Greater Wellington – Regional Pest Management Strategy

2002–2022

Quality for Life

greater WELLINGTON
THE REGIONAL COUNCIL | Biosecurity

For Help and Information

Most pest control is now the responsibility of landowners. For detailed information about how to control pest animals and pest plants on your property:

- **Contact a Biosecurity Officer through:**

  Greater Wellington – The Regional Council offices:

Masterton	**Phone:**	**(06) 378 2484 or**
Upper Hutt	**Phone:**	**(04) 526 4133**

- **Ask for Greater Wellington's information sheets about specific pests.**
- **Visit the land management section of our website – www.gw.govt.nz**
- **Ask about Greater Wellington's 'service delivery' options for pest control.**

Prepared by:
Biosecurity Department
Greater Wellington – The Regional Council
P O Box 41, Masterton
P O Box 40 847, Upper Hutt

Vision – Turning the Tide

"This morn I was awaked by the singing of the birds ashore from whence we were distant not a quarter of a mile, the numbers of them were certainly very great who seemed to strain their throats with emulation, perhaps; their voices were certainly the [most] melodious wild musick I have ever heard, almost imitating small bells but with the most tuneable silver sound imaginable." (Joseph Banks, February 1770, while anchored in Cook Strait.)

Sadly, this glorious riot of sound has been largely stilled by the impact of humans and the raft of pest species they brought with them such as rats, possums, and old man's beard.

This Council is committed to making a difference. Regional Pest Management Strategies have been in place since 1996. During that time we have mounted aggressive and sustained offensives on pests such as possums and old man's beard in the Wellington region. The outcomes are clear. While we can't bring back moa or huia, bellbirds have been seen and heard in the Karori Sanctuary after being absent for 40 years. In Trelissick Park, healthy kereru (New Zealand woodpigeon) feed on an abundance of titoki berries to the raucous chatter of tui, following extensive possum control.

Meanwhile in the agricultural sector, the likes of gorse, thistles and possums continue to impact adversely on the region's economy. Whilst there is no 'quick fix', this Strategy seeks to minimise their impact over time.

This Strategy maintains the momentum. There are some changes:

- Pest animals and pest plants are now combined into one Regional Pest Management Strategy.

- Long-term vision - a 20-year duration for the Strategy, to be reviewed at five-year intervals, or sooner if required.

- More pest animals and pest plants are targeted to protect and enhance indigenous biodiversity in the region's special places, Key Native Ecosystems.

- Roading authorities are responsible for pests on roadsides, rather than adjacent occupiers.

- There are new categories for pests, which better reflect the objectives for those pests.

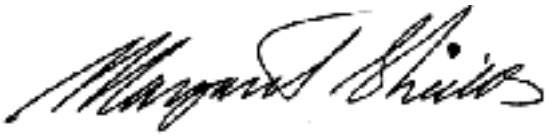
There are three key approaches for managing pests in the region incorporated in this Strategy:

Preventative Management – Where a species has not yet established in the region or parts of it, we will seek to eradicate the pest and keep the region clear. The philosophy 'prevention is better than cure' constitutes cost-effective, precautionary management.

Targeted Management in Special Places – Most pest species in the region are well established, and eradication is not a feasible option. Management effort is limited to special sites of environmental significance, providing holistic protection to Key Native Ecosystems.

Boundary Protection – Occupiers may control some pest species of agricultural significance on their properties. This work can be undone when pests re-establish ‘over the fence’. Greater Wellington will enforce boundary clearance of certain species in support of individual initiatives.

Effective pest management is critical in both the natural and productive environments. Collective responsibility and action will continue to ‘turn the tide’.



Margaret Shields
Chairperson, **Greater Wellington – The Regional Council**

Table of Contents

List of Tables

List of Figures

Part One
Introduction and Background

1. Introduction

1.1 Title

This document shall be known as the 'Greater Wellington Pest Management Strategy 2002-2022' (hereon known as the Strategy). It replaces the pest animal and pest plant management strategies first notified in July 1996. Under the Biosecurity Act 1993 (hereon known as the Act) these strategies were required to be reviewed before 1 July 2001. A review is commenced when a regional council publicly notifies a Proposed Pest Management Strategy and provides an opportunity for the community to have input into determining the appropriate pest management objectives for the region. Following consideration of public submissions on the Proposed Strategy, amendments made as a result, and acceptance of Council's decisions, the final Strategy is publicly notified under section 79F of the Act. This Strategy is the culmination of that process.

1.2 Purpose of the Strategy

The purpose of the Strategy is to provide a strategic and statutory framework for effective and proficient pest animal and pest plant management in the Wellington region so as to:

a) Minimise the actual and potential adverse and unintended effects of pests on the environment and the community; and

b) Maximise the effectiveness of individual pest animal and pest plant management through a regionally co-ordinated response.

A Regional Pest Management Strategy, when operative, empowers Greater Wellington to exercise the relevant enforcement and funding provisions available under the Biosecurity Act 1993 to accomplish these objectives.

1.3 Commencement and Duration

The Strategy shall become operative on the date that Greater Wellington's special order resolution adopting the Strategy is publicly notified. The Strategy shall cease to have effect:

a) When Greater Wellington publicly declares that the purpose of the Strategy has been realised; or

b) Twenty years after the Strategy has been approved by Greater Wellington; or

c) If the Strategy is revoked following a review carried out under Section 88(3) of the Act.

Which ever occurs first.

A Regional Pest Management Strategy must be reviewed every five years following the commencement date, or where it has been five years since the Strategy was reviewed in accordance with Section 88(6) of the Act.

1.4 Area of Effect

The Wellington region (figure 1) refers to the land, rivers, lakes and coastal marine area that lie within the administrative boundaries of Greater Wellington. It covers a land area of 813,000 ha on the southern end of the North Island. The northern boundary is defined by the catchments of the Waitohu Stream and Otaki River on the western side of the Tararua Range, by the Whareama and Mataikona river catchments, and by the headwaters of the Ruamahanga River on the eastern side. Horizons.mw (Manawatu-Wanganui Regional Council) borders the northern boundary of the Wellington region for its entire length.

1.5 Structure of the Strategy

The Strategy has been prepared in accordance with the requirements of Part V of the Act.

Part One of the Strategy provides an introduction, including the statutory basis for the preparation, administration and implementation of the Strategy, and the management responsibilities of the stakeholders.

Part Two outlines the pest management programmes in place and the rationale behind them. It also details specific programmes for individual pest animals and plants. For each pest there is a description of the animal or plant, the effects to be addressed, the management objectives, the principal means of achieving those objectives, and the Strategy rules.

Part Three of the Strategy details the Council's administrative, monitoring and funding procedures for giving effect to Part Two of the Strategy.

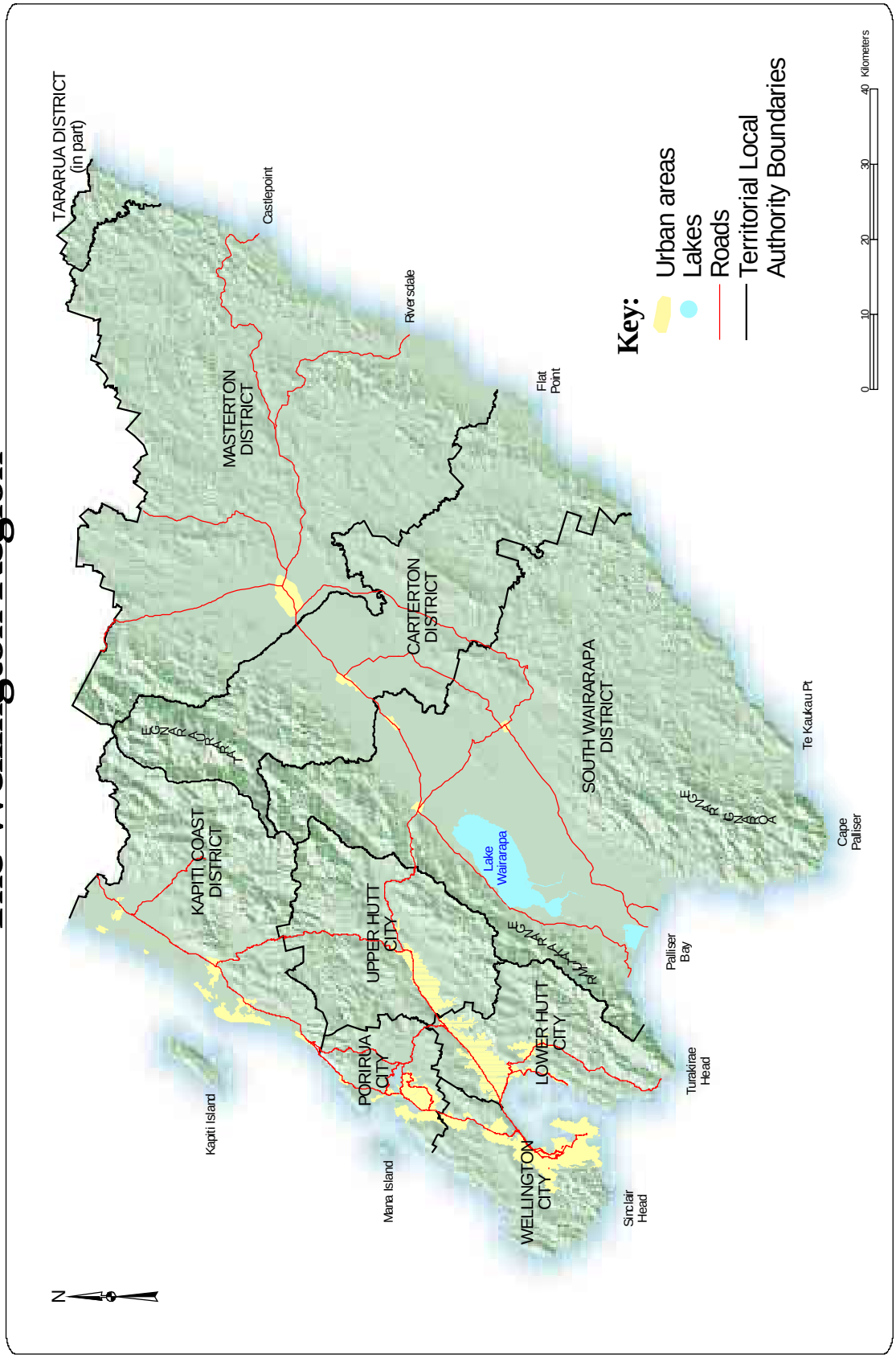


Figure 1. The administrative boundaries of Greater Wellington and the nine Territorial Local Authorities.

2. Definition of Terms

For the purposes of this Strategy, unless the context states otherwise, the following terms mean:

Animal	Any mammal, insect, bird and any living organism except a plant or human being.
Authorised Person	A person for the time being appointed an Authorised Person under Section 103 of the Act.
Beneficiary	The receiver of benefits accruing from the implementation of a pest management measure or the Strategy.
Biodiversity	The variety of life and its processes. It includes the variety of living organisms, the genetic differences among them, the communities and ecosystems in which they occur, and the ecological and evolutionary processes that keep them functioning, changing and adapting.
Biological Control	The application to a pest of a natural enemy which will adversely affect the pest with the intention of reducing the level of infestation of the pest.
Biosecurity	Protection within the region from the risks posed by organisms to the environment, public health and the economy, through exclusion, eradication and control.
Boundary Clearance	The enforced control of a specific pest within a specified distance from a property boundary, where the adjacent property is clear of the pest. Generally activated by a complaint from the adjacent occupier whose boundary is clear of the pest.
Conservation Pests	Organisms in respect of the Strategy which are capable of causing at some time a serious adverse and unintended effect in relation to the survival and distribution of indigenous plants or animals, or the sustainability of natural and developed ecosystems.
Containment	The zoning of pests into areas of the Region where occupier control responsibilities are specifically defined.
Ecosystem	All the individuals, species and populations in a spatially defined area, the interactions among them, and those between the organisms and their abiotic environment.

Equalised Capital Value	The outcome of an equalisation formula supplied by Quotable Values New Zealand and applied annually to keep pace with the real changes of a Territorial Authority's capital worth compared to other Territorial Authority's within the same region. Each Territorial Authority is valued on a three yearly rotational basis.
Eradicate	To destroy a pest at a rate that exceeds the survival rate of new recruits. Control measures must continue until all individuals (including the seed bank for pest plants) have been destroyed.
Exacerbator	A person, who by their actions or inaction, contribute to the creation, continuance or exacerbation of a particular pest management problem.
Externality Impacts	Adverse and unintended effects imposed on others. Such impacts are often called 'third party effects'.
Feral	Existing in a wild, or uncultivated state and does not rely directly on human activities for survival.
Green Waste	Unwanted pest plant material remaining following a control operation. Also refers to general garden material that may establish new pest infestations if not destroyed or disposed of appropriately.
Habitat	The place, or type of site where an organism or population normally occurs.
Indigenous	Produced by, or naturally occurring in the Wellington region.
Key Native Ecosystems (KNE)	Areas selected to represent a comprehensive range of indigenous biodiversity in the Wellington region. Sites are prioritised depending on ecological criteria.
Key Native Ecosystem Programme	A Greater Wellington initiative to protect and enhance native biodiversity in Key Native Ecosystems throughout the Wellington region through integrated pest management programmes.
Means of Achievement	The general management options, tactics or technical methods by which Greater Wellington will achieve an objective or objectives.
Monitor	To gather information, either actively or passively, about pests known to occur in the region to determine the - (a) Presence or absence of pests; or (b) Distribution and/or density of pests; or (c) Effects of pests on social, economic or environmental factors; or

	(d) Effects of the Strategy on the distribution and/or density of pests, or on social, economic or environmental factors; or (e) Extent to which objectives of the Strategy are being achieved.
Occupier	(a) In relation to any place physically occupied by any person, means that person. (b) In relation to any other place, means the owner of the place. (c) In relation to any place, includes any agent, employee, or other person acting in the general management or control of the place.
Pest	Any organism specified as a pest in this Strategy.
Plant	Any plant, tree, shrub, herb, flower, nursery stock, culture, vegetable or other vegetation. Includes the fruit, seed, spore, and any portion or product of any plant. Also includes all aquatic plants.
Regional Pest Plant Surveillance Programme	Inspections undertaken by Greater Wellington to determine whether infestations of new plant species are developing within the Region.
Regional Significance	In relation to a pest, the widespread public concern or interest throughout the region about the pest's actual, unintended or potential effects on the environment.
Sale	Includes bartering, offering for sale, exposing, or attempting to sell, or having in possession for sale, or sending or delivering for sale, causing or allowing to be sold, offered or displayed for sale.
Sell	Has a corresponding meaning to 'Sale'.
Service Delivery	Pest control work undertaken by Greater Wellington at no direct cost to the land occupier.
Site Led Management	The management of pest species within specific areas where the impacts are most serious and/or benefits of control will be greatest.
Suppression	The control of pests that are widely distributed throughout the Region with the express aim of minimising their adverse impacts.
Surveillance	To gather information, either actively or passively, about pests that are currently not in the region to determine incursions of new pests into the region or into parts of the region that are clear.
Taonga	Treasure or property prized and protected by the tribe. The term carries a spiritual meaning and may be things that cannot be seen or touched.

Territorial Local Authority — A city council or a district council.

The Act — The Biosecurity Act 1993.

The Strategy — The Regional Pest Management Strategy 2002-2022, notified by Greater Wellington.

Tikanga Maori — Maori customary values and practices.

Unalienated Land — Land that has **not** been subject to limited disposal by lease or licence or by absolute disposal by sale or otherwise.

Unwanted Organism — Any organism that a chief technical officer believes is capable or potentially capable of causing unwanted harm to any natural and physical resources or to human health; and

(a) Includes –

(i) Any new organism, if the Authority* has declined approval to import that organism.

(ii) Any organism specified in the Second Schedule of the Hazardous Substances and New Organisms Act 1996.

(b) But does not include any organism approved for importation under the Hazardous Substances and New Organisms Act 1996, unless –

(i) The organism is an organism which has escaped from a containment facility; or

(ii) A chief technical officer, after consulting the Authority and taken into account any comments made by the Authority concerning the organism, believes the organism is capable or potentially capable of causing unwanted harm to any natural and physical resources or human health.

** "the Authority refers to the Environmental Risk Management Authority."*

Vigilance — Actions undertaken by Greater Wellington to detect unwanted species that may have recently established in the Region.

Waahi Tapu — Places or things, which are sacred or spiritually endowed. These are defined locally by the hapu and iwi.

3. Effects of Strategy Implementation

3.1 Effects of the Strategy's Implementation

Section 76(j) and (k) of the Act requires Greater Wellington to consider the actual and potential effects that implementing the Strategy shall have:

3.1.1 On the Relationship with Maori and their Culture and Traditions with their Ancestral Lands, Waters, Sites Waahi Tapu and Taonga

Successful implementation of the Strategy is expected to have positive effects on the relationship of Maori and their culture and traditions. Specifically, the Strategy will prevent or reduce pests invading and possibly degrading waahi tapu sites and tikanga Maori. The control of pests in sites of conservation significance will protect native flora and fauna important to Maori culture and traditions.

Any adverse effects likely to arise from the Strategy on Maori culture and traditions may relate to the use of toxins for pest eradication and control and the possibility of contaminants in soil and water. However, most toxins used have isolated short-term and minor adverse effects, and the advantages of using toxins to control pests outweigh the disadvantages. Where possible, Greater Wellington will continue to address the effects from the use of toxins through the regulatory processes of the Health and Safety in Employment Act 1992, the Hazardous Substances and New Organisms (HSNO) Act 1996, the Pesticides Act 1979, Pesticides (Vertebrate Pest Control) Regulations 1983 and other similar legislation. Greater Wellington will also implement the consultation procedures outlined in the Resource Management Act (RMA) 1991 where appropriate.

3.1.2 On the Environment

Successfully implementing the Strategy will prevent or reduce the adverse effects of pests on the environment. Efficient and effective pest management will protect and enhance agricultural production, indigenous biodiversity, recreation and aesthetic values, and public health and safety.

Of the techniques recommended to control pests, the safe and efficient use of toxins is of particular interest to the public. Concerns relating to the environmental effects of toxins, including public health, have been taken into account in developing this Strategy. Greater Wellington believes that the risk to the environment and public health from the toxins is low. Their use will be regulated through the statutory processes noted above (3.3.1), and Greater Wellington will undertake all possible precautions to negate risks to the public and the environment.

The Resource Management Act outlines many of the functions of Greater Wellington and Territorial Local Authorities including controls on the use of land for preventing or mitigating any adverse effects of the storage, use, disposal, and transport of hazardous substances. Regional and District Council Plans may contain rules covering pest management activities (e.g. spraying, burning, vegetation clearance). In some instances, resource consents under the Resource Management Act 1991 may be required from the relevant authorities to undertake those activities. Where a local authority imposes conditions under the RMA, these conditions may only add to the controls already imposed under the HSNO Act, and cannot be less than the minimum requirements set by the HSNO legislation.

3.1.3 On the Marketing Overseas of New Zealand Products

In some instances, the successful implementation of the Strategy should facilitate increased production of export products. Similarly, the control of pests in conservation areas should increase the recreational and aesthetic values important for tourism.

The adverse effects of implementing the Strategy on the marketing overseas of New Zealand products should be very minimal. The use of toxins, and possibly biological control, may concern some international markets with these concerns being largely about residues in water, soil and non-target animals. Export protocols would guarantee the purity of export products.

3.1.4 The Biosecurity Act 1993

The Biosecurity Act 1993 is the statute under which Greater Wellington can address pest management issues in its region. The guiding principle of the Act is to '*…restate and reform the law relating to the exclusion, eradication, and effective management of pests and unwanted organisms'.* The purpose of the Act in relation to a Regional Pest Management Strategy is defined in Sections 42 and 54.

In preparing this Strategy, Greater Wellington has taken into account the Act's relevant statutory and planning requirements, and is satisfied that the Strategy is not inconsistent with any other statutes, regulations or pest management strategies.

Under the wording of the Act there is no legal obligation for a regional council to take on the role of managing pests unless it chooses to do so. Any involvement is at the discretion of the Council and is undertaken subject to the preparation of a Regional Pest Management Strategy. A Strategy is planned and funded pursuant to Part V of the Act. When operative, the Strategy empowers Greater Wellington to exercise the appropriate enforcement and funding provisions of the Act.

In the preparation of the Strategy, certain requirements of the Act must be satisfied. These include:

- Part V Sections 55-99 which specify the content of a Strategy, the way in which it is to be prepared and funding matters.
- Part VI which contains administrative provisions.

As the Management Agency approving the Strategy, Greater Wellington must ensure that:

- Those affected want to control an unwanted organism, are willing to accept the obligations and limitations on their rights, and accept the costs.
- Other affected parties have the opportunity to consider the proposed Strategy, express their concerns and have confidence that their concern will be heard before a decision is made.
- The control programmes proposed are technically sound, environmentally acceptable, feasible and have the necessary long-term commitment.

3.1.5 Prerequisites for a Strategy

Any harmful plant or animal can be declared a 'pest' through its inclusion in a pest management strategy. However, it must first meet the requirements set out in Section 72 of the Act.

Section 72 contains the criteria by which Greater Wellington assesses candidate pests and determines whether a Strategy is necessary, appropriate and the most cost-effective means of managing those organisms.

In summary, these criteria say that the Council must be satisfied that:

- The net benefits (monetary and non monetary) of the Strategy outweigh the costs.
- There should be net benefits to parties other than those who would normally be expected to control the pest.
- Those who pay for the Strategy must either receive benefits which exceed their costs or be exacerbators.
- The pest is having actual or potential environmental effects of regional significance. These effects may be broad in nature, and include economic matters, as well as natural, physical and cultural resources. As well as adverse impacts, Greater Wellington has considered whether the pest's distribution is limited, restricted or widespread with respect to its potentially suitable habitat. Its distribution will have a bearing on the type and level of management considered appropriate by Greater Wellington.

4. Strategy Responsibilities and Obligations

4.1 Organisms to Which the Strategy Applies and their Management

Table 1. Pest animals included in the Strategy and their management

Common Name	*Scientific Name*	Containment	Suppression			Site Led Management	
		Service Delivery	Service Delivery	Biological Control	Occupier Responsibility	KNE Service Delivery	Biological Control
Argentine ant	*Linepithema humile*					■	
Brown bullhead catfish	*Ameiurensis nebulosus*					■	
European hedgehog	*Erinacues europaeus occidentalis*					■	
Feral cat	*Felis catus*					■	
Feral goat	*Capra hircus*					■	
Feral pig	*Sus scrofa*					■	
Feral rabbit	*Oryctolagus cuniculus*		■	■	■	■	■
Ferret	*Mustela furo*					■	
Goldfish	*Carassius auratus*					■	
Hare	*Lepus europaeus occidentalis*					■	
House mouse	*Mus musculus*					■	
Koi Carp	*Cyprinus carpio*					■	
Magpie	*Gymnorhina tibicen*					■	
Mosquito fish	*Gambusia affinis*					■	
Norway rat	*Rattus norvegicus*					■	
Possum	*Trichosurus vulpecula*					■	
Rook	*Corvus frugilegus*	■				■	
Rudd	*Scardinius erythropthalmus*					■	
Ship rat	*Rattus rattus*					■	
Stoat	*Mustela erminea*					■	
Sulphur Crested Cockatoo	*Cacatua galerita*					■	
Tench	*Tinca tinca*					■	
Wasp	*Vulpecula germanica; V. vulgaris*					■	
Weasel	*Mustela nivalis*					■	

Table 2. Pest plants included in the Strategy and their management

Common Name	*Scientific Name*	Eradication	Containment			Suppression		Site Led Management		
		Service Delivery	Service Delivery	Biological Control	Occupier Responsibility	Biological Control	Occupier Responsibility	KNE Service Delivery	Biological Control	Boundary Clearance
African club moss	*Selaginella kraussiana*							■		
African feather grass	*Pennisetum macrourum*	■			■			■		
Artillery plant	*Galeobdolon luteum*							■		
Banana passionfruit	*Passiflora mixta; P. mollisima*						■	■		
Barberry	*Berberis glaucocarpa*							■		
Bathurst bur	*Xanthium spinosum*	■						■		
Blackberry	*Rubus fruticosus*							■		
Blue morning glory	*Ipomoea indica*							■		
Blue passion flower	*Passiflora caerulea*	■						■		
Boneseed	*Chrysanthemoides monilifera*		■					■		
Boxthorn	*Lycium ferocissimum*							■		
Broom	*Cytisus scoparius*							■	■	
Brush wattle	*Paraserianthes lophantha*							■		
Buddleia	*Buddleja davidii*							■		
Cape honey flower	*Melianthus major*							■		
Cape ivy	*Senecio angulatus*							■		
Cathedral bells	*Cobaea scandens*						■	■		
Chilean flame creeper	*Tropaeolum speciosum*							■		
Chinese and tree privet	*Ligustrum; sinese L. lucidum*							■		

Common Name	*Scientific Name*	Eradication	Containment			Suppression		Site Led Management		
		Service Delivery	Service Delivery	Biological Control	Occupier Responsibility	Biological Control	Occupier Responsibility	KNE Service Delivery	Biological Control	Boundary Clearance
Climbing dock	*Rumex sagittatus*							■		
Climbing spindleberry	*Celastrus orbiculatus*	■						■		
Cotoneaster	*Cotoneaster franchetii; C. horizontalis*							■		
Darwin's barberry	*Berberis darwinii*		■					■		
Eelgrass	*Vallisneria spp.*	■						■		
Egeria	*Egeria densa*							■		
Elaeagnus	*Elaeagnus x reflexa*							■		
Evergreen buckthorn	*Rhamnus alaternus*		■		■			■		
German ivy	*Senecio mikanioides*							■		
Gorse	*Ulex europaeus*							■	■	■
Great bindweed	*Calystegia silvatica*							■		
Gunnera	*Gunnera tinctoria*							■		
Hawthorn	*Crataegus monogyna*							■		
Himalayan honeysuckle	*Leycesteria formosa*							■		
Hornwort	*Ceratophyllum demersum*				■			■		
Japanese honeysuckle	*Lonicera japonica*							■		
Lagarosiphon	*Lagarosiphon major*							■		
Manchurian wild rice	*Zizania latifolia*	■						■		
Marram grass	*Ammophila arenaria*							■		

Common Name	*Scientific Name*	Eradication	Containment			Suppression		Site Led Management		
		Service Delivery	Service Delivery	Biological Control	Occupier Responsibility	Biological Control	Occupier Responsibility	KNE Service Delivery	Biological Control	Boundary Clearance
Mexican daisy	*Erigeron karvinskianus*							■		
Mignonette vine	*Anredera cordifolia*	■						■		
Mile-a-minute	*Dipogon lignosus*							■		
Mist flower	*Ageratina riparia*		■	■				■	■	
Moth plant	*Araujia sericifera*	■						■		
Nodding thistle	*Carduus nutans*		■	■	■			■	■	
Old man's beard	*Clematis vitalba*					■	■	■	■	
Pampas grass	*Cortaderia jubata; C. selloana*							■		
Parrot's feather	*Myriophyllum aquaticum*							■		
Perennial nettle	*Urtica dioica*	■						■		
Periwinkle	*Vinca major*							■		
Plectranthus	*Plectranthus ciliatus*							■		
Purple ragwort	*Senecio glastifolius*							■		
Ragwort	*Senecio jacobaea*							■	■	■
Saffron thistle	*Carthamus lanatus*	■						■		
Smilax	*Asparagus asparagoides*	■						■		
Spanish heath	*Erica lusitanica*							■		
Stinking iris	*Iris foetidissima*							■		
Sweet pea shrub	*Polygala myrtifolia*	■						■		
Sycamore	*Acer pseudoplatanus*							■		
Variegated thistle	*Silybum marianum*							■		■
Velvet groundsel	*Senecio petasitis*							■		
Wandering jew	*Tradescantia fluminensis*							■		

Common Name	Scientific Name	Eradication	Containment			Suppression		Site Led Management		
		Service Delivery	Service Delivery	Biological Control	Occupier Responsibility	Biological Control	Occupier Responsibility	KNE Service Delivery	Biological Control	Boundary Clearance
Wild ginger	*Hedychium; gardnerianum; H. flavescens*						■	■		
Wild onion	*Allium vineale*							■		
Wilding conifers	*Larix decidua; var*							■		
Wilding pines	*Pinus spp*							■		
Woolly nightshade	*Solanum mauritianum*	■						■		

4.2 Management Agency

Greater Wellington is the Management Agency responsible for implementing the Strategy. This entails preparing and administering systems to ensure the objectives of the Strategy are being achieved. It also includes developing and managing systems that ensure research, monitoring and review processes are consistent with the Act and any other statutory obligations.

Greater Wellington, in determining that it shall be the Management Agency, is satisfied that it meets the requirements of Section 84(3) of the Act in that:

a) It is answerable to the ratepayers, through representation and the annual reporting process.
b) It is acceptable to ratepayers and those persons subject to the management conditions.
c) It has the ability and expertise to administer the Strategy.

The Management Agency will conduct its functions in the manner described in Part Two of this document, including:

a) advice, education and information
b) inspections and enforcement
c) direct control by service delivery
d) biological control
e) integrated pest management in priority conservation sites.

