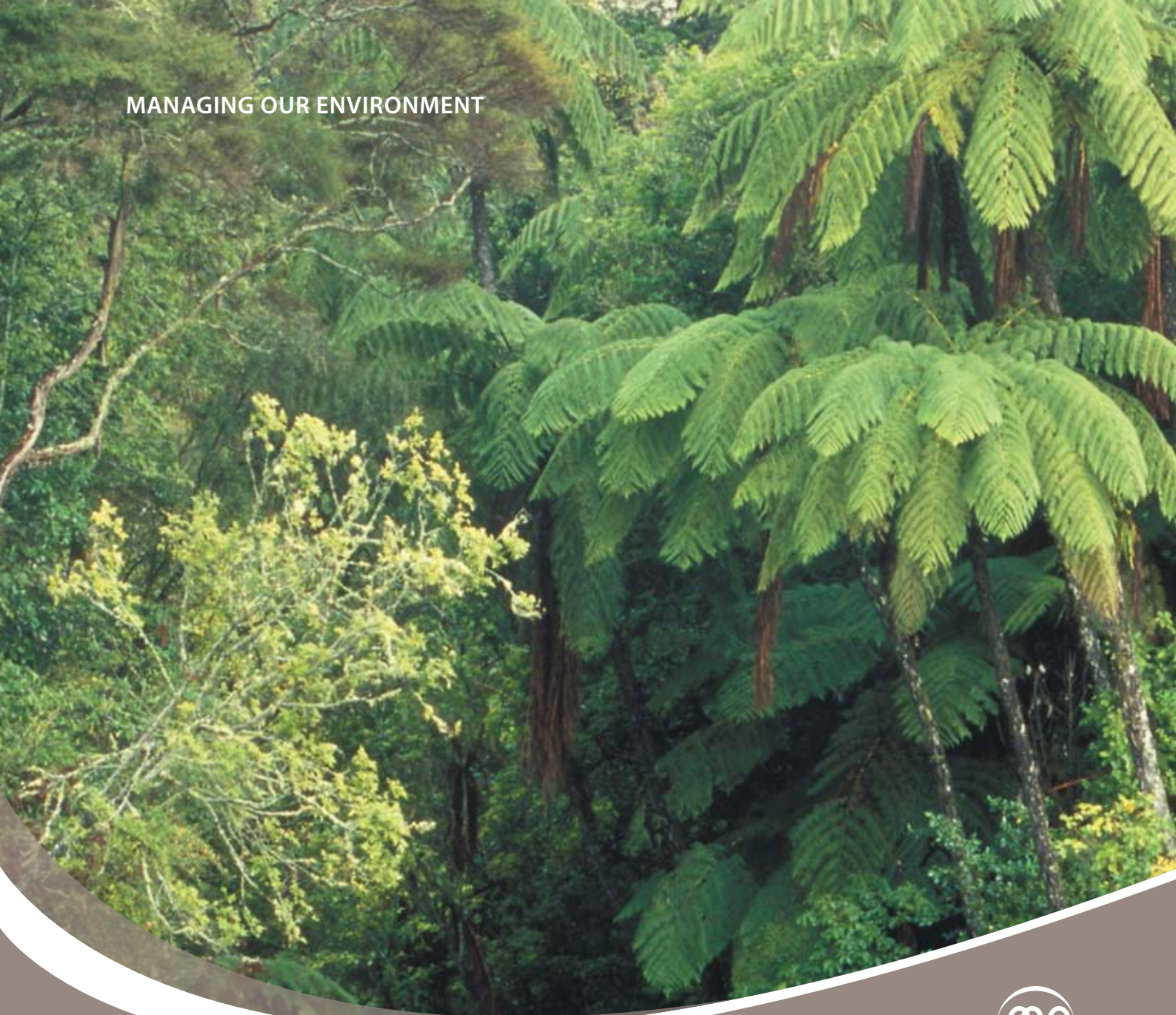


MANAGING OUR ENVIRONMENT



Manawatu-Wanganui Regional Pest Animal Management Strategy

December 2009

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Manawatu-Wanganui
Regional Pest Animal Management Strategy

Regional Pest Animal Management Strategy

The Manawatu-Wanganui Regional Council approved the Regional Pest Animal Management Strategy on this 1st day of December 2009.

Signed under the Seal of the Manawatu-Wanganui Regional Council

In the presence of:


Garrick Murfitt
Chairman





Michael McCartney
Chief Executive

The Regional Pest Animal Management Strategy became operative on 10th January 2010.

FOREWORD

Horizons Regional Council remains committed to managing the threats posed by pest animals on the Regional environment and economy. The Strategy describes that commitment and reflects some substantial changes in the nature of our business compared to previous animal pest management strategies.

Among our more ambitious aims is to take on region-wide suppression of possum numbers. There is very high community demand for continuation of possum control in areas where possums have been controlled in the past, and an expectation that new areas receive attention. The main reason for the demand is to reduce the effects of possums on native plants and animals. Horizons has picked what we believe to be the best balance of doing enough possum control everywhere to protect common native species and intensive possum control in sites to protect rare species. The protection of pastoral production is low on the community's list of reasons to suppress possum numbers. Still, there is clear evidence that possums affect pastoral productivity to such an extent that the regional economic benefits of possum control justify the cost.

The protection of agricultural production values continues to be the focus of the rook and rabbit control. For rabbits, the level of Horizons' intervention remains more akin to a supervisory role – keeping an eye on rabbit numbers and enforcing rules where necessary. Quite the opposite approach is taken for rooks with Horizons taking the lead with the eradication of this species from the Region. Both approaches present challenges to be addressed through further research on the real and potential economic damage of these species and through working closely with the farming community.

In addition to possums, the management of introduced predators like cats and ferrets and browsers like goats and deer is needed to safeguard the biological diversity of the Region. These species are wide-spread and their management presents the challenge of doing too little in too many places. Deer in particular are a highly valued hunting commodity and this too presents a challenge in balancing competing community desires.

Horizons has picked the Site-led Biodiversity approach as the best-fit means to managing the effects of these species on the Region's biological diversity.

It makes economic or environmental sense to eradicate populations of new introductions of species before they become too widely established. It is therefore appropriate for Horizons to plan for and be involved in the management of new incursions and illegal liberations of potential pests. The Strategy includes a Surveillance and Monitoring programme for identifying new incursions and a Small Scale Management programme for their control. Horizons will continue to work with Biosecurity New Zealand and the Department of Conservation in searching for new incursions and managing them.

The task of pest management is much greater than can be dealt with by Horizons alone. This Strategy is very much about Horizons ability and capacity to manage the effects of pests in our Region as a joint effort with our community and other agencies that have a role in managing the effects of pest animals on our environment and economy.



Michael McCartney
CHIEF EXECUTIVE



Garrick Murfitt
CHAIRMAN

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PART ONE

INTRODUCTION AND BACKGROUND

1. General Introduction

Pest animal species are those species that detrimentally impact on the environment, our health, or the economy. The impacts on indigenous flora, fauna and the ecosystems include altering natural ecosystem processes, predation, competition for food, and competition for space, which lead to species extinctions and ultimately a loss of biodiversity. In our own environment the impacts include damage to crops, loss of productivity and impacts on health and well-being.

The naturalisation of accidentally or purposefully introduced animals began when the kiore or Polynesian rat (*Rattus exulans*) arrived with the first Māori settlers of Aotearoa. Against the background of human-induced extinctions, the negative effects of kiore on the pre-existing ecosystem are difficult to distinguish. However, the kiore has been implicated in the post-Māori / pre-European extinction of some frog and seabird species (Worthy and Holdaway; 2002).

The bulk of the terrestrial mammals and birds that cause economic or environmental concern today were intentional liberations. Goats and pigs were liberated very early in the timeline of European arrival in New Zealand with the intention to provide back-up food sources for stranded sailors. Various deer, wildfowl, and fish species were purposefully released to the wild to provide opportunities to hunt and fish and rooks were released to give New Zealand a nostalgic reminder of past homelands. Rabbits were liberated for meat and skins and quickly became an agricultural pest. Stoats and weasels were released in attempt to keep rabbits in check and are now a threat to indigenous biodiversity. Possums were introduced to establish a fur trade from an under-utilised landscape. These releases all seemed a good idea at the time.

Lessons were learned and stronger regulation of purposeful imports and introductions of species have since been made. Now most newcomers are

accidental arrivals that sneak in undetected or ignored until their populations build to a point where they are causing noticeable damage. One recent example in this category is the Argentine ant. With the ever increasing speed and volume of trade and travel comes an increasing risk of new incursions that then go on to cause undesirable damage on the environment or on the economy.

The management of animals that affect the regional environment and economy is a function that regional councils inherited after the wind up of the Agricultural Pest Destruction Council and associated Pest Boards. Back in 1986, when the Central Government of the day signalled a decrease in Crown funding for pest control, the predominant concern was to protect the agricultural sector from the impacts of rabbits, hares, possums, wallabies, and rooks (Nelson; 1986). This concern for primary productivity was still largely the case when the Biosecurity Act (the Act) was enacted in 1993, as evidenced by the content of the first generation of Horizons' Regional Animal Pest Management Strategy.

The Act increased the scope of pest management to include all facets of managing organisms that harm environment and economy, not just agricultural pests. With increasing recognition of and concern for the harm done to indigenous ecosystems by the animals we liberated, has come increasing commitment from regional councils to control pest animals to protect indigenous biodiversity.

This Regional Pest Animal Management Strategy (RPAMS or the Strategy) describes Horizons' framework for efficient and effective pest animal management. The Strategy lists the animals that Horizons is satisfied some form of Regional intervention or overview is needed. The Strategy includes agricultural and biodiversity pests and details the management approaches for those species.

2. INTRODUCTION TO THE REGIONAL PEST ANIMAL MANAGEMENT STRATEGY

2.1 Title

This document is known as the Manawatu-Wanganui Regional Pest Animal Management Strategy. It is also referred to as the RPAMS or simply the Strategy.

2.2 Administering Agency

The pest management agency for the Strategy is Horizons Regional Council (Horizons). Horizons is the trading name for the Manawatu-Wanganui Regional Council.

2.3 Purpose of the RPAMS

The purpose of the Strategy is to safeguard the Manawatu-Wanganui Region's primary productivity, environmental quality, and biological diversity from degradation by pest animals.

The Strategy provides a regionally, and sometimes inter-regionally, coordinated strategic and statutory framework for pest animal management so as to:

- reduce the occurrence of new pest animal incursions;
- suppress, contain or, where possible, eradicate pest animal populations that impact on Regional values; and
- control pest animals in specific sites valued for biodiversity reasons.

Part Two and Part Three describe the aims and objectives for each species or categories of species where they relate to the purpose of the Strategy.

2.4 Area of Jurisdiction

The Strategy will have effect over the entire Manawatu-Wanganui Region (Figure 2-1) as constituted by the Local Government Amendment Act (1992). The Manawatu-Wanganui Region covers a land area of 22,179 square kilometres in the lower central North Island. The Region is administered by the Manawatu-Wanganui Regional Council and seven main territorial authorities: Ruapehu, Rangitikei, Wanganui, Manawatu, Tararua, and Horowhenua (District Councils), and Palmerston North (City Council). Small areas of Stratford, Waitomo and Taupo District Councils are also within the Region.

2.5 Commencement and Duration

The Strategy will commence on the date it is affixed with the Council Seal (per Section 79 (F) of the Act) and will remain in force until January 2020 unless revoked earlier. The Strategy will be reviewed after five years from the date it is made operative, as required by the Act.



Figure 2-1: Regional Administrative Boundaries and Horizons' area of jurisdiction.

2.6 Document Structure

The Act has specific requirements for a Regional Pest Animal Strategy. This Strategy fulfils these statutory obligations as required for a strategy proposal as well as providing additional contextual information.

Part One: Introduction and Background

Part One contains introductory and background information that will assist the reader's understanding of the Strategy. Part One has been divided into the following sections:

- Section 1 provides a brief background of pest animal introductions to New Zealand and introduces this Strategy in the context of the Biosecurity Act and strategic pest management.
- Section 2 contains the introduction to the RPAMS and states: the title; administrating agency; purpose and objectives; the area of jurisdiction; and outlines the general structure of this document.
- Section 3 describes the statutory framework within which the Strategy sits, including the relationship with other statutes and policy.
- Section 4 outlines the planning framework within which the Strategy sits including the rationale driving management decisions, and lists the animals declared as pests and non-statutory problem animals that are managed in this Strategy.
- Section 5 describes the monitoring and reporting of Strategy objectives.
- Section 6 highlights some of the effects implementation of the Strategy may have on Māori, the environment, and overseas markets.
- Section 7 outlines the responsibilities and obligations of both Horizons and occupiers under the Strategy.

Part Two: Pest Animal Management Programmes

Part Two sets out the management regime for animals declared as pests under this Strategy, which are to be managed using the Biosecurity Act. Part Two contains four sections: Animals banned from sale and distribution, Rooks, Possum, and Rabbit. Each animal or class of animals includes a description, objectives, means of achievement, rules, and monitoring.

Part Three: Other Management Programmes and Initiatives

Part Three describes the other management initiatives Horizons undertakes to manage those animals harming Regional values.

- Section 12 describes Horizons' surveillance and monitoring programme for new incursions and animals that might be in the Region but Horizons is uncertain of their status.
- Section 13 explains Site-led Biodiversity Programmes and lists the animals that may be controlled under site-led initiatives.
- Section 14 briefly explains the relationship between pest animal management under this Strategy and pest animal control that is undertaken under the Sustainable Land Use Initiative (SLUI) and the Wanganui Catchment Strategy (WCS).
- Section 15 describes the Amenity Programme for managing pests in urban areas.
- Section 16 describes small-scale management and details the regulatory tools available to Horizons' to undertake small-scale management of new incursions and illegal liberations.
- Section 17 describes Horizons' biological control programme.
- Section 18 describes Horizons' approach for working with community groups.
- Section 19 deals with cross-boundary issues.

Part Four: Administrative and Management Procedures

Part Four is divided into four sections dealing with administrative and management procedures as prescribed by the Biosecurity Act.

- Section 20 outlines the statutory powers held by Horizons Regional Council.
- Section 21 describes the regulatory management of the Strategy including: the consequences of failing to comply with a rule or notice of direction; methods for recovery of costs incurred; and the provision of exemptions to a rule.
- Section 22 outlines the funding of the Strategy including: the costs of the Strategy; sources of funding; and cost recovery and compensation.
- Section 23 describes the Regional Pest Animal Management Strategy review procedures.

Definitions of terms are at the end of this document.

3. STATUTORY FRAMEWORK

3.1 Legislative Framework

The Biosecurity Act (the Act) was enacted on 1 October 1993 and heralded a new era for pest animal management in New Zealand to “...restate and reform the law relating to the exclusion, eradication and effective management of pests and unwanted organisms” (BSA; 1993). The Act has two underlying principles:

1. Prevention of harmful organisms (plants, animals, and diseases) from arriving in New Zealand (pre-border and border inspections and controls).
2. Management of harmful organisms already in New Zealand by implementation of national and regional pest management strategies, and small-scale control measures for ‘unwanted organisms’.

Section 13 of the Act empowers Horizons to have a significant statutory role in implementing the Act, but no statutory obligation. Horizons has chosen to be proactive and recognises its ongoing responsibilities for pest animal management by having a strategy continuously in place.

In preparing this Strategy, Horizons has taken into account the Act and subsequent legislative amendments to the Act. This Strategy has been considered, planned and funded pursuant to Part V of the Act.

3.2 Relationship with other Statutes

While the Act is the cornerstone for any pest management strategy, there are other Acts and regulations to which the Strategy must have regard. Nothing in the Strategy is to affect or derogate from other legislation relating to pest management. This includes those Acts as specified in Section 7 of the Biosecurity Act:

- Soil Conservation and Rivers Control Act 1941;
- Forests Act 1949;
- Wildlife Act 1953;
- Health Act 1956;
- Animal Protection Act 1960;
- Customs Act 1966;
- Wild Animal Control Act 1977;
- Reserves Act 1977;
- National Parks Act 1980;
- Fisheries Act 1983;
- Conservation Act 1987;
- Trade in Endangered Species Act 1989;
- Resource Management Act 1991 (and amendments).

The provisions of the Act as they relate to risk goods shall not be construed to take precedence over:

- Customs Act 1966;
- Misuse of Drugs Act 1975.

Other legislation that the Strategy must have regard to include:

- Local Government Act 2002 (and amendments);
- Local Government (Rating) Act 2002;
- Health and Safety in Employment Act 1992;
- Hazardous Substances and New Organisms Act 1996.

Other legislation that the management of animals, including pest animals, must have regard to include:

- Agricultural Compounds and Veterinary Medicines Act 1997;
- Animal Welfare Act 1999.

