 10 years is rated as low. Intensive management of Bathurst bur over time has indicated that eradication is feasible.

Progressive containment: Low

The risk of not achieving the Progressive Containment objective within the next 10 years is also rated as low.

Beneficiaries of the programme [NPD 7(2)(b)]

The prime beneficiaries are considered to be occupiers in rural areas but there are benefits to the whole community from continuing with an eradication programme.

Exacerbators of the programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

This plant can spread by seed carried by animals and in water, as well as in produce. Active exacerbators are occupiers with this plant on their land and those who move animals that can carry the seed to new sites.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of a very small programme is to incorporate it into the general rate.

Effects of not intervening

This spiny shrub will spread rapidly, as its hooked seeds are carried by animals and farm produce and in water. It will damage the feet of livestock, irritate the skin of sheep and

devalue their wool. The seedlings will compete with many summer crops and pasture species. They are toxic to many farm animals, and can cause dermatitis in humans.

Rationale

As there are few known sites of Bathurst bur on which live plants are present, it is appropriate to include it in the Eradication programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to ensure its eradication is not considered viable. It is difficult to identify this plant when it is growing in pasture and at the juvenile stage or after browsing. Some occupiers are not aware of its pest potential. An intensive campaign is continuing and its inclusion in the Plan should ensure that all sites can be treated and utilise the experience and skills of the biosecurity team to achieve eradication.

Adverse effects [Section 71(d)]

Is Bathurst Bur capable of causing an adverse effect on:		Comments
Economic well-being?	Yes	The seedlings affect livestock and compete strongly with summer crops and preferred pasture species.
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?		
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?		
Soil resources?		
Water quality?		
Human health?	Yes	Contacts with plants can cause dermatitis.
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?	Yes	The spines on plants restrict access.
The relationship between Māori, their culture, and their traditions		

and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?	Yes	The seedlings are toxic to cattle, sheep, goats, horses, pigs and poultry, and the burs can damage the feet of livestock.

Blackberry

Preferred Option: Sustained Control

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

Programme Options	Progressive Containment	Sustained Control
Objective	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.	Over the duration of this Plan, control the pests listed in the Sustained Control Programme to minimise their adverse effects.
Intermediate outcome	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.	To provide for ongoing control of the pest, or an organism being spread by the pest, to reduce its impacts on values and its spread to other properties.
Technical and operational risks	Moderate Blackberry is a prickly scrambling multi-stemmed perennial shrub that can form impenetrable thickets. It is spread mainly by birds carrying the fleshy edible fruit but it can also spread laterally by the tips of the canes rooting where they touch the ground in autumn. It is widespread throughout the region, invading wasteland and land that is lightly grazed.	Low Blackberry is a prickly scrambling multi-stemmed perennial shrub that can form impenetrable thickets. It is spread mainly by birds carrying the fleshy edible fruit but it can also spread laterally by the tips of the canes rooting where they touch the ground in autumn. It is widespread throughout the region, invading wasteland and land that is lightly grazed.
The risk that the option cannot be implemented and the risk of non-compliance with rules	Moderate Blackberry is rated at 8 (out of 10) on the Infestation Curve. It is not easily controlled.	Low Blackberry is rated at 8 (out of 10) on the Infestation Curve. It is not easily controlled.
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low

Programme Options	Progressive Containment	Sustained Control
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Progressive Containment: Moderate

The risk of not achieving the Progressive Containment objective of reducing the geographic distribution within the next 10 years is rated as moderate as it is a difficult pest to control.

Sustained Control: Low

The risk of not achieving the Sustained Control objective within the next 10 years is rated as low. Maintaining control of this pest for a set distance of 10 m from property boundaries where the land is clear or being cleared of blackberry is a more realistic and cost-effective option.

Beneficiaries of the programme [NPD 7(2)(b)]

The direct beneficiaries are considered to be rural occupiers.

Exacerbators of the programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Exacerbators are the rural occupiers with this pest growing on their land.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of this minor programme is to incorporate it into the general rate.

Effects of not intervening

This prickly vine will spread, partly by birds distributing the seed in the fleshy fruit, and partly by gradual spread from the canes rooting where they touch the ground in autumn, onto wasteland and land that is lightly grazed, restricting access and providing habitat for pest animals.

Rationale

There is very little staff time involved in this work and involves checking property boundaries when there is a complaint. It is appropriate to include it as a Boundary Control pest in the Sustained Control programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to reduce its impact on values and its spread to other properties is not considered viable. Some occupiers are overwhelmed by the scale of infestation, some lack motivation and some are unaware of its ability to spread. A requirement in the Plan to maintain control within 10 m of the boundary from properties where it is clear or being cleared is a more effective way of achieving this.

Adverse effects [Section 71(d)]

Is Blackberry capable of causing an adverse effect on:		Comments
Economic well-being?	Yes	It can invade lower quality pastoral land and reduce carrying capacity, and lower wool quality.
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?		
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?		
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?	Yes	It can form impenetrable barriers and severely restrict public access. The berries can be eaten but are difficult to collect and have largely been replaced by cultivated berries.
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?	Yes	The canes can trap sheep

Black Spot

Preferred Option: Sustained Control

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

Programme Options	Progressive Containment	Sustained Control
Objective	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.	Over the duration of this Plan, control the pests listed in the Sustained Control Programme to minimise their adverse effects.
Intermediate outcome	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.	To provide for ongoing control of the pest, or an organism being spread by the pest, to reduce its impacts on values and its spread to other properties.
Technical and operational risks	Moderate Black spot is a fungus found on the leaves and fruit of apple trees. Its spores spread from leaf material on the ground to nearby trees. Any sign of black spot on fruit causes its rejection. Orchards can be treated in springtime to minimise infection.	Low Black spot is a fungus found on the leaves and fruit of apple trees. Its spores spread from leaf material on the ground to nearby trees. Any sign of black spot on fruit causes its rejection. Orchards can be treated in springtime to minimise infection.
The risk that the option cannot be implemented and the risk of non-compliance with rules	High Black spot is rated at 7 (out of 10) on the Infestation Curve. It is found throughout the region in association with apple orchards. It would be very difficult to reduce its distribution.	Low Black spot is rated at 7 (out of 10) on the Infestation Curve. It is found throughout the region in association with apple orchards. It can be adequately controlled with fungicides.
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low

Programme Options	Progressive Containment	Sustained Control
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Progressive Containment: Moderate

The risk of not achieving the Progressive Containment objective of reducing the geographic distribution within the next 10 years is rated as moderate as it is closely associated with apple orchards.

Sustained Control: Low

The risk of not achieving the Sustained Control objective within the next 10 years is rated as low. The orchardist at risk has the option of controlling black spot on apple trees on the adjoining land if it is not being adequately controlled. This is a cost-effective option.

Beneficiaries of the Programme [NPD 7(2)(b)]

The direct beneficiaries are considered to be the apple orchardists producing high quality fruit.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Exacerbators are those occupiers within 500 m of apple orchards who are not controlling black spot on their apple trees.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of this minor programme is to incorporate it into the general rate.

Effects of not intervening

This fungus will spread from infected apple tree leaves to nearby apple trees, resulting in rejection of fruit if orchards are not treated to minimise infection.

Rationale

The previous boundary control rule was similar and one that had been generally accepted by occupiers adjoining apple orchards. This makes it appropriate to include black spot as a Boundary Control pest in the Sustained Control programme. It will allow the orchardists to control this pest on poorly managed apple orchards on land within 500 m. They have the expertise to identify it and the resources to treat it.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to control it is not considered viable. A requirement in the Plan to allow orchardists to control this pest on apple trees on adjoining land when it is not being adequately controlled is a more effective means of achieving this and ensuring commercial apple crops can meet market requirements. Orchardists have the incentive and the expertise to identify it and the resources to treat it.

Adverse effects [Section 71(d)]

Is Black Spot capable of causing an adverse effect on:		Comments
Economic well-being?	Yes	If untreated, it can damage apples and result in the crop being rejected.
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?		
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?		
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Bomarea

Preferred Option: Progressive Containment

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

Programme Options	Progressive Containment	Sustained Control
Objective	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.	Over the duration of this Plan, control the pests listed in the Sustained Control Programme to minimise their adverse effects.
Intermediate outcome	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.	To provide for ongoing control of the pest, or an organism being spread by the pest, to reduce its impacts on values and its spread to other properties.
Technical and operational risks	<p>Moderate</p> <p>Bomarea is a multi-stemmed climbing vine growing from underground rhizomes. It is shade-tolerant and can spread and smother supporting trees. It produces fleshy round orange fruit and has the potential to spread into scrubland and the margins of indigenous forest and into light wells. It is capable of smothering its host trees and shading understorey vegetation. This vine is best controlled with herbicides by painting the stumps of cut stems or spraying the stems or regrowth after cutting back. Further treatment may be required.</p>	<p>Low</p> <p>Bomarea is a multi-stemmed climbing vine growing from underground rhizomes. It is shade-tolerant and can spread and smother supporting trees. It produces fleshy round orange fruit and has the potential to spread into scrubland and the margins of indigenous forest and into light wells. It is capable of smothering its host trees and shading understorey vegetation. This vine is best controlled with herbicides by painting the stumps of cut stems or spraying the stems or regrowth after cutting back. Further treatment may be required.</p>

Programme Options	Progressive Containment	Sustained Control
The risk that the option cannot be implemented and the risk of non-compliance with rules	Low Bomarea has a limited distribution at present and is rated 2 (out of 10) on the Infestation Curve. It produces a dense mat of roots, rhizomes and tubers and is hard to kill.	Low Bomarea has a limited distribution at present and is rated 2 (out of 10) on the Infestation Curve. It produces a dense mat of roots, rhizomes and tubers and is hard to kill.
The risk that compliance with other legislation will adversely affect implementation of the option	Low Treatment usually involves hand application of widely used herbicides.	Low Treatment usually involves hand application of widely used herbicides.
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Progressive Containment: Moderate

The risk of not achieving the Progressive Containment objective within the next 10 years is rated as moderate. However, its limited distribution and a well-organised control programme suggests this can be achieved within this time frame.

Sustained Control: Low

The risk of not achieving the Sustained Control objective within the next 10 years is rated as low as this involves a lower level of control by occupiers.

Beneficiaries of the Programme [NPD 7(2)(b)]

The beneficiaries are considered to be the whole community.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

This plant produces fruit containing viable seed from an early age which is distributed by birds. Exacerbators are occupiers with this plant on their land who fail to control it. It is a difficult plant to control.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of a very small programme is to incorporate it into the general rate.

Effects of not intervening

This vine will spread from the seed in the fleshy orange fruit eaten by birds, invading scrubland and the margins of forests and light wells within the forest, smothering host trees and shading understorey vegetation.

Rationale

The limited distribution of *Bomarea* makes it appropriate to include it as in the Progressive Containment programme. A quantitative CBA undertaken shows a Progressive Containment programme has a high internal rate of return (>100) (Lambie; 2018).

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to contain or reduce its geographic distribution is not considered viable. It is an attractive plant, once popular in domestic gardens, and some do not appreciate its pest potential. Its inclusion in the Plan should ensure that progressive containment can be achieved.

Adverse effects [Section 71(d)]

Is <i>Bomarea</i> capable of causing an adverse effect on:		Comments
Economic well-being?		
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?	Yes	It is a vigorous evergreen vine capable of invading and smothering indigenous scrubland and margins of indigenous forest.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	It is capable of disrupting natural scrubland and forest ecosystems.
Soil resources?		
Water quality?		
Human health?		

Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?	Yes	It Impedes access into some areas.
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Boneseed (outside the Port Hills)

Preferred Option: Eradication

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

Programme Options	Eradication	Progressive Containment
Objective	Over the duration of this Plan, eradicate the pests listed in the Eradication Programme to eliminate their adverse effects.	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.
Intermediate outcome	To reduce the infestation level of the pest, or an organism being spread by the pest, to zero levels in an area in the short to medium term.	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.
Technical and operational risks	<p>Low</p> <p>Boneseed is a perennial multi-branched woody shrub growing up to 3 m, producing large quantities of black berries that are mostly distributed by birds, but can also be water-distributed. The seeds can be viable for up to 10 years. It is an aggressive fast-growing coloniser in coastal areas and can rapidly displace native coastal plants on cliffs and sand dunes and in salt marshes.</p>	<p>Low</p> <p>Boneseed is a perennial multi-branched woody shrub growing up to 3 m, producing large quantities of black berries that are mostly distributed by birds, but can also be water-distributed. The seeds can be viable for up to 10 years. It is an aggressive fast-growing coloniser in coastal areas and can rapidly displace native coastal plants on cliffs and sand dunes and in salt marshes.</p>
The risk that the option cannot be implemented and of non-compliance	<p>Low</p> <p>Boneseed has limited distribution outside of the Port Hills and is rated at 3 (out of 10) on the Infestation Curve. Tasman District Council biosecurity staff will continue to inspect all sites and control any live plants.</p>	<p>Low</p> <p>Boneseed has limited distribution outside of the Port Hills and is rated at 3 (out of 10) on the Infestation Curve.</p>

Programme Options	Eradication	Progressive Containment
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Eradication: Low

The risk of not achieving the Eradication objective outside the Port Hills within the next 10 years is rated as low. Intensive management of boneseed over time indicates that eradication is feasible.

Progressive containment: Low

The risk of not achieving the Progressive Containment objective outside the Port Hills within the next 10 years is also rated as low.

Beneficiaries of the Programme [NPD 7(2)(b)]

The prime beneficiary is considered to be the whole community, which will benefit from its removal from coastal areas outside the Port Hills of Nelson. Within the Port Hills, it is widely distributed and the number of property owners and steep terrain make the provision of advice and investment in biocontrol a more appropriate option.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Active exacerbators are occupiers with this plant on their land.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of a very small programme is to incorporate it into the general rate.

Effects of not intervening

This woody shrub will spread rapidly, as the seeds are carried by birds eating the black berries. The berries can also be transported in water. It will colonise coastal areas, displacing coastal plants on cliffs, sand dunes and salt marshes.

Rationale

As there are few known sites of boneseed outside the Port Hills on which live plants are present, it is appropriate to include it in the Eradication programme. A quantitative CBA on a Progressive Containment programme that included the Port Hills showed this scenario is not cost beneficial (Lambie; 2018).

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to ensure its eradication is not considered viable. It is an attractive plant but a prolific seeder, and some occupiers do not appreciate its pest potential. There are a limited number of infested sites remaining and it is vital to utilise the experience and skills of the biosecurity team to achieve eradication in the region outside the Port Hills. Its inclusion in the Plan should ensure this can be achieved.

Adverse effects [Section 71(d)]

Is Boneseed capable of causing an adverse effect on:		Comments
Economic well-being?		
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?	Yes	It can displace native species growing on coastal cliffs, sand dunes and in salt marshes.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	It can reduce biological diversity in coastal ecosystems.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		

The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Boxthorn

Preferred Option: Eradication

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

Programme Options	Eradication	Progressive Containment
Objective	Over the duration of this Plan, eradicate the pests listed in the Eradication Programme to eliminate their adverse effects.	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.
Intermediate outcome	To reduce the infestation level of the pest, or an organism being spread by the pest, to zero levels in an area in the short to medium term.	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.
Technical and operational risks	<p>Low</p> <p>Boxthorn is an evergreen multi-branched shrub growing up to 6 m. It is an aggressive coloniser of sand dunes and coastal areas and can rapidly smother native coastal plants. It produces orange berries that are distributed by birds. The berries, leaves, stems and roots contain alkaloids that are toxic to humans and livestock, and the stiff sharp spines are mildly poisonous.</p>	<p>Low</p> <p>Boxthorn is an evergreen multi-branched shrub growing up to 6 m. It is an aggressive coloniser of sand dunes and coastal areas and can rapidly smother native coastal plants. The berries, leaves, stems and roots contain alkaloids that are toxic to humans and livestock, and the stiff sharp spines are mildly poisonous.</p>
The risk that the option cannot be implemented and of non-compliance	<p>Low</p> <p>Boxthorn has a limited distribution and is rated at 3 (out of 10) on the Infestation Curve. Tasman District Council biosecurity staff will continue to inspect all sites and destroy any live plants.</p>	<p>Low</p> <p>Boxthorn has a limited distribution and is rated at 3 (out of 10) on the Infestation Curve.</p>

Programme Options	Eradication	Progressive Containment
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Eradication: Low

The risk of not achieving Eradication within the next 10 years is rated as low. Intensive management of boxthorn over time indicates that eradication is achievable.

Progressive containment: Low

The risk of not achieving the Progressive containment objective outside the Port Hills within the next 10 years is also rated as low.

Beneficiaries of the Programme [NPD 7(2)(b)]

The prime beneficiary is considered to be the whole community, which will benefit from its removal from coastal areas.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

This plant is spread by seed contained in berries that is spread by birds. Exacerbators are occupiers with this plant on their land.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of a very small programme is to incorporate it into the general rate.

Effects of not intervening

This spiny evergreen shrub will spread rapidly into coastal areas, as its seeds are contained in orange berries that are distributed by birds. The berries, leaves, stems and roots contain alkaloids that are toxic to humans and to livestock and the spines are mildly poisonous.

Rationale

There are a few known sites of boxthorn remaining in coastal areas throughout the region. It is appropriate that it is included in the Eradication programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to ensure its eradication is not considered viable. It can be a difficult plant to locate in scrubland and its seeds contained in berries are distributed by birds. There are a limited number of infested sites remaining and it is vital to utilise the experience and skills of the biosecurity team to achieve eradication in the region. Its inclusion in the Plan should ensure this can be achieved.

Adverse effects [Section 71(d)]

Is Boxthorn capable of causing an adverse effect on:		Comments
Economic well-being?	Yes	Boxthorn is toxic to livestock and can invade extensively managed land.
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?	Yes	It can displace native species growing in coastal areas.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	It can reduce biological diversity in coastal ecosystems.
Soil resources?		
Water quality?		
Human health?	Yes	Boxthorn leaves, stems and roots contain alkaloids that are toxic to humans and the spines are poisonous.
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?	Yes	Boxthorn can quickly restrict access to coastal sites.
The relationship between Māori, their culture, and their traditions		

and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		Boxthorn leaves, stems and roots contain alkaloids that are toxic to humans and the spines are poisonous.

Broom (Howard-St Arnaud area)

Preferred Option: Sustained Control

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

Programme Options	Progressive Containment	Sustained Control
Objective	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.	Over the duration of this Plan, control the pests listed in the Sustained Control Programme to minimise their adverse effects.
Intermediate outcome	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.	To provide for ongoing control of the pest, or an organism being spread by the pest, to reduce its impacts on values and its spread to other properties.
Technical and operational risks	<p>Moderate</p> <p>Broom is an erect multi-stemmed shrub with flexible green stems that are almost leafless. It is an aggressive competitor for light, nutrients and moisture and can invade lightly grazed productive land and wasteland along waterways, and smothers native species in regenerating shrubland. It seeds prolifically and seed life can exceed 20 years. The seeds are dispersed when the seed pods open and can be distributed over long distances in river gravels and in soil on heavy machinery. Broom is best controlled by spraying with commonly-used herbicides and follow-up spraying is required over a substantial period of time.</p>	<p>Low</p> <p>Broom is an erect multi-stemmed shrub with flexible green stems that are almost leafless. It is an aggressive competitor for light, nutrients and moisture and can invade lightly grazed productive land and wasteland along waterways, and smothers native species in regenerating shrubland. It seeds prolifically and seed life can exceed 20 years. The seeds are dispersed when the seed pods open and can be distributed over long distances in river gravels and in soil on heavy machinery. Broom is best controlled by spraying with commonly-used herbicides and follow-up spraying is required over a substantial period of time</p>
The risk that the option cannot be implemented and	<p>Moderate</p> <p>Broom is lightly distributed in this part of the region and rated</p>	<p>Low</p> <p>Broom is lightly distributed in this part of the region and rated</p>

Programme Options	Progressive Containment	Sustained Control
the risk of non-compliance with rules	at 4 (out of 10) on the Infestation Curve.	at 4 (out of 10) on the Infestation Curve.
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Progressive Containment: Moderate

The risk of not achieving the Progressive Containment objective within the next 10 years is rated as moderate because the long seed life requires an extended follow-up period.

Sustained Control: Low

The risk of not achieving the Sustained Control objective within the next 10 years is rated as low as this can be achieved with a lower level of control by landowners/occupiers.

Beneficiaries of the Programme [NPD 7(2)(b)]

The primary beneficiaries are considered to be the rural occupiers whose land is clear, or being cleared, of broom.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Exacerbators are occupiers with this plant on their land who fail to control it. It is a difficult plant to control as it produces prolific amounts of seed from an early age and seed life can exceed 20 years.

Best mechanism to impose cost allocation 7(2)(e)

The simplest way of allocating the cost of this relatively small programme is to incorporate it into the general rate.

Effects of not intervening

This multi-stemmed evergreen shrub seeds prolifically and the long-lived seeds can be distributed in river gravel and in soil with heavy machinery. The seedlings will invade productive land, regenerating shrubland and wasteland, shading competing vegetation.

Rationale

The success of this programme will depend on the willingness of occupiers to control plants that are lightly distributed through parts of the Howard-St Arnaud area that are ungrazed or lightly grazed and frequently difficult to locate. It is appropriate that broom in this area is included in the Sustained Control programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to reduce its impacts on values and its spread to other properties in the Howard-St Arnaud area is not considered viable. Its extended seed life makes control a long-term project and some occupiers are reluctant to do this. Its inclusion in the Plan should ensure that this can be achieved.

Adverse effects [Section 71(d)]

Is Broom capable of causing an adverse effect on:		Comments
Economic well-being?	Yes	Impact on productivity by invasion of lightly grazed farmland.
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?		
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	It is capable of invading native shrubland and becoming the dominant vegetation.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		

The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Quantitative Analysis - Assumptions and Results

Area infested (ha): 24

Maximum area that could become infested (ha) 8000

Rate of spread (r): 0.08003

Time for infestation to reach 90% of maximum (years):100

Earnings (\$/ha): \$585

Reduction in earnings caused by pest (%): 60

Discount rate (%): 4

Programme Type: Sustained Control

Annual Programme Implementation Cost (inclusive of occupier and council cost): \$20,000

Number of years for this simulation: 30

Net Present Value (NPV) (\$): \$8011

Internal Rate of Return (IRR) (%): 4.2908

A positive NPV indicates Sustained Control is a cost beneficial scenario. The cost of doing nothing is estimated to be \$645,188 of lost economic opportunity.

Broom (outside the Howard-St Arnaud area)

Preferred Option: Sustained Control incorporating a Good Neighbour Rule

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

Programme Options	Progressive Containment	Sustained Control
Objective	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.	Over the duration of this Plan, control the pests listed in the Sustained Control Programme to minimise their adverse effects.
Intermediate outcome	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.	To provide for ongoing control of the pest, or an organism being spread by the pest, to reduce its impacts on values and its spread to other properties.
Technical and operational risks	<p>Moderate</p> <p>Broom is an erect multi-stemmed shrub with flexible green stems that are almost leafless. It is an aggressive competitor for light, nutrients and moisture and can invade lightly grazed productive land and wasteland along waterways, and smothers native species in regenerating shrubland. It seeds prolifically and seed life can exceed 20 years. The seeds are dispersed when the seed pods open and can be distributed over long distances in river gravels and in soil on heavy machinery. Broom is best controlled by spraying with commonly-used herbicides and follow-up spraying is required over a substantial period of time.</p>	<p>Low</p> <p>Broom is an erect multi-stemmed shrub with flexible green stems that are almost leafless. It is an aggressive competitor for light, nutrients and moisture and can invade lightly grazed productive land and wasteland along waterways, and smothers native species in regenerating shrubland. It seeds prolifically and seed life can exceed 20 years. The seeds are dispersed when the seed pods open and can be distributed over long distances in river gravels and in soil on heavy machinery. Broom is best controlled by spraying with commonly-used herbicides and follow-up spraying is required over a substantial period of time</p>
The risk that the option cannot be implemented and	<p>Moderate</p> <p>Broom is moderately distributed throughout this part of the</p>	<p>Low</p> <p>Broom is moderately distributed throughout this part of the</p>

Programme Options	Progressive Containment	Sustained Control
the risk of non-compliance with rules	region, often forming dense stands, and is rated at 7 (out of 10) on the Infestation Curve in this part of the region.	region, often forming dense stands, and is rated at 7 (out of 10) on the Infestation Curve in this part of the region.
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Progressive Containment: Moderate

The risk of not achieving the Progressive containment objective within the next 10 years is rated as moderate because of its widespread distribution. The long seed life requires an extended follow-up period to achieve control.

Sustained Control: Low

The risk of not achieving the Sustained Control objective within the next 10 years is rated as low. Maintaining control of this pest for a set distance of 10 m from property boundaries where the adjoining land is clear or being cleared of broom is a realistic and cost-effective option as seed fall occurs close to the parent plants.

Beneficiaries of the Programme [NPD 7(2)(b)]

The primary beneficiaries are rural occupiers whose land is clear, or being cleared, of broom.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Exacerbators are occupiers with this pest on their land who fail to control it. It is a difficult plant to control as it produces prolific amounts of seed from an early age and seed life can exceed 20 years.

Best mechanism to impose cost allocation 7(2)(e)

The simplest way of allocating the compliance monitoring cost of this relatively small programme is to incorporate it into the general rate.

The best method for allocating control costs is for the occupier to bear them.

Effects of not intervening

This multi-stemmed evergreen shrub seeds prolifically and the long-lived seeds can be distributed in river gravel and in soil with heavy machinery. The seedlings will invade productive land, regenerating shrubland and wasteland, shading competing vegetation.

Rationale

There is widespread distribution of broom through much of the region. The presence of dense stands means that the most effective way of protecting land that is cleared or being cleared of broom from spread from adjacent or nearby neighbours is to require adjoining occupiers to control broom on their land within 10 m of the boundary.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on occupiers with this pest on their land to take voluntary action to reduce its impact on values and its spread to other properties is not in their own economic interest. A requirement in the Plan to maintain control within 10 m of the boundary from properties where it is clear or being cleared is a reasonable means of imposing the cost of spread on to the exacerbator.

Adverse effects [Section 71(d)]

Is Broom capable of causing an adverse effect on:		Comments
Economic well-being?	Yes	Impact on productivity by invasion of lightly grazed farmland.
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?		
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	It is capable of invading native shrubland and becoming the dominant vegetation.
Soil resources?		
Water quality?		
Human health?		

Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Quantitative Analysis - Assumptions and Results

Area infested (ha): 8,800

Maximum area that could become infested (ha) 150,000

Rate of spread (r): 0.04973

Time for infestation to reach 90% of maximum (years):100

Earnings (\$/ha): \$221

Reduction in earnings caused by pest (%): 60

Discount rate (%): 4

Programme Type: Sustained Control

Annual Programme Implementation Cost (inclusive of occupier and council cost): \$143,000

Number of years for this simulation: 30

Net Present Value (NPV) (\$): \$15,571,882

Internal Rate of Return (IRR) (%): 71.3164

A positive NPV indicates Sustained Control with a Good Neighbour Rule is a cost beneficial scenario. The cost of doing nothing is estimated to be \$58,400,098 of lost economic opportunity.

Brushtail Possum (southern parts of Waimea Estuary)

Preferred Option: Site-led

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

Programme Options	Site-led	Sustained Control
Objective	Over the duration of this Plan, eradicate, progressively contain or sustainably control the pests listed in the Site-led Programme to eliminate or minimise their adverse effects.	Over the duration of this Plan, control the pests listed in the Sustained Control Programme to minimise their adverse effects
Intermediate outcome	That the pest, or an organism being spread by the pest, that is capable of causing damage to a place, is excluded or eradicated from that place, or is contained, reduced, or controlled within the place to an extent that protects the values of that place.	To provide for ongoing control of the pest, or an organism being spread by the pest, to reduce its impacts on values and its spread to other properties.

Programme Options	Site-led	Sustained Control
<p>Technical and operational risks</p>	<p>Low</p> <p>Brushtail possums can damage native forests, shrubland and exotic plantations, as well as preying on birds. They are a key vector in spreading bovine tuberculosis and are present throughout the whole region. As a result of intensive trapping in this part of the region, possum numbers are close to zero density. To maintain this, ongoing trapping will be essential. Elsewhere, possums are controlled under the National Pest Management Plan for bovine TB while the Department of Conservation controls possums on the conservation estate as resources permit, and work closely with OSPRI (previously Animal Health Board) to co-ordinate operations in adjoining areas. In other parts of the region, possums may be controlled by occupiers or by contractors on their behalf.</p>	<p>Low</p> <p>Brushtail possums can damage native forests, shrubland and exotic plantations, as well as preying on birds. They are a key vector in spreading bovine tuberculosis and are present throughout the whole region. As a result of intensive trapping in this part of the region, possum numbers are close to zero density. To maintain this, ongoing trapping will be essential. Elsewhere, possums are controlled under the National Pest Management Plan for bovine TB while the Department of Conservation controls possums on the conservation estate as resources permit, and work closely with OSPRI (previously Animal Health Board) to co-ordinate operations in adjoining areas. In other parts of the region, possums may be controlled by occupiers or by contractors on their behalf.</p>
<p>The risk that the option cannot be implemented and the risk of non-compliance with rules</p>	<p>Low</p> <p>Possoms are present in very low numbers in this part of the region as a result of intensive trapping by the members of the community-led group who collectively had a high level of expertise. The biosecurity staff are willing to available provide advice and assistance if required.</p>	<p>Low</p> <p>Possoms are present in very low numbers in this part of the region as a result of intensive trapping by the members of the community-led group who collectively had a high level of expertise. The biosecurity staff are willing to available provide advice and assistance if required.</p>
<p>The risk that compliance with other legislation will adversely affect implementation of the option</p>	<p>Low</p>	<p>Low</p>

Programme Options	Site-led	Sustained Control
The risk that public or political concerns will adversely affect implementation of the option	Low There may be a small number of residents who oppose the use of traps or pesticides.	Low There may be a small number of residents who oppose the use of traps or pesticides.
Other material risks	None identified	None identified

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

Site-led: Low

The risk of not achieving the Site-led objective within the next 10 years is rated as low as long as the community-led groups can maintain their trapping programme.

Sustained Control: Low

The risk of not achieving the Sustained Control objective within the next 10 years is rated as low as long as the community-led groups can maintain their trapping programme.

Beneficiaries of the Programme [NPD 7(2)(b)]

The direct beneficiaries are considered to be occupiers within these areas but the whole community benefits indirectly.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Exacerbators are rural occupiers with possums on their land who are unable or unwilling to control them.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the small cost of supporting the community-led group is to incorporate it into the general rate.

Effects of not intervening

Possums live predominantly in forest and shrubland, feeding on a wide range of plants (including horticultural crops, grasses and clover) and preying on eggs, young birds and invertebrates. Failure to control possums will result in devastated forests, shrubland, birdlife and crops, and Tb-infected farm animals.

Rationale

The control of brushtail possums under the Waimea Estuary Site-led Programme is likely to lead to greater protection to indigenous wildlife from the effects of predation. The level of commitment and expertise among the community group managing these sites make it appropriate to include brushtail possums in the Site-led programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to achieve zero density in the areas close to sites with high biodiversity values is not considered viable. Some occupiers may be reluctant to allow trapping or may be unaware of this pest's impact on native birds. Its inclusion in the Plan for these designated areas around the Waimea Estuary will allow pest control to be undertaken on any properties where effective control is lacking.

Adverse effects [Section 71(d)]

Are Brushtail Possums capable of causing an adverse effect on:		Comments
Economic well-being?	Yes	As well as being carriers of bovine TB, possums can damage a wide range of crops.
The viability of threatened species or organisms?	Yes	Possums can damage a range of threatened species.
The survival and distribution of indigenous plants or animals?	Yes	Possums can damage a wide variety of indigenous animals, birds and plants.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	Through their impact on indigenous species.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?	Yes	Through their Impact on natural ecosystems.
Animal welfare?		

Cape Tulip

Preferred Option: Exclusion

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

Programme Options	Do Nothing	Exclusion
Objective	Over the duration of this Plan, do nothing toward managing this pest.	Over the duration of this Plan, prevent the establishment of the pests listed in the Exclusion Programme from the Tasman-Nelson region to avoid adverse effects on economic well-being, the natural environment, human health, recreational values, or cultural values.
Intermediate outcome	Do nothing – leave it to Central Government.	To exclude this pest from the region.
Technical and operational risks	Low This pest is believed to be eradicated from the region and Central Government is responsible for their continued exclusion.	Low This pest is believed to be eradicated from the region and surveillance of historical sites and potential vectors is enough to keep this status.
The risk that the option cannot be implemented and of non-compliance	Low	Low
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Moderate Public pressure to do something may mean that “do nothing” is not feasible	Low
Other material risks	None identified	None identified

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

Do nothing: Low

The risk of doing nothing within the next 10 years is rated low because it is unlikely that this pest will re-invade the region as long as Central Government continues to commit to the National Interest Pests Response (NIPR) programme.

Exclusion: Low

The risk of maintaining the excluded status of this pest over the next 10 years is rated low because a surveillance programme should be sufficient to identify and respond quickly to any incursions before it becomes established.

Beneficiaries of the Programme [NPD 7(2)(b)]

The beneficiary is the farming community who enjoy freedom from the economic impact of this pest.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Active and passive exacerbators are occupiers who do not report the presence of this pest on the lands they occupy. Active exacerbators include people who trade this organism.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of a very small programme is to incorporate it into the general rate.

Effects of not intervening

Central Government is responsible for the continued response for managing NIPR pests nationally. Should that situation change and the pests remain in New Zealand, there is some risk this pest will re-appear in the region and cause adverse effects on the environment and/or economic production.

Rationale

Council involvement in the NIPR programme under the Plan potentially provides for a faster and more effective incursion response than relying on Central Government alone to deal with these pests.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to incursion response is not considered viable. Cape tulip is an attractive plant that has been grown in domestic gardens and some occupiers are unaware of its pest potential.

Adverse effects [Section 71(d)]

Is Cape tulip capable of causing an adverse effect on:		Comments
Economic well-being?	Yes	Cape tulip is poisonous to livestock
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?		
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?		
Soil resources?		
Water quality?		
Human health?	Yes	Cape tulip is poisonous to humans
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Cathedral Bells

Preferred Option: Eradication

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

Programme Options	Eradication	Progressive Containment
Objective	Over the duration of this Plan, eradicate the pests listed in the Eradication Programme to eliminate their adverse effects.	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.
Intermediate outcome	To reduce the infestation level of the pest, or an organism being spread by the pest, to zero levels in an area in the short to medium term.	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.
Technical and operational risks	Low Cathedral bells is a vigorous perennial climber that smothers ground cover, shrubs and trees. It can suppress indigenous regeneration in disturbed, open and coastal forests. It produces many large-winged seeds that can be distributed by wind and water.	Low Cathedral bells is a vigorous perennial climber that smothers ground cover, shrubs and trees. It can suppress indigenous regeneration in disturbed, open and coastal forests. It produces many large-winged seeds that can be distributed by wind and water.
The risk that the option cannot be implemented and of non-compliance	Low Cathedral bells is assessed at 3 (out of 10) on the Infestation Curve. As much of the region is climatically suitable, Tasman District Council biosecurity staff will continue to inspect all known sites and treat any live plants found. There is a low risk that the inspection and control operations cannot be carried out annually.	Low Cathedral bells is assessed at 3 (out of 10) on the Infestation Curve. It needs intensive management and unless Tasman District Council biosecurity staff will continue to inspect all known sites and treat any live plants found, there is a significant risk that this pest will spread. This cannot be done if it is a Progressive Containment pest.

Programme Options	Eradication	Progressive Containment
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Eradication: Low

The risk of not achieving the Eradication objective within the next 10 years is rated as low. Intensive management of cathedral bells over time has indicated that eradication is feasible.

Progressive containment: Low

The risk of not achieving the Progressive Containment objective within the next 10 years is rated as moderate if Tasman District Council biosecurity staff are not involved in its ongoing management.

Beneficiaries of the Programme [NPD 7(2)(b)]

The prime beneficiaries are occupiers in rural areas but there are benefits to the whole community from continuing with an eradication programme.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

This plant spreads by seed on wind and in water, garden waste and soil. Active exacerbators are occupiers with this plant on their land and those who move garden waste and soil containing seed to new sites.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of a very small programme is to incorporate it into the general rate.

Effects of not intervening

This vigorous climber produces many winged seeds that can be distributed by wind and water and will invade shrubland and forestland, smothering competing vegetation.

Rationale

As there are few known sites of cathedral bells on which live plants are present, it is appropriate to include it in the Eradication programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to ensure its eradication is not considered viable. It is a difficult pest to identify and locate at low densities and some lack the incentive to deal with it. There are a limited number of infested sites remaining and it is vital to utilise the experience and skills of the biosecurity team to achieve eradication in the region. Its inclusion in the Plan should ensure this can be achieved.

Adverse effects [Section 71(d)]

Is Cathedral Bells capable of causing an adverse effect on:		Comments
Economic well-being?		
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?	Yes	Cathedral bells can smother native vegetation and suppress regeneration in disturbed and low forest, forest margins and open coastal forest and shrublands.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	Cathedral bells can disrupt natural ecosystems.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		

Animal welfare?		
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Chilean Needle Grass

Preferred Option: Exclusion

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

Programme Options	Do Nothing	Exclusion
Objective	Over the duration of this Plan, do nothing toward managing this pest.	Over the duration of this Plan, prevent the establishment of the pests listed in the Exclusion Programme from the Tasman-Nelson region to avoid adverse effects on economic well-being, the natural environment, human health, recreational values, or cultural values.
Intermediate outcome	Do nothing – leave it to occupiers to manage.	To exclude this pest from the region.
Technical and operational risks	Low to moderate This pest is believed to be absent from the region, but it is present in Marlborough and could arrive here.	Low This pest is believed to be absent from the region and surveillance of optimal sites near vector routes is enough to keep this status.
The risk that the option cannot be implemented and of non-compliance	Low	Low
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Moderate Public pressure to do something may mean that “do nothing” is not feasible	Low
Other material risks	None identified	None identified

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

Do nothing: Low to moderate

The risk of doing nothing within the next 10 years is rated low to moderate because there is a risk that this pest could arrive in the region during that period.