4.3 Stakeholders

For the purposes of this Strategy, ‘stakeholders’ are those land occupiers identified as beneficiaries of regional intervention, or exacerbators of the pest problem. Therefore, where appropriate, beneficiaries and exacerbators will be bound by the provisions of the Strategy and will be required to contribute to the funding of the Strategy.

4.3.1 Private Land Occupiers

Occupiers of private land where a pest occurs are often the exacerbators of the pest problem and, in many instances, the beneficiary of any control action undertaken. Accordingly, where appropriate, the Strategy shall place the onus on the occupier to undertake the control and management of pest species on land for which they are responsible. Occupiers of private land are required to control pests as set out in the Strategy rules prescribed in Part Two of this document.

4.3.2 Territorial Local Authorities

There are nine Territorial Local Authorities (TLAs) in the greater Wellington region (refer figure 1). Territorial Local Authorities are both beneficiaries and exacerbators, and therefore each authority is required to control pests on land that it occupies, (including roadside verges for which that authority is responsible) in accordance with the Strategy rules prescribed in Part Two of this document.

4.3.3 Crown Land Occupiers

Under Section 87 of the Act the Crown cannot be bound to, or be required to fund any Strategy unless it agrees to be bound. Crown land accounts for approximately 156,364 ha, or 19% of the total land area in the Wellington region. Six Crown Agencies are recognised as being major occupiers within the region:

- Department of Conservation
- Land Information New Zealand (LINZ)
- New Zealand Railways Corporation
- New Zealand Defence Force
- Ministry of Education
- Department of Corrections

In addition, Transit New Zealand occupies Crown land, but does not constitute a Crown agency (refer 4.2.3.6).

In respect of the Regional Pest Management Strategy, Greater Wellington views Crown occupiers as both exacerbators and beneficiaries. Greater Wellington proposes that the aforementioned Crown Agencies agree to be bound to the Strategy, and control pests on land that they administer as set out in the Strategy rules prescribed in Part Two of this document. By being bound to the Strategy, Crown occupiers will gain public support for recognising their responsibilities as exacerbators, and ensuring their good neighbour policy is maintained. This will also ensure that a consistent approach to pest control can be applied throughout the region.

Greater Wellington also proposes that relevant Crown Agencies contribute to funding the Strategy's implementation and administration.

4.3.3.1 Department of Conservation

The Department of Conservation is responsible for the management of approximately 138,234 ha of the Wellington region. It is the occupier of Crown land under the Reserves Act 1977, National Parks Act 1980 and the Conservation Act 1987. The Department has particular interest and expertise in environmental pests, and its "Conservation Management Strategy for the Wellington Conservancy 1996-2005" addresses pest management issues. As the Regional Pest Management Strategy places an emphasis on the control of environmental pests, the Department will undoubtedly be a significant beneficiary. With a large expanse of Department bush reserve, there is also significant potential for pest infestations to develop and pose control costs on adjacent land occupiers.

Where the Department is an exacerbator or a beneficiary of pest management, it may contribute towards funding the implementation and administration of the Strategy. As many of the pests have been included in the Strategy to enhance protection of indigenous biodiversity, the Department may contribute in non-financial ways e.g. co-ordinating awareness programmes, combining educational material with Greater Wellington, co-ordinating operational programmes to complement Council initiatives.

4.3.3.2 Land Information New Zealand (LINZ)

Land Information New Zealand administers vacant land, non-rateable land and unalienated Crown Land (i.e. land not specifically owned by any party). This includes Crown riverbeds and portions of New Zealand Railways Corporation land available for disposal. In total, LINZ is responsible for the management of approximately 15,600 ha in the Wellington region, of which 15,304 ha is occupied under lease or licence and 296 ha is unoccupied land. Where land is under lease or licence, the occupier is responsible for pest management on that land. Where it is not under lease or licence, LINZ is responsible for pest control.

4.3.3.3 New Zealand Railways Corporation

The New Zealand Railways Corporation is responsible for approximately 800 ha in the Wellington region, with rail trunk lines extending through the eastern and western areas of the region. These corridors have the potential to impose externality impacts upon adjoining land occupiers, as well as transferring pests from other areas.

Railway land is Crown land which is leased to, and managed by Tranz Rail Ltd. As a privately owned company, Tranz Rail is required to control pests on Crown land that it occupies, as per the obligations outlined in Part Two of the Strategy. Tranz Rail is an occupier of Crown land and specifically excluded as a Crown agency under the Fourth Schedule of the Public Finance Act 1989. Accordingly, Tranz Rail is subject to the provisions defined in the Strategy on land under their jurisdiction.

To date, pest plant control has been achieved to a satisfactory level on land occupied by Tranz Rail. For pest animal infestations, Tranz Rail has agreed to consider, on a case by case basis, situations where they may be exacerbators.

4.3.3.4 Other Crown Agencies

In the Wellington region, the New Zealand Defence Force is responsible for 408 ha of land, the Ministry of Education for approximately 862 ha, and the Department of Corrections for approximately 230 ha.

4.3.3.5 Crown Agency Management Plans

The Strategy provides for agreed management plans for the control of pests on Crown land. It is envisaged that management plans for at least the first five-year period of this Strategy will be agreed between all Crown Agencies and Greater Wellington. This will provide certainty for the planning and operational functions of the affected organisations.

4.3.3.6 Transit New Zealand

There is over 230 km of State Highway in the Wellington region. Transit New Zealand is the occupier of Crown land on which the road lies, together with the verge or road reserve extending to the adjacent occupier's property boundary. Transit New Zealand was recently legally recognised as a

separate body corporate and as such, is an occupier of Crown land and specifically excluded as a Crown agency under the Fourth Schedule of the Public Finance Act 1989. Accordingly, on land under their jurisdiction Transit New Zealand is subject to the rules for land occupier defined in the Strategy.

4.3.4 Road Reserve Responsibilities

Road reserves include the land on which the road lies and the verge area that extends to adjacent property boundaries. Road reserves have the potential to be a source of pest infestations and can act as corridors allowing pests to spread throughout a region. Prior to the 1997 amendments, the Act stated that 'land' included the adjoining road reserves, and the adjoining landowner was responsible for pest management on those reserves. Following amendments made to Sections 6, 76(1)(i) and 80A(g) of the Act , adjoining road reserves are now not included as 'land' unless a Pest Management Strategy states that is the case.

If not stated, the Act places default responsibility for pest management on roadside verges with the road controlling authority (i.e. Territorial Local Authorities and Transit New Zealand).

For road reserves, the Strategy places responsibility for the management of <u>all</u> pests with the roading authority occupying that land.

Transit New Zealand and Territorial Local Authorities are both exacerbators and beneficiaries because they occupy road reserves where pests grow and live, and they will benefit from pest control on this land. It is therefore consistent with the principles of the Act that all roading authorities are responsible for pest control on land which they manage.

Under the previous Strategies (1996-2001), Transit New Zealand and the nine TLAs controlled pests on road reserves to satisfactory levels, although the legal onus for pest control was on adjacent occupiers. For example, Transit New Zealand agreed voluntarily to control some pest plants within road reserves in the following situations:

- Rest areas
- Motorway reserves
- Weigh pits and stockpile areas
- Within reserves where adjacent land is administered by the Department of Conservation (this may vary with some of the control in some national park reserves being undertaken by the Department)
- On State Highway reserves where road works have contributed to the establishment of pest plants
- Other isolated areas of road reserves, mainly for safety reasons
- Any other area where it is unreasonable to expect adjoining landowners to control pests on State Highway reserves due to topography, remoteness etc.

The control of some Containment pest plants (refer 5.2.3 for definition), particularly gorse, may be impractical to fully implement in some roadside situations, i.e. where the reserve contains threatened native species, soil stabilisation concerns, access difficulties or risks to adjacent properties. The level of control or the distance to be cleared back from a complainant's boundary may be subject to waiver provisions and significantly reduced. Other management techniques such as planting suitable species in the infested area to eventually suppress or contain the pest plant infestation may also be considered as a satisfactory alternative on road reserves and subject to a waiver.

Greater Wellington will seek formal arrangements with the roading authorities to form Road Reserve Management Plans that take into account the above situations. Management Plans may also prioritise pest plant control requirements on road reserves, for example, giving first priority to weed removal or suppression planting on reserves next to Key Native Ecosystems and other lands significant to the natural heritage of the district.

4.4 Pests Banned from Sale and Distribution

Pursuant to Section 52 and 53 of the Biosecurity Act 1993 all organisms identified as an Unwanted Organism or listed as a pest in a Pest Management Strategy are banned from distribution, propagation and sale. A breach of these provisions is an offence under Section 154(m) of the Biosecurity Act 1993.

Part Two
Pest Management Programmes

5. Pest Management Rationale

This section provides the rationale for applying various management policies to different species in this Strategy.

5.1 Infestation Curve

The invasion pattern of many species tends to follow an 'S-shaped' pattern (figure 2). The important characteristics of the curve are a long tail at the beginning of a species' invasion as the pest establishes itself, a steep rise as the pest finds suitable habitats, and then a flattening off as these habitats reach carrying capacity.

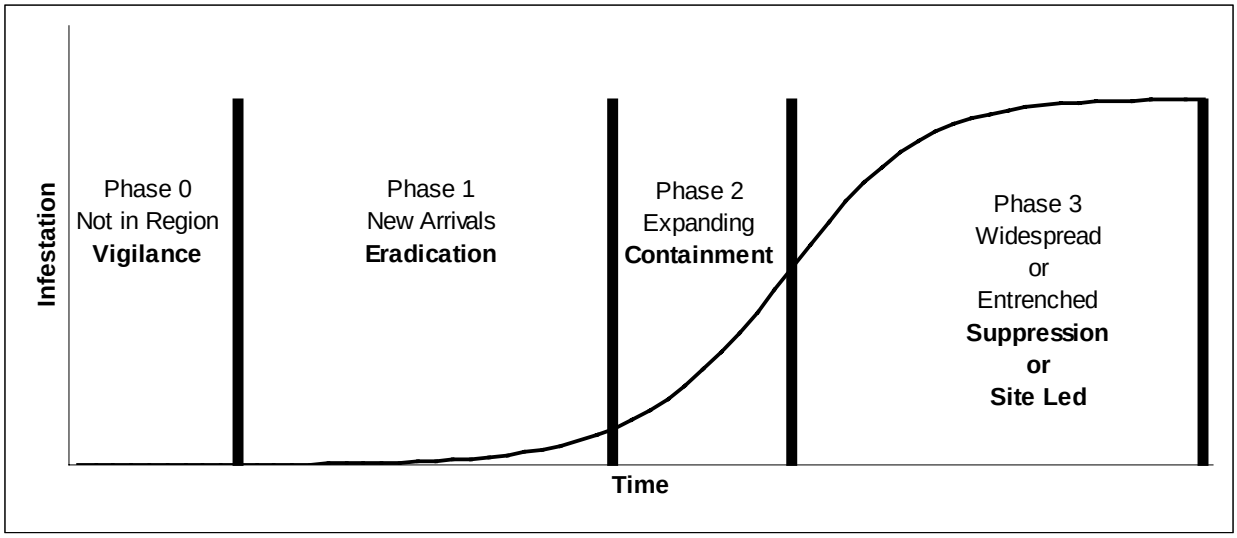


Figure 2. Conceptual phases of a pest through time in relation to its appropriate management. Modified from P. Williams, 1997, *Ecology and Management of Invasive Weeds*, Department of Conservation.

As well as considering impacts, costs and benefits, the location of a pest on the curve helps determine its appropriate management. The curve is divided into the four sections, or '**phases**'. These phases, and the preferred management policies associated with them, are summarised in table 3 below. Further detailed information follows in section 5.2.

Table 3. Summary of management approaches, guided by the extent to which a pest species has become established in the region.

Phase of Infestation	Phase Characteristics	Management Policies
Phase 0	Potential pest not currently in the region	Vigilance
Phase 1	Recent arrival limited in distribution	Eradication
Phase 2	Expanding in range and density	Containment
Phase 3	Widespread or entrenched in most or all available habitat	Widespread suppression or site led management

5.2 Pest Management Policies for Phases of Infestation

This section describes the preferred management approach for the infestation phase of a species. The different management policies give rise to the **Pest Management Categories** by which all pests listed in Part Two of this document are grouped.

5.2.1 Phase 0 - Potential Pests Not Yet in the Region

There are a large number of pest species present in New Zealand, which are not yet found in the Wellington region e.g. Purple Loosestrife *(lythrum salicaria)* and wallabies (*Macropus* species). Greater Wellington has a precautionary policy for these Phase 0 pests which involves a programme of early detection (**Vigilance)** combined with eradication of new incursions. Any control work will be on a service delivery basis.

We cannot predict exactly which species might breach our regional border over the term of the Strategy. However, there is a **National Pest Plant Accord** developed jointly between regional councils and the Ministry of Agriculture and Forestry, in consultation with the Department of Conservation, Royal Forest and Bird Society and the New Zealand Nursery and Garden Industry Association. Plants listed in the Accord are classified as 'unwanted organisms', and their sale or distribution is prohibited by the Act throughout New Zealand. This Accord replaces the "National Surveillance Pest Plant List" which has applied for the past five years.

If a new pest becomes established before the next Strategy review, and it has the potential to cause serious adverse and unintended effects to the region, Greater Wellington may elect to undertake small-scale management under Section 100 of the Act. Section 100 allows Greater Wellington to undertake management of unwanted organisms outside the Pest Management Strategy if the pest:

- is limited in distribution; and
- can be eradicated within three years; and
- the cost of the programme will not exceed $100,000.

The Council may make a request to the appropriate Crown agency for an Unwanted Organism status for any new arrivals that have not yet been declared as unwanted organisms, and that Greater Wellington wishes to eradicate under Section 100 of the Act.

5.2.2 Phase 1 - Recent Arrivals Limited in Distribution

Phase 1 pests are of limited distribution and density in the Wellington region, but have the potential to have serious adverse effects on values that are regionally significant. Greater Wellington has a precautionary policy for these pests, and every attempt will be made to eradicate them. They have been classified as **Eradication** pests. Examples include woolly nightshade, perennial nettle and African feather grass.

For the purposes of this Strategy, 'to eradicate' is defined as – 'To destroy a pest at a rate that exceeds the survival rate of new recruits. Control measures must continue until all individuals (including the seed bank for pest plants) have been destroyed'.

Greater Wellington believes that direct control by service delivery for pests that are of a limited distribution is the most effective means of managing Eradication pests. The Council will undertake the control of all Eradication pests at no direct cost to the land occupier, with the exception of Crown land. The removal of green waste following control will be the responsibility of the occupier.

5.2.3 Phase 2 - Expanding in Range and Density

Phase 2 pests have established themselves in the region but still have only limited to moderate distribution. While eradication region-wide is currently not feasible, many areas do remain clear at present. Greater Wellington has a precautionary policy for these pests. Clear areas will be kept clear.

In zoned areas where the presence of the pest is tolerated, occupiers will usually be responsible for maintaining low pest density. These areas are 'Containment Zones', and the species are classified as **Containment** Pests. Examples include boneseed, rooks and nodding thistle.

Greater Wellington believes that direct control by service delivery for pests where they are of limited distribution will be the most effective method for the management of Containment pests in clear areas. In clear areas, a vigilance/eradication policy will apply. The Council will undertake the control of pests in these areas at no direct cost to the land occupier, with the exception of Crown land. The removal of green waste following control will be the responsibility of the occupier.

5.2.4 Phase 3 – Established in Most, or All Available Habitat

Species which are widespread or well entrenched throughout the region comprise some of the most stubborn pest problems we have. Greater Wellington recognises that neither eradication of the pest nor significant restriction of its range is achievable. Depending on their rate and mode of dispersal, these well-established Phase 3 pests fall into two pest management categories:

1. **Suppression Pests.** These widespread pests can spread rapidly over long distances, so Site Led management is not effective. Their adverse impacts are severe and eradication or restriction of range is not achievable. Greater Wellington therefore has a policy of suppressing pest density throughout the region to minimise impacts. All control work will be the responsibility of the occupier. Examples include feral rabbits, old man's beard and cathedral bells.

2. **Site Led Pests.** These pests are well established throughout the region, and it would therefore not be cost effective to attempt control on a region-wide scale. Management will focus on specific sites where the pests have the most serious impact and the benefits of control will be the greatest. Examples include magpies, gorse and ragwort.

   In the case of conservation pests, management may focus on the site, rather than specific pest species.

Site Led pests have been assigned to three management programmes, depending on each pest's impacts and benefits. The management programmes are:

- Manage environmental pests in important environmental places (e.g. possums in Key Native Ecosystems, see Section 5.2.5 and 9.5 for a definition).
- Manage pests when and where they affect human health (e.g. aggressive magpies around schools).
- Manage agricultural pests in agricultural places (e.g. a boundary clearance policy for gorse).

5.2.5 Pest Management in Key Native Ecosystems (KNEs)

The main impact of most pests included in the Strategy is on the region's native biodiversity. Unfortunately, many of these pests are well established and widespread throughout the region, and it is not financially or technically possible to completely remove them. For these species, Greater Wellington believes the most sensible option is to manage pests of our native flora and fauna in special natural places.

Greater Wellington is committed to improving the quality of native ecosystems and protecting the region's indigenous biodiversity so, in 1996, it established the Key Native Ecosystem (KNE) programme. To date, more than 20,000 ha of native habitat have received possum control under this programme. However, to restore indigenous ecosystems to a healthy state requires intensive, and long-term multi-pest management.

The Strategy includes an extensive list of pest plants and pest animals that may need to be controlled in some KNEs (see Section 9.5). These KNE management areas will be prioritised based on ecological principles of quality, size, connectivity and importance. Pest management will vary from possum control only, through to intensive multi-pest control, depending on the site's priority.

It is important to note that Greater Wellington does not propose widespread control of the pests listed in the KNE management category. In many instances, control of these species region-wide is not possible or desirable. For example, feral goats and pigs are a valued resource for many recreational hunters and the Council will only control them in priority KNEs.

5.2.6 Possum Management in the Wellington Region

Possums are included in this Regional Pest Management Strategy in the **Site Led Pests** Category as a species identified for Key Native Ecosystem Management (see Section 9.5).

Possums are widespread throughout the region and are recognised as a major environmental and agricultural pest. They can seriously damage native forest and eat the berries and flowers that are food for native birds, as well as predating directly on birds and other native animals. Possums damage crops and commercial forest and are a considerable nuisance around dwellings and gardens. Possums also spread Bovine Tuberculosis to cattle and deer.

Greater Wellington is committed to managing possum densities to levels that protect the environmental and economic values of the Wellington region. It intends to expand and intensify formal control in the future. Most key environmental areas and

farmed land are already targeted. The Council also provides free advice and education, and a possum control service with costs recovered from land occupiers.

Approximately 600,000 ha (75%) of the region currently receives possum control through the:

- National Strategy for Bovine Tuberculosis Vector Control
- Department of Conservation's possum control programmes
- The Council's control programmes on its own estate, e.g. regional parks
- The Council's Key Native Ecosystem Management Programme
- Individual occupier and group scheme possum control programmes.

Figure 3 identifies areas currently managed and those areas proposed for possum control. All control agencies set, achieve and maintain low possum density targets and generally give priority to the maintenance of current control areas over commencing new areas.

The Bovine Tuberculosis Vector Control programme has had a major influence on reducing and maintaining low possum densities. However, this Regional Pest Management Strategy **does not** relate to possum control for reasons of Bovine Tuberculosis management. This is addressed by the National Pest Management Strategy for Bovine Tuberculosis managed by the Animal Health Board.

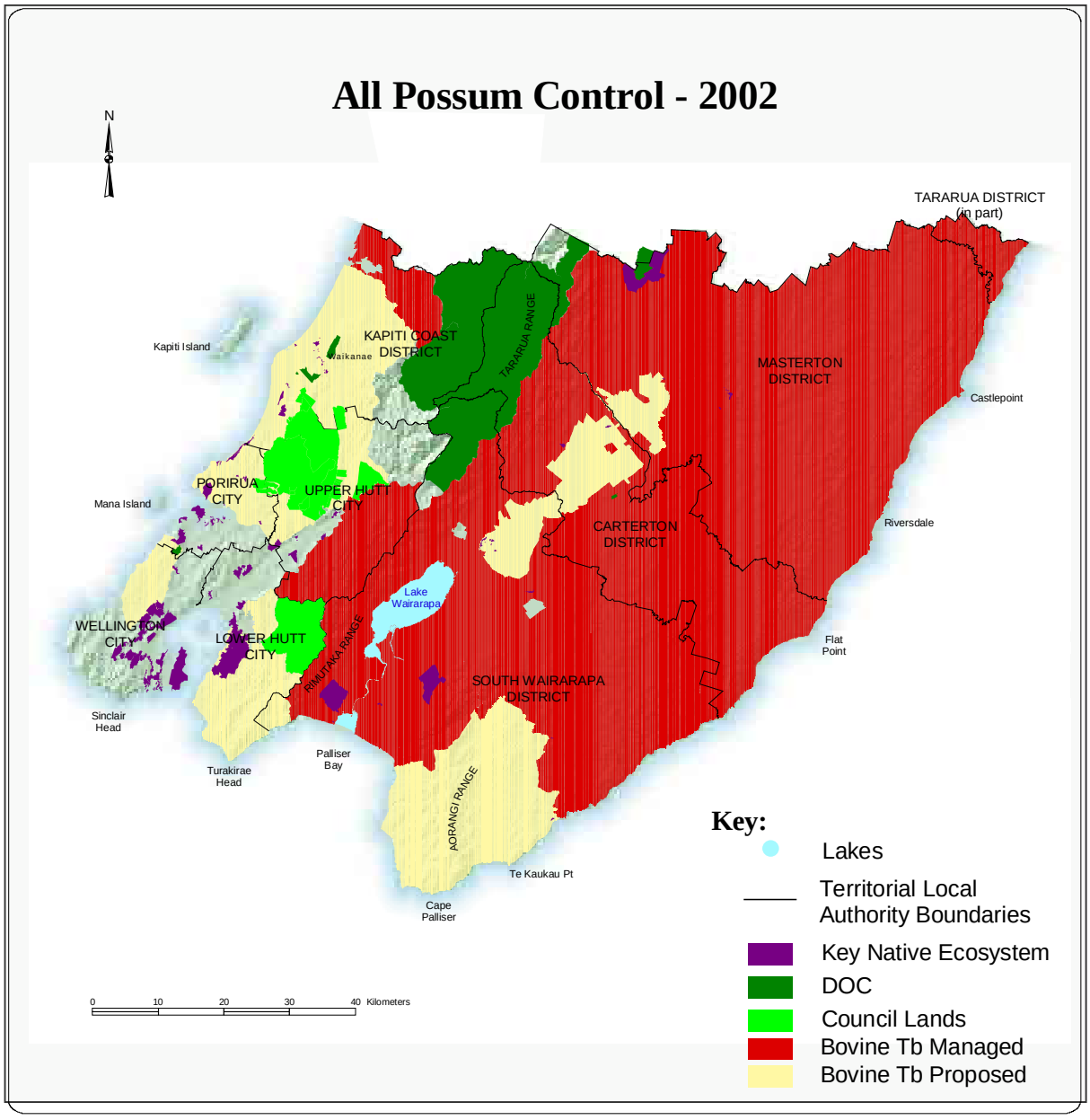
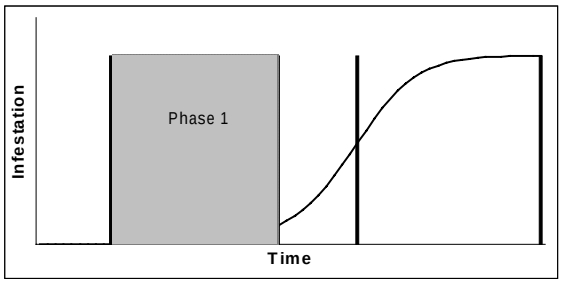


Figure 3. Areas of the Wellington region that have received, or will receive, possum control under various Greater Wellington and Department of Conservation possum control programmes.

Eradication Pests



- **Limited distribution and density in the region.**
- **Potential to cause adverse serious effects.**
- **Greater Wellington will control the pest at no direct cost to the land occupier (except Crown land).**
- **Direct control by 'service delivery' is deemed to be the most effective management method for these pests.**
- **The occupier is responsible for removing green waste after pest control is undertaken.**

6. Eradication Pests

6.1 African feather grass (*Pennisetum macrourum*)

6.1.1 Description

- A robust perennial grass that forms dense clumps up to 2 m tall.
- Extensive fibrous roots that grow from stout rhizomes, 7 mm in diameter and up to 2 m in length.
- Erect cylindrical stems, up to 2 m long, emerge from a crown.
- Leaves are light green and strongly ribbed on the upper surface, darker green beneath, and sometimes purplish on the edges and tips.
- Numerous bristle-like seeds are produced in spikes that surround the flower head.
- Seeds normally germinate in autumn producing large numbers of new plants.

6.1.2 Reason for Inclusion

African feather grass has been recorded in the Wairarapa and Wellington City. The total area infested in the region is estimated to be 50 ha. African feather grass can become a serious pasture weed by reducing the area available for grazing. It is unpalatable to stock and the seed can cling to wool reducing the value of fleeces. It can also become a serious weed of roadsides, wasteland, and urban amenity areas. If left to spread, it has the potential to infest 445,000 ha in the Wellington region.

6.1.3 Control Options

Due to the low number of infestations Greater Wellington believes that eradicating African feather grass from the entire region is achievable. African feather grass has been subject to ongoing management by the Council which believes that eradication is achievable by 2021. It is the opinion of Greater Wellington that eradication of African feather grass over the entire region is the best option.

Alternative options for the management of African feather grass include: ‘do nothing’; or place the responsibility for the control of African feather grass on the occupier. Greater Wellington does not consider ‘do nothing’ to be a viable option as the potential costs to the region will be substantial if the pest becomes widespread. Placing all responsibility for controlling this pest on the occupier is unlikely to achieve eradication and therefore direct control by service delivery is required.

6.1.4 Aim

"To eradicate African feather grass from the Wellington region."

6.1.5 Objectives

- Reduce the density of plants of African feather grass by 60% at all known sites by 2011.
- Eradicate African feather grass from all known sites by 2021.

6.1.6 Means of Achievement

Greater Wellington shall:

- Undertake **direct control by service delivery** of African feather grass at all known sites in the region.
- Provide **information and publicity** to enhance public awareness of the threat posed by African feather grass to the region.
- **Identify** new sites of African feather grass through incidental reports by biosecurity officers or the public, and through the regional pest plant surveillance programme.
- Annually **inspect** local nurseries for the sale of African feather grass.

6.1.7 Strategy Rules for African feather grass

a) Occupiers in the region are required to notify Greater Wellington of the presence of African feather grass (*Pennisetum macrourum*) plants on land they occupy. A breach of this rule will create an offence under Section 154(r) of the Act.

Pursuant to Sections 52 and 53 of the Biosecurity Act 1993, no person shall release, or cause to be released, propagate, or sell or offer for sale, or hold in premises where plants are offered for sale, or otherwise spread African feather grass (*Pennisetum macrourum*) plants. A breach of this provision is an offence under Section 154(m) of the Act.

Explanation of Strategy Rules

Strategy rule (a) will bring any new infestations of African feather grass to the attention of Greater Wellington so they can be included in the control programme. Sections 52 and 53 of the Act impose a ban on the sale, propagation or distribution of African feather grass in the Wellington region.

6.1.8 Monitoring the Objectives

The Council shall:

- Annually report the location and number of known sites of African feather grass and density of plants within them.

6.2 Bathurst bur (*Xanthium spinosum*)

6.2.1 Description

- An erect, much branched annual herb up to 1 m tall.
- The leaf stalks and stem nodes have one or two 3-pronged yellow spines.
- The leaves are mostly 3-lobed and are up to 7 cm long, narrow and pointed. The upper surface of the leaf is dark green and shiny with prominent white midribs. The underside is pale green and downy.
- Flowers are inconspicuous and creamy green.

6.2.2 Reason for Inclusion

The total area infested with Bathurst bur in the region is estimated to be 6 ha, over four known sites. Bathurst bur can invade waste places, coastal sites, pasture, cultivated land and urban gardens. If left to spread, Bathurst bur has the potential to infest 445,000 ha in the Wellington region.

The burs from Bathurst bur can add costs to woollen products through contamination, and the spines can damage the feet of sheep and other animals. Bathurst bur acts as a host for some fungal diseases of horticultural plants, and competes strongly with summer crops. The burs contaminate seeds of crops such as maize, sorghum, and sunflowers as well as bird seed and poultry seed. Seedlings are poisonous to stock. Bathurst bur can irritate the skin of shearers and crop pickers, and can cause dermatitis in some people.

6.2.3 Control Options

Due to the low number of infestations Greater Wellington believes that eradicating Bathurst bur from the entire region is achievable. The Council has not previously managed Bathurst bur so it could take at least 20 years to exhaust the seed bank at all known sites. It is the opinion of Greater Wellington that eradication of Bathurst bur over the entire region is the best option.

Alternative options for the management of Bathurst bur include: ‘do nothing’; or place all responsibility for the control of Bathurst bur on the occupier. Greater Wellington does not consider ‘do nothing’ to be a viable option as the potential costs to the region will be substantial if the pest becomes widespread. Placing the responsibility for controlling this pest on the occupier is unlikely to achieve eradication and therefore direct control by service delivery is required.

6.2.4 Aim

"To eradicate Bathurst bur from the Wellington region."