3.3 Relationship with other Policy

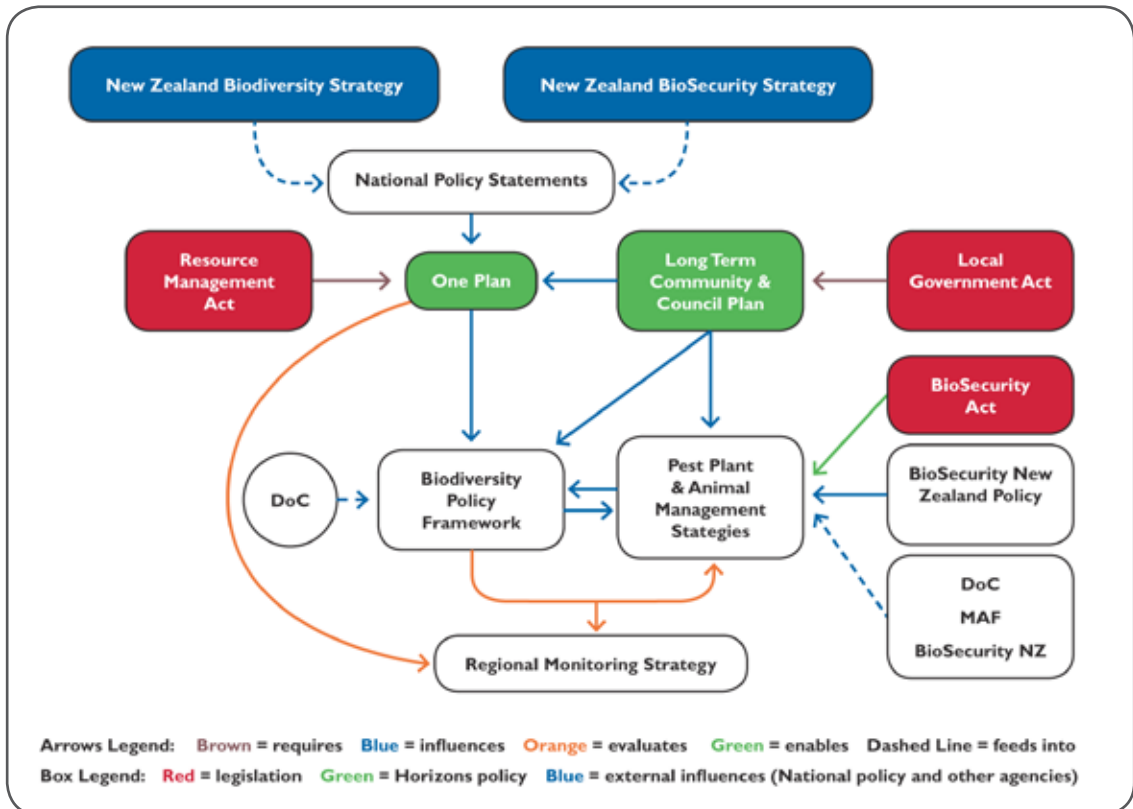


Figure 3-1: Diagrammatic representation of linkages between legislation, strategies and other policy.

3.3.1 The New Zealand Biosecurity Strategy

The need for the New Zealand Biosecurity Strategy (NZBSS) was identified and funded under the New Zealand Biodiversity Strategy (Section 3.3.2) and came into being in 2003. The focus of the NZBSS is on pre-border, border and post-border activities to keep out new pests.

The NZBSS provides little advice on implementation but it does provide a set of explicit expectations. The expectations for pest management in the future under the NZBSS are:

- that there is a clear and effective national leadership and coordination of pest management activities within central government, local government and the private sector.
- that there are transparent and effective performance measures to monitor and forecast the establishment of pest and weed impacts and pathways.
- that the Crown meets its obligation as a landowner.
- that there is a routine programme of national and regional communication and coordination including ongoing assessment and review of both individual programmes and the overall system.

Although the NZBSS has little influence on the structure or content of a RPAMS, it provides clear expectations for the future directions of pest management, and emphasises the importance of a collective approach by agencies, industry and individuals. Over the forthcoming years obligations and roles of the various agencies will become apparent. Biosecurity New Zealand is the leading agency in biosecurity management at the national level.

3.3.2 The New Zealand Biodiversity Strategy

The New Zealand Biodiversity Strategy (NZBDS) came into being in February 2000 and is coordinated by the Department of Conservation. The NZBDS outlines the actions taken to implement New Zealand's requirements under the Convention on Biological Diversity (CBD) which was ratified by the New Zealand Government in 1993. The CBD was one of the key agreements arising from the Earth Summit in Rio de Janeiro (1992).

The term 'biodiversity' relates to the variety of biological life and the natural patterns it forms, that is: genetic diversity, species diversity and habitat diversity. The NZBDS states that maintenance and enhancement of land-based indigenous biodiversity is under greatest threat from invasive species. Therefore biodiversity and biosecurity are intertwined - a positive outcome for one is a positive outcome for the other.

3.3.3 Department of Conservation Policy and Strategy

The Department of Conservation (DoC) manages eight million hectares of publicly owned land across New Zealand. There are 423,777 ha of public conservation land within the Manawatu-Wanganui Region managed under five conservancies.

The Department is responsible for preserving and protecting these areas, including the management of pest animals (Department of Conservation, 1998). Under the Resource Management Act (1991) regional councils have a similar mandate to maintain biodiversity on private land.

The control of pest animals on public conservation land (managed by DoC) and on private land (managed by regional councils) is intertwined. Therefore, it is advantageous if this RPAMS complements where possible the intentions of DoC's management of pest animals. Likewise, there are benefits to both agencies and the greater community if DoC incorporates the requirements of this RPAMS into their relevant work plan priorities.

3.3.4 Game Birds and Sports Fish

The management of game and sports fish is the statutory responsibility of the Fish and Game Council under the Conservation Act 1987. Game and sports fish are managed under Sports Fish and Game Management Plans which are aimed at maintaining the quality of recreational hunting opportunities. These plans also specify the Fish and Game Councils' response to the negative economic impacts of excessive numbers of game.

It is therefore inappropriate and unnecessary for Horizons to form policy around the management of species such as Canada geese, mallard ducks, and trout. Where game birds threaten regional values described in this Strategy, Horizons will bring this to the attention of the Fish and Game Council so that appropriate action can be taken. Horizons and Fish and Game will continue to work together to prevent sports fish from establishing in areas where they are currently absent and their establishment would threaten biodiversity values. Horizons may lobby Central Government for changes to the legal status of a game bird or sports fish species where Horizons deems that the regional economic impact of the animal outweighs the value returned to the region through recreational hunting.

3.3.5 Horizons' Regional Pest Plant Management Strategy

For effective long-term management of either pest animals or pest plants an integrated approach is essential. Pest animals are often vectors of pest plants. Removal of pest plants in isolation from pest animals could result in a diet switch and further detriment of the indigenous flora. Alternatively, removal of a single pest animal could benefit one or more species of pest plants or pest animals that could in turn have a detrimental effect on indigenous biodiversity.

The framework and approach, as laid down in this RPAMS, are intended to complement Horizons' recently operative Regional Pest Plant Management Strategy.

3.3.6 The One Plan

The One Plan is a combined Regional Policy Statement and Regional Plan dealing with matters that Horizons is responsible for under the Resource Management Act (RMA) 1991. The One Plan has eight themes:

1. Issues significant to iwi;
2. Land;
3. Water;
4. Living Heritage (biological diversity, landscapes and natural features);
5. Air Quality;
6. Coastal Environment;
7. Natural Hazards; and
8. Energy, Waste and Contaminated Sites.

In keeping with the RMA's general principles, the One Plan policies and regulations seek to protect landscape, ecosystems and heritage.

The One Plan further consolidates the importance of an integrated approach to natural resource management. The RPAMS provides a crucial tool in achieving the goals outlined in the One Plan by providing the strategic framework for integrated site-led control of animals that affect biodiversity and soil conservation values.

3.3.7 Neighbouring Regional Pest Management Strategies

Horizons shares boundaries with Greater Wellington, Taranaki Regional Council, Environment Waikato and Hawke's Bay Regional Council. It is in the interests of efficient and effective pest management to have regard to the Regional Pest Management Strategies of our neighbouring councils.

3.3.8 Animal Welfare

The Animal Welfare Act (1999) would not normally apply to pest animal control activities because it specifically does not regulate the practice of killing animals that are in a wild state. However, the Act does require a duty to care for wild animals in captivity and requires the humane killing of wild animals when in captivity. The Act also has specific obligations relating to the welfare of trapped animals under the traps and devices provisions. Under these provisions, where pest control results in animals being caught alive and contained and where they can not immediately killed or removed, the obligations in the Act relating to animals in people's care apply. For example it would be expected that water is provided for an animal trapped in a cage for any length of time. Unusual and cruel acts and practices towards wild animals are also illegal.

The humane treatment of all animals, whether domestic or wild, pet or pest, is expected by most people and Horizons accepts an obligation to give regard to the humaneness of pest control methods when deciding which control methods to use. Horizons commits to utilising best practice and recognised humane methods in the interests of animal welfare. As part of a strategy for continuous improvement of pest control with animal welfare in mind, Horizons will:

1. Seek advice on and consider alternative measures with regard to desired outcomes (e.g. damage limitation versus eradication);
2. Consider the animal welfare impacts of control methods and consider using the most humane control tools that result in the desired outcome;
3. Follow best practice and any label directions or conditions, in order to limit escapes, sub-lethal dosing and non-target impacts;
4. Undertake effective post-operative monitoring and follow-up control to ensure pest numbers remain low, avoiding the need to kill large numbers of animals in the future.

4. PLANNING FRAMEWORK

In preparing management objectives and management tools, Horizons undertakes an analysis to determine the most sensible, equitable, practical, and affordable management solution for each animal. The management options are compared to the anticipated results if Horizons does nothing to actively manage the animal(s) of concern.

4.1 Impact Evaluation and Funding Rationale

Using existing knowledge or that from literature on pest ecology, Horizons determines what values are

affected, develops appropriate management responses, and evaluates the costs of not managing the animal. This evaluation in turn informs the cost/benefit analysis (described in Section 4.2.2.). Through the impact evaluation process, Horizons also determines who the beneficiaries of pest control are and develops an equitable funding rationale.

Table 4-1 lists the Regional values Horizons perceives are important. This table describes the impact pest animals have on these values and gives a general analysis on who the beneficiaries are likely to be.

Table 4-1: Regional values considered when evaluating impacts and determining the funding rationale for each animal or class of animals in this Strategy.

Regional Value	Impact evaluation and funding rationale
Agricultural	The pest impact is in the form of an economic loss as a result of grazing competition, or spread of disease. Often the cost and responsibility for control will fall on the farming community as the main beneficiaries of control unless it can be shown the economic losses would severely affect the Regional economy.
Horticultural	The pest impact is in the form of an economic loss as a result of damage to crops and orchards. Often the cost and responsibility for control will fall on horticulturalists as the main beneficiaries of control unless it can be shown the economic losses would severely affect the Regional economy.
Forestry	The pest impact is in the form of an economic loss as a result of damage to forests. Often the cost and responsibility for control will fall on foresters as the main beneficiaries of control unless it can be shown the economic losses would severely affect the Regional economy.
Soil conservation	The pest impact is on the ability of vegetation on erodible land to reduce sediment run-off and slow water flows. When assigning responsibility and costs, consideration is given to balancing the benefits gained by the landowner with the benefits gained by the Regional community, as a result of improved water quality and flood mitigation.
Water quality	The pest impact is in the form of a reduction in water quality as a result of soil disturbance, loss of vegetative cover, or in-stream activity of the pest. When assigning responsibility and costs, consideration is given to balancing the agricultural, horticultural, or forestry benefits gained by the landowner, with the benefits gained by the Regional community as a result of improved water quality.
Biodiversity	The pest impact is in the form of predation, or browsing on, or direct competition with, indigenous flora and fauna. The effect on biodiversity is either a reduction in the genetic variability of species, reduction in the quality of a habitat, or a reduction in the structural and species complexity of communities or ecosystems. When assigning responsibility and costs, consideration is given to balancing the agricultural, horticultural, or forestry benefits gained by the landowner, with the benefits gained by the Regional community as a result of biodiversity protection.
Amenity/ Nuisance	The pest impact is in the form of a localised effect on lifestyles or well-being. When assigning responsibility and costs, consideration is given to the beneficiary's ability to control the pest.

4.1.1 Identifying Exacerbators and Beneficiaries

Exacerbators are people, institutions or activities that, through their actions (or non-actions), contribute to the creation, continuance or worsening of a pest problem. Exacerbators may include public entities such as Crown agencies, Horizons, and TLAs, or private individuals or companies.

Beneficiaries are people, institutions or activities that, under a regional strategy, will experience lower costs, higher production or the benefits of a healthier natural environment. Beneficiaries include the “Regional Community” who benefit from non-financial gains from pest control such as protection of biodiversity and water quality.

The underlying rationale for identifying beneficiaries and exacerbators is that they are expected to share the cost of implementing the Strategy. By identifying the beneficiaries and exacerbators, an equitable funding policy can be formed for each pest. The beneficiaries and exacerbators are identified as part of the cost/benefit analysis.

4.2 Assigning the Management Objective

To determine management objectives that fit each animal or class of animals, the Infestation Curve (see Section 4.2.1) is incorporated into the assessment process as a means of guiding control options. A cost/benefit analysis is then done to assess the likely costs of preferred management regimes compared to the expected economic and non-financial benefits gained from control.

In addition to the infestation curve and cost/benefit analysis, Horizons considers whether there are practical methods of control or monitoring that would achieve the objectives of management. The result is a preferred management regime that is sensible, cost-effective, and feasible.

Other considerations when determining management objectives are whether the pest might be better managed under the Site-led Programme, or if managing the pest requires cooperation with other agencies. Table 4-2 explains these considerations further.

Table 4-2: Considerations when assigning management objectives for each animal or class of animals.

Consideration	Explanation
Size of Problem	Using the Infestation Curve, Horizons assesses the size (density and extent) of the Regional population of the animals of concern to determine management regimes that are practical.
Costs and Benefits	Using cost/benefit analysis, Horizons assesses the likely cost of the preferred management regime and compares that to the expected economic and non-financial benefits gained from control.
Achievability/ Feasibility	By looking at the range of control and monitoring tools available, Horizons assesses whether the preferred management regime can be achieved and measured. The assessment considers whether the control tools are only available to Horizons, if Horizons is best placed to undertake the delivery of the control, or if control may be achieved by land owners individually or collectively.
Site-led Work	Horizons acknowledges that a holistic multi-species approach to pest management can achieve more for the Region’s biodiversity and soil conservation than the suppression of a single species across the Region. Emphasis is placed on integrated site-led management of threats to biodiversity or soil conservation that includes the control of exotic animals.
Inter-agency Relationships	To maintain relationships between neighbouring Regional Councils, Territorial Local Authorities, Government Departments and Crown Entities and other agencies, Horizons attempts to align management regimes with those of these agencies. Co-operation between agencies increases Horizons’ ability to prevent new species from establishing in the Region. Sharing knowledge, technical skills and focusing on combined benefit (eg. biocontrol) leads to more cost-effective and efficient pest animal management.

4.2.1 The Infestation Curve

The Infestation Curve (Figure 4-1) is a simple model that illustrates basic pest animal population dynamics. The position of a species on the Infestation Curve is estimated, based on information from distribution maps and field knowledge regarding geographical

spread and population densities. The position on the Infestation Curve helps to determine management objectives that fit the distribution and density of the pest, but is at best, a guide only.

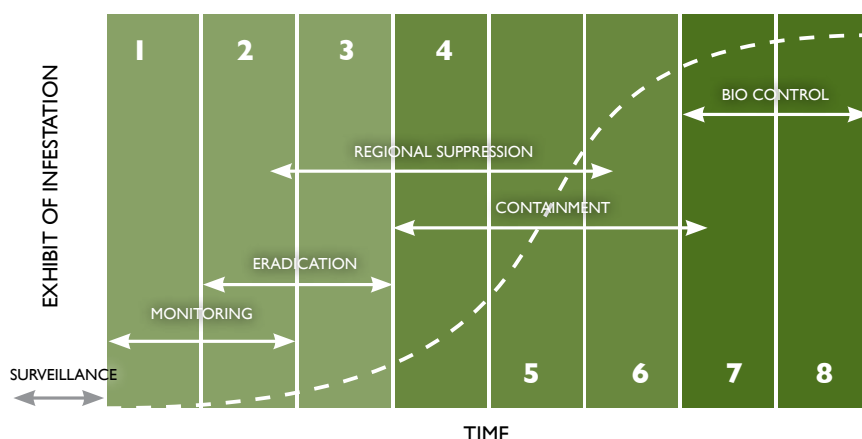


Figure 4-1: Infestation curve model

The Infestation Curve has been described in Kormondy (1969) and Panetta (1994) and adapted by Horizons to describe the management objectives that match extent of infestation. Table 4-3 describes the density and extent of the pest in each category (1-10). Table 4-4 describes the management objectives (Surveillance - Biocontrol).

Table 4-3: Infestation Curve category descriptions in relation to geographic spread and density. These descriptions are based in part on Kormondy (1969).

	Description
Surveillance	Not yet in Region but known nearby.
1	1 or 2 known sites. Full extent and effects unknown.
2	3–20 sites. Effects may be unknown.
3	3–20 sites, some of moderate density or high density but very local.
4	Between 20 and 30 sites but still limited in geographic extent.
5	Restricted range but starting to noticeably expand its range and/or intensity of infestation.
6	Widespread and continuing to expand range and/or intensity of infestation.
7	Common throughout most of the expected habitat in the Region.
8	Widespread through all suitable habitat.

Table 4-4: Management objectives in relation to geographic spread and density.