Exclusion: Low

The risk of maintaining the excluded status of this pest over the next 10 years is rated low because a surveillance programme should be sufficient to identify and respond quickly to any incursions before it becomes established.

Beneficiaries of the Programme [NPD 7(2)(b)]

The beneficiary is the farming community who enjoy freedom from the economic impact of this pest.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Active and passive exacerbators are occupiers who do not report the presence of this pest on the lands they occupy.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of a very small programme is to incorporate it into the general rate.

Effects of not intervening

Should this pest appear in the region, it could have significant economic impacts on pastoral farming operations.

Rationale

Council surveillance programme potentially provides for a fast and effective incursion response.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to respond to new incursions is not considered viable. Chilean Needle grass is difficult to tell apart from other grasses and by the time an infestation causes noticeable economic damage, the pest can be entrenched and difficult to get rid of.

Adverse effects [Section 71(d)]

Is Chilean needle grass capable of causing an adverse effect on:	Comments
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Economic well-being?	Yes	Seeds of Chilean needle grass can contaminate wool and damage sheep pelts as well as adversely affecting other animals.
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?		
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?		
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Chinese Pennisetum

Preferred Option: Progressive Containment

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

Programme Options	Progressive Containment	Eradication
Objective	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.	Over the duration of this Plan, eradicate the pests listed in the Eradication Programme to eliminate their adverse effects.
Intermediate outcome	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.	To reduce the infestation level of the pest, or an organism being spread by the pest, to zero levels in an area in the short to medium term.
Technical and operational risks	Low Chinese pennisetum is a tufted perennial grass, unpalatable to stock, that can invade productive pasture and reduce its productivity. Much of the region is climatically suitable.	Moderate Chinese pennisetum is a tufted perennial grass, unpalatable to stock, that can invade productive pasture and reduce its productivity. Much of the region is climatically suitable.
The risk that the option cannot be implemented and of non-compliance	Low It has a limited distribution, and is found mostly in the Lee, Sherry and Slippery catchments, and is rated 3 (out of 10) on the Infestation Curve. There is a low risk that inspections cannot be carried out annually.	Low There is a low risk that inspection and control operations cannot be carried out annually.
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect	Low	Low

Programme Options	Progressive Containment	Eradication
implementation of the option		
Other material risks	None identified	None identified

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

Progressive containment: Low

The risk of not achieving the Progressive Containment objective within the next 10 years is rated as low.

Eradication: Moderate

The risk of not achieving the Eradication objective within the next 10 years is rated as moderate. Experience with management of Chinese pennisetum over time has indicated that eradication is feasible in pastoral situations but difficult in plantation forests.

Beneficiaries of the Programme [NPD 7(2)(b)]

The prime beneficiaries are occupiers in rural areas but there are benefits to the whole community from continuing with an eradication programme.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

This plant spreads by seed on wind and in water, garden waste and soil. Active exacerbators are occupiers with this plant on their land and those who move garden waste and soil containing seed to new sites.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of this minor programme is to incorporate it into the general rate.

Effects of not intervening

This unpalatable grass produces large flower spikes containing large numbers of seeds. These hooked seeds are spread by animals and humans and will establish in pastureland and wasteland, reducing productivity.

Rationale

As there are too many active sites to be confident about eradicating Chinese pennisetum within the 10-year time frame, it is appropriate to include it in the Progressive Containment programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to contain or reduce its geographic distribution is not considered viable. It is a difficult plant to identify amongst other grasses, particularly at the juvenile stage, when in low densities, and some occupiers lack the incentive to deal with it. Its inclusion in the Plan should ensure that progressive containment can be achieved.

Adverse effects [Section 71(d)]

Is Chinese Pennisetum capable of causing an adverse effect on:		Comments
Economic well-being?	Yes	It is generally unpalatable to stock and capable of invading productive pastureland and reducing its productivity.
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?		
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?		
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Chocolate Vine

Preferred Option: Sustained Control

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

Programme Options	Progressive Containment	Sustained Control
Objective	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.	Over the duration of this Plan, prevent the further spread of chocolate vine to reduce its adverse effects on the environment.
Intermediate outcome	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.	To reduce the impacts and spread of chocolate vine.
Technical and operational risks	<p>Low</p> <p>Chocolate vine is a vigorous twining climber that has been widely planted as an ornamental vine in home gardens but has been banned from sale and distribution since 2008 because of its rapid spread. It tolerates a wide range of site conditions but prefers moist sites in riparian areas, wetlands and along forest margins. It can be spread by birds carrying seed and by moving soil containing seed and vegetative fragments. It produces a dense mass of stems, smothering ground cover, shrubs and trees.</p>	<p>Low</p> <p>Chocolate vine is a vigorous twining climber that has been widely planted as an ornamental vine in home gardens but has been banned from sale and distribution since 2008 because of its rapid spread. It tolerates a wide range of site conditions but prefers moist sites in riparian areas, wetlands and along forest margins. It can be spread by birds carrying seed and by moving soil containing seed and vegetative fragments. It produces a dense mass of stems, smothering ground cover, shrubs and trees.</p>

Programme Options	Progressive Containment	Sustained Control
The risk that the option cannot be implemented and of non-compliance	Low As Chocolate vine is a new pest, there is no information on its distribution in the region. It has been tentatively rated at 4 (out of 10) on the Infestation Curve.	Low As Chocolate vine is a new pest, there is no information on its distribution in the region. It has been tentatively rated at 4 (out of 10) on the Infestation Curve. While more information is being gathered, sustained control will be more achievable in the short term than progressive containment.
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Progressive containment: Low

The risk of not achieving the Progressive Containment objective within the next 10 years is rated as low, as it can be controlled using common herbicides.

Sustained Control: Low

The risk of not achieving the Sustained Control objective within the next 10 years is rated as low, as it can be controlled using common herbicides.

Beneficiaries of the Programme [NPD 7(2)(b)]

The prime beneficiaries will be occupiers in rural areas with wetlands, riparian areas and forest margins. There will be indirect benefits to the whole community from continuing with a control programme.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Seeds from this plant are spread by birds and vegetative stems in garden waste and soil. Active exacerbators are occupiers with this plant on their land and those who move garden waste and soil containing seed to new sites.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of a very small programme is to incorporate it into the general rate.

The best method for allocating control costs is for the occupier to bear them.

Effects of not intervening

This vine produces large numbers of pods which contain many small black seeds that are distributed by birds and by moving soil containing seed and vegetative fragments. It will invade forest edges, shrubland, riparian areas and wetlands, smothering ground cover and shading competing vegetation.

Rationale

As there are too many active sites to consider eradicating chocolate vine within the 10-year time frame. Due to limited information, there is some risk that a Progressive Containment programme will not achieve this objective in the 10-year life of the Plan. A Sustained Control programme is considered more appropriate over the duration of the Plan while more information is being gathered.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to contain or reduce its geographic distribution is not considered viable. Many occupiers are unaware of its pest potential. Its inclusion in the Plan should ensure sustained control can be achieved.

Adverse effects [Section 71(d)]

Is Chocolate Vine capable of causing an adverse effect on:		Comments
Economic well-being?		
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?	Yes	It is a fast-growing aggressive vine capable of smothering ground cover and shrubs and trees.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	It is capable of disrupting natural ecosystems.

Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Climbing Asparagus (eastern Golden Bay)

Preferred Option: Sustained Control

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

Programme Options	Sustained Control	Eradication
Objective	Over the duration of this Plan, control the pests listed in the Sustained Control Programme to minimise their adverse effects.	Over the duration of this Plan, eradicate the pests listed in the Eradication Programme to eliminate their adverse effects.
Intermediate outcome	To provide for ongoing control of the pest, or an organism being spread by the pest, to reduce its impacts on values and its spread to other properties.	To reduce the infestation level of the pest, or an organism being spread by the pest, to zero levels in an area in the short to medium term.
Technical and operational risks	<p>Low</p> <p>Climbing asparagus is a perennial scrambling plant capable of smothering seedlings and strangling, shading out or ringbarking larger plants. It grows in semi-shade, posing a risk to native forest and shrublands. Birds spread the seed to new sites and it is also spread by moving soil containing tubers. It was originally planted as an ornamental garden plant in home gardens. Its distribution in this part of Golden Bay has been mapped by the Project De-Vine team.</p>	<p>Moderate</p> <p>Climbing asparagus is a perennial scrambling plant capable of smothering seedlings and strangling, shading out or ringbarking larger plants. It grows in semi-shade, posing a risk to native forest and shrublands. Birds spread the seed to new sites and it is also spread by moving soil containing tubers. It was originally planted as an ornamental garden plant in home gardens. Its distribution in this part of Golden Bay has been mapped by the Project De-Vine team.</p>
The risk that the option cannot be implemented and of non-compliance	<p>Low</p> <p>The existence of tubers requires multiple treatments for effective control. Its presence in home gardens means that reinvasion will need to be managed.</p>	<p>High</p> <p>The existence of tubers requires multiple treatments for eradication. Its presence in home gardens means that eradication is not a realistic option.</p>

Programme Options	Sustained Control	Eradication
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Sustained control: Low

The risk of not achieving the Sustained control objective within the next 10 years is rated as low, as it can be controlled using common herbicides (providing penetrants are not used when spraying it on shrubs and trees), providing there are follow-up treatments.

Eradication: High

The risk of not achieving the Eradication objective within the next 10 years is rated as high as it can regrow from tubers and will require repeated treatment. There is also the risk of reinvasion from home gardens.

Beneficiaries of the Programme [NPD 7(2)(b)]

The prime beneficiaries will be occupiers in rural areas with native shrubland and forest. There will be indirect benefits to the whole community from continuing with an active control programme.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Seeds from this plant are spread by birds and tubers in garden waste and soil. Active exacerbators are occupiers with this plant on their land and those who move garden waste and soil containing seed to new sites.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of supporting this community project is to incorporate the cost of staff time into the general rate.

Effects of not intervening

This vine is spread by berries distributed by birds and in soil containing seed or tubers. It will establish in shrubland, forestland, hedgerows and wasteland, smothering seedlings and shading, strangling or ringbarking larger plants.

Rationale

Eradication of this pest from the region is not feasible. The commitment and expertise of the Project De-Vine team make it possible to reduce the spread of this pest in eastern Golden Bay. The non-statutory (i.e. no Plan rules) status of this pest in the rest of the region make it appropriate to include it in the Sustained Control programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers in eastern Golden Bay with this pest on their land to take voluntary action is not considered viable. Once a popular garden plant, it is a persistent vine that is very difficult to control. A co-ordinated campaign is underway utilising external funding and its inclusion in the Plan should ensure that all properties in eastern Golden Bay can be treated and sustained control across the region can be achieved.

Adverse effects [Section 71(d)]

Is Climbing Asparagus capable of causing an adverse effect on:		Comments
Economic well-being?		
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?	Yes	It is a fast-growing aggressive vine capable of smothering ground cover and shrubs and inhibiting the regrowth of native plants.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	It is capable of disrupting natural ecosystems and reducing biological diversity.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		

The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Climbing Spindleberry

Preferred Option: Eradication

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

Programme Options	Eradication	Progressive Containment
Objective	Over the duration of this Plan, eradicate the pests listed in the Eradication Programme to eliminate their adverse effects.	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.
Intermediate outcome	To reduce the infestation level of the pest, or an organism being spread by the pest, to zero levels in an area in the short to medium term.	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.
Technical and operational risks	<p>Moderate</p> <p>Climbing spindleberry is a vigorous perennial climber capable of reaching 12 m. It produces orange fruit that can be distributed by birds and animals. It is one of the few climbers with the potential to invade cooler sites in the region. Commonly used herbicides can be used to kill the mature plant, but it is difficult to eradicate as stumps and suckers can re-sprout and dropped stems can take root. Intensive follow-up is essential. Climbing spindleberry is rated at 4 (out of 10) on the Infestation Curve.</p>	<p>Low</p> <p>Climbing spindleberry is a vigorous perennial climber capable of reaching 12 m. It produces orange fruit that can be distributed by birds and animals. It is one of the few climbers with the potential to invade cooler sites in the region. Commonly used herbicides can be used to kill the mature plant, but it is difficult to eradicate as stumps and suckers can re-sprout and dropped stems can take root. Intensive follow-up is essential. Climbing spindleberry is rated at 4 (out of 10) on the Infestation Curve.</p>
The risk that the option cannot be implemented and of non-compliance	<p>Low</p> <p>There is a low risk that the inspection and control operations cannot be carried out annually.</p>	<p>Low</p> <p>There is a low risk that the inspection and control operations cannot be carried out annually.</p>

Programme Options	Eradication	Progressive Containment
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Eradication: Moderate

The risk of not achieving the Eradication objective within the next 10 years is rated as moderate. Intensive management of climbing spindleberry over time has indicated that eradication is feasible but some follow-up is necessary.

Progressive containment: Low

The risk of not achieving the Progressive Containment objective within the next 10 years is rated as low.

Beneficiaries of the Programme [NPD 7(2)(b)]

The prime beneficiaries are occupiers in rural areas but there are benefits to the whole community from reducing its potential impact on native vegetation by continuing with an eradication programme.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

This plant spreads by seed on wind and in water, garden waste and soil. Active exacerbators are occupiers with this plant on their land and those who move garden waste and soil containing seed to new sites.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of a small programme is to incorporate it into the general rate.

Effects of not intervening

This vigorous climber will produce large quantities of orange capsules that are transported by birds into forestland and regenerating shrubland, forming dense thickets and causing canopy species to collapse.

Rationale

The ability of climbing spindleberry to establish on cooler sites makes this a priority pest for eradication. At present, there are only a limited number of sites of climbing spindleberry on which live plants are present. It is appropriate to put it into the Eradication programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to ensure its eradication is not considered viable. There are a limited number of infested sites remaining and it is vital to utilise the experience and skills of the biosecurity team to achieve eradication in the region. Its inclusion in the Plan should ensure this can be achieved.

Adverse effects [Section 71(d)]

Is Climbing Spindleberry capable of causing an adverse effect on:		Comments
Economic well-being?		
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?	Yes	Climbing spindleberry can smother native vegetation and suppress regeneration in disturbed and low forest, on forest margins and shrublands.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	Climbing spindleberry can smother natural ecosystems, disrupt successional processes and reduce biodiversity.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?	Yes	The visual impact of Climbing spindleberry covering native trees and smothering shrubland is detrimental to the enjoyment many people have of the natural environment.
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Codling Moth

Preferred Option: Sustained Control

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

Programme Options	Progressive Containment	Sustained Control
Objective	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.	Over the duration of this Plan, control the pests listed in the Sustained Control Programme to minimise their adverse effects.
Intermediate outcome	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.	To provide for ongoing control of the pest, or an organism being spread by the pest, to reduce its impacts on values and its spread to other properties.
Technical and operational risks	Moderate Codling moth is a small grey moth present throughout the region that lays its eggs on apple and pear trees. The caterpillars that hatch out then enter the fruit, causing its rejection for sale. They are currently controlled by pesticides – other means of control (pheromones, biocontrol) are under development. It is assessed at 7 (out of 10) on the Infestation Curve.	Low Codling moth is a small grey moth present throughout the region that lays its eggs on apple and pear trees. The caterpillars that hatch out then enter the fruit, causing its rejection for sale. They are currently controlled by pesticides – other means of control (pheromones, biocontrol) are under development. It is assessed at 7 (out of 10) on the Infestation Curve.
The risk that the option cannot be implemented and of non-compliance	Moderate	Low
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low

The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Progressive containment: High

The risk of not achieving the Progressive Containment objective within the next 10 years is rated as moderate with current technology.

Sustained control: Low

The risk of not achieving the Sustained Control objective within the next 10 years is rated as low. It is currently being achieved by the horticultural industry.

Beneficiaries of the Programme [NPD 7(2)(b)]

The prime beneficiaries are the orchardists growing apples and pears.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Active exacerbators are those with apple and pear trees or orchards nearby who are failing to adequately control this pest.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of this programme is to ensure that it is undertaken by the orchardists who are the beneficiaries.

Effects of not intervening

A failure to control this moth will result in rejection of apple and pear crops.

Rationale

The previous boundary control rule was similar and one that had generally been accepted by occupiers adjoining apple and pear orchards. This makes it appropriate to include codling moth as a Boundary Control pest in the Sustained Control programme. It will allow the orchardists to control this pest on poorly managed apple and pear trees land within 500 m. They have the expertise to identify it and determine the timing, and have the resources to undertake the work.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to control it is not considered viable. A requirement in the Plan to allow orchardists to control this pest on adjoining land when it is not being adequately controlled is a more effective means of achieving this and ensuring commercial apple crops can meet market requirements. Orchardists have the incentive and the expertise to identify it and the resources to treat it.

Adverse effects [Section 71(d)]

Is Codling Moth capable of causing an adverse effect on:		Comments
Economic well-being?	Yes	Codling moth is a significant problem for orchardists and can result in fruit being rejected from sale.
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?		
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?		
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Cotoneaster species (Abel Tasman)

Preferred Option: Site-led

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

Programme Options	Do Nothing	Site-led
Objective	Over the duration of this Plan, do not have rules to assist in the management of this pest in the Abel Tasman National Park and environs	Over the duration of this Plan, eradicate and exclude <i>Cotoneaster</i> species to prevent adverse effects on the indigenous biological diversity of Abel Tasman National Park and environs under the Abel Tasman National Park Site-led Programme (ATNPSP).
Intermediate outcome	Do nothing.	To eradicate this species from the ATNPSP.
Technical and operational risks	Low This species is at low to zero density within the Abel Tasman National Park.	Low It is possible to eradicate this pest from private land within the ATNPSP, using established control tools.
The risk that the option cannot be implemented and of non-compliance	Moderate There is a risk that some occupiers will not participate in a voluntary programme, creating a perpetual source for re-invasion (and cost), risking the success of voluntary efforts.	Moderate There is a risk that some occupiers will not comply with rules unless pressured.
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Moderate Public pressure to do something may mean that “do nothing” is not feasible	Low
Other material risks	None identified	None identified

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

Do nothing: Moderate

The risk of doing nothing within the next 10 years is rated moderate because this pest will continue to invade Abel Tasman National Park from uncontrolled sites near the Park boundary. This creates a perpetual cost to the current voluntary programme that may not be sustainable.

Site-led: Low

The risk of not achieving the site-led objective within the next 10 years is rated as low, as the spread of this pest into the Park can be reduced by managing it on private land with the ATNPSP area, using established control techniques.

Beneficiaries of the Programme [NPD 7(2)(b)]

The direct and main beneficiaries are considered to be the community of New Zealand and Tasman District who enjoy the near-pristine environment of Abel Tasman National Park. Occupiers who do not want this pest in their garden also benefit.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Active exacerbators are occupiers with this plant on their land who are unwilling or unable to control it.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of managing this programme is to incorporate it into the general rate.

Effects of not intervening

This weed will displace indigenous flora, outcompeting indigenous flora for space and light. If it is not managed, it will infest parts of the Abel Tasman National Park, reducing the indigenous dominance of the Park, potentially affecting indigenous biological diversity. The effort to manage this pest within the Park is potentially in vain if the sources of infestation remain unmanaged.

Rationale

The control of the pest will reduce the spread of these pests into Abel Tasman National Park, leading to greater protection of indigenous flora from the effects of competition with invasive flora.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action may not be viable. Some occupiers may be reluctant to allow control of this pest on their land, or may be unaware of their impacts on indigenous flora. The inclusion of the Abel Tasman National Park (and environs) Site-led Programme in the Plan will allow council to intervene on any properties where council deems effective control is necessary to protect the Abel Tasman National Park.

Adverse effects [Section 71(d)]

Is <i>Cotoneaster</i> capable of causing an adverse effect on:		Comments
Economic well-being?		
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?	Yes	This species can outcompete indigenous plants for space and light.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	This invasive species can change species composition and reduces indigenous dominance which potentially alters indigenous ecological process and can result in loss in indigenous biodiversity margins.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Darwin's Barberry (St Arnaud Village)

Preferred Option: Site-led

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

Programme Options	Site-led	Not in RPMP
Objective	Over the duration of this Plan, eradicate or progressively control the pests listed in the Site-led Programme to eliminate or minimise their adverse effects.	None
Intermediate outcome	That the pest, or an organism being spread by the pest, that is capable of causing damage to a place, is excluded or eradicated from that place, or is contained, reduced, or controlled within the place to an extent that protects the values of that place.	None
Technical and operational risks	Low Darwin's barberry is a spiny evergreen shrub with tough woody stems and very sharp spines. It is present in very low numbers in and around St Arnaud Village. It produces large quantities of berries that are dispersed by birds, spreading into tussock grassland, herbfield, shrubland and regenerating forest, smothering the native species present.	None
The risk that the option cannot be implemented and the risk of non-compliance with rules	Low	None

Programme Options	Site-led	Not in RPMP
The risk that compliance with other legislation will adversely affect implementation of the option	Low	None
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Site-led: Low

The risk of not achieving the Eradication objective within the next 10 years is rated as low because of the small number of plants present, the area involved, and the intensive control programme.

Not in RPMP: None

Beneficiaries of the Programme [NPD 7(2)(b)]

The beneficiaries are occupiers in St Arnaud Village and in the adjoining rural area.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Exacerbators are the occupiers with this pest on their land who are failing to control it.

Best mechanism to impose cost allocation 7(2)(e)

This programme is undertaken by the local community with support from the Department of Conservation.

Effects of not intervening

This spiny evergreen shrub will produce large quantities of berries that are dispersed by birds, spreading into tussock grasslands that are transported by birds into forestland, herbfield, shrubland and regenerating forest, smothering the native species present.

Rationale

The commitment of the community group in this area make it appropriate to include Darwin's barberry in the Site-led programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to achieve zero density in this area is not considered viable. This has been a garden plant and some bach owners are unaware of its pest potential. Its inclusion in the Plan for this area around St Arnaud Village will allow pest control to be undertaken on any properties where effective control is lacking.

Adverse effects [Section 71(d)]

Is Darwin's Barberry capable of causing an adverse effect on:		Comments
Economic well-being?	Yes	Impact on productivity by invasion of lightly grazed farmland. Plantation forest sites have been invaded in other regions.
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?		
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	It is capable of invading native shrubland and becoming the dominant vegetation.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?	Yes	Its sharp spines severely restrict access into areas where this plant is present.
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Douglas Fir (wildings only – Abel Tasman)

Preferred Option: Site-led

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

Programme Options	Do Nothing	Site-led
Objective	Over the duration of this Plan, do not have rules to assist in the management of this pest the Abel Tasman National Park and environs	Over the duration of this Plan, eradicate and exclude wildings of Douglas fir to prevent adverse effects on the indigenous biological diversity of Abel Tasman National Park and environs under the Abel Tasman National Park Site-led Programme (ATNPSP).
Intermediate outcome	Do nothing.	To eradicate this species from the ATNPSP.
Technical and operational risks	Low This species is at low to zero density within the Abel Tasman National Park.	Low It is possible to eradicate this pest from private land within the ATNPSP, using established control tools.
The risk that the option cannot be implemented and of non-compliance	Moderate There is a risk that some occupiers will not participate in a voluntary programme, creating a perpetual source for re-invasion (and cost), risking the success of voluntary efforts.	Moderate There is a risk that some occupiers will not comply with rules unless pressured.
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Moderate Public pressure to do something may mean that “do nothing” is not feasible	Low
Other material risks	None identified	None identified

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

Do nothing: Moderate

The risk of doing nothing within the next 10 years is rated moderate because this pest will continue to invade Abel Tasman National Park from uncontrolled sites near the Park boundary. This creates a perpetual cost to the current voluntary programme that may not be sustainable.

Site-led: Low

The risk of not achieving the site-led objective within the next 10 years is rated as low, as the spread of this pest into the Park can be reduced by managing it on private land with the ATNPSP area, using established control techniques.

Beneficiaries of the Programme [NPD 7(2)(b)]

The direct and main beneficiaries are considered to be the community of New Zealand and Tasman District who enjoy the near-pristine environment of Abel Tasman National Park. Occupiers who do not want this pest in their garden also benefit.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Active exacerbators are occupiers with this plant on their land who are unwilling or unable to control it.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of managing this programme is to incorporate it into the general rate.

Effects of not intervening

This weed will displace indigenous flora, outcompeting indigenous flora for space and light. If it is not managed, it will infest parts of the Abel Tasman National Park, reducing the indigenous dominance of the Park, potentially affecting indigenous biological diversity. The effort to manage this pest within the Park is potentially in vain if the sources of infestation remain unmanaged.

Rationale

The control of the pests will reduce the spread of these pests into Abel Tasman National Park, leading to greater protection of indigenous flora from the effects of competition with invasive flora.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action may not be viable. Some occupiers may be reluctant to allow control of this pest on their land, or may be unaware of their impacts on indigenous flora. The inclusion of the Abel Tasman National Park (and environs) Site-led Programme in the Plan will allow council to intervene on any properties where council deems effective control is necessary to protect the Abel Tasman National Park.

Adverse effects [Section 71(d)]

Is Douglas fir capable of causing an adverse effect on:		Comments
Economic well-being?		
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?	Yes	This species can outcompete indigenous plants for space and light.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	This invasive species can change species composition and reduces indigenous dominance which potentially alters indigenous ecological process and can result in loss in indigenous biodiversity margins.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Egeria

Preferred Option: Eradication

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

Programme Options	Eradication	Progressive Containment
Objective	Over the duration of this Plan, eradicate the pests listed in the Eradication Programme to eliminate their adverse effects.	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.
Intermediate outcome	To reduce the infestation level of the pest, or an organism being spread by the pest, to zero levels in an area in the short to medium term.	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.
Technical and operational risks	Low	Low
The risk that the option cannot be implemented and of non-compliance	Low There is a low risk that the inspection and control operations cannot be carried out annually.	Low There is a low risk that the inspection and control operations cannot be carried out annually.
The risk that compliance with other legislation will adversely affect implementation of the option	Low Egeria is a vigorous perennial aquatic plant that forms dense stands, reducing water flow, suppressing other aquatic plants, degrading the natural character of waterbodies, restricting recreational use and impeding irrigation and hydroelectric operations. There are a number of ponds where Egeria has been treated but none of these sites are currently active. It is rated at 3 (out of 10) on the Infestation Curve.	Low Egeria is a vigorous perennial aquatic plant that forms dense stands, reducing water flow, suppressing other aquatic plants, degrading the natural character of waterbodies, restricting recreational use and impeding irrigation and hydroelectric operations. There are a number of ponds where Egeria has been treated but none of these sites are currently active. It is rated at 3 (out of 10) on the Infestation Curve.

Programme Options	Eradication	Progressive Containment
The risk that public or political concerns will adversely affect implementation of the option	Low There is a low risk that the inspection and control operations cannot be carried out annually	Low There is a low risk that the inspection and control operations cannot be carried out annually
Other material risks	None identified	None identified

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

Eradication: Low

The risk of not achieving the Eradication objective within the next 10 years is rated as low. Intensive management of Egeria over time has shown that eradication is feasible.

Progressive containment: Low

The risk of not achieving the Progressive Containment objective within the next 10 years is rated as low.

Beneficiaries of the Programme [NPD 7(2)(b)]

There are benefits to the whole community from keeping waterbodies free from Egeria.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

This plant spreads by vegetative fragments and could be transported in water from infested sites.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of this small programme is to incorporate it into the general rate.

Effects of not intervening

This aquatic plant will form dense stands that reduce water flow, suppress other aquatic plants, degrade the natural character of waterbodies, and impede irrigation and hydroelectric operations.

Rationale

As none of the known sites are currently active, it is desirable to continue monitoring of these sites and maintaining inspections of waterways and other waterbodies.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this aquatic pest to take voluntary action to ensure its eradication is not considered viable. There are a small number of ponds where it has been present, but after an extended campaign, none of these are currently active. It is vital to utilise the experience and skills of the biosecurity team to undertake monitoring and ensure it has been eradicated in the region. Its inclusion in the Plan should ensure this can be achieved.

Adverse effects [Section 71(d)]

Is Egeria capable of causing an adverse effect on:		Comments
Economic well-being?	Yes	It can block intakes used for irrigation and for generation of hydroelectricity.
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?	Yes	Egeria can smother native aquatics and suppress regeneration.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	Egeria can disrupt natural ecosystems and reduce biodiversity.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?	Yes	Dense infestations of Egeria are detrimental to the enjoyment many people get from recreational activities in and around waterways.
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Entire Marshwort

Preferred Option: Eradication

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

Programme Options	Eradication	Progressive Containment
Objective	Over the duration of this Plan, eradicate the pests listed in the Eradication Programme to eliminate their adverse effects.	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.
Intermediate outcome	To reduce the infestation level of the pest, or an organism being spread by the pest, to zero levels in an area in the short to medium term.	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.
Technical and operational risks	Low Entire marshwort is a bottom-rooted perennial aquatic plant with bright green floating leaves and yellow flowers. Like other aquatic pest plants, it can reduce water flow, suppressing other aquatic plants, degrade the natural character of waterbodies, restrict recreational activities and impede irrigation and hydroelectric operations. It is rated at 1 (out of 10) on the Infestation Curve.	Low Entire marshwort is a bottom-rooted perennial aquatic plant with bright green floating leaves and yellow flowers. Like other aquatic pest plants, it can reduce water flow, suppressing other aquatic plants, degrade the natural character of waterbodies, restrict recreational activities and impede irrigation and hydroelectric operations. It is rated at 1 (out of 10) on the Infestation Curve.
The risk that the option cannot be implemented and of non-compliance	Low	Low
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low

Programme Options	Eradication	Progressive Containment
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Eradication: Low

The risk of not achieving the Eradication objective within the next 10 years is rated as low. Management of entire marshwort over time has shown that eradication is feasible.

Progressive containment: Low

The risk of not achieving the Progressive Containment objective within the next 10 years is rated as low.

Beneficiaries of the Programme [NPD 7(2)(b)]

There are benefits to the whole community from keeping waterbodies free from entire marshwort.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

This plant spreads by vegetative fragments and could be transported in water taken from infested areas containing fish or other aquatic plants.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of a small programme is to incorporate it into the general rate.

Effects of not intervening

This aquatic plant will form dense floating mats of foliage that reduce water flow, suppress other aquatic plants, degrade the natural character of waterbodies, and impede irrigation and hydroelectric operations.

Rationale

It is appropriate to include entire marshwort in the Eradication programme as none of the known sites are currently active but it will allow ongoing monitoring of these sites and inspection of waterbodies.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this aquatic pest to take voluntary action to ensure its eradication is not considered viable. There are a small number of sites where it has been present, but after an extended campaign, none of these are currently active. It is vital to utilise the experience and skills of the biosecurity team to ensure it has been eradicated in the region. Its inclusion in the Plan should ensure this can be achieved.

Adverse effects [Section 71(d)]

Is Entire Marshwort capable of causing an adverse effect on:		Comments
Economic well-being?	Yes	It can block intakes used for irrigation and for generation of hydroelectricity.
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?	Yes	Entire marshwort can smother native aquatics and suppress regeneration.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	Entire marshwort can disrupt natural ecosystems and reduce biodiversity in waterways.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?	Yes	Dense infestations of entire marshwort are detrimental to the enjoyment many people get from recreational activities in and around waterways.
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

European Canker

Preferred Option: Eradication

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

Programme Options	Progressive Containment	Sustained Control
Objective	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.	Over the duration of this Plan, control the pests listed in the Sustained Control Programme to minimise their adverse effects.
Intermediate outcome	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.	To provide for ongoing control of the pest, or an organism being spread by the pest, to reduce its impacts on values and its spread to other properties.
Technical and operational risks	Moderate European canker is a fungus that enters the tree through pruning wounds or fresh scar tissue from bud break, petal fall, harvesting and leaf fall. It is slow acting but can eventually girdle infected branches, causing shoot dieback and eventually trunk dieback, reducing apple production. It can be treated by removal and immediate burning of infected material. It is found throughout the region, mostly in association with apple orchards, but it would be very difficult to reduce its distribution. It is assessed at 7 (out of 10) on the Infestation Curve.	Low European canker is a fungus that enters the tree through pruning wounds or fresh scar tissue from bud break, petal fall, harvesting and leaf fall. It is slow acting but can eventually girdle infected branches, causing shoot dieback and eventually trunk dieback, reducing apple production. It can be treated by removal and immediate burning of infected material. It is found throughout the region, mostly in association with apple orchards, but it would be very difficult to reduce its distribution. It is assessed at 7 (out of 10) on the Infestation Curve.
The risk that the option cannot be implemented and the risk of non-compliance with rules	High	Low

Programme Options	Progressive Containment	Sustained Control
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Progressive Containment: High

The risk of not achieving the Progressive Containment objective of reducing the geographic distribution within the next 10 years is rated as high as it is intimately associated with apple orchards.

Sustained Control: Low

The risk of not achieving the Sustained Control objective within the next 10 years is rated as low. The orchardist at risk has the option of controlling European canker on apple trees on the adjoining land if it is not being adequately controlled. This is a cost-effective option.

Beneficiaries of the Programme [NPD 7(2)(b)]

The direct beneficiaries are considered to be the apple orchardists producing high quality fruit.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Exacerbators are those occupiers within 500 m of apple orchards who are not controlling European canker on their apple trees.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of this minor programme is to incorporate it into the general rate.

Effects of not intervening

Failure to control this fungal disease will result in the dieback of shoots and subsequently trunks, causing major crop losses.

Rationale

The previous boundary control rule was similar and one that had generally accepted by occupiers adjoining apple orchards. This makes it appropriate to include European canker as a Boundary Control pest in the Sustained Control programme. It will allow the orchardists to control this pest on poorly managed apple orchards on land within 500 m. They have the expertise to identify it and the resources to treat it.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this disease of apple trees to take voluntary action to control is not considered viable. A requirement in the Plan to allow orchardists to control this pest on adjoining land when it is not being adequately controlled is a more effective means of achieving this. Orchardists have the incentive and the expertise to identify it and the resources to treat it.

Adverse effects [Section 71(d)]

Is European Canker capable of causing an adverse effect on:		Comments
Economic well-being?	Yes	It can damage apple trees and reduce orchard productivity.
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?		
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?		
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		

Animal welfare?		
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European Holly (Abel Tasman National Park and St Arnaud Village)

Preferred Option: Site-led

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

Programme Options	Do Nothing	Site-led
Objective	Over the duration of this Plan, do not have rules to assist in the management of European holly in the Abel Tasman National Park and environs St and Arnaud Village.	Over the duration of this Plan, eradicate and exclude European holly to prevent adverse effects on the indigenous biological diversity and recreational enjoyment for pests under site-led programmes
Intermediate outcome	Do nothing.	To eradicate this species from Abel Tasman National Park and environs St and Arnaud Village.
Technical and operational risks	Low This species is at low to zero density within Abel Tasman National Park and environs St and Arnaud Village.	Low It is possible to eradicate this pest from private land within Abel Tasman National Park and environs St and Arnaud Village using established control tools.
The risk that the option cannot be implemented and of non-compliance	Moderate There is a risk that some occupiers will not participate in a voluntary programme, creating a perpetual source for re-invasion (and cost), risking the success of voluntary efforts.	Moderate There is a risk that some occupiers will not comply with rules unless pressured.
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Moderate Public pressure to do something may mean that “do nothing” is not feasible	Low

Programme Options	Do Nothing	Site-led
Other material risks	None identified	None identified

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

Do nothing: Moderate

The risk of doing nothing within the next 10 years is rated moderate because this pest will continue to invade Abel Tasman National Park and environs from uncontrolled sites and St Arnaud Village. This creates a perpetual cost to current voluntary programmes that may not be sustainable.

Site-led: Low

The risk of not achieving the site-led objective within the next 10 years is rated as low, as the spread of this pest can be reduced by managing it on private land, using established control techniques.

Beneficiaries of the Programme [NPD 7(2)(b)]

The direct and main beneficiaries of the Abel Tasman site-led programme are considered to be the community of New Zealand and Tasman District who enjoy the near-pristine environment of Abel Tasman National Park. Occupiers who do not want this pest in their garden also benefit.

The direct beneficiaries of the St Arnaud site-led programme are occupiers in St Arnaud Village and in the adjoining rural area.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Active exacerbators are occupiers with this plant on their land who are unwilling or unable to control it.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of managing this programme is to incorporate it into the general rate.

Effects of not intervening

This evergreen shrub will produce large quantities of red berries that are distributed by birds into shrubland and forests, forming dense thickets that suppress native regeneration.

If it is not managed, it could infest parts of the Abel Tasman National and Nelson Lakes Parks, reducing the indigenous dominance of the Park, potentially affecting indigenous biological diversity. Voluntary efforts to manage this pest are potentially in vain if the sources of infestation remain unmanaged.

Rationale

The control of the pests will reduce the spread of these pests leading to greater protection of indigenous flora from the effects of competition with invasive flora.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action may not be viable. Some occupiers may be reluctant to allow control of this pest on their land, or may be unaware of their impacts on indigenous flora. The inclusion of the St Arnaud village, and the Abel Tasman National Park (and environs) Site-led Programme in the Plan will allow council to intervene on any properties where council deems effective control is necessary to protect environmental values.