6.2.5 Objectives

- Prevent seeding of Bathurst bur at all known sites annually.
- Eradicate Bathurst bur from all known sites by 2021.

6.2.6 Means of Achievement

Greater Wellington shall:

- Undertake **direct control by service delivery** of Bathurst bur at all known sites in the region.
- Provide **information and publicity** to enhance public awareness of the threat Bathurst bur poses to the region.
- **Identify** new sites of Bathurst bur through incidental reports by biosecurity officers or the public, and through the regional pest plant surveillance programme.
- Annually **inspect** local nurseries for the sale of Bathurst bur.

6.2.7 Strategy Rules for Bathurst bur

a) Occupiers in the region are required to notify Greater Wellington of the presence of Bathurst bur (*Xanthium spinosum)* plants on land they occupy. A breach of this rule will create an offence under Section 154(r) of the Act.

Pursuant to Sections 52 and 53 of the Biosecurity Act 1993, no person shall release, or cause to be released, propagate, or sell or offer for sale, or hold in premises where plants are offered for sale, or otherwise spread Bathurst bur (*Xanthium spinosum)* plants. A breach of this provision is an offence under Section 154(m) of the Act.

Explanation of Strategy Rules

Strategy rule (a) will bring any new infestations of Bathurst bur to the attention of Greater Wellington so they can be included in the control programme. Sections 52 and 53 of the Act impose a ban on the sale, propagation or distribution of Bathurst bur in the Wellington region.

6.2.8 Monitoring the Objectives

The Council shall:

- Annually report the location and number of plants at all known sites of Bathurst bur.
- Annually report the number of seeding plants at all known sites of Bathurst bur.

6.3 Blue passion flower (*Passiflora caerulea*)

6.3.1 Description

- A hairless vine with angular shoots and five lobed leaves.
- Non-tubular white flowers with a ring of purple filaments up to 9 cm across.
- Round yellow fruit up to 5 cm in diameter.

6.3.2 Reason for Inclusion

The total area infested with blue passion flower in the region is estimated to be 1 ha over four known sites. Blue passion flower grows quickly to mid-high canopy and forms large masses. It is capable of causing damage by smothering plants in coastal areas, lowlands and forest margins and preventing natural regeneration. Blue passion flower is semi-shade tolerant and has effective dispersal ability. If left to spread, blue passion flower has the potential to infest 40,000 ha in the Wellington region.

6.3.3 Control Options

Due to the low number of infestations Greater Wellington believes that eradicating blue passion flower from the entire region is achievable. The Council has not previously managed blue passion flower so it could take at least 10 years to eradicate all known sites. It is the opinion of Greater Wellington that eradication of blue passion flower over the entire region is the best option.

Alternative options for the management of blue passion flower include: ‘do nothing’; or place the responsibility for the control of blue passion flower on the occupier. Greater Wellington does not consider ‘do nothing’ to be a viable option as the potential costs to the region will be substantial if the pest becomes widespread. Placing the responsibility for controlling this pest on the occupier is unlikely to achieve eradication and therefore direct control by service delivery is required.

6.3.4 Aim

"To eradicate blue passion flower from the Wellington region."

6.3.5 Objectives

- Reduce the density of plants of blue passion flower by 80% at all known sites by 2006.
- Eradicate blue passion flower from all known sites by 2011.

6.3.6 Means of Achievement

Greater Wellington shall:

- Undertake **direct control by service delivery** of blue passion flower at all known sites in the region.
- Provide **information and publicity** to enhance public awareness of the threat blue passion flower poses to the region.
- **Identify** new sites of blue passion flower through incidental reports by biosecurity officers or the public, and through the regional pest plant surveillance programme.
- Annually **inspect** local nurseries for the sale of blue passion flower.

6.3.7 Strategy Rules for Blue passion flower

a) Occupiers in the region are required to notify Greater Wellington of the presence of blue passion flower (*Passiflora caerulea*) plants on land they occupy. A breach of this rule will create an offence under Section 154(r) of the Act.

Pursuant to Sections 52 and 53 of the Biosecurity Act 1993, no person shall release, or cause to be released, propagate, or sell or offer for sale, or hold in premises where plants are offered for sale, or otherwise spread blue passion flower (*Passiflora caerulea)* plants. A breach of this provision is an offence under Section 154(m) of the Act.

Explanation of Strategy Rules

Strategy rule (a) will bring any new infestations of blue passion flower to the attention of Greater Wellington so they can be included in the control programme. Sections 52 and 53 of the Act impose a ban on the sale, propagation or distribution of blue passion flower in the Wellington region.

6.3.8 Monitoring the Objectives

The Council shall:

- Annually report the location and number of known sites of blue passion flower and density of plants within them.

6.4 Climbing spindleberry/oriental bittersweet (*Celastrus orbiculatus*)

6.4.1 Description

- A deciduous, hairless climber up to 12 m tall with woody round stems.
- Young twigs are green often with sharp 1-2 mm spines.
- Leaves are alternate, roundish 5-10 mm long, finely serrated yellowing before falling.
- The flowers are insignificant and pale green.

6.4.2 Reason for Inclusion

The total area infested with climbing spindleberry in the region is estimated to be 0.5 ha over two known sites. Climbing spindleberry grows quickly to mid-high canopy and may strangle the host and cause collapse. Layering stems become very dense and form impenetrable thickets. Climbing spindleberry is tolerant of warm and very cold temperatures, shade and high to moderately low rainfall and will invade disturbed and intact bush, scrubland and forest margins. If left to spread, climbing spindleberry has the potential to infest 40,000 ha in the Wellington region.

6.4.3 Control Options

Due to the low number of infestations Greater Wellington believes that eradicating climbing spindleberry from the entire region is achievable. The Council has not previously managed climbing spindleberry so it could take at least 10 years to eradicate all known sites. It is the opinion of Greater Wellington that eradication of climbing spindleberry over the entire region is the best option.

Alternative options for the management of climbing spindleberry include: ‘do nothing’; or place the responsibility for the control of climbing spindleberry on the occupier. Greater Wellington does not consider ‘do nothing’ to be a viable option as the potential costs to the region will be substantial if the pest becomes widespread. Placing the responsibility for controlling this pest on the occupier is unlikely to achieve eradication and therefore direct control by service delivery is required.

6.4.4 Aim

"To eradicate climbing spindleberry from the Wellington region."

6.4.5 Objectives

- Reduce the density of plants of climbing spindleberry by 80% at all known sites by 2006.
- Eradicate climbing spindleberry from all known sites by 2011.

6.4.6 Means of Achievement

Greater Wellington shall:

- Undertake **direct control by service delivery** of climbing spindleberry at all known sites in the region.
- Provide **information and publicity** to enhance public awareness of the threat climbing spindleberry poses to the region.
- **Identify** new sites of climbing spindleberry through incidental reports by biosecurity officers or the public, and through the regional pest plant surveillance programme.
- Annually **inspect** local nurseries for the sale of climbing spindleberry.

6.4.7 Strategy Rules for Climbing spindleberry

a) Occupiers in the region are required to notify Greater Wellington of the presence of climbing spindleberry (*Celastrus orbiculatus)* plants on land they occupy. A breach of this rule will create an offence under Section 154(r) of the Act.

Pursuant to Sections 52 and 53 of the Biosecurity Act 1993, no person shall release, or cause to be released, propagate, or sell or offer for sale, or hold in premises where plants are offered for sale, or otherwise spread climbing spindleberry (*Celastrus orbiculatus*) plants. A breach of this provision is an offence under Section 154(m) of the Act.

Explanation of Strategy Rules

Strategy rule (a) will bring any new infestations of climbing spindleberry to the attention of Greater Wellington so they can be included in the control programme. Sections 52 and 53 of the Act impose a ban on the sale, propagation or distribution of climbing spindleberry in the Wellington region.

6.4.8 Monitoring the Objectives

The Council shall:

- Annually report the location and number of known sites of climbing spindleberry and density of plants within them.

6.5 Eelgrass (*Vallisneria spp*)

Excludes twisted leaf varieties

6.5.1 Description

- Strap like leaves that arise from stout rhizomes extending at or immediately below the level of the sediments.
- Leaves vary in length from a few centimetres in shallow water to 5.5 m in deep water and in width 0.4-8.0 cm.
- Each leaf is winged at the base with one wing folded over the edge of the next inner leaf and the other wing extended.

6.5.2 Reason for Inclusion

The total area infested with eelgrass in the region is estimated to be 0.5 ha in one known site in the Masterton District. Eelgrass forms a dense mass of plant tissue through the entire water column in standing or flowing waters. It will colonise sandy to silty sediments but dispersal is largely limited to rhizome extension. If left to spread, eelgrass has the potential to infest 11,000 ha of water bodies in the Wellington region.

6.5.3 Control Options

Due to the low number of infestations Greater Wellington believes that eradicating eelgrass from the entire region is achievable. The Council has not previously managed eelgrass so it could take at least 10 years to eradicate all known sites. It is the opinion of Greater Wellington that eradication of eelgrass over the entire region is the best option.

Alternative options for the management of eelgrass include: ‘do nothing’; or place the responsibility for the control of eelgrass on the occupier. Greater Wellington does not consider ‘do nothing’ to be a viable option as the potential costs to the region will be substantial if the pest becomes widespread. Placing the responsibility for controlling this pest on the occupier is unlikely to achieve eradication and therefore direct control by service delivery is required.

6.5.4 Aim

"To eradicate eelgrass from the Wellington region."

6.5.5 Objectives

- Reduce the density of plants of eelgrass by 80% at all known sites by 2006.
- Eradicate eelgrass from all known sites by 2011.

6.5.6 Means of Achievement

Greater Wellington shall:

- Undertake **direct control by service delivery** of eelgrass at all known sites in the region.
- Provide **information and publicity** to enhance public awareness of the threat eelgrass poses to the region.
- **Identify** new sites of eelgrass through incidental reports by biosecurity officers or the public, and through the regional pest plant surveillance programme.
- Annually **inspect** local nurseries and pet shops for the sale of eelgrass.

6.5.7 Strategy Rules for Eelgrass

a) Occupiers in the region are required to notify Greater Wellington of the presence of eelgrass (*Vallisneria spp*) plants, except twisted leaf varieties, in water bodies on land they occupy. A breach of this rule will create an offence under Section 154(r) of the Act.

Pursuant to Sections 52 and 53 of the Biosecurity Act 1993, no person shall release, or cause to be released, propagate, or sell or offer for sale, or hold in premises where plants are offered for sale, or otherwise spread eelgrass (*Vallisneria spp*) plants, except twisted leaf varieties. A breach of this provision is an offence under Section 154(m) of the Act.

Explanation of Strategy Rules

Strategy rule (a) will bring any new infestations of eelgrass to the attention of Greater Wellington so they can be included in the control programme. Sections 52 and 53 of the Act impose a ban on the sale, propagation or distribution of eelgrass in the Wellington region.

6.5.8 Monitoring the Objectives

The Council shall:

- Annually report the location and number of known sites of eelgrass and density of plants within them.

6.6 Manchurian wild rice (*Zizania latifolia*)

6.6.1 Description

- A very tall, perennial wetland grass.
- Leaves are 50-100 cm long, 2-3 cm wide. Linear leaf blades have very stout midribs tapering to a sharp point at the tip.
- Leaves are usually erect. May bend over at the top without twisting.
- Narrowly pyramid-shaped panicles are 40-60 cm long, purplish or chestnut-brown, with long branches rough to touch.
- The branches have a tuft of long white hairs in the axils.

6.6.2 Reason for Inclusion

In the Wellington region Manchurian wild rice occurs at one site in Waikanae. The total area infested is estimated to be 10 ha. Manchurian wild rice has the potential to invade freshwater and saline wetlands on the edges of watercourses, ponds, swamps and pasture and cause significant change to natural vegetation by dominating and suppressing the growth of native wetland plants. If left to spread, Manchurian wild rice could infest 11,000 ha in the Wellington region.

6.6.3 Control Options

Due to the low number of infestations Greater Wellington believes that eradicating Manchurian wild rice from the entire region is achievable. Manchurian wild rice has been subject to ongoing management by the Council and Greater Wellington believes that eradication is achievable by 2011. It is Greater Wellington's opinion that eradication of Manchurian wild rice over the entire region is the best option.

Alternative options for the management of Manchurian wild rice include: 'do nothing'; or place the responsibility for the control of Manchurian wild rice on the occupier. Greater Wellington does not consider 'do nothing' to be a viable option as the potential costs to the region will be substantial if the pest becomes widespread. Placing all responsibility for controlling this pest on the occupier is unlikely to achieve eradication and therefore direct control by service delivery is required.

6.6.4 Aim

"To eradicate Manchurian wild rice from the Wellington region."

6.6.5 Objectives

- Reduce the density of plants of Manchurian wild rice by 80% at all known sites by 2006.
- Eradicate Manchurian wild rice from all known sites by 2011.

6.6.6 Means of Achievement

Greater Wellington shall:

- Undertake **direct control by service delivery** of Manchurian wild rice at all known sites in the region.
- Provide **information and publicity** to enhance public awareness of the threat posed by Manchurian wild rice to the region.
- **Identify** new sites of Manchurian wild rice through incidental reports by biosecurity officers or the public, and through the regional pest plant surveillance programme.
- Annually **inspect** local nurseries for the sale of Manchurian wild rice.

6.6.7 Strategy Rules for Manchurian wild rice

a) Occupiers in the region are required to notify Greater Wellington of the presence of Manchurian wild rice (*Zizania latifolia*) plants on land they occupy. A breach of this rule will create an offence under Section 154(r) of the Act.

Pursuant to Sections 52 and 53 of the Biosecurity Act 1993, no person shall release, or cause to be released, propagate, or sell or offer for sale, or hold in premises where plants are offered for sale, or otherwise spread Manchurian wild rice (*Zizania latifolia*) plants. A breach of this provision is an offence under Section 154(m) of the Act.

Explanation of Strategy Rules

Strategy rule (a) will bring any new infestations of Manchurian wild rice to the attention of Greater Wellington so they can be included in the control programme. Sections 52 and 53 of the Act impose a ban on the sale, propagation or distribution of Manchurian wild rice in the Wellington region.

6.6.8 Monitoring the Objectives

The Council shall:

- Annually report the location and number of known sites of Manchurian wild rice and density of plants within them.

6.7 Mignonette/madeira vine (*Anredera cordifolia*)

6.7.1 Description

- A hairless, perennial creeper arising from a fleshy rhizome.
- The heart-shaped leaves are bright green, alternate and grow from reddish brown stems.
- Distinctive wart-like tubers grow out of the aerial stems as well as underground.
- Numerous small, creamy white fragrant flowers hang in slender spikes approximately 18 cm long, which droop from the leaf axils.

6.7.2 Reason for Inclusion

The total area infested with mignonette vine is estimated to be 1 ha over three known sites. Mignonette vine has the ability to compete with and displace native plants in disturbed or low forest, forest margins, and coastal areas. It can affect native plant succession, and in some instances modifying ecosystem structure. The vine can also be invasive in urban reserves and gardens where it can become the dominant species. If left to spread, mignonette vine has the potential to infest 185,000 ha in the Wellington region.

6.7.3 Control Options

Due to the low number of infestations Greater Wellington believes that eradicating mignonette vine from the entire region is achievable. The Council has not previously managed mignonette vine so it could take at least 10 years to eradicate all known sites. It is the opinion of Greater Wellington that eradication of mignonette vine over the entire region is the best option.

Alternative options for the management of mignonette vine include: ‘do nothing’; or place the responsibility for the control of mignonette vine on the occupier. Greater Wellington does not consider ‘do nothing’ to be a viable option as the potential costs to the region will be substantial if the pest becomes widespread. Placing all responsibility for controlling this pest on the occupier is unlikely to achieve eradication and therefore direct control by service delivery is required.

6.7.4 Aim

"To eradicate mignonette vine from the Wellington region."

6.7.5 Objectives

- Reduce the density of plants of mignonette vine by 80% at all known sites by 2006.
- Eradicate mignonette vine from all known sites by 2011.

6.7.6 Means of Achievement

Greater Wellington shall:

- Undertake **direct control by service delivery** of mignonette vine at all known sites in the region.
- Provide **information and publicity** to enhance public awareness of the threat mignonette vine poses to the region.
- **Identify** new sites of mignonette vine through incidental reports by biosecurity officers or the public, and through the regional pest plant surveillance programme.
- Annually **inspect** local nurseries for the sale of mignonette vine.

6.7.7 Strategy Rules for Mignonette vine

a) Occupiers in the region are required to notify Greater Wellington of the presence of mignonette vine (*Anredera cordifolia*) plants on land they occupy. A breach of this rule will create an offence under Section 154(r) of the Act.

Pursuant to Sections 52 and 53 of the Biosecurity Act 1993, no person shall release, or cause to be released, propagate, or sell or offer for sale, or hold in premises where plants are offered for sale, or otherwise spread mignonette vine (*Anredera cordifolia*) plants. A breach of this provision is an offence under Section 154(m) of the Act.

Explanation of Strategy Rules

Strategy rule (a) will bring any new infestations of mignonette vine to the attention of Greater Wellington so they can be included in the control programme. Sections 52 and 53 of the Act impose a ban on the sale, propagation or distribution of mignonette vine in the Wellington region.

6.7.8 Monitoring the Objectives

The Council shall:

- Annually report the location and number of known sites of mignonette vine and density of plants within them.

6.8 Moth plant (*Araujia sericifera*)

6.8.1 Description

- A slender, evergreen vine climbing up to 6 m high.
- The lance shaped leaves are dark green on the upper side and greyish green underneath.
- Small creamy coloured tubular flowers are formed December-May, and grow from the base of each leaf. Flowers occur in clusters of up to seven. Some flowers produce oblong-ovoid green pods, 10-12 cm long with a thick leathery skin.
- The fruits contain over 500 seeds attached to silky threads.
- Seeds are released as the pods dry out and spilt during autumn-winter.

6.8.2 Reason for Inclusion

The total area infested with moth plant is estimated to be 0.8 ha over 19 known sites. Moth plant has the ability to compete with, smother and replace native plant species in disturbed or low forest, scrub-forest margins, and in open habitats such as coastal areas and on offshore islands. If left to spread, moth plant has the potential to infest 185,000 ha in the Wellington region.

6.8.3 Control Options

Due to the low number of infestations Greater Wellington believes that eradicating moth plant from the entire region is achievable. The Council has not previously managed moth plant so it could take at least 10 years to eradicate all known sites. It is the opinion of Greater Wellington that eradication of moth plant over the entire region is the best option.

Alternative options for the management of moth plant include: ‘do nothing’; or place the responsibility for the control of moth plant on the occupier. Greater Wellington does not consider ‘do nothing’ to be a viable option as the potential costs to the region will be substantial if the pest becomes widespread. Placing all responsibility for controlling this pest on the occupier is unlikely to achieve eradication and therefore direct control by service delivery is required.

6.8.4 Aim

"To eradicate moth plant from the Wellington region."

6.8.5 Objectives

- Reduce the density of plants of moth plant by 80% at all known sites by 2006.
- Eradicate moth plant from all known sites by 2011.

6.8.6 Means of Achievement

Greater Wellington shall:

- Undertake **direct control by service delivery** of moth plant at all known sites in the region.
- Provide **information and publicity** to enhance public awareness of the threat moth plant poses to the region.
- **Identify** new sites of moth plant through incidental reports by biosecurity officers or the public, and through the regional pest plant surveillance programme.
- Annually **inspect** local nurseries for the sale of moth plant.

6.8.7 Strategy Rules for Moth plant

a) Occupiers in the region are required to notify Greater Wellington of the presence of moth plant (*Araujia sericifera*) plants on land they occupy. A breach of this rule will create an offence under Section 154(r) of the Act.

Pursuant to Sections 52 and 53 of the Biosecurity Act 1993, no person shall release, or cause to be released, propagate, or sell or offer for sale, or hold in premises where plants are offered for sale, or otherwise spread moth plant (*Araujia sericifera*) plants. A breach of this provision is an offence under Section 154(m) of the Act.

Explanation of Strategy Rules

Strategy rule (a) will bring any new infestations of moth plant to the attention of Greater Wellington so they can be included in the control programme. Sections 52 and 53 of the Act impose a ban on the sale, propagation or distribution of moth plant in the Wellington region.

6.8.8 Monitoring the Objectives

The Council shall:

- Annually report the location and number of known sites of moth plant and density of plants within them.

6.9 Perennial nettle *(Urtica dioica)*

6.9.1 Description

- A rhizomatous, erect plant growing to 50 cm in height.
- The tough rhizomes are yellowish, much branched and spread vigorously.
- The erect stems that grow from this rootstock are ridged and have bristly stinging hairs and few branches.
- Leaves are ovate to heart-shaped, sharply toothed and covered with stinging hairs.
- The seed of perennial nettle is 1-1.5 mm long, flattened, oval and minutely granular.

6.9.2 Reason for Inclusion

The total area infested with perennial nettle in the region is estimated to be 8 ha over 37 known sites. Perennial nettle has the potential to invade waste places, cultivated land and pasture. Perennial nettle is unpalatable to stock and will form dense clumps, excluding desirable pasture species. If left to spread, perennial nettle could infest 470,000 ha in the Wellington region.

6.9.3 Control Options

Due to the low number of infestations Greater Wellington believes that eradicating perennial nettle from the entire region is achievable. Perennial nettle has been subject to ongoing management by the Council and Greater Wellington believes that eradication is achievable by 2021. It is Greater Wellington's opinion that eradication of perennial nettle over the entire region is the best option.

Alternative options for the management of perennial nettle include: 'do nothing'; or place the responsibility for the control of perennial nettle on the occupier. Greater Wellington does not consider 'do nothing' to be a viable option as the potential costs to the region will be substantial if the pest becomes widespread. Placing all responsibility for controlling this pest on the occupier is unlikely to achieve eradication and therefore direct control by service delivery is required.

6.9.4 Aim

"To eradicate perennial nettle from the Wellington region."

6.9.5 Objectives

- Reduce the density of plants of perennial nettle by 80% at all known sites by 2006.
- Eradicate perennial nettle from all known sites by 2021.

6.9.6 Means of Achievement

Greater Wellington shall:

- Undertake **direct control by service delivery** of perennial nettle at all known sites in the region.
- Provide **information and publicity** to enhance public awareness of the threat perennial nettle poses to the region.
- **Identify** new sites of perennial nettle through incidental reports by biosecurity officers or the public, and through the regional pest plant surveillance programme.
- Annually **inspect** local nurseries for the sale of perennial nettle.

6.9.7 Strategy Rules for Perennial nettle

a) Occupiers in the region are required to notify Greater Wellington of the presence of perennial nettle (*Urtica dioica*) plants on land they occupy. A breach of this rule will create an offence under Section 154(r) of the Act.

Pursuant to Sections 52 and 53 of the Biosecurity Act 1993, no person shall release, or cause to be released, propagate, or sell or offer for sale, or hold in premises where plants are offered for sale, or otherwise spread perennial nettle (*Urtica dioica*) plants. A breach of this provision is an offence under Section 154(m) of the Act.

Explanation of Strategy Rules

Strategy rule (a) will bring any new infestations of perennial nettle to the attention of Greater Wellington so they can be included in the control programme. Sections 52 and 53 of the Act impose a ban on the sale, propagation or distribution of perennial nettle in the Wellington region.

6.9.8 Monitoring the Objectives

The Council shall:

- Annually report the location and number of known sites of perennial nettle and density of plants within them.

6.10 Saffron thistle (*Carthamus lanatus*)

6.10.1 Description

- An erect annual plant growing to 1 m high.
- It has stoutly branched, fleshy taproots up to 40 cm deep.
- The stems are white, yellowish-white, or pale green. There is generally only a single stem that is much-branched in the upper half.
- Rosette leaves to 20 cm long, are deeply divided with broad lobes. The stem leaves are shorter, alternate and prominently veined.
- Flower heads are solitary and composed of numerous, bright yellow florets.

6.10.2 Reason for Inclusion

The total area infested with Saffron Thistle is estimated to be 2.5 ha over five known sites. Saffron thistle can invade cultivated paddocks, poor pasture, and neglected areas. It often occurs in dense patches which restricts stock movement and injures grazing animals. Saffron thistle also competes with pasture species reducing the carrying capacity. It can cause vegetable faults and reduce yield in certain crops. The hard stems increase wear and tear on harvesting machinery in these crops. If left to spread, saffron thistle has the potential to infest 445,000 ha in the Wellington region.

6.10.3 Control Options

Due to the low number of infestations Greater Wellington believes that eradicating saffron thistle from the entire region is achievable. Saffron thistle has been subject to ongoing management by the Council and Greater Wellington believes that eradication is achievable by 2021. It is Greater Wellington's opinion that eradication of saffron thistle over the entire region is the best option.

Alternative options for the management of saffron thistle include: 'do nothing'; or place all responsibility for the control of saffron thistle on the occupier. Greater Wellington does not consider 'do nothing' to be a viable option as the potential costs to the region will be substantial if the pest becomes widespread. Placing all responsibility for controlling this pest on the occupier is unlikely to achieve eradication and therefore direct control by service delivery is required.

6.10.4 Aim

"To eradicate saffron thistle from the Wellington region."

6.10.5 Objectives

- Prevent seeding of saffron thistle at all known sites annually.
- Eradicate saffron thistle from all sites by 2021.

6.10.6 Means of Achievement

Greater Wellington shall:

- Undertake **direct control by service delivery** of saffron thistle at all known sites in the region.
- Provide **information and publicity** to enhance public awareness of the threat saffron thistle poses to the region.
- **Identify** new sites of saffron thistle through incidental reports by biosecurity officers or the public, and through the regional pest plant surveillance programme.
- Annually **inspect** local nurseries for the sale of saffron thistle.

6.10.7 Strategy Rules for Saffron thistle

a) Occupiers in the region are required to notify Greater Wellington of the presence of saffron thistle (*Carthamus lanatus*) plants on land they occupy. A breach of this rule will create an offence under Section 154(r) of the Act.

Pursuant to Sections 52 and 53 of the Biosecurity Act 1993, no person shall release, or cause to be released, propagate, or sell or offer for sale, or hold in premises where plants are offered for sale, or otherwise spread saffron thistle (*Carthamus lanatus*) plants. A breach of this provision is an offence under Section 154(m) of the Act.

Explanation of Strategy Rules

Strategy rule (a) will bring any new infestations of saffron thistle to the attention of Greater Wellington so they can be included in the control programme. Sections 52 and 53 of the Act impose a ban on the sale, propagation or distribution of saffron thistle in the Wellington region.

6.10.8 Monitoring the Objectives

The Council shall:

- Annually report the location and number of plants at all known sites of saffron thistle.
- Annually report the number of seeding plants at all known sites of saffron thistle.

6.11 Smilax/bridal creeper (Asparagus asparagoides)

6.11.1 Description

- A scrambling or twining perennial that grows up to 3 m tall in supporting shrubs and trees.
- The 'leaves' of Smilax are actually green, flattened stems, that resemble leaves.
- The flowers are small, greenish-white and followed by red berries.

6.11.2 Reason for Inclusion

The total area infested with smilax is estimated to be 1.25 ha over four known sites. Smilax can invade coastal areas, open rocklands, scrubland, roadsides, hedges, wasteland and inshore and offshore islands. Smilax prefers open woodland or fertile, well-drained soils although it will tolerate all but the wettest soils. It can establish and out-compete other species in heavy shade. If left to spread, smilax has the potential to infest 403,000 ha in the Wellington region.

6.11.3 Control Options

Due to the low number of infestations Greater Wellington believes that eradicating smilax from the entire region is achievable. The Council has not previously managed smilax so it could take at least 10 years to eradicate all known sites. It is the opinion of Greater Wellington that eradication of smilax over the entire region is the best option.

Alternative options for the management of smilax include: 'do nothing'; or place the responsibility for the control of smilax on the occupier. Greater Wellington does not consider 'do nothing' to be a viable option as the potential costs to the region will be substantial if the pest becomes widespread. Placing all responsibility for controlling this pest on the occupier is unlikely to achieve eradication and therefore direct control by service delivery is required.

6.11.4 Aim

"To eradicate smilax from the Wellington region."

6.11.5 Objective

- Reduce the density of plants of smilax by 80% at all known sites by 2006.
- Eradicate smilax from all known sites by 2011.

6.11.6 Means of Achievement

Greater Wellington shall:

- Undertake **direct control by service delivery** of smilax at all known sites in the region.
- Provide **information and publicity** to enhance public awareness of the threat smilax poses to the region.
- **Identify** new sites of smilax through incidental reports by biosecurity officers or the public, and through the regional pest plant surveillance programme.
- Annually **inspect** local nurseries for the sale of smilax.

6.11.7 Strategy Rules for Smilax

a) Occupiers in the region are required to notify Greater Wellington of the presence of smilax (*Asparagus asparagoides*) plants on land they occupy. A breach of this rule will create an offence under Section 154(r) of the Act.

Pursuant to Sections 52 and 53 of the Biosecurity Act 1993, no person shall release, or cause to be released, propagate, or sell or offer for sale, or hold in premises where plants are offered for sale, or otherwise spread smilax (*Asparagus asparagoides*) plants. A breach of this provision is an offence under Section 154(m) of the Act.

Explanation of Strategy Rules

Strategy rule (a) will bring any new infestations of smilax to the attention of Greater Wellington so they can be included in the control programme. Sections 52 and 53 of the Act impose a ban on the sale, propagation or distribution of smilax in the Wellington region.