Management Objective	Explanation
Surveillance	<p>Region-wide surveillance programme to search for and control new incursions that pose a threat to the Region. Surveillance pests will generally sit off the Infestation Curve model as they are not yet present in the Region.</p> <p>Keeping an eye out for problems we can prevent is the most economic and practically feasible method by which to protect our Region from invasive pest animals. Section 100 of the Act may be used to instigate emergency control.</p>
Monitoring	<p>Region-wide monitoring programme to determine the effect on Regional values and rate of increase or extent of potential pests that are assumed to be in the Region but little is known about them.</p> <p>“Monitoring” is reserved for potential pests assumed to be at low densities or low geographical spread. Section 100 of the Act may be used to instigate emergency control. “Monitoring” as a management objective, should not be confused with monitoring of the Strategy (per Section 5.1).</p>
Eradication	<p>Region-wide programme aimed at reducing the pest to a level where it becomes very difficult to detect if the pest still exists.</p> <p>Eradication is a strategy reserved for pests that are of low incidence and/or of such high threat that it is more cost-effective to get rid of the pest completely.</p>
Suppression	<p>Region-wide programme aimed at reducing the pest to a level where it no longer poses a threat to Regional values.</p> <p>Suppression is a strategy for pests of low to moderate densities but of such wide geographical spread that they cannot feasibly be eradicated from the Region.</p>
Containment	<p>A programme to contain pests in certain areas and keep the rest of the Region free of the pest.</p> <p>“Containment” is a compromise between eradication and suppression that usually arises when the pest is at high densities in a few places, but of low extent or limited range Regionally. Regional eradication is not feasible, but it is feasible to prevent the pest from spreading to other parts of the Region or to eradicate it from other parts of the Region where its densities are low.</p>
Biocontrol	<p>A specialised programme to suppress pests by using a natural predator or disease to control their numbers. Often biocontrol is used when the extent or density of the pest is so great that other methods of control are impractical or expensive.</p>
Site-led	<p>A localised programme for removing all pests that threaten a Regional value in a particular place and in conjunction with other management of that value. Site-led programmes are implemented across the spectrum of pest density and extent, so are not depicted in Figure 4-1.</p>
Amenity	<p>A specialised and localised programme for removing the individuals of a pest affecting lifestyles or well-being. The delivery of an Amenity service is considered on a case by case basis by Horizons, so is not depicted in Figure 4-1.</p>

4.2.2 The Cost/Benefit Analysis

For the animals presented in Part 2 of the Strategy, where the Biosecurity Act 1993 will be used to implement the Strategy, Section 72 of the Act requires the Regional Council to undertake a cost/benefit analysis for each pest or class of pests. The section delineates four separate tests that, in the opinion of the Council, the proposed strategy for the organism meet. These tests are:

- Is the pest capable of causing a serious adverse effect? Sec 72(1)(c)
- Do the benefits outweigh the cost of the strategy? Sec 72(1)(a)
- Does Regional intervention exceed the benefit of an individual's intervention? Sec 72(1)(b)
- Are funding proposals for the strategy equitable? Sec 72(1)(ba)

The Act does not specify the empirical rigour to be applied to the cost/benefit analysis. The analysis for the Strategy involves a qualitative assessment of the cost and benefits of pest animal control, assigning a score of "minor", "moderate" or "major" as a measure of the effect of the pest on Regional values without control, and under the Strategy. These assessments are based on the combined years of experience of people in the regional pest management industry and are based on common sense reasoning.

The impact evaluation is performed as part of assessing the costs (impacts) of a scenario where the animal is not managed under a strategy. The impacts of the pests are evaluated against the seven Regional values outlined in Table 4-1. If an animal has an adverse effect on any one of these values, it will trigger section 72 (c) of the Act.

The costs and the benefits of the proposed management regime are also evaluated against the seven Regional values outlined in Table 4-1 so they may be compared and contrasted with the consequences of inaction. The proposed scenario is guided partly by the Infestation Curve (part 4.2.1), but also taking into consideration the feasibility of control, other benefits of control not covered by the values in Table 4-1, and political and community will garnered from pre-proposal discussion with various stakeholders.

The species that fall under the "Surveillance and Monitoring" programme accrue relatively low costs and also do not warrant a species-by-species cost/benefit analysis.

The remainder of the species presented in the Strategy will only be targeted as dictated by Regional biodiversity or soil conservation priorities, or amenity pests. In the Council's opinion, these programmes are considered the most cost-efficient way of managing the impact of these pests. Because these programmes are not implemented using the Act, a cost/benefit analysis is not presented.

4.3 Selecting Management Tools

After consideration of the management objectives for each animal or class of animals, Horizons matches management tools to the outcomes sought. The following is a description of the management tools Horizons uses.

Table 4-5: Management tools that Horizons uses to implement the objectives of this Strategy.

Management Tool	Explanation
Service delivery	<p>Where warranted Horizons will conduct pest animal control to ensure the management objectives will be met, without direct cost-recovery apportioned back to individual beneficiaries. The funding of Service Delivery comes from a balance of general and targeted rates depending on the exacerbator/beneficiary balance, and is a tool mainly used for amenity or site-led animal management, or when control options are only available to Horizons.</p> <p>Horizons will choose an appropriate method for control of a species, based on best industry practices. If landowners/occupiers opt for a more expensive control method, landowners/occupiers may be required to pay any costs over and above those that would normally be incurred by Horizons. Consideration will be given to fully funding the alternative where the benefits outweigh the cost of the alternative and outweigh the benefits of Horizons' preferred method.</p>
Enforcement	<p>Horizons will define and enforce rules where it is deemed that a regulatory approach is needed to ensure pest animals are managed appropriately. Rules and enforcement are used to ensure everyone controls pests in accordance with the objectives in the Strategy. Part Four describes the powers and process for enforcement.</p>
Advice	<p>Horizons will provide advice on pest control options for any pest defined in the Strategy, and pass on to the community new information that arises from research and investigations.</p>
Education	<p>Education will be aimed at increasing awareness of the Strategy and of the concept of biosecurity in general. Combined with the advisory service, the focus will be on providing information and assistance to enable the community to identify problems and to carry out their own pest management. Certain high-risk dispersal avenues and activities will be identified and targeted for focused awareness campaigns.</p>
Community Participation	<p>Horizons will (at its discretion) establish and nurture community adoption of a local pest control issue or natural areas where the issue aligns with the control of animals identified in this Strategy. Horizons will assist with management plans and/or funding where appropriate.</p>
Research and Investigations	<p>National and international understanding of invasive species ecology is increasing and evolving all the time. It is imperative that Horizons provides the means for its staff to keep informed of such developments and abreast with changing management practices. Horizons will support or undertake research and training to contribute to the existing collective knowledge. Carefully considered biological control will be one focus of research efforts. Horizons will also undertake investigations to determine the extent of any new pest and its potential effect on Regional values.</p>

4.4 Site-led versus Species-led Management

When Horizons looks at the reasons why it undertakes pest management and the values it wants to protect, it also considers whether a species-led or site-led approach would serve to protect those values in the most cost-effective way.

Traditionally the focus of pest management has been to manage individual species over all or part of the Region, with methods and rules by which to manage them. This type of pest management is known as 'species-led'. Species-led programmes concentrate on the control of specific species to minimise the extent of the damage those species cause throughout the Region.

Developments in knowledge since 1993 have led Horizons to conclude that the most successful species-led approaches are on species that are still at low population densities or are of restricted distribution. When the animal is widespread it is more difficult to find cost-effective pest management tools.

Site-led programmes focus on protecting certain values at certain sites. The objectives of animal control are not based on the control of individual species but on the site itself, the values within the site and the threats to those values. The site-led approach is not limited by whether an animal of concern is legally ascribed the status of "pest" in the strategy, nor population densities and distribution of pest animal species. Animal species included in a site-led approach are typically widespread, but can also include species of limited distribution that pose a threat to the site in question. Sites can vary in scale and can encompass buffer zones and areas of dispersal risk.

Table 4-6: Comparison between species-led and site-led approaches of pest animal management.

	Species-Led Approach	Site-Led Approach
Focus	Control or management of a specific species.	Protection of specific values at specific sites.
Type of Species	Pest animal species at low-density, or restricted distribution, or high-risk species.	Mostly widespread, high-density pest animal species, but can also include species at low density and/or distribution. Situations where control of one species alone is not enough to protect natural values.
Scale	The focus of a species-led approach is the entire Region, although the actual area of control can be smaller.	Depends on the values and area to be protected. Can be a collection of sites or can include areas that buffer against re-infestation of core areas.
Broad Outcomes	The absence or restricted distribution of the pest animal species in question (threat of species removed).	Positive changes in the health and ecological integrity of the values within sites (enhanced indigenous biodiversity) or improvement in the retention of soil (soil conservation plantings).
Driven By	Regulatory control of a pest using the Biosecurity Act (1993).	Non-regulatory methods in Regional plans and policy statements as part of Resource Management Act (1991) obligations.

Part Two of this Strategy includes the pest animal species under a species-led management regime. The Site-led Biodiversity Programme is detailed in Section 13.

4.5 Summary of Animal Considered for Management in this Strategy

Table 4-7: Animals considered for management under this Strategy. The management objective is indicated, along with the main means of achieving the management objective. The animals are listed in the order in which they first appear in this Strategy.

Animal	Management Objective	Main Means of Achievement	Rules and regulations in this Strategy*
Rook	Eradication	Species-led Service Delivery	✓
Possum	Suppression	Species-led Service Delivery	✓
Feral Rabbit	Suppression	Species-led, Occupier Responsibility	✓
Stoat	Site-led	Site-led Service Delivery	✓
Ferret	Site-led	Site-led Service Delivery	✓
Weasel	Site-led	Site-led Service Delivery	✓
Koi/European Carp	Site-led	Site-led Service Delivery	✓
Gambusia	Site-led	Site-led Service Delivery	✓
Brown Bull-headed Catfish	Site-led	Site-led Service Delivery	✓
Rudd	Site-led	Site-led Service Delivery	✓
Feral Cat	Site-led	Site-led Service Delivery	✓
Feral Eastern Rosella	Site-led	Site-led Service Delivery	✓
Dama Wallaby	Surveillance	Surveillance and Small Scale Management	✓
Banjo Frog	Surveillance	Surveillance and Small Scale Management	✓
Feral Rainbow Lorikeet	Surveillance	Surveillance and Site-led Service Delivery	✓
Gudgeon	Surveillance	Surveillance and Small Scale Management	✓
Marron	Surveillance	Surveillance and Small Scale Management	✓
The Clubbed Tunicate Sea Squirt	Surveillance	Surveillance and Small Scale Management	✓
Chinese Mitten Crab	Surveillance	Surveillance and Small Scale Management	✓
Mediterranean Fanworm	Surveillance	Surveillance and Small Scale Management	✓
Northern Pacific Seastar	Surveillance	Surveillance and Small Scale Management	✓
European Shore Crab	Surveillance	Surveillance and Small Scale Management	✓

Animal	Management Objective	Main Means of Achievement	Rules and regulations in this Strategy*
Asian Clam	Surveillance	Surveillance and Small Scale Management	✓
Feral Goat	Site-led	Site-led Service Delivery	
Red Deer	Site-led	Site-led Service Delivery	
Sika Deer	Site-led	Site-led Service Delivery	
Sambar Deer	Site-led	Site-led Service Delivery	
Fallow Deer	Site-led	Site-led Service Delivery	
Feral Pig	Site-led	Site-led Service Delivery	
Hare	Site-led	Site-led Service Delivery	
Rat species	Site-led	Site-led Service Delivery	
European Hedgehog	Site-led	Site-led Service Delivery	
Magpie	Site-led	Site-led Service Delivery	
Feral Sulphur Crested Cockatoo	Site-led	Site-led Service Delivery	
Peafowl	Suppression	Voluntary Self-help Groups	

*In addition to the rules and regulations in this Strategy, there are other legislative provisions that require the owner of any of the organisms listed above to manage them in accordance with that legislation. Section 8.1 briefly describes that other legislation and the regulating authority. Unless specified as a Statutory Pest in this Strategy, Horizons does not carry the mandate to enforce control. However, Horizons may undertake work with the relevant regulating authority to manage any organisms deemed by Horizons to affect regional values.

5. ANNUAL MONITORING AND REPORTING ON THE STRATEGY

Assessing the performance of the Strategy is an integral part of pest management. By monitoring Strategy objectives, Horizons will be able to evaluate when and if Strategy objectives are being achieved. Annual reporting of the outcome of the year's work and progress toward meeting Strategy objectives is also an important component of being accountable to ratepayers and the Regional community.

5.1 Monitoring

Monitoring involves regular, systematic measurement of progress toward meeting the Strategy Objectives. Without monitoring, Horizons has no indication of whether this Strategy is successful or otherwise. Good strategic monitoring involves some measures of each of inputs, outputs, and outcomes, and this Strategy uses all three approaches to some extent.

Operationally, pest control is about reducing the numbers of an animal species. Pest density estimations, through indices or census, is often referred to as operational monitoring or outputs monitoring. Outputs monitoring can be expensive when the pest is widespread or difficult to detect but is otherwise a very effective means of measuring success. Most regional pest management strategies and most of the currently used methods of monitoring focus on assessing population densities as a measure of operational success.

Animals are a pest because they impact on a value. There is an expectation that there will be an increase (recovery of) or no further decrease (protection of) in the quality or quantity of those values when the pest is controlled. Measuring change in the quality or quantity of the values is arguably the best measure of success. Estimation of the quality or quantity of a value is often referred to as outcomes monitoring. In reality, the value being measured may be affected by more than one species of pest or by another variable not controlled in the Strategy. Relating the increase in values back to pest control can be difficult.

With good quality research and optimal operational information management, the amount of effort put into controlling a pest can be used to indicate the likely success of pest control or progress toward achieving objectives. Measuring effort (eg. area

covered and control method used) is often referred to as inputs monitoring, and is the simplest form of accounting for success. It is also the least accurate.

There is a need to consider the cost of monitoring against the value of the information collected. Monitoring uses resources that may otherwise be better spent on controlling the pest. The level of information and certainty required must relate to the significance of the problem.

The most significant problems are those pests identified for species-led management in Part Two of the Strategy. These are the pests Horizons will actively manage and spend most of the pest control budget on. Due to the size of the expenditure and scale of control, it is expected that there will be detailed accounting for performance. Operational monitoring of the success of the control of these pests is detailed in Part Two. The operational monitoring of these pests has very explicit ties back to objectives.

The next most significant issue is the animals under site-led management. The monitoring objectives for the Site-led Biodiversity Programme are built into the management plans for individual sites, so are not detailed in the Strategy except where site-led pests are statutory (Part Two) pests. It is expected the results of site-led monitoring will be used to gauge the success or otherwise of site-led management (eg. bush and wetland pest control programmes) and ultimately this Strategy.

The least significant issue is the animals that are presently in low numbers or are not thought to be in the Region. These animals fall into the Monitoring or Surveillance Programme. The programme is described in more detail in Section 12 and includes some general performance and monitoring measures. Monitoring the control of new incursions is planned at the same time as control operations, so cannot be detailed in the Strategy.

5.2 Reporting

Horizons will report annually, by November, on work conducted over the previous financial year to achieve the objectives of the Strategy. Such reporting will include, but is not restricted to:

- results of inputs, outputs, and outcomes monitoring as detailed for each pest under this Strategy.
- results of outcomes and outputs monitoring as detailed in site-led pest management strategies and in any programmes controlling Monitoring and Surveillance animals.
- change (positive or negative) in the extent of biocontrol agents and suggested reasons for the change.
- results of trials.
- evaluation of work programmes. Where monitoring indicates a need to change management practices, a case will be made and considered.
- reporting on education campaigns with a statement on the perceived success of these, and guidance on the direction of future campaigns.
- details of community initiatives including extent of work, methods, and results.

6. ACTUAL OR POTENTIAL EFFECTS OF RPAMS IMPLEMENTATION

Horizons, given its experiences under the current Strategy, is satisfied that the overall effects of this Strategy will be beneficial to the Regional community. While Horizons is confident that a RPAMS is the most effective way of managing pest animals, there are, however, some aspects of the implementation of the Strategy that may have real or perceived adverse effects.

6.1 Effects on Māori Values

It is assumed that pest animal management under the Strategy will have a positive effect on the relationship of Māori and their culture and traditions with their ancestral lands, waters, sites, waahi tapu (sacred places), and taonga (treasures) by contributing to the protection of taonga and mauri (life-force) associated with indigenous biodiversity, landscapes and waterways.

It is acknowledged that the kiore is considered taonga by some iwi. Feral animals such as deer, pigs, and goats are prized as replacements for traditional hunting resources. The degree of control of these species (if any) is negotiated with the owner, so there is room to accommodate the aspirations of the owners and occupiers of tribal lands. Also, a great deal of the feral range of these species is not a priority for pest control under this Strategy. It is therefore perceived that the Regional effect of this Strategy on the availability of these hunting resources will be minimal.

6.2 Effects on the Environment

This Strategy will enhance and protect the ecological environment including natural ecosystems and processes, soil health and water quality by removing, reducing or managing the pest animal species that threaten them.

The use of control tools such as toxins and traps can negatively affect indigenous wildlife. Horizons actively participates in current research and training that aims to minimise the non-target effects of pest control, and readily adopts best practice methods for poisoning and trapping operations.

Enjoyment of the cultural environment will also be enhanced where pest animal management overlaps with amenity and recreational values.