Adverse effects [Section 71(d)]

Is European holly capable of causing an adverse effect on:		Comments
Economic well-being?		
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?	Yes	This species can outcompete indigenous plants for space and light.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	It is capable of establishing on adjoining grasslands and in native and exotic forest and shrublands.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?	Yes	Dense stands of holly can restrict access.
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Feral Cats (southern parts of the Waimea Estuary)

Preferred Option: Site-led

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

Programme Options	Site-led	Not in RPMP
Objective	Over the duration of this Plan, eradicate or progressively control the pests listed in the Site-led Programme to eliminate or minimise their adverse effects.	None
Intermediate outcome	That the pest, or an organism being spread by the pest, that is capable of causing damage to a place, is excluded or eradicated from that place, or is contained, reduced, or controlled within the place to an extent that protects the values of that place.	None
Technical and operational risks	Low Feral cats are mobile and difficult to trap. Cage trapping of cats commenced several years ago on a small scale in this area and this has gradually expanded.	None
The risk that the option cannot be implemented and of non-compliance	Low There are few feral cats in and around these intensively-monitored parts of Waimea Inlet where the programme has been underway for several years.	None
The risk that compliance with other legislation will adversely affect implementation of the option	Low	None

Programme Options	Site-led	Not in RPMP
The risk that public or political concerns will adversely affect implementation of the option	Moderate Concern has been expressed by some domestic cat owners that their cats may be caught in cage traps and accidentally destroyed. The provision of free microchipping for these cats and the requirement to check every trapped cat has provided reassurance.	None
Other material risks	None identified	None identified

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

Site-led: Low

The risk of not achieving the Site-led objective of managing feral cats to zero density within the next 10 years is rated as low. Control of feral cats on a small scale is feasible when linked with ongoing monitoring and varying techniques.

Not in RPMP

An effective trapping programme could be very difficult to maintain over time if these areas were excluded from the RPMP.

Beneficiaries of the Programme [NPD 7(2)(b)]

The prime beneficiary which will benefit from ongoing control of feral cats is considered to be the whole community.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

The exacerbators are cat owners who are unwilling to support the programme and fail to keep their cats on their property, and those who dump unwanted cats and kittens in this neighbourhood.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the minimal cost of supporting this community programme is to incorporate it into the general rate.

Effects of not intervening

Failure to control feral cats will result in widespread loss of native birds, lizards, freshwater fish, frogs and large invertebrates.

Rationale

Given the adverse effects of feral cats on endangered and threatened birds that nest on the margins of the Waimea Estuary and the strong community commitment to the trapping programme, it is appropriate to support this initiative by incorporating it as a Site-led programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to achieve zero density in the areas with high biodiversity values is not considered viable. Its inclusion in the Plan for these designated areas around the Waimea Estuary will allow pest control to be undertaken on any properties where effective control is lacking.

Adverse effects [Section 71(d)]

Are Feral Cats inside part of the Waimea Estuary capable of causing an adverse effect on:		Comments
Economic well-being?		
The viability of threatened species or organisms?	Yes	Feral cats are capable of killing the small numbers of banded rail and Australian bitterns that remain in this area.
The survival and distribution of indigenous plants or animals?	Yes	Feral cats predate a wide range of indigenous organisms in this area.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	Feral cats can significantly disrupt succession and simplify biodiversity ecosystems in this area.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		

Animal welfare?		Feral cats can attack domestic cats and transfer infectious diseases.
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Feral Rabbits within Golden Bay (but excluding Awaroa)

Preferred Option: Eradication

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

Programme Options	Eradication	Progressive Containment
Objective	Over the duration of this Plan, eradicate the pests listed in the Eradication Programme to eliminate their adverse effects.	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.
Intermediate outcome	To reduce the infestation level of the pest, or an organism being spread by the pest, to zero levels in an area in the short to medium term.	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.
Technical and operational risks	Low Few rabbits are seen in the Golden Bay area (outside Awaroa) and there is strong community support for removing them from Golden Bay completely. Once established, they can be difficult to eradicate.	Low Few rabbits are seen in the Golden Bay area (outside Awaroa) and there is strong community support for removing them from Golden Bay completely. Once established, they can be difficult to eradicate.
The risk that the option cannot be implemented and of non-compliance	Low There is a risk that some occupiers will not report the presence of feral rabbits but this is considered low.	Low There is a risk that some occupiers will not report the presence of feral rabbits but this is considered low.
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low

Programme Options	Eradication	Progressive Containment
Other material risks	None identified	None identified

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

Eradication: Low

The risk of not achieving Eradication within the next 10 years is rated as low. Eradication of feral rabbits is difficult but achievable in the early stages of establishment. However, it is not possible to prevent people bringing in feral rabbits to keep as pets that subsequently escape from captivity, establish and breed.

Progressive containment: Low

The risk of not achieving the Progressive containment objective within the next 10 years is rated as low.

Beneficiaries of the Programme [NPD 7(2)(b)]

The prime beneficiary is considered to be the whole community, which will benefit from the eradication of feral rabbits.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

The exacerbators are those who bring in feral rabbits as pets and allow them to escape.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of this programme is to incorporate it into the general rate.

Effects of not intervening

Rabbits are significant agricultural and ecological pests that will compete with livestock for pasture, browse on vulnerable plant communities, and provide food for mammalian predators that prey on native birds and animals.

Rationale

There have been no reports on the presence of feral rabbits in Golden Bay outside Awaroa. Given their potential impact on productivity, it is appropriate that they are included as a pest in the Eradication Programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

There are no known sites with feral rabbits present in Golden Bay (excluding Awaroa) but some may be brought into the region, escape from captivity and start breeding. Relying on all occupiers with this pest on their land to take voluntary action to ensure its eradication is not considered viable. It is vital to utilise the experience and skills of the biosecurity team to ensure that if this occurs, they do not become established. Its inclusion in the Plan should ensure this can be achieved.

Adverse effects [Section 71(d)]

Are Feral Rabbits capable of causing an adverse effect on:		Comments
Economic well-being?	Yes	Feral rabbits will compete with cattle and sheep for forage and will browse on vegetable crops. Rabbit holes can cause injury to livestock if their legs become trapped.
The viability of threatened species or organisms?	Yes	Feral rabbits provide feedstock for predators such as feral cats, ferrets and stoats.
The survival and distribution of indigenous plants or animals?	Yes	Feral rabbits damage young trees and shrubs by feeding on shoots and stripping bark.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	They have significantly reduced biodiversity in many natural ecosystems through selective browsing and open up areas for invasion by weed species.
Soil resources?	Yes.	They can initiate soil erosion on susceptible soils.
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		

Animal welfare?		
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Ferrets (southern parts of Waimea Estuary)

Preferred Option: Site-led

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

Programme Options	Site-led	Not in RPMP
Objective	Over the duration of this Plan, eradicate, progressively or sustainably control the pests listed in the Site-led Programme to eliminate or minimise their adverse effects.	None
Intermediate outcome	That the pest, or an organism being spread by the pest, that is capable of causing damage to a place, is excluded or eradicated from that place, or is contained, reduced, or controlled within the place to an extent that protects the values of that place.	None
Technical and operational risks	Moderate Ferrets are the largest mustelids in New Zealand and predate mainly on rabbits and hares but will also attack rodents, possums, ground-nesting birds and their eggs, and lizards. They are widely distributed through the region and rated at 8 (out of 10) on the Infestation Curve. It is unlikely they are present in the intensively-trapped part of this region, but likely to enter from the surrounding area.	None
The risk that the option cannot be implemented and of non-compliance	Moderate The limited numbers of ferrets in the intensively trapped areas means that it is likely that ferret numbers within and adjoining the sites can be maintained at or very close to zero density.	Low

Programme Options	Site-led	Not in RPMP
The risk that compliance with other legislation will adversely affect implementation of the option	Low	None
The risk that public or political concerns will adversely affect implementation of the option	Low	None
Other material risks	None identified	None

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

Site-led: Low

The risk of not achieving and maintaining the Site-led objective of managing ferrets to zero density within the next 10 years is rated as low. Control of ferrets on a small scale is feasible when linked with ongoing monitoring and varying control techniques.

Not in RPMP

An effective control programme could be supported by including these trapping sites in the RPMP.

Beneficiaries of the Programme [NPD 7(2)(b)]

The beneficiary which will benefit most from ongoing control of ferrets is the general community.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

The exacerbators are the occupiers of rural land who are unable to control ferrets on their land or unwilling to allow others to do so.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the minimal cost of support for this community programme is to incorporate it into the general rate.

Effects of not intervening

Failure to control ferrets will result in predation of animals including lizards, ground-nesting birds and their eggs.

Rationale

The level of commitment and expertise among the community group managing these sites makes it appropriate to include ferrets as a pest in the Site-led programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to achieve zero density in the areas close to sites with high biodiversity values is not considered viable. Some occupiers will be unaware of their presence and their impact or reluctant to undertake trapping. Their inclusion in the Plan for these designated areas around the Waimea Estuary will allow pest control to be undertaken on any properties where effective control is lacking.

Adverse effects [Section 71(d)]

Are Ferrets capable of causing an adverse effect on:		Comments
Economic well-being?	Yes	Ferrets can carry bovine TB into “clean” areas.
The viability of threatened species or organisms?	Yes	They are major predators of a wide range of threatened species of ground-nesting birds.
The survival and distribution of indigenous plants or animals?	Yes	They have had a major impact on ground-nesting birds and will consume their eggs.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?		
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Fireblight

Preferred Option: Sustained Control

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

Programme Options	Progressive Containment	Sustained Control
Objective	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.	Over the duration of this Plan, control the pests listed in the Sustained Control Programme to minimise their adverse effects.
Intermediate outcome	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.	To provide for ongoing control of the pest, or an organism being spread by the pest, to reduce its impacts on values and its spread to other properties.
Technical and operational risks	Moderate Fireblight is an epiphytotic bacterium that is transmitted by birds, insects and contaminated orchard equipment. This bacterium causes blackening of twigs, foliage and flowers. Fruit can only be exported to Australia, Japan and South Korea from fireblight-free orchards. It is found throughout the region in association with apple and pear orchards and a number of other species that includes hawthorn and cotoneaster. Fireblight is present throughout the region and is rated at 7 (out of 10) on the Infestation Curve.	Low Fireblight is an epiphytotic bacterium that is transmitted by birds, insects and contaminated orchard equipment. This bacterium causes blackening of twigs, foliage and flowers. Fruit can only be exported to Australia, Japan and South Korea from orchards that are fireblight-free. It is found throughout the region in association with apple and pear orchards and a range of the species that includes hawthorn, quince, loquat, cotoneaster, medlar and pyracantha. Fire blight is rated at 7 (out of 10) on the Infestation Curve.
The risk that the option cannot be implemented and the risk of non-compliance with rules	Moderate It would be very difficult to reduce its distribution.	Low

Programme Options	Progressive Containment	Sustained Control
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Progressive Containment: Moderate

The risk of not achieving the Progressive Containment objective of reducing the geographic distribution within the next 10 years is rated as moderate as it is closely associated with a range of species besides apples and pears.

Sustained Control: Low

The risk of not achieving the Sustained Control objective within the next 10 years is rated as low. The orchardist at risk has the option of controlling fireblight on apples and other infected species on adjoining land up to 500 m if it is not being adequately controlled. This is a cost-effective option.

Beneficiaries of the Programme [NPD 7(2)(b)]

The direct beneficiaries are considered to be the apple and pear orchardists who produce high quality fruit.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Exacerbators are those occupiers within 500 m of apple orchards who are not controlling fireblight on their trees.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of this minor programme is to incorporate it into the general rate.

Effects of not intervening

Failure to control this bacterial disease will restrict the entry of fruit to some important export markets and will result in the premature death of apple and pear trees.

Rationale

The previous boundary control rule was similar and one that had generally accepted by occupiers adjoining apple orchards. This makes it appropriate to include fireblight as a Boundary Control pest in the Sustained Control programme. It will allow the orchardists to control this pest on infected trees on land within 500 m. They have the expertise to identify it and the resources to treat it.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

It is not considered viable to rely on all occupiers with this pest on their land to take voluntary action to control it. A requirement in the Plan to allow orchardists to control this pest on adjoining land when it is not being adequately controlled is a more effective means of achieving this, allowing apple and pear orchards to be classified as fireblight-free and meet export market requirements. Orchardists have the incentive and the expertise to identify it and the resources to treat it.

Adverse effects [Section 71(d)]

Is Fireblight capable of causing an adverse effect on:		Comments
Economic well-being?	Yes	It can damage apple and pear trees and result in export fruit being rejected.
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?		
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?		
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		

The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Gambusia

Preferred Option: Eradication

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

Programme Options	Eradication	Progressive Containment
Objective	Over the duration of this Plan, eradicate the pests listed in the Eradication Programme to eliminate their adverse effects.	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.
Intermediate outcome	To reduce the infestation level of the pest, or an organism being spread by the pest, to zero levels in an area in the short to medium term.	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.
Technical and operational risks	<p>Low</p> <p>Gambusia are small silvery fish that were introduced into North Island waterways in the 1930s and first found in local waterways in 2000. An active campaign has been conducted against them, along with other pest fish, by the Department of Conservation. They are small aggressive fish that attack a variety of native fish and pose a threat to a range of aquatic organisms. They are restricted to a small number of coastal waterways in the Waimea Plains and are rated at 2 (out of 10) on the Infestation Curve.</p>	<p>Low</p> <p>Gambusia are small silvery fish that were introduced into North Island waterways in the 1930s and first found in local waterways in 2000. An active campaign has been conducted against them, along with other pest fish, by the Department of Conservation. They are small aggressive fish that attack a variety of native fish and pose a threat to a range of aquatic organisms. They are restricted to a small number of coastal waterways in the Waimea Plains and are rated at 2 (out of 10) on the Infestation Curve.</p>
The risk that the option cannot be implemented and of non-compliance	<p>Low</p> <p>The restricted distribution of Gambusia and the improvements in control methods provide optimism that Gambusia can be eradicated.</p>	<p>Low</p> <p>The restricted distribution of Gambusia and the improvements in control methods provide optimism that Gambusia can be progressively controlled.</p>

Programme Options	Eradication	Progressive Containment
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Eradication: Low

The risk of not achieving Eradication within the next 10 years is rated as low. Eradication of Gambusia is difficult but the effectiveness of control methods has continued to improve.

Progressive containment: Low

The risk of not achieving the Progressive Containment objective within the next 10 years is rated as low.

Beneficiaries of the Programme [NPD 7(2)(b)]

The prime beneficiary is considered to be the whole community, which will benefit from the eradication of Gambusia.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

The exacerbators are those who have released Gambusia along with other pest fish.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of this programme is to incorporate it into the general rate.

Effects of not intervening

These small aggressive fish can breed very quickly, rapidly increasing population numbers. They will attack a variety of native fish, resulting in their disappearance from infested waterways.

Rationale

There have been no reports of *Gambusia* in the region outside the coastal waterways on the Waimea Plains. Given their potential impact on native fish and other aquatic organisms, it is appropriate that they are included as a pest in the Eradication programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

These aggressive pest fish are present in some small streams on the south side of the Waimea Estuary and the Department of Conservation has the expertise and resources to effectively control them. Its inclusion in the Plan for these streams around the Waimea Estuary should allow them to eradicate *Gambusia* within the term of the Plan.

Adverse effects [Section 71(d)]

Are <i>Gambusia</i> capable of causing an adverse effect on:		Comments
Economic well-being?		
The viability of threatened species or organisms?	Yes	<i>Gambusia</i> attack a range of native fish and other aquatic organisms.
The survival and distribution of indigenous plants or animals?	Yes	<i>Gambusia</i> will attack whitebait and mudfish.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	They significantly reduce aquatic biodiversity.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?	Yes	The absence of whitebait will prevent many whitebaiters from enjoying their favourite recreational activity.
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?	Yes	Whitebait provide an important and highly valued food for Maori.
Animal welfare?		

Giant Buttercup

Preferred Option: Sustained Control

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

Programme Options	Progressive Containment	Sustained Control
Objective	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.	Over the duration of this Plan, control the pests listed in the Sustained Control Programme to minimise their adverse effects.
Intermediate outcome	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.	To provide for ongoing control of the pest, or an organism being spread by the pest, to reduce its impacts on values and its spread to other properties.
Technical and operational risks	<p>Moderate</p> <p>Giant buttercup is a hairy rhizomatous perennial that is found in the higher-rainfall pastoral areas in the region. It produces hooked seed that allows it to be transported by animals, hay, footwear, machinery and floodwaters. It can overwhelm pastoral grasses and clovers in dairying areas as it is unpalatable to cows, but can be controlled by sheep. It has been controlled by herbicides but resistant strains have developed. A biocontrol agent (a mycoherbicide) has been trialled but results have been variable. It is rated at 6 (out of 10) on the Infestation Curve.</p>	<p>Low</p> <p>Giant buttercup is a hairy rhizomatous perennial that is found in the higher-rainfall pastoral areas in the region. It produces hooked seed that allows it to be transported by animals, hay, footwear, machinery and floodwaters. It can overwhelm pastoral grasses and clovers in dairying areas as it is unpalatable to cows, but can be controlled by sheep. It has been controlled by herbicides but resistant strains have developed. A biocontrol agent (a mycoherbicide) has been trialled but results have been variable. It is rated at 6 (out of 10) on the Infestation Curve.</p>

Programme Options	Progressive Containment	Sustained Control
The risk that the option cannot be implemented and the risk of non-compliance with rules	Moderate As it is widely distributed and it is difficult to control with herbicides without damaging pasture species, it is unlikely that its geographic distribution can be reduced.	Low As it is widely distributed and it is difficult to control with herbicides without damaging pasture species, it is more realistic to aim at sustained control.
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Progressive Containment: Moderate

The risk of not achieving the Progressive Containment objective of reducing the geographic distribution within the next 10 years is rated as moderate with the current management tools.

Sustained Control: Low

The risk of not achieving the Sustained Control objective within the next 10 years is rated as low.

Beneficiaries of the Programme [NPD 7(2)(b)]

The direct beneficiaries are considered to be the dairy farmers.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Exacerbators are those who are not controlling giant buttercup on land adjoining pasture where it is not present and those who move contaminated machinery onto pasture where it is not present.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of this minor programme is to incorporate it into the general rate.

Effects of not intervening

Failure to control giant buttercup will result in the replacement of grasses and clover in dairy pastures, reducing pasture quality and lowering productivity.

Rationale

There is an existing rule and one that is accepted by occupiers adjoining dairy pastures. It is appropriate to include giant buttercup as a Boundary Control pest in the Sustained Control programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to control this pest to reduce its impact on adjoining pasture values and its spread to other properties is not considered viable. It is widely distributed on some properties and is difficult to control. A requirement in the Plan to maintain control within 5 m of the boundary from pasture that is clear or being cleared is a more effective means of achieving this.

Adverse effects [Section 71(d)]

Is Giant Buttercup capable of causing an adverse effect on:		Comments
Economic well-being?	Yes	It can outcompete pasture grasses on dairy farms where it is unpalatable to cows and results in significantly reduced milk production.
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?		
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?		
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		

Is Giant Buttercup capable of causing an adverse effect on:		Comments
The enjoyment of the recreational value of the natural environment?		.
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Gorse (Howard – St Arnaud)

Preferred Option: Sustained Control

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

Programme Options	Progressive Containment	Sustained Control
Objective	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.	Over the duration of this Plan, control the pests listed in the Sustained Control Programme to minimise their adverse effects.
Intermediate outcome	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.	To provide for ongoing control of the pest, or an organism being spread by the pest, to reduce its impacts on values and its spread to other properties.
Technical and operational risks	<p>Moderate</p> <p>Gorse is a fast-growing perennial that forms dense spiny thickets up to 2.5 m high. It is an aggressive competitor for light, nutrients and moisture and will displace pasture grasses. It impedes access for stock and its spines reduce the value of wool. Gorse provides habitat for rabbits and possums and can become a fire hazard in summer. It is an extremely difficult plant to eradicate as it flowers prolifically and its seeds remain viable for decades. It is present in parts of the Howard-St Arnaud area and is assessed at 4 (out of 10) on the Infestation Curve.</p>	<p>Low</p> <p>Gorse is a fast-growing perennial that forms dense spiny thickets up to 2.5 m high. It is an aggressive competitor for light, nutrients and moisture and will displace pasture grasses. It impedes access for stock and its spines reduce the value of wool. Gorse provides habitat for rabbits and possums and can become a fire hazard in summer. It is an extremely difficult plant to eradicate as it flowers prolifically and its seeds remain viable for decades. It is present in parts of the Howard-St Arnaud area and is assessed at 4 (out of 10) on the Infestation Curve.</p>
The risk that the option cannot be implemented and the risk of non-compliance with rules	<p>Moderate</p> <p>It is unlikely that its geographic distribution can be significantly reduced with current technology.</p>	<p>Low</p> <p>As it is present in parts of the area, and can be controlled with herbicides, it is more realistic to aim at sustained control.</p>

Programme Options	Progressive Containment	Sustained Control
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Progressive Containment: Moderate

The risk of not achieving the Progressive Containment objective of reducing the geographic distribution within the next 10 years is rated as moderate with current management tools.

Sustained Control: Low

The risk of not achieving the Sustained Control objective within the next 10 years is rated as low.

Beneficiaries of the Programme [NPD 7(2)(b)]

The direct beneficiary is considered to be the community.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Exacerbators are those who are not controlling gorse on their land and those who move machinery carrying gorse seed into areas where it is not present.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of this minor programme is to incorporate it into the general rate.

Effects of not intervening

This spiky shrub seeds prolifically and the long-lived seeds will be spread in river gravel and in soil on heavy machinery. The seedlings will invade productive land, regenerating shrubland and wasteland, restricting access and shading competing vegetation.

Rationale

The success of this programme will depend on the willingness of occupiers to control plants that are lightly distributed through parts of the Howard-St Arnaud area that are ungrazed or lightly grazed and frequently difficult to locate. It is appropriate that gorse in this area is included in the Sustained Control programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to reduce its impacts on values and its spread to other properties in the Howard-St Arnaud area is not considered viable. Its extended seed life makes control a long-term project and some occupiers are reluctant to do this. Its inclusion in the Plan should ensure that this can be achieved.

Adverse effects [Section 71(d)]

Is Gorse capable of causing an adverse effect on:		Comments
Economic well-being?	Yes	It can displace pasture grasses, impede stock access, provide habitat for pests, and become a fire hazard in summer.
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?		
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	It can invade native shrubland and grassland
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		Gorse can restrict access and degrade amenity values.
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		

Is Gorse capable of causing an adverse effect on:	Comments
Animal welfare?	

Quantitative Analysis – Assumptions and Results

Area infested (ha): 24

Maximum area that could become infested (ha): 8000

Rate of spread (r): 0.08003

Time for infestation to reach 90% of maximum (years):100

Earnings (\$ha): \$585

Reduction in earnings caused by pest (%): 60

Discount rate (%): 4

Programme Type: Sustained Control

Annual Programme Implementation Cost (inclusive of occupier and council cost): \$20,000

Number of years for this simulation: 30

Net Present Value (NPV) (\$): \$8011

Internal Rate of Return (IRR) (%): 4.2908

A positive NPV indicates Sustained Control is a cost beneficial scenario. The cost of doing nothing is estimated to be \$645,188 of lost economic opportunity.

Gorse (outside Howard – St Arnaud)

Preferred Option: Sustained Control incorporating a Good Neighbour Rule

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

Programme Options	Progressive Containment	Sustained Control
Objective	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.	Over the duration of this Plan, control the pests listed in the Sustained Control Programme to minimise their adverse effects.
Intermediate outcome	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.	To provide for ongoing control of the pest, or an organism being spread by the pest, to reduce its impacts on values and its spread to other properties.
Technical and operational risks	<p>Moderate</p> <p>Gorse is a fast-growing perennial that forms dense spiny thickets up to 2.5 m high. It is an aggressive competitor for light, nutrients and moisture and will displace pasture grasses. It impedes access for stock and its spines reduce the value of wool. Gorse bushes provide habitat for rabbits and possums and can become a fire hazard in summer. It is an extremely difficult plant to eradicate as it flowers prolifically and its seeds remain viable for decades. The seeds are spread ballistically when the pods open, but can also be spread in mud on machinery and vehicles, and in gravel extracted from waterways. Gorse is widespread throughout the region outside Howard-St Arnaud and is assessed at 7 (out of 10) on the Infestation Curve.</p>	<p>Low</p> <p>Gorse is a fast-growing perennial that forms dense spiny thickets up to 2.5 m high. It is an aggressive competitor for light, nutrients and moisture and will displace pasture grasses. It impedes access for stock and its spines reduce the value of wool. Gorse bushes provide habitat for rabbits and possums and can become a fire hazard in summer. It is an extremely difficult plant to eradicate as it flowers prolifically and its seeds remain viable for decades. The seeds are spread ballistically when the pods open, but can also be spread in mud on machinery and vehicles, and in gravel extracted from waterways. Gorse is widespread throughout the region outside Howard – St Arnaud and is assessed at 7 (out of 10) on the Infestation Curve.</p>

Programme Options	Progressive Containment	Sustained Control
The risk that the option cannot be implemented and the risk of non-compliance with rules	Moderate It is unlikely that its geographic distribution can be significantly reduced with current technology.	Low As it is present throughout the rest of the region and can be controlled with herbicides, it is more efficient to aim at boundary control to prevent its spread onto adjoining land that is clear, or being cleared, of gorse.
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Progressive Containment: Moderate

The risk of not achieving the Progressive Containment objective of reducing the geographic distribution within the next 10 years is rated as moderate with current management tools.

Sustained Control: Low

The risk of not achieving the Sustained Control objective within the next 10 years is rated as low.

Beneficiaries of the Programme [NPD 7(2)(b)]

The direct beneficiary is considered to be the community.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Exacerbators are occupiers with this pest on their land who fail to control it. It is a difficult plant to control as it produces prolific amounts of seed from an early age and seed life can exceed 20 years.

Best mechanism to impose cost allocation 7(2)(e)

The simplest way of allocating the compliance monitoring cost of this relatively small programme is to incorporate it into the general rate.

The best method for allocating control costs is for the occupier to bear them.

Effects of not intervening

This spiky shrub seeds prolifically and the long-lived seeds will be spread in river gravel and in soil on heavy machinery. The seedlings will invade productive land, regenerating shrubland and wasteland, restricting access and shading competing vegetation.

Rationale

There is widespread distribution of gorse through much of the region. The presence of dense stands means that the most effective way of protecting land that is cleared or being cleared of broom from spread from adjacent or nearby neighbours is to require adjoining occupiers to control broom on their land within 10 m of the boundary.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on occupiers with this pest on their land to take voluntary action to reduce its impact on values and its spread to other properties is not in their own economic interest. A requirement in the Plan to maintain control within 10 m of the boundary from properties where it is clear or being cleared is a reasonable means of imposing the cost of spread on to the exacerbator.

Adverse effects [Section 71(d)]

Is Gorse capable of causing an adverse effect on:		Comments
Economic well-being?	Yes	It can displace pasture grasses, impede stock access, provide habitat for pests, and become a fire hazard in summer.
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?		
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	It can invade native shrubland and grassland.
Soil resources?		

Is Gorse capable of causing an adverse effect on:		Comments
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		Gorse can restrict access and degrade amenity values.
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Quantitative Analysis - Assumptions and Results

Area infested (ha): 8,800

Maximum area that could become infested (ha) 150,000

Rate of spread (r): 0.04973

Time for infestation to reach 90% of maximum (years):100

Earnings (\$/ha): \$221

Reduction in earnings caused by pest (%): 60

Discount rate (%): 4

Programme Type: Sustained Control

Annual Programme Implementation Cost (inclusive of occupier and council cost): \$143,000

Number of years for this simulation: 30

Net Present Value (NPV) (\$): \$15,571,882

Internal Rate of Return (IRR) (%): 71.3164

A positive NPV indicates Sustained Control with a Good Neighbour Rule is a cost beneficial scenario. The cost of doing nothing is estimated to be \$58,400,098 of lost economic opportunity.

Greater Bindweed (St Arnaud Village)

Preferred Option: Site-led

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

Programme Options	Site-led	Not in RPMP
Objective	Over the duration of this Plan, eradicate or progressively control the pests listed in the Site-led Programme to eliminate or minimise their adverse effects.	None
Intermediate outcome	That the pest, or an organism being spread by the pest, that is capable of causing damage to a place, is excluded or eradicated from that place, or is contained, reduced, or controlled within the place to an extent that protects the values of that place.	None
Technical and operational risks	<p>Low</p> <p>Greater bindweed is a clambering vine that has been (incorrectly) called Convolvulus. It is a vigorous sprawling perennial that can invade bush margins, roadsides, swamps and waste areas, smothering small plants and shrubs. Small infestations of greater bindweed can be controlled by grubbing and careful removal of rhizomes. Larger infestations can be controlled with commonly-used herbicides. It is present in very low numbers within St Arnaud Village.</p>	None
The risk that the option cannot be implemented and the risk of non-compliance with rules	Low	None

Programme Options	Site-led	Not in RPMP
The risk that compliance with other legislation will adversely affect implementation of the option	Low	None
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Site-led: Low

The risk of not achieving the Site-led objective within the next 10 years is rated as low because of the small number of plants involved in the village.

Not in RPMP: None

Beneficiaries of the Programme [NPD 7(2)(b)]

The beneficiaries are occupiers in St Arnaud Village and in the adjoining rural area.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Exacerbators are the occupiers with this pest on their land who are failing to control it.

Best mechanism to impose cost allocation 7(2)(e)

There is minimal cost as this programme is community-led and it can be incorporated into the general rate.

Effects of not intervening

This vigorous sprawling perennial will invade road edges, bush margins, waste areas and swamps, smothering small plants and shrubs.

Rationale

The commitment of the community group in this area make it appropriate to include greater bindweed in the Site-led programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to achieve zero density in this area is not considered viable. Some occupiers are reluctant to do this. Its inclusion in the Plan for this area around St Arnaud Village will allow pest control to be undertaken on any properties where effective control is lacking.

Adverse effects [Section 71(d)]

Is Greater Bindweed capable of causing an adverse effect on:		Comments
Economic well-being?		
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?		
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	It is capable of invading bush margins and wetlands and becoming the dominant vegetation.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Gunnera

Preferred Option: Sustained Control

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

Programme Options	Progressive Containment	Sustained Control
Objective	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.	Over the duration of this Plan, prevent the further spread of Gunnera to reduce its adverse effects on the environment.
Intermediate outcome	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.	To reduce the impacts and spread of Gunnera.
Technical and operational risks	<p>Moderate</p> <p>Gunnera is a tall herbaceous plant with thick stalks supporting large leaves. Nicknamed Chilean rhubarb, it has invaded wetlands and riparian areas, forming dense stands and smothering shorter vegetation. It has a limited distribution and is tentatively rated at 3 (out of 10) on the Infestation Curve, though information on full extent of infestation is quite poor.</p>	<p>Low</p> <p>Gunnera has a limited distribution and is tentatively rated at 3 (out of 10) on the Infestation Curve. It is a tall herbaceous plant with thick stalks supporting large leaves. Nicknamed Chilean rhubarb, it has invaded wetlands and riparian areas, forming dense stands and smothering shorter vegetation.</p>

Programme Options	Progressive Containment	Sustained Control
The risk that the option cannot be implemented and of non-compliance	<p>Low to Moderate</p> <p>There is limited information on the distribution of Gunnera but its rapid growth and prolific seed production will make eradication difficult. An ornamental plant which occupiers may be reluctant to remove.</p> <p>Treatment methods available should ensure that its geographical distribution can be reduced within the term of the Plan.</p>	<p>Low</p> <p>There is limited information on the distribution of Gunnera but the treatment methods available should ensure that its geographical distribution can be contained and possibly even reduced within the term of the Plan.</p>
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Progressive containment: Low to moderate

The risk of not achieving the Progressive Containment objective within the next 10 years is rated as low to moderate due to the lack of good information on distribution. There is more work to do on mapping its distribution and its spread from garden waste dumped in rural areas.

Sustained Control: Low

The risk of not achieving the Sustained Control objective within the next 10 years is rated as low.

Beneficiaries of the Programme [NPD 7(2)(b)]

The prime beneficiaries are occupiers in rural areas along waterways but there are benefits to the whole community from commencing a control programme.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

This plant spreads by seed in water and in garden waste. Active exacerbators are occupiers with this plant on their land where it can seed into waterways and those who dump garden waste and soil containing seed in rural areas.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of this small programme is to incorporate it into the general rate.

Effects of not intervening

This tall herbaceous plant will invade riparian areas and wetlands, forming dense stands and smothering competing vegetation.

Rationale

There are too many active sites to be confident about eradicating *Gunnera* within the 10-year time frame. The distribution information is too poor to be confident (at this stage) that Progressive Containment can be achieved. It is therefore prudent to manage *Gunnera* under a Sustained Control programme until information improves.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to contain or reduce its geographic distribution is not considered viable. It is an attractive plant that has been grown in domestic gardens and some occupiers are unaware of its pest potential. Its inclusion in the Plan should ensure sustained control can be achieved.

Adverse effects [Section 71(d)]

Is <i>Gunnera</i> capable of causing an adverse effect on:		Comments
Economic well-being?		
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?	Yes	It is capable of smothering smaller plants and shrubs in riparian areas and on coastal cliffs.

Is Gunnera capable of causing an adverse effect on:		Comments
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	It disrupts natural ecosystems, becoming the dominant vegetation cover on coastal cliffs and the dominant understorey vegetation under trees along waterways.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?	Yes	The dense stands can restrict access to recreational and natural areas.
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Himalayan Balsam

Preferred Option: Eradication

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

Programme Options	Eradication	Progressive Containment
Objective	Over the duration of this Plan, eradicate the pests listed in the Eradication Programme to eliminate their adverse effects.	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.
Intermediate outcome	To reduce the infestation level of the pest, or an organism being spread by the pest, to zero levels in an area in the short to medium term.	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.
Technical and operational risks	Low Himalayan balsam is an aggressive fast-growing herb that has colonised riparian areas, wetland margins, roadsides and ditches. It is considered to have a very limited distribution and has been tentatively rated at 2 (out of 10) on the Infestation Curve.	Low Himalayan balsam is an aggressive fast-growing herb that has colonised riparian areas, wetland margins, roadsides and ditches. It is considered to have a very limited distribution and has been tentatively rated at 2 (out of 10) on the Infestation Curve.
The risk that the option cannot be implemented and of non-compliance	Low There is a low risk that surveillance, inspection and control operations cannot be carried out annually.	Low There is a low risk that the surveillance, inspection and control operations cannot be carried out annually.
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low

Programme Options	Eradication	Progressive Containment
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Eradication: Low

The risk of not achieving Eradication within the next 10 years is rated as low. Experience with intensive management of Himalayan balsam in other regions indicates that eradication is feasible with existing technology.

Progressive containment: Low

The risk of not achieving the Progressive Containment objective within the next 10 years is also rated as low.

Beneficiaries of the Programme [NPD 7(2)(b)]

The prime beneficiaries will be a small number of local occupiers who will benefit from its removal from waterways and wetlands on their land.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Active exacerbators are occupiers with this plant on their land growing close to waterways. This plant is spread by seeds, which are explosively released from capsules, moving down waterways and allowing this plant to become established in riparian areas downstream.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of managing this programme is to incorporate it into the general rate.

Effects of not intervening

This fast-growing herb will invade riparian areas, roadsides, ditches and wetland margins, smothering competing vegetation.

Rationale

As there are few known sites of Himalayan balsam with live plants present, it is appropriate that it is included as a pest in the Eradication programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to ensure its eradication is not considered viable. There are a limited number of infested sites and it is vital to utilise the experience and skills of the biosecurity team to achieve eradication in the region. Its inclusion in the Plan should ensure this can be achieved.

Adverse effects [Section 71(d)]

Is Himalayan Balsam capable of causing an adverse effect on:		Comments
Economic well-being?		
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?	Yes	It can displace native species growing along waterways and in gullies and wetlands.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	It can reduce biological diversity in riparian ecosystems.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Hornwort

Preferred Option: Exclusion

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

Programme Options	Do Nothing	Exclusion
Objective	Over the duration of this Plan, do nothing toward managing this pest.	Over the duration of this Plan, prevent the establishment of the pests listed in the Exclusion Programme from the Tasman-Nelson region to avoid adverse effects on economic well-being, the natural environment, human health, recreational values, or cultural values.
Intermediate outcome	Do nothing – leave it to occupiers to manage.	To exclude this pest from the region.
Technical and operational risks	Low to moderate This pest is believed to be absent from the region after successful eradications from Moutere Stream and ponds.	Low This pest is believed to be absent from the region and surveillance of optimal sites is enough to keep this status.
The risk that the option cannot be implemented and of non-compliance	Low	Low
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Moderate Public pressure to do something may mean that “do nothing” is not feasible	Low
Other material risks	None identified	None identified

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

Do nothing: Low

The risk of doing nothing within the next 10 years is rated low. There is some risk that this pest could arrive in the region during that period.

Exclusion: Low

The risk of maintaining the excluded status of this pest over the next 10 years is rated low because a surveillance programme should be sufficient to identify and respond quickly to any incursions before it becomes established.

Beneficiaries of the Programme [NPD 7(2)(b)]

The beneficiary is the Tasman-Nelson community who enjoy recreating in the environment. There are also aquatic biodiversity benefits from keeping this pest out of the region.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Active and passive exacerbators are occupiers who do not report the presence of this pest on the lands they occupy, and those who purposely re-introduce this pest to the region.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of a very small programme is to incorporate it into the general rate.

Effects of not intervening

Should this pest appear in the region, it could have significant water quality and biodiversity impact.

Rationale

Council surveillance programme potentially provides for a fast and effective incursion response.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to respond to new incursions is not considered viable. Hornwort is an aquatic pest that can be difficult to manage and some occupiers are unaware of its pest potential.

Adverse effects [Section 71(d)]

Is hornwort capable of causing an adverse effect on:		Comments
Economic well-being?		

The viability of threatened species or organisms?	Yes	Can completely waterways and lakes.
The survival and distribution of indigenous plants or animals?	Yes	Can completely waterways and lakes.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	Can completely waterways and lakes.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Indian Myna

Preferred Option: Exclusion

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

Programme Options	Do Nothing	Exclusion
Objective	Over the duration of this Plan, do nothing toward managing this pest.	Over the duration of this Plan, prevent the establishment of the pests listed in the Exclusion Programme from the Tasman-Nelson region to avoid adverse effects on economic well-being, the natural environment, human health, recreational values, or cultural values.
Intermediate Outcome	Do nothing	To exclude this pest from the region.
Technical and operational risks	Low	Low There are no known populations of Indian myna in the region. Once established, they can be difficult to control.
The risk that the option cannot be implemented and of non-compliance	Low There is a risk that Indian myna deliberately introduced though this is considered low.	Low There is a risk that Indian myna deliberately introduced though this is considered low.
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Do Nothing: Low

There is a slight risk that this species may be introduced to the region.