6.11.8 Monitoring the Objectives

The Council shall:

- Annually report the location and number of known sites of smilax and density of plants within them.

6.12 Sweet pea shrub *(Polygala myrtifolia)*

- excludes Polygala myrtifolia var.grandifolia and Polygala x dalmasiana

6.12.1 Description

- A much-branched, perennial shrub that can grow to 2 m high.
- The light green leaves are oval and grow to 2.5 cm.
- The pea-like flowers are clustered at the end of each branchlet. The petals are pinky-purple, and the middle petal (keel) is white with a purple blush ending in a tuft of white hairs. The backs of the petals are generally greeny-white (compared to Grandifolia, which are purple). The flower is approximately 1.5 cm long with the keel slightly shorter.
- Flowers are produced all year except for a short period during summer.
- Dark brown hairy seeds are produced in a small winged capsule.

6.12.2 Reason for Inclusion

The total area infested with sweet pea shrub is estimated to be 0.2 ha over five known sites. Sweet pea shrub has the ability to invade and drastically alter the ecology of coastal areas. It can also invade forest margins, scrubland communities and open land, suppress groundcover species and inhibit the regeneration of native species in these areas. If left to spread, sweet pea shrub has the potential to infest 345,000 ha in the Wellington region.

6.12.3 Control Options

Due to the low number of infestations Greater Wellington believes that eradicating sweet pea shrub from the entire region is achievable. The Council has not previously managed sweet pea shrub so it could take at least 10 years to eradicate all known sites. It is the opinion of Greater Wellington that eradication of sweet pea shrub over the entire region is the best option.

Alternative options for the management of sweet pea shrub include: ‘do nothing’; or place the responsibility for the control of sweet pea shrub on the occupier. Greater Wellington does not consider ‘do nothing’ to be a viable option as the potential costs to the region will be substantial if the pest becomes widespread. Placing all responsibility for controlling this pest on the occupier is unlikely to achieve eradication and therefore direct control by service delivery is required**.**

6.12.4 Aim

"To eradicate sweet pea shrub from the Wellington region."

6.12.5 Objectives

- Reduce the density of plants of sweet pea shrub by 80% at all known sites by 2006.
- Eradicate sweet pea shrub from all known sites by 2011.

6.12.6 Means of Achievement

Greater Wellington shall:

- Undertake **direct control by service delivery** of sweet pea shrub at all known sites in the region.
- Provide **information and publicity** to enhance public awareness of the threat sweet pea shrub poses to the region.
- **Identify** new sites of sweet pea shrub through incidental reports by biosecurity officers or the public, and through the regional pest plant surveillance programme.
- Annually **inspect** local nurseries for the sale of sweet pea shrub.

6.12.7 Strategy Rules for Sweet pea shrub

a) Occupiers in the region are required to notify Greater Wellington of the presence of sweet pea shrub (*Polygala myrtifolia*) plants on land they occupy. A breach of this rule will create an offence under Section 154(r) of the Act.

Pursuant to Sections 52 and 53 of the Biosecurity Act 1993, no person shall release, or cause to be released, propagate, or sell or offer for sale, or hold in premises where plants are offered for sale, or otherwise spread sweet pea shrub (*Polygala myrtifolia*) plants. A breach of this provision is an offence under Section 154(m) of the Act.

Explanation of Strategy Rules

Strategy rule (a) will bring any new infestations of sweet pea shrub to the attention of Greater Wellington so they can be included in the control programme. Sections 52 and 53 of the Act impose a ban on the sale, propagation or distribution of sweet pea shrub in the Wellington region.

6.12.8 Monitoring the Objectives

The Council shall:

- Annually report the location and number of known sites of sweet pea shrub and density of plants within them.

6.13 Woolly nightshade *(Solanum mauritianum)*

6.13.1 Description

- A shrub or small tree up to 10 m in height with a trunk up to 20 cm in diameter.
- Leaves are ovate, greyish-green on the upper surface and white to yellowish green on the lower surface. They are covered with dense felt-like hairs and have a very pungent smell, especially when crushed.
- The flowers have five purple lobes with a yellow centre and form clusters at the end of branches.
- Green berries 1 cm in diameter form, and ripen to a yellow colour. Each berry contains many seeds, 1-2 mm long.

6.13.2 Reason for Inclusion

The total area infested with woolly nightshade in the region is estimated to be 1 ha over 21 known sites. Woolly nightshade has the ability to invade pastoral and horticultural land, and is suspected of poisoning livestock. Woolly nightshade has the potential to invade scrubland and short tussock land. Woolly nightshade can also form pure colonies and has a moderate ability to suppress the regeneration of native species. If left to spread, woolly nightshade has the potential to infest 695,000 ha in the Wellington region.

6.13.3 Control Options

Due to the low number of infestations Greater Wellington believes that eradicating woolly nightshade from the entire region is achievable. Woolly nightshade has been subject to ongoing management by the Council and Greater Wellington believes that eradication is achievable by 2011. It is Greater Wellington's opinion that eradication of woolly nightshade over the entire region is the best option.

Alternative options for the management of woolly nightshade include: 'do nothing'; or place the responsibility for the control of woolly nightshade on the occupier. Greater Wellington does not consider 'do nothing' to be a viable option as the potential costs to the region will be substantial if the pest becomes widespread. Placing all responsibility for controlling this pest on the occupier is unlikely to achieve eradication and therefore direct control by service delivery is required.

6.13.4 Aim

"To eradicate woolly nightshade from the Wellington region."

6.13.5 Objectives

- Reduce the density of plants of woolly nightshade by 80% at all known sites by 2006.
- Eradicate woolly nightshade from all known sites by 2011.

6.13.6 Means of Achievement

Greater Wellington shall:

- Undertake **direct control by service delivery** of woolly nightshade at all known sites in the region.
- Provide **information and publicity** to enhance public awareness of the threat woolly nightshade poses to the region.
- **Identify** new sites of woolly nightshade through incidental reports by biosecurity officers or the public, and through the regional pest plant surveillance programme.
- Annually **inspect** local nurseries for the sale of woolly nightshade.

6.13.7 Strategy Rules for Woolly nightshade

a) Occupiers in the region are required to notify Greater Wellington of the presence of woolly nightshade (*Solanum mauritianum*) plants on land they occupy. A breach of this rule will create an offence under Section 154(r) of the Act.

Pursuant to Sections 52 and 53 of the Biosecurity Act 1993, no person shall release, or cause to be released, propagate, or sell or offer for sale, or hold in premises where plants are offered for sale, or otherwise spread woolly nightshade (*Solanum mauritianum*) plants. A breach of provision is an offence under Section 154(m) of the Act.

Explanation of Strategy Rules

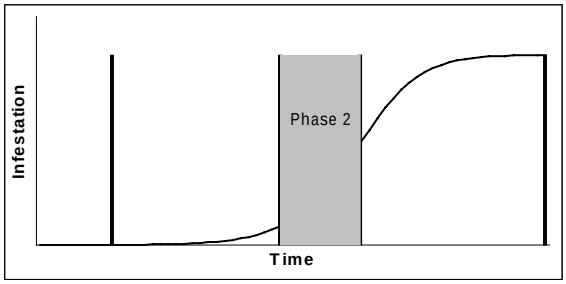
Strategy rule (a) will bring any new infestations of woolly nightshade to the attention of Greater Wellington so they can be included in the control programme. Sections 52 and 53 of the Act impose a ban on the sale, propagation or distribution of woolly nightshade in the Wellington region.

6.13.8 Monitoring the Objectives

The Council shall:

- Annually report the location and number of known sites of woolly nightshade and density of plants within them.

Containment Pests



- **These pests are established in the region, but have limited to moderate distribution.**
- **Many areas remain clear.**
- **In zoned areas, where the pest is tolerated, occupiers will usually be responsible for maintaining low pest density.**
- **In clear areas, the 'direct control by service delivery' method will be used. Greater Wellington will control the pests at no direct cost to the land occupier (except Crown land).**
- **The occupier is responsible for removing green waste after pest control is undertaken.**

7. Containment Pests

7.1 Rooks (Corvus frugilegus)

7.1.1 Description

- Large black birds introduced to New Zealand from Great Britain in the early 1800s.
- Usually nest in colonies of 20-100 pairs, and up to 900 pairs in heavily infested areas.
- Rookeries in the Wellington region typically contain 40 nests.
- Rooks lay 2-6 eggs between late August and mid November. The eggs hatch after 19 days and the young begin to fly one month later.

7.1.2 Reason for Inclusion

The initial spread of rooks was slow and the first colonies to establish in the Wellington region were in southern Wairarapa in the 1930s. Control efforts in other parts of the country during the 1960s and 1970s lead to rooks displacing and spreading much more rapidly. From 1985 to 1994 rook numbers in the Wairarapa increased 10-fold until Greater Wellington recommenced control in 1995. Currently, rooks are mostly confined to Northern Wairarapa (figure 4) but are expected to increase their numbers and extend their range into the remainder of the region in the absence of control.

During summer when soil becomes hard and difficult to extract insects, rooks assemble into large groups and target easy food supplies. These include walnut stands, acorns, freshly ploughed soil (for overturned insects), newly germinating crop seedlings and mature grains such as wheat and lentils. Precision planted crops such as maize, peas and beans are especially at risk.

7.1.3 Control Options

A cost-benefit analysis has identified that reducing rooks within the Masterton and Tararua districts over the next five years, and concurrently removing all rooks from all other areas has the greatest net benefit to the region. Due to the continual invasion of rooks from other parts of the country, eradicating rooks from the whole region is not thought possible. However, successful implementation of the Strategy objectives would result in very few rooks remaining in the region by the term of the Strategy.

Alternative options for the management of rooks include: ‘Do nothing’ or place all responsibility for the control of rooks on the occupier. Greater Wellington does not consider ‘do nothing’ to be a viable option as the potential impacts to the region will be substantial if the pest becomes more widespread throughout the region. Occupier attempts to control rooks are likely to result in scattered rookeries and an increase in rook numbers. Therefore Greater Wellington believes direct control by service delivery for rooks is the best option.

7.1.4 Aim

"To manage rooks to levels that protect economic values."

7.1.5 Objectives

- Have no active breeding rookeries outside the Containment zone (figure 4) by 2006.
- Have no more than five breeding rookeries within the Containment zone (figure 4) by 2006.

7.1.6 Means of Achievement

Greater Wellington shall:

- Undertake **direct control by service delivery** where rooks are known to exist.
- **Survey** rook populations annually in areas where they are known to exist, and where new infestations are reported.
- Support appropriate **research initiatives**, including biological control should it become available.
- **Ensure compliance** with the Strategy rules in order to achieve the Strategy objectives.
- **Encourage Horizons.mw** (Manawatu-Wanganui Regional Council) to actively pursue management of rooks within their region that complements this Council's Rook Containment programme.
- Annually **inspect** pet shops and rook keepers for the sale of rooks.

7.1.7 Strategy Rules for Rooks

a) Occupiers in the Wellington region shall notify Greater Wellington of the presence of rookeries on land that they occupy. A breach of this rule will create an offence under Section 154(r) of the Act.

b) Other than in accordance with the direction or under the supervision of an Authorised Person pursuant to this Strategy, no person shall
   i) Discharge a firearm at any rookery.
   ii) Lay any poison bait that is acceptable to rooks (*Corvus frugilegus*) where rooks are known to be present from time to time.
   iii) Damage, disturb or interfere in any way with a rookery.
   A breach of this rule will create an offence under Section 154(r) of the Act.

c) No person shall move or interfere with any article or substance left at a place by an Authorised Person pursuant to this Strategy for the purposes of:
   i) Confirming the presence, former presence, or absence of rooks (*Corvus frugilegus*); or
   ii) Managing or eradicating rooks (*Corvus frugilegus*); -
   Other than in accordance with the direction or under the supervision of an Authorised Person. A breach of this rule will create an offence under Section 154(r) of the Act.

Pursuant to Sections 52 and 53 of the Biosecurity Act 1993, no person shall release, or cause to be released, breed, or sell or offer for sale, or hold in premises where animals are offered for sale, or otherwise spread rooks (*Corvus frugilegus*). A breach of this provision is an offence under Section 154(m) of the Act.

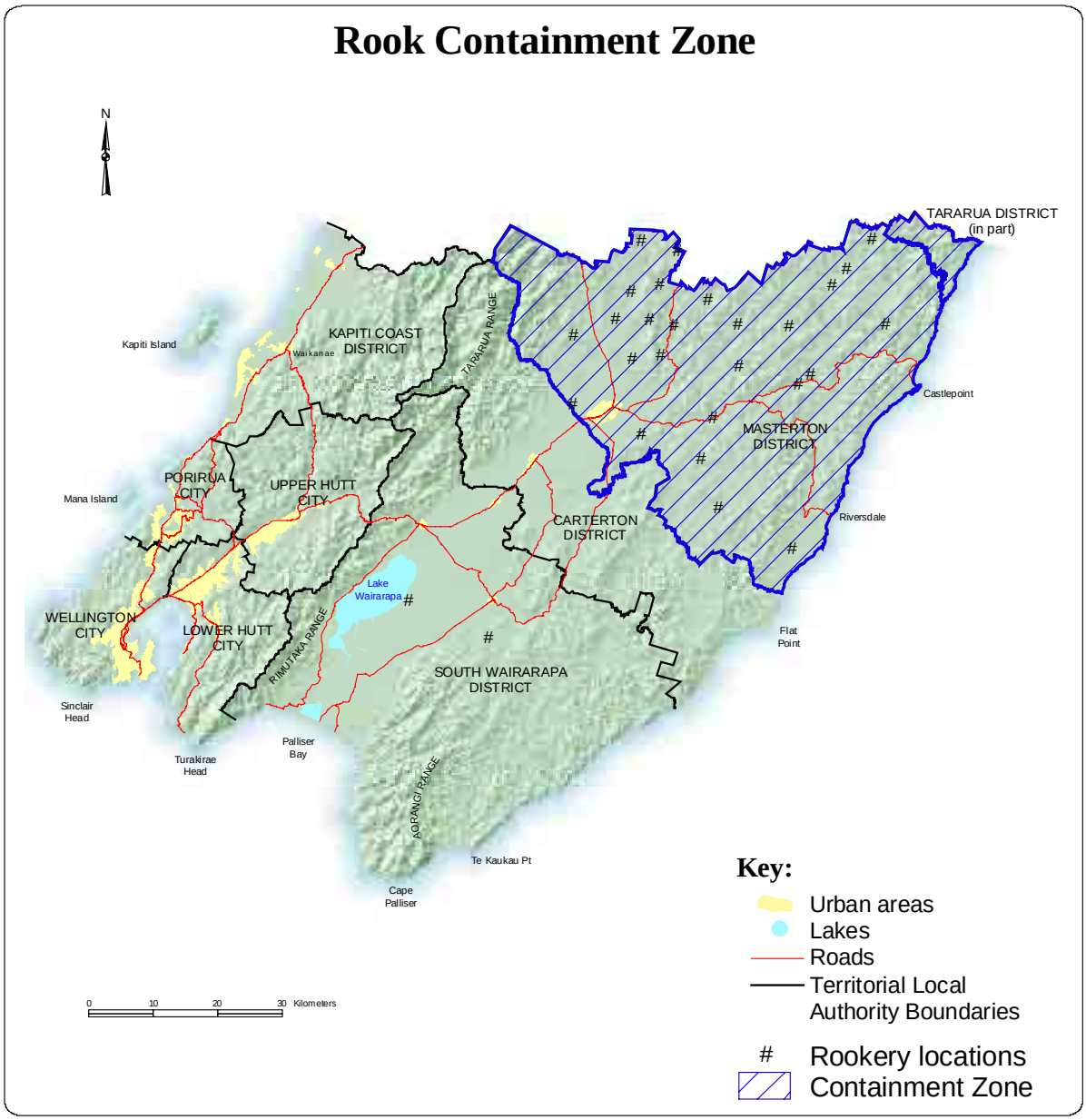
Explanation of Strategy Rules

Strategy rule a) will assist Greater Wellington in monitoring new infestations of rooks and implement control before they become well established at the new location. Rooks are very shy and cunning, making them difficult to poison and trap. Rule b) and c) prevents mismanaged control attempts by occupiers that may result in dispersal of the birds and further spread of the problem, and allows Greater Wellington to undertake the necessary actions for control. Sections 52 and 53 of the Act impose a ban on the sale, breeding or distribution of rooks in the Wellington region.

7.1.8 Monitoring the Objectives

The Council shall:

- Annually report the location of known rookeries and number of active nests.
- Annually report the density of rooks at known sites.



Containment zone includes all land within the Masterton District and that part of the Tararua District within the Wellington Region.

Figure 4. Rook Containment zone and location of known rookeries in Wellington region as at September 2001. Greater Wellington intends to eradicate all known rookeries outside the Containment zone, and reduce the number of rookeries in the Containment zone by 2006.

7.2 Boneseed (Chrysanthemoides monilifera)

7.2.1 Description

- A bushy, much branched shrub that grows to 3 m high.
- Thick leathery leaves, with toothed edges, tapered leaf bases and a mealy powdery surface.
- Produces clusters of small yellow daisy flowers that cover the plant in late winter to early summer.
- The fruit is initially green, becoming round and black, then the outside flakes off to leave a hard whitish inner coat.

7.2.2 Reason for Inclusion

The total area infested with boneseed in the region is estimated to be 200 ha. Most infestations of boneseed are widely distributed throughout Wellington City, Hutt City, Porirua City and parts of Kapiti District. There are limited infestations in the remainder of the region. Boneseed has the ability to cause irreversible change to the structure of natural areas, and is able to rapidly colonise and replace low coastal and open vegetation. It can form dense colonies in normally open areas, preventing the regeneration of native plant species. If left to spread, boneseed has the potential to infest 190,000 ha in the Wellington region.

7.2.3 Control Options

Due to the overall number of infestations Greater Wellington does not believe that eradicating boneseed from the entire region is achievable at present. However, analysis has shown that it is beneficial to prevent boneseed further extending its range to areas that are currently clear. It is the opinion of Greater Wellington that eradication of boneseed outside the Containment zone (figure 5) is the best option. Within the Containment zone, occupier control will be voluntary.

Alternative options for the management of boneseed include: ‘Do nothing’; or place all responsibility for the control of boneseed outside the Containment zone on the occupier. Greater Wellington does not consider ‘do nothing’ to be a viable option as the potential impacts to the region will be substantial if the pest is allowed to become widespread. Placing all responsibility for controlling this pest on the occupier is unlikely to achieve eradication outside the Containment zone and therefore a high level of regional intervention is required.

7.2.4 Aim

"To reduce the adverse environmental impacts of boneseed."

7.2.5 Objective

- Reduce the number of known active sites of boneseed outside the Containment zone by 50% by 2006.
- Eradicate boneseed from all known sites outside the Containment zone by 2011.

7.2.6 Means of Achievement

Greater Wellington shall:

- Undertake **direct control by service delivery** of boneseed outside the Containment zone.
- Provide **information and publicity** to enhance public awareness of the threat boneseed poses to the region.
- **Identify** new sites of boneseed through incidental reports by biosecurity officers or the public, and through the regional pest plant surveillance programme.
- Release approved **biological control** agents for the control of boneseed if and when they become available.
- Annually **inspect** local nurseries for the sale of boneseed.

7.2.7 Strategy Rules for Boneseed

a) Occupiers outside the Containment zone (figure 5) are required to notify Greater Wellington of the presence of boneseed (*Chrysanthemoides monilifera)* on land that they occupy. A breach of this rule will create an offence under Section 154(r) of the Act.

Pursuant to Sections 52 and 53 of the Biosecurity Act 1993, no person shall release, or cause to be released, propagate, or sell or offer for sale, or hold in premises where plants are offered for sale, or otherwise spread boneseed (*Chrysanthemoides monilifera)* plants. A breach of this provisions an offence under Section 154(m) of the Act.

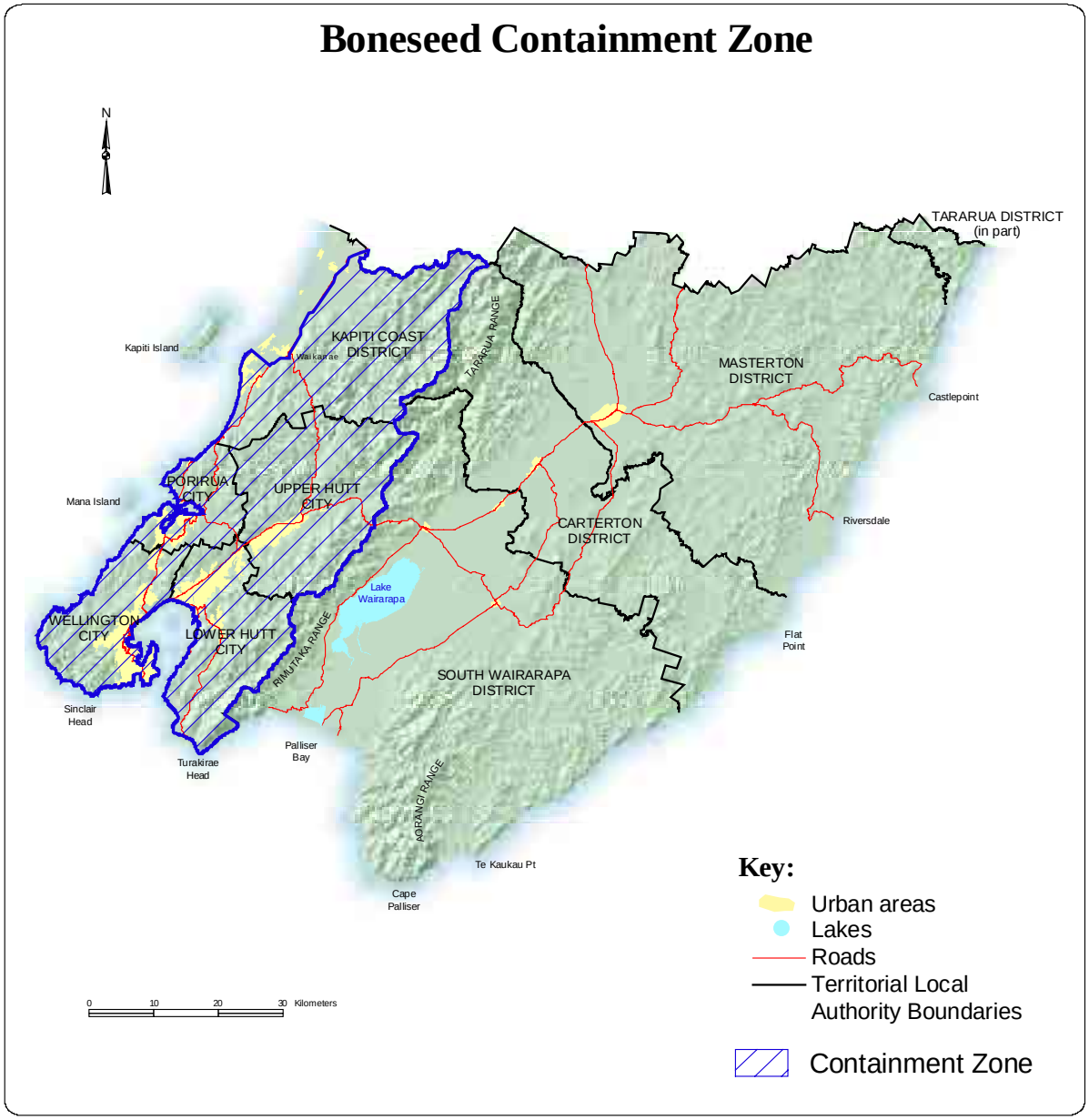
Explanation of Strategy Rules

Strategy rule (a) requires occupiers outside the containment zone to notify the Council of any boneseed on their land, to enable the Council to implement its eradication policy. Sections 52 and 53 of the Act impose a ban on the sale, propagation or distribution of boneseed in the Wellington region.

7.2.8 Monitoring the Objectives

The Council shall:

- Annually report the location and number of known sites of boneseed outside the Containment zone.



Containment zone includes all land within the districts of Wellington City, Lower Hutt City, Upper Hutt City, Porirua City and Kapiti District, with the exception of the land enclosed by the Waikanae River, State Highway Number One, Wellington region northern boundary and the mean high water springs line of the western coastline of the Wellington region.

Figure 5. Boneseed Containment zone indicating the area to which boneseed will be confined. Greater Wellington will undertake direct control by service delivery outside the Containment zone.

7.3 Climbing asparagus/snakefeather *(Asparagus scandens)*

7.3.1 Description

- A scrambling or climbing perennial, growing 2-3 m up host vegetation.
- The plant grows from root tubers that can spread up to 50 cm from the parent plant.
- Leaves are tiny and delicate.
- Small white flowers are formed September-December. These develop into orange-red berries, each containing 1-9 seeds.

7.3.2 Reason for Inclusion

Climbing asparagus is common in urban gardens and reserves throughout the Hutt Valley, Wellington City, Porirua and Kapiti. However, infestations in the Wairarapa District are light. The total area infested with climbing asparagus in the Wellington region is estimated to be 2,016 ha. Climbing asparagus has the ability to have significant effects in disturbed forest and scrubland. It often carpets the ground, suppressing regeneration of native species. It is one of a few weed species that is capable of killing host trees by ring barking. If left to spread, climbing asparagus has the potential to infest 405,000 ha in the Wellington region.

7.3.3 Control Options

Due to the overall number of infestations Greater Wellington does not believe that eradicating climbing asparagus from the entire region is achievable at present. However, analysis has shown that it is beneficial to prevent climbing asparagus further extending its range to currently clear areas of the region. It is the opinion of Greater Wellington that eradication of climbing asparagus outside the Containment zone (figure 6) is the best option. Within the Containment zone, occupier control will be voluntary.

Alternative options for the management of climbing asparagus include: ‘Do nothing’; or place all responsibility for the control of climbing asparagus in the Wairarapa on the occupier. Greater Wellington does not consider ‘do nothing’ to be a viable option as the potential impacts to the region will be substantial if the pest becomes more widespread throughout the Wairarapa. Placing the responsibility of controlling this pest in this zone on the occupier is unlikely to achieve eradication outside the Containment zone and therefore a high level of regional intervention is required.

7.3.4 Aim

"*To reduce the adverse environmental impacts of climbing asparagus throughout the Wairarapa."*

7.3.5 Objectives

- Eradicate all of the known sites of climbing asparagus outside the Containment zone by 2006.

7.3.6 Means of Achievement

Greater Wellington shall:

- Undertake **direct control by service delivery** of climbing asparagus at all known sites outside the Containment zone.
- Provide **information and publicity** to enhance public awareness of the threat climbing asparagus poses to the region.
- **Identify** new sites of climbing asparagus through incidental reports by biosecurity officers or the public, and through the regional pest plant surveillance programme.
- Release **approved biological control** agents for the control of climbing asparagus if and when they become available.
- Annually **inspect** local nurseries for the sale of climbing asparagus.

7.3.7 Strategy Rules for Climbing asparagus

a) Occupiers outside the Containment zone (figure 6) are required to notify Greater Wellington of the presence of climbing asparagus (*Asparagus scandens)* on land that they occupy. A breach of this rule will create an offence under Section 154(r) of the Act.

Pursuant to Sections 52 and 53 of the Biosecurity Act 1993, no person shall release, or cause to be released, propagate, or sell or offer for sale, or hold in premises where plants are offered for sale, or otherwise spread climbing asparagus (*Asparagus scandens)* plants. A breach of this provision is an offence under Section 154(m) of the Act.