The economic environment will experience some benefit as a result of suppressing or eradicating pest animals that impact on primary productivity. In addition, the tourism industry (domestic and international) is expected to gain from this Strategy through enhancement of the natural areas utilised by visitors.

6.3 Effects on Marketing Overseas of New Zealand Products

The control of pest animals in areas of high natural value should increase the recreational and aesthetic values associated with these areas, which may have a positive impact on international tourism. Further, New Zealand's clean, green image may benefit from pest animal management in natural areas.

The broad-scale use of toxins could be considered in conflict with the clean, green image. The use of best practice methods when applying toxins and employment of mixed method control should mitigate this threat.

The volume of exports may be improved through increased productivity by managing pest animals that affect agriculture, horticulture, and forestry.

7. RPAMS RESPONSIBILITIES AND OBLIGATIONS

7.1 Horizons Regional Council

As the management agency, Horizons will be accountable to stakeholders and ratepayers who fund the RPAMS and undertake the programmes outlined in the Strategy by:

preparing, evaluating, and reviewing the Strategy pursuant to the Act and –

- providing technical advice and information on pest animal management;
- enforcing Strategy rules;
- conducting surveillance for new incursions, and to ensure species banned from sale, propagation and distribution are not offered for sale;
- encouraging community initiatives;
- implementing focused education and awareness campaigns with a view to behaviour change within the community;
- incorporating new research and developments into work plans including the continued use of biological control agents;
- continual training of staff including animal identification, new control methods and monitoring and information recording techniques, attendance at training seminars and workshops;
- conducting direct control of pest animal species (including small-scale control under Section 100 of the Act);
- carrying out pest animal management in accordance with the Strategy on land that it occupies and manages; and
- actively participating in driving biosecurity decision-making at a national level, including lobbying of Central Government on national biosecurity issues affecting Horizons' community.

7.2 Stakeholders

For the purposes of the Strategy, stakeholders are those persons that either benefit from the Strategy's implementation, or exacerbate pest animal problems, and accordingly will be bound by the provisions of the Strategy and will contribute to its funding. Ratepayers, Crown departments, State-Owned Enterprises and other Crown occupiers fall under this stakeholder definition. The obligations and responsibilities for stakeholders are outlined below.

7.2.1 Private Occupiers

Occupiers of private land are required to control pest animals on land that they are responsible for, as set out in any rule prescribed in Part Two (Pest Animal Management Programmes) of the Strategy. Private occupiers will contribute to funding implementation and administration of the Strategy in accordance with the funding provisions set out in Section 22 of the Strategy. This applies only to rateable land. The occupier of non-rated land is expected to meet all pest control costs, or otherwise negotiate a contribution as part of agreeing to be bound by the Strategy.

The Regional Council may, in accordance with Section 21.5 of the Strategy, exempt any person from any specified requirement included in a rule.

7.2.2 Crown Agencies

The Crown is a potential exacerbator and beneficiary that Horizons cannot force to contribute to the share of the cost of pest animal control. Pursuant to Section 87 of the Act, the Crown cannot be bound to, or fund the RPAMS, unless it agrees by Order in Council. Under the First Schedule of the Local Government (Rating) Act (2002), the Crown does not pay rates, but may agree to contribute monies in lieu of rates to fund this RPAMS.

Progress has been made with integrating pest control on Crown estate and the current RPAMS through Memoranda of Understanding and partnerships with the relevant Crown agencies. Horizons will still seek Orders in Council to bind the Crown if this is deemed an appropriate solution for integrated pest management. Horizons will also continue to lobby the Crown for funding. In the absence of Orders in Council, Horizons will continue to pursue and maintain formal and informal relationships with Crown agencies to achieve RPAMS objectives.

Five central government agencies occupy Crown estate in Horizons' Region (below).

Department of Conservation

The Department of Conservation (DoC) administers 423,777 ha (c. 19% of the total land area) in the Manawatu-Wanganui Region. It is an occupier for public conservation land under the Reserves Act 1977, National Parks Act 1980, and the Conservation Act 1987.

There are five conservancies with part of their area within the Horizons boundary (Wellington, East Coast/Hawke's Bay, Waikato, Tongariro/Taupo and Wanganui Conservancies). DoC has particular interest and expertise in the area of pest animal threats to indigenous biodiversity values.

Land Information New Zealand

Land Information New Zealand (LINZ) administers approximately 1,280 ha of vacant and non-rateable land. LINZ also has responsibility for unalienated Crown land in the Region and surplus railway land.

New Zealand Railways Corporation (ONTRACK)

ONTRACK is the Crown's agent responsible for managing approximately 522 km of land and rail infrastructure, on behalf of the Crown, in the Manawatu-Wanganui Region. This accounts for around 1,600 ha of non-surplus railway land.

New Zealand Defence Force

The New Zealand Defence Force (NZDF) has three large installations within the Region. They are the Ohakea Air Force Base, the Linton Army Camp, and the Waiouru Army Camp and surrounding training area. The total area occupied is approximately 62,000 ha.

Transit New Zealand

Transit New Zealand is the roading authority for State Highways. Transit New Zealand manages approximately 1216 km of road and roadside verges.

7.2.3 Territorial Local Authorities

There are seven Territorial Local Authorities (TLAs) with boundaries wholly or mainly within the Region, and three with boundaries partially in the Region. District and city councils occupy land and are a roading authority in their locality. District and city councils are required to carry out pest animal management pursuant to any Strategy rule on land, including roadside verges, which they occupy and administer. The only TLA not affected is Taupo District which does not administer land or roads in the Region.

7.3 Transport Corridor Responsibilities

A regional pest management strategy may transfer responsibility for pest animal management of road reserves to the adjacent occupier, or have a mix of responsibilities. Road reserves include the land on which the formed road lies and the verge area that extends to adjacent property boundaries.

Pest animals on road side verges are dealt with on a case by case basis due to their trans-boundary impacts but in general roadside responsibilities for pest animal management for “formed” roads fall to the roading authority which maintains the road. The responsibility for pest animal management on “unformed” (paper) roads falls to the occupier of the place adjoining the paper road.

In accordance with Sections 6 and 76(1)(i) of the Act, roading authorities are responsible for controlling pest animals (as described in Part Two of the Strategy) on road reserves that they occupy in the following situations:

- rest areas;
- weigh pits and stockpile areas;
- road reserves where road works have contributed to the establishment of habitat that could contain named pest animals;
- other isolated areas of road reserves mainly for safety reasons;
- road reserves adjacent to land where the landowner is undertaking programmed pest animal management; and
- any other area under their jurisdiction where it is unreasonable to expect adjoining landowners to control pest animals.

Except where a Strategy Rule prevents occupier control (eg. rooks).

Where the road reserve boundary is unknown it shall be taken as 10 m from the road centre line.

Except where a Strategy Rule prevents occupier control:

- the control of pest animals on unformed (paper) roads is the responsibility of the person occupying that land.
- where fences encroach into a surveyed road reserve, the occupier adjoining the road reserve shall be responsible for pest animal control within that fenced area.
- in situations where adjacent occupiers do not support the use of toxins to control pests (eg. organic farming practices), the occupier adjoining the road reserve shall be responsible for pest animal control in the road reserve as well.

Memoranda of Understanding between Horizons and roading authorities will be sought. Such agreements should:

- state which species are to be controlled, and where, and best practice control methods suggested;
- state expected timeframes for completion of work; and
- incorporate existing agreements between roading authorities and their clients (ratepayers), eg. non-toxin agreements.

PART TWO

PEST ANIMALS TO BE MANAGED

8. INTRODUCTION TO PEST ANIMALS TO BE MANAGED

Part Two of this Strategy lists each animal or class of animals declared as pests. The objectives and means of delivery for the control of rooks, possums and feral rabbits are also detailed in this part of the Strategy. The objectives and means of delivery of the Surveillance and Monitoring Programme and Site-led Biodiversity programmes are described in Section 12 and Section 13 respectively. The Surveillance and

Monitoring Programme and Site-led Programme do not have rules directly associated with their implementation. However the pest animals managed under those programmes are subject to the rules detailed in Sub-section 8.1 below. Table 8-1 lists animals that are pests and the management objective for them.

Table 8-1: Animals listed as pests under this Strategy

Animal (type)	Management Objective
Rook (bird)	Eradication
Possum (marsupial)	Suppression
Feral Rabbit (mammal)	Suppression
Feral Stoat (mammal)	Site-led Biodiversity
Feral Ferret (mammal)	Site-led Biodiversity
Weasel (mammal)	Site-led Biodiversity
Koi/European Carp (fish)	Site-led Biodiversity
Gambusia (fish)	Site-led Biodiversity
Brown Bull-headed Catfish (fish)	Site-led Biodiversity
Rudd (fish)	Site-led Biodiversity
Feral Cat (mammal)	Site-led Biodiversity
Feral Eastern Rosella (bird)	Site-led Biodiversity
Dama Wallaby (marsupial)	Surveillance
Banjo Frog (amphibian)	Surveillance
Feral Rainbow Lorikeet (bird)	Surveillance
Gudgeon (fish)	Surveillance
Marron (crustacean)	Surveillance
The Clubbed Tunicate (sea squirt)	Surveillance
Chinese Mitten Crab (crustacean)	Surveillance
Mediterranean Fanworm (marine worm)	Surveillance
Northern Pacific Seastar (starfish)	Surveillance
European Shore Crab (crustacean)	Surveillance
Asian Clam (mollusc)	Surveillance

8.1 These Pests are Banned from Sale and Distribution

In accordance with Section 52 of the Act, the animals listed in Table 8-1 should not be knowingly released or spread unless in accordance with this Strategy or as otherwise permitted under Section 52 of the Act. Under Section 53 of the Act, any person in charge of these animals should not offer for sale or breed these animals unless permitted by a chief technical officer.

Strategy Rules

Rule 8.1. No person shall knowingly spread, cause to be spread, release, or cause to be released any pest to be managed in this Strategy except;

- (a) in the course of and in accordance with the Strategy; or
- (b) as provided in an emergency regulation made under section 150 of the Act; or
- (c) for a scientific purpose carried out with the authority of the Minister; or
- (d) as permitted either generally or specifically by a chief technical officer.

Rule 8.2. The owner or person in charge of an organism which that person knows or suspects constitutes a pest to be managed in this Strategy must not;

- (a) cause or permit that organism to be in a place where organisms are offered for sale or are exhibited; or
- (b) sell or offer that organism for sale; or
- (c) propagate, breed, or multiply the pest or unwanted organism or otherwise act in such a manner as is likely to encourage or cause the propagation, breeding, or multiplication of the pest or unwanted organism.

A chief technical officer may permit an owner or person in charge of an organism to carry out an act otherwise prohibited by Rule 8.2 so long as permission is given either by notice in the New Zealand Gazette or in writing to the owner or person in charge of an organism.

Rules 8.1 and 8.2 in this Strategy do not prohibit the legal ownership or trade of domestic ferrets, captive rainbow lorikeet, captive eastern rosella, domestic rabbits, captive possums, or farmed wallaby, as long as they are kept in accordance with legislation pertinent to their management and Gazette notices. Where the intent of those directives is not being followed by the owner or person in charge, those animals may be considered feral and may be controlled as pests under

this Strategy.

Rules 8.1 and 8.2 in this Strategy do not prohibit the legal ownership and trade of domestic (companion) cats kept in accordance with recommended best practice standards under the Animal Welfare (Companion Cat) Code of Welfare 2007.

Rule 8.2 in this Strategy does not prohibit the sale and display of these organisms if they are dead (eg. taxidermy). However, other legislation may prohibit the sale of the meat of these organisms for consumption.

Breach of these rules is an offence under Section 154(m) of the Biosecurity Act, upon which Horizons will instigate the compliance and enforcement process as outlined in Section 21 of this Strategy.

The reason for banning the sale and distribution of pests under this Strategy is to prevent their further spread through negligent liberations or ignorance.

Other animals banned from liberation to the wild

In addition to the Rule 8.1, the liberation of introduced animals (including mammals, birds, lizards, and invertebrates) to the wild is generally regulated by other legislation.

Specifically the liberation of pigs, goats, red deer, fallow deer, sika deer, sambar deer, wallaby and possums to the wild is prohibited under the Wild Animal Control Act 1977. The Department of Conservation has the statutory authority to act on illegal liberations of the animals not otherwise covered by Rule 8.1. Horizons will work with DoC to collectively tackle the issue of illegal liberations.

The liberation of any introduced fish species to water bodies, where the species is otherwise absent, is prohibited by the Conservation Act 1987. The Department of Conservation and the Fish and Game Council (in relation to sports fish) have the statutory authority to act on illegal liberations of fish not otherwise covered by Rule 8.1. Horizons will work with these agencies to collectively tackle the issue of illegal liberations of fish.

The liberation of birds is also regulated by these two agencies. Check with Horizons, DoC and Fish and Game Council before releasing birds to the wild.

The liberation of Unwanted Organisms is banned under the Biosecurity Act 1993 and includes a long list of insects and other invertebrates. Newly imported organisms are regulated under the Hazardous Substances and New Organisms Act 1996. Check with Horizons, MAF Biosecurity New Zealand, and ERMA before releasing exotic invertebrates to the wild.



9. Rook

Corvus frugilegus



DESCRIPTION

Rooks are from the crow family. The adult rook is glossy black, approximately 50 cm in length, and weighs 350-500 gm. Rooks are social birds. They establish permanent breeding rookeries and night-time winter roosts which they maintain for many years unless disturbed. Because of this habit, a census of the number of active nests in every known rookery may be used to estimate the rook population size.

REASON FOR INCLUSION

Rooks feed in flocks and can cause significant damage to crops such as newly sown cereals, ripening peas, broad beans, potatoes, pumpkins, walnuts, and fruit (NPCA 2006a). On pastoral land they eat insects such as grass grubs, but any benefits are greatly outweighed by direct damage to pasture, and indirect effects such as opening up pasture to weed infestation and triggering soil erosion. In rural areas, rooks congregating on rooftops can cause pollution of water supplies.

One reason to include rooks in the Strategy instead of leaving them to voluntary control is that the best methods for rook control are not available to the public. Shooting rooks tends only to disperse the population, making them even more difficult to control.

A further reason to control rooks is to maintain positive relations with Hawke's Bay Regional Council and Greater Wellington Regional Council who have a commitment to eradicate rooks from their regions also.

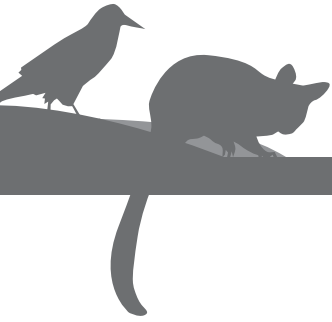
DISTRIBUTION

Rooks are assessed at "5" on the infestation curve. The Manawatu-Wanganui Region has New Zealand's largest population of rooks. They have spread, initially from Hawke's Bay into the Taranaki District and subsequently into other districts (Figure 9-1). There is a large area of suitable habitat (farmland with cropping) west of the main ranges that could support many more birds. Current evidence suggests that they will increase in numbers if uncontrolled.

IMPACT EVALUATION

Primarily pastoral and horticultural with possible minor biodiversity effects and amenity/nuisance issues.



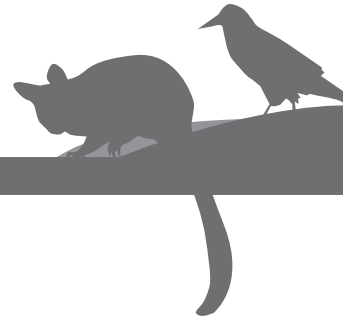


MANAGEMENT REGIME FOR THE ROOK

<p>OBJECTIVE</p> <p>Eradication.</p>	<p>MEANS OF DELIVERY</p> <p><i>Service Delivery</i></p> <p>Horizons will coordinate and conduct control operations on all rookeries, and on rook flocks where conditions are suitable.</p>
<p>AIMS</p> <ul style="list-style-type: none"> • All ground-based poisoning operations result in a 95% kill rate or higher. • Eradication of all rookeries within the zero-density¹ management zone by 2012, and within the Taihape and Tararua management zones by 2017. • Fewer than 20 active nests to remain in the Taihape management zone and fewer than 300 active nests to remain in the Tararua management zone by 2012. • Fewer than 4 rookeries to remain in the Taihape management zone and fewer than 27 rookeries to remain in the Tararua management zone by 2012. • Eradicate rooks from the Region by 2020. 	<p><i>Investigation</i></p> <p>Horizons will undertake investigations to determine the location of all rookeries in the Region. Horizons may also undertake site specific investigations to determine damage.</p> <p><i>Education</i></p> <p>Horizons will carry out programmes to increase public awareness and promote community participation in the surveillance for rooks and rookery locations.</p> <p><i>Enforcement</i></p> <p>Horizons will enforce Strategy rules prescribed in this section.</p>
<p>MONITORING</p> <p>Horizons will monitor the success of rook control using standard industry protocol and best practice guidelines (NPCA 2006a), which include operational success monitoring (percent kill estimates) and population census (number of active rookeries and active nests). Horizons will also keep a record of reports of damage to crops, and relate this back to estimated rook densities during annual reporting.</p>	<p>OUTCOMES</p> <p>Major damage to crop and pasture production by rooks is avoided.</p> <p>No measurable effect attributed to rooks in areas being controlled for pests under Site-led Biodiversity Programme.</p>

¹ "Zero-density" is a medium-term target to maintain an area rook-free. Between 2012 and 2020, rooks from neighbouring areas might be seen in the zero-density management zone, but there should not be any breeding populations within the zone.