Exclusion: Low

The risk of not achieving the Exclusion objective within the next 10 years is rated as low.

Beneficiaries of the Programme [NPD 7(2)(b)]

The prime beneficiary is considered to be the whole community.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

The exacerbators are those who release Indian myna into the wild.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of this programme is to incorporate it into the general rate.

Effects of not intervening

Myna are an aggressive bird that feeds on insects, fruit and berries and can cause considerable economic loss. They are strongly territorial when nesting and are reputed to destroy the eggs and nestlings of other birds in their feeding area.

Rationale

While there have been no reports of wild populations of Indian myna in the region, it is useful to have tools to respond to new incursions as they arise. Accordingly, it is appropriate that they become a pest in the Exclusion Programme rather than doing nothing.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to respond to new incursions is not considered viable. Myna can be difficult to manage and some occupiers are unaware of its pest potential.

Adverse effects [Section 71(d)]

Are Indian myna capable of causing an adverse effect on:		Comments
Economic well-being?	Yes	They will feed on fruit crops.

Are Indian myna capable of causing an adverse effect on:		Comments
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?	Yes	They compete with native birds for resources, and destroy their nests and eggs.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?		
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?	Yes	Are aggressive when nesting and harass people and pets by swooping on them.
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Indian Ring-Necked Parakeets (Feral)

Preferred Option: Eradication

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

Programme Options	Eradication	Progressive Containment
Objective	Over the duration of this Plan, eradicate the pests listed in the Eradication Programme to eliminate their adverse effects.	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.
Intermediate Outcome	To reduce the infestation level of the pest, or an organism being spread by the pest, to zero levels in an area in the short to medium term.	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.
Technical and operational risks	<p>Low</p> <p>Indian ring-necked parakeets are pale green parakeets that are considered a threat to native birds and to bats by providing competition for food, habitat and nesting places, and through the introduction of new diseases. They are considered one of the most destructive pests in India of cereal, nut and fruit crops. There are no known populations of Indian ring-necked parakeets in the wild in this region, but they may be present as pets in cages. Once established, they can be difficult to locate and recapture.</p>	<p>Low</p> <p>There are no known populations of Indian ring-necked parakeets in the wild. Once established, they can be difficult to locate.</p>
The risk that the option cannot be implemented and of non-compliance	<p>Low</p> <p>There is a risk that Indian ring-necked parakeets are accidentally or deliberately released from captivity but this is considered low.</p>	<p>Low</p> <p>There is a risk that Indian ring-necked parakeets are accidentally or deliberately released from captivity but this is considered low.</p>

Programme Options	Eradication	Progressive Containment
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Eradication: Low

The risk of not achieving Eradication within the next 10 years is rated as low, although it is not possible to prevent Indian ring-necked parakeets escaping from captivity or being deliberately released. At present, there are no known wild populations.

Progressive containment: Low

The risk of not achieving the Progressive Containment objective within the next 10 years is rated as low.

Beneficiaries of the Programme [NPD 7(2)(b)]

The prime beneficiary is considered to be the whole community.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

The exacerbators are those with Indian ring-necked parakeets that escape and establish in the wild.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of this programme is to incorporate it into the general rate.

Effects of not intervening

These birds will invade native forests, impacting on native birds and bats by competing for food, habitat and nesting sites. They will feed on a range of cereal, fruit and nut crops.

Rationale

There have been no reports of wild populations of Indian ring-necked parakeets in the region. Accordingly, it is appropriate that they become a pest in the Eradication Programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

There are no known sites with feral Indian ring-necked parakeet present in the region but they are kept in captivity and it is possible some could escape and start breeding. It is vital to utilise the experience and skills of the biosecurity team and of the Department of Conservation to ensure that if this occurs, they do not become established. Its inclusion in the Plan should ensure this can be achieved.

Adverse effects [Section 71(d)]

Are Indian Ring-Necked Parakeets capable of causing an adverse effect on:		Comments
Economic well-being?	Yes	They will feed on nuts, cereal and fruit crops.
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?	Yes	They threaten our native birds and bats by competing for food, taking nesting places and introducing diseases.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	They could significantly reduce biodiversity in natural ecosystems by replacing native species of bats and birds.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?	Yes	They could introduce diseases to native birds.

Johnson grass

Preferred Option: Exclusion

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

Programme Options	Do Nothing	Exclusion
Objective	Over the duration of this Plan, do nothing toward managing this pest.	Over the duration of this Plan, prevent the establishment of the pests listed in the Exclusion Programme from the Tasman-Nelson region to avoid adverse effects on economic well-being, the natural environment, human health, recreational values, or cultural values.
Intermediate outcome	Do nothing – leave it to Central Government.	To exclude this pest from the region.
Technical and operational risks	Low This pest is believed to be eradicated from the region and Central Government is responsible for their continued exclusion.	Low This pest is believed to be eradicated from the region and surveillance of historical sites and potential vectors is enough to keep this status.
The risk that the option cannot be implemented and of non-compliance	Low	Low
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Moderate Public pressure to do something may mean that “do nothing” is not feasible	Low
Other material risks	None identified	None identified

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

Do nothing: Low

The risk of doing nothing within the next 10 years is rated low because it is unlikely that this pest will re-invade the region as long as Central Government continues to commit to the National Interest Pests Response (NIPR) programme.

Exclusion: Low

The risk of maintaining the excluded status of this pest over the next 10 years is rated low because a surveillance programme should be sufficient to identify and respond quickly to any incursions before it becomes established.

Beneficiaries of the Programme [NPD 7(2)(b)]

The beneficiary is the farming community who enjoy freedom from the economic impact of this pest.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Active and passive exacerbators are occupiers who do not report the presence of this pest on the lands they occupy.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of a very small programme is to incorporate it into the general rate.

Effects of not intervening

Central Government is responsible for the continued response for managing NIPR pests nationally. Should that situation change and the pests remain in New Zealand, there is some risk this pest will re-appear in the region and cause adverse effects on the environment and/or economic production.

Rationale

Council involvement in the NIPR programme under the Plan potentially provides for a faster and more effective incursion response than relying on Central Government alone to deal with these pests.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to respond to new incursions is not considered viable. Johnson grass is difficult to distinguish from many other grasses.

Adverse effects [Section 71(d)]

Is Johnson grass capable of causing an adverse effect on:		Comments
Economic well-being?	Yes	Poisonous to livestock
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?		
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?		
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Knotweeds (Giant, Asiatic and hybrids)

Preferred Option: Eradication

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

Programme Options	Eradication	Progressive Containment
Objective	Over the duration of this Plan, eradicate the pests listed in the Eradication Programme to eliminate their adverse effects.	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.
Intermediate outcome	To reduce the infestation level of the pest, or an organism being spread by the pest, to zero levels in an area in the short to medium term.	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.
Technical and operational risks	Moderate Knotweeds (Giant, Asiatic and hybrids) are a multi-stemmed shrub up to 3 m high that grows rapidly to form dense long-lived thickets along waterways, roadsides and wasteland. They can grow from rhizomes, stem fragments and seed and it is a very difficult plant to kill. They are believed to have a limited distribution and are tentatively rated at 3 (out of 10) on the Infestation Curve.	Moderate Knotweeds (Giant, Asiatic and hybrids) are a multi-stemmed shrub up to 3 m high that grows rapidly to form dense long-lived thickets along waterways, roadsides and wasteland. They can grow from rhizomes, stem fragments and seed and it is a very difficult plant to kill. They are believed to have a limited distribution and are tentatively rated at 3 (out of 10) on the Infestation Curve.
The risk that the option cannot be implemented and of non-compliance	Moderate There is limited information on the distribution of knotweed and its rapid growth and prolific seed production make it difficult to be certain about eradication within the term of the Plan.	Low There is limited information on the distribution of knotweed and its rapid growth and prolific seed production will make eradication difficult, but the treatment methods available should ensure that its geographical distribution can be significantly reduced within the term of the Plan.

Programme Options	Eradication	Progressive Containment
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Eradication: Moderate

The risk of not achieving the Eradication objective within the next 10 years is rated as moderate. A limited range of herbicides can be used to control knotweed but not all can be used in wetlands. It spreads from rhizomes, stem fragments and seed, and is considered difficult to kill. Recent work to map the distribution of this pest reduces some of the uncertainty associated with an eradication objective. Council will assist private occupier with an eradication management plan which reduces the risk further.

Progressive containment: Low

The risk of not achieving the Progressive Containment objective within the next 10 years is rated as low.

Beneficiaries of the Programme [NPD 7(2)(b)]

The prime beneficiaries are occupiers in rural areas along waterways but there are benefits to the whole community from commencing a control programme.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

This plant spreads from rhizomes, stem fragments and seed. Active exacerbators are occupiers with this plant on their land and those who dump infested garden waste and soil.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of monitoring of compliance, preparation of management plans for private occupiers, and the cost of control on council lands is to incorporate it into the general rate.

The best method for allocating control costs is for the occupier to bear them.

Effects of not intervening

These multi-stemmed shrubs reproduce from seeds, stem fragments and rhizomes and will invade riparian areas, roadsides and wasteland, forming dense long-lived stands, shading native species and restricting natural regeneration.

Rationale

New information has reduced the uncertainty about the number of active sites, increasing the confidence about eradicating knotweed within the 10-year time frame. There remains a moderate risk that eradication cannot be achieved in 10 years associated with the difficulty and high cost of controlling this pest.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to contain or reduce its geographic distribution is not considered viable. It is a plant that is difficult to control and many occupiers are unaware of its pest potential. Its inclusion in the Plan should ensure progressive containment can be achieved.

Adverse effects [Section 71(d)]

Is Knotweed capable of causing an adverse effect on:		Comments
Economic well-being?		
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?	Yes	It is capable of smothering smaller plants and shrubs in riparian areas and on coastal cliffs.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	It forms dense stands that smother smaller native plants.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?	Yes	The dense stands can restrict access to recreational and natural areas.

Is Knotweed capable of causing an adverse effect on:		Comments
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Koi Carp

Preferred Option: Exclusion

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

Programme Options	Do Nothing	Exclusion
Objective	Over the duration of this Plan, do nothing toward managing this pest.	Over the duration of this Plan, prevent the establishment of the pests listed in the Exclusion Programme from the Tasman-Nelson region to avoid adverse effects on economic well-being, the natural environment, human health, recreational values, or cultural values.
Intermediate outcome	Do nothing	To exclude this pest from the region.
Technical and operational risks	Low Koi have been successfully eradicated from the pond in the Queen's Gardens and from a number of ponds in the Lower Moutere area.	Low There are no known populations of koi carp the region. If they establish wild populations in rivers, they can be difficult to control.
The risk that the option cannot be implemented and of non-compliance	Low There is a risk that koi carp will be deliberately reintroduced though this is considered low.	Low.
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Do nothing: Low to moderate

The risk of doing nothing within the next 10 years is rated low because there is potential for the species to be released intentionally.

Exclusion: Low

The risk of maintaining the excluded status of this pest over the next 10 years is rated low because a surveillance programme should be sufficient to identify and respond quickly to any incursions before it becomes established.

Beneficiaries of the Programme [NPD 7(2)(b)]

The prime beneficiary is considered to be the whole community, which will benefit from aquatic environments free of koi carp

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

The exacerbators are those who have released koi carp along with other pest fish.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of supporting this work by the Department of Conservation is to incorporate it into the general rate.

Effects of not intervening

When koi carp feed, they stir up the bottom of ponds, lakes and rivers, muddying the water and destroying native plant and fish habitat. Koi carp are opportunistic omnivores, eating a wide range of food, including insects, fish eggs, juvenile fish of other species and a diverse range of plants and other organic matter. Through this habit, they can affect populations of native fish and deteriorate the quality of aquatic ecosystems.

Rationale

There have been no reports of persistent koi carp populations in the region. It is useful to have tools to respond to new incursions as they arise. Given their potential impact on native fish and other aquatic organisms, it is appropriate that they become a pest in the Exclusion Programme rather than doing nothing.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

These ornamental pest fish have been released into some small ponds in the Moutere area in the past and the Department of Conservation has undertaken a campaign to eradicate them. They have expertise and resources and its inclusion in the Plan should allow them to complete its eradication within the term of the Plan.

Adverse effects [Section 71(d)]

Are koi carp capable of causing an adverse effect on:		Comments
Economic well-being?		
The viability of threatened species or organisms?	Yes	Affect the habitat and survival of native fish and other aquatic organisms.
The survival and distribution of indigenous plants or animals?	Yes	Affect the habitat and survival of native fish and other aquatic organisms.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	They can significantly reduce aquatic biodiversity.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?	Yes	Their feeding habit can reduce water quality.
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?	Yes	Their feeding habit can reduce water quality.
Animal welfare?		

Kūmarahou (Abel Tasman)

Preferred Option: Site-led

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

Programme Options	Do Nothing	Site-led
Objective	Over the duration of this Plan, do not have rules to assist in the management of this pest in the Abel Tasman National Park and environs	Over the duration of this Plan, eradicate and exclude kūmarahou to prevent adverse effects on the indigenous biological diversity of Abel Tasman National Park and environs under the Abel Tasman National Park Site-led Programme (ATNPSP).
Intermediate outcome	Do nothing.	To eradicate this species from the ATNPSP.
Technical and operational risks	Low This species is at low to zero density within the Abel Tasman National Park.	Low It is possible to eradicate this pest from private land within the ATNPSP, using established control tools.
The risk that the option cannot be implemented and of non-compliance	Moderate There is a risk that some occupiers will not participate in a voluntary programme, creating a perpetual source for re-invasion (and cost), risking the success of voluntary efforts.	Moderate There is a risk that some occupiers will not comply with rules unless pressured.
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low Kūmarahou is a rongoā species in Māori cultural medicine. However, as the plan only applies to the Abel Tasman National Park (where it is not native), the conflict with the Biosecurity Act requirements for consideration of the effect (of including this species in the Plan) on Māori and the Treaty of Waitangi Act is considered low.

Programme Options	Do Nothing	Site-led
The risk that public or political concerns will adversely affect implementation of the option	Moderate Public pressure to do something may mean that “do nothing” is not feasible	Low
Other material risks	None identified	None identified

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

Do nothing: Moderate

The risk of doing nothing within the next 10 years is rated moderate because this pest will continue to invade Abel Tasman National Park from uncontrolled sites near the Park boundary. This creates a perpetual cost to the current voluntary programme that may not be sustainable.

Site-led: Low

The risk of not achieving the site-led objective within the next 10 years is rated as low, as the spread of this pest into the Park can be reduced by managing it on private land with the ATNPSP area, using established control techniques.

Beneficiaries of the Programme [NPD 7(2)(b)]

The direct and main beneficiaries are considered to be the community of New Zealand and Tasman District who enjoy the near-pristine environment of Abel Tasman National Park. Occupiers who do not want this pest in their garden also benefit.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Active exacerbators are occupiers with this plant on their land who are unwilling or unable to control it.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of managing this programme is to incorporate it into the general rate.

Effects of not intervening

This native plant does not naturally occur in Abel Tasman National Park. It has the ability to displace indigenous flora natural to the Park, outcompeting indigenous flora for space and light. If it is not managed, it will infest parts of the Abel Tasman National Park, reducing the indigenous dominance of the Park, potentially affecting indigenous biological diversity. The effort to manage this pest within the Park is potentially in vain if the sources of infestation remain unmanaged.

Rationale

The control of the pest will reduce the spread of these pests into Abel Tasman National Park, leading to greater protection of indigenous flora from the effects of competition with invasive flora.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action may not be viable. Some occupiers may be reluctant to allow control of this pest on their land, or may be unaware of their impacts on indigenous flora. The inclusion of the Abel Tasman National Park (and environs) Site-led Programme in the Plan will allow council to intervene on any properties where council deems effective control is necessary to protect the Abel Tasman National Park.

Adverse effects [Section 71(d)]

Is rosemary grevillea capable of causing an adverse effect on:		Comments
Economic well-being?		
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?	Yes	This species can outcompete other indigenous plants for space and light.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	This species can predominate habitat composition potentially altering ecological process on forest margins.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Lagarosiphon

Preferred Option: Sustained Control

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

Programme Options	Progressive Containment	Sustained Control
Objective	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.	Over the duration of this Plan, control the pests listed in the Sustained Control Programme to minimise their adverse effects.
Intermediate outcome	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.	To provide for ongoing control of the pest, or an organism being spread by the pest, to reduce its impacts on values and its spread to other properties.
Technical and operational risks	<p>Moderate</p> <p>Lagarosiphon, also known as oxygen weed, is an aggressive freshwater plant that can shade out native aquatic plants and displace food sources of value to Maori such as watercress. Dense stands reduce the availability of oxygen to other aquatic organisms, impede fish access to spawning grounds, and restrict water flow. It can quickly regrow from vegetative fragments, making eradication very difficult. It is rated at 4 (out of 10) on the Infestation Curve.</p>	<p>Moderate</p> <p>Lagarosiphon, also known as oxygen weed, is an aggressive freshwater plant that can shade out native aquatic plants and displace food sources of value to Maori such as watercress. Dense stands reduce the availability of oxygen to other aquatic organisms, impede fish access to spawning grounds, and restrict water flow. It can quickly regrow from vegetative fragments, making eradication very difficult. It is rated at 4 (out of 10) on the Infestation Curve.</p>
The risk that the option cannot be implemented and the risk of non-compliance with rules	<p>Moderate</p> <p>As an aquatic plant, Lagarosiphon is difficult and expensive to control with a limited range of herbicides and these can only be applied by an Approved Handler who has undertaken specialist training and has a permit from EPA. Alternative treatments include hand weeding and weed mats</p>	<p>Low</p> <p>As an aquatic plant, Lagarosiphon is difficult and expensive to control with a limited range of herbicides and these can only be applied by an Approved Handler who has undertaken specialist training and has a permit from EPA. Alternative treatment methods include hand weeding and</p>

Programme Options	Progressive Containment	Sustained Control
	for small-scale infestations, and suction dredging for larger infestations. Ongoing control is required. Introduced grass carp offer a biocontrol option.	weed mats for small-scale infestations, and suction dredging for larger infestations. Ongoing control is required. Introduced grass carp offer a biocontrol option.
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Progressive Containment: Moderate

The risk of not achieving the Progressive containment objective within the next 10 years is rated as moderate. Its rapid regrowth from vegetative fragments makes this option difficult and expensive to achieve.

Sustained Control: Low

The risk of not achieving the Sustained Control objective within the next 10 years is rated as low as this can be achieved with a lower level of control.

Beneficiaries of the Programme [NPD 7(2)(b)]

The beneficiary is the Tasman-Nelson community who enjoy recreating in the environment. There are also aquatic biodiversity benefits from keeping this pest out of the region.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Exacerbators are those who move boats and equipment containing plant fragments into waterways where it is not present. It is a difficult plant to control because of its exceptional ability to reproduce and spread.

Best mechanism to impose cost allocation 7(2)(e)

The simplest way of allocating the cost of this relatively small programme that will benefit the whole community is to incorporate it into the general rate.

Effects of not intervening

This aquatic plant will form dense stands in slower-moving waterways, reducing the availability of oxygen to other aquatic organisms, impeding fish access to breeding grounds, restricting water flow, and shading out native aquatic plants.

Rationale

The success of this programme will largely depend on the willingness of those who have been in infested waterways (boat owners and machine operators) to clean their equipment (boats, trailers, machinery) prior to entering waterways where it is absent. It is appropriate to put Lagarosiphon in the Sustained Control programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all parties that come into contact with this aquatic pest to take voluntary action to control its spread is not considered viable. Its inclusion in the Plan should ensure that education and advocacy can be employed to promote sustained control.

Adverse effects [Section 71(d)]

Is Lagarosiphon capable of causing an adverse effect on:		Comments
Economic well-being?		
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?	Yes	Dense stands can restrict access to migrating native fish, such as whitebait, and shade out native aquatic plants and invertebrates.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	Dense stands can lower oxygen levels as older material decays, and impede water flow through the waterbodies.
Soil resources?		
Water quality?	Yes	Dense stands can lower oxygen levels as older material decays.
Human health?		
Social and cultural well-being?		

Is Lagarosiphon capable of causing an adverse effect on:		Comments
The enjoyment of the recreational value of the natural environment?	Yes	Through the changed appearance of waterways and the reduction in whitebait populations.
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?	Yes	Through reduction in whitebait populations.
Animal welfare?		

Madeira Vine

Preferred Option: Eradication

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

Programme Options	Eradication	Progressive Containment
Objective	Over the duration of this Plan, eradicate the pests listed in the Eradication Programme to eliminate their adverse effects.	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.
Intermediate outcome	To reduce the infestation level of the pest, or an organism being spread by the pest, to zero levels in an area in the short to medium term.	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.
Technical and operational risks	<p>Moderate</p> <p>Madeira vine is an evergreen perennial woody vine arising from a fleshy rhizome. It can grow up to 7 m tall, producing long-lived aerial and subterranean tubers that are very difficult to kill. It displaces native species in riparian and forest margins, particularly in coastal areas. Local experience confirms that it can be eradicated with intensive management and follow-up. It is restricted to a small number of sites as a result of an effective campaign and is rated at 2 (out of 10) on the Infestation Curve.</p>	<p>Low</p> <p>Madeira vine is an evergreen perennial woody vine arising from a fleshy rhizome. It can grow up to 7 m tall, producing long-lived aerial and subterranean tubers that are very difficult to kill. It displaces native species in riparian and forest margins, particularly in coastal areas. Local experience confirms that it can be eradicated with intensive management and follow-up. It is restricted to a small number of sites as a result of an effective campaign and is rated at 2 (out of 10) on the Infestation Curve.</p>
The risk that the option cannot be implemented and of non-compliance	Low	Low

Programme Options	Eradication	Progressive Containment
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Eradication: Low

The risk of not achieving Eradication within the next 10 years is rated as low. Local experience has confirmed that intensive management of Madeira vine and regular follow-up will achieve eradication.

Progressive containment: Low

The risk of not achieving the Progressive Containment objective within the next 10 years is also rated as low.

Beneficiaries of the Programme [NPD 7(2)(b)]

The prime beneficiaries will be occupiers with areas of native forest and shrubland but there will be benefits to the whole community.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Madeira vine reproduces from tubers. Active exacerbators are occupiers who dump garden waste containing tubers.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of managing this programme is to incorporate it into the general rate.

Effects of not intervening

This perennial woody vine will produce long-lived aerial and subterranean tubers that can be distributed in soil and by water, spreading along waterways, into gullies and along forest

margins, smothering existing understorey vegetation and causing supporting trees to collapse.

Rationale

The sites of Madeira vine have been recorded and an eradication programme has been underway for more than a decade. Although eradication is difficult, staff are confident that the Madeira vine sites that have been identified can be eradicated and follow-up is continuing. It is appropriate that Madeira vine is included in the Eradication programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to ensure its eradication is not considered viable. It is a difficult plant to control and a long-term commitment is required. There are a limited number of infested sites and it is vital to utilise the experience and skills of the biosecurity team to achieve eradication in the region. Its inclusion in the Plan should ensure this can be achieved.

Adverse effects [Section 71(d)]

Is Madeira Vine capable of causing an adverse effect on:		Comments
Economic well-being?		
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?	Yes	Madeira vine can overtop and smother native species in forest margins, shrublands and gullies, and topple small trees.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	Madeira vine can change natural patterns of succession and reduce biodiversity.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		

Is Madeira Vine capable of causing an adverse effect on:		Comments
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Magpies (Golden Bay)

Preferred Option: Eradication

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

Programme Options	Do nothing	Eradication
Objective	Over the duration of this Plan, do nothing toward managing magpies in Golden Bay.	Over the duration of this Plan, reduce the geographic distribution of magpies to zero-density in the Golden Bay area to eliminate their adverse effects.
Intermediate outcome	Do nothing.	To contain and reduce the geographic distribution of magpies in Golden Bay.
Technical and operational risks	Low. Few magpies are presently seen in the Golden Bay area. Without intervention, the population will likely increase. Once established, they can be difficult to eradicate.	Low. Few magpies are presently seen in the Golden Bay area. Zero-density can be achieved with good surveillance and the use of traps and other available tools. There is community support for removing them from Golden Bay completely.
The risk that the option cannot be implemented and of non-compliance	Low	Low. There is a risk that some occupiers will not report the presence of magpies but this is considered low.
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Moderate. Public pressure to do something (perhaps under a council-supported non-regulatory programme) may mean that “do nothing” is not feasible	Low

Programme Options	Do nothing	Eradication
Other material risks	None identified	None identified

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

Do nothing: Moderate

The risk of doing nothing within the next 10 years is rated moderate because it is likely that magpies will increase in Golden Bay over this period and cause increasing adverse effects on the environment and public health. Once established, they can be difficult to manage.

Eradication: Low

The risk of not achieving the eradication objective within the next 10 years is rated as low, as individual magpies can be targeted and eliminated before they settle and breed.

Beneficiaries of the Programme [NPD 7(2)(b)]

The beneficiary is the community of Golden Bay who enjoy recreating in the natural environment without the adverse effects of magpies.\

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Active and passive exacerbators are occupiers in Golden Bay who do not report the presence of magpies on the lands they occupy.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of this programme is to incorporate it into the general rate.

Effects of not intervening

Magpies have a complex social system in which they form non-territorial or territorial groups. Magpies defend their territory by singing, aggressive posturing and fighting. This aggressive territorial behaviour makes them a pest. They can be a considerable nuisance during the breeding season, swooping on and occasionally attacking people, especially children.

Magpies can affect native birds by excluding them from breeding territories. They may also prey on chicks and eggs to feed to their young.

Rationale

Magpie control in Golden Bay to eliminate their impacts is likely to improve the enjoyment of the natural environment. Their removal from areas where they are impacting on native birds is likely to provide significant benefits to the native bird population under those circumstances.

While magpies may continue to invade into (and be seen in) the Golden Bay area, the objective is to maintain the population at zero-density. "Eradication" best describes the intended outcome with respect to the impacts of this pest (to eliminate their effects). Due to a lack of information on the status of magpie across the whole Tasman-Nelson region, it is not considered feasible to attempt regional-scale eradication, progressive

containment, or sustained control at this stage. Non-regulatory management of magpies outside the Golden Bay area will continue.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to achieve zero density is not considered viable. The use of control tools (traps, poisons, and shooting) in urban and peri-urban environments requires specialist advice. The inclusion of magpies in the Plan will allow pest control to be undertaken on any properties where effective control is lacking.

Adverse effects [Section 71(d)]

Are Magpies capable of causing an adverse effect on:		Comments
Economic well-being?		
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?	Yes	They prey on the eggs and chicks of native birds.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?		
Soil resources?		
Water quality?		
Human health?	Yes	Are known to attack people, particularly children.
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?	Yes	Are known to attack people, particularly children.
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Nassella Tussock (outside Cape Soucis)

Preferred Option: Progressive Containment

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

Programme Options	Eradication	Progressive Containment
Objective	Over the duration of this Plan, eradicate the pests listed in the Eradication Programme to eliminate their adverse effects.	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.
Intermediate outcome	To reduce the infestation level of the pest, or an organism being spread by the pest, to zero levels in an area in the short to medium term.	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.
Technical and operational risks	<p>Moderate</p> <p>Nassella tussock is a tufted perennial grass that forms dense tussocks with deep fibrous roots. The tough leaves are generally unpalatable to stock and the plant will invade pasture and grassland. It is a prolific seed producer and the seeds remain viable for a decade or longer. The seeds are covered in bristles and can be carried over several kilometres by wind. They can also be transported by water, animals, vehicles, machinery, and agricultural produce. There are two known sites and this programme applies to the Richmond Hills site. Nassella tussock is rated at 2 (out of 10) on the Infestation Curve.</p>	<p>Low</p> <p>Nassella tussock is a tufted perennial grass that forms dense tussocks with deep fibrous roots. The tough leaves are generally unpalatable to stock and the plant will invade pasture and grassland. It is a prolific seed producer and the seeds remain viable for a decade or longer. The seeds are covered in bristles and can be carried over several kilometres by wind. They can also be transported by water, animals, vehicles, machinery, and agricultural produce. There are only two known sites and this programme would apply only to the Richmond Hills site. Nassella tussock is rated at 2 (out of 10) on the Infestation Curve.</p>

Programme Options	Eradication	Progressive Containment
The risk that the option cannot be implemented and of non-compliance	Low There is a low risk that inspection and control operations cannot be carried out annually.	Low There is a low risk that the inspection and control operations cannot be carried out annually.
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Eradication: Moderate

The risk of not achieving the Eradication objective within the next 10 years is rated as moderate. The difficulty of identifying Nassella tussock scattered through other grasses and its long seed life indicate that eradication within the 10-year time frame is highly unlikely, based on current technology.

Progressive containment: Low

The risk of not achieving the Progressive Containment objective within the next 10 years is rated as low.

Beneficiaries of the Programme [NPD 7(2)(b)]

The prime beneficiaries are occupiers in rural areas.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Active exacerbators are occupiers who allow Nassella seeds to arrive on-site from an infested area outside this region on animals, vehicles, machinery, and in agricultural produce.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of this small programme is to incorporate it into the general rate.

Effects of not intervening

This tufted tussock grass is a prolific seeder and the long-lived seeds are distributed by wind, water, animals, vehicles and machinery, establishing in pasture and low-producing grassland. It is unpalatable to stock and will reduce pasture quality and lower productivity.

Rationale

The difficulty of identifying Nassella tussock scattered through other grasses and its long seed life suggest that eradication within the 10-year time frame is highly unlikely. It is appropriate that this pest is included in the Progressive Containment programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on the occupier with this pest on their land to take voluntary action to contain or reduce its geographic distribution is not considered viable. It is very difficult to identify scattered plants in amongst other grasses. Its inclusion in the Plan will encourage the achievement of progressive containment.

Adverse effects [Section 71(d)]

Is Nassella Tussock capable of causing an adverse effect on:		Comments
Economic well-being?	Yes	It is generally unpalatable to stock and capable of invading productive grassland and reducing carrying capacity.
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?		
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?		
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		

Is Nassella Tussock capable of causing an adverse effect on:		Comments
The enjoyment of the recreational value of the natural environment?		
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Nassella Tussock (Cape Soucis area)

Preferred Option: Sustained Control

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

Programme Options	Progressive Containment	Sustained Control
Objective	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.	Over the duration of this Plan, control the pests listed in the Sustained Control Programme to minimise their adverse effects.
Intermediate outcome	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.	To provide for ongoing control of the pest, or an organism being spread by the pest, to reduce its impacts on values and its spread to other properties.
Technical and operational risks	<p>Moderate</p> <p>Nassella tussock is a tufted perennial grass that forms dense tussocks with deep fibrous roots. The tough leaves are generally unpalatable to stock and the plant will invade pasture and grassland. It is a prolific seed producer and the seeds remain viable for a decade or longer. The seeds are covered in bristles and can be carried over several kilometres by wind. They can also be transported by water, animals, vehicles, machinery, and agricultural produce. There are two known sites and this programme applies to the site near Cape Soucis, located above a very steep coastal face. Nassella tussock is rated at 2 (out of 10) on the Infestation Curve.</p>	<p>Low</p> <p>Nassella tussock is a tufted perennial grass that forms dense tussocks with deep fibrous roots. The tough leaves are generally unpalatable to stock and the plant will invade pasture and grassland. It is a prolific seed producer and the seeds remain viable for a decade or longer. The seeds are covered in bristles and can be carried over several kilometres by wind. They can also be transported by water, animals, vehicles, machinery, and agricultural produce. There are two known sites and this programme applies to the site near Cape Soucis, located above a very steep coastal face. Nassella tussock is rated at 2 (out of 10) on the Infestation Curve.</p>

Programme Options	Progressive Containment	Sustained Control
The risk that the option cannot be implemented and of non-compliance	Low There is a low risk that the inspection and control operations cannot be carried out annually.	Low There is a low risk that the inspection and control operations cannot be carried out annually.
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	Low	None identified

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

Progressive containment: Moderate

The risk of not achieving the Progressive Containment objective within the next 10 years is rated as moderate. The difficulty of identifying Nassella tussock scattered through long grass, the steep terrain above the coastal cliffs, and its long seed life indicate that a reduction in its geographical distribution within the 10-year time frame is highly unlikely.

Sustained control: Low

The risk of not achieving the Sustained Control objective within the next 10 years is rated as low.

Beneficiaries of the Programme [NPD 7(2)(b)]

The prime beneficiaries are occupiers in rural areas.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Active exacerbators are occupiers with this plant on their land who do not control this pest or allow seeds to be moved off-site on animals, vehicles, machinery, and agricultural produce.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of this small programme is to incorporate it into the general rate.

Effects of not intervening

This tufted tussock grass is a prolific seeder and the seeds are distributed by wind, water, animals, vehicles and machinery, establishing in pasture and low-producing grassland. It is unpalatable to stock and will reduce pasture quality and lower productivity.

Rationale

The difficulty of accessing Nassella tussock on steep terrain above coastal cliffs, the difficulty of identifying it amongst other grasses and coastal vegetation, and its long seed life, indicate that this pest should be included in the Sustained Control programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

This pest is located on land that includes steep coastal cliffs where control is not possible. However, its inclusion in the Plan will ensure that the occupier will control the plants on easier terrain, reducing the risk of spread to adjoining properties.

Adverse effects [Section 71(d)]

Is Nassella Tussock capable of causing an adverse effect on:		Comments
Economic well-being?	Yes	It is unpalatable to stock and capable of invading productive grassland and reducing carrying capacity.
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?		
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?		
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		

Is Nassella Tussock capable of causing an adverse effect on:		Comments
The enjoyment of the recreational value of the natural environment?		
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Quantitative Analysis – Assumptions and Results

Area infested (ha): 5
 Maximum area that could become infested (ha) 8000
 Rate of spread (r): 0.12766
 Time for infestation to reach 90% of maximum (years):75
 Earnings (\$/ha): \$221
 Reduction in earnings caused by pest (%): 20
 Discount rate (%): 4

Programme Type: Sustained Control.

Annual Programme Implementation Cost (inclusive of occupier and council cost): \$20,000

Number of years for this simulation: 30

Net Present Value (NPV) (\$): \$1487
Internal Rate of Return (IRR) (%): 4.6875

A positive NPV indicates Sustained Control is a cost beneficial scenario. The cost of doing nothing is estimated to be \$37,849 of lost economic opportunity.

Nodding Thistle

Preferred Option: Sustained Control

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

Programme Options	Progressive Containment	Sustained Control
Objective	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.	Over the duration of this Plan, control the pests listed in the Sustained Control Programme to minimise their adverse effects.
Intermediate outcome	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.	To provide for ongoing control of the pest, or an organism being spread by the pest, to reduce its impacts on values and its spread to other properties.
Technical and operational risks	<p>Moderate</p> <p>Nodding thistle is an annual or biennial herb up to 1.5 m tall with large purple flowers. It produces heavy seeds that fall close to the parent plant and remain viable for a decade or longer. It is a very aggressive thistle and can spread quickly through pasture, reducing grazing productivity. It can restrict stock movement and provide habitat for rabbits and other pests. Its spines stick to wool, lowering its value. The seeds are spread by birds, stock, and machinery. It is present in most of the region (outside Golden Bay and the Upper Buller areas) and rated at 5 (out of 10) on the Infestation Curve.</p>	<p>Low</p> <p>Nodding thistle is an annual or biennial herb up to 1.5 m tall with large purple flowers. It produces heavy seeds that are viable for a decade or longer. It is a very aggressive thistle and can spread quickly through pasture, reducing grazing productivity. It can restrict stock movement and provide habitat for rabbits and vermin. Its spines stick to wool, lowering its value. The seeds are spread by animals, machinery, hay and water. It is present in most of the region (outside Golden Bay and the Upper Buller areas) and rated at 5 (out of 10) on the Infestation Curve.</p>

Programme Options	Progressive Containment	Sustained Control
The risk that the option cannot be implemented and the risk of non-compliance with rules	Low There is a low risk that surveillance and inspection operations cannot be carried out annually.	Low There is a low risk that surveillance and inspection operations cannot be carried out annually.
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Progressive Containment: Moderate

The risk of not achieving the Progressive Containment objective of reducing the geographic distribution within the next 10 years is rated as moderate as the long seed life ensures it persists on pastureland, although biocontrol agents continue to provide a reasonable level of control.

Sustained Control: Low

The risk of not achieving the Sustained Control objective within the next 10 years is rated as low. It is more appropriate to control this pest for a set distance of 20 m from property boundaries where the adjoining land is clear, or being cleared, of nodding thistle.

Beneficiaries of the Programme [NPD 7(2)(b)]

The direct beneficiaries are considered to be rural occupiers.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Exacerbators are the rural occupiers with this pest on their land close to the boundary of neighbours without this pest.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of this minor programme is to incorporate it into the general rate.

Effects of not intervening

This tall thistle produces heavy seeds that are spread by birds, stock and machinery. It will establish in pastureland, reducing pasture quality and lowering its productivity.

Rationale

It is appropriate to include nodding thistle as a Boundary Control pest within the Sustained Control programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to reduce its impact on values and its spread to other properties is not considered viable. It is widely distributed and produces seed with a long seed life. Control requires a long-term commitment. A requirement in the Plan to maintain control within 20 m of the boundary from properties where it is clear or being cleared is a more effective means of achieving this.

Adverse effects [Section 71(d)]

Is Nodding Thistle capable of causing an adverse effect on:		Comments
Economic well-being?	Yes	It can invade lower quality pastoral land and reduce carrying capacity.
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?		
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?		
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		

Is Nodding Thistle capable of causing an adverse effect on:		Comments
The enjoyment of the recreational value of the natural environment?	Yes	Dense stands of nodding thistle can restrict access.
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?	Yes	Nodding thistle can contribute to scabby mouth in stock.