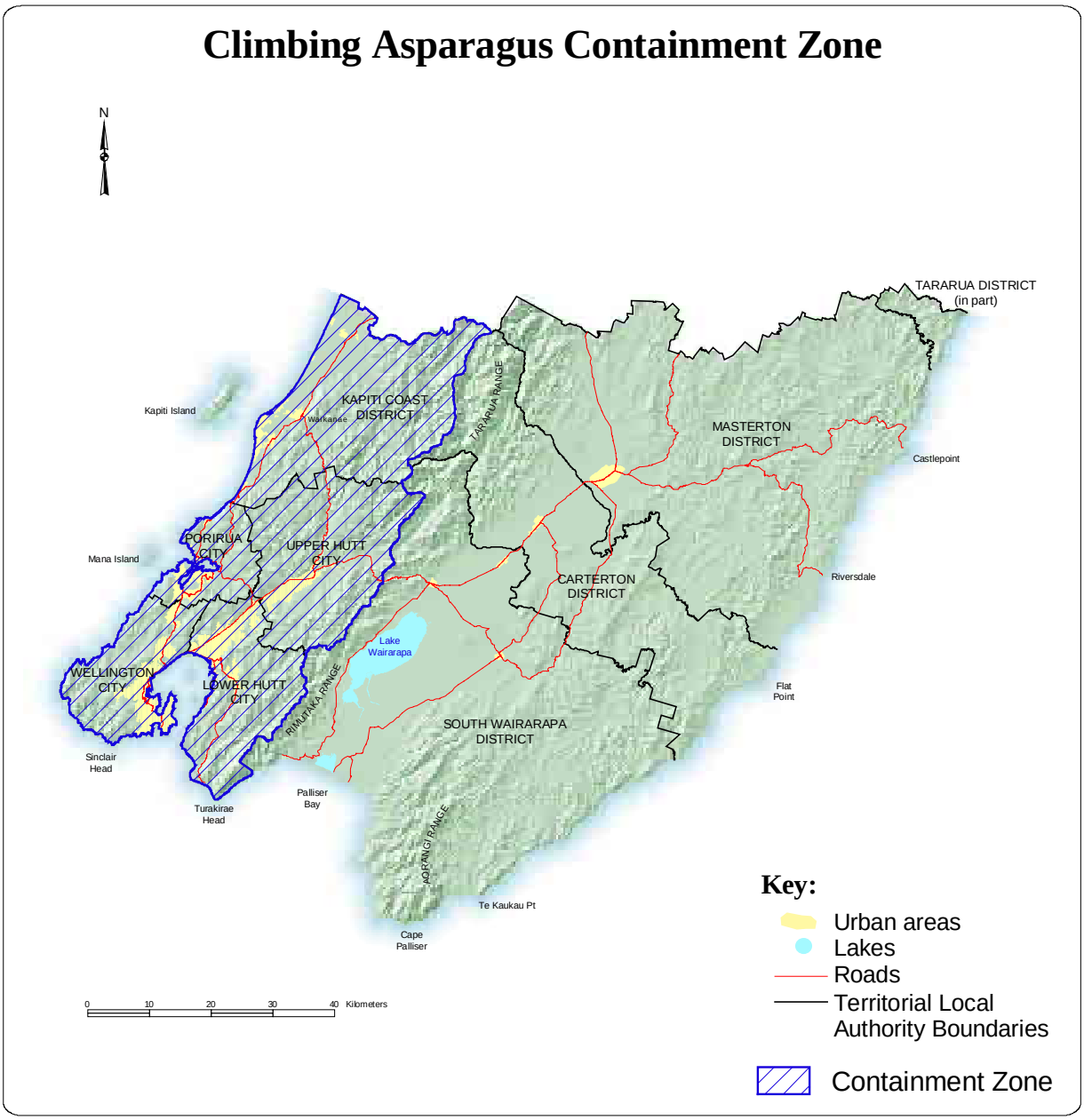
Explanation of Strategy Rules

Strategy rule (a) requires occupiers outside the Containment zone to notify the Council of any climbing asparagus on their land, to enable the Council to implement its eradication policy. Sections 52 and 53 of the Act impose a ban on the sale, propagation or distribution of climbing asparagus in the Wellington region.

7.3.8 Monitoring the Objectives

The Council shall:

- Annually report the location and number of known sites of climbing asparagus outside the Containment zone.



Containment zone includes all land within the districts of Wellington City, Lower Hutt City, Upper Hutt City, Porirua City and Kapiti District.

Figure 6. Climbing asparagus Containment zone indicating the area to which climbing asparagus will be confined. Greater Wellington will undertake direct control by service delivery outside the Containment zone.

7.4 Darwin's barberry *(Berberis darwinii)*

7.4.1 Description

- An evergreen shrub grows up to 6 m tall.
- Can form impenetrable colonies.
- Leaves are prickly and similar to holly but smaller. They are dark olive green, waxy on top and pale yellow green on the under-side.
- The edges of the leaves have 1-6 spiny teeth that are sharp to the touch.
- Main flowering is September-January, with some flowering throughout the year. Flowers hang in clusters. Range from deep orange to yellow.
- Berries form in early summer, are dark blue with each containing several seeds. Seed is generally spread in bird droppings.

7.4.2 Reason for Inclusion

Darwin's barberry is common in urban gardens and waste areas through the western suburbs of Wellington City. On many of the outlying western hills of the city the species is dominant, often overtopping and suppressing gorse. While scattered infestations are recorded through the Hutt Valley, Porirua and Kapiti districts, the actual degree is uncertain. In the Wairarapa only a small number of minor infestations are recorded with the area of infestation in that portion of the region estimated at 10 ha.

Darwin's barberry has been established on the western hills of Wellington for many years where it appeared static. It is only recently that increasing numbers of plants have been noted in outlying areas within reasonable proximity to the main infestations. In the Wairarapa the few sites have existed for many years and have remained static.

7.4.3 Control Options

Due to insufficient information regarding the degree of infestation in the Hutt Valley, Porirua and Kapiti Coast districts, and the widespread infestation throughout the Wellington City area, Greater Wellington does not believe that eradicating Darwin's barberry from the entire region is achievable. However, available information indicates that it is beneficial to prevent the species further extending its range in the Wairarapa.

It is the opinion of Greater Wellington that eradication of Darwin's barberry outside of the Containment zone (figure 7) is the best option. Within the Containment zone, occupier control will be voluntary. Greater Wellington will establish the level of infestation and rate of spread over the next few years to better determine the status of the species in the next Strategy review.

Alternative options for the management of Darwin's barberry include: 'Do nothing'; or place all responsibility for the control of Darwin's barberry on the occupier. Greater Wellington does not consider 'do nothing' to be a viable option as the potential impacts to the Wairarapa will be substantial if the pest becomes more widespread. Placing all responsibility for controlling this pest on the occupier is unlikely to achieve eradication outside of the Containment zone and therefore a high level of regional intervention is required.

7.4.4 Aim

"To reduce the adverse environmental impacts of Darwin's barberry in the Wellington region."

7.4.5 Objective

- Eradicate all known sites of Darwin's barberry outside of the Containment zone by 2006
- Determine the extent of infestation within the Containment zone by 2006.

7.4.6 Means of Achievement

Greater Wellington shall:

- Undertake **direct control by service delivery** of Darwin's barberry at all known sites outside of the Containment zone.
- Provide **information and publicity** to enhance public awareness of the threat Darwin's barberry poses to the region.
- **Identify** sites of Darwin's barberry by inspection carried out by biosecurity officers and from information received from the public.
- Release approved **biological control** agents for the control of Darwin's barberry if and when they become available.
- Annually **inspect** local nurseries for the sale of Darwin's barberry.

7.4.7 Strategy Rules for Darwin's barberry

a) Occupiers outside of the Containment zone (figure 7) are required to notify Greater Wellington of the presence of Darwin's barberry (*Berberis darwinii*) on land that they occupy. A breach of this rule will create an offence under Section 154(r) of the Act.

Pursuant to Sections 52 and 53 of the Biosecurity Act 1993, no person shall release, or cause to be released, propagate, or sell or offer for sale, or hold in premises where plants are offered for sale, or otherwise spread Darwin's barberry (*Berberis darwinii*) plants. A breach of this provision is an offence under Section 154(m) of the Act.

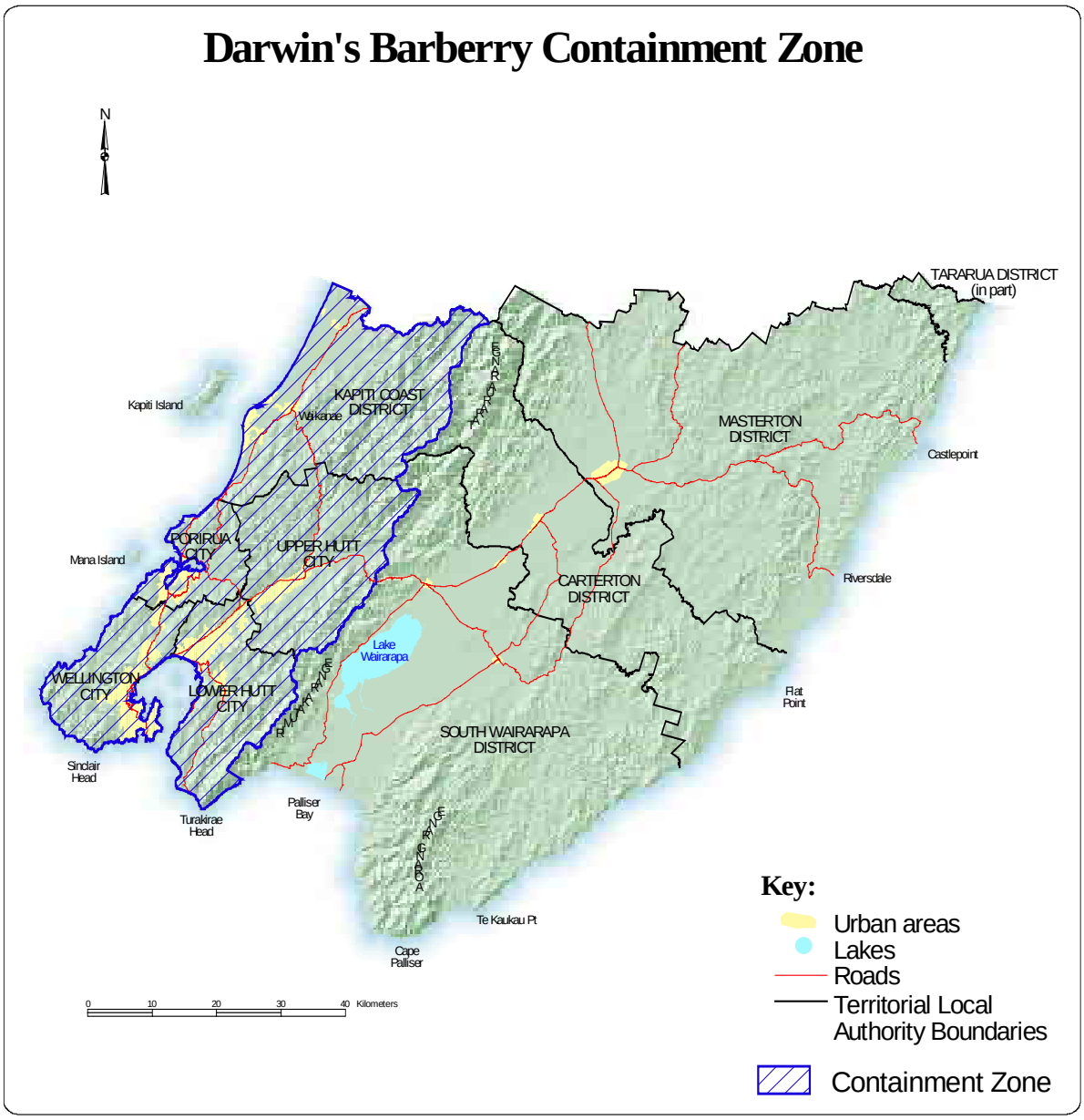
Explanation of Strategy Rules

Strategy rule (a) requires occupiers outside the Containment zone to notify Greater Wellington of any Darwin's barberry on their land, to enable the Council to implement its eradication policy. Sections 52 and 53 of the Act impose a ban on the sale, propagation or distribution of Darwin's barberry in the Wellington region.

7.4.8 Monitoring the Objectives

The Council shall:

- Annually report the location and number of known sites of Darwin's barberry outside the Containment zone.



Includes all land within the districts of Wellington City, Lower Hutt City, Upper Hutt City, Porirua City and Kapiti District.

Figure 7. Darwin's barberry Containment zone indicating the areas to which Darwin's barberry will be confined. Greater Wellington will undertake direct control by service delivery outside the Containment zone.

7.5 Evergreen buckthorn (*Rhamnus alaternus*)

7.5.1 Description

- An evergreen tree that grows up to 10 m in height.
- The glossy green leaves are leathery, oval shaped, often with serrated or toothed edges and prominent veins.
- The flowers are inconspicuous, pale green, and fragrant, occurring May-November.
- A glossy red berry is formed which turns black when ripe, and contains pale white seeds.

7.5.2 Reason for Inclusion

The total area infested with evergreen buckthorn in the region is estimated to be 500 ha. Evergreen buckthorn prefers areas with summer drought and intermittent winter rain, particularly coastal areas and bare rock. It can cause significant change to these plant communities by suppressing regeneration. If left to spread, evergreen buckthorn has the potential to infest 405,000 ha in the Wellington region.

7.5.3 Control Options

Due to the overall number of infestations Greater Wellington does not believe that eradicating evergreen buckthorn from the entire region is achievable at present. However, analysis has shown that it is beneficial to prevent evergreen buckthorn further extending its range to currently clear areas of the region. It is the opinion of Greater Wellington that eradication of evergreen buckthorn outside the Containment zone (figure 8) is the best option. The Containment zone is split into two zones:

- Containment zone 1 - As evergreen buckthorn primarily affects coastal ecosystems, occupier control will be voluntary in this inland environment.
- Containment zone 2 - evergreen buckthorn will be managed to low densities and the responsibility for control will lie with the occupier.

Alternative options for the management of evergreen buckthorn include: ‘Do nothing’; or place all responsibility for the control of evergreen buckthorn on the occupier. Greater Wellington does not consider ‘do nothing’ to be a viable option as the potential impacts to the region will be substantial if the pest becomes more widespread throughout the region. Placing the responsibility of controlling this pest on the occupier is unlikely to achieve eradication outside the Containment zone and therefore a high level of regional intervention is required.

7.5.4 Aim

"To reduce the adverse environmental impacts of evergreen buckthorn in coastal areas of the Wellington region."

7.5.5 Objective

- Prevent the establishment of evergreen buckthorn outside the Containment zone.
- Reduce the number of known active sites of evergreen buckthorn in Containment zone 2 by 25% by 2006.
- Reduce the number of known active sites of evergreen buckthorn in Containment zone 2 by 80% by 2021.

7.5.6 Means of Achievement

Greater Wellington shall:

- Annually **inspect** a random selection of the properties in Containment zone 2 with known infestations of evergreen buckthorn.
- Undertake **direct control by service delivery** of evergreen buckthorn found outside the Containment zones.
- **Ensure compliance** with the Strategy rules in order to achieve the Strategy objectives.
- Provide **information and publicity** to enhance public awareness of the threat evergreen buckthorn poses to the region.
- Release approved **biological control** agents for the control of evergreen buckthorn if and when they become available.
- **Identify** new incursions of evergreen buckthorn through incidental reports by biosecurity officers or the public, and through the regional pest plant surveillance programme.
- Annually **inspect** local nurseries for the sale of evergreen buckthorn.

7.5.7 Strategy Rules for Evergreen buckthorn

a) Occupiers in Containment zone 2 (figure 8) shall destroy all evergreen buckthorn *(Rhamnus alaternus)* plants on land that they occupy. A breach of this rule will create an offence under Section 154(r) of the Act.

b) Occupiers outside the Containment zones (figure 8) are required to notify Greater Wellington of the presence of evergreen buckthorn *(Rhamnus alaternus)* on land that they occupy. A breach of this rule will create an offence under Section 154(r) of the Act.

Pursuant to Sections 52 and 53 of the Biosecurity Act 1993, no person shall release, or cause to be released, propagate, or sell or offer for sale, or hold in premises where plants are offered for sale, or otherwise spread evergreen buckthorn *(Rhamnus alaternus)* plants. A breach of this provision is an offence under Section 154(m) of the Act.

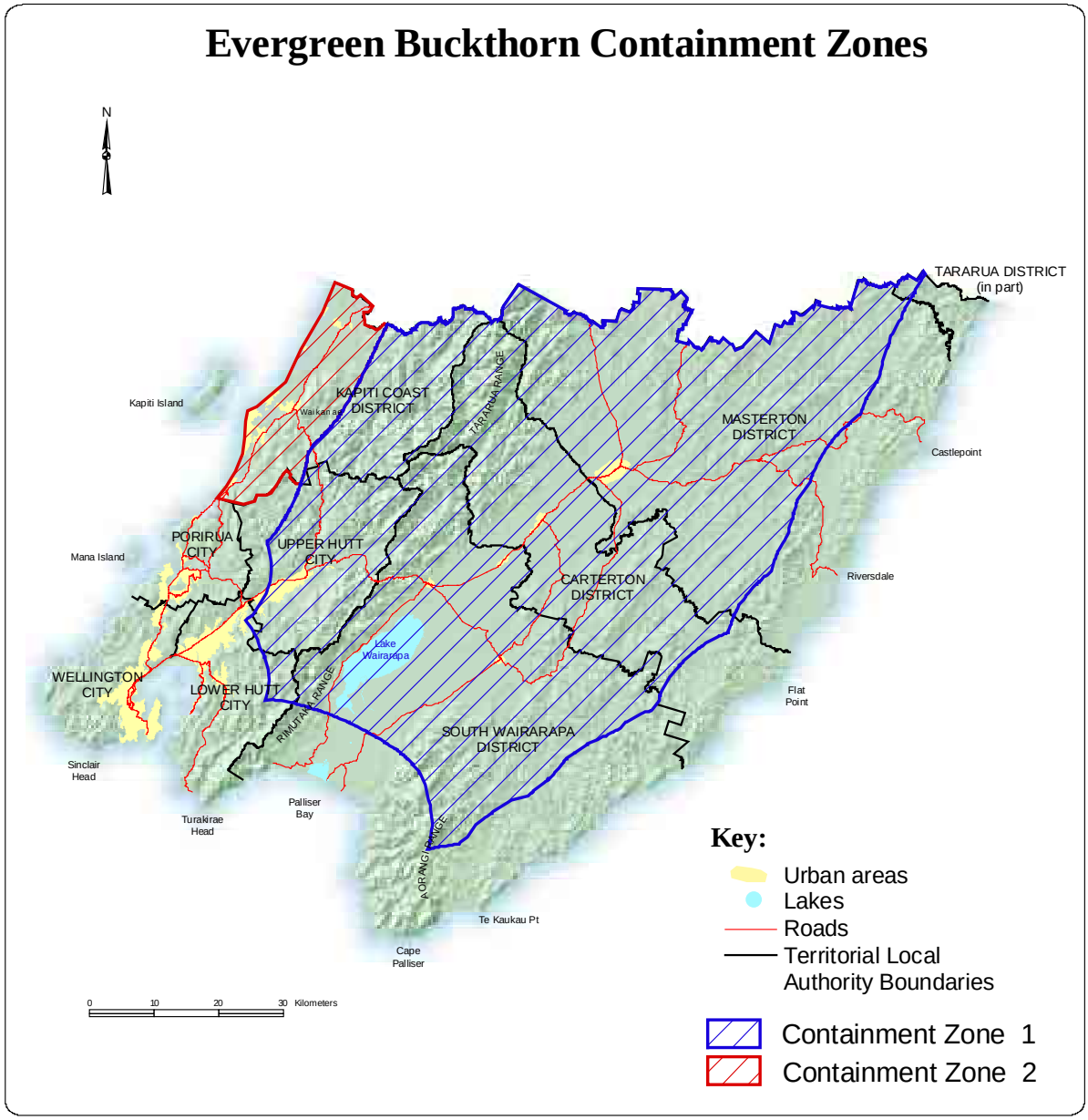
Explanation of Strategy Rules

Strategy rule (a) requires occupiers in the Wellington region to treat and destroy all evergreen buckthorn wherever it appears on their property. Strategy rule (b) requires occupiers outside the Containment zone to notify the Council of any evergreen buckthorn on their land, to enable the Council to implement its eradication policy. Sections 52 and 53 impose a ban on the sale, propagation or distribution of evergreen buckthorn in the Wellington region.

7.5.8 Monitoring the Objectives

The Council shall:

- Annually report the location and number of known sites of evergreen buckthorn outside the Containment zone and in Containment zone 2.



Containment zone 1 includes all land in the Wellington Region more than 10 km distant from mean high water springs. Containment zone 2 includes all land in the Kapiti Coast District within 10 km of mean high water springs.

Figure 8. Evergreen buckthorn Containment zones indicating where control of evergreen buckthorn is voluntary (zone 1) and where occupiers are required to destroy all evergreen buckthorn on their property (zone 2). Greater Wellington will undertake direct control by service delivery outside the Containment zones.

7.6 Hornwort (Ceratophyllum demersum)

The strategy for hornwort is subject to the registration and availability of the herbicide 'Endothal' (*Aquathol K)*, for use in aquatic environments in New Zealand.

7.6.1 Description

- A dark green, entirely submerged, often free-floating freshwater plant.
- Leaves are dark green in whorls of 5-12, and 1-4 cm long.
- Elongated stems, 30-60 cm long, are brittle and stiffly branched, or cord-like and flexible.
- Flowers are greenish and inconspicuous.
- Lacks roots but has rhizoid shoots, which can anchor the otherwise free-floating mass to the streambed.

7.6.2 Reason for Inclusion

In the Wellington region hornwort occurs along the eastern lake shore of Lake Wairarapa and in lake reserves nearby. It is also found at one site at the southern end of Lake Wairarapa. The total area infested in the region is estimated to be 4.5 ha. Hornwort can inhabit still or slow flowing freshwater up to 10 m deep and occasionally brackish water. It will compete with and displace native aquatic plant species. Hornwort also poses a threat to irrigation channels throughout the region. If left to spread, hornwort has the potential to infest most silty bottom, slow flowing water bodies in the Wellington region.

7.6.3 Control Options

Due to the technical difficulty of eradicating large infestations of hornwort, Greater Wellington does not believe that eradicating hornwort from the entire region is achievable at present. However, analysis has shown that it is beneficial to prevent hornwort further extending its range to areas that are currently clear. It is the opinion of Greater Wellington that eradication of hornwort outside the Containment zone (figure 9) is the best option. Within the Containment zone, hornwort will be managed to low densities and the responsibility will lie with the occupier.

Alternative options for the management of hornwort include: ‘Do nothing’; or Greater Wellington adopting a greater level of regional intervention such as direct control by service delivery. The Council does not consider ‘do nothing’ to be a viable option as the potential impacts to the region will be substantial if the pest becomes more widespread. Alternatively, if Greater Wellington undertook direct control by service delivery throughout the region, the costs of controlling this pest would outweigh the anticipated benefits and may discourage those occupiers contributing to the problem from taking responsibility for control of pests on their property.

Land Information New Zealand (LINZ) has developed a five-year strategy for managing weeds in North Island Lakes. This strategy will include the management of hornwort where it occurs in LINZ-managed lakebeds.

7.6.4 Aim

"To reduce the adverse environmental and economic impacts of hornwort in the region."

7.6.5 Objectives

- Prevent the establishment of hornwort outside the Containment zone.
- Manage hornwort within the Containment zone so that it is not present in more than 30% of its potential habitat at any one time.

7.6.6 Means of Achievement

Greater Wellington shall:

- Annually **inspect** areas in the Containment zone (Lake Wairarapa including Lake Reserve Domain, wetlands and adjoining properties on eastern lakeshore) with known infestations.
- Undertake **direct control by service delivery** of hornwort found outside the Containment zone.
- **Ensure compliance** with the Strategy rules to achieve the Strategy's objectives.
- Provide **information and publicity** to enhance public awareness of the threat hornwort poses to the region and promote new control methods.
- **Identify** new sites of hornwort through incidental reports by biosecurity officers or the public, and through the regional pest plant surveillance programme.
- **Release** approved biological control agents for the control of hornwort if and when they become available.
- Annually **inspect** local nurseries and pet shops for the sale of hornwort.

7.6.7 Strategy Rules for Hornwort

a) Occupiers in the Containment zone (figure 9) shall destroy all hornwort *(Ceratophyllum demersum)* plants in water bodies on land that they occupy.

b) Occupiers outside the Containment zone (figure 9) are required to notify Greater Wellington of the presence of hornwort *(Ceratophyllum demersum)* on land that they occupy. A breach of this rule will create an offence under Section 154(r) of the Act.

Pursuant to Sections 52 and 53 of the Biosecurity Act 1993, no person shall release, or cause to be released, propagate, or sell or offer for sale, or hold in premises where plants are offered for sale, or otherwise spread hornwort *(Ceratophyllum demersum)* plants. A breach of this provision is an offence under Section 154(m) of the Act.

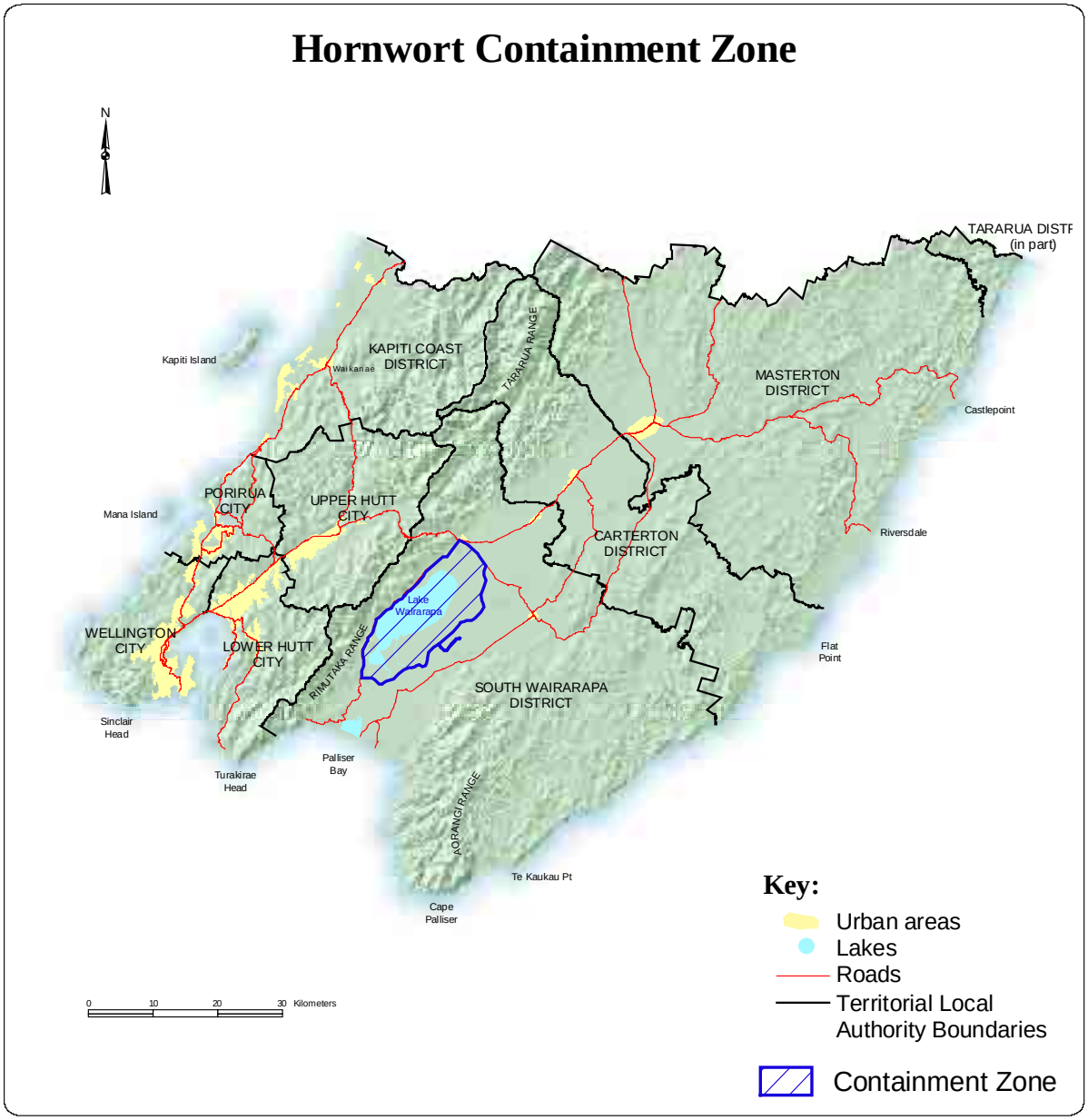
Explanation of Strategy Rules

Strategy rule (a) requires occupiers in the Wellington region to treat and destroy all hornwort wherever it appears on their property. Strategy rule (b) requires occupiers outside the Containment zone to notify the Council of any hornwort on their land, to enable the Council to implement its eradication policy. Sections 52 and 53 of the Act impose a ban on the sale, propagation or distribution of hornwort in the Wellington region.

7.6.8 Monitoring the Objectives

The Council shall:

- Annually report location and number of known sites of hornwort outside the Containment zone.
- Annually report the proportion of all potential habitat in the Containment zone that is infested with hornwort.



All the land within South Wairarapa district enclosed by Moore Street, Cross Creek Road, Western Lake Road, East West Access Road, Kahutara Road, State Highway Number 53 and Fitzherbert Street, also including the Whakawiriwiri Stream to a distance of 3 km upstream of Kahutara Road.

Figure 9. Hornwort Containment zone indicating the area to which hornwort will be contained. Greater Wellington will undertake direct control by service delivery outside the Containment zone.

7.7 Mist flower (Ageratina riparia)

7.7.1 Description

- An erect or sprawling herb to sub-shrub, up to 1 m tall.
- Has a short thick rootstock and fibrous roots.
- Dark green leaves grow from reddish-brown stems on longish stalks.
- Leaves are toothed, 7 cm long by 2.5 cm wide and taper at each end.
- Small white flowers are arranged in terminal clusters at the ends of long branches in the upper leaf axils.

7.7.2 Reason for Inclusion

In the Wellington region mist flower has been recorded on approximately 35% of the properties throughout Days Bay, Eastbourne. The total area infested in the region is unknown. Mist flower has the potential to invade forest margins, clearings, waste places, damp banks, wetlands, and open damp forests and will suppress native regeneration within them. If left to spread, mist flower has the potential to infest 365,000 ha in the Wellington region.

7.7.3 Control Options

Due to the overall number of infestations, Greater Wellington does not believe that eradicating mist flower from the entire region is achievable at present. However, analysis has shown that it is beneficial to prevent mist flower further extending its range to currently clear areas of the region. It is the opinion of Greater Wellington that eradication of mist flower outside the Containment zone (figure 10) is the best option. Within the Containment zone, mist flower will be managed to low densities using biological control agents.