STRATEGY RULES

Strategy Rule	Explanation
9.1	<p>No person shall attempt to control rooks or rookeries without prior permission from an Authorised Person. For the purpose of this Strategy, control means shooting or any other disturbance of rooks or rookeries that cause rooks to become wary of control or to cause rookeries to fragment and disperse. Control does not include the use of deterrents such as scarecrows and crucified rooks, which are “best practice” options for protection of arable land.</p> <p>A breach of this rule will create an offence under Section 154 (r) of the Act. Any person or corporation who fails to comply with this rule is liable to penalties as prescribed under Section 157 (5) of the Act.</p> <p>The reason for this rule is that shooting and piecemeal poisoning makes coordinated control more difficult. When free of disturbance, rooks spread slowly and are easier to control.</p>



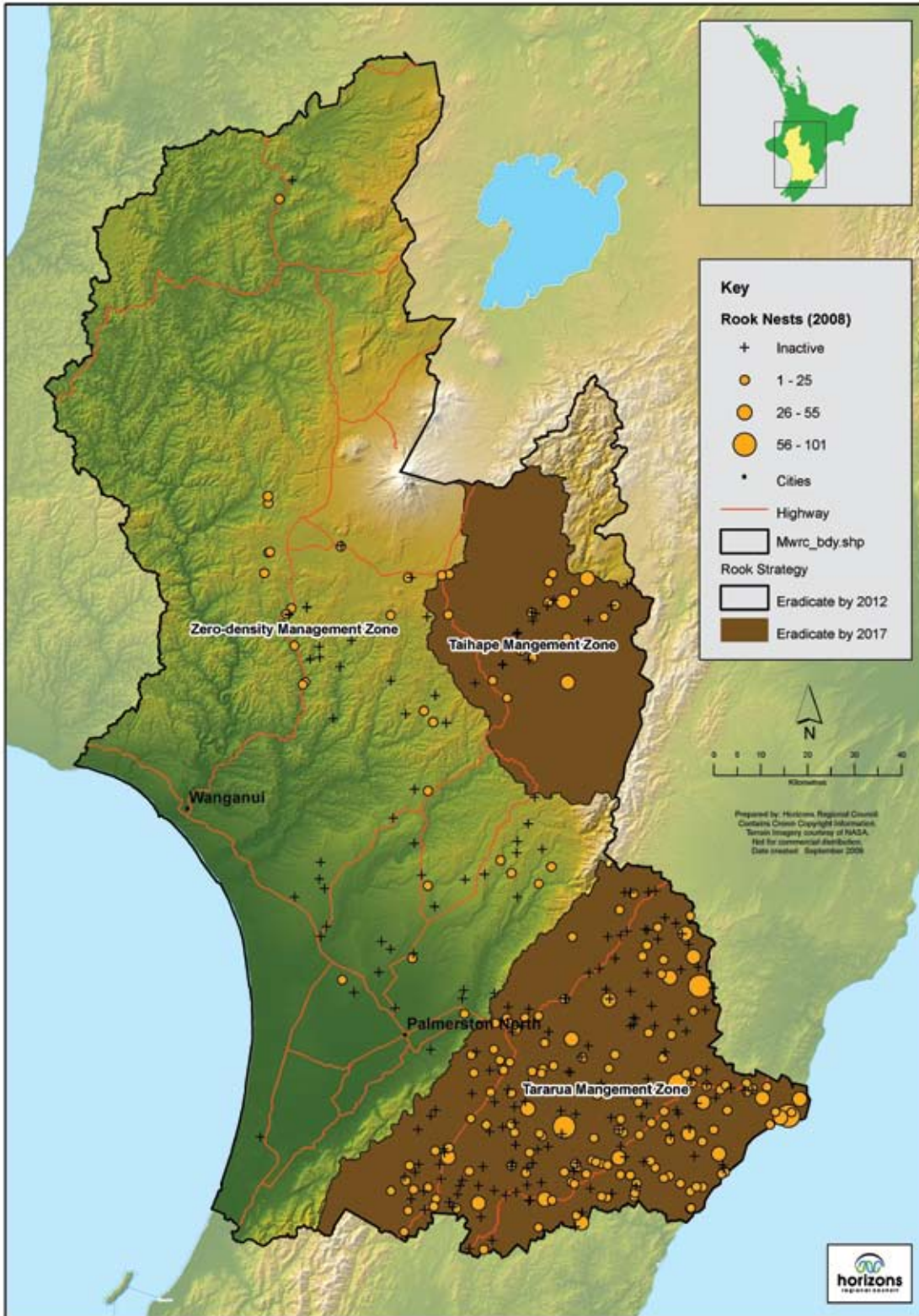
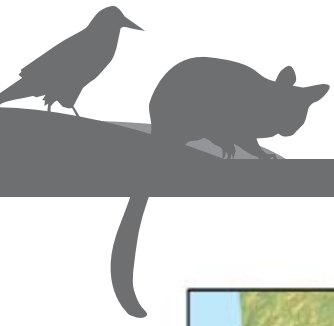


Figure 9-1: Location and size of rookeries (nest count) from 2008 Rook Census.





10. Possum

Trichosurus vulpecula



DESCRIPTION

Possoms are an Australian marsupial originally introduced to create a fur trade. Ranging in size from 2-5 kg, possums have a rounded build, grey to black or orange-black fur, and a prehensile tail. Possoms eat a large range of plants including trees, crops, gardens and pasture. They are also known to eat native insects, and prey on native birds and their eggs. Possoms are known to preferentially feed on individual trees along their foraging path. By this habit, possums can kill large trees through sustained heavy foliage damage.

REASON FOR INCLUSION

Possoms are considered the number one animal pest in the Region because of their adaptability to different environments, and the extent and severity of damage they cause to both production and environmental values.

Possom populations are very destructive to indigenous ecosystems - from localised extinctions of possum-preferred species, to canopy dieback and ecosystem change. For example, in the Ruahine Ranges possums were primarily responsible for the collapse of 75% of the indigenous rata/kamahi forest (Rogers & Leathwick 1997). They have caused local extinction of native mistletoe species and tree fuchsia (the largest fuchsia in the world) from some native forest remnants. Possoms also prey on native bird species, through predation of both eggs and chicks.

High populations consume economically significant volumes of pasture (e.g. Cowan 2009), and they are vectors for a number of pathogens – the best known being bovine tuberculosis (Tb). Individual possums are able to do considerable damage through attacks on gardens, trees and nurseries, and through their habit of nesting in buildings.

DISTRIBUTION

Concerted effort by Horizons and the Animal Health Board (AHB) has driven populations to very low levels in some parts of the Region. With this localised reduction of numbers, the possum population is assessed as a “6” on the infestation curve at a Regional level. While possums are common throughout most of the expected habitat in the Region, the density of population is such that it will rapidly re-expand if not controlled.

IMPACT EVALUATION

Major Regional effect on biodiversity and pastoral values. Minor effect on soil and horticultural values and an amenity/nuisance issue.



MANAGEMENT REGIME FOR THE POSSUM

OBJECTIVE

Suppression.

AIMS

- Fifty percent of the Region to be managed under a Possum Control Operation (PCO) by 2012, and 100 percent by 2017.
- Possum Control Operations (PCOs) on land not previously under the auspices of AHB vector control to have possum populations maintained below a density of 10% Residual Trap Catch Index (RTCI) or 40% Wax Tag 7-night Bite Mark Index (BMI).
- PCOs on land previously under the auspices of AHB vector control to have possum populations maintained below a density of 5% RTCI or 15% BMI.
- Possum populations are controlled as prescribed in management plans for high-value natural areas prioritised for protection under the Regional Biodiversity Programme. Where the indicators of successful possum control are not identified in those management plans, possum populations are maintained below a density of 5% RTCI or 15% BMI and there is no measurable reduction in the percentage canopy cover of possum-preferred indigenous tree species attributed to possum browse.
- In soil conservation plantings, possum populations are controlled as prescribed in management plans for the site. Where possum control is not specifically identified, possum populations are controlled as and when needed, to achieve a density 5% RTCI or 15% BMI.
- 95% of all queries regarding possum damage on pasture, horticulture, crops, and amenities, including nuisance possums, are addressed within two working days.

MEANS OF DELIVERY

Service Delivery

Horizons will provide service delivery possum control in all areas previously controlled under Self-Help Possum Groups (SHPG), Possum Control Areas (PCAs) and ceased Animal Health Board operations, under a Possum Control Operation (PCO), and will progressively expand PCOs into areas that have previously not received possum control.

Horizons will provide service delivery in selected sites valued for biological diversity where it is deemed possums are a threat to the ongoing viability of the site and the biodiversity values, as prescribed in site management plans.

In urban areas Horizons will undertake direct delivery or education and advice for nuisance possums or amenity protection. Horizons may provide services (such as traps available for loan to occupiers, or disposing of cage-caught possums) to assist land occupiers to control possums in amenity areas.

Horizons will seek to cooperate with Crown Agencies where their land is contained inside, or adjacent to, a possum control area or a site under the Site-led Biodiversity Programme.

Advice

Horizons will provide ongoing advice to occupiers on appropriate control measures and management programmes.

Education

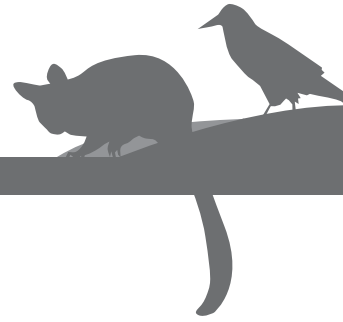
Horizons will carry out community education programmes to increase public awareness of the services provided by Horizons and the rules in this Strategy.

Research

Horizons will support programmes to develop biological control agents for possums.

Horizons will maintain a portfolio of control methodologies, and resultant possum density estimates or environmental outcomes, to support input monitoring practice.

Horizons will champion research into tools to better monitor the biodiversity outcomes of possum control in PCOs and under the Site-led Biodiversity Programme.



MANAGEMENT REGIME FOR THE POSSUM

MONITORING

Horizons will monitor possum density trends in at least 10% of PCOs by 30 June every year. Monitoring will use standard industry protocols and best practice guidelines.

Horizons will audit the quality of possum control inputs for alignment with industry and Horizons best practice for all PCOs on an annual basis, by 30 June.

Horizons will monitor environmental outcomes as prescribed in management plans for high-value natural areas prioritised for protection under the Regional Biodiversity Programme. As part of this Strategy, results of outcome monitoring in any given year will be summarised in the annual report for that year.

Horizons will keep a record of reports of damage to crops, horticulture, forestry and amenities and relate this back to Strategy objectives for annual reporting.

Horizons will keep a record of the degree by which soil conservation plantings are affected by possum browse and relate this back to Strategy objectives for annual reporting.

OUTCOMES

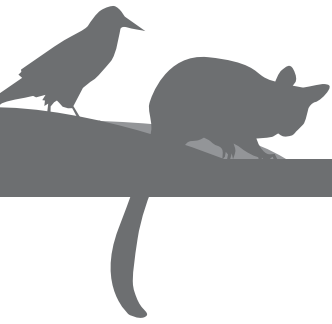
Damage to amenities, forestry, soil conservation plantings, crops, horticulture, and pasture production is suppressed to today's level or lower.

The risk of disease transmission from possums to livestock, pets, and humans is reduced.

The diversity of the Region's indigenous flora and fauna is protected from loss attributed to possums.

The effectiveness of any soil conservation planting is not reduced as a consequence of possum browse.





STRATEGY RULES

Strategy Rule	Explanation
10.1	<p>Any occupier seeking rates remission for possum control under the Rates Remission Policy of the LTCCP (per amendment in the 2007-08 Annual Plan), is required to undertake their own auditable possum control.</p> <p>i) “Control” is to be at a level of input that Horizons agrees would result in maintaining possums below the density index that Horizons aims for in the PCO that the opted-out area is within.</p> <p>ii) “Auditable” means evidence that the work has been carried out must be kept and made available to an Authorised Person upon request. Evidence may include, but is not limited to, invoices for ammunition, bait or contract labour, or the presence and obvious use of traps or bait stations, a tally of possums killed, the tails as evidence, or receipts of payment for skins (with tally) or fur (with weight), or the results of a private possum monitoring operation done in accordance with a current NPCA Possum Monitoring Protocol (NPCA 2005a, NPCA 2005b). In any state, the evidence produced must be sufficient to demonstrate compliance with this rule.</p> <p>iii) Where there is insufficient evidence to determine if the occupier’s possum control programme meets Horizons’ requirements, a Residual Trap Catch Index (RTCI) assessment may be undertaken. The result of the assessment must meet the target set by Horizons.</p> <p>iv) Compliance with this rule will be checked every second year. A written Request to Clear notice to control possums in accordance with Rule 10.1, that includes the target RTCI and timeframes, will be issued biennially, to remind these occupiers of their obligations.</p> <p>A breach of this rule is an offence under section 154 (r) of the Act, and may result in default work under section 128 of the Act, with the costs of control being imposed back on to the occupier (refer to Section 21 of this Strategy).</p> <p>The reason for this rule is that any person who decides not to contribute to funding possum control in PCOs is expected to control possums to the same level Horizons aims to achieve.</p>





11. Feral Rabbit

Oryctolagus cuniculus



DESCRIPTION

The European feral rabbit is a herbivore of 1-2 kg, with a rounded body, long ears and a small tail. The fur colour is mainly buff, sprinkled with black, a reddish neck and white belly, or black. Feral hybrids with domestic rabbits occur in a range of colours including white, brown, and black. Rabbits will breed throughout the year, with adult females capable of producing 45 to 50 young per year. Rabbits will inhabit forest margins, shrublands and tall pasture habitats on most soil types, but they prefer short pasture on light, free-draining soils.

REASON FOR INCLUSION

Historically, feral rabbits have been a significant problem for farming in parts of the Region. At high infestation levels feral rabbits can significantly:

- damage new plantings of trees and crops;
- reduce the amount of palatable pasture;
- increase the amount of bare ground susceptible to erosion and pest plant invasion;
- initiate erosion processes by burrowing;
- damage horticultural crops and damage residential gardens; and
- reduce vegetation species diversity - replacing vegetation dominated by perennial species with vegetation dominated by annuals, and replacing grasslands and shrubland with low, herbaceous and mat-forming vegetation.

Even small populations can be a nuisance to bush remnant restoration programmes where they affect the re-establishment of the forest understorey, and damage soil conservation, forestry and other new tree plantings.

Feral rabbits can also be a local nuisance in urban and peri-urban areas, where small populations do a lot of damage to vegetable gardens, trees and nurseries. Control options for these populations are very limited due to the residential setting.

This Strategy does not include the management of individual escapee domestic or pet rabbits that would otherwise, when recaptured, be kept within a fence or enclosure for domestic or farming purposes. This Strategy does include control of populations of rabbits of any origin that are no longer kept in domestic circumstances (ie. feral rabbits).

DISTRIBUTION

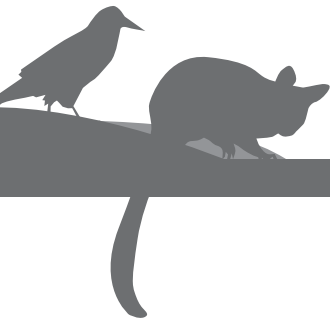
Rabbit populations do well on light, free-draining soils. The highly rabbit-prone areas are the sandy western coastal sectors of the Wanganui, Rangitikei, Manawatu and Horowhenua Districts, the eastern coastal sector of the Tararua District and the pumice soils of the Ruapehu District. Due to the continuing effectiveness of Rabbit Haemorrhagic Disease (RHD) and pastoral management, populations on rabbit-prone land have been largely suppressed. There are significant but localised infestations in some areas of coastal country.

The feral rabbit population is assessed as a “7” on the infestation curve at a Regional level. Rabbits are common throughout most of the expected habitat in the Region in low to medium densities. In rabbit-prone areas the density of population is such that it may rapidly expand if the efficacy of RHD wears off.

IMPACT EVALUATION

Primarily a pastoral, horticultural, forestry and soil conservation issue. Some effects on coastal and forest edge native vegetation. Localised but sometimes severe damage to amenity and restoration plantings.





MANAGEMENT REGIME FOR THE FERAL RABBIT

OBJECTIVE

Suppression.

AIMS

- Feral rabbit populations to be kept below a level acceptable for maintaining primary productivity, defined as Level 4 on the Modified McLean Scale – see Table 11-1, throughout the duration of this Strategy.
- Conservation plantings (soil conservation and habitat restoration) to be protected from rabbit damage by controlling rabbits at those sites if necessary.
- 95% of all queries regarding rabbit damage on pasture, horticulture, crops, and amenities including nuisance rabbits to be addressed within two working days.

MONITORING

Horizons will undertake monitoring by 30 June each year to establish Regional trends in the feral rabbit population, and will report results in the annual report by November.

Horizons will assay populations every second year for Regional trends in RHD virus immunity, in accordance with industry protocols, and will report results in the annual report by November of the year the data are collected.

Horizons will keep a record of reports of feral rabbit damage to amenity plantings, and relate this back to Strategy objectives for annual reporting.