Old Man's Beard (Golden Bay to Riwaka, Upper Buller)

Preferred Option: Sustained Control

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

Programme Options	Progressive Containment	Sustained Control
Objective	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.	Over the duration of this Plan, control the pests listed in the Sustained Control Programme to minimise their adverse effects.
Intermediate outcome	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.	To provide for ongoing control of the pest, or an organism being spread by the pest, to reduce its impacts on values and its spread to other properties.
Technical and operational risks	<p>Moderate</p> <p>Old man's beard is a deciduous woody vine that can climb up to 25 m and cover an area up to 180 m². It produces vast quantities of light windblown seed that can be carried for kilometres. It has invaded lowland forests and shrubland and represents an extraordinary threat to natural values, particularly wind-damaged forests and areas of second-growth. Old man's beard is rated as 4 on the Infestation Curve in these areas and as 7 throughout the rest of the region. The steep terrain on which this plant establishes makes it difficult to access, locate and destroy.</p>	<p>Low</p> <p>Old man's beard is a deciduous woody vine that can climb up to 25 m and cover an area up to 180 m². It produces vast quantities of light windblown seed that can be carried for kilometres. It has invaded lowland forests and shrubland and represents an extraordinary threat to natural values, particularly wind-damaged forests and areas of second-growth. Old man's beard is rated as 4 on the Infestation Curve in these areas and as 7 throughout the rest of the region. The steep terrain on which this plant establishes makes it difficult to access, locate and destroy.</p>
The risk that the option cannot be implemented and the risk of non-compliance with rules	<p>Low</p> <p>There is a low risk that the inspection and control operations cannot be carried out annually.</p>	<p>Low</p> <p>There is a low risk that the inspection and control operations cannot be carried out annually.</p>

Programme Options	Progressive Containment	Sustained Control
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Progressive Containment: Moderate

The risk of not achieving the Progressive Containment objective of reducing the geographic distribution within the next 10 years is rated as moderate with current management tools.

Sustained Control: Low

The risk of not achieving the Sustained Control objective within the next 10 years is rated as low.

Beneficiaries of the Programme [NPD 7(2)(b)]

The direct beneficiaries are considered to be occupiers with natural areas in this area, although the regional community can be considered to benefit.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Exacerbators are those in this area who are not controlling old man's beard.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of this programme is to incorporate it into the general rate.

Effects of not intervening

This deciduous woody vine produces vast quantities of light seed that are distributed for kilometres by the wind. It will establish in forests, shrubland, riparian areas, willow swamps and wasteland, rapidly forming a dense canopy, smothering understorey species and inhibiting the growth of native species.

Rationale

The commitment and expertise of the Project De-Vine team to reduce the extent of this pest in Golden Bay to Riwaka, and Upper Buller, and the non-statutory (i.e. no Plan rules) status of this pest in the rest of the region make it appropriate to include it in the Sustained Control programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers in the Golden Bay-Riwaka and Upper Buller with this pest on their land to take voluntary action is not considered viable. It is difficult to control, often forming dense stands in the upper canopy of trees on steep terrain. A co-ordinated campaign is underway utilising external funding and its inclusion in the Plan should ensure that all properties in the Golden Bay-Riwaka and Upper Buller can be treated and sustained control across the region can be achieved.

Adverse effects [Section 71(d)]

Is Old Man's Beard capable of causing an adverse effect on:		Comments
Economic well-being?		
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?	Yes	It is capable of invading native forest and scrubland up to 740 m asl and smothering a wide range of native plants.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	It is capable of disrupting natural succession and reducing biodiversity.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		Old man's beard can restrict access and degrade amenity values.

Is Old Man's Beard capable of causing an adverse effect on:		Comments
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Perch

Preferred Option: Eradication

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

Programme Options	Eradication	Progressive Containment
Objective	Over the duration of this Plan, eradicate the pests listed in the Eradication Programme to eliminate their adverse effects.	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.
Intermediate outcome	To reduce the infestation level of the pest, or an organism being spread by the pest, to zero levels in an area in the short to medium term.	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.
Technical and operational risks	<p>Low</p> <p>Perch is an olive-green fish that is part of a group described as coarse fish. Although classified as a sports fish in the Freshwater Fishing Regulations 1983, it is not rated as a quality sporting fish in New Zealand. It feeds on insects, small fish and their larvae. They are considered to pose a threat to native aquatic larvae and to the recreational trout fisheries. A successful campaign had been undertaken by the Department of Conservation against illegal releases of perch and it has been eradicated at five of six known sites. Eradication from the region is achievable if the present campaign is continued, unless there are further illegal releases.</p>	<p>Low</p> <p>Perch is an olive-green fish that is part of a group described as coarse fish. Although classified as a sports fish in the Freshwater Fishing Regulations 1983, it is not rated as a quality sporting fish in New Zealand. It feeds on insects, small fish and their larvae. They are considered to pose a threat to native aquatic larvae and to the recreational trout fisheries. A successful campaign had been undertaken by the Department of Conservation against illegal releases of perch and it has been eradicated at five of six known sites. Eradication from the region is achievable if the present campaign is continued unless there are further illegal releases.</p>

Programme Options	Eradication	Progressive Containment
The risk that the option cannot be implemented and of non-compliance	Low The restricted distribution of perch and the improvements in control methods provide optimism that perch can be eradicated.	Low The restricted distribution of perch and the improvements in control methods provide optimism that perch can be progressively controlled.
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Eradication: Low

The risk of not achieving Eradication within the next 10 years is rated as low. Eradication of perch is difficult but the effectiveness of methods being employed has continued to improve.

Progressive containment: Low

The risk of not achieving the Progressive Containment objective within the next 10 years is rated as low.

Beneficiaries of the Programme [NPD 7(2)(b)]

The prime beneficiary is considered to be the whole community, which will benefit from the eradication of perch.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

The exacerbators are those who have released perch along with other pest fish.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of supporting this work by the Department of Conservation is to incorporate it into the general rate.

Effects of not intervening

This freshwater fish will feed on insects, small fish and their larvae, impacting on native fish (inanga, smelt, bullies), crayfish and on the trout fishery.

Rationale

There have been no reports of perch in the region outside the ponds on the Waimea Plains. Given their potential impact on native fish and other aquatic organisms, it is appropriate that they are put in the Eradication programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

These pest fish have been released into some small ponds in the Moutere area and the Department of Conservation has undertaken a campaign to eradicate them. They have expertise and resources and its inclusion in the Plan should allow them to complete its eradication within the term of the Plan.

Adverse effects [Section 71(d)]

Are Perch capable of causing an adverse effect on:		Comments
Economic well-being?		
The viability of threatened species or organisms?	Yes	Perch attack a range of native fish and other aquatic organisms.
The survival and distribution of indigenous plants or animals?	Yes	Perch attack a range of native fish that include bullies, inanga, and smelt and other aquatic organisms (freshwater crayfish).
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	They significantly reduce aquatic biodiversity.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?	Yes	A reduction in trout numbers from perch predation would be a major source of frustration to those who fish for trout.

Are Perch capable of causing an adverse effect on:		Comments
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?	Yes	
Animal welfare?		

Phragmites

Preferred Option: Exclusion

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

Programme Options	Do Nothing	Exclusion
Objective	Over the duration of this Plan, do nothing toward managing this pest.	Over the duration of this Plan, prevent the establishment of the pests listed in the Exclusion Programme from the Tasman-Nelson region to avoid adverse effects on economic well-being, the natural environment, human health, recreational values, or cultural values.
Intermediate outcome	Do nothing – leave it to occupiers to manage.	To exclude this pest from the region.
Technical and operational risks	Low This pest is believed to have been eradicated from the region.	Low.
The risk that the option cannot be implemented and of non-compliance	Low	Low
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Moderate Public pressure to do something may mean that “do nothing” is not feasible	Low
Other material risks	None identified	None identified

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

Do nothing: Low

The risk of doing nothing within the next 10 years is rated low. While the pest has been present in the region in the past, it is believed to be eradicated.

Exclusion: Low

The risk of maintaining the excluded status of this pest over the next 10 years is rated low because a surveillance programme should be sufficient to identify and respond quickly to any incursions before it becomes re-established.

Beneficiaries of the Programme [NPD 7(2)(b)]

The beneficiary is the Tasman-Nelson community who enjoy recreating in the environment. There are also aquatic biodiversity benefits from keeping this pest out of the region.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Active and passive exacerbators are occupiers who do not report the presence of this pest on the lands they occupy.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of a very small programme is to incorporate it into the general rate.

Effects of not intervening

Should this pest appear in the region, it could have significant environmental impacts by forming dense mats on water ways.

Rationale

Council surveillance programme potentially provides for a fast and effective incursion response.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to respond to new incursions is not considered viable. Phragmites may be considered an ornamental grass and some occupiers are unaware of its pest potential.

Adverse effects [Section 71(d)]

Is Phragmites grass capable of causing an adverse effect on:		Comments
Economic well-being?		
The viability of threatened species or organisms?		

The survival and distribution of indigenous plants or animals?		
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	Phragmites can completely invade wetlands, reducing the indigenous biodiversity of wetland habitats.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?	Yes	Smothers waterways.
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Powdery Mildew

Preferred Option: Sustained Control

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

Programme Options	Progressive Containment	Sustained Control
Objective	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.	Over the duration of this Plan, control the pests listed in the Sustained Control Programme to minimise their adverse effects.
Intermediate outcome	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.	To provide for ongoing control of the pest, or an organism being spread by the pest, to reduce its impacts on values and its spread to other properties.
Technical and operational risks	Moderate Powdery mildew is a fungus found on the leaves and fruit of apple and pear trees. Its spores spread from leaf material on the ground to nearby trees. Powdery mildew on fruit can cause its rejection. Powdery mildew is found throughout the region in association with apple and pear orchards and rated at 7 (out of 10) on the Infestation Curve.	Low Powdery mildew is a fungus found on the leaves and fruit of apple and pear trees. Its spores spread from leaf material on the ground to nearby trees. Powdery mildew on fruit can cause its rejection. Powdery mildew is found throughout the region in association with apple and pear orchards and rated at 7 (out of 10) on the Infestation Curve.
The risk that the option cannot be implemented and the risk of non-compliance with rules	Moderate Orchards can be treated in springtime to minimise infection. Commercial orchardists are very familiar with it - it is part of normal management practice. It would be very difficult to reduce its distribution.	Low Orchards can be treated in springtime to minimise infection. Commercial orchardists are very familiar with it - it is part of normal management practice and provides effective ongoing control.

Programme Options	Progressive Containment	Sustained Control
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Progressive Containment: Moderate

The risk of not achieving the Progressive Containment objective of reducing the geographic distribution within the next 10 years is rated as moderate as it is closely associated with apple and pear orchards.

Sustained Control: Low

The risk of not achieving the Sustained Control objective within the next 10 years is rated as low. The orchardist at risk has the option of controlling powdery mildew on infected trees on the adjoining land if it is not being adequately controlled. This is a cost-effective option.

Beneficiaries of the Programme [NPD 7(2)(b)]

The direct beneficiaries are considered to be the orchardists producing high quality fruit.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Exacerbators are those occupiers within 500 m of apple orchards who are not controlling powdery mildew on their apple trees.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of this minor programme is to incorporate it into the general rate.

Effects of not intervening

The consequences of not controlling powdery mildew is that fruit tree growth will become stunted and apples and pears can be rejected from markets.

Rationale

The previous boundary control rule was similar and one that had been generally accepted by occupiers adjoining apple and pear orchards. This makes it appropriate to include powdery mildew as a Boundary Control pest in the Sustained Control programme. It will allow the orchardists to control this pest on poorly managed apples and pears on land within 500 m. They have the expertise to identify it and the resources to treat it.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this disease of apple and pear trees to take voluntary action to control it is not considered viable. A requirement in the Plan to allow orchardists to control this pest on apple and pear trees on adjoining land if it is not being adequately controlled is a more effective means of achieving this and ensuring the fruit can meet market requirements. Orchardists have the incentive and the expertise to identify it and the resources to treat it.

Adverse effects [Section 71(d)]

Is Powdery Mildew capable of causing an adverse effect on:		Comments
Economic well-being?	Yes	It can damage apples and pears, resulting in fruit being rejected.
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?		
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?		
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		

Is Powdery Mildew capable of causing an adverse effect on:		Comments
Animal welfare?		

Purple Loosestrife

Preferred Option: Progressive Containment

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

Programme Options	Eradication	Progressive Containment
Objective	Over the duration of this Plan, eradicate the pests listed in the Eradication Programme to eliminate their adverse effects.	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.
Intermediate outcome	To reduce the infestation level of the pest, or an organism being spread by the pest, to zero levels in an area in the short to medium term.	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.
Technical and operational risks	<p>Moderate</p> <p>Purple loosestrife is a fast-growing perennial herb, once a popular garden plant, which has rapidly colonised margins of waterways and wetlands. It is a prolific seed producer and the seed is distributed by wind, water, wildlife and machinery and remains viable in the soil for many years. It forms dense stands, shading out native species, and restricting access. Purple loosestrife is considered to have a limited distribution and has been rated at 2 (out of 10) on the Infestation Curve.</p>	<p>Low</p> <p>Purple loosestrife is a fast-growing perennial herb, once a popular gardens plant, which has rapidly colonised margins of waterways and wetlands. It is a prolific seed producer and the seed is distributed by wind, water, wildlife and machinery and remains viable in the soil for many years. It forms dense stands, shading out native species, and restricting access. Purple loosestrife is considered to have a limited distribution and has been rated at 2 (out of 10) on the Infestation Curve.</p>
The risk that the option cannot be implemented and of non-compliance	<p>Low</p> <p>There is a low risk that surveillance, inspection and control operations cannot be carried out annually.</p>	<p>Low</p> <p>There is a low risk that the surveillance, inspection and control operations cannot be carried out annually.</p>

Programme Options	Eradication	Progressive Containment
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Eradication: Moderate

The risk of not achieving the Eradication within the next 10 years is rated as moderate. Experience with intensive management of purple loosestrife indicates that eradication in these riparian areas is feasible with existing technology but it takes a considerable amount of time. It has been a popular garden plant and this could continue to provide a source of future infestation.

Progressive containment: Low

The risk of not achieving the Progressive Containment objective within the next 10 years is also rated as low.

Beneficiaries of the Programme [NPD 7(2)(b)]

The prime beneficiaries will be the small number of local occupiers who will benefit from its removal from waterways and wetlands on their land, but there will also be community benefits.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Active exacerbators are occupiers with this plant on their land. This plant is spread by seeds, which are distributed by wind, water and machinery, allowing it to establish and spread through riparian areas.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of managing this programme is to incorporate it into the general rate.

Effects of not intervening

This fast-growing perennial herb seeds prolifically and these long-lived seeds are distributed by wind, water, wildlife and machinery. They will establish in riparian areas and wetlands, forming dense stands, shading out native species and restricting access.

Rationale

Although there are few known sites of purple loosestrife with live plants present, its prolific seed production, long period of seed viability and its presence in home gardens, make it appropriate to be included in the Progressive Containment programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to contain or reduce its geographic distribution is not considered viable. It is an attractive plant that has been popular with gardeners, many are unaware of its pest potential, and it is difficult to control with sprays when located alongside waterways. Its inclusion in the Plan should ensure that progressive containment can be achieved.

Adverse effects [Section 71(d)]

Is Purple Loosestrife capable of causing an adverse effect on:		Comments
Economic well-being?		
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?	Yes	It can displace native species growing along waterways and in gullies and wetlands.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	It can significantly reduce biological diversity in riparian and wetland ecosystems.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?	Yes	Dense stands of purple loosestrife can limit access along waterways.

Is Purple Loosestrife capable of causing an adverse effect on:		Comments
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Queensland Poplar

Preferred Option: Sustained Control

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

Programme Options	Progressive Containment	Sustained Control
Objective	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.	Over the duration of this Plan, prevent the further spread of Queensland poplar to reduce its adverse effects on the environment.
Intermediate outcome	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.	To reduce the impacts and spread of Queensland poplar.
Technical and operational risks	<p>Low to Moderate</p> <p>Queensland poplar is a small shade-tolerant shrub or tree that can invade open spaces, roadsides, forest margins and regenerating shrubland, producing a dense understorey. It produces substantial quantities of fruit that can be distributed by birds, water and machinery, particularly roadside mowers. It is a new plant in the Plan and is considered to have a limited distribution, though information on distribution is poor.</p>	<p>Low</p> <p>Queensland poplar is a small shade-tolerant shrub or tree that can invade open spaces, roadsides, forest margins and regenerating shrubland, producing a dense understorey. It produces substantial quantities of fruit that can be distributed by birds, water and machinery, particularly roadside mowers. It is a new plant in the Plan and is considered to have a limited distribution.</p>
The risk that the option cannot be implemented and of non-compliance	<p>Low</p> <p>There is a low risk that surveillance and inspection operations cannot be carried out annually.</p>	<p>Low</p> <p>There is a low risk that surveillance and inspection operations cannot be carried out annually.</p>
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low

Programme Options	Progressive Containment	Sustained Control
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Progressive containment: Low to Moderate

The risk of not achieving the Progressive Containment objective within the next 10 years is rated as low to moderate due to poor information about the distribution of the species.

Sustained control: Low

The risk of not achieving the Sustained Control objective within the next 10 years is rated as low.

Beneficiaries of the Programme [NPD 7(2)(b)]

The prime beneficiaries will be occupiers whose land is free from Queensland poplar and who are working to prevent it becoming established.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Active exacerbators are occupiers with established plants on their land who allow it to fruit.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of monitoring of compliance and the cost of control on council lands is to incorporate it into the general rate.

The best method for allocating control costs is for the occupier to bear them.

Effects of not intervening

This shade-tolerant shrub produces substantial quantities of fruit that are distributed by birds, water and machinery. It will invade shrubland, forest margins and open spaces, producing a dense understorey and shading out understorey vegetation.

Rationale

Queensland poplar's prolific fruit production, its distribution by birds, roadside mowers and water, and its ability to form dense long-lived thickets, make it difficult to eradicate. Due to limited information on the extent of this pest, there is some risk that a Progressive Containment programme will not achieve this objective in the 10-year life of the Plan. A

Sustained Control programme is considered more appropriate over the duration of the Plan while more information is being gathered.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to contain or reduce its geographic distribution is not considered viable. It is an attractive tree that has been planted in gardens and some occupiers are unaware of its pest potential. Its inclusion in the Plan should ensure sustained control can be achieved.

Adverse effects [Section 71(d)]

Is Queensland Poplar capable of causing an adverse effect on:		Comments
Economic well-being?		
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?	Yes	It can smother or displace native species in scrubland and disturbed forest.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	It can reduce biological diversity in regenerating ecosystems.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?	Yes	Its dense thickets can make access difficult.
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Quantitative Analysis – Assumptions and Results

Area infested (ha): 25

Maximum area that could become infested (ha) 96,000
Rate of spread (r): 0.06967
Time for infestation to reach 90% of maximum (years):150
Earnings (\$ha): \$485
Reduction in earnings caused by pest (%): 50
Discount rate (%): 6

Programme Type: Sustained Control.

Annual Programme Implementation Cost (inclusive of occupier and council cost): \$20,000
reducing incrementally to \$ 7000 by year 10 and \$1,500 from year 16 to 25.

Number of years for this simulation: 30

Net Present Value (NPV) (\$): \$16,969
Internal Rate of Return (IRR) (%): 7.0557

A positive NPV indicates Sustained Control is a cost beneficial scenario. The cost of doing nothing is estimated to be \$301,377 of lost economic opportunity.

Ragwort

Preferred Option: Sustained Control

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

Programme Options	Progressive Containment	Sustained Control
Objective	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.	Over the duration of this Plan, control the pests listed in the Sustained Control Programme to minimise their adverse effects.
Intermediate outcome	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.	To provide for ongoing control of the pest, or an organism being spread by the pest, to reduce its impacts on values and its spread to other properties.
Technical and operational risks	<p>Moderate</p> <p>Ragwort is an erect biennial or perennial herb that is an aggressive competitor for light, nutrients and moisture and will displace pasture grasses. It contains alkaloids that can cause liver damage to cattle and horses, and taint milk and honey. It is a difficult plant to eradicate as seed can remain viable for more than a decade. Seed can be transmitted by wind, water, and livestock, in soil and on machinery. A number of biocontrol agents have been developed that have significantly reduced its vigour and density. Ragwort is widespread throughout the region outside the Howard – St Arnaud area and is assessed at 7 (out of 10) on the Infestation Curve.</p>	<p>Low</p> <p>Ragwort is an erect biennial or perennial herb that is an aggressive competitor for light, nutrients and moisture and will displace pasture grasses. It contains alkaloids that can cause liver damage to cattle and horses, and taint milk and honey. It is a difficult plant to eradicate as seed can remain viable for more than a decade. Seed can be transmitted by wind, water, and livestock, in soil and on machinery. A number of biocontrol agents have been developed that have significantly reduced its vigour and density. Ragwort is widespread throughout the region outside the Howard – St Arnaud area and is assessed at 7 (out of 10) on the Infestation Curve.</p>

Programme Options	Progressive Containment	Sustained Control
The risk that the option cannot be implemented and the risk of non-compliance with rules	Moderate It is unlikely that its geographic distribution can be significantly reduced with current technology.	Low As it is present throughout the rest of the region and can be controlled with herbicides, it is more efficient to aim at boundary control to prevent its spread onto adjoining land that is clear, or being cleared, of ragwort.
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Progressive Containment: Moderate

The risk of not achieving the Progressive Containment objective of reducing the geographic distribution within the next 10 years is rated as moderate for a pest with seeds with extended viability.

Sustained Control: Low

The risk of not achieving the Sustained Control objective within the next 10 years is rated as low.

Beneficiaries of the Programme [NPD 7(2)(b)]

The direct beneficiary is considered to be the community.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Exacerbators are those who are not controlling ragwort on their land and those who move machinery carrying ragwort seed into areas where it is not present.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of this minor programme is to incorporate it into the general rate.

Effects of not intervening

This pest plant produces substantial quantities of seed that are distributed by wind, water, animals, machinery and in soil. It will invade pastureland and low fertility grassland, displacing pasture grasses and lowering productivity. They contain alkaloids that will cause liver damage in cattle and horses, and tainting of milk and honey.

Rationale

Given its widespread distribution, it is appropriate to be included as a Boundary Control pest within the Sustained Control programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to reduce its impact on values and its spread to other properties is not considered viable. It is widespread and is difficult to control but its numbers have been greatly reduced by the progressive introduction of biocontrol agents. A requirement in the Plan to maintain control within 20 m of the boundary from properties where it is clear or being cleared is considered to be the most effective means of achieving progressive containment.

Adverse effects [Section 71(d)]

Is Ragwort capable of causing an adverse effect on:		Comments
Economic well-being?	Yes	It can displace pasture grasses, impede stock access, provide habitat for pests, and become a fire hazard in summer. The foliage contains alkaloids that can cause liver damage to cattle and horses and taint milk and honey.
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?		
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	It can invade native shrubland and grassland.

Is Ragwort capable of causing an adverse effect on:		Comments
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		Ragwort can restrict access and degrade amenity values.
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Rats (southern parts of the Waimea Estuary)

Preferred Option: Site-led

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

Programme Options	Do Nothing	Site-led
Objective	Over the duration of this Plan, do nothing toward managing rats in the Waimea Estuary site-led programme.	Over the duration of this Plan, reduce the level of the rat population in sites under the Waimea Estuary site-led programme to reduce their adverse effects on the environment.
Intermediate outcome	Do nothing.	To reduce the level of the rat population in the Waimea Estuary environs.
Technical and operational risks	Low	Low
The risk that the option cannot be implemented and the risk of non-compliance with rules	Rats are likely to be at their carrying capacity (i.e. 10 out of 10 on the infestation curve).	Eradication of rats will not be possible, but it is possible to reduce rat numbers using traps and other methods.
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	There is a risk that some occupiers will not participate in the programme, but the effect on programme success is considered low.
Other material risks		Low

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

Do nothing: Moderate

The risk of doing nothing within the next 10 years is rated moderate because rats will have an ongoing impact on native wildlife in the Waimea Estuary.

Do nothing: Moderate

The risk of doing nothing within the next 10 years is rated moderate because rats will have an ongoing impact on native wildlife in the Waimea Estuary.

Site-led: Low

The risk of not achieving the Site-led objective within the next 10 years is rated as low as long as the community-led groups can maintain their trapping programme.

Beneficiaries of the Programme [NPD 7(2)(b)]

The direct beneficiaries are considered to be occupiers within these areas but the whole community benefits indirectly.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Exacerbators are occupiers within the Waimea Estuary Site-led area who have rats on their land and who are unable or unwilling to control them.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost to the councils for this programme is to incorporate it into the general rate.

The best method for allocating the cost of control is for volunteer groups and occupiers to assume the costs of their participation.

Effects of not intervening

Rats prey on chicks and eggs. If they are not managed, the effort to manage the other predators under the Waimea Estuary Site-led programme is potentially in vain.

Rationale

The control of rats under the Waimea Estuary Site-led Programme is likely to lead to greater protection to indigenous wildlife from the effects of predation. The level of commitment and expertise among the community group managing these sites make it appropriate to include rats in the Site-led programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to service traps and other control methods in the areas close to sites with high biodiversity values may not be viable. Some occupiers may be reluctant to allow trapping or may be unaware of this pest's impact on native birds. The inclusion of rats into the Plan for the designated areas around the Waimea Estuary will allow intervention where it is deemed effective control is necessary to protect wildlife.

Adverse effects [Section 71(d)]

Are rats capable of causing an adverse effect on:		Comments
Economic well-being?		
The viability of threatened species or organisms?	Yes	Rats can damage a range of threatened species.
The survival and distribution of indigenous plants or animals?	Yes	They prey on the eggs and chicks of native birds.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	Through their impact on indigenous species.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?	Yes	Through their Impact on natural ecosystems.
Animal welfare?		

Red-Eared Slider Turtles (Feral)

Preferred Option: Eradication

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

Programme Options	Eradication	Progressive Containment
Objective	Over the duration of this Plan, eradicate the pests listed in the Eradication Programme to eliminate their adverse effects.	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.
Intermediate outcome	To reduce the infestation level of the pest, or an organism being spread by the pest, to zero levels in an area in the short to medium term.	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.
Technical and operational risks	<p>Low</p> <p>Red-eared slider turtles are rated as one of the world's 100 most invasive species. They are medium-sized turtles that are sold as juvenile pets and sometimes have been illegally released into waterways when they outgrow their tanks and outlive their appeal. They can live for 30 years or longer and pose a significant threat to aquatic plants, insects, small fish and eels in the waterways. They can survive in the cooler temperatures in the region, but are unlikely to breed. It has been tentatively rated at 1 (out of 10) on the Infestation Curve.</p>	<p>Low</p> <p>Red-eared slider turtles are rated as one of the world's 100 most invasive species. They are medium-sized turtles that are sold as juvenile pets and sometimes have been illegally released into waterways when they outgrow their tanks and outlive their appeal. They can live for 30 years or longer and pose a significant threat to aquatic plants, insects, small fish and eels in the waterways. They can survive in the cooler temperatures in the region, but are unlikely to breed. It has only been sighted in two locations and is tentatively rated at 1 (out of 10) on the Infestation Curve.</p>
The risk that the option cannot be implemented and of non-compliance	Low	Low

Programme Options	Eradication	Progressive Containment
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Eradication: Low

As there have only been two sightings, the risk of not achieving Eradication within the next 10 years is rated as low, although these turtles would be difficult to capture in the wild.

Progressive containment: Low

The risk of not achieving the Progressive Containment objective within the next 10 years is also rated as low.

Beneficiaries of the Programme [NPD 7(2)(b)]

The prime beneficiary is considered to be the whole community, which will benefit from the eradication of these turtles.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

The exacerbators are those who have released these turtles.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of supporting this work and working with other agencies such as Department of Conservation and Fish & Game is to incorporate it into the general rate.

Effects of not intervening

These turtles will pose a threat to aquatic plants, insects, small fish and eels. Fortunately, the cooler temperatures in the region are likely prevent their breeding.

Rationale

As there have only been two sightings in the region, it is appropriate that this pest is put into the Eradication programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

There have been two reported sightings of red-eared slider turtles that are likely to have been released from captivity. It is important to utilise the experience and skills of local agencies (Fish & Game, Department of Conservation) to work with the biosecurity team to take all reasonable steps to recapture them. Their inclusion in the Plan should ensure this can be achieved. Relying on voluntary action to ensure their eradication is not considered viable.

Adverse effects [Section 71(d)]

Are red eared slider turtles capable of causing an adverse effect on:		Comments
Economic well-being?		
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?	Yes	They will attack a range of aquatic plants, insects, small fish and eels.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	They significantly reduce aquatic biodiversity.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Reed Sweet Grass

Preferred Option: Progressive Containment

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

Programme Options	Eradication	Progressive Containment
Objective	Over the duration of this Plan, eradicate the pests listed in the Eradication Programme to eliminate their adverse effects.	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.
Intermediate outcome	To reduce the infestation level of the pest, or an organism being spread by the pest, to zero levels in an area in the short to medium term.	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.
Technical and operational risks	<p>Moderate</p> <p>Reed sweet grass grows on the edge of wetlands and waterbodies, and can form dense impenetrable mats that impede access and drainage, causing silt accumulation and flooding. It will replace other aquatic margin vegetation and degrade habitat for native aquatic plants. It has been implicated in cyanide poisoning of livestock and represents a significant threat to wetlands and stock. It seeds prolifically and the seeds are long-lived. Seed and rhizome fragments are spread by flowing water, machinery, livestock, soil movement, eel nets, boats and trailers. It is rated as 2 (out of 10) on the Infestation Curve.</p>	<p>Low</p> <p>Reed sweet grass grows on the edge of wetlands and waterbodies, and can form dense impenetrable mats that impede access and drainage, causing silt accumulation and flooding. It will replace other aquatic margin vegetation and degrade habitat for native aquatic plants. It has been implicated in cyanide poisoning of livestock and represents a significant threat to wetlands and stock. It seeds prolifically and the seeds are long-lived. Seed and rhizome fragments are spread by flowing water, machinery, livestock, soil movement, eel nets, boats and trailers. It is rated as 2 (out of 10) on the Infestation Curve.</p>
The risk that the option cannot be implemented and of non-compliance	<p>Low</p> <p>There is a low risk that inspection and control operations cannot be carried out annually.</p>	<p>Low</p> <p>There is a low risk that the inspection and control operations cannot be carried out annually.</p>

Programme Options	Eradication	Progressive Containment
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Eradication: Moderate

The risk of not achieving the Eradication objective within the next 10 years is rated as moderate. Experience with intensive management of reed sweet grass over time has highlighted the difficulty of eradicating this pest plant but good progress has been made by committed staff.

Progressive containment: Low

The risk of not achieving the Progressive Containment objective within the next 10 years is rated as low.

Beneficiaries of the Programme [NPD 7(2)(b)]

The prime beneficiaries are considered to be occupiers with wetlands but there are benefits to the whole community from continuing to reduce the size of the infestation at the known site.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

The exacerbators are occupiers with this plant on their land and those who move seed and rhizomes to new sites.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of a very small programme is to incorporate it into the general rate.

Effects of not intervening

This tall grass grows on the edge of wetlands and waterways and spreads rapidly from seed and rhizome fragments that are carried by water, machinery, livestock, soil movement, boats and trailers. It will produce dense impenetrable mats that impede access and drainage, and cause silt accumulation and flooding. It can cause cyanide poisoning in stock and displace other wetland margin species.

Rationale

As there is only one site of reed sweet grass on which live plants have recently been detected. It is possible to reduce the extent of this infestation over the 10-year life of the Plan, but much less feasible to eradicate it. It is appropriate that this pest is included in the Progressive Containment programme for this reason.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to contain or reduce its geographic distribution is not considered viable. It is difficult to control and difficult to identify scattered plants. Its inclusion in the Plan should ensure progressive containment can be achieved.

Adverse effects [Section 71(d)]

Is Reed Sweet Grass capable of causing an adverse effect on:		Comments
Economic well-being?	Yes	It is an aggressive unpalatable grass that can outcompete pasture and become a major pest along roadsides and on wasteland.
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?	Yes	Invasion and transformation of natural habitat.
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 well-being?	Yes	Loss of valued natural ecosystems.

Is Reed Sweet Grass capable of causing an adverse effect on:		Comments
The enjoyment of the recreational value of the natural environment?	Yes	Impedes access and restricts roadside vision.
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Rooks

Preferred Option: Exclusion

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

Programme Options	Do Nothing	Exclusion
Objective	Over the duration of this Plan, do nothing toward managing this pest.	Over the duration of this Plan, prevent the establishment of the pests listed in the Exclusion Programme from the Tasman-Nelson region to avoid adverse effects on economic well-being, the natural environment, human health, recreational values, or cultural values.
Intermediate Outcome	Do nothing	To exclude this pest from the region.
Technical and operational risks	Low The rook is a glossy black bird from the crow family. Feeding in large flocks, they inflict considerable economic losses to cropping and orchard operations.	Low There are no known populations of rook in the region. Once established, they can be difficult to control.
The risk that the option cannot be implemented and of non-compliance	Low	Low
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Do Nothing: Low

There is very little risk that species may naturally appear in the region. Purposeful introductions are a very low risk.

Exclusion: Low

The risk of not achieving the Exclusion objective within the next 10 years is rated as low.

Beneficiaries of the Programme [NPD 7(2)(b)]

The prime beneficiary is considered to be crop growers and orchardists.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

The exacerbators are those who introduce rook to the region or who do not report their presence

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of this programme is to incorporate it into the general rate.

Effects of not intervening

Before their numbers were reduced in Canterbury and the North Island, rooks were a serious problem to germinating arable crops such as maize, sweet corn, cereals, pumpkins, peas (both at planting and maturing), and apples.

Rationale

While there have been no reports of rook the region, it is useful to have tools to respond to new incursions as they arise. Accordingly, it is appropriate that they become a pest in the Exclusion Programme rather than doing nothing.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to respond to new incursions is not considered viable. Rooks are notoriously difficult to manage and some occupiers are unaware of their pest potential.

Adverse effects [Section 71(d)]

Are rooks capable of causing an adverse effect on:		Comments
Economic well-being?	Yes	They will feed on emerging crops in large flocks, and can damage fruit and walnut crops.
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?		
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?		
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Rosemary Grevillea (Abel Tasman)

Preferred Option: Site-led

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

Programme Options	Do Nothing	Site-led
Objective	Over the duration of this Plan, do not have rules to assist in the management of this pest in the Abel Tasman National Park and environs	Over the duration of this Plan, eradicate and exclude Rosemary grevillea to prevent adverse effects on the indigenous biological diversity of Abel Tasman National Park and environs under the Abel Tasman National Park Site-led Programme (ATNPSP).
Intermediate outcome	Do nothing.	To eradicate this species from the ATNPSP.
Technical and operational risks	Low This species is at low to zero density within the Abel Tasman National Park.	Low It is possible to eradicate this pest from private land within the ATNPSP, using established control tools.
The risk that the option cannot be implemented and of non-compliance	Moderate There is a risk that some occupiers will not participate in a voluntary programme, creating a perpetual source for re-invasion (and cost), risking the success of voluntary efforts.	Moderate There is a risk that some occupiers will not comply with rules unless pressured.
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Moderate Public pressure to do something may mean that “do nothing” is not feasible	Low
Other material risks	None identified	None identified

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

Do nothing: Moderate

The risk of doing nothing within the next 10 years is rated moderate because this pest will continue to invade Abel Tasman National Park from uncontrolled sites near the Park boundary. This creates a perpetual cost to the current voluntary programme that may not be sustainable.

Site-led: Low

The risk of not achieving the site-led objective within the next 10 years is rated as low, as the spread of this pest into the Park can be reduced by managing it on private land with the ATNPSP area, using established control techniques.

Beneficiaries of the Programme [NPD 7(2)(b)]

The direct and main beneficiaries are considered to be the community of New Zealand and Tasman District who enjoy the near-pristine environment of Abel Tasman National Park. Occupiers who do not want this pest in their garden also benefit.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Active exacerbators are occupiers with this plant on their land who are unwilling or unable to control it.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of managing this programme is to incorporate it into the general rate.

Effects of not intervening

This weed will displace indigenous flora, outcompeting indigenous flora for space and light. If it is not managed, it will infest parts of the Abel Tasman National Park, reducing the indigenous dominance of the Park, potentially affecting indigenous biological diversity. The effort to manage this pest within the Park is potentially in vain if the sources of infestation remain unmanaged.

Rationale

The control of the pest will reduce the spread of these pests into Abel Tasman National Park, leading to greater protection of indigenous flora from the effects of competition with invasive flora.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action may not be viable. Some occupiers may be reluctant to allow control of this pest on their land, or may be unaware of their impacts on indigenous flora. The inclusion of the Abel Tasman National Park (and environs) Site-led Programme in the Plan will allow council to intervene on any properties where council deems effective control is necessary to protect the Abel Tasman National Park.

Adverse effects [Section 71(d)]

Is rosemary grevillea capable of causing an adverse effect on:		Comments
Economic well-being?		
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?	Yes	This species can outcompete indigenous plants for space and light.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	This invasive species can change species composition and reduces indigenous dominance which potentially alters indigenous ecological process and can result in loss in indigenous biodiversity margins.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Rowan (St Arnaud Village)

Preferred Option: Site-led

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

Programme Options	Site-led	Not in RPMP
Objective	Over the duration of this Plan, eradicate, progressively or sustainably control the pests listed in the Site-led Programme to eliminate or minimise their adverse effects.	None
Intermediate outcome	That the pest, or an organism being spread by the pest, that is capable of causing damage to a place, is excluded or eradicated from that place, or is contained, reduced, or controlled within the place to an extent that protects the values of that place.	None
Technical and operational risks	Low Rowan is a deciduous tree from Europe, tolerant of cold conditions, that produces moderate quantities of red berries during winter that are widely dispersed by birds. The young seedlings are shade-tolerant and can form dense stands. It can invade tussock grassland, herbfield, shrubland and regenerating forest, and smother native species. It can be controlled by grubbing or applying commonly-used herbicides. It is present in St Arnaud Village in very low numbers.	None
The risk that the option cannot be implemented and the risk of non-compliance with rules	Low	None

Programme Options	Site-led	Not in RPMP
The risk that compliance with other legislation will adversely affect implementation of the option	Low	None
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Site-led: Low

The risk of not achieving the Eradication objective within the next 10 years is rated as low because of the small number of plants involved in the village.