Alternative options for the management of mist flower: include: ‘Do nothing’; or place all responsibility for the control of mist flower on the occupier. Greater Wellington does not consider ‘do nothing’ to be a viable option as the potential impacts to the region will be substantial if the pest becomes more widespread. Placing all responsibility for controlling this pest on the occupier is unlikely to achieve eradication outside the Containment zone.

7.7.4 Aim

"To reduce the adverse environmental impacts of mist flower in the Wellington region."

7.7.5 Objective

- Prevent the establishment of mist flower outside the Containment zone.
- Reduce the number of known active sites of mist flower in the Containment zone by 50% by 2006.
- Reduce the number of known active sites of mist flower in the Containment zone by 80% by 2021.

7.7.6 Means of Achievement

Greater Wellington shall:

- Release **biological control** agents to currently known sites of mist flower before March 2003.
- Release **biological control** agents to any new sites of mist flower that may be located.
- Undertake **direct control by service delivery** of mist flower found outside the Containment zone.
- Provide **information and publicity** to enhance public awareness of the threat mist flower poses to the region.
- **Identify** new sites of mist flower through incidental reports by biosecurity officers or the public, and through the regional pest plant surveillance programme.
- Annually **inspect** local nurseries for the sale of mist flower.

7.7.7 Strategy Rules for Mist flower

a) Occupiers outside the Containment zone (figure 10) are required to notify Greater Wellington of the presence of mist flower *(Ageratina riparia)* on land that they occupy. A breach of this rule will create an offence under Section 154(r) of the Act.

Pursuant to Sections 52 and 53 of the Biosecurity Act 1993, no person shall release, or cause to be released, propagate, or sell or offer for sale, or hold in premises where plants are offered for sale, or otherwise spread mist flower *(Ageratina riparia)* plants. A breach of this provision is an offence under Section 154(m) of the Act.

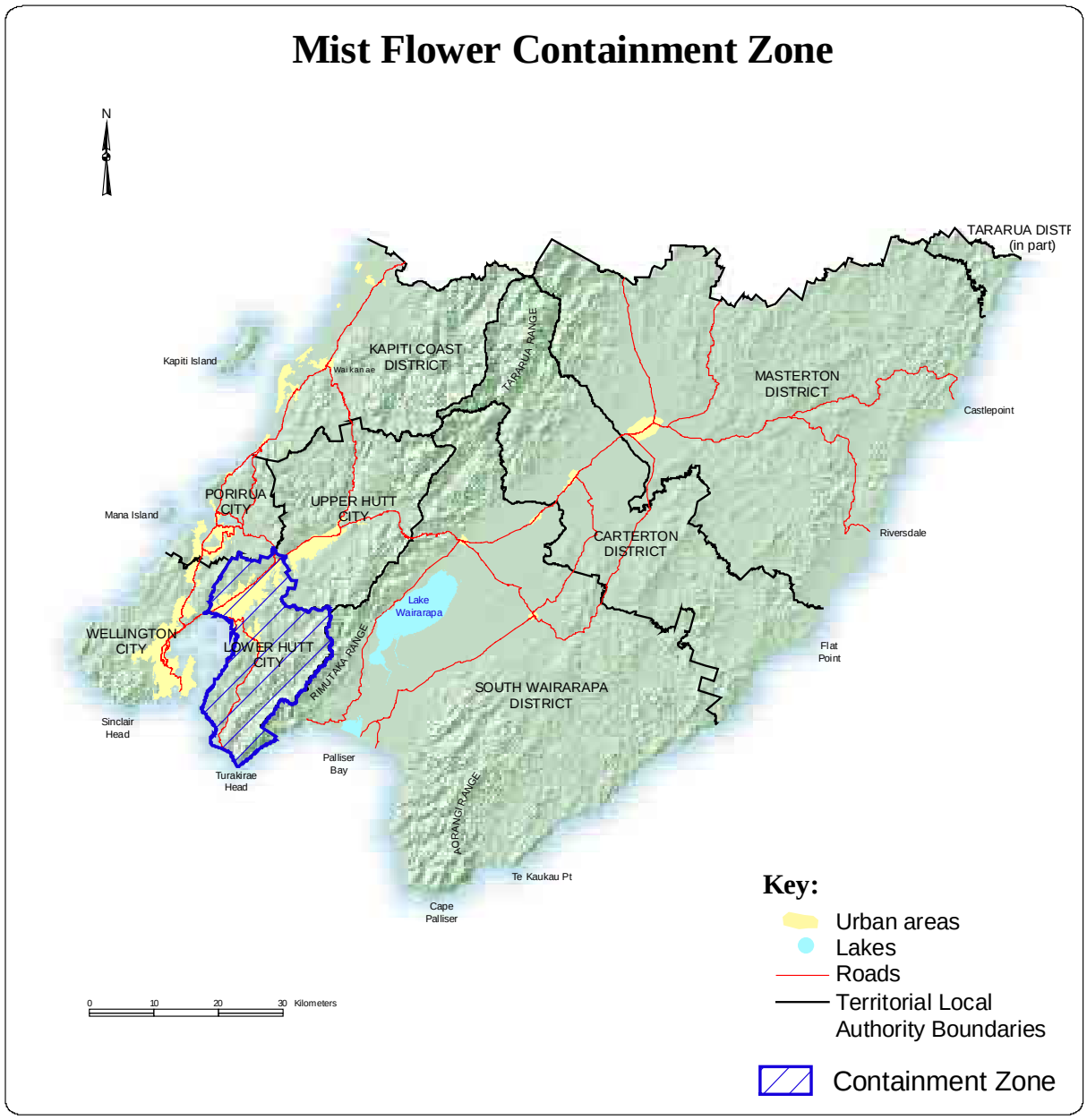
Explanation of Strategy Rules

Strategy rule (a) requires occupiers outside the Containment zone to notify the Council of any mist flower on their land, to enable the Council to implement its eradication policy. Sections 52 and 53 of the Act impose a ban on the sale, propagation or distribution of mist flower in the Wellington region.

7.7.8 Monitoring the Objectives

The Council shall:

- Annually report the location and number of known sites of mist flower.



Containment zone includes all land within Lower Hutt City.

Figure 10. Mist flower Containment zone indicating where known infestations of mist flower will be managed using biological control agents. The Council will undertake direct control by service delivery outside the Containment zone.

7.8 Nodding thistle (*Carduus nutans*)

7.8.1 Description

- An annual or perennial growing to 1.6 m high.
- Has a stoutly branched, fleshy taproot up to 40 cm.
- The stems are erect and branched, particularly in the upper half, and winged, except immediately beneath the flower heads.
- Produces multiple stems if the crown is damaged.
- Rosette leaves are narrow and oblong, up to 50 cm long by 10 cm wide, often with whitish mid-veins.
- Stem leaves are grey-green or metallic green, grow to 40 cm long and are deeply divided to the mid-vein.
- Flower stalks can grow to 75 cm tall, with red-purple or occasionally white composite flowers.
- The seed heads contain many thistle-down seeds.

7.8.2 Reason for Inclusion

In the Wellington region, nodding thistle is widespread in the Cape Palliser area and has been recorded at 312 other sites throughout the Wairarapa, the Hutt Valley and from Porirua to Kapiti. The total area infested with nodding thistle is estimated to be 1,388 ha. Nodding thistle can replace pasture species and prevent stock access to pasture. Dense patches also harbour pest animals, particularly Rabbits. If left to spread, nodding thistle has the potential to infest 440,000 ha in the Wellington region.

7.8.3 Control Options

Due to the overall number of infestations, Greater Wellington does not believe that eradicating nodding thistle from the entire region is achievable at present. However, analysis has shown that it is beneficial to prevent nodding thistle further extending its range to currently clear areas of the region. It is the opinion of Greater Wellington that eradication of nodding thistle outside the Containment zones (figure 11) is the best option. Within the two Containment zones, nodding thistle will be managed to low densities in the following ways:

- Containment zone 1 - Responsibility will lie with the occupier.
- Containment zone 2 - Biological control agents will be used.

Alternative options for the management of nodding thistle include: ‘Do nothing’; or place all responsibility for the control of nodding thistle on the occupier. Greater Wellington does not consider ‘do nothing’ to be a viable option as the potential impacts to the region will be substantial if the pest becomes more widespread. Placing all responsibility for controlling this pest on the occupier is unlikely to achieve eradication outside the containment zones.

7.8.4 Aim

"To reduce the adverse impacts of nodding thistle in the Wellington region."

7.8.5 Objective

- Reduce the number of known active sites of nodding thistle in Containment zone 1 by 15% by 2006.
- Reduce the density of infestation of nodding thistle in Containment zone 2 by 10% by 2021.
- Eradicate nodding thistle outside the Containment zones by 2021.

7.8.6 Means of Achievement

Greater Wellington shall:

- Annually **inspect** all properties with known infestations of nodding thistle.
- Undertake **direct control by service delivery** of nodding thistle found outside the Containment zones.
- **Ensure compliance** with the Strategy rules in order to achieve the Strategy's objectives.
- Provide **information and publicity** to enhance public awareness of the threat nodding thistle poses to the region.
- **Identify** new sites of nodding thistle through incidental reports by biosecurity officers or the public, and through the regional pest plant surveillance programme.
- Release approved **biological control** agents for the control of nodding thistle in Containment zone 2.
- Annually **inspect** local nurseries for the sale of nodding thistle.

7.8.7 Strategy Rules for Nodding thistle

a) Occupiers in the nodding thistle Containment zone 1 (figure 11) shall destroy all nodding thistle *(Carduus nutans)* plants prior to flowering on land that they occupy. A breach of this rule will create an offence under Section 154(r) of the Act.

b) Occupiers outside the Containment zones (figure 11) are required to notify Greater Wellington of the presence of nodding thistle *(Carduus nutans)* on land that they occupy. A breach of this rule will create an offence under Section 154(r) of the Act.

Pursuant to Sections 52 and 53 of the Biosecurity Act 1993, no person shall release, or cause to be released, propagate, or sell or offer for sale, or hold in premises where plants are offered for sale, or otherwise spread nodding thistle *(Carduus nutans)* plants. A breach of provision is an offence under Section 154(m) of the Act.

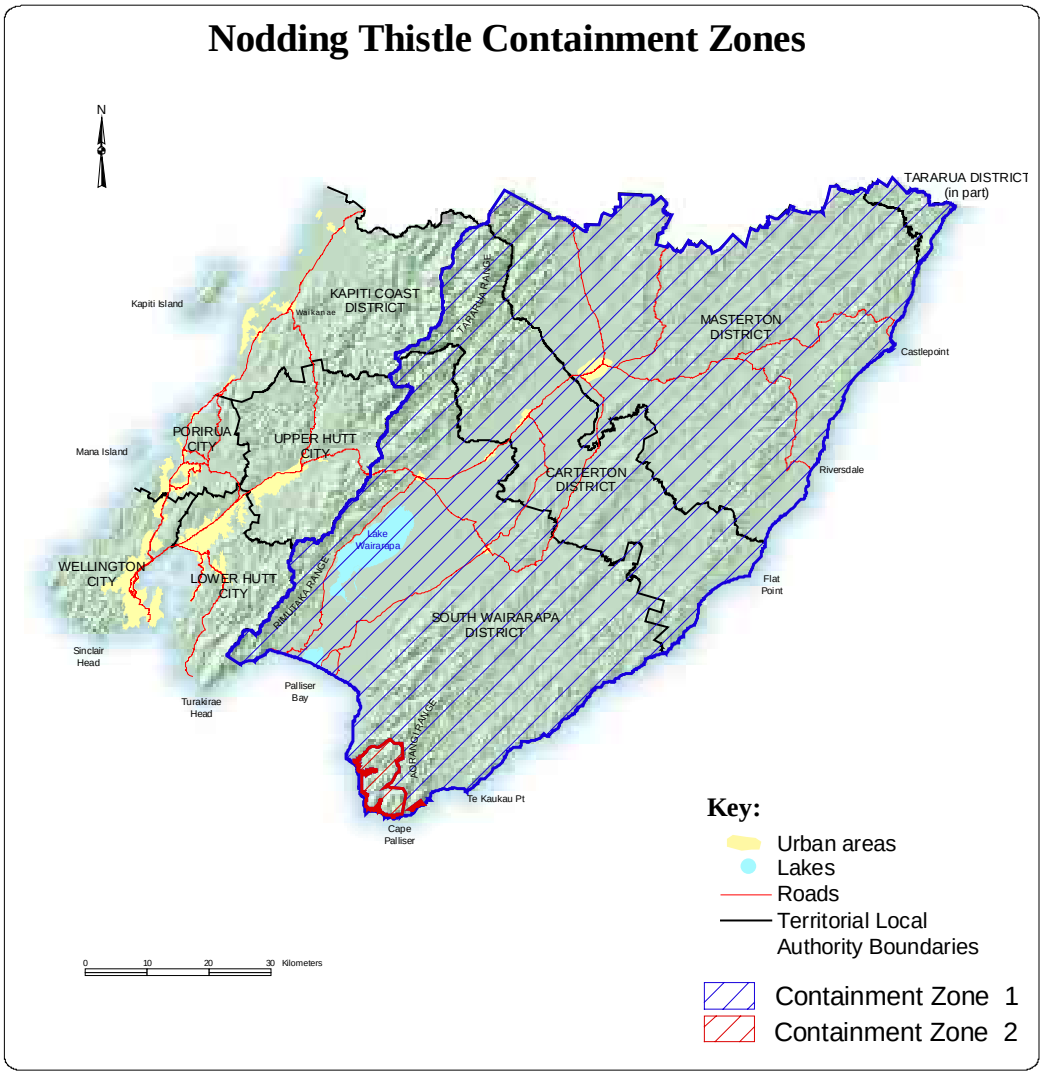
Explanation of Strategy Rules

Strategy rule (a) requires occupiers in the Wellington region to treat and destroy all nodding thistle wherever it appears on their property. Strategy rule (b) requires occupiers outside the Containment zone to notify the Council of any nodding thistle on their land, to enable the Council to implement its eradication policy. Sections 52 and 53 of the Act impose a ban on the sale, propagation or distribution of nodding thistle in the Wellington region.

7.8.8 Monitoring the Objectives

The Council shall:

- Annually report the location and number of known sites of nodding thistle over the region, and the density of infestations in Containment zone 2.

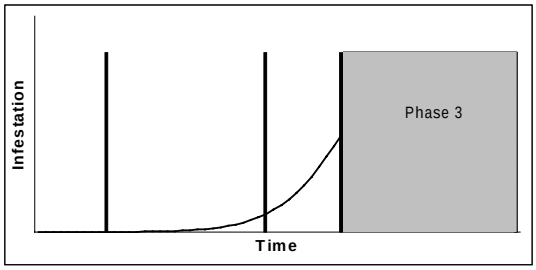


Containment zone 1 includes all land in the Masterton District, Carterton District, South Wairarapa District and that part of the Tararua District contained within the Wellington region, but not including the land comprising nodding thistle Containment Zone 2.

Figure 11. Nodding thistle Containment zones indicating where occupiers are required to control nodding thistle (zone 1) and where biological agents will be used to manage nodding thistle (zone 2). Greater Wellington will undertake direct control by service delivery outside the Containment zones.

Suppression Pests

- **These pests are widespread throughout the region.**
- **They can spread rapidly over long distances with severe adverse impacts.**
- **Eradication or restriction of range is not achievable.**
- **Greater Wellington's policy is to suppress the pest density to minimise impacts.**
- **All control work will be the responsibility of the occupier.**



8.0 Suppression Pests

8.1 Feral Rabbit (Oryctolagus cuniculus cuniculus)

8.1.1 Description

- The subspecies *O.c.cuniculus* lives wild in New Zealand, and is the ancestor of all domestic species.
- Most are grey-brown and can be distinguished from domesticated species.

8.1.2 Reason for Inclusion

Rabbits were introduced into New Zealand from Europe in the 1840s and 1850s to establish a meat and fur industry. Once established, they quickly became abundant and destructive to pastoral farming. In the Wairarapa, rabbits are largely found on the plains and in the coastal hills from Owahanga to Palliser. They especially favour dunelands with the Kapiti coastal dunelands providing some of the best rabbit habitat in the region. In the Wellington region there are approximately 15,300 ha of high to extreme rabbit prone land.

Rabbit abundance was the greatest in the Wellington region from the 1870s to the 1940s. Since the 1950s, modern farming practices and control programmes have kept rabbit numbers relatively stable. Since the introduction of rabbit haemorrhagic disease (RHD), rabbit numbers have decreased. However, it is unknown how long the disease will continue to suppress populations.

Rabbits eat a wide range of food including indigenous and native grasses and seedlings. When combined with grazing stock, rabbits can maintain bare ground and increase the risk of soil erosion. They directly compete with grazing stock for food, and contribute to the increase of unpalatable weed species. Grazing and burrowing can lead to the loss of vegetation cover and soil erosion in habitats for native flora and fauna. Dune systems are a favoured habitat, and rare plant species such as pingao (*Desmoschoenus spiralis*) and *Muehlenbeckia astonii* are particularly at risk.

8.1.3 Control Options

A cost-benefit analysis has identified that suppressing the adverse environmental impacts of rabbits by placing responsibility for control on the occupier has the greatest net benefit to the region. Due to the wide spread distribution of rabbits in the region and their rapid rate of spread, eradicating rabbits or containing them to parts of the region is not possible at present. Therefore, it is Greater Wellington's opinion that suppressing rabbit infestations to below level 5 on the Modified McLean Scale (table 4) is the best option.

Alternative options for the management of rabbits include: 'Do nothing'; or Greater Wellington adopting a greater level of regional intervention such as direct control by service delivery over the whole region. Greater Wellington does not consider 'do nothing' to be a viable option as financial and physical damage in high to extreme rabbit prone land would be significant in the absence of rabbit control. Alternatively, if Greater Wellington undertook all Rabbit control over the whole region the costs of controlling this pest would outweigh the anticipated benefits and may discourage those occupiers contributing to the problem from taking responsibility for control of rabbits on their property.

8.1.4 Aim

"Minimise the adverse impacts of feral rabbits."

8.1.5 Objective

- Ensure that no area in the region exceeds level 5 on the Modified McLean Scale at any one time.

8.1.6 Means of Achievement

Greater Wellington shall:

- Undertake **direct control by service delivery** to control rabbits on riverbeds, esplanades or similar public commons to ensure that rabbits do not exceed level 5 of the Modified McLean Scale (table 4).
- **Ensure compliance** with the Strategy rules in order to achieve the Strategy's objectives.
- **Survey** land in high to extreme rabbit prone areas to determine the extent of rabbit infestation.
- Make occupiers **aware** of their responsibilities for rabbit control.
- Provide **information and publicity** to enhance public awareness of the threat rabbits pose to the region.
- Release **biological control** agents for the control of feral rabbits when appropriate.
- Support **research initiatives** including biological control.
- Annually **inspect** pet shops for the sale of feral rabbits.

8.1.7 Strategy Rules

a) Occupiers shall maintain feral rabbit (*Oryctolagus cuniculus cuniculus*) populations on land they occupy at, or below level 5 of the Modified McLean Scale (table 4). A breach of this rule will create an offence under Section 154(r) of the Act.

b) No person shall move or interfere with any article or substance left at a place by an Authorised Person pursuant to this Strategy for the purposes of:

   i) Confirming the presence, former presence, or absence of feral rabbits (*Oryctolagus cuniculus cuniculus*); or

   ii) Managing or eradicating feral rabbits (Oryctolagus cuniculus cuniculus); -

Other than in accordance with the direction, or under the supervision of an Authorised Person. A breach of this rule will create an offence under Section 154(r) of the Act.

Pursuant to Sections 52 and 53 of the Biosecurity Act 1993, no person shall release, or cause to be released, breed, or sell or offer for sale, or hold in premises where animals are offered for sale, or otherwise spread feral rabbits. A breach of this is an offence under Section 154(m) of the Act.

Explanation of Strategy Rules

Strategy rule a) requires occupiers to control rabbits on their land to prevent numbers reaching high to extreme infestations. Rule b) allows Greater Wellington to undertake the necessary actions for monitoring and controlling rabbits on riverbeds, esplanades or similar public commons. Sections 52 and 53 of the Act impose a ban on the sale, breeding or distribution of rabbits in the Wellington region.

8.1.8 Monitoring the Objectives

The Council shall:

- Annually determine and report rabbit densities using the Modified McLean Scale for properties in the high to extreme rabbit prone areas.
- Monitor the effectiveness and rate of spread of biological control agents.

Table 4. Modified McLean Scale

Scale	Rabbit Infestation
1	No sign seen. No rabbits seen.
2	Very infrequent sign seen. Unlikely to see rabbits.
3	Sign infrequent with faecal heaps more than 10 m apart. Odd rabbits may be seen.
4	Sign frequent with some faecal heaps more than 5 m apart, but less than 10 m apart. Groups of rabbits may be seen.
5	Sign very frequent with faecal heaps less than 5 m apart in pockets. Rabbits spreading.
6	Sign very frequent with faecal heaps less than 5 m apart over the whole area. Rabbits may be seen over whole area.
7	Sign very frequent with 2-3 faecal heaps often less than 5 m apart over the whole area. Rabbits may be seen in large numbers over the whole area.
8	Sign very frequent with 3 or more faecal heaps less than 5 m apart over the whole area. Rabbits likely to be seen in large numbers over the whole area.

8.2 Banana passionfruit (Passiflora mollissima/P. mixta)

8.2.1 Description

- A vigorous evergreen, climber that can grow to 5-10 m.
- The dark green leaves are three-lobed, tooth-edged and softly downy.
- Large hanging, pink star-shaped flowers, each with a purplish-blue crown, appear during summer and autumn.
- The flowers are followed by 10 cm long, thick-skinned golden yellow edible fruits. Inside the fruit is a sweet orange pulp, filled with black seeds.
- Northern banana passionfruit is very similar, but has a longer petal tube (4-6.5 cm long) and a shorter calyx tube (up to 8 cm) than banana passionfruit. For this Strategy, banana passionfruit and northern banana passionfruit will be considered as one species.

8.2.2 Reason for Inclusion

The total area infested by banana passionfruit and northern banana passionfruit is estimated to be 3,630 ha. The plant is widely distributed throughout the Wellington region. It has a rapid rate of spread and the ability to cause irreversible change to ecosystem structure. It can overtop and smother trees in native forest and scrub, and can also inhibit low growing plants and seedlings, preventing the regeneration of native plant species. If left to increase, banana passionfruit has the potential to infest 40,150 ha in the Wellington region.

8.2.3 Control Options

Banana passionfruit is established throughout the region and Greater Wellington does not believe that eradicating banana passionfruit from significant areas of the region is achievable at present. However, analysis has shown that the impacts of banana passionfruit are significant and widespread, and ongoing control to minimise impacts is justified. It is the opinion of Greater Wellington that banana passionfruit should be managed to low densities throughout the region and responsibility for control will lie with the occupier.

Alternative options for the management of banana passionfruit include: ‘Do nothing’; or Greater Wellington adopting a greater level of regional intervention such as direct control by service delivery. The Council does not consider ‘do nothing’ to be a viable option as the potential impacts to the region will be substantial if the pest is allowed to become further entrenched. Alternatively, if Greater Wellington undertook direct control by service delivery the costs of controlling this pest would outweigh the anticipated benefits and may discourage those occupiers contributing to the problem from taking responsibility for control of pests on their property.

8.2.4 Aim

"To minimise the adverse environmental impacts of banana passionfruit throughout the Wellington region."

8.2.5 Objective

- That banana passionfruit is not established in the canopy at more than 10% of sites inspected during the previous year (commencing 1 July 2002).

8.2.6 Means of Achievement

Greater Wellington shall:

- From 2002-2003 undertake a **publicity and education** programme about banana passionfruit to raise awareness of the impacts and to advise occupiers of the requirement to control this species commencing 1 July 2003.
- Annually **inspect** a selection of properties with known infestations of banana passionfruit in the region commencing 1 July 2002.
- **Ensure compliance** with the Strategy rules in order to achieve the Strategy's objectives.
- Provide **information and publicity** to enhance public awareness of the threat banana passionfruit poses to the region.
- **Identify** new sites of banana passionfruit through incidental reports by biosecurity officers or the public, and through the regional pest plant surveillance programme.
- Release approved **biological control** agents for the control of banana passionfruit if and when they become available.
- Annually **inspect** local nurseries for the sale of banana passionfruit.

8.2.7 Strategy Rules For Banana passionfruit

The Council has determined that Strategy rule a) will only take effect from 1 July 2003. This will enable the Council to implement an extensive education programme on banana passionfruit raising awareness of its impact and the need to manage it.

a) Occupiers shall destroy all banana passionfruit *(Passiflora mollisima/mixta)* plants on land that they occupy commencing from 1 July 2003. A breach of this rule will create an offence under Section 154(r) of the Act.

Pursuant to Sections 52 and 53 of the Biosecurity Act 1993, no person shall release, or cause to be released, propagate, or sell or offer for sale, or hold in premises where plants are offered for sale, or otherwise spread banana passionfruit *(Passiflora mollisima/mixta)* plants. A breach of this provision is an offence under Section 154(m) of the Act.

Explanation of Strategy Rules

Strategy rule (a) requires occupiers in the Wellington region to treat and destroy all banana passionfruit wherever it appears on their property. Strategy rule (b) imposes a ban on the sale, propagation or distribution of banana passionfruit in the Wellington region.

8.2.8 Monitoring the Objectives

The Council shall:

- Annually report the location and number of known infestations of banana passionfruit and the percentage at which banana passionfruit is present in canopy vegetation.

8.3 Cathedral bells (*Cobaea scandens*)

8.3.1 Description

- A vigorous, perennial climber growing from shallow roots in the ground.
- The oval leaves are light green, entire, hairless, with prominent purplish veins.
- The stems are branched and woody at the base, and often purplish when young.
- Large bell-shaped flowers are produced August-May. The flowers are yellow-green upon opening, becoming purple as they mature, and omit a honey-like fragrance.
- Oval fruits 6-10 cm long are formed, and explode during summer to release many winged seeds.

8.3.2 Reason for Inclusion

The total area infested by cathedral bells is estimated to be 550 ha, and it is widely distributed throughout the Wellington region. It has a rapid rate of spread and the ability to cause significant change to ecosystem structure including tall and undisturbed forest, disturbed native forests, scrub, riverbanks, and natural open areas. If left to increase cathedral bells has the potential to infest 405,000 ha in the Wellington region.

8.3.3 Control Options

Cathedral bells is established throughout the region and Greater Wellington does not believe that eradicating cathedral bells from significant areas is achievable at present. However, analysis has shown that the impacts of cathedral bells are significant and widespread and ongoing control to minimise impacts is justified. It is the opinion of Greater Wellington that cathedral bells should be managed to low densities throughout the region and responsibility for control will lie with the occupier.

Alternative options for the management of cathedral bells include: ‘Do nothing’; or Greater Wellington adopting a greater level of regional intervention such as direct control by service delivery. The Council does not consider ‘do nothing’ to be a viable option as the potential impacts to the region will be substantial if the pest is allowed to become further entrenched. Alternatively, if Greater Wellington undertook direct control by service delivery the costs of controlling this pest would outweigh the anticipated benefits and may discourage those occupiers contributing to the problem from taking responsibility for the control of pests on their property.

8.3.4 Aim

"To minimise the adverse environmental impacts of cathedral bells throughout the Wellington region."

8.3.5 Objective

- That cathedral bells is not established in the canopy at more than 10% of sites inspected during the previous year.

8.3.6 Means of Achievement

Greater Wellington shall:

- Annually **inspect** a selection of properties with known infestations of cathedral bells in the region.
- **Ensure compliance** with the Strategy rules in order to achieve the Strategy's objectives.
- Provide **information and publicity** to enhance public awareness of the threat cathedral bells poses to the region.
- **Identify** new sites of cathedral bells through incidental reports by biosecurity officers or the public, and through the regional pest plant surveillance programme
- Release approved **biological control** agents for the control of cathedral bells if and when they become available.
- Annually **inspect** local nurseries for the sale of cathedral bells.

8.3.7 Strategy Rules for Cathedral bells

a) Occupiers shall destroy all cathedral bells (*Cobaea scandens*) plants on land that they occupy. A breach of this rule will create an offence under Section 154(r) of the Act.

Pursuant to Sections 52 and 53 of the Biosecurity Act 1993, no person shall release, or cause to be released, propagate, or sell or offer for sale, or hold in premises where plants are offered for sale, or otherwise spread cathedral bells (*Cobaea scandens)* plants. A breach of this provision is an offence under Section 154(m) of the Act.

Explanation of Strategy Rules
Strategy rule (a) requires occupiers in the Wellington region to treat and destroy all cathedral bells wherever it appears on their property. Sections 52 and 53 of the Act impose a ban on the sale, propagation or distribution of cathedral bells in the Wellington region.

8.3.8 Monitoring the Objectives

The Council shall:

- Annually report location and number of known infestations of cathedral bells and the percentage at which cathedral bells is present in canopy vegetation.

8.4 Old man's beard (*Clematis vitalba*)

8.4.1 Description

- A deciduous perennial, woody climbing vine that can grow to 20 m or more high.
- Young vines have six longitudinal ribs and mature vines have stringy, pale brown bark.
- Pale to dark green leaves are comprised of five leaflets which often vary in shape.
- Flowers are 2 cm in diameter, greenish-white in colour and appear December-February.
- The seed heads, which can be seen through autumn and winter, are pom-pom shaped, fluffy and grey coloured.