Horizons will keep a record of reports of the degree by which soil conservation plantings are affected by rabbit browse, and relate this back to Strategy objectives for annual reporting.

MEANS OF DELIVERY

Service Delivery

Horizons will use RHD virus in accordance with industry agreed best practice guidelines. Service delivery includes monitoring rabbit immunity and release of the disease into areas where immunity to the virus is low.

Horizons may provide service delivery in selected sites valued for biological diversity or soil conservation where it is deemed rabbits are a threat to the ongoing viability of the site and the values within.

Horizons may conduct control operations on small populations of rabbits, or provide tools for rabbit control, in urban or peri-urban situations where control by occupiers would otherwise be difficult.

Horizons will assist landowners and self-help groups to develop coordinated rabbit control programmes in areas where a rabbit problem is identified and coordinated control would be the most efficient means of addressing the problem.

Horizons may provide user-pays rabbit control services to individual landowners and self-help groups upon request or by negotiation. Costs will be calculated and recovered on a case by case basis.

Advice

Horizons will provide ongoing advice to the public on control measures and management programmes, and the status of the Regional rabbit population.

Education

Horizons will carry out community education programmes to increase public awareness of the services provided by Horizons and the rules in this Strategy.

Investigation

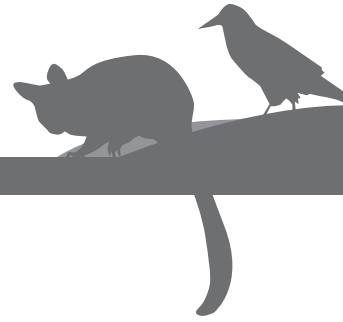
Upon complaint from a neighbouring occupier, Horizons will investigate the size of the rabbit population to determine where the population epicentre is located and if any part of the infestation is at or above Level 4 on the Modified McLean Scale. A property assessment will be in accordance with industry best practice guidelines.

Enforcement

Upon verifying the location of a rabbit population epicentre at or above Level 4 on the Modified McLean Scale, Horizons may serve Notice of Direction on any occupier who refuses to control rabbits in accordance with Rule 11.1.

Subject to weather, Horizons will check compliance with the Notice of Direction by conducting another rabbit population investigation in the same sampling area after forty (40) working days but before fifty (50) working days from when the notice was served.





MANAGEMENT REGIME FOR THE FERAL RABBIT

OUTCOMES

Severe pastoral losses and soil damage caused by rabbit population explosions are avoided.

The effectiveness of any soil conservation or native vegetation restoration planting is not reduced as a consequence of rabbit browse.

Damage to amenities, forestry, soil conservation plantings, crops, horticulture, and pasture production is suppressed to today's level or lower.

STRATEGY RULES

Strategy Rule	Explanation
11.1	<p>Occupiers shall carry out rabbit control to ensure that rabbit populations are maintained below Level 4 on the Modified McLean Scale (Table 11-1).</p> <p>A breach of this rule will create an offence under Section 154 (r) of the Act and will result in a Notice of Direction, under Section 122 of the Act, to control rabbits to a level below Level 4 on the Modified McLean Scale within 40 days. Failure to comply with the Notice of Direction may result in default work under Section 128 of the Act, with the costs of control being imposed back on to the occupier.</p> <p>The reason for this rule is that occupiers, as the main beneficiaries of rabbit control, are expected to take responsibility for rabbit control.</p>

Table 11-1: The Modified McLean Scale of Rabbit Infestation (extracted directly from NPCA 2006b).

Level	Description
1	No sign seen. No rabbits seen.
2	Very infrequent sign present. Unlikely to see rabbits.
3	Sign infrequent with faecal pellet heaps more than 10 metres apart. Odd rabbit may be seen.
4	Sign frequent with some faecal pellet heaps more than 5 metres, but less than 10 metres apart. Groups of rabbits may be seen.
5	Sign very frequent with faecal pellets heaps often less than 5 metres apart in pockets. Rabbits spreading.
6	Sign very frequent with faecal pellet heaps often less than 5 metres apart over the whole area. Rabbits may be seen over the whole area.
7	Sign very frequent with 2-3 faecal pellet heaps often less than 5 metres 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 pellet heaps often less than 5 metres apart over the whole area. Rabbits likely to be seen in large numbers over the whole area.



PART THREE

OTHER PEST ANIMAL MANAGEMENT PROGRAMMES AND INITIATIVES

12. SURVEILLANCE AND MONITORING PROGRAMME

Species typically take several years before they become established in the wild, and several more before they begin to disperse widely. It makes sound strategic sense to prevent future problems by keeping out species not yet present within our Region. Some may be in the Region, but we do not have enough information to determine if control is warranted or achievable. The Surveillance and Monitoring Programme is a policy of prevention and precaution to ensure new threats are discovered and acted on before eradication becomes unachievable.

The Surveillance and Monitoring Programme is based on active or passive methods to locate and delimit the extent and impact of animals that:

- Are not known to be present in the Region, but known to be a threat elsewhere and are likely to find a suitable habitat within the Region. Often these animals are known to be present in neighbouring regions.
- Are assumed or known to be present in the Region but only in a limited area or confined to a small number of sites, or the extent is not known, or impacts are not known.
- Are classified as unwanted organisms that Horizons believes are at risk of establishing in the wild through deliberate or accidental release.

12.1 Animal Species on Surveillance and Monitoring List

Table 12-1 lists the species for the Surveillance and Monitoring Programme. This list is dynamic and it is envisaged that additional species may be added to the Surveillance and Monitoring Programme at any time during the life of this Strategy, should Horizons deem it necessary. Any additions to the list will be species for which there are no rules attached, other than rules that restrict the sale and distribution of pests or unwanted organisms. Species will only be added if it is deemed that the effect of adding them does not significantly change the rights and obligations of any person (in accordance with Section 88A of the Act). Therefore a Strategy review is not required to update the list. An up-to-date list of the species under this programme is obtainable from Horizons upon request.

Table 12- I: Animals Managed under the Surveillance and Monitoring Programme.

Animal (Binomial name)	Brief Description	Status
Dama Wallaby (<i>Macropus eugenii</i>)	A mammal that mainly affects pastoral and horticultural values but can affect biodiversity values. Until a recent change in the pest management strategy of Environment Waikato, the feral range of wallaby was moving south toward Horizons' Region.	No record of presence in the Region
Banjo Frog (<i>Limnodynastes species</i>)	Four species of frog that may affect biodiversity values. This unwanted organism may be of interest to the pet trade even though it is banned from sale.	No record of presence in the Region
Feral Rainbow Lorikeet (<i>Trichoglossus haematodus</i>)	A brightly coloured parrot that may affect biodiversity values. This unwanted organism is of high interest to the pet trade. Captive bred rainbow lorikeet may be legally sold per notice in the Gazette (15 July 1999) but it is illegal to release to the wild.	No confirmed record of viable feral populations
Gudgeon (<i>Gobio gobio</i>)	A fish that may affect biodiversity values. This unwanted organism may be of interest to the pet trade even though it is banned from sale.	No record of presence in the Region
Marron (<i>Cherax species</i>)	Two species of crustacean that may affect biodiversity or freshwater fisheries values. This unwanted organism may be of interest to aqua-cultural farming trade even though it is banned from sale.	No record of presence in the Region
The Clubbed Tunicate Sea Squirt (<i>Styela clava</i>)	A marine animal that is cylinder shaped, tapering to a stalk with a holdfast, with a tough leathery brown skin.	No record of presence in the Region
Chinese Mitten Crab (<i>Eriocheir sinensis</i>)	A marine crab with a light brown body up to 8 cm across, with dense patches of hairs on its claws.	No record of presence in the Region
Mediterranean Fanworm (<i>Sabella spallanzanii</i>)	A marine animal typically found in estuaries or sheltered sites, which consists of a tube anchored to a hard surface topped with a single spiral fan.	No record of presence in the Region

Animal (Binomial name)	Brief Description	Status
Northern Pacific Seastar (<i>Asterias amurensis</i>)	This starfish has five arms often with turned up tips. They can be yellow or purple-red in colour, and up to 10 cm in diameter.	No record of presence in New Zealand
European Shore Crab (<i>Carcinus maenas</i>)	A marine crab, mottled dark brown to green with small yellow patches, and up to 9 cm across.	No record of presence in New Zealand
Asian Clam (<i>Potamocorbula amurensis</i>)	A clam found in estuaries or brackish water. A dirty white, yellow or tan colour, and up to 3 cm across.	No record of presence in New Zealand

At the time of writing the Strategy, all of the species on the Surveillance and Monitoring list are not believed to have established viable (breeding) populations in the Region.

The natural dispersal pathways of marron, gudgeon, and banjo frogs are considered very low due to lack of suitable habitat corridors. The predominant threat of these species entering the Region is through their trade or purposeful release. The focus of active surveillance for these species is therefore on the pet trade.

The potential for natural dispersal of dama wallaby into the Horizons Region is kept in check by the combined efforts of Environment Waikato, Environment Bay of Plenty, and the Department of Conservation. The predominant threat of this species entering the Region is through illegal liberations. To Horizons' knowledge there are no legitimate wallaby farms in the Region so escapes from farms are an unlikely source of wallaby. However, individual

wallaby may be being kept as pets. The focus of active surveillance for this species is therefore on the pet trade, with passive surveillance on incidences of wallaby being kept as pets and reports of wallaby seen in the wild.

Rainbow lorikeets are present in the wild but not known to be breeding in the Region. The further dispersal of this species is likely to come from illegal liberations. The focus of active surveillance for this species is on the pet trade with passive surveillance of incidences of feral rainbow lorikeet reported from the wild.

The natural dispersal pathway of the marine organisms is through oceanic travel by eggs or larvae. They are therefore unlikely to arrive naturally from their seas of origin. The main dispersal pathway of these organisms is through unintentional transport on boats or in boat ballast water. The focus of active surveillance is to assist MAF BNZ to identify and survey at-risk sites in the Region, such as wharves and boat ramps.

12.2 Objectives of the Surveillance and Monitoring Programme

The Surveillance and Monitoring Programme has the following objectives:

- To detect new pests before they become widely established within the Region.
- To establish the extent and speed of advance of potential pest species with limited distribution within the Region.
- To continue to assist Chief Technical Officers with the management of unwanted organisms.
- To facilitate a quick response through appropriate funding that will enable the control or management of newly discovered threat species.
- To improve and maintain relationships with other agencies.
- To report on surveillance actions and initiatives, including recording and disseminating information on the distribution of new pest animals.

12.3 Means of Delivery

The success of the Surveillance and Monitoring Programme is limited by terrain, accessibility, in-field expertise, and observational skill. The importance given to surveillance operations alongside continued and strengthened interagency relationships will go some way to overcoming these issues. Horizons believes the main dispersal pathways of these organisms involve people deliberately or unwittingly moving them from place to place. Therefore the Strategy is also limited by the willingness of the Regional community to enter the spirit of it.

The main method of implementation is a programme of active surveillance for the sale of the Surveillance and Monitoring pests by retail outlets, over the internet, in newspapers, and at market stalls. This is backed up by following up opportunistic findings and investigating reports from the public, volunteer groups, and Horizons' staff.

Upon discovery of a Surveillance and Monitoring species, Horizons will undertake an identification and evaluation process to determine level of threat and cost of control. A decision on management objectives and outcomes monitoring is made within four weeks of the initial discovery. This decision is made with the support of the Biodiversity and Biosecurity Managers and any relevant external agencies.

Except for wallaby, all of the animals on the Surveillance and Monitoring programme list are unwanted organisms. If an expeditious response is warranted, Horizons may undertake small-scale management programmes for these under Section 100 of the Act as detailed in Section 16.

If wallaby are discovered in the Region, and are determined to be affecting site-led biodiversity values, then they may be managed under the Site-led Biodiversity Programme as detailed in Section 13. Nothing in this Strategy prohibits occupiers from eradicating wallaby from their own land. Rule 8.1 prohibits all persons from releasing wallaby to the wild in the Horizons Region.

Field staff will meet with field staff from the Department of Conservation, the Fish and Game Council, Biosecurity New Zealand, and other field staff from the biosecurity industry at least once a year. These meetings are a vehicle to facilitate sharing of knowledge and data, alerting to new threats, and training staff on animal identification skills.

12.4 Performance Measures and Monitoring

The objectives of the Surveillance and Monitoring Programme will be met when:

- All observations reported (internally and externally) are logged (species, location [grid reference], name and/or organisation of observer) and responded to within two working days.
- Retail outlets and market stalls are checked annually for conformance with Strategy Rules 8.1 and 8.2 and any non-conformance is rectified in accordance with Section 21 of this Strategy.
- The internet and classified pages of newspapers are perused monthly for conformance with Strategy Rules 8.1 and 8.2. Any relevant non-conformance is followed up and rectified in accordance with Section 21 of this Strategy. A non-conformance is relevant when it is deemed likely the advertised sale would lead to any of the species that are banned from sale becoming established in the Region.
- Upon confirmation of the presence of a Surveillance and Monitoring species in the wild in the Region, the identification, delimitation, and evaluation process will be complete and a decision on management objectives and outcomes monitoring is made within four weeks of the initial discovery.
- High value marine ecosystems in Horizons Region remain free of invasive marine organisms.

Horizons will monitor the programme by:

- Recording the number of reported observations of Surveillance and Monitoring species found.
- Recording the response time and the subsequent action taken when Surveillance and Monitoring species are found.
- Monitoring of success of any control work, in accordance with the specific regime designed at the time.
- Mapping any recorded observations annually.
- Recording observations over the year, and reporting success of any control work undertaken each year as part of the annual monitoring and reporting process (Section 5).

13. SITE-LED BIODIVERSITY PROGRAMME

13.1 Introduction

Horizons recognises and provides for the protection of indigenous biodiversity using regulation and non-regulatory methods prescribed in the One Plan. Integrated pest plant and animal control are included in the non-regulatory approaches to protect and enhance the Region's biological diversity.

The Site-led Biodiversity Programme includes a number of animals that threaten biodiversity values. Many of these animals are widespread within the Region and have been established in the Region for a considerable time, so they are considered to be at the top end of the infestation curve. Due to limited resources, the most rational approach to protecting biodiversity is to focus control only in high value sites.

Another reason for limiting control to site-based circumstances is that some species are highly valued as resources (eg. deer) or are valued as pet species that would be unreasonable to ban from sale (eg. cats). Strategies for animal control in some sites may also include species that are largely benign or even desirable for land management in other habitats and landscapes of the Region. Species-led control of such animals does not make strategic sense.

13.1.1 Defining Sites and Scale

The scale of pest control is not necessarily consistent across all sites under the Site-led Biodiversity Programme. For the purposes of this Strategy sites can include:

- An identified significant natural site (forest fragment, wetland, scrubland, shrubland, tussockland, coastal habitat, freshwater habitat or estuary).
- A collection of discrete sites (as above) clustered close together.
- Buffer zones (of various scales) around a discrete site, collection of sites, or another agency's site-led programme. Buffer zones will generally be a component of the site in question. The extent and role of a buffer area will be site-specific and focus on risk management.
- A distinctive landscape (eg. volcanic plateau) and the habitats it supports.
- An area of similar habitat type (eg. coastal habitat).
- A geographically-defined area (eg. urban area), identified in response to community desires, where it is recognised that the outcomes are predominantly biodiversity-driven.

Horizons is not able to fund site-led programmes that do everything, everywhere. Sites and the species to be controlled are determined based on ecological and management priorities.

13.2 Objectives of the Site-led Biodiversity Programme

This Strategy will follow the objectives outlined in individual site-specific work plans. The general principle is that the animal species will be controlled so that they are not a threat to the viability or values of the site.

13.3 Means of Delivery

Horizons may provide service delivery in selected sites valued for biological diversity where it is deemed exotic animals are a threat to the ongoing viability of the site and the values within. As part of delivering this service Horizons will develop, in agreement with the occupier, site-specific management plans which outline animal control and other restoration requirements as appropriate.

Buffer areas may be established surrounding high value natural areas or soil conservation plantings. The size of the buffer, and species to be controlled within the buffer, will be determined on a site-specific basis (risk management) and be detailed in the site management plan. A buffer may need to be multi-layered with different species managed to different population levels at varying distances from the site. Animals targeted for control within this buffer zone will be at the discretion of Horizons and agreed with by the landowner.

Buffer areas may be established between housing subdivisions and natural areas (eg. coastal subdivisions, housing in close (2 km) proximity to forest fragments). These areas would be a focus for education campaigns to promote responsible pet owner practices.

Horizons recognises the Department of Conservation and the Fish and Game Council have particular interest and expertise with information gathering and managing many of these animals. Horizons will liaise with DoC and Fish and Game on appropriate management responses where Horizons discovers new populations of these species in places other than Horizons' priority sites.

13.4 Performance Measures and Monitoring

- Performance measures and monitoring are outlined in individual site-specific work plans. The biodiversity-related target densities for pests that are described in Part Two of the Strategy will be used as a gauge of the success of the Site-led Biodiversity Programme.
- The Site-led Biodiversity Programme will be successful when high value natural areas are being managed in an integrated manner in line with Regional policy, and incorporating the Regional Pest Plant Management Strategy and other management requirements.
- Relationships between other agencies and landowners are maintained and result in achievement of the above success criteria.