Not in RPMP: None

Beneficiaries of the Programme [NPD 7(2)(b)]

The beneficiaries are occupiers in St Arnaud Village and in the adjoining rural area.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Exacerbators are the occupiers with this pest on their land who are failing to control it.

Best mechanism to impose cost allocation 7(2)(e)

There is minimal cost with this programme as it is community-led and the low cost of supporting it can be incorporated into the general rate.

Effects of not intervening

This deciduous tree produces moderate quantities of red berries that are distributed by birds. It will invade tussock grassland, herbfield, shrubland and regenerating native forest, displacing native species.

Rationale

The commitment of the community group in this area make it appropriate to include rowan in the Site-led programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to achieve zero density in this area is not considered viable. It has been a popular garden plant and some occupiers are reluctant to control it. Its inclusion in the Plan for this area around St Arnaud Village will allow pest control to be undertaken on any properties where effective control is lacking.

Adverse effects [Section 71(d)]

Is Rowan capable of causing an adverse effect on:		Comments
Economic well-being?	Yes	Impact on productivity following invasion of lightly grazed grassland.
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?	Yes	It can invade native shrubland and shade out native species.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	It can affect natural succession and reduce biodiversity.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Rudd

Preferred Option: Eradication

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

Programme Options	Eradication	Progressive Containment
Objective	Over the duration of this Plan, eradicate the pests listed in the Eradication Programme to eliminate their adverse effects.	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.
Intermediate outcome	To reduce the infestation level of the pest, or an organism being spread by the pest, to zero levels in an area in the short to medium term.	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.
Technical and operational risks	<p>Low</p> <p>Rudd is an olive-green fish that is part of a group described as coarse fish. Although classified as a sports fish in the Freshwater Fishing Regulations 1983, it is not rated as a quality sporting fish in New Zealand. It feeds on insects, small fish and their larvae and is considered to pose a threat to native aquatic larvae and to recreational trout fisheries. A successful campaign has been undertaken by the Department of Conservation against illegal releases of rudd and it has been eradicated from 15 of 16 ponds. Eradication from the region should be achieved if the present campaign is continued unless there are further illegal releases.</p>	<p>Low</p> <p>Rudd is an olive-green fish that is part of a group described as coarse fish. Although classified as a sports fish in the Freshwater Fishing Regulations 1983, it is not rated as a quality sporting fish in New Zealand. It feeds on insects, small fish and their larvae and is considered to pose a threat to native aquatic larvae and to recreational trout fisheries. A successful campaign has been undertaken by the Department of Conservation against illegal releases of rudd and it has been eradicated from 15 of 16 ponds. Progressive Containment should be able to be achieved if the present campaign is continued.</p>
The risk that the option cannot be implemented and of non-compliance	Low	Low

Programme Options	Eradication	Progressive Containment
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Eradication: Low

The risk of not achieving Eradication within the next 10 years is rated as low, providing there are no more illegal releases. Eradication has been achieved at 15 sites.

Progressive containment: Low

The risk of not achieving the Progressive Containment objective within the next 10 years is rated as low.

Beneficiaries of the Programme [NPD 7(2)(b)]

The prime beneficiary is considered to be the whole community, which will benefit from the eradication of rudd.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

The exacerbators are those who have released rudd along with other pest fish into natural waterways.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of supporting this work by the Department of Conservation is to incorporate it into the general rate.

Effects of not intervening

This freshwater fish feeds on insects, small fish and their larvae. It will impact on native fish (inanga, smelt, bullies), crayfish and the trout fishery.

Rationale

Given the Department of Conservation's success with eradication of pest fish, it is appropriate that rudd is included in the Eradication programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

These pest fish have been released into some small ponds in the Moutere area and the Department of Conservation has undertaken a campaign to eradicate them. They have expertise and resources and its inclusion in the Plan should allow them to complete its eradication within the term of the Plan.

Adverse effects [Section 71(d)]

Are Rudd capable of causing an adverse effect on:		Comments
Economic well-being?		
The viability of threatened species or organisms?	Yes	Adult rudd are predominantly herbivorous and feed on small aquatic plants while the juveniles feed mostly on zooplankton.
The survival and distribution of indigenous plants or animals?	Yes	They can have a major impact on native aquatic plants and remove the food sources for native fish and invertebrates.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	They destroy native habitat, stir up bottom sediments, muddy waterways and significantly reduce aquatic biodiversity.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Russell Lupin (St Arnaud Village)

Preferred Option: Site-led

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

Programme Options	Site-led	Not in RPMP
Objective	Over the duration of this Plan, eradicate, progressively contain or sustainably control the pests listed in the Site-led Programme to eliminate or minimise their adverse effects.	None
Intermediate outcome	That the pest, or an organism being spread by the pest, that is capable of causing damage to a place, is excluded or eradicated from that place, or is contained, reduced, or controlled within the place to an extent that protects the values of that place.	None
Technical and operational risks	<p>Low</p> <p>Russell lupin is a perennial herb from North America that produces colourful flower spikes up to 60 cm. It produces large quantities of long-lived seed that are distributed mainly by water and form dense self-replacing stands in river beds, wetlands, tussock land and subalpine shrublands. These stands reduce nesting habitat for iconic birds such as black stilt, black-fronted terns and banded dotterels, and provide habitat for predators. There are only small numbers in St Arnaud village but the long seed life will require ongoing follow-up to achieve eradication.</p>	None

Programme Options	Site-led	Not in RPMP
The risk that the option cannot be implemented and the risk of non-compliance with rules	Low	None
The risk that compliance with other legislation will adversely affect implementation of the option	Low	None
The risk that public or political concerns will adversely affect implementation of the option	Low	None
Other material risks	None identified	None identified

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

Site-led: Low

The risk of not achieving localised eradication under a site-led objective within the next 10 years is rated as low because of the small number of plants involved in the village.

Not in RPMP: None

Beneficiaries of the Programme [NPD 7(2)(b)]

The beneficiaries are occupiers in St Arnaud Village and in the adjoining rural area.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Exacerbators are the occupiers with this pest on their land who are failing to control it.

Best mechanism to impose cost allocation 7(2)(e)

There is minimal cost with this programme as it is community-led and the low cost of supporting it can be incorporated into the general rate.

Effects of not intervening

This perennial herb produces large quantities of long-lived seed that is distributed mainly by water. They will establish in river beds, wetlands, tussock land and sub-alpine grasslands, forming dense self-replacing stands, shading out native species and restricting access.

Rationale

The commitment of the community group in this area make it appropriate to include Russell lupin in the Site-led programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to achieve zero density in this area is not considered viable. It is an attractive plant and some occupiers are reluctant to control it. Its inclusion in the Plan for this area around St Arnaud Village will allow pest control to be undertaken on any properties where effective control is lacking.

Adverse effects [Section 71(d)]

Is Russell Lupin capable of causing an adverse effect on:		Comments
Economic well-being?		
The viability of threatened species or organisms?	Yes	Dense stands can provide habitat for predators, reducing the habitat for ground-nesting birds.
The survival and distribution of indigenous plants or animals?	Yes	Dense stands can smother and displace native plants. The provision of habitat for predators and resulting increase in predator density will impact on native animals.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	It is capable of invading native shrubland and shading out native plants, as well as indirectly impacting on native animals, and reducing biodiversity.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		

Is Russell Lupin capable of causing an adverse effect on:		Comments
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Sabella (Mediterranean Fanworm)

Preferred Option: Eradication

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

Programme Options	Eradication	Progressive Containment
Objective	Over the duration of this Plan, eradicate the pests listed in the Eradication Programme to eliminate their adverse effects.	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.
Intermediate outcome	To reduce the infestation level of the pest, or an organism being spread by the pest, to zero levels in an area in the short to medium term.	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.
Technical and operational risks	<p>Moderate</p> <p>Sabella is a marine bristle worm that lives inside a long leathery tube with a feeding fan at the end. It can form colonies on hard surfaces and this can produce major fouling on boat hulls and structures and suppress native marine species. It was first found in Nelson Marina in November 2013 and small numbers were found over the next 5 months. It was also found in Tarakohe in September 2016. A Small Scale Management Plan has been prepared to ensure it could be removed from both areas.</p>	<p>Moderate</p> <p>Sabella is a marine bristle worm that lives inside a long leathery tube with a feeding fan at the end. It can form colonies on hard surfaces and this can produce major fouling on boat hulls and structures and suppress native marine species. It was first found in Nelson Marina in November 2013 and small numbers were found over the next 5 months. It was also found in Tarakohe in September 2016. A Small Scale Management Plan has been prepared to ensure it could be removed from both areas.</p>
The risk that the option cannot be implemented and the risk of non-compliance with rules	<p>Moderate</p> <p>As a marine pest, Sabella is difficult to locate and expensive for divers to manually remove. Clear water is essential to locate and remove pest organisms.</p>	<p>Low</p> <p>As a marine pest, Sabella is difficult to locate and expensive for divers to manually remove. Clear water is essential to locate and remove pest organisms.</p>

Programme Options	Eradication	Progressive Containment
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Eradication: Moderate

The risk of not achieving the Eradication objective within the next 10 years is rated as moderate. Ongoing inspections on a regular basis will be required to locate and remove any undetected organisms and there is an ongoing risk that additional organisms can be introduced by infested vessels.

Progressive Containment: Low

The risk of not achieving the Progressive Containment objective within the next 10 years is rated as low as this can be achieved with regular monitoring and ongoing removal.

Beneficiaries of the Programme [NPD 7(2)(b)]

The beneficiary is considered to be the whole community.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Exacerbators are those who move boats and barges infested with Sabella into uninfested ports, marinas and coastal waters.

Best mechanism to impose cost allocation 7(2)(e)

The high cost of future operations to locate and remove this pest will require funding from outside the existing biosecurity budget.

Effects of not intervening

Failure to control this marine bristle worm will result in dense fouling on boat hulls, marine structures and mussel lines. This will slow boats, displace native marine organisms, and reduce mussel growth and mussel farm productivity.

Rationale

While there is much difficulty in locating and eradicating Sabella in the coastal area, and always a risk of further invasion, the intent is to manage this pest to zero density. It is therefore appropriate to consider this pest as being managed under an Eradication objective as opposed to a Sustained Control objective.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on owners of structures, vessels and moorings with this aquatic pest present to take voluntary action to remove it and owners of vessels and equipment entering the region's waters to be free from this pest is not considered viable. Some lack the motivation to do this. Its inclusion in the Plan will increase the likelihood of this being achieved.

Adverse effects [Section 71(d)]

Is Sabella capable of causing an adverse effect on:		Comments
Economic well-being?	Yes	It can clog motors, inlet pipes and propellers, increase fuel costs by increasing drag, and smother valuable commercial shellfish (paua, scallops and mussels).
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?	Yes	Dense stands can smother native marine species.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	Dense stands can adversely impact on natural succession and reduce biodiversity.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?	Yes	Through reduction in commercial species of shellfish.

Is Sabella capable of causing an adverse effect on:		Comments
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?	Yes	Through reduction in commercial species of shellfish.
Animal welfare?		

Saffron Thistle

Preferred Option: Eradication

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

Programme Options	Eradication	Progressive Containment
Objective	Over the duration of this Plan, eradicate the pests listed in the Eradication Programme to eliminate their adverse effects.	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.
Intermediate outcome	To reduce the infestation level of the pest, or an organism being spread by the pest, to zero levels in an area in the short to medium term.	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.
Technical and operational risks	Low Saffron thistle is a prickly annual to biennial thistle with leaves with very sharp spines that can devalue the wool and injure sheep. It forms dense impenetrable stands and produces heavy seeds with a seed life that can exceed 15 years. There are only a small number of known sites and intensive ongoing control on an annual basis should be able to achieve eradication.	Low Saffron thistle is a prickly annual to biennial thistle with leaves with very sharp spines that can devalue the wool and injure sheep. It forms dense impenetrable stands and produces heavy seeds with a seed life that can exceed 15 years. There are only a small number of known sites and intensive ongoing control on an annual basis should be able to achieve eradication.
The risk that the option cannot be implemented and of non-compliance	Low There is a low risk that inspection and control operations cannot be carried out annually.	Low There is a low risk that the inspection and control operations cannot be carried out annually.
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low

Programme Options	Eradication	Progressive Containment
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Eradication: Low

The risk of not achieving the Eradication objective within the next 10 years is rated as low. Intensive management of saffron thistle over time has indicated that eradication is feasible.

Progressive containment: Low

The risk of not achieving the Progressive Containment objective within the next 10 years is also rated as low.

Beneficiaries of the Programme [NPD 7(2)(b)]

The prime beneficiaries are considered to be occupiers in rural areas but there are benefits to the whole community from continuing with an eradication programme.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

This plant can spread by seed carried by stock, water, machinery and in soil. Active exacerbators are occupiers with this plant on their land and those who move animals and machinery that can carry the seed to new sites.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of a small programme is to incorporate it into the general rate.

Effects of not intervening

Failure to control this pest will result in dense impenetrable stands of thistles whose leaves and flowers have sharp spikes that can injure sheep and devalue the wool.

Rationale

As there are few known sites of saffron thistle on which live plants are present and it rates as a significant pest, it is appropriate to include this pest in Eradication programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to ensure its eradication is not considered viable. It is difficult to detect juvenile plants scattered through pasture and produces seed with a long seed life. Effective control will require long-term monitoring to eradicate it. It is important to utilise the experience and skills of the biosecurity team to achieve eradication and its inclusion in the Plan should ensure this.

Adverse effects [Section 71(d)]

Is Saffron Thistle capable of causing an adverse effect on:		Comments
Economic well-being?	Yes	The seedlings affect livestock, impede access, and compete strongly with summer crops and preferred pasture species.
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?		
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?		
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?	Yes	The spines on plants and the dense stands restrict access.
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?	Yes	The spines on the plant can affect the mouths and noses of stock.

Senegal Tea

Preferred Option: Exclusion

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

Programme Options	Do Nothing	Exclusion
Objective	Over the duration of this Plan, do nothing toward managing this pest.	Over the duration of this Plan, prevent the establishment of the pests listed in the Exclusion Programme from the Tasman-Nelson region to avoid adverse effects on economic well-being, the natural environment, human health, recreational values, or cultural values.
Intermediate outcome	Do nothing – leave it to occupiers to manage.	To exclude this pest from the region.
Technical and operational risks	Low This pest is believed to have been eradicated from the region.	Low.
The risk that the option cannot be implemented and of non-compliance	Low	Low
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Do nothing: Low

The risk of doing nothing within the next 10 years is rated low. While the pest has been present in the region in the past, it is believed to be eradicated.

Exclusion: Low

The risk of maintaining the excluded status of this pest over the next 10 years is rated low because a surveillance programme should be sufficient to identify and respond quickly to any incursions before it becomes re-established.

Beneficiaries of the Programme [NPD 7(2)(b)]

The beneficiary is the Tasman-Nelson community who enjoy recreating in the environment. There are also aquatic biodiversity benefits from keeping this pest out of the region.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Active and passive exacerbators are occupiers who do not report the presence of this pest on the lands they occupy.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of a very small programme is to incorporate it into the general rate.

Effects of not intervening

Should this pest appear in the region, it could have significant environmental impacts by forming dense mats on water ways.

Rationale

Council surveillance programme potentially provides for a fast and effective incursion response.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to respond to new incursions is not considered viable. Occupiers are unaware of its pest potential.

Adverse effects [Section 71(d)]

Is Senegal tea capable of causing an adverse effect on:		Comments
Economic well-being?		
The viability of threatened species or organisms?		

The survival and distribution of indigenous plants or animals?		
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	Can completely invade ponds and streams, reducing the indigenous biodiversity of aquatic habitats.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?	Yes	Smothers waterways and ornamental ponds.
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Spartina

Preferred Option: Eradication

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

Programme Options	Eradication	Progressive Containment
Objective	Over the duration of this Plan, eradicate the pests listed in the Eradication Programme to eliminate their adverse effects.	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.
Intermediate outcome	To reduce the infestation level of the pest, or an organism being spread by the pest, to zero levels in an area in the short to medium term.	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.
Technical and operational risks	<p>Moderate</p> <p>Spartina is an aquatic, perennial grass, growing up to 80 cm high in estuaries and other coastal areas. It was originally planted to assist reclamation of tidal flats through its ability to trap sediment. Sediment trapped by Spartina can lead to flooding and restrict bird and flatfish habitat, alter drainage on adjacent flats and lead to loss of estuarine habitat. Rhizomes are the primary means of spread, dislodged by nets, propellers and stock, and carried in water. Recent control operations have been undertaken by Department of Conservation, with some input from Tasman District Council staff. There are small numbers of plants at scattered locations around the coastline and it is becoming increasingly difficult to locate them amongst coastal vegetation.</p>	<p>Low</p> <p>Spartina is an aquatic, perennial grass, growing up to 80 cm high in estuaries and other coastal areas. It was originally planted to assist reclamation of tidal flats through its ability to trap sediment. Sediment trapped by Spartina can lead to flooding and restrict bird and flatfish habitat, alter drainage on adjacent flats and lead to loss of estuarine habitat. Rhizomes are the primary means of spread, dislodged by nets, propellers and stock, and carried in water. Recent control operations have been undertaken by Department of Conservation, with some input from Tasman District Council staff. There are small numbers of plants at scattered locations around the coastline and it is becoming increasingly difficult to locate them amongst coastal vegetation.</p>

Programme Options	Eradication	Progressive Containment
The risk that the option cannot be implemented and of non-compliance	Low There is a low risk that the inspection and control operations cannot be carried out annually.	Low There is a low risk that the inspection and control operations cannot be carried out annually.
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Eradication: Low

Management of Spartina over time has shown that eradication is difficult but feasible. In recent times, this has been led by the Department of Conservation, assisted by Tasman District Council staff. There has been steady progress on reducing its distribution and density and it is appropriate that the aim continues to be eradication.

Progressive containment: Low

The risk of not achieving the Progressive Containment objective within the next 10 years is rated as low.

Beneficiaries of the Programme [NPD 7(2)(b)]

There are significant benefits to the whole community from keeping the coastal margins of harbours and estuaries free from Spartina.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

This plant is spread by rhizomes, dislodged by propellers, nets, stock and machinery, which are transported in seawater.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of contributing to this Department of Conservation-led programme is to incorporate it into the general rate.

Effects of not intervening

This aquatic perennial grass is spread by rhizome fragments carried in water. It will establish on the edge of estuaries, trapping silt, altering drainage, affecting bird and flatfish habitat, and resulting in a loss of estuarine habitat.

Rationale

There has been a lot of progress in recent years in significantly reducing the distribution of Spartina. It will be challenging to identify and remove its remnants scattered around the coastline, often hidden in intertidal vegetation and debris. However, given the Department of Conservation's commitment to dealing with it, it is appropriate to include this pest in the Eradication programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Spartina was planted in coastal areas to assist reclamation and the Department of Conservation, with assistance from Tasman District Council biosecurity staff, have been working towards eradication. It is a difficult plant to identify amongst coastal vegetation and debris and requires a long-term commitment. There are only a few small areas remaining with a low number of scattered plants and it is vital that the expertise and resources of the two agencies continue to be employed to achieve eradication. Its inclusion in the Plan should ensure this.

Adverse effects [Section 71(d)]

Is Spartina capable of causing an adverse effect on:		Comments
Economic well-being?		
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?	Yes	Sediment trapped by Spartina can reduce areas suitable for bird and fish habitat, and restrict fish spawning areas.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	Sediment trapped by Spartina can result in flooding, reduce areas suitable for bird and fish habitat, and restrict fish spawning areas.
Soil resources?		
Water quality?		

Is Spartina capable of causing an adverse effect on:		Comments
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Stoats (southern parts of Waimea Estuary)

Preferred Option: Site-led

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

Programme Options	Site-led	Not in RPMP
Objective	Over the duration of this Plan, eradicate, progressively or sustainably control the pests listed in the Site-led Programme to eliminate or minimise their adverse effects.	None
Intermediate outcome	That the pest, or an organism being spread by the pest, that is capable of causing damage to a place, is excluded or eradicated from that place, or is contained, reduced, or controlled within the place to an extent that protects the values of that place.	None
Technical and operational risks	<p>Moderate</p> <p>Stoats have very good eyesight, sense of smell and hearing. They are excellent climbers and feed on rodents, birds, rabbits, hares, reptiles and weta. They have had a devastating effect on local native birds (kaka, kakariki, kakapo and kiwi) and have been responsible for the extinction of a considerable number. They are considered trap-shy and bait-shy, making them difficult to locate and control. A single litter is produced annually that can have up to 12 kits. As a result of intensive trapping, it is believed there are very limited numbers of stoats currently within and close to these sites in the Waimea Estuary and trapping will continue to maintain these gains with regular changes of bait.</p>	None

Programme Options	Site-led	Not in RPMP
The risk that the option cannot be implemented and of non-compliance	Moderate The limited numbers of stoats and the ongoing intensive trapping means that it is likely that stoat numbers within and adjoining these sites can be maintained at or very close to zero density.	None
The risk that compliance with other legislation will adversely affect implementation of the option	Low	None
The risk that public or political concerns will adversely affect implementation of the option	Low	None
Other material risks	None identified	None

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

Site-led: Low

The risk of not achieving and maintaining the Site-led objective of managing stoats to zero density within the next 10 years is rated as low. Control of stoats on a small scale is feasible when linked with ongoing monitoring and varying techniques.

Not in RPMP

An effective control programme could be supported by including these trapping sites in the RPMP.

Beneficiaries of the Programme [NPD 7(2)(b)]

The beneficiary from ongoing control of stoats is considered to be the whole community.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

The exacerbators are occupiers who are unable to control stoats on their land or unwilling to allow others to do so.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the minimal cost of support for this community programme is to incorporate it into the general rate.

Effects of not intervening

The stoat is the most destructive mammalian predator in the region, with good eyesight, sense of smell and hearing, the ability to climb, and the capacity for females to produce annual litters of up to 12 kits. It has decimated native bird populations throughout the region, causing the extinction of a substantial number of species.

Rationale

Given the adverse effects of stoats on indigenous biodiversity and particularly on the endangered and threatened birds that nest on the margins of the Waimea Estuary, and the strong community commitment to the trapping programme, it is appropriate to include this pest in the Plan as a Site-led programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to achieve zero density in the areas close to sites with high biodiversity values is not considered viable. Some occupiers will be unaware of their presence and their impact or be reluctant to undertake trapping. Its inclusion in the Plan for these designated areas around the Waimea Estuary will allow pest control to be undertaken on any properties where effective control is lacking.

Adverse effects [Section 71(d)]

Are Stoats capable of causing an adverse effect on:		Comments
Economic well-being?		
The viability of threatened species or organisms?	Yes	Stoats are capable of killing the small numbers of banded rail and Australian bitterns that remain in this area.
The survival and distribution of indigenous plants or animals?	Yes	Stoats predate a wide range of indigenous organisms – birds, reptiles and invertebrates – that are present in this area.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	They have significantly reduced biodiversity in many natural ecosystems and this area is no exception.
Soil resources?		

Are Stoats capable of causing an adverse effect on:		Comments
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Sycamore (St Arnaud Village and Abel Tasman National Park)

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

Programme Options	Do Nothing	Site-led
Objective	Over the duration of this Plan, do not have rules to assist in the management of sycamore in St Arnaud Village and the Abel Tasman National Park and environs	Over the duration of this Plan, eradicate and exclude sycamore to prevent adverse effects on the indigenous biological diversity and recreational enjoyment in and around St Arnaud Village and in and around Abel Tasman National Park and environs
Intermediate outcome	Do nothing.	To eradicate this species from St Arnaud Village and around Abel Tasman National Park and environs.
Technical and operational risks	Low This species is at low to zero density within S Arnaud Village and the Abel Tasman National Park and environs.	Low It is possible to eradicate this pest from private land within St Arnaud Village and Abel Tasman National Park and environs, using established control tools.
The risk that the option cannot be implemented and of non-compliance	Moderate There is a risk that some occupiers will not participate in a voluntary programme, creating a perpetual source for re-invasion (and cost), risking the success of voluntary efforts.	Moderate There is a risk that some occupiers will not comply with rules unless pressured.
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Moderate Public pressure to do something may mean that “do nothing” is not feasible	Low

Programme Options	Do Nothing	Site-led
Other material risks	None identified	None identified

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

Do nothing: Moderate

The risk of doing nothing within the next 10 years is rated moderate because this pest will continue to invade St Arnaud Village and Abel Tasman National Park and environs from uncontrolled sites. This creates a perpetual cost to current voluntary programmes that may not be sustainable.

Site-led: Low

The risk of not achieving the site-led objective within the next 10 years is rated as low, as the spread of this pest can be reduced by managing it on private land, using established control techniques.

Beneficiaries of the Programme [NPD 7(2)(b)]

The direct beneficiaries of the St Arnaud site-led programme are occupiers in St Arnaud Village and in the adjoining rural area.

The direct and main beneficiaries of the Abel Tasman site-led programme are considered to be the community of New Zealand and Tasman District who enjoy the near-pristine environment of Abel Tasman National Park. Occupiers who do not want this pest in their garden also benefit.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Active exacerbators are occupiers with this plant on their land who are unwilling or unable to control it.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of managing this programme is to incorporate it into the general rate.

Effects of not intervening

This deciduous tree produces large quantities of winged seeds that are wind-distributed. It will establish in tussock grasslands, shrublands and forestland, shading out native species.

If it is not managed, it will infest parts of the Nelson Lakes and Abel Tasman National Parks, reducing the indigenous dominance of the Park, potentially affecting indigenous biological diversity. Voluntary efforts to manage this pest are potentially in vain if the sources of infestation remain unmanaged.

Rationale

The control of the pests will reduce the spread of these pests, leading to greater protection of indigenous flora from the effects of competition with invasive flora.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action may not be viable. Some occupiers may be reluctant to allow control of this pest on their land, or may be unaware of their impacts on indigenous flora. The inclusion of the St Arnaud village, and the Abel Tasman National Park (and environs) Site-led Programme in the Plan will allow council to intervene on any properties where council deems effective control is necessary to protect environmental values.

Adverse effects [Section 71(d)]

Is Sycamore capable of causing an adverse effect on:		Comments
Economic well-being?	Yes	Adverse impacts on pasture productivity following the invasion of lightly grazed grassland.
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?		
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	It is capable of invading tussock grassland and native shrubland, shading out native species and reducing biodiversity.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		

Is Sycamore capable of causing an adverse effect on:		Comments
Animal welfare?		

Taiwan Cherry

Preferred Option: Eradication

Preferred Option: Eradication

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

Programme Options	Site-led	Eradication
Objective	Over the duration of this Plan, eradicate, progressively or sustainably control the pests listed in the Site-led Programme to eliminate or minimise their adverse effects.	By 2035, eradicate all cultivars of Taiwan cherry from the Tasman-Nelson region, to eliminate their adverse effects on the environment.
Intermediate outcome	That the pest, or an organism being spread by the pest, that is capable of causing damage to a place, is excluded or eradicated from that place, or is contained, reduced, or controlled within the place to an extent that protects the values of that place.	By 2028, to contain and reduce the infestation level of mature cultivars for Taiwan cherry across the Tasman-Nelson region.
Technical and operational risks	Low Taiwan cherry has spread quickly onto land adjoining Nelson City's eastern boundary from Enner Glynn northwards. Nelson City Council has instituted a control programme but its presence in urban gardens close to this boundary will make ongoing control necessary.	Low The mechanisms of dispersal and colonisation, and methods of control are well known. The larger area being managed will make progress slower than the site-led option.
The risk that the option cannot be implemented and of non-compliance	Low There is a low risk that surveillance and inspection operations cannot be carried out annually.	Low There is a low risk that inspection and control operations cannot be carried out annually.

Programme Options	Site-led	Eradication
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low None anticipated
The risk that public or political concerns will adversely affect implementation of the option	Low The attractive appearance of this plant has made it a popular choice for urban gardens. This will make it necessary to maintain ongoing control operations.	Low to moderate The attractive appearance of this plant has made it a popular choice for urban gardens. It may be necessary to undertake advocacy to explain the threats and to suggest other plant choices.
Other material risks	None identified	None identified

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

Site-led: Moderate

It will be possible to reduce the geographical distribution of Taiwan cherry on publicly-owned land, but it will be more difficult to achieve on private land. Ongoing commitment will be needed to manage seedlings from seed spread by birds.

Eradication: Low to Moderate

The risk of not achieving the overall eradication objective is rated low to moderate. It will be possible to reduce the extent of Taiwan cherry on publicly-owned land to zero-density within the 10-year timeframe of the Plan. The achievement of the objective on private land may be slower due to initial opposition to control.

Beneficiaries of the Programme [NPD 7(2)(b)]

The beneficiaries will be the Nelson and Tasman communities that enjoy recreating in the natural environment. As a species that can invade indigenous forests, the indigenous habitats of the region will benefit for the eradication of this pest.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Active exacerbators are occupiers with Taiwan cherry on their land who are unwilling to replace it with a less weedy species, and are plant shops and nurseries that continue to sell cultivars of Taiwan cherry.

Passive exacerbators are occupiers with Taiwan cherry on their land who do not know it.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of this programme (estimated to be around \$42,000 per annum for 15 years) is to incorporate it into the general rate. This estimate is based on the “worst case” combined figures for Tasman District and Nelson City that were presented in the Nelson City council submission.

Effects of not intervening

This deciduous tree produces large quantities of small succulent fruit that are distributed by birds. They will rapidly establish in shrublands, forest margins and open areas along roadsides, shading out native species and preventing recruitment of native species. Based on the assumptions reported in the Nelson City Council submission, it is estimated that doing nothing as an opportunity cost of \$6,639,000. This is the reduction in the value of indigenous habitats over 30 years of continued expansion of Taiwan cherry.

The benefit of eradication is the removal of this threat to the value of indigenous habitats in the Tasman – Nelson region.

Rationale

While eradication will take longer and will be challenging with respect to controlling Taiwan cherry on private land, the approach is feasible and practical. The low to moderate risk that occupier compliance might cause with achieving the stated species-led objective (compared to a lower risk posed by a site-led programme) is less than the cost of the risk that constant reinvasion causes for achieving a site-led objective. The quantitative costs and benefits analysis presented in the Nelson City submission shows that eradication is more cost beneficial than a site-led programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to achieve zero density is not considered viable. It has been a popular garden tree that flowers prolifically with seeds in fruit that are distributed by birds. Some occupiers are unaware of its pest potential and some are reluctant to control it. Its inclusion in the Plan will allow pest control to be undertaken on any properties where effective control is lacking.

Adverse effects [Section 71(d)]

Is Taiwan Cherry capable of causing an adverse effect on:		Comments
Economic well-being?		
The viability of threatened species or organisms?		

Is Taiwan Cherry capable of causing an adverse effect on:		Comments
The survival and distribution of indigenous plants or animals?	Yes	It can smother native species in scrubland and disturbed forest.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	It can reduce biological diversity in regenerating ecosystems by becoming the dominant species.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?	Yes	Its dense stands can make access difficult.
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Tench

Preferred Option: Eradication

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

Programme Options	Eradication	Progressive Containment
Objective	Over the duration of this Plan, eradicate the pests listed in the Eradication Programme to eliminate their adverse effects.	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.
Intermediate outcome	To reduce the infestation level of the pest, or an organism being spread by the pest, to zero levels in an area in the short to medium term.	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.
Technical and operational risks	<p>Moderate</p> <p>Tench is an olive-green fish that is part of a group described as coarse fish. Although classified as a sports fish in the Freshwater Fishing Regulations 1983, it is not rated as a quality sporting fish in New Zealand. It is carnivorous and feeds on insects, crustaceans and molluscs. It is considered to pose a significant threat to native aquatic larvae and is associated with reductions in water clarity. A campaign has been undertaken by the Department of Conservation against illegal releases of tench and it has been eradicated from 17 of 33 sites. Eradication from the region should be achieved within the term of this Plan if the present campaign is continued unless there are further illegal releases.</p>	<p>Low</p> <p>Tench is an olive-green fish that is part of a group described as coarse fish. Although classified as a sports fish in the Freshwater Fishing Regulations 1983, it is not rated as a quality sporting fish in New Zealand. It is carnivorous and feeds on insects, crustaceans and molluscs. It is considered to pose a significant threat to native aquatic larvae and is associated with reductions in water clarity. A campaign has been undertaken by the Department of Conservation against illegal releases of tench and it has been eradicated from 17 of 33 sites. Eradication from the region should be achieved within the term of this Plan if the present campaign is continued unless there are further illegal releases.</p>

Programme Options	Eradication	Progressive Containment
The risk that the option cannot be implemented and of non-compliance	Low	Low
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Eradication: Moderate

The risk of not achieving Eradication within the next 10 years is rated as moderate.

Progressive containment: Low

The risk of not achieving the Progressive Containment objective within the next 10 years is rated as low.

Beneficiaries of the Programme [NPD 7(2)(b)]

The prime beneficiary is considered to be the whole community, which will benefit from the eradication of tench.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

The exacerbators are those who have released tench along with other pest fish into natural waterways.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost to the Management Agency of supporting this work by the Department of Conservation is to incorporate it into the general rate.

Effects of not intervening

This carnivorous coarse fish feeds on insects, crustaceans and molluscs. It will pose a threat to native aquatic larvae and will reduce water clarity.

Rationale

Given the Department of Conservation's success with eradication of pest fish, it is appropriate that tench is included in the Eradication programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

These pest fish have been released into some small ponds in the Moutere area and the Department of Conservation has undertaken a campaign to eradicate them. They have expertise and resources and its inclusion in the Plan should allow them to complete its eradication within the term of the Plan.

Adverse effects [Section 71(d)]

Are Tench capable of causing an adverse effect on:		Comments
Economic well-being?		
The viability of threatened species or organisms?	Yes	Adult tench are carnivorous and feed on small insect larvae, crustaceans and molluscs.
The survival and distribution of indigenous plants or animals?	Yes	They can have a major impact on native aquatic fauna.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	They destroy native aquatic fauna and muddy waterways, significantly reducing aquatic biodiversity.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		

Are Tench capable of causing an adverse effect on:		Comments
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Variegated Thistle (Central Tasman District)

Preferred Option: Progressive Containment

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

Programme Options	Progressive Containment	Sustained Control
Objective	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.	Over the duration of this Plan, control the pests listed in the Sustained Control Programme to minimise their adverse effects.
Intermediate outcome	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.	To provide for ongoing control of the pest, or an organism being spread by the pest, to reduce its impacts on values and its spread to other properties.
Technical and operational risks	<p>Low</p> <p>Variegated thistle is a conspicuous, robust, spiny annual or biennial thistle that can form dense stands in pasture and wasteland that provide habitat for other pests. It will suppress desirable pasture and reduce carrying capacity. Its spines can be toxic and cause injury to animals and the leaves can cause nitrate poisoning. It can impact significantly on pastoral and crop production and is difficult to eradicate with its seed being viable for more than 20 years. The seeds can be spread by stock, hay, machinery and wind. It is found in the eastern part of the region and rated at 4 (out of 10) on the Infestation Curve.</p>	<p>Low</p> <p>Variegated thistle is a conspicuous, robust, spiny annual or biennial thistle that can form dense stands in pasture and wasteland that provide habitat for other pests. It will suppress desirable pasture and reduce carrying capacity. Its spines can be toxic and cause injury to animals. It has the potential to have a significant impact on pastoral and crop production and is difficult to eradicate with its seed being viable for more than 20 years. The seeds can be spread by stock, hay, machinery and wind. It is found in the eastern part of the region and rated at 4 (out of 10) on the Infestation Curve.</p>

Programme Options	Progressive Containment	Sustained Control
The risk that the option cannot be implemented and of non-compliance	Low There is a low risk that inspection and control operations cannot be carried out annually.	Low There is a low risk that the inspection and control operations cannot be carried out annually.
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Progressive containment: Low

The risk of not achieving the Progressive Containment objective within the next 10 years is rated as low. Management of variegated thistle over time has indicated that a reduction in its geographic distribution is feasible.

Sustained control: Low

The risk of not achieving the Sustained Control objective within the next 10 years is also rated as low.

Beneficiaries of the Programme [NPD 7(2)(b)]

The prime beneficiaries are considered to be occupiers in rural areas but there will be benefits to the whole community from continuing with a Progressive Containment programme.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Active exacerbators are occupiers with this plant on their land who are failing to adequately control it, and those who move animals and machinery that transport the seed to new sites.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of a small programme is to incorporate it into the general rate.

Effects of not intervening

This robust spiny thistle forms dense stands that restrict access, suppress desirable pasture species, reduce carrying capacity, and provide habitat for other pests. The leaves will cause nitrate poisoning and the spines can be toxic.

Rationale

As it is feasible to reduce the geographic distribution of variegated thistle and the tools are available for this, it is appropriate that it is included in the Progressive Containment programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to achieve a reduction in its geographic distribution is not considered viable. It is difficult to detect juvenile plants scattered through pasture and it produces seed with a long seed life. Some occupiers consider that the long-term commitment required for effective control is too difficult to attempt. Its inclusion in the Plan should ensure progressive containment can be achieved.

Adverse effects [Section 71(d)]

Is Variegated Thistle capable of causing an adverse effect on:		Comments
Economic well-being?	Yes	The seedlings affect livestock, impede access, provide habitat for pests and compete strongly with preferred pasture species.
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?		
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?		
Soil resources?		
Water quality?		
Human health?		

Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?	Yes	The spines on plants and the dense stands restrict access.
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?	Yes	The spines on the thistle can affect the mouths and noses of stock and the leaves can produce nitrate poisoning.