8.4.2 Reason for Inclusion

The total area infested by old man's beard is estimated to be approximately 1,688 ha (excluding Wellington City), and it is widely distributed throughout the Wellington region. It has a rapid rate of spread and the ability to invade disturbed forest and scrubland, as well as other community types to a lesser extent. It has the potential to cause significant change in these natural areas and suppress regeneration of native species. If left to increase, old man's beard has the potential to infest 405,000 ha in the Wellington region.

8.4.3 Control Options

Old man's beard is established throughout the region and Greater Wellington does not believe that eradicating old man's beard from significant areas of the region is achievable at present. However, analysis has shown that the impacts of old man's beard are significant and widespread and ongoing control to minimise impacts is justified. It is the opinion of Greater Wellington that old man's beard should be managed to low densities throughout the region and responsibility for control will lie with the occupier.

Alternative options for the management of old man's beard include: 'Do nothing'; or Greater Wellington adopting a greater level of regional intervention such as direct control by service delivery. The Council does not consider 'do nothing' to be a viable option as the potential impacts to the region will be substantial if the pest is allowed to become further entrenched. Alternatively, if Greater Wellington undertook direct control by service delivery for the whole region, the costs of controlling this pest would outweigh the anticipated benefits and may discourage those occupiers contributing to the problem from taking responsibility for control of pests on their property.

8.4.4 Aim

"To minimise the adverse environmental impacts of old man's beard throughout the Wellington region."

8.4.5 Objective

- That old man's beard is not established in the canopy at more than 10% of sites inspected during the previous year.

8.4.6 Means of Achievement

Greater Wellington shall:

- Annually **inspect** a selection of the properties with known infestations of old man's beard in the region.
- **Ensure compliance** with the Strategy rules in order to achieve the Strategy's objectives.
- Provide **information and publicity** to enhance public awareness of the threat old man's beard poses to the region
- **Identify** new sites of old man's beard through incidental reports by biosecurity officers or the public, and through the regional pest plant surveillance programme.
- Release approved **biological control** agents for the control of old man's beard.
- Annually **inspect** local nurseries for the sale of old man's beard.

8.4.7 Strategy Rules for Old man's beard

a) Occupiers shall destroy all old man's beard *(Clematis vitalba)* plants on land that they occupy. A breach of this rule will create an offence under Section 154(r) of the Act.

b) Occupiers in Wellington City shall destroy all old man's beard *(Clematis vitalba)* plants within 10 m of their boundary following a complaint to the Council by an adjoining occupier whose land, within 10 m of the boundary, is clear or being cleared of old man's beard. A breach of this rule will create an offence under Section 154(r) of the Act.

Pursuant to Sections 52 and 53 of the Biosecurity Act 1993, no person shall release, or cause to be released, propagate, or sell or offer for sale, or hold in premises where plants are offered for sale, or otherwise spread old man's beard *(Clematis vitalba)* plants. A breach of this provision is an offence under Section 154(m) of the Act.

Explanation of Strategy Rules

Strategy rule (a) requires occupiers in the Wellington region to treat and destroy all old man's beard wherever it appears on their property. Sections 52 and 53 of the Act impose a ban on the sale, propagation or distribution of old man's beard in the Wellington region.

8.4.8 Monitoring the Objectives

The Council shall:

- Annually report location and number of known infestations of old man's beard and the percentage at which old man's beard is present in canopy vegetation.

8.5 Wild ginger *(Hedychium gardnerianum/H. flavescens)*

8.5.1 Description

- Herbaceous perennial plants, which grow from large, branching rhizomes and produce vertical stems annually.
- Beds of living rhizomes can form a dense layer up to 1 m thick.
- Adult stems can reach 2 m with large wax-covered ovate leaves alternately arranged.
- Kahili ginger flowers are lemon yellow with conspicuous red stamens. They produce over 100 seeds per flower head.
- Yellow ginger flowers are cream to light yellow and do not produce any seeds.
- For this Strategy, Kahili ginger and yellow ginger will be managed identically.

8.5.2 Reason for Inclusion

Both wild ginger species occur throughout the region, although yellow ginger is less common. The total area infested by wild ginger is estimated to be 1,795 ha and is widely distributed throughout the Wellington region. It has a rapid rate of spread and the ability to cause significant change to the structure of natural areas and suppress the regeneration of native species. The build-up of dense mats of rhizomes over time excludes other species from establishing in areas where infestations of wild ginger occur. If left to increase, they have the potential to infest 360,000 ha in the Wellington region.

8.5.3 Control Options

Wild ginger is established throughout the region and Greater Wellington does not believe that eradicating wild ginger from significant areas of the region is achievable at present. However, analysis has shown that the impacts of wild ginger are significant and widespread and ongoing control to minimise impacts is justified. It is the opinion of Greater Wellington that wild ginger should be managed to low densities throughout the region and responsibility for control will lie with the occupier.

Alternative options for the management of wild ginger include: ‘Do nothing’; or Greater Wellington adopting a greater level of regional intervention such as direct control by service delivery. The Council does not consider ‘do nothing’ to be a viable option as the potential impacts to the region will be substantial if the pest is allowed to become further entrenched. Alternatively, if Greater Wellington undertook direct control by service delivery the costs of controlling this pest would

outweigh the anticipated benefits and may discourage those occupiers contributing to the problem from taking responsibility for control of pests on their property.

8.5.4 Aim

"To minimise the adverse environmental impacts of wild ginger throughout the Wellington region."

8.5.5 Objective

- Reduce the number of known active sites of wild ginger in the Wellington region by 20% by 2006.
- Reduce the number of known active sites of wild ginger in the Wellington region by 50% by 2021.

8.5.6 Means of Achievement

Greater Wellington shall:

- Annually **inspect** a selection of properties with known infestations of wild ginger in the region.
- **Ensure compliance** with the Strategy rules in order to achieve the Strategy's objectives.
- Provide **information and publicity** to enhance public awareness of the threat wild ginger poses to the region.
- **Identify** new sites of wild ginger through incidental reports by biosecurity officers or the public, and through the regional pest plant surveillance programme.
- Release approved **biological control** agents for the control of wild ginger if and when they become available.
- Annually **inspect** local nurseries for the sale of wild ginger.

8.5.7 Strategy Rules for Wild ginger

a) Occupiers shall destroy all wild ginger (*Hedychium gardnerianum/flavescens*) plants on land that they occupy. A breach of this rule will create an offence under Section 154(r) of the Act.

Pursuant to Sections 52 and 53 of the Biosecurity Act 1993, no person shall release, or cause to be released, propagate, or sell or offer for sale, or hold in premises where plants are offered for sale, or otherwise spread wild ginger (*Hedychium gardnerianum/flavescens*) plants. A breach of this provision is an offence under Section 154(m) of the Act.

Explanation of Strategy Rules

Strategy rule (a) requires occupiers in the Wellington region to treat and destroy all wild ginger wherever it appears on their property. Sections 52 and 53 of the Act impose a ban on the sale, propagation or distribution of wild ginger in the Wellington region.

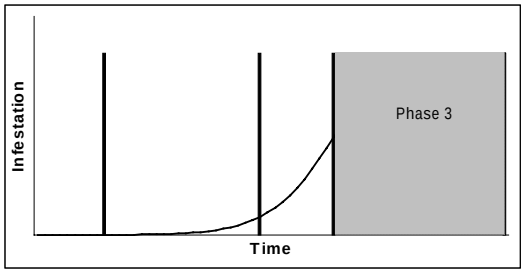
8.5.8 Monitoring the Objectives

The Council shall:

- Annually report location and number of known sites of wild ginger.

Site Led Pests

- **These pests are well established throughout the region.**
- **Eradication or restriction of range is not achievable.**
- **Management focuses on specific sites - where the pests have the most serious impact and benefits of control are greatest.**



- **Three programmes operate –**
  - **managing environmental pests in important environmental places**
  - **managing pests when and where they affect human health**
  - **managing agricultural pests in agricultural places.**

9.0 Site Led Pests

9.1 Magpie (Gymnorhina tibicen)

9.1.1 Description

- Two subspecies of the Australian magpie were introduced into New Zealand between 1864 and 1900 with the aim of controlling invertebrate soil pests.
- The black-backed magpie and the white-backed magpie commonly interbreed, producing birds with intermediate markings which makes distinct classification difficult.
- Breeding occurs June to November, and pairs usually only rear one chick each year.

9.1.2 Reason for Inclusion

Magpies were widely distributed throughout the Wellington region by 1970. Their preferred habitat is open grassland and cultivated paddocks with tall trees nearby for shelter. They are frequently found in paddocks, city parks and playing fields, on the edges of native and exotic forests and occasionally on mountains up to 1700 m.

During the breeding season magpies can become very aggressive and attempt to drive off animals and humans. Small children in particular can be subjected to terrifying and hazardous attacks. Magpies are known to harass, attack and kill a wide variety of native and exotic birds. There is a large amount of anecdotal evidence suggesting that magpies cause reductions or local eviction of native bird species populations.

Greater Wellington is currently participating in the last year of a four-year nation-wide research programme to determine the impact magpies have on native bird species. The Council has invested an average of $43,000 per annum in the programme over the last three years. Results to date indicate that controlling magpies will increase the number or conspicuousness of some birds, including kereru and tui.

9.1.3 Control Options

A cost-benefit analysis has identified that the greatest net benefit to the region comes from preventing human injury and stress where magpies have become a serious pest in public areas, and providing assistance to landowners wishing to undertake magpie control on their property to reduce environmental impacts. Due to the high level of magpie numbers present in the region, eradicating magpies is not possible at present.

Alternative options for the management of magpies include: 'Do nothing'; or Greater Wellington adopting a greater level of regional intervention such as direct control by service delivery over the whole region. Greater Wellington does not consider 'do nothing' to be a viable option as the potential environmental and human health impacts may become greater in the absence of control. Alternatively, if Greater Wellington undertook all magpie control over the whole region the costs of controlling this pest would outweigh the anticipated benefit, and may discourage occupiers from taking responsibility for control of magpies on their property.

9.1.4 Aim

"Manage magpies to minimise adverse environmental and human health impacts in the Wellington region."

9.1.5 Objectives

- Upon receiving complaints of magpies attacking members of the public, dispose of those magpies within 10 working days.
- Identify the conservation impacts of magpies on native fauna by supporting research initiatives.

9.1.6 Means of Achievement

Greater Wellington shall:

- Undertake **direct control by service delivery** of magpies within 10 working days where there is known to be a threat of injury to members of the public, or complaint(s) are made to that effect.
- **Respond** to landowners wanting to undertake magpie control within 10 working days of receiving a request for information and/or assistance.
- Provide **advice, education and assistance** to occupiers wanting to undertake magpie control.
- Support appropriate **research initiatives** into magpie impact on conservation values.
- Annually **inspect** pet shops for the sale of magpies.

9.1.7 Strategy Rules for Magpies

a) No person shall move or interfere with any article or substance left at a place by an Authorised Person pursuant to this Strategy for the purposes of:

   i) Confirming the presence, former presence, or absence of magpies (*Gymnorhina tibicen*); or

   ii) Managing or eradicating magpies (*Gymnorhina tibicen*); -

   Other than in accordance with the direction or under the supervision of an Authorised Person. A breach of this rule will create an offence under Section 154(r) of the Act.

b) No person shall release, or cause to be released, breed, or sell or offer for sale, or hold in premises where animals are offered for sale, or otherwise spread magpies (*Gymnorhina tibicen*). A breach of this rule will create an offence under Section 154(r) of the Act.

Explanation of Strategy Rules

Strategy rule (a) allows Greater Wellington to undertake the necessary actions for monitoring and controlling magpies where they are impacting environmental and human health values. Rule (b) imposes a ban on the sale, breeding or distribution of magpies in the Wellington region.

9.1.8 Monitoring the Objectives

The Council shall:

- Report the time of magpie complaints, location and number of birds disposed of and time of disposal.
- Regularly assess numbers of native fauna species and magpies at specific sites as part of ongoing research initiatives.

9.2 Gorse (Ulex europaeus)

9.2.1 Description

- A very spiny, woody perennial shrub 2 m or more in height.
- True leaves are on the seedlings only. Older plants have narrow, deeply furrowed, rigid spines, 15-30 mm long, with shorter lateral spines.
- Produces a mass of solitary, golden-yellow pea-like flowers, 15-20 cm in diameter.
- The flowers produce a large number of seeds, which are spread by dry seedpods bursting open.

9.2.2 Reason for Inclusion

The total area infested with gorse in the region is estimated to be 77,600 ha. Gorse is widespread and common in all areas of the Wellington region. Gorse is a serious weed of farming and forestry in New Zealand. Gorse also invades a wide range of habitats from riverbank margins to scrubland, as well as urban gardens and reserves.

9.2.3 Control Options

Due to the pest's widespread distribution, Greater Wellington does not believe that eradicating gorse is achievable. A cost-benefit analysis has identified that controlling gorse to prevent it spreading on to a property that is clear or being cleared has the greatest net benefit to the region. Therefore, Greater Wellington believes protecting boundaries from gorse and placing all responsibility on the occupier is the best option.

Alternative options for the management of gorse include: 'Do nothing'; or Greater Wellington adopting a greater level of regional intervention such as direct control by service delivery. The Council does not consider 'do nothing' to be a viable option as in some instances relying on voluntary control will not prevent the spread of gorse on to neighbouring clear land. Alternatively, if Greater Wellington undertook direct control by service delivery the costs of controlling this pest would outweigh the anticipated benefits and may discourage those occupiers contributing to the problem from taking responsibility for control of pests on their property.

9.2.4 Aim

"To minimise the externality impacts of gorse on land that is clear or being cleared of gorse."

9.2.5 Objective

- Prevent the spread of gorse onto properties that are clear of, or being cleared of gorse.

9.2.6 Means of Achievement

Greater Wellington shall:

- Where a complaint is received **ensure compliance** with the Strategy rules to ensure control of gorse is undertaken to a distance of not less than 10 m from the boundary where the adjacent property is clear or being cleared of gorse.
- Provide **information and publicity** to enhance public awareness of the Strategy rules and the threat gorse poses to the region.
- **Release** approved biological control agents for the control of gorse *(not a means of control within 10 m of a boundary).*
- Annually **inspect** local nurseries for the sale of gorse.

9.2.7 Strategy Rules for Gorse

a) Occupiers shall destroy all gorse *(Ulex europaeus)* plants within 10 m of their boundary following a complaint to Greater Wellington by an adjoining occupier whose land is clear or being cleared of gorse. A breach of this rule will create an offence under Section 154(r) of the Act.

b) No person shall release, or cause to be released, propagate, or sell or offer for sale, or hold in premises where plants are offered for sale, or otherwise spread gorse *(Ulex europaeus)* plants. A breach of this rule will create an offence under Section 154(r) of the Act.

Explanation of Strategy Rules

Strategy rule (a) requires land occupiers to treat and destroy gorse in boundary situations and only where a complaint has been received by Greater Wellington. This will help prevent the spread of gorse onto clear land. Strategy rule (b) imposes a ban on the sale, propagation or distribution of gorse in the Wellington region.

9.2.8 Monitoring the Objectives

The Council shall:

- For areas under complaint, report the extent of invasion of gorse on to adjacent properties that are clear or being cleared of gorse.

9.3 Ragwort (Senecio jacobaea)

9.3.1 Description

- An erect herbaceous annual, biennial or perennial herb 30-120 cm in height.
- Leaves are deeply divided and wrinkled, dark green on top and a paler green, downy lining beneath.
- Young plants form a rosette and develop into a cabbage type form.
- Stems are reddish-purple at the base, rising up to branch out at the top.
- Bright yellow flowers 2.5 cm in diameter group together in clusters of 12-15, forming large heads at the end of each stem.
- Each plant can produce more than 150,000 seeds with over 99% of the seeds falling close to the plant or remaining in the seed head. Of those seeds carried by the wind, 85% fall within 18 m of the parent plants.

9.3.2 Reason for Inclusion

Ragwort is widespread throughout the Wellington region in pasture, along roadsides and waste places. Ragwort is a serious pasture weed with the ability to rapidly spread and invade clean areas, leading to reduced pasture production and ongoing maintenance. Ragwort is also toxic to stock, particularly horses and cattle. The total area infested with ragwort in the region is estimated to be 77,600 ha. If left to spread, ragwort has the potential to infest 440,000 ha in the Wellington region.

9.3.3 Control Options

Due to the pest's widespread distribution, Greater Wellington does not believe that eradicating ragwort is achievable. A cost-benefit analysis has identified that controlling ragwort to prevent it spreading on to a property that is clear or being cleared has the greatest net benefit to the region. Therefore, Greater Wellington believes protecting boundaries from ragwort and placing all responsibility on the occupier is the best option.

Alternative options for the management of ragwort include: 'Do nothing'; or Greater Wellington adopting a greater level of regional intervention such as direct control by service delivery. The Council does not consider 'do nothing' to be a viable option as in some instances relying on voluntary control will not prevent the spread of ragwort on to neighbouring clear land. Alternatively, if Greater Wellington undertook direct control by service delivery the costs of controlling this pest would outweigh the anticipated benefits and may discourage those occupiers contributing to the problem from taking responsibility for control of pests on their property.

9.3.4 Aim

"To minimise the externality impacts of ragwort on land that is clear or being cleared of ragwort."

9.3.5 Objective

- Prevent the spread of ragwort onto properties that are clear of, or being cleared of ragwort.

9.3.6 Means of Achievement

Greater Wellington shall:

- Where a complaint is received, **ensure compliance** with the Strategy rules to ensure control of ragwort is undertaken to a distance of not less than 50 m from the boundary where the adjacent property is clear or being cleared of ragwort.
- Provide **information and publicity** to enhance public awareness of the Strategy rules and the threat ragwort poses to the region.
- **Release** approved biological control agents for the control of ragwort *(not a means of control within 50 m of a boundary).*
- Annually **inspect** local nurseries for the sale of ragwort.

9.3.7 Strategy Rules for Ragwort

a) Occupiers shall destroy all ragwort (*Senecio jacobaea*) plants within 50 m of their boundary, following a complaint to Greater Wellington, where adjoining land is clear or being cleared of ragwort. A breach of this rule will create an offence under Section 154(r) of the Act.

b) No person shall release, or cause to be released, propagate, or sell or offer for sale, or hold in premises where plants are offered for sale, or otherwise spread ragwort (*Senecio jacobaea*) plants. A breach of this rule will create an offence under Section 154(r) of the Act.

Explanation of Strategy Rules

Strategy rule (a) requires land occupiers to treat and destroy ragwort in boundary situations and only where a complaint has been received by Greater Wellington. This will help prevent the spread of ragwort onto clear land. Strategy rule (b) imposes a ban on the sale, propagation or distribution of ragwort in the Wellington region.

9.3.8 Monitoring the Objectives

The Council shall:

- For areas under complaint, report the extent of invasion by ragwort on to adjacent properties that are clear or being cleared of ragwort.

9.4 Variegated thistle (*Silybum marianum*)

9.4.1 Description

- An erect annual or biennial herb growing to 2.5 m high by 2 m wide.
- Has a stout taproot and a hollow or pith-filled stem.
- Stems are usually much-branched and ribbed along the length.
- Variegated rosette leaves with prominent white veins and blotches. The stem leaves are shorter, close to the stem with the upper ones becoming stiff.
- The large purple flower heads are solitary and occur at the ends of branches.
  Many sharp spines surround the flower heads.

9.4.2 Reason for Inclusion

In the Wellington region variegated thistle is mainly found on the hills and coastal flats in the Paraparaumu and Waikanae areas. It also occurs in the eastern hills and coastal areas of the Wairarapa. The total area infested with variegated thistle is estimated to be 23,100 ha. If left to spread, variegated thistle has the potential to infest 440,000 ha in the Wellington region.

Variegated thistle competes with pasture species and will eliminate most other plants through shading and competition for moisture and nutrients. Under some conditions variegated thistle is poisonous to cattle and to a lesser extent sheep. Dense clumps of variegated thistle can harbour pest animals, particularly rabbits.

9.4.3 Control Options

Due to the pest's widespread distribution, Greater Wellington does not believe that eradicating variegated thistle is achievable. A cost-benefit analysis has identified that controlling variegated thistle to prevent it spreading on to a property that is clear or being cleared has the greatest net benefit to the region. The Council believes that protecting boundaries from variegated thistle and placing all responsibility on the occupier is the best option.

Alternative options for the management of variegated thistle include: 'Do nothing'; or Greater Wellington adopting a greater level of regional intervention such as direct control by service delivery. The Council does not consider 'do nothing' to be a viable option as in some instances relying on voluntary control will not prevent the spread of variegated thistle on to neighbouring clear land. Alternatively, if Greater Wellington undertook direct control by service delivery the costs of controlling this pest would outweigh the anticipated benefits and may discourage those occupiers contributing to the problem from taking responsibility for control of pests on their property.

9.4.4 Aim

"To minimise the externality impacts of variegated thistle on land that is clear or being cleared of variegated thistle."

9.4.5 Objective

- Prevent the spread of variegated thistle onto adjacent properties that are clear of, or being cleared of variegated thistle.

9.4.6 Means of Achievement

Greater Wellington shall:

- Where a complaint is received, **ensure compliance** with the Strategy rules to ensure control of variegated thistle is undertaken to a distance of not less than 20 m from the boundary where the adjacent property is clear or being cleared of variegated thistle.
- Provide **information and publicity** to enhance public awareness of the Strategy rules and the threat variegated thistle poses to the region.
- **Release** approved biological control agents for the control of variegated thistle if and when they become available *(not a means of control within 20 m of a boundary)*.
- Annually **inspect** local nurseries for the sale of variegated thistle.

9.4.7 Strategy Rules for Variegated thistle

a) Occupiers shall destroy all variegated thistle (*Silybum marianum*) plants within 20 m of their boundary following a complaint to Greater Wellington by an adjoining occupier whose land is clear or being cleared of variegated thistle. A breach of this rule will create an offence under Section 154(r) of the Act.

b) No person shall release, or cause to be released, propagate, or sell or offer for sale, or hold in premises where plants are offered for sale, or otherwise spread variegated thistle (*Silybum marianum*) plants. A breach of this rule will create an offence under Section 154(r) of the Act.

Explanation of Strategy Rules

Strategy rule (a) requires land occupiers to treat and destroy Variegated Thistle in boundary situations and only where a complaint has been received by Greater Wellington. This will help prevent the spread of Variegated Thistle onto clear land. Strategy rule (b) imposes a ban on the sale, propagation or distribution of Variegated Thistle in the Wellington region.

9.4.8 Monitoring the Objectives

The Council shall:

- For areas under complaint, report the extent of invasion by Variegated Thistle on to adjacent properties that are clear or being cleared of Variegated Thistle.

9.5 Key Native Ecosystem Management

9.5.1 Description and Reasons for Inclusion

The Key Native Ecosystem (KNE) programme is a Greater Wellington initiative to protect and enhance native flora and fauna in selected sites throughout the Wellington region. The programme contributes to New Zealand's commitments made under the International Convention of Biological Diversity as outlined in the New Zealand Biodiversity Strategy 2000.

Sustaining New Zealand's biodiversity will benefit the whole community, through the enjoyment and identity we derive from our natural world, and the pride and profit from our distinctive 'green' branding.

Controlling introduced pests is one of several management techniques required to protect and enhance indigenous biodiversity. Greater Wellington will undertake pest control in a representative range of Key Native Ecosystems. Areas are selected to represent a range of indigenous biodiversity in the region, and are prioritised primarily on ecological criteria. The allocation of resources will follow the principle of giving priority to the least modified indigenous habitats, where critical ecological processes can continue to function. The number of sites will depend on the priority process, available funding and community involvement.

9.5.2 Management Methods

Management will apply only to those sites identified in the Key Native Ecosystem programme and will focus on the site, rather than on individual species within it. The adverse impact that an individual pest has on native flora and fauna is difficult to separate from the adverse impacts of other pests and habitat degradation.

Many of the management techniques that will be used by Greater Wellington will be applicable to more than one pest, and not every pest listed will be present in each of the sites selected. Therefore, focusing pest management on individual pests within a native ecosystem is inappropriate. For this reason, the aim, objectives and means of achievements for all pests included in the programme are presented collectively. The Key Native Ecosystem programme also includes species from previously described categories.

Unless Crown Agencies agree to be bound to, and contribute to the Strategy through an Order in Council, the Key Native Ecosystem programme will not apply to Crown land.

9.5.3 Aim

"*To protect indigenous biodiversity in a comprehensive selection of Key Native Ecosystems.*"

9.5.4 Objectives

- Achieve a measurable improvement in the ecological health and diversity of Key Native Ecosystems using a range of suitable indicators.

9.5.5 Means of Achievement

- Review the **prioritisation process** based on ecological principles.
- Maintain **holistic management** in existing Key Native Ecosystem areas.
- Prioritise and select **additional** Key Native Ecosystems by July 2003.
- Establish and implement **integrated pest management plans** for all Key Native Ecosystems.
- Ensure Key Native Ecosystems are **legally protected** into perpetuity.
- Undertake **direct control by service delivery** of pests identified in the management plan for each Key Native Ecosystem.
- Attempt to **re-establish** locally extinct native species.
- **Monitor** site recovery using a range of ecological indicators.
- Facilitate the involvement of **community groups** where appropriate.
- Where Key Native Ecosystems are identified on Territorial Local Authority land, seek funding from the relevant authority to form **financial partnerships.**
- Co-ordinate site management with other **biodiversity initiatives** where possible.
- Use **biological control** agents where appropriate, and support relevant biological control research initiatives.
- Manage **external pressures** that are inconsistent with Key Native Ecosystem Management objectives.
- **Promote** the presence of organisms that assist in the control of pests in Key Native Ecosystems.
- Liaise with the **Department of Conservation** to determine the distribution of, and appropriate control methods for coarse fish, catfish and mosquito fish.
- Provide public **education and advice** to foster biodiversity management outside formal Key Native Ecosystem programme areas.

9.5.6 Strategy Rules for Key Native Ecosystem Management

a) No person shall move or interfere with any article or substance left at a place by an Authorised Person pursuant to this Strategy for the purposes of:

   i) Confirming the presence, former presence, or absence of pests identified in the Key Native Ecosystem Management category; or

   ii) Managing or eradicating pests identified in the Key Native Ecosystem Management category; -

   Other than in accordance with the direction or under the supervision of an Authorised Person. A breach of this rule will create an offence under Section 154(r) of the Act.

b) No person shall cause or permit the disposal of green waste plant material in a Key Native Ecosystem. A breach of this rule will create an offence under Section 154(r) of the Act.

c) No person shall cause or permit access of livestock into a Key Native Ecosystem. A breach of this rule will create an offence under Section 154(r) of the Act.

d) No person shall cause or permit any fire(s) in a Key Native Ecosystem. A Breach of this rule will create an offence under Section 154(r) of the Act.

Explanation of Strategy Rules

Strategy rule (a) will allow Greater Wellington to implement the necessary actions required for integrated pest management in sites included in the Key Native Ecosystem programme, as well as monitoring the sites to determine pest impacts and ecosystem recovery. Rule (b) prohibits any person from dumping green waste into any site included in the Key Native Ecosystem programme. Rule (c) prohibits any person from letting stock into an area where that has undergone pest management as part of the Key Native Ecosystem programme. Rule (d) prohibits the lighting of fires within a Key Native Ecosystem in order to protect indigenous species.

9.5.7 Monitoring the Objectives

The Council shall:

- Undertake surveys of pest animal populations prior to and immediately after control to determine its effectiveness.
- Periodically assess pest animal population status when control is not taking place.
- Undertake surveys of pest plant extent and density before and after control to determine its effectiveness.
- Monitor the recovery of indigenous vegetation at sites where pests have been controlled.
- Monitor the recovery of indigenous animals at sites where pests have been controlled.