13.5 Animal Species Included in the Site-led Programme

Under this Strategy, the following species are considered animals of concern in the context of Site-led Biodiversity Programme:

- All of the species in Part Two of this Strategy (refer to Table 8.1);
- Any Unwanted Organism; or
- Any other species that is threatening site-led values where not managing that species would compromise the objectives of this Strategy or the objectives for the site.

Table 13-1 describes the animals in addition to rooks, possums, and rabbits, that may be managed under the site-led biodiversity programme.

Many of the animals are not considered for larger species-led control programmes because they are widespread (eg. cats and rats). The cost of suppression or containment control of widespread species on wide scales would detract from implementing more effective protection of the biodiversity values these animals threaten. Some of the animals are not widespread but are not considered for larger species-led eradication programmes because the Department of Conservation has the responsibility for this (eg. pest fish).

The list also contains animals that are not managed by this Strategy using the Biosecurity Act (eg. feral deer species). The widespread management of these animals, including their release into the wild, is controlled by other legislation.

Table 13-1: Additional animals that may be managed under site-led biodiversity programme

Animal (Binomial name)	Description
Feral Stoat (<i>Mustela erminea</i>)	A long (up to 30 cm), very slender (80-100 g) mammal, with a light brown coat and off-white belly. Common throughout the Region.
Feral Ferret and hybrids (<i>Mustela putorius</i>)	A long (up to 40 cm), slender (1-2 kg) mammal. Colouration ranges from white to brown to black, with bandit-like markings on the face. Larger than stoat and weasel and has a more bushy tail. Common throughout the Region, though generally avoiding dense forest.
Feral Weasel (<i>Mustela nivalis vulgaris</i>)	A long (up to 20 cm), very slender mammal (30-55 g), with a light brown coat, white belly and black tipped tail. Differs from a stoat in being generally smaller and having a longer tail relative to body. Throughout the Region but not common.
Koi/European Carp (<i>Cyprinus carpio</i>)	A fish with a pair of barbels at corners of mouth, large scales and a large prominent dorsal fin. Usually coloured orange, but sometimes white, black, gold or a combination of these colours. Often exceed 5 kg and occasionally 10 kg. Known from at least 12 sites in the Region.
<i>Gambusia affinis</i>	A thick bodied fish with a small mouth, large round dorsal fin and olive green silvery colour. Maximum length is usually 6 cm. Females are larger than males. Known from at least six sites in the Region.
Brown Bull-headed Catfish (<i>Ameiurus nebulosus</i>)	A fish with eight long whisker-like barbels around the mouth. The skin is slimy to touch and colour is dark brown to green on the back with a pale underside. Grow to 50 cm and 3 kg in weight. Suspected at six sites in the Region.
Rudd (<i>Scardinius erythroptalmus</i>)	Stout-bodied fish of the carp family. They have yellow-orange eyes, deep red fins, and a sharp-edged belly. Grow to 35-40 cm and weigh 1-2 kg. Known from at least five sites in the Region.
Goat (<i>Capra hircus</i>)	A herbivorous mammal, of 25-55 kg. Goats have a hairy coat ranging in colour from white, light and tan brown and black, or any combination, and short tail. Goats will eat nearly any kind of vegetation within their reach. In heavily infested areas, goats do significant damage to the forest understorey, accelerate soil erosion, and change forest structure and species composition. Goats are a feral food resource for hunters and feral goats may be mustered and legally treated as domestic animals when managed in accordance with the Wild Animal Control Act 1977.

Animal (Binomial name)	Description
Red Deer (<i>Cervus elaphus</i>)	A herbivorous mammal, red deer can be distinguished from other deer by their reddish-brown hairy coat. On average red deer stand at 1.2 m tall at the shoulder. In dense populations red deer damage forest understoreys, opening them up to soil erosion and changing understorey species composition and forest structure. Red deer are a significant feral food resource for hunters, and a popular sport and trophy hunting resource.
Sika Deer (<i>Cervus nippon</i>)	Sika have a white spotted chestnut brown coat with cream belly in summer. In winter the coat is a uniform dull grey. They have a white/cream rump patch which they flash when alarmed. On average sika stand 0.9 m tall at the shoulder. Like red deer, sika can change forest understorey structure and composition through browsing. Their populations have yet to reach a point where they are considered a threat to soil conservation in indigenous forests, but they may impact on the success of soil conservation plantings. Sika are also a feral food resource for hunters, and popular sport and trophy hunting resource.
Sambar Deer (<i>Cervus unicolor</i>)	Sambar stand slightly shorter than the red deer on average, but are more heavily built and have a darker coat with shorter hair. The antler beam is thicker and tines are more toward the top of the antler. Sambar are not widespread but cause significant damage to forestry plantations within their feral range. Like other deer, they can also impact on the success of soil conservation and river engineering plantings, and indigenous vegetation communities. Sambar are a minor feral food resource for hunters, but are a popular sport and trophy hunting resource.
Fallow Deer (<i>Dama dama</i>)	Similar in colouration and stature to sika, the main point of difference is that the spots are usually more prominent and the antler in older males is palmate. Like sika, fallow populations have yet to reach a point where they are considered a threat to soil conservation in indigenous forests, but they may impact on the success of soil conservation plantings. Fallow are also a feral food resource for hunters, and popular sport and trophy hunting resource.
Feral Pig (<i>Sus scrofa</i>)	The feral pig is the same species as the domestic pig, though is often leaner and more hairy. Pigs are omnivorous with a taste for invertebrates, small vertebrates, eggs, vegetation, roots, fruit and fungi, and root through the soil for buried food items. Through their foraging habits, pigs change the ecosystem dynamics of the forest floor. Feral pigs are a significant feral food resource for hunters, and a sport and trophy hunting resource.
Feral Cat (<i>Felis catus</i>)	A predatory mammal typically ranging in weight from two to five kg. Cats will take small mammal pests like rats and mice, but also native birds, lizards, and insects. Cats are throughout the Region and are a popular pet.

Animal (Binomial name)	Description
Hare (<i>Lepus europaeus occidentalis</i>)	A herbivorous mammal superficially similar to a rabbit, though somewhat larger and does not burrow. Hare affect soil conservation and habitat restoration plantings through browse and bark removal. Hare are widespread, but aside from localised problems listed above, do not have a significant impact on Regional values.
Rats (<i>Rattus species</i>)	The rats are a group of omnivorous mammals that eat all manner of things, including invertebrates, small vertebrates, eggs, vegetation, roots, fruit, and seeds. There are three species under the rat umbrella – the Norway rat, ship rat, and kiore, which differ in size, colour and origin. Widespread rat control is impractical, the kiore is taonga, and domesticated Norway rats are a popular pet.
European Hedgehog (<i>Erinaceus europaeus</i>)	A small mammal with a coat of prickly spines instead of hair. Hedgehogs are predominantly invertebrate carnivores but they will also eat the eggs of ground-nesting birds. Hedgehogs are also well known as potential vectors of disease such as ringworm. Hedgehogs are widespread and are considered helpful in controlling garden invertebrate pests in urban settings.
Magpie (<i>Gymnorhina tibicen</i> and <i>G. leuconota</i>)	A black and white bird of the crow family with distinctive warbling call. Magpies are very territorial. Their territorial behaviour suppresses the conspicuousness of native birds, and they compete with native birds for food resources. Widespread control of magpies for biodiversity gains is impractical.
Sulphur Crested Cockatoo (<i>Cacatua galerita</i>)	A large white parrot with yellow crest. Cockatoo may displace native birds and bats or be a vector for parrot diseases to native parrots. Otherwise cockatoo are not a threat to Regional values and they are a popular cage bird.
Feral Eastern Rosella (<i>Platycercus eximius</i>)	This parrot grows to about 30 cm, has a red head and neck with white cheeks, a yellow to green abdomen, and blue wing and tail feathers. Eastern rosella may compete with kakariki (a native parrot of similar size) on forest margins and may be a vector of parrot diseases. Pet eastern rosella are a popular cage bird.

Table 13-1 is not exhaustive, and additional animals of concern may be encountered, or new species become known during the life of this Strategy. Horizons may conduct a control programme that includes other animals as required to achieve integrated site-led management and in keeping with the individual site management plan. An up-to-date list of species can be obtained from Horizons.

Where sports fish and game species are affecting site-led biodiversity values but are otherwise under the jurisdiction of the Fish and Game Council (eg. perch, and Canada geese), Horizons will work with Fish and Game to devise appropriate management responses.

14. CROSS REFERENCE TO THE SLUI AND WCS

The Sustainable Land Use Initiative (SLUI) and Whanganui Catchment Strategy (WCS) are non-regulatory projects to reduce accelerated hill country erosion. Staff from Horizons and other agencies work with landowners to develop whole farm business plans which include the identification of areas that benefit from retaining or planting vegetation for soil conservation purposes. Pest management programmes to protect the investment in soil conservation areas are devised as needed.

The SLUI and Whanganui Catchment Strategy have their own supporting strategic documents that define the objectives and means of achievement. Their delivery comes from budgets that are separate from the delivery of the RPAMS so are not reiterated in this Strategy. These initiatives are mentioned here to give a complete picture of the environmental pest animal control under Horizons' policy documents.

The soil conservation threats posed by rooks, possums, rabbits and goats are identified respectively in Sections 9, 10, 11 and 13 of this Strategy. For rooks, the eradication objective in this Strategy eliminates the need for prescribed rook control under SLUI or the WCS. For possums, rabbits, and goats the protection of soil conservation plantings may require more localised and stringent programmes than otherwise described in this Strategy. In such instances, animal control strategies can be devised as part of the whole farm business plans. To ensure that isolated soil conservation programmes do not simply result in dispersing the pests on to other properties, Horizons may assist landowners with the coordination of rabbit, possum and goat control across adjoining farms.

Other animals that threaten soil conservation values include feral goats, feral deer, feral pigs, and hares. Their populations will be managed locally and to a level that is appropriate to protect soil conservation areas.

15. AMENITY PEST SERVICE DELIVERY

Amenity pests are those that impact on lifestyles or wellbeing. The beneficiary is unable to dispatch of or otherwise control the pest and is harmed by its presence.

To avoid over-subscription of the Amenity Pest Service the following criteria are used to determine if Horizons should control the pest:

- The beneficiary is elderly or infirm or otherwise does not have the physical capacity to implement control.
- The beneficiary is in a residential area and this limits the tools available to them to control the pest.
- There is no commercial provider of the service to control the pest in question.
- Horizons is not limited by other Acts, laws, bylaws, or policies to deliver a pest control service in the situation.

As an alternative to Horizons controlling the pest, Horizons will provide advice on ways to control the pest that are within the means of the beneficiary, or may lend traps or other equipment, or may provide bait.

Objective

To reduce the harm caused by amenity pests in domestic situations on people who otherwise cannot instigate their own control.

Means of Delivery

In addition to amenity services listed for rooks, possums, and rabbits, Horizons may provide service delivery on a case by case basis where the situation meets all of the criteria above.

Performance Measures and Monitoring

- Customer inquiries are responded to within two working days.
- In the case of the loan of cage traps, users are advised of their animal welfare obligations and advised to avoid trapping on weekends or other times when Horizons staff may not be available to dispose of the animal (if this service is required).
- In the case of the supply of bait, users are advised of any laws or bylaws restricting the use of toxins and advised on how to avoid non-target deaths.
- The number of customer inquiries resulting in Horizons intervention, split between advice or control service, is reported monthly.
- The expenditure on Amenity Pest service delivery is reported monthly.

16. SMALL-SCALE MANAGEMENT

The essence of small scale management is the ability to respond rapidly to contain or eradicate a new pest threat before the animal becomes more widely established. The speed, scale and context in which Horizons can strategically respond to small scale threats is constrained by how well a threat is known, cost, access to sites, and when Horizons' powers under the Biosecurity Act can be used and cannot be used.

The feral range of animals listed in Table 4-7 of this Strategy may not be established across the entire Region. New incursions into areas presently free of those species may be identified as feral expansion into this Region from another (under the Surveillance Programme) or as a result of illegal liberations. Future cost savings may accrue to the Region if these animals are eradicated at an early stage of their establishment before they reach densities where they threaten regional values.

Horizons may undertake small scale eradication of local populations of any organism listed in Table 4-7 that has been illegally liberated or is otherwise a new incursion to an area known to be free, or largely free of them. Horizons' powers under the Act may be used for any of the animals listed in Table 8-1. Horizons' powers cannot be used for the other organisms listed in this Strategy that do not appear in Table 8-1. In such instances Horizons can work closely with DoC to achieve a successful outcome. Cost is a constraint and Horizons will undertake a cost-benefit analysis before undertaking control to be satisfied that Horizon's intervention is justified.

One extension to Horizons' powers for species not declared as pests in this Strategy is the use of Section 100 of the Act. Section 100 enables Horizons to undertake management of an Unwanted Organism in the absence of a relevant management strategy. Provided the criteria of Section 100 are met, a newly-discovered high-risk species could be controlled without delay, thus avoiding the risk of further spread and establishment of the species. All Unwanted Organisms listed in this Strategy have a central government agency (either DoC, or MAF) attached to their management and Horizons will work closely with these agencies to achieve a successful outcome.

The use of Section 100 of the Act is limited to Unwanted Organisms as declared by a Chief Technical Officer. Horizons may request a Chief Technical Officer to declare a species as 'unwanted' and control the species as per the stipulations of Section 100 of the Act.

To rapidly respond to small populations of animals of concern that are not Unwanted Organisms and not identified as pest animals in this Strategy, Horizons may also use Section 88A of the Act. Section 88a enables Horizons to make minor changes to the Strategy (such as adding a new pest species or forming a new rule), without undertaking a formal review of the Strategy. To do this, Horizons must be satisfied that the amendment will not have any significant effect on the rights and obligations (including the obligation to contribute to costs) of any person. Section 88a can be a very effective means of empowering Horizons to undertake small scale control where a population consists of a few species in a localised area either as a result of a new incursion or through illegal liberation.

17. BIOLOGICAL CONTROL

Biological control agents (biocontrol) come in a range of options that include predators, parasites, or diseases that directly kill the pest or reduce fecundity. The effectiveness of biological control for pest animals has historically been fraught with unanticipated negative effects and lack of success (eg. mustelid control of rabbits). However, advances in biocontrol agent testing has minimised non-target effects and increased confidence in the use of biocontrol (eg. use of RHD to control rabbits).

Biocontrol is especially useful for widespread species where other means of suppressing their populations over a wide area are costly or ineffective. Due to the ecology of a biocontrol agent and its host, the biocontrol only reduces infestations and does not eradicate the pest. The ideal ecological result is an equilibrium between the populations of the pest and the biocontrol agent where the pest density is maintained to acceptable levels. This will substantially reduce the adverse effects of the pest. There may still be an ongoing cost of maintaining control in the form of monitoring, but the cost of control is much less than using other control methods for the same result.

The only animal presently under an active biocontrol programme is the rabbit, where there is monitoring of immunity to RHD as an indication of the presence and effectiveness of the disease.

Horizons remains committed to exploring opportunities for appropriate biocontrol agents, particularly for the control of possums, and will actively participate in the search for new and improved biocontrol agents.

- Horizons may give financial or logistical assistance to research into additional biological control agents.
- Should a suitable new biological agent be developed during the duration of the Strategy, Horizons may undertake to release, propagate and redistribute those agents.
- Horizons will continue to encourage collaboration between agencies on biocontrol needs and research directions.
- Horizons will provide training for staff around biocontrol concepts, agents and their identification, distribution and population monitoring.
- Horizons will extend training pertaining to biocontrol to the Regional community as required, and provide readily available information on how to obtain, release and maintain a population of biocontrol agents.
- Horizons will continue the existing RHD management programme for rabbits (refer to Section 11).

18. COMMUNITY CARE GROUPS AND SELF-HELP INITIATIVES

Community care groups and self-help initiatives may involve a community, an organisation, a family, or even a highly motivated individual occupier seeking advice or assistance from Horizons. Local people who have the passion and enthusiasm required for successful pest management are encouraged by Horizons, especially if the aspirations of the group or individual match Horizons' objectives.

The focus may be on the care of a single site, such as a wetland or forest fragment, where the control of a range of animals is required to preserve the values at the site. Preference will be given to groups or individuals that have aspirations in line with the One Plan methods for protection of the Region's natural heritage.

The focus may be on the coordinated control of a single species that affect regional values in a localised area. Examples include the control of peacocks to protect agricultural values, or the control of goats that are affecting soil conservation values. Preference will be given to self-help groups that have aspirations in line with One Plan methods for land management. In areas where there is strong support for Horizons-led control of the pest (service delivery), preference will be given to individuals and groups that have a high willingness to pay.

18.1 Means of Implementation

Horizons will, at its discretion, assist and encourage community care group and self-help initiatives through a range of mechanisms. The level of involvement from Horizons will be project-dependent and can include:

- preparation of site (or species) management plans;
- assistance with funding applications, or provision of 'seeding' funds;
- assistance with or provision of project implementation expertise, for example;
 - > contacting other landowners in the project area;
 - > organising and coordination of control events;
- provision of written resources that provide direction and training, on, for example;
 - > pest management;
 - > site manipulation;
 - > habitat restoration;

- provision of materials, for example
 - > traps;
 - > bait stations;
 - > bait;
- composing Codes of Practice for specific communities and specific issues, for example:
 - > for groups of occupiers of properties adjacent to rivers or bush corridors to attempt to manage pest animals along corridors;
 - > for new subdivisions in close proximity to natural areas specifying cat-free areas; and
 - > for organic farmers to ensure effective pest animal management is achieved in the absence of toxin use;
- arranging collaborations with other groups or organisations, for example
 - > similar minded self-help groups;
 - > hunter groups;
 - > pest management contractors;
 - > DoC, Fish and Game, and TLAS;
- user-pays delivery of a service, when, for example
 - > specialised techniques have to be used;
 - > controlled toxicants have to be used;
 - > the efficiency of Horizons undertaking coordinated control is cheaper than the cost to individuals to do the control themselves.