Preferred Option: Exclusion

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

Programme Options	Do Nothing	Exclusion
Objective	Over the duration of this Plan, do nothing toward managing this pest.	Over the duration of this Plan, prevent the establishment of the pests listed in the Exclusion Programme from the Tasman-Nelson region to avoid adverse effects on economic well-being, the natural environment, human health, recreational values, or cultural values.
Intermediate outcome	Do nothing – leave it to occupiers to manage.	To exclude this pest from the region.
Technical and operational risks	Low This pest is believed to be absent from the region, but it is present in New Zealand and could arrive here.	Low This pest is believed to be absent from the region and surveillance of optimal sites near vector routes is enough to keep this status.
The risk that the option cannot be implemented and of non-compliance	Low	Low
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Do nothing: Low to moderate

The risk of doing nothing within the next 10 years is rated low to moderate because there is a risk that this pest could arrive in the region during that period.

Exclusion: Low

The risk of maintaining the excluded status of this pest over the next 10 years is rated low because a surveillance programme should be sufficient to identify and respond quickly to any incursions before it becomes established.

Beneficiaries of the Programme [NPD 7(2)(b)]

The beneficiary is the farming community who enjoy freedom from the economic impact of this pest.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Active and passive exacerbators are occupiers who do not report the presence of this pest on the lands they occupy.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of a very small programme is to incorporate it into the general rate.

Effects of not intervening

Should this pest appear in the region, it could have significant economic impacts on farm fodder quality and arable farming operations.

Rationale

Council surveillance programme potentially provides for a fast and effective incursion response.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to achieve zero density is not considered viable. Occupiers may not be aware of this pest. By the time an infestation causes noticeable economic damage, the pest can be entrenched and difficult to get rid of.

Adverse effects [Section 71(d)]

Is velvet leaf capable of causing an adverse effect on:	Comments
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Economic well-being?	Yes	It can successfully outcompete arable crops for nutrients, space, and water, and reduces the quality of fodder crops.
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?		
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?		
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Wallabies (Dama and Bennett's)

Preferred Option: Exclusion

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

Programme Options	Do Nothing	Exclusion
Objective	Over the duration of this Plan, do nothing toward managing these pests.	Over the duration of this Plan, prevent the establishment of the pests listed in the Exclusion Programme from the Tasman-Nelson region to avoid adverse effects on economic well-being, the natural environment, human health, recreational values, or cultural values.
Intermediate Outcome	Do nothing – rely on occupiers	To exclude this pest from the region.
Technical and operational risks	Low	Low Once established they can be difficult to control.
The risk that the option cannot be implemented and of non-compliance	Low	Low
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Do Nothing: Low

There is some risk that wallabies appear in the region though purposeful. Natural migration is a very low risk.

Exclusion: Low

The risk of not achieving the Exclusion objective within the next 10 years is rated as low.

Beneficiaries of the Programme [NPD 7(2)(b)]

The prime beneficiary is considered to be pastoral farming.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

The exacerbators are those who introduce dama or Bennett's to the region or who do not report their presence

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of this programme is to incorporate it into the general rate.

Effects of not intervening

Since their initial releases in parts of Canterbury wallabies have increased in numbers and distribution, and they compete with livestock for pasture, browse seedlings in plantation forests and damage indigenous vegetation.

Rationale

While there have been no reports of wallaby the region, it is useful to have tools to respond to new incursions as they arise. Accordingly, it is appropriate that they become a pest in the Exclusion Programme rather than doing nothing.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to respond to new incursions is not considered viable. Once infestations are entrenched, wallaby can be difficult to manage.

Adverse effects [Section 71(d)]

Are rooks capable of causing an adverse effect on:		Comments
Economic well-being?	Yes	They compete with grazing stock.
The viability of threatened species or organisms?		

Are rooks capable of causing an adverse effect on:		Comments
The survival and distribution of indigenous plants or animals?		
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?		
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Water hyacinth

Preferred Option: Exclusion

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

Programme Options	Do Nothing	Exclusion
Objective	Over the duration of this Plan, do nothing toward managing this pest.	Over the duration of this Plan, prevent the establishment of the pests listed in the Exclusion Programme from the Tasman-Nelson region to avoid adverse effects on economic well-being, the natural environment, human health, recreational values, or cultural values.
Intermediate outcome	Do nothing – leave it to Central Government.	To exclude this pest from the region.
Technical and operational risks	Low This pest is believed to be eradicated from the region and Central Government is responsible for their continued exclusion.	Low This pest is believed to be eradicated from the region and surveillance of historical sites and potential vectors is enough to keep this status.
The risk that the option cannot be implemented and of non-compliance	Low	Low
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Moderate Public pressure to do something may mean that “do nothing” is not feasible	Low
Other material risks	None identified	None identified

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

Do nothing: Low

The risk of doing nothing within the next 10 years is rated low because it is unlikely that this pest will re-invade the region as long as Central Government continues to commit to the National Interest Pests Response (NIPR) programme.

Exclusion: Low

The risk of maintaining the excluded status of this pest over the next 10 years is rated low because a surveillance programme should be sufficient to identify and respond quickly to any incursions before it becomes established.

Beneficiaries of the Programme [NPD 7(2)(b)]

The beneficiary is the community of the greater Tasman-Nelson region who enjoy recreating in the natural environment.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Active and passive exacerbators are occupiers who do not report the presence of this pest on the lands they occupy. Active exacerbators include people who trade this organism.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of a very small programme is to incorporate it into the general rate.

Effects of not intervening

Central Government is responsible for the continued response for managing NIPR pests nationally. Should that situation change and the pests remain in New Zealand, there is some risk this pest will re-appear in the region and cause adverse effects on the environment and/or economic production.

Rationale

Council involvement in the NIPR programme under the Plan potentially provides for a faster and more effective incursion response than relying on Central Government alone to deal with these pests.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to achieve zero density is not considered viable. Water hyacinth is an attractive plant that has been grown in domestic gardens and some occupiers are unaware of its pest potential.

Adverse effects [Section 71(d)]

Is water hyacinth capable of causing an adverse effect on:		Comments
Economic well-being?		
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?		
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	Water hyacinth can smother waterways.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?	Yes	Water hyacinth can smother waterways.
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Weasels (southern parts of Waimea Estuary)

Preferred Option: Site-led

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

Programme Options	Site-led	Not in RPMP
Objective	Over the duration of this Plan, eradicate, progressively or sustainably control the pests listed in the Site-led Programme to eliminate or minimise their adverse effects.	None
Intermediate outcome	That the pest, or an organism being spread by the pest, that is capable of causing damage to a place, is excluded or eradicated from that place, or is contained, reduced, or controlled within the place to an extent that protects the values of that place.	None
Technical and operational risks	<p>Moderate</p> <p>Weasels are the smallest of the mustelids in New Zealand and considered to be the world's smallest carnivore. They are present in low numbers in the region in gardens, fernland and scrub. They prey mainly on mice, as well as lizards, birds' eggs, small birds, weta and other invertebrates. The widespread distribution of weasels and the difficulty in controlling them with current technology means that it is unlikely that their geographic distribution over most of the region can be reduced. However, intensive trapping within this part of the Waimea Estuary has reduced their numbers to very low levels approaching zero density, and this will need to be continued to maintain these very low levels.</p>	None

The risk that the option cannot be implemented and of non-compliance	Low	None
The risk that compliance with other legislation will adversely affect implementation of the option	Low	None
The risk that public or political concerns will adversely affect implementation of the option	Low	None
Other material risks	None identified	None

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

Site-led: Low

The risk of not achieving and maintaining the Site-led objective of managing weasels at close to zero density within the next 10 years is rated as low. Control of weasels on a small scale is feasible when linked with ongoing monitoring and a range of techniques.

Not in RPMP

An effective control programme could be supported by including these trapping sites in the RPMP.

Beneficiaries of the Programme [NPD 7(2)(b)]

The beneficiary from ongoing control of weasels is considered to be the whole community.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

The exacerbators are occupiers who are unable to control weasels on their land or unwilling to allow others to do so.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the minimal cost of supporting this community programme is to incorporate it into the general rate.

Effects of not intervening

This small mustelid will have a significant impact on weta, lizards, birds' eggs and small birds.

Rationale

Given the adverse effects of weasels on indigenous biodiversity and particularly on the endangered and threatened birds that nest on the margins of the Waimea Estuary and the strong community commitment to the trapping programme, it is appropriate to support this initiative by incorporating it in the Plan as a Site-led programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to achieve zero density in the areas close to sites with high biodiversity values is not considered viable. Some occupiers will be unaware of their presence and their impact or be reluctant to undertake trapping. Its inclusion in the Plan for these designated areas around the Waimea Estuary will allow pest control to be undertaken on any properties where effective control is lacking.

Adverse effects [Section 71(d)]

Are Weasels capable of causing an adverse effect on:		Comments
Economic well-being?		
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?	Yes	Weasels have contributed to a reduction in the number of skinks, lizards, small birds, weta and other invertebrates.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	They have reduced biodiversity in some natural ecosystems.
Soil resources?		
Water quality?		
Human health?	Yes	
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		

Are Weasels capable of causing an adverse effect on:		Comments
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

White-Edged Nightshade

Preferred Option: Progressive Containment

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

Programme Options	Progressive Containment	Sustained Control
Objective	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.	Over the duration of this Plan, control the pests listed in the Sustained Control Programme to minimise their adverse effects.
Intermediate outcome	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.	To provide for ongoing control of the pest, or an organism being spread by the pest, to reduce its impacts on values and its spread to other properties.
Technical and operational risks	Low White-edged nightshade is a thorny, multi-branched perennial shrub found on disturbed land, waste areas and scrubland. It can invade regenerating shrubland, bush margins and pastureland, forming dense impenetrable thickets and producing berries that are poisonous to humans and stock. It is found on the foothills above Nelson and Richmond and in the Wairoa Gorge and rated at 3 (out of 10) on the Infestation Curve.	Low White-edged nightshade is a thorny, multi-branched perennial shrub found on disturbed land, waste areas and scrubland. It can invade regenerating shrubland, bush margins and pastureland, forming dense impenetrable thickets and producing berries that are poisonous to humans and stock. It is found on the foothills above Nelson and Richmond and in the Wairoa Gorge and rated at 3 (out of 10) on the Infestation Curve.
The risk that the option cannot be implemented and of non-compliance	Low There is a low risk that inspection operations cannot be carried out annually.	Low There is a low risk that inspection operations cannot be carried out annually.
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low

Programme Options	Progressive Containment	Sustained Control
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Progressive containment: Low

The risk of not achieving the Progressive Containment objective within the next 10 years is rated as low.

Sustained control: Low

The risk of not achieving the Sustained Control objective within the next 10 years is also rated as low.

Beneficiaries of the Programme [NPD 7(2)(b)]

The prime beneficiary is considered to be the whole community, which will benefit from a reduction in its density and distribution.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Active exacerbators are occupiers who are not controlling this plant on their land and those who move soil containing seeds of this pest.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of this programme is to incorporate it into the general rate.

Effects of not intervening

This perennial shrub produces berries that are toxic to stock and humans, which are distributed by birds. It will establish on disturbed land, shrubland and low-quality pasture, forming dense impenetrable stands, and shading out desirable plants.

Rationale

As it is only found at a very limited number of sites and its density and distribution has significantly reduced, it is appropriate to include white-edged nightshade in the Progressive Containment programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to contain or reduce its geographic distribution is not considered viable. It is a thorny shrub on wasteland and scrubland that can form dense impenetrable thickets and some occupiers are reluctant to control it. Its inclusion in the Plan should ensure progressive containment can be achieved.

Adverse effects [Section 71(d)]

Is White-Edged Nightshade capable of causing an adverse effect on:		Comments
Economic well-being?	Yes	It can invade low quality pasture and form impenetrable stands.
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?		
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	It can invade regenerating scrubland and bush margins and displace native species.
Soil resources?		
Water quality?		
Human health?	Yes	The fruit is poisonous to humans.
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?	Yes	The short spines on the stems and the backs of leaves make dense stands very difficult to negotiate.
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?	Yes	The fruit is poisonous to stock.

Wild Ginger (Golden Bay – Kaiteriteri)

Preferred Option: Sustained Control

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

Programme Options	Progressive Containment	Sustained Control
Objective	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.	Over the duration of this Plan, control the pests listed in the Sustained Control Programme to minimise their adverse effects.
Intermediate outcome	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.	To provide for ongoing control of the pest, or an organism being spread by the pest, to reduce its impacts on values and its spread to other properties.
Technical and operational risks	<p>Low</p> <p>Wild ginger (both species) are non-woody perennials that produce flowering spikes that contain many seeds and massive branching rhizomes that can form a dense layer up to 1 m thick, preventing regeneration of native species. Although frost sensitive, their shade-tolerance allows them to grow under an overhead canopy. These plants have invaded indigenous forest and regenerating shrublands in coastal areas at the top of the South Island, suppressing indigenous regeneration, blocking streams and drains, and restricting access for recreation. They are rated at 3 (out of 10) on the Infestation Curve in the Golden Bay – Kaiteriteri area.</p>	<p>Low</p> <p>Wild ginger (both species) are non-woody perennials that produce flowering spikes that contain many seeds and massive branching rhizomes that can form a dense layer up to 1 m thick, preventing regeneration of native species. Although frost sensitive, their shade-tolerance allows them to grow under an overhead canopy. These plants have invaded indigenous forest and regenerating shrublands in coastal areas at the top of the South Island, suppressing indigenous regeneration, blocking streams and drains, and restricting access for recreation. They are rated at 3 (out of 10) on the Infestation Curve in the Golden Bay – Kaiteriteri area.</p>

Programme Options	Progressive Containment	Sustained Control
The risk that the option cannot be implemented and of non-compliance	Low There is a low risk that inspection and control operations cannot be carried out annually.	Low There is a low risk that the inspection and control operations cannot be carried out annually.
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Progressive containment: Low - Moderate

The risk of not achieving the Progressive Containment objective within the next 10 years is rated as low to moderate. Management of wild ginger has indicated that a reduction in its geographic distribution in the Golden Bay – Kaiteriteri area during the time of this Plan is feasible, but it is not feasible to extend Progressive Containment to manage this pest across the whole region.

Sustained control: Low

The risk of not achieving the Sustained Control objective within the next 10 years is rated as low.

Beneficiaries of the Programme [NPD 7(2)(b)]

The prime beneficiaries are considered to be occupiers in rural areas of Golden Bay – Kaiteriteri but there will be benefits to the whole community from continuing with a Sustained Control programme.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Active exacerbators are occupiers with this plant on their land who are failing to adequately control it, and those who dump garden waste containing rhizomes or seed from this plant.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of a small programme is to incorporate it into the general rate.

Effects of not intervening

This shade-tolerant perennial spreads by seed produced on flowering spikes and from fragments of its massive rhizomes. It will spread into regenerating shrubland and forest, blocking streams and restricting access.

Rationale

It is feasible to reduce the geographic distribution of wild ginger in the Golden Bay – Kaiteriteri area. To do nothing risks further damage to the environment in this area. The non-statutory (i.e. no Plan rules) status of this pest in the rest of the region make it appropriate to include it in the Sustained Control programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers in the Golden Bay – Kaiteriteri area with this pest on their land to take voluntary action to contain or reduce its geographic distribution is not considered viable. It has been planted in domestic gardens and some occupiers are unaware of its pest potential. Its inclusion in the Plan should ensure that infestation in this area are actively managed and sustained control across the region can be achieved.

Adverse effects [Section 71(d)]

Is Wild Ginger capable of causing an adverse effect on:		Comments
Economic well-being?		
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?	Yes	Wild ginger produces rhizomes that form a very dense layer, suppressing indigenous regeneration.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	Wild ginger can affect natural succession and reduce biodiversity.
Soil resources?		
Water quality?		
Human health?		

Is Wild Ginger capable of causing an adverse effect on:		Comments
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?	Yes	Wild ginger can restrict access to popular recreational areas.
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Wild Kiwifruit (including unmanaged or abandoned stands)

Preferred Option: Eradication

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

Programme Options	Eradication	Progressive Containment
Objective	Over the duration of this Plan, eradicate the pests listed in the Eradication Programme to eliminate their adverse effects.	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.
Intermediate outcome	To reduce the infestation level of the pest, or an organism being spread by the pest, to zero levels in an area in the short to medium term.	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.
Technical and operational risks	<p>Moderate</p> <p>Kiwifruit is an aggressive fast-growing deciduous woody vine that is a very productive horticultural plant. It can also establish in native and exotic forests, on shelterbelts and in gullies, forming a dense overstorey that can smother or topple the understorey trees. Unmanaged kiwifruit and abandoned stands are considered to be restricted to a small number of sites as a result of an effective campaign and are tentatively rated at 2 (out of 10) on the Infestation Curve. Wild kiwifruit is more widely distributed and is tentatively rated at 4. Its isolated sites in forested areas are difficult to locate and will depend on community advice to staff.</p>	<p>Low</p> <p>Kiwifruit is an aggressive fast-growing deciduous woody vine that is a very productive horticultural plant. It can also establish in native and exotic forests, on shelterbelts and in gullies, forming a dense overstorey that can smother or topple the understorey trees. Unmanaged kiwifruit and abandoned stands are considered to be restricted to a small number of sites as a result of an effective campaign and are tentatively rated at 2 (out of 10) on the Infestation Curve. Wild kiwifruit is more widely distributed and is tentatively rated at 4. Its isolated sites in forested areas are difficult to locate and will depend on community advice to staff.</p>

Programme Options	Eradication	Progressive Containment
The risk that the option cannot be implemented and of non-compliance	Moderate Occupiers of unmanaged sites may be reluctant to allow their vines to be removed or managed.	Moderate Occupiers of unmanaged sites may be reluctant to allow their vines to be removed or managed.
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Eradication: Moderate

The risk of not achieving eradication within the term of the Plan is rated as low, providing it continues to be intensively managed. Experience with controlling kiwifruit (unmanaged or wild) in other regions indicates that eradication is feasible with existing technology, but there will be the challenge of identifying all wild kiwifruit sites and the possibility of resistance from some occupiers of unmanaged or abandoned stands on their land.

Progressive containment: Low

The risk of not achieving the Progressive Containment objective within the next 10 years is rated as low.

Beneficiaries of the Programme [NPD 7(2)(b)]

The prime beneficiaries will be occupiers who own kiwifruit orchards but there will be benefits to the whole community.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

This plant is spread by birds eating the fruit that remains on vines and from fruit that has been dumped or dropped. Active exacerbators are occupiers with unmanaged or wild kiwifruit on their land and those who feed it to their stock or dump it and leave it uncovered.

Best mechanism to impose cost allocation 7(2)(e)

The best way of managing this programme is to incorporate it into the general rate. The direct costs of dealing with wild kiwifruit will be borne by occupiers. Kiwi Vine Health may provide assistance with treatment of abandoned or unmanaged kiwifruit.

Effects of not intervening

This deciduous woody vine produces a succulent fruit that, if left unmanaged, allows birds to spread it into gullies, shelterbelts and forests, where it will form a dense overstorey, smothering or toppling understorey trees. These stands will form a reservoir for diseases such as Psa, which devastated the gold kiwifruit in the North Island.

Rationale

The potential risk posed by the bacteria Psa in wild, unmanaged and abandoned kiwifruit stands, is a very significant one for managed kiwifruit. Although the more recent plantings are of Psa-resistant varieties, the older varieties found in wild kiwifruit (including unmanaged and abandoned stands) could be highly susceptible to Psa and provide reservoirs for infection. It is appropriate that all forms of wild kiwifruit are included in the Eradication programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to ensure its eradication is not considered viable. Wild kiwifruit are difficult to detect, but abandoned or unmanaged stands are in the wild and control and a long-term commitment are required. Some occupiers lack the incentive to destroy them and others are unaware of its pest potential. Its inclusion in the Plan should ensure its eradication can be achieved.

Adverse effects [Section 71(d)]

Is Kiwifruit (unmanaged or wild) capable of causing an adverse effect on:		Comments
Economic well-being?	Yes	Wild kiwifruit (abandoned and unmanaged) could harbour diseases that could infect commercial orchards.
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?	Yes	Wild kiwifruit can overtop and smother indigenous shrubs and trees in forests, shrublands and gullies.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	Wild kiwifruit can adversely impact on natural succession and reduce biodiversity.

Is Kiwifruit (unmanaged or wild) capable of causing an adverse effect on:		Comments
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Woolly Nightshade (Golden Bay)

Preferred Option: Sustained Control

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

Programme Options	Progressive Containment	Sustained Control
Objective	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects	Over the duration of this Plan, control the pests listed in the Sustained Control Programme to minimise their adverse effects.
Intermediate outcome	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.	To provide for ongoing control of the pest, or an organism being spread by the pest, to reduce its impacts on values and its spread to other properties.
Technical and operational risks	<p>Low</p> <p>Woolly nightshade is a shrub or small tree, capable of invading disturbed land, waste areas, reverting pastureland, scrubland, coastal areas and sand dunes. It forms dense thickets with colourful purple flowers that produce yellow berries that are distributed by pigeons and other larger birds. It inhibits the growth of understorey vegetation. Dense stands occur on the hills behind Nelson and Richmond and it occurs in Golden Bay. As a new pest, it is tentatively rated at 4 (out of 10) on the Infestation Curve.</p>	<p>Low</p> <p>Woolly nightshade is a shrub or small tree, capable of invading disturbed land, waste areas, reverting pastureland, scrubland, coastal areas and sand dunes. It forms dense thickets with colourful purple flowers that produce yellow berries that are distributed by pigeons and other larger birds. It inhibits the growth of understorey vegetation. Dense stands occur on the hills behind Nelson and Richmond and it occurs in Golden Bay. As a new pest, it is tentatively rated at 4 (out of 10) on the Infestation Curve.</p>
The risk that the option cannot be implemented and of non-compliance	<p>Moderate</p> <p>There is a risk of limited compliance as some occupiers, particularly those with large infestations, will lack the resources and the commitment to deal effectively with this pest.</p>	<p>Low</p> <p>There is a low risk that inspection operations cannot be carried out annually</p>

Programme Options	Progressive Containment	Sustained Control
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Progressive containment: Moderate

The risk of not achieving the Progressive Containment objective within the next 10 years is rated as moderate.

Sustained control: Low

The risk of not achieving the Sustained Control objective within the next 10 years is rated as low.

Beneficiaries of the Programme [NPD 7(2)(b)]

The prime beneficiary is considered to be the whole community, which will benefit from a reduction in its density and distribution.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Active exacerbators are primarily occupiers who are not controlling this plant on their land.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of this programme is to incorporate it into the general rate.

Effects of not intervening

This pest will establish on disturbed land, shrubland and low-quality pasture, from berries that are distributed by birds. It will form dense stands that inhibit natural regeneration as a result of its allelopathic properties and restrict access. Its berries are toxic to humans and stock and the hairs from the leaves irritate eye, nose, skin and throat.

Rationale

It is desirable to reduce the geographic distribution of this pest to minimise the effects of its toxic berries and its irritating hairs, but limitations on information reduce the confidence that this species can achieve the objectives of a Progressive Containment programme in 10 years. It is therefore prudent to manage woolly nightshade under a Sustained Control programme while more information is being collected.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land in Golden Bay to take voluntary action to contain or reduce its geographic distribution is not considered viable. It is a large shrub on wasteland and scrubland that can form dense stands and some occupiers are reluctant to control it. Its inclusion in the Plan should ensure sustained control can be achieved in this area.

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Adverse effects [Section 71(d)]

Is Woolly Nightshade capable of causing an adverse effect on:		Comments
Economic well-being?	Yes	It can invade low quality pasture, forming dense stands that produce berries that are toxic to humans and cattle.
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?	Yes	It is allelopathic, producing a toxin that inhibits plant regeneration.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	It can invade regenerating scrubland and bush margins, displacing native species.
Soil resources?		
Water quality?		
Human health?	Yes	The berries are poisonous to humans.
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?	Yes	The dense stands restrict access and produce fine hairs on the leaves that irritate skin, eyes, nose and throat.

Is Woolly Nightshade capable of causing an adverse effect on:		Comments
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?	Yes	The berries are poisonous to stock.

Yellow Bristle Grass (Golden Bay and Upper Buller)

Preferred Option: Sustained Control

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

Programme Options	Progressive Containment	Sustained Control
Objective	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.	Over the duration of this Plan, control the pests listed in the Sustained Control Programme to minimise their adverse effects.
Intermediate outcome	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.	To provide for ongoing control of the pest, or an organism being spread by the pest, to reduce its impacts on values and its spread to other properties.

Programme Options	Progressive Containment	Sustained Control
<p>Technical and operational risks</p>	<p>Moderate</p> <p>Yellow bristle grass is an aggressive annual-seeding plant which spreads rapidly through pasture, reducing pasture quality and causing production losses. It has low palatability and this leads to rapid re-infestation and an opening for other weeds. The barbed seed is transported in dung, fur and feathers, as well as by water, in soil, and as contaminants of hay and maize. It has been recorded along roadsides in Golden Bay and in the lower Moutere area between Wakefield and Motueka. Roadside mowing will have played a major role in spreading it. Mowing before it starts seeding is critical and good wash-down facilities are needed. A dense grass cover provides an effective barrier but it rapidly spreads onto bare ground where grass has been sprayed. It is considered a difficult pest to locate and spray. Weeds alongside roadsides are the responsibility of the roading authority.</p>	<p>Low</p> <p>Yellow bristle grass is an aggressive annual-seeding plant which spreads rapidly through pasture, reducing pasture quality and causing production losses. It has low palatability and this leads to rapid re-infestation and an opening for other weeds. The barbed seed is transported in dung, fur and feathers, as well as by water, in soil, and as contaminants of hay and maize. It has been recorded along roadsides in Golden Bay and in the lower Moutere area between Wakefield and Motueka. Roadside mowing will have played a major role in spreading it. Mowing before it starts seeding is critical and good wash-down facilities are needed. A dense grass cover provides an effective barrier but it rapidly spreads onto bare ground where grass has been sprayed. It is considered a difficult pest to locate and spray. Weeds alongside roadsides are the responsibility of the roading authority.</p>
<p>The risk that the option cannot be implemented and of non-compliance</p>	<p>Low</p> <p>There is a low risk that inspection cannot be carried out annually.</p>	<p>Low</p> <p>There is a low risk that inspection cannot be carried out annually.</p>
<p>The risk that compliance with other legislation will adversely affect implementation of the option</p>	<p>Low</p>	<p>Low</p>

Programme Options	Progressive Containment	Sustained Control
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Progressive containment: Moderate

Yellow bristle grass has a limited distribution in this region at present and it should be possible to slow its spread if mowing is undertaken before seeding and/or the mowers are cleaned before moving to areas that are free from this pest. The funding of this work by roading authorities and the co-operation of mowing contractors will be essential. The risk of not achieving the Progressive Containment objective of containing its geographical distribution during the term of this Plan is rated as moderate.

Sustained control: Low

The risk of not achieving the Sustained Control objective within the next 10 years is rated as low.

Beneficiaries of the Programme [NPD 7(2)(b)]

The prime beneficiaries are considered to be occupiers in rural areas but there will be benefits to the whole community from a Sustained Control programme.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Active exacerbators are occupiers with this plant on their land who are failing to adequately control it. Roading authorities are responsible for controlling weeds along roadsides.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of a small programme is to incorporate it into the general rate.

Effects of not intervening

This aggressive unpalatable grass produces barbed seeds that are transported by animals, water, soil, hay, maize and machinery. It will establish in pasture, on open ground and along roadsides, reducing pasture quality and lowering its productivity.

Rationale

As it is considered feasible to maintain the currently limited geographic distribution of yellow bristle grass, it is appropriate to include this pest in the Sustained Control programme.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to reduce its impact on values and its spread to other properties is not considered viable. It currently has a limited distribution in this area but can be easily spread. Its inclusion in the Plan should ensure sustained control can be achieved in this area.

Adverse effects [Section 71(d)]

Is Yellow Bristle Grass capable of causing an adverse effect on:		Comments
Economic well-being?	Yes	It can quickly spread through productive grassland reducing pasture quality and causing production losses. Roadside mowers appear to have been one of the principal sources of spread elsewhere in the region.
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?		
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?		
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Quantitative Analysis – Assumptions and Results

Area infested (ha): 200
Maximum area that could become infested (ha) 40,000
Rate of spread (r): 0.24968
Time for infestation to reach 90% of maximum (years):30
Earnings (\$/ha): \$2154
Reduction in earnings caused by pest (%): 20
Discount rate (%): 6

Programme Type: Sustained Control.

Annual Programme Implementation Cost (inclusive of occupier and council cost): \$1,000,000

Number of years for this simulation: 30

Net Present Value (NPV) (\$): \$2,879,558
Internal Rate of Return (IRR) (%): 7.8065

A positive NPV indicates Sustained Control is a cost beneficial scenario. The cost of doing nothing is estimated to be \$45,761,896 of lost economic opportunity.

Yellow Flag

Preferred Option: Sustained Control

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

Programme Options	Progressive Containment	Progressive Containment
Objective	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.	Over the duration of this Plan, prevent the further spread of yellow flag to reduce its adverse effects on the environment.
Intermediate outcome	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.	To reduce the impacts and spread of yellow flag.
Technical and operational risks	<p>Low</p> <p>Yellow flag is a robust aquatic perennial that grows on swampy ground and the margins of water bodies, salt marsh, and wet sandy areas. It is an internationally renowned weed of wetlands, growing up to 2 m high, and forming mats of dense rhizomes that are toxic to stock and can overtop native species. These can cause flooding and change water levels in swamps. It seeds prolifically and the seed is poisonous to stock and birds. It is assessed at 3 (out of 10) on the Infestation Curve and poses a threat to wetlands in the Tasman-Nelson region.</p>	<p>Low</p> <p>Yellow flag is a robust aquatic perennial that grows on swampy ground and the margins of water bodies, salt marsh, and wet sandy areas. It is an internationally renowned weed of wetlands, growing up to 2 m high, and forming mats of dense rhizomes that are toxic to stock and can overtop native species. These can cause flooding and change water levels in swamps. It seeds prolifically and the seed is poisonous to stock and birds. It is assessed at 3 (out of 10) on the Infestation Curve and poses a threat to wetlands in the Tasman-Nelson region.</p>

Programme Options	Progressive Containment	Progressive Containment
The risk that the option cannot be implemented and of non-compliance	<p>Low to Moderate</p> <p>It is a difficult plant to control as it can regrow from rhizomes and repeated treatment will be necessary.</p> <p>Information on distribution is patchy.</p>	<p>Low</p> <p>It is a difficult plant to control as it can regrow from rhizomes and repeated treatment will be necessary.</p> <p>While information on distribution is patchy, currently known sites can be contained and reduced.</p>
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Progressive containment: Low to moderate

The risk of not achieving the Progressive Containment objective within the next 10 years is rated as low to moderate due to lack of information on full distribution. Repeat treatments will eventually reduce its geographic distribution.

Sustained Control: Low

The risk of not achieving the Sustained Control objective within the next 10 years is rated as low, as repeat treatments will halt its spread and may eventually reduce its geographic distribution.

Beneficiaries of the Programme [NPD 7(2)(b)]

The prime beneficiaries will be occupiers in rural areas, and the regional community through the protection of wetland and other environmental values.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Active exacerbators are occupiers with this plant on their land who are unwilling or unable to control it.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of managing this programme is to incorporate it into the general rate.

Effects of not intervening

This tall evergreen iris spreads from seed produced on flowering spikes and from fragments of its massive rhizomes that are carried in water. It will establish on river margins and wetlands, smothering natural regeneration, blocking streams and restricting access.

Rationale

There is uncertainty about the number and location of sites with this pest and the sites with difficult access make eradication unlikely, and reduces the certainty of achieving Progressive Containment within the 10-year time frame. It is therefore prudent to manage yellow flag under a Sustained Control programme while more information is being collected.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to contain or reduce its geographic distribution is not considered viable. It is an attractive plant that has been cultivated in domestic gardens, it can be difficult to control, and some occupiers are unaware of its pest potential. Its inclusion in the Plan should ensure sustained control can be achieved.

Adverse effects [Section 71(d)]

Is Yellow Flag capable of causing an adverse effect on:		Comments
Economic well-being?	Yes	The rhizomes pose a risk to stock health.
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?	Yes	It is a significant wetland weed that can dominate wetland margins and suppress native species.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	It has the ability to become the dominant vegetation on the margins of wetlands and drains, replacing native wetland plants and degrading habitat for aquatic fauna.
Soil resources?		
Water quality?		

Human health?	Yes	The plant resin can cause skin irritation and the seeds are poisonous.
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?	Yes	The dense rhizome mats can restrict access for fishing and swimming.
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?	Yes	The rhizomes are poisonous to stock and the seed is poisonous to birds.

Yellow Jasmine

Preferred Option: Sustained Control

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

Programme Options	Progressive Containment	Sustained Control
Objective	Over the duration of this Plan, reduce the geographic distribution of the pests listed in the Progressive Containment Programme to reduce their adverse effects.	Over the duration of this Plan, prevent the further spread of yellow jasmine to reduce its adverse effects on the environment.
Intermediate outcome	To contain or reduce the geographic distribution of the pest, or an organism being spread by the pest, in an area in the short to medium term.	To reduce the impacts and spread of yellow jasmine.
Technical and operational risks	<p>Low</p> <p>Yellow jasmine is an evergreen shrub up to 2.5 m tall that tolerates a range of site conditions but prefers open forest, shrubland, coastal sites and limestone outcrops. It has a scrambling habit, with stems that root on contact with soil, and produces black berries that are eaten by birds. As it is a new pest in the Plan, there is little information on the distribution of yellow jasmine. It is tentatively rated at 4 (out of 10) on the Infestation Curve.</p>	<p>Low</p> <p>Yellow jasmine is an evergreen shrub up to 2.5 m tall that tolerates a range of site conditions but prefers open forest, shrubland, coastal sites and limestone outcrops. It has a scrambling habit, with stems that root on contact with soil, and produces black berries that are eaten by birds. As it is a new pest in the Plan, there is little information on the distribution of yellow jasmine. It is tentatively rated at 4 (out of 10) on the Infestation Curve.</p>
The risk that the option cannot be implemented and of non-compliance	<p>Low to moderate</p> <p>It is a difficult plant to control and its presence on steep coastal cliffs makes control a challenging and expensive option with current technology</p> <p>A lack of information on the full range of sites reduces the feasibility of achieving progressive containment within 10 years.</p>	<p>Low</p> <p>It is a difficult plant to control and its presence on steep coastal cliffs makes eradication and containment a challenging and expensive option with current technology. On easier terrain with better access, containment and sustained control is feasible.</p>

Programme Options	Progressive Containment	Sustained Control
The risk that compliance with other legislation will adversely affect implementation of the option	Low	Low
The risk that public or political concerns will adversely affect implementation of the option	Low	Low
Other material risks	None identified	None identified

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

Progressive containment: Low to moderate

The risk of not achieving the Progressive Containment objective within the next 10 years is rated as low to moderate due to lack of information on full distribution. Repeat treatments will eventually reduce its geographic distribution.

Sustained Control: Low

The risk of not achieving the Sustained Control objective within the next 10 years is rated as low, as repeat treatments will halt its spread and may eventually reduce its geographic distribution.

Beneficiaries of the Programme [NPD 7(2)(b)]

The prime beneficiaries will be occupiers in rural areas and the regional community through the protection of environmental values.

Exacerbators of the Programme [NPD 7(2)(c)] (those who contribute to the creation, continuance or exacerbation of the problem)

Active exacerbators are occupiers with this plant on their land who are unwilling or unable to control it.

Best mechanism to impose cost allocation 7(2)(e)

The simplest and most efficient method of allocating the cost of managing this programme is to incorporate it into the general rate.

Effects of not intervening

This shrub grows quickly on a wide range of sites, forming dense bushes. It spreads from seeds in berries that are distributed by birds and from stems that root on contact with soil in

dumped rubbish. It invades coastline, limestone hill country and wasteland, smothering established vegetation and preventing natural regeneration.

Rationale

There is uncertainty about the number and location of sites with this pest and the sites with difficult access make eradication unlikely, and reduces the certainty of achieving Progressive Containment within the 10-year time frame. It is therefore prudent to manage yellow jasmine under a Sustained Control programme while more information is being collected.

Other matters raised in the revised Biosecurity Act

Reasons for not relying on voluntary actions [Section 70(2)(c)(vi)]

Relying on all occupiers with this pest on their land to take voluntary action to contain or reduce its geographic distribution is not considered viable. It is an attractive plant that has been cultivated in domestic gardens, it can be difficult to control, and some occupiers are unaware of its pest potential. Its inclusion in the Plan should ensure sustained control can be achieved.

Adverse effects [Section 71(d)]

Is Yellow Jasmine capable of causing an adverse effect on:		Comments
Economic well-being?		
The viability of threatened species or organisms?		
The survival and distribution of indigenous plants or animals?	Yes	It is a fast-growing aggressive evergreen shrub up to 2.5 m tall that that is capable of smothering low-growing plants.
The sustainability of natural and developed ecosystems, ecological processes and biological diversity?	Yes	It can become the dominant vegetation on limestone, coastal sites, and forest margins.
Soil resources?		
Water quality?		
Human health?		
Social and cultural well-being?		
The enjoyment of the recreational value of the natural environment?		

Is Yellow Jasmine capable of causing an adverse effect on:		Comments
The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu and taonga?		
Animal welfare?		

Appendix 1: Determining the level of costs and benefits analysis to be applied [NPD 6(1)].

Section 6(1) of NPI specifies four criteria to be considered when determining the level of cost and benefits analysis. Guidance on how to set levels for each of the criteria is provided by *Meeting the requirements of the National Policy Direction for Pest Management 2015* (Version 1.0) produced by the Ministry for Primary Industries (MPI; 2015). The following assessment criteria have been derived from these sources:

Assessment criteria

1 Significance of the pest or the proposed measures

- **High** – High total costs **or** strongly opposed community views **or** significant community interest
- **Medium** – Moderate total costs **or** some opposed community views **or** moderate community interest
- **Low** – Low total costs **or** limited community interest

2 Relationship between costs and benefits

- **High** – costs are likely to be similar to the benefits
- **Medium** – costs are likely to be less than the benefits
- **Low** – costs are likely to be much lower than the benefits

3 Uncertainty of the impact of the pest and the effectiveness of the methods of control

- **High uncertainty** – Little known about its impacts **and** the effectiveness of control measures
- **Medium uncertainty** – Some information available on its impacts **and** on the effectiveness of control measures
- **Low uncertainty** – Plenty of information on its impacts **and** effectiveness of control measures

4 Level and quality of available data

- **High** – High quality data on distribution **and** well-established costs and impacts
- **Medium** – Limited information on distribution **and** on costs and impacts
- **Low** – Little information available on distribution **and** costs and impacts

The level of Cost Benefit Analysis that is required to be undertaken is determined by the combination of ratings for these different categories where:

- A **High** level of CBA is needed when three of the four criteria listed above (Criteria 1-4) are assessed as high.
- A **Low** level of CBA can be undertaken when none of the first three criteria (Criteria 1-3) are ranked high and no more than two are ranked as medium.
- A **Medium** level of CBA is required for all other combinations.