9.5.8 Species Identified for Key Native Ecosystem Management

In addition to those species included in the Eradication, Containment, Suppression and Site Led Management categories, the species identified for inclusion in the Key Native Ecosystem Management programme are:

- Argentine ant (*Linepithema humile*)
- Brown bullhead catfish (*Ameiurensis nebulosis*)
- European hedgehog (*Erinaceus europaeus occidentalis*)
- Feral cat (*Felis catus*)
- Feral goat (*Capra hircus*)
- Feral pig (*Sus scrofa*)
- Ferret (*Mustela furo*)
- Goldfish (*Carassius auratus*)
- Hare (*Lepus europaeus occidentalis*)
- House mouse (*Mus musculus*)
- Koi Carp (*Cyprinus carpio*)
- Mosquito fish (*Gambusia affinis*)
- Norway rat (*Rattus norvegicus*)
- Possum (*Trichosurus vulpecula*)
- Rudd (*Scardinius erythropthalmus*)
- Ship rat (*Rattus rattus*)
- Stoat (*Mustela erminea*)
- Sulphur Crested Cockatoo (*Cacatua galerita*)

- [1]Tench (*Tinca tinca*)
- Wasp (*Vulpecula germanica; Vulpecula vulgaris*)
- Weasel (*Mustela nivalis*)
- African club moss (*Selaginella kraussiana*)
- Artillery plant (*Galeobdolon luteum)*
- Barberry (*Berberis glaucocarpa*)
- Blackberry (*Rubus fruticosus*)
- Blue morning glory (*Ipomoea indica*)
- Boxthorn (*Lycium ferocissimum*)
- Broom *(Cytisus scoparius)*
- Brush wattle (*Paraserianthes lophantha*)
- Buddleia (*Buddleja davidii*)
- Cape honey flower (*Melianthus major*)
- Cape ivy (*Senecio angulatus*)
- Chilean flame creeper (*Tropaceolum speciosum*)
- Chinese and tree privet (*Ligustrum sinense; L.lucidum*)
- Climbing dock (*Rumex sagittatus*)
- Great bindweed (*Calystegia silvatica*)
- Cotoneaster (*Cotoneaster franchetii, C.horizontalis*)
- Darwin's barberry *(Berberis darwinii)*
- Egeria (*Egeria densa*)
- Elaeagnus (*Elaeagnus x reflexa*)
- German ivy (*Senecio mikanioides*)
- Gunnera *(Gunnera tinctoria)*
- Hawthorn (*Crataegus monogyna*)
- Himalayan honeysuckle (*Leycesteria formosa*)
- Japanese honeysuckle (*Lonicera japonica*)
- Lagarosiphon (*Lagarosiphon major*)
- Marram grass (*Ammophila arenaria*)
- Mexican daisy *(Erigeron karvinskianus)*
- Mile-a-minute (*Dipogon lignosus*)
- Pampas grass (*Cortaderia jubata; C.selloana*)
- Parrot's feather (*Myriophyllum aquaticum*)
- Periwinkle (*Vinca major*)
- Plectranthus (*Plectranthus ciliatus*)
- Purple ragwort (*Senecio glastifolius*)
- Spanish heath (*Erica lusitanica*)
- Stinking iris (*Iris foetidissima*)
- Sycamore (*Acer pseudoplatanus*)
- Velvet groundsel *(Senecio petasitis)*
- Wandering jew (*Tradescantia fluminensis*)
- Wild onion (*Allium triquetrum*)
- Wilding conifers (*Larix decidua; var)*
- Wilding pines *(Pinus spp.)*

[1] Tench are identified as Sports Fish in the First Schedule of the Freshwater Fisheries Regulations 1983. As such, approval from Wellington Fish and Game Council must be obtained prior to the control of Tench.

Part Three
Administrative Provisions

10. Powers Conferred

The powers conferred on Greater Wellington by the Biosecurity Act 1993 for the purposes of implementing the Strategy are outlined in Table 5. Authorised Persons will exercise many of these powers on behalf of Greater Wellington. The Principal Officer of Greater Wellington will appoint Authorised Persons and may delegate powers to any Authorised Person, subject to Sections 103 and 105 of the Act. When carrying out his/her duties, an Authorised Person shall be limited to using those powers specified in his/her Instrument of Appointment, based on those powers listed in table 5.

Table 5. Administrative powers available under the Act.

Administrative Powers	**Level of Delegation**
Section 128 Power to act on default	Greater Wellington (as the Management Agency)
Section 129 Liens	" "
Section 131 Declaration of a controlled area	" "
Section 135 Options for cost recovery	" "
Section 136 Failure to Pay	" "
Section 154 Offences	
Section 103(3) & (7) Appointment of Authorised and Accredited Persons	Principal Officer of the Regional Council
Section 105 Delegation to Authorised Persons	" "
Section 114A Application of articles or substances from aircraft	" "
Section 128 Powers to act on default	" "
Section 129 Liens	" "
Section 43 Duty to provide information	Authorised Person
Section 106 Power to require assistance	" "
Section 109 Power of inspection	" "
Section 112 Duties on exercising power of entry	" "
Section 113 Power to record information	" "
Section 114 General Powers	" "
Section 115 Use of dogs and devices	" "
Section 118 Power to seize evidence	" "
Section 119 Power to seize abandoned goods	" "
Section 120 Power to intercept baggage etc.	" "
Section 121 Power to examine organisms	" "
Section 121A Power to apply article or substance to a place	" "
Section 122 Power to give directions	" "
Section 123 Power to vaccinate	" "
Section 130 Declaration of restricted place	" "
Section 134 Enforcement of controlled areas	" "

11. Implementation

11.1 Education and Information

Greater Wellington, acting as the Management Agency for the Strategy, will conduct ongoing educational programmes to enhance public awareness of pest animals and pest plants.

These educational programmes will include:

- Conducting practical on-location demonstrations of management techniques
- Preparing feature articles and placing advertisements in the news media
- Carrying out presentations to interested groups
- Preparing and conducting educational programmes for schools
- Conducting displays at shows and field days
- Producing and distributing information leaflets and pamphlets
- Jointly preparing educational programmes with recognised authorities e.g. Department of Conservation, Landcare Research.

11.2 Monitoring and Review

11.2.1 Monitoring the Achievement of Strategy Objectives

Monitoring of the Strategy is required to determine its effectiveness. Monitoring will provide answers to questions such as - 'Have we achieved our targets?' and 'Should we start/continue to manage this pest?' The results of monitoring are reported annually in Greater Wellington's Operational Plan Report (refer section 11.2.2)

Monitoring the Strategy is mainly pest-led, with programmes to determine the extent and/or density of pest infestation. With the regional pest surveillance programme, the impact of pests on the environment is also monitored. The Key Native Ecosystems programme involves Site Led monitoring of ecosystem integrity and biological diversity, in addition to monitoring pest numbers.

Monitoring the density of infestation will, where possible, involve counting the number of pests in an area. This works well for most plants on the eradication list. Where pest infestations cannot be directly monitored, estimates of density are made based on random samples. In some cases, it is the extent of the pest, rather than the density that is most important. For these pests, the area it occupies is monitored. Where this area is vast, an estimate of the area occupied is made, based on random samples for the presence of the pest.

By monitoring pest impacts such as foliage being browsed, dieback of plants and ecosystem recovery indicators such as forest floor regeneration, we can determine the effectiveness and results of integrated pest management in Site Led programmes. Greater Wellington can measure a range of vegetative, invertebrate, and vertebrate indicators of biological diversity. Current methods include direct field measurements, fixed photo-points and aerial photography.

11.2.2 Performance Monitoring

As the Management Agency, Greater Wellington is required to prepare an operational plan within three months of the Strategy being approved. This plan details the activities which Greater Wellington intends to undertake to implement the Strategy. The plan must be reviewed annually and a report prepared assessing Greater Wellington's performance in implementing the Strategy. This report is available from Greater Wellington on request.

11.2.3 Review of the Strategy

A review of the Strategy will be carried out in the following circumstances:

a) When new issues arise concerning other harmful pests, or if monitoring shows a significant change in an existing issue, or shows that a review would be appropriate.
b) As required by the Act, a full review will be carried out no later than five years after the date upon which this Strategy was approved. This will involve re-notifying a Proposed Pest Management Strategy in accordance with Section 78 of the Act.

11.3 Biological Control

Biological control refers to the introduction of biological agents for the control of specific plants and animals.

Biological controls provide an alternative option for the control of pests that are well established. Although there are high initial establishment costs, biological control, when used in conjunction with other technical methods, can assist effective long-term control of pests.

Biological programmes to control pest plants were first used in New Zealand between 1927 and 1935 when the gorse seed weevil was introduced throughout the country.

The Environmental Risk Management Authority (ERMA) regulates the deliberate importation, development or release of new organisms into New Zealand under the Hazardous Substances and New Organisms Act (HSNO) 1996. The Ministry of Agriculture and Forestry (MAF) ensures that the controls placed by ERMA on experiments and restricted field trials are complied with. The HSNO Act is designed so that the legal importation and release of new organisms can be examined in advance to assess the effects on people and the environment.

All biological-agents are exhaustively researched in their country of origin, and safety tested to ensure they are host specific. Following safety testing, small colonies of the agents are imported into New Zealand and quarantined. They are then tested to ensure they are free of parasites or diseases before rearing programmes commence. Biological agents are reared in containment in preparation for field release, and then distributed to regional councils and other organisations participating in the biological control programme.

Since November 1989, Greater Wellington has contributed to a co-operative programme with Landcare Research NZ Ltd to investigate, rear and release specific biological control agents for pest plants such as old man's beard, gorse, broom and ragwort.

The Council's biosecurity officers regularly monitor the release sites. As agent populations increase, they are distributed on to new sites.

Greater Wellington will continue to promote research and development, by recognised authorities, of biological control agents where deemed appropriate for designated pest species.

11.4 River Corridor Management

More than 100 km of the region's major rivers have infestations of old man's beard. These infestations currently affect remnant native bush, secondary native regrowth, river protection plantings (private and regional council scheme) and various exotic plant species.

Since 1996 the Council has funded the control of old man's beard along approximately 100 km of river reserve. This systematic and sustained programme involving initial and maintenance control will continue until the next Strategy review in 2006.

The programme's estimated annual expenditure of $65,000 will continue to be funded from the General Rate fund. If this programme was not implemented under the Strategy, damage to indigenous and exotic species would be irreversible. While the Council is not legally responsible for old man's beard control on river margins, it recognises that a regionally co-ordinated and systematic programme is the best method for protecting and enhancing the region's natural biodiversity.

Other pest species considered a threat to river protection plantings and indigenous biodiversity may also be included in this programme to help protect the biodiversity of river corridors in the region, and complement the Key Native Ecosystem Management programme.

12. Regulatory Management

12.1 Compliance with the Strategy

Occupiers have a legal obligation to comply with all lawful directions, requirements and notices for implementing the Strategy, as outlined in this section.

For each specified pest, an occupier must carry out his/her obligations in the manner and to the standards prescribed in this section.

If an occupier fails to comply with any rules under Part Two of the Strategy, the Council will initiate the regulatory procedures set out below.

12.2 Issue of Direction to an Occupier

If an occupier fails to comply with any Strategy rule in Part Two of the Strategy, an Authorised Person may issue a direction to the occupier under Section 122(2e) of the Act, specifying the following matters:

a) A legal description of the land in respect of which works or measures are required to be undertaken.

b) The pest for which the works or measures are required.

c) Works or measures to be undertaken to meet the occupier's obligations.

d) The time within which the works or measures are to be undertaken.

e) Action that may be undertaken by the Management Agency if the occupier or occupiers fail to comply with any part of the direction.

f) The name of the Authorised Person issuing the direction.

g) The contact address, telephone and fax numbers of the issuer.

In accordance with Sections 164A and 128(2) of the Biosecurity Act 1993, a direction to an occupier must be served in the following ways:

(1) Where an occupier is a person (other than Crown, corporate body, or a body of persons) by:
   (a) Delivering it personally to the occupier; or
   (b) Delivering it (including by fax) to the last known place of residence or business of the person; or
   (c) Posting it to the person at the last known place or residence or business of the person; or
   (d) Where it is not practicable to give it in accordance with (a), (b) or (c), by placing it in some conspicuous part of the land in a way that will remain visible for a reasonable time.

(2) Where the occupier is a Minister of the Crown, by giving it to the chief executive of the appropriate department of the Public Service in accordance with subsections (1)(a) to (1)(c).

(3) Where the occupier is a body (incorporated or not) a direction shall be given by:
   (a) Giving it to an officer of the body in accordance with subclauses (1)(a) to (1)(c); or
   (b) Delivering it to the registered office of the body in accordance with subclauses (1)(a) to (1)(c); or
   (c) In the case of a partnership, a direction shall be given to any one of the partners in accordance with subclauses (1)(a) to (1)(c).

(4) Where a direction must be issued to owners of Maori Land the issuing of such directions will be in accordance with Section 181 of the Te Ture Whenua Maori Act 1993.

12.3 Extension or Variation of Directions

Upon written request from a land occupier, the Council may extend the time specified in the direction for a further period, or vary the requirements of the direction as is considered appropriate.

Greater Wellington must first be satisfied that:

a) Steps have been taken to comply with the direction and further compliance is unnecessary; and/or

b) The action taken or provision made is as effective or more effective than actual compliance with the direction; or

c) The occupier had been prevented by reasonable cause from completing the necessary works and measures.

12.4 Cancellation of Directions

Greater Wellington may cancel a direction if it is satisfied that:

a) Works or measures have been undertaken to meet the occupier's obligations; or

b) For some other reason it is not longer appropriate to enforce the direction.

12.5 Failure to Comply

When an occupier has not complied with the requirements of the direction within the time specified, then the Management Agency may:

a) Prosecute for offences under Section 154 of the Act; or

b) Enter the land and carry out, or cause to be carried out, the works or measures specified, or such other works or measures necessary or appropriate to meet the requirements of the direction.

12.6 Recovery of Costs Incurred

Under Section 128 of the Act, the Management Agency may recover from the occupier the costs reasonably incurred by it in carrying out the works and measures specified in the direction.

If these costs are not paid then, in accordance with Section 129 of the Act, all recoverable costs will be charged against the land concerned. Recovery costs shall have priority over all existing or later mortgages, charges and encumbrances.

12.7 Compensation

No compensation shall be payable by Greater Wellington for any claims resulting from the implementation of the Strategy, except where the pest is recognised as legal property. The owner of any property damaged or destroyed in the course of implementing the Strategy shall be entitled to receive the net proceeds (if any) arising from the disposal of that property. Any dispute concerning eligibility for, or the amount of, net proceeds will be assigned to independent arbitrators for resolution.

13. Cross-Boundary Issues and Integrated Management

13.1 Introduction

Cross-boundary issues can occur between regions as pest distributions are seldom constrained by regional council boundaries. The aim of integrated management is minimise cross-boundary issues and implement complementary, efficient and effective pest management.

13.2 Other Pest Management Strategies

Under Section 76(4) of the Act, the Wellington Regional Pest Management Strategy 2002-2022 shall not be inconsistent with any other Regional Pest Management Strategy by another organisation, whether within the same region or any other region, or any National Pest Management Strategy.

This Strategy is consistent with the Regional Pest Management Strategy of our only adjoining region, horizons.mw (Manawatu-Wanganui Regional Council). Where appropriate, Greater Wellington will liaise with horizons.mw on cross-boundary issues about pest management, and other regional councils on pest management matters relevant to more than one region.

In addition, Greater Wellington will, where appropriate, liaise with government biosecurity departments (Agriculture and Forestry, Conservation, Fisheries, and Health) over pest management issues which are best handled nationally.

13.3 Regional Policy Statements and Regional Plans

The Wellington Regional Pest Management Strategy shall not be inconsistent with the Wellington Regional Policy Statement or any Greater Wellington Plan prepared under the Resource Management Act 1991.

13.4 Other Legislation

The provisions of the Strategy shall be construed so as to not affect or derogate in any way from the provisions of:

- Soil Conservation and Rivers Control Act 1941
- Forests Act 1949
- Wildlife Act 1953
- Health Act 1956
- Wild Animal Control Act 1977
- Reserves Act 1977
- National Parks Act 1980
- Fisheries Acts 1983 and 1996
- Conservation Act 1987
- Trade in Endangered Species Act 1989
- Resource Management Act 1991
- Customs and Excise Act 1996
- Animal Welfare Act 1999

Other legislation that may influence the Strategy includes:

- Native Plants Protection Act 1934
- Local Government Act 1974
- Rating Powers Act 1988
- Health and Safety in Employment Act 1992
- Privacy Act 1993
- Te Ture Whenua Maori/Maori Land Act 1993
- Hazardous Substances and New Organisms Act 1996
- Agricultural Compounds and Veterinary Medicines Act 1997

14. Funding Provisions

14.1 Principles for the Allocation of Costs

Pests are included in the Strategy where they have regionally significant impacts and regional intervention is considered necessary.

Where regional intervention provides regional benefit, the costs for this intervention are fairly sourced from the regional public purse. Regional funding will therefore be applied to the administration, monitoring and inspection functions of the Strategy. Some direct pest control will also be regionally funded, if it is prioritised as being for the public good of the region. This includes environmental management, eradication of new arrivals, and management of pests that are technically difficult to control and range over multiple properties (e.g. rooks).

However, many pests can be managed on individual properties, and the occupiers are both the principal beneficiaries of pest control and the exacerbators of the pest problem. In these cases, occupiers will be responsible for the costs of control. Greater Wellington may provide a service delivery option but the full costs will be recovered from the occupier.

14.2 Greater Wellington Funding Policy

Pest Management Strategies can be funded through various means, including rates, direct charges and contributions. In addition, the rationale for Strategy funding must be consistent with Greater Wellington's overall Funding Policy as required under Part VII of the Local Government Act 1974.

This Strategy overall reinforces the significant environmental management benefits that have been initiated through the Key Native Ecosystem programme; the Wellington City Pest Plant Control Programme; and maintains the suppression and eventual eradication of some of our worst agricultural pests.

The Council believes that this Strategy will add significantly to the ecological, social and production benefits gained under the initial pest strategies. It is therefore considered appropriate to maintain the status quo for funding. Further details are provided in the following subsections.

14.3 Cost-Benefit Analysis

The Biosecurity Act requires that the benefits and costs of the Strategy have been analysed and that the Strategy must show why having it is more appropriate than relying on the voluntary actions of individuals to manage each pest species. These requirements have been addressed in a cost-benefit analysis[2] and a synopsis is provided within the description for each pest candidate in this Strategy.

14.4 Who Should Pay?

A Pest Management Strategy is funded by those persons or parties likely to benefit from its implementation (beneficiaries) and whose action or inaction contribute to the pest problem (exacerbators). The main beneficiaries and exacerbators are occupiers of land and those parties who utilise and enjoy the conservation and amenity values maintained and enhanced by pest management. These include:

- Those with land at risk from pests, or those affected by pests through impacts on their production and/or livelihood, including those who contribute to the pest problems (exacerbators).
- Groups of individuals or properties (urban communities, conservation groups, and farming and forestry interests) by keeping land pest free, protecting the environment and improving production.
- The Crown (Department of Conservation, Land Information New Zealand, New Zealand Railways Corporation, Transit New Zealand, Department of Corrections, Ministry of Education, New Zealand Defence Force).
- The regional community by protecting primary production, catchments, drainage and soil conservation to preserve the economy, biodiversity and environment of the region.

The Wellington Regional Pest Management Strategy 2002-2022 contains five pest management programmes:

- Vigilance (not yet in the region)
- Eradication (new arrivals)
- Containment (expansionary)
- Suppression (widespread)
- Site Led (entrenched)

Definitions of these programmes are provided in Part Two of the Strategy (Section 5). The five programmes reflect the aims and objectives for the management of each pest species and contain a high level of ‘public good’ outcomes.

The **Vigilance** programme relies on early detection of new incursions. As it is not possible to predict which species might breach the regional border, the costs associated with control will be borne by all rateable properties via the General Rate. It is considered that more effective management will result from the ‘Direct Control by Service Delivery’ policy for new incursions or unwanted organisms.

[2] “Cost-Benefit Assumptions and Calculations: Animal and Plant Species Considered for Inclusion in a Proposed Wellington Regional Council Pest Management Strategy 2001-2021”.

Costs associated with **Eradication pests** will be borne by all rateable properties via the General Rate. These species are a mix of environmental and production pests. Preventing their establishment will reduce potential long-term control costs. It is considered that more effective management will result from the 'Direct Control by Service Delivery' policy for these pests of limited distribution.

Containment pests are managed under a dual policy, one of keeping clear areas clear and the other of maintaining low pest densities in defined containment zones. In the clear areas, costs will be borne by all ratepayers via the General Rate. In containment zones where a suppression policy applies, occupiers are responsible for the costs of control. Costs related to inspection and administration of the Strategy will be borne regionally.

Suppression pests are widely distributed throughout the region and have serious adverse effects. Their distribution and rapid rate of spread makes them difficult to manage. However, the Council intends to minimise their impact throughout the region. The Council believes that direct control by service delivery by Greater Wellington would be prohibitively expensive. Therefore, responsibility for pest control and associated costs will be the occupiers. Costs related to inspection and administration of the Strategy will be borne regionally.

Site Led pests are managed for a variety of reasons, using a range of methods. Consequently there are several different funding rationales. The Key Native Ecosystem Programme (KNE) manages environmental pests in high priority regional ecosystems. There is little direct financial benefit to occupiers from this programme as the benefits are predominantly to the regional environment and are therefore considered a public good. General Rates will therefore fund the regional KNE programme with control works managed by Greater Wellington. Where appropriate, Greater Wellington will seek to share the costs with the land occupier.

Other pests have adverse impacts on agriculture. The benefit of managing these pests accrues to the occupier, so regional intervention is not required in principle. However, these pests can cross property boundaries. Greater Wellington believes that management of pests on property boundaries sometimes requires regional intervention. Costs of control still lie with the occupier, whilst administration of the Strategy and inspection costs will be borne regionally.

Magpies can pose a serious threat to human health. When this occurs Greater Wellington will undertake control by direct service delivery. Because of the wide-ranging nature of magpies, and the difficulty of control (sometimes requiring use of firearms in urban areas), occupiers cannot be reasonably expected to undertake control work themselves.

In determining how the wider costs of administering, implementing and monitoring the Strategy should be funded, consideration has been given to:

- The desire to continue with a simple, transparent funding system.
- The need to minimise administrative costs associated with developing, implementing and maintaining a funding system.
- The desire to be equitable to all constituents.

14.5 How the Strategy is Funded

The rating provisions outlined in Section 33 of the Rating Powers Act 1988 will be used to fund the Strategy.

The rating years are:

2002/2003 (1 July 2002 to 30 June 2003)
2003/2004 (1 July 2003 to 30 June 2004)
2004/2005 (1 July 2004 to 30 June 2005)
2005/2006 (1 July 2005 to 30 June 2006)
2006/2007 (1 July 2006 to 30 June 2007)

14.5.1 Private Land Occupiers

Private land occupiers will contribute to the Strategy's funding via the General Rate levied on every separately rateable property within the boundaries of Greater Wellington, pursuant to Section 33 of the Rating Powers Act 1988. The rating system to be used shall be on the basis of Equalised Capital Value.

14.5.2 Territorial Local Authorities

Territorial Local Authorities will contribute to the Strategy's' funding via the General Rate levied on every separately rateable property occupied by the Territorial Local Authority within the boundaries of the nine Territorial Local Authorities listed in Table 5, pursuant to Section 33 of the Rating Powers Act 1988. The rating system to be used shall be on the basis of Equalised Capital Value.

Table 6. Direct Contributions by Territorial Local Authorities to the Strategy via General Rates

Year	02/03	¾	04/05	05/06	06/07
Carterton District Council	$97	$98	$100	$100	$100
Hutt City Council	$2,003	$2,025	$2,074	$2,064	$2,064
Upper Hutt City Council	$1,070	$1,082	$1,108	$1,103	$1,103
Masterton District Council	$1,152	$1,165	$1,193	$1,187	$1,187
South Wairarapa District Council	$569	$575	$589	$586	$586
Wellington City Council	$20,559	$20,782	$21,285	$21,187	$21,187
Porirua City Council	$1,792	$1,811	$1,855	$1,846	$1,846
Kapiti Coast District Council	$1,581	$1,598	$1,636	$1,629	$1,629
Tararua District Council	$0	$0	$0	$0	$0

14.5.3 Crown Stakeholders

This Strategy earlier referred (4.2.3) to the possibility of the six major Crown Land Occupiers being bound to the Strategy. The Crown is a significant landowner and is responsible for administering over 19% of the region's land. Section 87 of the Biosecurity Act exempts the Crown and Crown Agencies from being legally bound by the funding provisions or rules in a regional pest management strategy.

However, these agencies may seek funding from the Crown under an Order in Council or agree to make voluntary contributions towards regional pest management strategies. Greater Wellington will seek binding commitments from Crown Agencies to fund Strategy obligations.

Regional councils are collectively negotiating with the relevant Crown Agencies and organisations occupying Crown Land to develop a nationally co-ordinated policy for Crown funding of regional pest management strategies. Crown land contributions are likely to be based on the length of boundary, the land's proneness to pests and the likely impact on adjacent private occupiers of uncontrolled pests.

14.6 Strategy Costs

The costs of administering and implementing the Strategy are mainly incurred through the following activities. It should be noted that management costs are spread across all activities and include administration, auditing and reporting.

- Inspections
- Monitoring
- Direct Control
- Information and advice
- Enforcement
- Community initiatives
- Biological control
- Research

It is anticipated that the implementation costs for the first five-year term of the Strategy will be as follows:

Table 7. Strategy Implementation Costs

Year	**02/03**	**03/04**	**04/05**	**05/06**	**06/07**
Crown Contribution[1]	$16,761	$16,944	$17,354	$17,273	$17,273
General Rate Contribution	$1,692,188	$1,710,604	$1,751,983	$1,743,882	$1,743,882
Total Expenditure	**$1,708,949**	**$1,727,548**	**$1,769,337**	**$1,761,155**	**$1,761,155**

[1] *Crown contribution derived from actual rates paid on rateable land.*

14.7 Recovery of Direct Costs

Section 135 of the Biosecurity Act enables regional councils to recover the costs of administering the Act and performing the functions, powers and duties under a pest management strategy. These include user charges and cost recovery from occupiers in the event of non-compliance with legal directions. In addition, Greater Wellington may supply specific pest management services requested by an occupier, in which case full cost recovery from the occupier would apply. The amount of money recovered from direct charges will vary from year to year depending on the size and number of cost recovery operations undertaken.

14.8 Land Occupier Costs

In most cases, occupiers will bear the costs of managing pests on their land to meet the objectives, means of achievement and rules of the Strategy.

14.9 Other Funding Provisions

Under Section 100 of the Biosecurity Act, additional funding may be required to manage potential pests not included in the Strategy, but where there is a defined need for intervention. This may be provided from the General Rate (based on Equalised Capital Value) through Greater Wellington's Annual Plan process.

14.10 Rating Powers Act

The Rating Powers Act 1988 is to be repealed and replaced with the Local Government (Rating) Act 2002 to be effective from 1 July 2003. This could impact on the funding process and may require Greater Wellington to amend its Funding Policy during the term of this Strategy.

14.11 Remission and Postponement of Rates

Rate remissions and postponements of rates will be considered upon application, under Part XII of the Rating Powers Act 1988.

14.12 Discounts and Additional Charges

Any discount for prompt payment of rates, or any additional charges on unpaid rates, will be made in accordance with any resolution made by the Council in a given rating year, in accordance with Sections 131 and 132 of the Rating Powers Act 1988.

14.13 Administrative Problems or Costs

No unusual administrative problems or costs are expected in recovering the costs from any of the persons who are required to pay.

References

Bertram G.; Hackwell, K. 1999. *The Economic Impact on New Zealand of Introduced Pests*. Draft report prepared for the New Zealand Conservation Authority. Presented to New Zealand Pest Summit Conference, Palmerston North.

Biosecurity Generic Guidelines Group. 2000. *Regional Pest Management Strategies: A Guide to Reviewing Strategies Under Section 88 Of The Biosecurity Act 1993.*

Champion P.D. 1995. *Assessment of Pest Plants Proposed for Inclusion in Auckland Regional Council's Pest Management Strategies*. Consultancy Report No. ARC315.

Department of Conservation.1999. *Draft Weed Control Manual.*

Esler, A.E. 1988. Naturalism of plants in urban Auckland, New Zealand. 5. Success of the alien species. *New Zealand Journal of Botany 26,* 565-618.

Esler, A.E.; Liefting, L.W.; and Champion, P.D. 1993. *Biological Success and Weediness of the Noxious Plants of New Zealand.* Ministry of Agriculture and Fisheries, New Zealand.

Howell, C,; Hughes,P,; Sawyer, J. 2000. *Pest Plant Atlas: Wellington Conservancy excluding the Chatham Islands.* Department of Conservation, New Zealand.

Ministry of Agriculture and Forestry. 1999. *Farm Monitoring Report.*

New Zealand Biodiversity Strategy. Department of Conservation and the Ministry for the Environment. February 2000.

Roy, B.; Popay, I.; Champion, P.; James, T. and Rahman, A. 1998. *An Illustrated Guide to Common Weeds of New Zealand.* New Zealand Plant Protection Society.

Veitch, D. and Lovegrove, T. 1997. *Weed Control Manual*. Department of Conservation/Auckland Regional Council.

Wellington Regional Council. 2000. *Surveillance Plant Monitoring Report: Interim Report for the Wellington Region.* Unpublished Report for Greater Wellington.

Wellington Regional Council. 2001. *Cost-benefit Assumptions and Calculations: Animals and Plant Species Considered for Inclusion in a Proposed Wellington Regional Council Pest Management Strategy*. Biosecurity Department Unpublished Report, December 2000.

Wellington Regional Council. 1999. *Regional Animal Pest Management Strategy: Wellington Region 1996-2000*. Amended March 1999 Under Section 88A of the Biosecurity Act 1993.

Water, air, earth and energy: elements in Greater Wellington's logo that combine to create and sustain life. Greater Wellington promotes **Quality for Life** by ensuring our environment is protected while meeting the economic, cultural and social needs of the community.

FOR FURTHER INFORMATION

Greater Wellington
Regional Council
Wellington Office
P O Box 11646
T 0800 496 734
T 04 384 5708
F 04 384 6960
E info@gw.govt.nz
W www.gw.govt.nz

Greater Wellington
Regional Council
Masterton Office
P O Box 41
T 06 378 2484
F 06 378 7994
E pest.plants@gw.govt.nz
W www.gw.govt.nz

Greater Wellington
Regional Council
Upper Hutt Office
P O Box 40847
T 04 526 4133
F 04 526 4171
W www.gw.govt.nz

Greater Wellington is the promotional name of the Wellington Regional Council

Published April 2003

WRC/BIO-G-02/53

ISBN 0–909016–82–8