The results of the application of the NPD Section 6(1) criteria are presented in Table 1 below.

Table 1: Assessment of the level of cost and benefits analysis (CBA) to be applied to each pest in the Tasman-Nelson Pest Management Plan

Pest	6(1)(a) Uncertainty of impacts and effectiveness of methods	6(1)(b) Likely significance or controversy of the pest or proposed measures or cost of measures	6(1)(c) Likely costs relative to likely benefits	6(1)(d) Level and quality of data	Level of CBA warranted
African Feathergrass	Low - the environmental and production impact of the species is known. Control measures known.	Low - was a subject in the Proposed Plan and there was support for control of this species. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Low - the protection of production and environmental benefits are likely to significantly outweigh costs. There are no occupier costs for this TDC-led programme.	High - the total extent assumption is based on good existing information about the extent of the pest.	Low
Argentine and Darwin's ants (exclusion sites)	Low - the environmental impacts are well known. Possibly some risk to success in urban areas if occupier control is relied on.	Medium - public already aware of the pest, but experience shows there is resistance to adoption / participation.	Medium - the environmental benefits are likely to outweigh the costs in most but not all scenarios.	Medium to high - delimitation surveys for known sites, but new sites not monitored for, so would need to check infestations relative to site of interest.	Medium
Banana Passion vine (Golden Bay)	Low - environmental impacts well understood. The limitations of control methods are well understood and can be factored into the total cost of control.	Low - was a subject in the Proposed Plan and there was support for control of this species. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Low - the original CBA shows benefits outweigh costs for sustained control and progressive containment programmes. Occupier costs were considered in original CBA.	High - the total extent assumption is based on good existing information about the extent of the pest in Golden Bay.	Low
Banana Passion vine (Upper Riwaka)	Low - environmental impacts well understood. The limitations of control methods are well understood and can be factored into the total cost of control.	Low - was a subject in the Proposed Plan and there was support for control of this species. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Low - the original CBA shows benefits outweigh costs for sustained control and progressive containment programmes. Occupier costs were considered in original CBA.	Medium - the total extent assumption is based on good existing information though the pest may be more widespread than realised in Riwaka.	Low
Bathurst Bur	Low - the production impact of the species is known. Control measures known.	Low - was a subject in the Proposed Plan and there was support for control of this species. No new impositions posed on landowners	Low - the protection of production benefits is likely to significantly outweigh costs. There are no occupier costs for this TDC-led programme.	High - the total extent assumption is based on good existing information about the extent of the pest.	Low

Pest	6(1)(a) Uncertainty of impacts and effectiveness of methods	6(1)(b) Likely significance or controversy of the pest or proposed measures or cost of measures	6(1)(c) Likely costs relative to likely benefits	6(1)(d) Level and quality of data	Level of CBA warranted
		(e.g. no fundamental change to the rules).			
Blackberry	Low - the production impacts are well known.	Low - was a subject in the Proposed Plan and there was support for control of this species. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Low - the original qualitative CBA adequately describes the costs and benefits in qualitative terms. Occupier costs are not considered significant.	High - the pest is known to be throughout the region	Low
Black spot	Low - the production impacts are well known.	Low - was a subject in the Proposed Plan and there was support for control of this species. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Low - the original qualitative CBA adequately describes the costs and benefits in qualitative terms. Occupier costs are not considered significant as control is sustained through normal crop management practices - i.e. there is very little additional cost imposed by the Plan.	High - the pest is known to be throughout the region	Low
Bomarea	Low - environmental impacts well understood. The limitations of control methods are well understood and can be factored into the total cost of control.	Low - was a subject in the Proposed Plan and there was support for control of this species. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Low to medium - the original CBA shows benefits outweigh costs for this type of programme. The reconsideration of the containment area size of infestation and occupier costs may have increased cost effect.	Medium - the original total extent assumption is based on existing observations at scattered sites. Mapping the pest is very assumption based.	Low
Boneseed (outside Port Hills)	Low - the environmental and production impact of the species is known. Control measures known.	Low - public are generally aware of the pest nature of this species.	Low to medium - the environmental benefits are likely to outweigh the costs on most scenarios except where sites are steep and inaccessible.	High - location of infestations relatively well known. Some further monitoring would be needed to improve knowledge of full distribution	Low

Pest	6(1)(a) Uncertainty of impacts and effectiveness of methods	6(1)(b) Likely significance or controversy of the pest or proposed measures or cost of measures	6(1)(c) Likely costs relative to likely benefits	6(1)(d) Level and quality of data	Level of CBA warranted
Boxthorn	Low - the environmental and production impact of the species is known. Control measures known.	Low - was a subject in the Proposed Plan and there was support for control of this species. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Low - the protection of production and environmental benefits are likely to significantly outweigh costs. There are no occupier costs for this TDC-led programme.	High - the total extent assumption is based on good existing information about the extent of the pest.	Low
Broom (Howard-St Arnaud)	Low - production and environmental impacts well understood	Low - the pest is subject of the Proposed Plan and there was little contention on its inclusion.	High - the original quantitative CBA showed a negative rate of return and overlooked the of control for landowners.	High - the location of this pest in the interest area can be readily identified through monitoring. The original CBA was focused on protecting areas inside the area of interest (which is effectively progressive containment under the NPD), but the means of achievement requires ongoing commitment (sustained control) in real terms.	Medium
Broom (outside Howard - St Arnaud)	Low - production impacts well understood, as are control measures.	Low to medium - was a subject in the Proposed Plan and there was support for control of this species. A potential increased cost imposition is placed on Crown agencies who would be bound by the rule.	Medium - the benefits are likely to outweigh the costs, but the change increases the assumed landowner costs.	High - the pest is known to be throughout the region in patchy infestations	Low
Brushtail Possum (Waimea Estuary)	Low - the environmental and production impact of the species is known. Control measures known.	Low - was a subject in the Proposed Plan and there was support for control of this species in this context. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Low - the protection of environmental benefits is likely to significantly outweigh costs. There are no occupier costs for this TDC-led programme.	High - the total extent assumption is based on good existing information about the extent of the pest in the site.	Low
Cape Tulip	Low - the production impact of the species is known. Control measures known.	Low - public are generally aware of the pest nature of these species.	Low - the production benefits of keeping this pest out of the region is more than likely to outweigh the minor surveillance cost.	High - location of areas most prone to invasion are well known.	Low

Pest	6(1)(a) Uncertainty of impacts and effectiveness of methods	6(1)(b) Likely significance or controversy of the pest or proposed measures or cost of measures	6(1)(c) Likely costs relative to likely benefits	6(1)(d) Level and quality of data	Level of CBA warranted
Cathedral Bells	Low - the environmental impact of the species is known. Control measures known.	Low - was a subject in the Proposed Plan and there was support for control of this species. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Low - the protection of environmental benefits is likely to significantly outweigh costs. There are no occupier costs for this TDC-led programme.	High - the total extent assumption is based on good existing information about the extent of the pest.	Low
Chilean Needle Grass	Medium - the economic effects are well known. The difficulties managing this pest is known but there is some uncertainty about the efficacy of control measures.	Low - was a subject in the Proposed Plan and there was no opposition to the exclusion of this species. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Low - the economic benefits of keeping this pest out of the region are more than likely to outweigh the minor surveillance cost.	High - location of areas most prone to re- infestation are well known.	Low
Chinese pennisetum	Low - environmental impacts well understood. The limitations of control methods are well understood and can be factored into the total cost of control.	Low - was a subject in the Proposed Plan and there was support for control of this species. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Low to medium - the original CBA shows benefits outweigh costs for this type of programme. The reconsideration of the containment area size of infestation and occupier costs may have increased cost effect.	Medium - the original total extent assumption is based on existing observations at scattered sites. Mapping the pest is very assumption based.	Low
Chocolate vine	Low - environmental impacts well understood. The limitations of control methods are well understood and can be factored into the total cost of control.	Low - was a subject in the Proposed Plan and there was support for control of this species. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Low - the original CBA shows benefits outweigh costs. Change from sustained control from progressive containment may reduce benefits but there is also a reduction in control costs.	Medium - assumption of extent is based on existing observations at scattered sites, but there is no targeted monitoring data that best ascertains a limited control area.	Low
Climbing Asparagus (eastern Golden Bay)	Low - environmental impacts well understood. The limitations of control methods are well understood and can be factored into the total cost of control.	Low - was a subject in the Proposed Plan and there was support for control of this species. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Low to medium - the original CBA shows benefits outweigh costs for this type of programme. Extension of control area without increased cost should improve the rate of return. Occupier costs may be significant.	High to medium - the total extent assumption is based on good existing information about the extent of the pest.	Low

Pest	6(1)(a) Uncertainty of impacts and effectiveness of methods	6(1)(b) Likely significance or controversy of the pest or proposed measures or cost of measures	6(1)(c) Likely costs relative to likely benefits	6(1)(d) Level and quality of data	Level of CBA warranted
Climbing Spindleberry	Low - the environmental and production impact of the species is known. Control measures known.	Low - was a subject in the Proposed Plan and there was support for control of this species. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Low - the protection of production and environmental benefits are likely to significantly outweigh costs. There are no occupier costs for this TDC-led programme.	High - the total extent assumption is based on good existing information about the extent of the pest.	Low
Codling moth	Low - the production impacts are well known.	Low - was a subject in the Proposed Plan and there was support for control of this species. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Low - the original qualitative CBA adequately describes the costs and benefits in qualitative terms. Occupier costs are not considered significant as control is sustained through normal crop management practices - i.e. there is very little additional cost imposed by the Plan.	High - the pest is known to be throughout the region	Low
Cotoneaster species (Abel Tasman)	Low - the environmental impact of the species is known. Control measures known.	Low - a very high level of acceptance indicated by submissions. Most opposition can be resolved through collaboration.	Low - the increased protection to the National Park from these invasive weeds is more than likely to outweigh the additional cost.	Medium - area of attention very specific, but sizes of infestation not well known.	Low
Darwin's Barberry (St Arnaud Village)	Low - the environmental impact of the species is known. Control measures known.	Low - was a subject in the Proposed Plan and there was support for control of this species in this context. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Low - the protection of environmental benefits is likely to significantly outweigh costs. There are no occupier costs for this TDC-led programme.	Medium - possible that not all infestations within the site have been identified yet.	Low
Douglas Fir (wildings only - Abel Tasman)	Low - the environmental impact of the species is known. Control measures known.	Low - a very high level of acceptance indicated by submissions. Most opposition can be resolved through collaboration.	Low - the increased protection to the National Park from these invasive weeds is more than likely to outweigh the additional cost.	Medium - area of attention very specific, but sizes of infestation not well known.	Low

Pest	6(1)(a) Uncertainty of impacts and effectiveness of methods	6(1)(b) Likely significance or controversy of the pest or proposed measures or cost of measures	6(1)(c) Likely costs relative to likely benefits	6(1)(d) Level and quality of data	Level of CBA warranted
Egeria	Low - the environmental impact of the species is known. Control measures known.	Low - was a subject in the Proposed Plan and there was support for control of this species. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Low - the protection of environmental benefits is likely to significantly outweigh costs. There are no occupier costs for this TDC-led programme.	High - the total extent assumption is based on good existing information about the extent of the pest.	Low
Entire Marshwort	Low - the environmental impact of the species is known. Control measures known.	Low - was a subject in the Proposed Plan and there was support for control of this species. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Low - the protection of environmental benefits is likely to significantly outweigh costs. There are no occupier costs for this TDC-led programme.	High - the total extent assumption is based on good existing information about the extent of the pest.	Low
European canker	Low - the production impacts are well known.	Low - was a subject in the Proposed Plan and there was support for control of this species. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Low - the original qualitative CBA adequately describes the costs and benefits in qualitative terms. Occupier costs are not considered significant as control is sustained through normal crop management practices - i.e. there is very little additional cost imposed by the Plan.	High - the pest is known to be throughout the region	Low
European Holly (Abel Tasman national Park and environs, and St Arnaud Village)	Low - the environmental impact of the species is known. Control measures known.	Low - a very high level of acceptance indicated by submissions. Most opposition can be resolved through collaboration.	Low - the increased protection to the Nelson Lakes and Abel Tasman National Parks from this invasive weed is more than likely to outweigh the additional cost.	Medium to High - area of attention very specific. Sizes of infestation not well known in Abel Tasman.	Low
Feral Cats (Waimea Estuary)	Low - the environmental impact of the species is known. Control measures known.	Low - was a subject in the Proposed Plan and there was support for control of this species in this context. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Low - the protection of environmental benefits is likely to significantly outweigh costs. There are no occupier costs for this TDC-led programme.	Medium - the size of the population within the site is unknown but can be reduced with existing control tools.	Low

Pest	6(1)(a) Uncertainty of impacts and effectiveness of methods	6(1)(b) Likely significance or controversy of the pest or proposed measures or cost of measures	6(1)(c) Likely costs relative to likely benefits	6(1)(d) Level and quality of data	Level of CBA warranted
Feral Rabbits (Golden Bay)	Low - the environmental and production impact of the species is known. Control measures known.	Low - was a subject in the Proposed Plan and there was support for control of this species in this context. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Low - the protection of environmental benefits is likely to significantly outweigh costs. There are no occupier costs for this TDC-led programme.	Medium – locations within the site are not fixed knowns, but known to be in very low numbers.	Low
Ferrets (Waimea Estuary)	Low - the environmental impact of the species is known. Control measures known.	Low - was a subject in the Proposed Plan and there was support for control of this species in this context. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Low - the protection of environmental benefits is likely to significantly outweigh costs. There are no occupier costs for this TDC-led programme.	Medium – the size of the population within the site is unknown but can be reduced with existing control tools.	Low
Fireblight	Low - the production impacts are well known.	Low - was a subject in the Proposed Plan and there was support for control of this species. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Low - the original qualitative CBA adequately describes the costs and benefits in qualitative terms. Occupier costs are not considered significant as control is sustained through normal crop management practices - i.e. there is very little additional cost imposed by the Plan.	High - the pest is known to be throughout the region	Low
Gambusia	Low - the environmental impact of the species is known. Control measures known.	Low - was a subject in the Proposed Plan and there was support for control of this species. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Low - the protection of environmental benefits is likely to significantly outweigh costs. There are no occupier costs for this TDC-led programme.	High - the total extent assumption is based on good existing information about the extent of the pest.	Low
Giant buttercup	Low - the production impacts are well known.	Low - was a subject in the Proposed Plan and there was support for control of this species. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Low - the original qualitative CBA adequately describes the costs and benefits in qualitative terms. Occupier costs are not considered significant as control is sustained through normal pasture management practices - i.e. there	High - the pest is known to be throughout the region	Low

Pest	6(1)(a) Uncertainty of impacts and effectiveness of methods	6(1)(b) Likely significance or controversy of the pest or proposed measures or cost of measures	6(1)(c) Likely costs relative to likely benefits	6(1)(d) Level and quality of data	Level of CBA warranted
			is very little additional cost imposed by the Plan.		
Gorse (Howard-St Arnaud)	Low - production and environmental impacts well understood	Low - the pest is subject of the Proposed Plan and there was little contention on its inclusion.	High - the original quantitative CBA showed a negative rate of return and overlooked the of control for landowners.	High - the location of this pest in the interest area can be readily identified through monitoring. The original CBA was focused on protecting areas inside the area of interest (which is effectively progressive containment under the NPD), but the means of achievement requires ongoing commitment (sustained control) in real terms.	Medium
Gorse (outside Howard - St Arnaud)	Low - production impacts well understood, as are control measures.	Low to medium - was a subject in the Proposed Plan and there was support for control of this species. A potential increased cost imposition is placed on Crown agencies who would be bound by the rule.	Medium - the benefits are likely to outweigh the costs, but the change increases the assumed landowner costs.	High - the pest is known to be throughout the region in patchy infestations	Low
Greater Bindweed (St Arnaud Village)	Low - the environmental impact of the species is known. Control measures known.	Low - was a subject in the Proposed Plan and there was no opposition for control of this species in this context. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Low - the protection of environmental benefits is likely to significantly outweigh costs. There are no occupier costs for this TDC-led programme.	High - the total extent assumption is based on good existing information about the extent of the pest in the site.	Low
Gunnera	Low - environmental impacts well understood. The limitations of control methods are well understood and can be factored into the total cost of control.	Low - was a subject in the Proposed Plan and there was no opposition for control of this species. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Low - the original CBA shows benefits outweigh costs. Change from sustained control from progressive containment may reduce benefits but there is also a reduction in control costs.	Medium - assumption of extent is based on existing observations at scattered sites, but there is no targeted monitoring data that best ascertains a limited control area.	Low

Pest	6(1)(a) Uncertainty of impacts and effectiveness of methods	6(1)(b) Likely significance or controversy of the pest or proposed measures or cost of measures	6(1)(c) Likely costs relative to likely benefits	6(1)(d) Level and quality of data	Level of CBA warranted
Himalayan Balsam	Low - the environmental impact of the species is known. Control measures known.	Low - was a subject in the Proposed Plan and there was no opposition for control of this species. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Low - the protection of environmental benefits is likely to significantly outweigh costs. There are no occupier costs for this TDC-led programme.	Medium - assumption of extent is based on existing observations at scattered sites, but there is no targeted monitoring data that best ascertains a limited control area.	Low
Hornwort	Low - the environmental impact of the species is known. Control measures known.	Low - public are generally aware of the pest nature of these species.	Low - the environmental benefits of keeping this pest out of the region are more than likely to outweigh the minor surveillance cost.	High - location of areas most prone to invasion are well known.	Low
Indian Myna	Low - the environmental and production impact of the species is known. Control measures known.	Low - public are generally aware of the pest nature of these species, or are likely to be ambivalent.	Low - the environmental and production benefits of keeping this pest out of the region are more than likely to outweigh the minor surveillance cost.	High - location of areas most prone to invasion are well known.	Low
Indian Ring-necked Parakeet (feral)	Medium - the environmental and production impact of the species is known. Methods of control not well established, but likely to be able to be based on methods used for other bird species.	Low - was a subject in the Proposed Plan and there was no opposition to control. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Low - the environmental and production benefits of eradicating this pest are more than likely to outweigh the cost of control.	Medium – May be in the region as caged birds, but none known to be in the wild. Information on locations is poor. Cost of methods of control not certain but a likely to be similar to control of other bird species.	Low
Johnson Grass	Low - the production impact of the species is known. Control measures known.	Low - public are generally aware of the pest nature of these species.	Low - the production benefits of keeping this pest out of the region are more than likely to outweigh the minor surveillance cost.	High - location of areas most prone to re- infestation are well known.	Low
Knotweeds (Asiatic, Giant and hybrids)	Low - environmental impacts well understood. The limitations of control methods are well understood and can	Low to medium - was a subject in the Proposed Plan and there was support for control of this species. A potential increased cost imposition	Low to medium - the original CBA shows benefits of progressive containment outweigh costs. The further reduction in extent may be more cost beneficial (depending on implementation	High - new information provides very good level of detail of size of infestation	Low

Pest	6(1)(a) Uncertainty of impacts and effectiveness of methods	6(1)(b) Likely significance or controversy of the pest or proposed measures or cost of measures	6(1)(c) Likely costs relative to likely benefits	6(1)(d) Level and quality of data	Level of CBA warranted
	be factored into the total cost of control.	is posed on landowners who have this pest.	cost). Consideration of the risk of not achieving the objective (due to difficulty on controlling these pests) may be necessary and this will reduce the rate of return.		
Koi carp	Low - the environmental impact of the species is known. Control measures known.	Low - public are generally aware of the pest nature of these species.	Low - the environmental benefits of keeping this pest out of the region are more than likely to outweigh the minor surveillance cost.	High - location of areas most prone to invasion are well known.	Low
Kūmarahou (Abel Tasman)	Low - the environmental impact of the species is known. Control measures known.	Low - a very high level of acceptance indicated by submissions. Most opposition can be resolved through collaboration.	Low - the increased protection to the National Park from this invasive weed is more than likely to outweigh the additional cost.	Medium - area of attention very specific, but sizes of infestation not well known.	Low
Lagarosiphon	Low - the environmental effects are well known. The difficulties managing this aquatic pest is well understood, and can be factored into the cost of control.	Low - the pest is subject of the Proposed Plan and there was little contention on its inclusion. Boat owners have no increased responsibility as a result of the proposal (the rule has been around for some time).	Low - the original qualitative CBA adequately describes the costs and benefits in qualitative terms. While the quantitative CBA overlooked the time cost to boaties, the potential loss value of \$467,153 (i.e. benefits realised) are likely to be much greater than the cost of checking that boat and trailer are clear of this weed.	High - the lakes and rivers that have and do not have this pest are known. The original CBA was focused on protecting areas from further spread (which is effectively sustained control under the NPD) but the means of achievement is effectively containment in real terms.	Low
Madeira Vine	Low - the environmental impact of the species is known. Control measures known.	Low - public are generally aware of the pest nature of these species.	Low - the environmental benefits of eradicating this pest are more than likely to outweigh the cost of control	High - location of existing infestations are well known.	Low

Pest	6(1)(a) Uncertainty of impacts and effectiveness of methods	6(1)(b) Likely significance or controversy of the pest or proposed measures or cost of measures	6(1)(c) Likely costs relative to likely benefits	6(1)(d) Level and quality of data	Level of CBA warranted
Magpies (Golden Bay)	Low - the environmental, production, and "human health" impacts are well known. While good control methods are still being investigated, there are adequate tools for managing this pest in Golden Bay.	low - considered a pest by most people	Medium - the biodiversity benefits are likely to outweigh the costs in most but not all scenarios. Unlikely to stack up as a production pest (otherwise farmers would control them). Benefits outweigh costs with respect to health-related pest with specific reference to birds in parks that are attacking people.	Medium - the pest is throughout the region but not very common in Golden Bay. Local densities are not known.	Low
Nassella Tussock (Cape Soucis area)	Low - production impacts well understood. The limitations of control methods are well understood and can be factored into the cost of control.	Low - was a subject in the Proposed Plan and there was support for control of this species. No new impositions posed on landowners (e.g. no fundamental change to the rules).	High - While the original quantitative CBA shows benefits outweigh costs for this programme, the NPV is very small (\$8). While the occupier costs are unlikely to be considered significant to the occupiers (estimated to be around \$200 per annum), they might cause costs to outweigh benefits.	High - the pest is known to be throughout this area in patchy infestations	Medium
Nassella Tussock (outside Cape Soucis area)	Low - production impacts well understood. The limitations of control methods are well understood and can be factored into the cost of control.	Low - was a subject in the Proposed Plan and there was support for control of this species. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Low - the original quantitative CBA shows benefits outweigh costs for this type of programme. Occupier costs are not considered significant as TDC undertakes the management of this pest - i.e. there is very little additional cost imposed by the Plan to occupiers above their normal pasture management practices.	High - the location of the pest is well known though regular monitoring and surveillance. New knowledge has led to an increase in the assumed infestation size to acknowledge the total area searched for this pest.	Low
Nodding Thistle	Low - the production impacts are well known.	Low - was a subject in the Proposed Plan and there was support for control of this species. No new impositions posed on landowners	Low - the original qualitative CBA adequately describes the costs and benefits in qualitative terms. Occupier costs are not considered significant as control is sustained	High - the pest is known to be throughout the region	Low

Pest	6(1)(a) Uncertainty of impacts and effectiveness of methods	6(1)(b) Likely significance or controversy of the pest or proposed measures or cost of measures	6(1)(c) Likely costs relative to likely benefits	6(1)(d) Level and quality of data	Level of CBA warranted
		(e.g. no fundamental change to the rules).	through normal pasture management practices - i.e. there is very little additional cost imposed by the Plan.		
Old Man's Beard (Golden Bay-Riwaka, Upper Buller)	Low - environmental impacts well understood. The limitations of control methods are well understood and can be factored into the total cost of control.	Low - was a subject in the Proposed Plan and there was much support for control of this species. No new impositions posed on landowners (e.g. no fundamental change to the rules). Occupier costs may be high, but given support, they are not considered "significant".	Low - the original CBA shows benefits outweigh costs for this type of programme and no change is proposed. Occupier costs are assumed to be insignificant due to high level of support and acceptability.	High to medium - the total extent assumption is based on good existing information about the extent of the pest.	Low
Perch	Low - the environmental impact of the species is known. Control measures known.	Low - public are generally aware of the pest nature of these species.	Low - the environmental and production benefits of eradicating this pest are more than likely to outweigh the cost of control	High - location of existing infestations are well known.	Low
Phragmites	Low - the environmental impact of the species is known. Control measures known.	Low - public are generally aware of the pest nature of these species.	Low - the environmental benefits of keeping this pest out of the region are more than likely to outweigh the minor surveillance cost.	High - location of areas most prone to re- infestation are well known.	Low
Powdery Mildew	Low - the production impacts are well known.	Low - was a subject in the Proposed Plan and there was support for control of this species. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Low - the original qualitative CBA adequately describes the costs and benefits in qualitative terms. Occupier costs are not considered significant as control is sustained through normal crop management practices - i.e. there is very little additional cost imposed by the Plan.	High - the pest is known to be throughout the region	Low

Pest	6(1)(a) Uncertainty of impacts and effectiveness of methods	6(1)(b) Likely significance or controversy of the pest or proposed measures or cost of measures	6(1)(c) Likely costs relative to likely benefits	6(1)(d) Level and quality of data	Level of CBA warranted
Purple Loosestrife	Low - environmental impacts well understood. The limitations of control methods are well understood and can be factored into the total cost of control.	Low - was a subject in the Proposed Plan and there was support for control of this species. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Low to medium - the original CBA shows benefits outweigh costs for this type of programme. The reconsideration of the containment area size of infestation and occupier costs may have increased cost effect.	Medium - the original total extent assumption is based on existing observations at scattered sites. Mapping the pest is very assumption based.	Low
Queensland Poplar	Low - environmental impacts well understood. The limitations of control methods are well understood and can be factored into the total cost of control.	Low - was a subject in the Proposed Plan and there was support for control of this species. No new impositions posed on landowners (e.g. no fundamental change to the rules).	High - the original CBA shows costs outweigh the benefits slightly. Change from sustained control from progressive containment may reduce benefits further but there is also a reduction in control costs.	Medium - there is a revised assumption of extent of existing infestation which is based on existing observations at scattered sites and requirement for greater search area. There is no targeted monitoring data that best ascertains a more limited control area.	Medium
Ragwort	Low - the production impacts are well known.	Low - was a subject in the Proposed Plan and there was support for control of this species. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Low - the original qualitative CBA adequately describes the costs and benefits in qualitative terms. Occupier costs are not considered significant as control is sustained through normal pasture management practices - i.e. there is very little additional cost imposed by the Plan.	High - the pest is known to be throughout the region	Low
Rats (southern parts of Waimea Estuary)	Low - the environmental and production impact of the species is known. Control measures known.	Low - public are generally aware of the pest nature of this species.	Low - the increased protection to wildlife from rat control is more than likely to outweigh the additional cost.	High - location of areas most prone to re- infestation are well known.	Low
Red-eared Slider Turtles (feral)	Medium - the environmental impact of the species is known. Control measures are not well established.	Low - public are generally aware of the pest nature of these species.	Low - the environmental and production benefits of eradicating this pest are more than likely to outweigh the cost of control	Medium – Suspected as being present in the region, but information on locations is poor. Cost of methods of control not	Low

Pest	6(1)(a) Uncertainty of impacts and effectiveness of methods	6(1)(b) Likely significance or controversy of the pest or proposed measures or cost of measures	6(1)(c) Likely costs relative to likely benefits	6(1)(d) Level and quality of data	Level of CBA warranted
				certain but a likely to be similar to control of other bird species.	
Reed sweet grass	Low - environmental impacts well understood. The limitations of control methods are well understood and can be factored into the total cost of control.	Low - was a subject in the Proposed Plan and there was support for control of this species. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Low to medium - the original CBA shows benefits outweigh costs for this type of programme. The reconsideration of the containment area size of infestation and occupier costs may have increased cost effect.	Medium - the original total extent assumption is based on existing observations at scattered sites. Mapping the pest is very assumption based.	Low
Rooks	Low - the production impact of the species is known. Control measures known.	Low - public are generally aware of the pest nature of these species.	Low - the production benefits of keeping this pest out of the region are more than likely to outweigh the minor surveillance cost.	Medium - location of areas most prone to incursion can be reasonably ascertained, but not exactly known.	Low
Rosemary Grevillea (Abel Tasman)	Low - the environmental impact of the species is known. Control measures known.	Low - a very high level of acceptance indicated by submissions. Most opposition can be resolved through collaboration.	Low - the increased protection to the National Park from this invasive weed is more than likely to outweigh the additional cost.	Medium - area of attention very specific, but sizes of infestation not well known.	Low
Rowan (St Arnaud Village)	Low - the environmental impact of the species is known. Control measures known.	Low - a high level of acceptance indicated by submissions.	Low - the increased protection to the National Park from this invasive weed is more than likely to outweigh the additional cost.	High - the total extent assumption is based on good existing information about the extent of the pest in the site.	Low
Rudd	Low - the environmental impact of the species is known. Control measures known.	Low - public are generally aware of the pest nature of these species.	Low - the environmental and production benefits of eradicating this pest are more than likely to outweigh the cost of control	High - location of existing infestations are well known.	Low

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Russell Lupin (St Arnaud Village)	Low - the environmental and production impact of the species is known. Control measures known.	Low – a high level of acceptance indicated by submissions.	Low - the increased protection to the National Park from this invasive weed is more than likely to outweigh the additional cost.	High - the total extent assumption is based on good existing information about the extent of the pest in the site.	Low
Sabella	Medium - the environmental effects are well known. The difficulties managing this aquatic pest is known but there is some uncertainty about the efficacy of control measures.	Low - was a subject in the Proposed Plan and there was support for control of this species. No new impositions posed on boat owners (e.g. no fundamental change to the rules).	Low - the original qualitative CBA adequately describes the costs and benefits in qualitative terms.	High - the source of this pest and mechanisms of dispersal are well known	Low
Saffron Thistle	Low - the environmental impact of the species is known. Control measures known.	Low - public are generally aware of the pest nature of these species.	Low - the environmental benefits of eradicating this pest are more than likely to outweigh the cost of control	High - location of existing infestations are well known.	Low
Senegal Tea	Low - the environmental impact of the species is known. Control measures known.	Low - public are generally aware of the pest nature of these species.	Low - the environmental benefits of keeping this pest out of the region are more than likely to outweigh the minor surveillance cost.	High - location of areas most prone to re- infestation are well known.	Low
Spartina	Low - the environmental impact of the species is known. Control measures known.	Low - public are generally aware of the pest nature of these species.	Low - the environmental benefits of eradicating this pest are more than likely to outweigh the cost of control	High - location of existing infestations are well known.	Low
Stoats (Waimea Estuary)	Low - the environmental impact of the species is known. Control measures known.	Low - was a subject in the Proposed Plan and there was support for control of this species in this context. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Low - the protection of environmental benefits is likely to significantly outweigh costs. There are no occupier costs for this TDC-led programme.	Medium – the size of the population within the site is unknown but can be reduced with existing control tools.	Low

Pest	6(1)(a) Uncertainty of impacts and effectiveness of methods	6(1)(b) Likely significance or controversy of the pest or proposed measures or cost of measures	6(1)(c) Likely costs relative to likely benefits	6(1)(d) Level and quality of data	Level of CBA warranted
Sycamore (St Arnaud Village and Abel Tasman)	Low - the environmental impact of the species is known. Control measures known.	Low – a very high level of acceptance indicated by submissions. Most opposition can be resolved through collaboration.	Low - the increased protection to the National Park from these invasive weeds is more than likely to outweigh the additional cost.	Medium - area of attention very specific, but sizes of infestation not well known in Abel Tasman.	Low
Taiwan Cherry and cultivars	Low - the environmental and production impact of the species is known. Control measures known.	Medium - public are generally aware of the pest nature of these species, but it is an attractive ornamental so some initial resistance is expected.	Low - quantitative CBA provided by submitter shows benefits outweigh costs.	High - location of infestations relatively well known. Some further monitoring would be needed to improve knowledge of full distribution	Low
Tench	Low - the environmental impact of the species is known. Control measures known.	Low - public are generally aware of the pest nature of these species.	Low - the environmental and production benefits of eradicating this pest are more than likely to outweigh the cost of control	High - location of existing infestations are well known.	Low
Variiegated thistle	Low - environmental impacts well understood. The limitations of control methods are well understood and can be factored into the total cost of control.	Low - was a subject in the Proposed Plan and there was support for control of this species. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Low to medium - the original CBA shows benefits outweigh costs for this type of programme. The reconsideration of the containment area size of infestation and occupier costs may have increased cost effect.	Medium - the original total extent assumption is based on existing observations at scattered sites. Mapping the pest is very assumption based.	Low
Velvet leaf	Low - the production impact of the species is known. Control measures known.	Low - public are generally aware of the pest nature of these species.	Low – the production benefits of keeping this pest out of the region are more than likely to outweigh the minor surveillance cost.	High - location of areas most prone to invasion are well known.	Low
Wallabies (Dama & Bennett's)	Low - the production and environmental impact of the species is known. Control measures known.	Low - public are generally aware of the pest nature of these species.	Low – the production environmental benefits of keeping this pest out of the region are more than likely to outweigh the minor surveillance cost.	Medium - location of areas most prone to incursion can be reasonably ascertained, but not exactly known.	Low

Pest	6(1)(a) Uncertainty of impacts and effectiveness of methods	6(1)(b) Likely significance or controversy of the pest or proposed measures or cost of measures	6(1)(c) Likely costs relative to likely benefits	6(1)(d) Level and quality of data	Level of CBA warranted
Water Hyacinth	Low - the environmental impact of the species is known. Control measures known.	Low - public are generally aware of the pest nature of these species.	Low - the environmental benefits of keeping this pest out of the region are more than likely to outweigh the minor surveillance cost.	High - location of areas most prone to invasion are well known.	Low
Weasels (Waimea Estuary)	Low - the environmental impact of the species is known. Control measures known.	Low - was a subject in the Proposed Plan and there was support for control of this species in this context. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Low - the protection of environmental benefits is likely to significantly outweigh costs. There are no occupier costs for this TDC-led programme.	Medium – the size of the population within the site is unknown but can be reduced with existing control tools.	Low
White-edged nightshade	Low - environmental impacts well understood. The limitations of control methods are well understood and can be factored into the total cost of control.	Low - was a subject in the Proposed Plan and there was support for control of this species. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Low to medium - the original CBA shows benefits outweigh costs for this type of programme. The reconsideration of the containment area size of infestation and occupier costs may have increased cost effect.	Medium - the original total extent assumption is based on existing observations at scattered sites. Mapping the pest is very assumption based.	Low
Wild Ginger (G Bay -Kaiteriteri)	Low - environmental impacts well understood. The limitations of control methods are well understood and can be factored into the total cost of control.	Low - was a subject in the Proposed Plan and there was support for control of this species. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Low - the original quantitative CBA shows benefits outweigh costs for progressive containment. The occupier costs (estimated to be less than \$1000 in total per annum) are not significant.	High to medium - the total extent assumption is based on good existing information about the extent of the pest.	Low
Wild kiwifruit (including unmanaged or abandoned)	Low - the environmental impact of the species is known. Control in steep areas is extremely risky and may not be able to be undertaken.	Low - public are generally aware of the pest nature of this species. Maybe some resistance in urban areas initially if individual plants are being retained for amenity reasons.	Low - Cost of the programme (including cost to occupiers) is not considered significant compared to the cost of a PSA outbreak.	High - location of areas most prone to rats can be readily identified.	Low

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Woolly nightshade.	Low - production impacts well understood. Control methods are well understood and effective.	Low - was a subject in the Proposed Plan and there was support for control of this species. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Low to medium - the original CBA shows benefits outweigh costs for progressive containment. Sustained control reduces cost but also reduces benefits and the proposed change may reduce the rate of return.	High to medium - the total extent assumption is based on good existing information about the extent of the pest.	Low
Yellow Bristle grass (Golden Bay and Upper Buller)	Medium - the production impacts are well known, but control methods are still being researched	Low - was a subject in the Proposed Plan and there was support for control of this species. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Medium - the original qualitative CBA describes benefits outweighing the costs. However, this is considered a significant programme in terms of estimated occupier cost inputs.	Medium - the general location of the pest is known but little is known about local rates of spread	Medium
Yellow Flag	Low - environmental impacts well understood. The limitations of control methods are well understood and can be factored into the total cost of control.	Low - was a subject in the Proposed Plan and there was support for control of this species. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Low - the original CBA shows benefits outweigh costs. Change from sustained control from progressive containment may reduce benefits but there is also a reduction in control costs.	Medium - assumption of extent is based on existing observations at scattered sites, but there is no targeted monitoring data that best ascertains a limited control area.	Low
Yellow Jasmine	Low - environmental impacts well understood. The limitations of control methods are well understood and can be factored into the total cost of control.	Low - was a subject in the Proposed Plan and there was support for control of this species. No new impositions posed on landowners (e.g. no fundamental change to the rules).	Low - the original CBA shows benefits outweigh costs. Change from sustained control from progressive containment may reduce benefits but there is also a reduction in control costs.	Medium - assumption of extent is based on existing observations at scattered sites, but there is no targeted monitoring data that best ascertains a limited control area.	Low