Table 18-1 provides examples of species that might be managed under community care groups or self-help initiatives. The list is not intended to be exhaustive. While the type of animal species that may be controlled under community care group or self-help group initiatives will generally be those listed in Table 4-5 of this Strategy, exceptions may be made where it is clear the group is highly motivated, the organisms are doing significant damage, and the cost of Horizons involvement will not detract from achieving the other objectives in this Strategy. Due to other legislative provisions, Horizons may be unable to deliver community expectations for the management of currently protected species such as spur-wing plover or game such as Canada geese, mallard ducks or paradise ducks, or sports fish such as perch. For such species, DoC or the Fish and Game Council should be contacted in the first instance, before seeking help from Horizons.

Table 18-1: Examples of animal species and management responses under community care groups or self-help initiatives.

Pest / Programme type	Examples	Horizons' response
Species-led local agricultural pest problem	Rabbits, eastern rosella, peafowl, pigs, goats, deer	User-pays delivery of a control service, coordination of control, information and advice.
Site-led biodiversity	Possums, stoats, feral cats, deer	Seed funding, supply of traps, information and advice.
Soil conservation pest	Rabbits, possums, goats	Coordination of control, information and advice.

18.2 Performance Measures and Monitoring

Horizons' input will be measured and accounted for as a component of the annual report for this Strategy and against arrangements under individual project agreements.

19. CROSS-BOUNDARY ISSUES

As pest animal impacts are not constrained by administrative boundaries, cross-boundary issues will be inevitable. Minimising these issues leads to more effective and efficient pest animal management.

19.1 Means of Implementation

In order to minimise adverse consequences associated with cross-boundary issues, Horizons will:

- pursuant to Section 76(4) of the Act, not be inconsistent with any national or Regional pest management strategy concerning the same pest, any regulation, or any Regional policy statement, or Regional plan prepared under the Resource Management Act;
- participate in collective fora with other regional councils to promote effective pest management;
- communicate and consult with neighbouring regional councils in regard to pest animal management in general and cross-boundary issues in particular;
- Memoranda of Understanding between Horizons and the neighbouring councils will be encouraged where such arrangements will enhance pest animal management for a particular outcome;
- make submissions in respect of strategies prepared by neighbouring (and other) regional councils, or documents prepared by other agencies on pest animal management;
- liaise with Biosecurity New Zealand over pest animal management issues best dealt with or co-ordinated at the national level;
- contribute and/or support new initiatives developed by Biosecurity New Zealand; and
- liaise with the Ministry for the Environment and the Department of Conservation over national biodiversity issues as they relate to site-led pest animal management.

PART FOUR

ADMINISTRATIVE AND MANAGEMENT PROCEDURES

20. STATUTORY POWERS

To achieve the purpose of the Strategy and to give effect to its objectives and means of achievement, Horizons will use the statutory powers listed in Table 20-1.

Authorised persons will exercise many of these powers on behalf of the Council. The Chief Executive, as the Principal Officer of Horizons, will appoint authorised persons and may delegate powers to any authorised person, subject to Sections 103 and 105 of the Act.

Table 20-1: Administrative powers under the Biosecurity Act.

Administrative Powers	Reference in the Biosecurity Act
Powers of Operations Committee of Horizons	
Power to act on default	Section 128
Liens	Section 129
Options for cost recovery	Section 135
Failure to pay	Section 136
Options to undertake a prosecution action	Section 154
Powers of the Chief Executive of Horizons	
The appointment of authorised and accredited persons	Section 103(3) and (7)
Delegation to authorised persons	Section 105
Application of articles or substances from aircraft	Section 114A
Declaration of Controlled Area	Section 131
Powers of Authorised Person	
Duty to provide information	Section 43
Power to require assistance	Section 106
Power of inspection	Sections 109 and 112
Power to record information	Section 113
General powers	Section 114
Use of dogs and devices	Section 115
Power to seize evidence	Section 118
Power to seize abandoned goods	Section 119
Power to intercept baggage etc	Section 120
Power to examine organisms	Section 121
Power to apply article or substance to place	Section 121A
Other powers in respect of risk goods	Section 122
Declaration of restricted place	Section 130

21. REGULATORY MANAGEMENT

Horizons will endeavour to establish a positive relationship with stakeholders in the first instance with emphasis placed on achieving willing compliance with the rules in this Strategy. In instances where passive encouragement is inadequate to achieve the Strategy objectives, compliance will be enforced.

Table 21-1 describes the enforcement process Horizons will normally undertake to ensure rules are met without being heavy handed.

Table 21-1: Process followed to enforce compliance with Strategy rules relating to occupier responsibilities for pest animal control.

<p>Step One Communication</p>	<p>Visit property. Occupier informed of Strategy responsibilities. Advice given and timeframes negotiated and agreed upon. A written Request to Clear notice issued.</p>
<p>Step Two Notice of Direction (Section 122)</p>	<p>When Step One fails, a Notice of Direction will be issued. The occupier will be informed of the next steps in the process, timeframes within which to complete control work, and a re inspection scheduled. Failure to comply with a reasonable direction is an offence under s154 (d).</p>
<p>Step Three Notice of Intention To Act On Default (Section 128)</p>	<p>When the Notice of Direction has not been complied with by the time specified in the notice, Horizons will cause the required work to be carried out or action taken as necessary. A notice will be issued to occupiers advising of the details of the work or actions taken and the timeframes within which they will be completed.</p>
<p>Step Four Cost Recovery (Section 128) Liens (Section 129)</p>	<p>Horizons will recover the costs and expenses incurred when acting on default as debt due from the occupier to whom the Notice of Intention to Act on Default was given. A statutory land charge will be placed against the property concerned for non payment of cost (actual costs of issuing notice and re-inspecting and the costs of control work).</p>

Where failure to comply with a rule is due to an action for which there is no remedy, or in circumstances of continued non-compliance, an Authorised Person will report the non-compliance to the Chief Executive who in turn may advise the Operations Committee of Horizons to instigate the administrative and enforcement provisions of the Act to prosecute the offender.

21.1 Failure to Comply with a Rule

Any breach of a Strategy rule, except Rules 8.1 and 8.2, constitutes an offence under section 154 (r) of the Act. The maximum penalty for an offence under section 154 (r) of the Act is in the case of an individual person a fine not exceeding \$5,000, and in the case of a corporation, a fine not exceeding \$15,000 (section 157).

The sale, distribution or propagation of species listed in Part Two of this Strategy is an offence under section 154 (m), as described in Rules 8.1 and 8.2, and carries a maximum penalty of, in the case of an individual person, a prison term not exceeding five years, a fine not exceeding \$10,000, or both, and in the case of a corporation, a fine not exceeding \$200,000 (section 157).

21.2 Failure to Comply with a Notice of Direction

Where a Notice of Direction has been given to an occupier under Section 122 of the Act, and the occupier has not complied with the requirements of the direction within the time specified, then under Section 128 of the Act, Horizons may enter onto the land specified in the Direction Notice and carry out, or cause to be carried out, such works or measures as are reasonably necessary to meet the requirements of the Direction.

21.3 Offences

Horizons will, in appropriate cases, prosecute persons who do not act on directions or requirements issued by authorised persons to give effect to this Strategy.

21.4 Recovery of Costs Incurred

Under Section 128 of the Act, Horizons may recover the costs and expenses reasonably incurred by it in carrying out the works and measures as a debt due from the occupier to whom the Notice of Direction was given.

21.5 Provision for Exemption

Horizons may, upon the written request of an occupier, exempt any person from any requirement in any Strategy rule included in Part Two of this Strategy. Before granting an exemption under Section 80D of the Act the Chief Executive shall be satisfied that:

- the requirements have been substantially complied with and that further compliance is unnecessary; or
- the action taken or provision made in respect of the matter to which the requirement relates is as effective or more effective than actual compliance with the requirement; or
- the prescribed requirements are clearly unreasonable or inappropriate in the particular case; or
- events have occurred that make the prescribed requirements unreasonable or inappropriate in the particular case; and
- that the granting of exemption will not significantly prejudice the attainment of the objectives of this Strategy.

Process: On receipt of any request, Horizons will advise that person within ten (10) working days of its decision whether or not to exempt him or her from any requirements in any Strategy rule included in Part Two of this Strategy. The Chief Executive may delegate the power to approve exemptions. A register of exemptions will be maintained for public inspection.

21.6 Specific Provision for Exemption in Accordance with Section 52 (d) of the Act

In the course of and in accordance with implementing this Strategy, Horizons may at times transport pests for the purpose of carrying out this Strategy, for example, for training, display, or identification purposes. Appropriate measures will be undertaken to mitigate the risk of these pests escaping and establishing new populations.

22. FUNDING THE RPAMS

The development and adoption of a funding policy provides greater transparency, equity and accountability in Horizons' charges for the services it provides. Section 77 of the Biosecurity Act requires funding information be presented in a Proposed Regional Pest Management Strategy, including the rationale for the proposed allocation of costs based on who the beneficiaries and the exacerbators are.

Under Part 6 of the Local Government Act (2002), Horizons adopted a Revenue and Financing Policy for all of its functions on 14 March 2006. The funding policy for the current Strategy can be found on pages 138-139 (Environmental Pest Animal Control) and 145-147 (Production Pest Animal Control) of Volume 2 of the 2006-2016 Long-term Council Community Plan (LTCCP). The LTCCP is reviewed every three years. Between reviews the Annual Plan for any given year specifies the proposed funding regime for that year.

The policy and allocation of costs presented below are as they currently stand in the 2009-2010 Annual Plan and may be subject to change as a result of the public consultation process for this Strategy but also as a result of the public consultation process for the LTCCP.

22.1 Funding Allocation – Costs

The proposed allocation to outputs for pest animal management for this Strategy is presented below:

Area of Output	Total \$
General Strategy Implementation	358,889
Region-wide Possum Control Programme	2,203,765
Rook Control	182,000
Total \$	2,744,654

22.2 General Strategy Implementation

This activity includes the general administration of the Strategy, monitoring and auditing, Medical Officer of Health approvals, all customer services (including the Amenity Programme), enforcement and monitoring of rabbit control, the Surveillance and Monitoring Programme and pest animal control under site-led biodiversity programmes.

Beneficiaries

The existence of the Strategy and associated annual reporting is a Regional benefit. The value of rabbit enforcement and avoidance of plagues benefits farmers and the Regional economy. By keeping unwanted organisms out of the Region, the Surveillance and Monitoring programme benefits the Regional community. The Amenity Programme benefits urban and peri-urban ratepayers. The preservation of habitats under Site-led Biodiversity Programmes benefits the Region, the nation and is also in the interest of the global community. While communities surrounding protected areas receive a higher level of benefit due to accessibility, the importance of protecting these areas for the good of all should not be overlooked.

Exacerbators

Past generations have been the main exacerbators, whose actions have led to the need to have pest animal control. It is impossible to pass this cost back to these past generations. Anyone who does not control rabbits in line with the policies of this Strategy is considered an exacerbator.

Cost and Benefits of Distinct Funding

Although the majority of the benefits of this activity accrue equally to properties, it would be burdensome on lower value properties to rate this activity solely on a per property basis. Half of the cost of this activity will be rated as a Uniform Annual Charge and half on equalised capital value. This mix of rating balances transparency, fairness and ability to pay.

Note: The rural communities pay for their own rabbit control under this Strategy and therefore a specifically targeted rate is not required of these beneficiaries.

Policy

The method of funding this function is:

General rate (EQCV)* 50%

Uniform Annual Charge 50%

*Includes 10% currently unrecoverable national share.

22.3 Region-wide Possum Control Programme

This function involves the Region-wide suppression of possums under the PCO programme with the purpose of protecting habitats and the biological diversity in them, protecting the productive capacity of farms, and reducing the effect of possums on other Regional values.

Beneficiaries

Both the nation and the Region benefit from this function. The national component cannot currently be recovered. The reduction of possum numbers not only protects the national/Regional economy; it also contributes towards the protection of significant environmental areas. Farms and larger properties benefit as a result of protecting their productive capacity and other features of their properties.

Exacerbators

The main contributors to the need for this activity were past generations who introduced these pest animals. People who do not control possums in line with the policies in this Strategy contribute to the need for this activity (including the Crown in some places).

Cost and Benefits of Distinct Funding

The Regional general rate via equalised capital value is the most appropriate for recovering the Region's share of cost for this activity, as it is efficient, generally reflects the ability to pay and meets the need for transparency.

It is appropriate for fairness and transparency that the private benefit of this activity be funded by way of a targeted rate on properties over four hectares in size. This rate will be a per hectare rate for these properties as the benefits will increase as the property size increases. It should be noted, even though urban properties over four hectares in size may not be economically affected by possums, they can be physically affected through damage to plants and provide a reservoir for possums in town.

Policy

The method of funding this function is:

General rate (EQCV)* 60%

Targeted per hectare, rate properties > 4 ha 40%

*Includes 20% currently unrecoverable national share.

22.4 Rook Control Funding Policies

This function involves the control of rooks within affected areas of the Region with the purpose of protecting the productive capacity of farms and protecting the public.

Beneficiaries

Both the nation and the Region benefit from this function. The reduction of rook numbers protects the national/Regional economy. Although rooks currently affect the northern and eastern parts of the Region, their aerial and mobile nature means production properties within the entire Region are protected by their containment and eventual elimination.

Exacerbators

The main contributors to the need for this activity were past generations who introduced rooks. It could also be argued that people who do not control these pests on their properties contribute to the need for this activity. However, we do not want the public to attempt to control rooks, because they adapt to noticeable control methods such as shooting, and such methods often speed their dispersal.

Cost and Benefits of Distinct Funding

The Regional general rate via equalised capital value is the most appropriate for recovering the Region's share of cost for this activity, as it is efficient, generally reflects the ability to pay and meets the need for transparency.

It is appropriate for fairness and transparency that the local benefit of this activity be funded by way of a targeted rate on properties over four hectares in size within the Region. This rate will be a per hectare rate for these properties as the benefits will increase as the property size increases. It should be noted that, even though urban properties over four hectares in size may not be economically affected by rooks, they can be physically affected through asset damage and can provide a reservoir for rooks.

Policy

The method of funding this function is:

General rate (EQCV)* 10%

Targeted per hectare, rate properties > 4 ha 90%

*Includes 10% currently unrecoverable national share.

23. REVIEW OF THE RPAMS

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

- If Horizons has reason to believe that:
 - > the Strategy is failing to achieve its purposes; or
 - > new issues have arisen with respect to other harmful animals, or Regional monitoring shows a significant change in an existing issue or shows that a review would otherwise be appropriate;
- The Strategy is due to expire in less than 12 months.

A full review will be conducted no later than five years after the date upon which this Strategy becomes operative (as required by the Act and within the meaning of Section 88 of the Act). The procedures to be used to review the Strategy will be determined at that time, and will include (as part of a review programme):

- an assessment of how well Strategy objectives were achieved;
- an assessment of the impact designated pest animals have had on the Region, and whether any other harmful animals should be considered for inclusion in the Strategy;
- formal and informal liaison with public authorities and key interest groups regarding the effectiveness of the Strategy; and
- assessing whether to notify a proposal for another Regional Pest Plant Management Strategy under Section 78 of the Act.

Horizons may make minor amendments to the Strategy at any time by resolution without a review of the Strategy in accordance with Section 88 of the Act. Minor amendments can only be made if Horizons is satisfied that the amendment will not have any significant effect on the rights and obligations (including costs) of any person (Section 88A(4)).

24. DEFINITION OF TERMS

Terms marked with an asterisk (*) are defined in the Biosecurity Act 1993.

Act	The Biosecurity Act 1993.
Authorised person*	A person appointed an authorised person under section 103 of the Act.
Beneficiary	The receiver of benefits accruing from the implementation of a pest plant management measure of the Strategy.
Biological Control (Biocontrol)	The use of organisms that attack pests without harming other species.
Biological Diversity (Biodiversity)	The variability among living organisms from all sources including inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species and of ecosystems.
Binomial name	The two-part scientific name given to an animal (ie. <i>Genus species</i>).
Chief Technical Officer*	A person appointed a chief technical officer under section 101 of the Act.
Costs and Benefits*	Costs and benefits of any kind whether monetary or non-monetary.
Crown land	Land vested in the Crown and administered by a Minister; and includes all land forming part of any national park, any reserve within the meaning of the Reserves Act 1977, and all unoccupied lands of the Crown.
District Council	A district council constituted under Part 1A of the Local Government Act 2002.
Ecosystem	A defined community of all plants, animals and micro-organisms, the physical and climatic environment and the interactions and processes between them.
Endemic	A species that is indigenous only to New Zealand.
Enforce	To compel observance with the law.
Exacerbator	A person who, by their actions or inaction, contributes to the creation, continuance, or exacerbation of a particular pest management problem.
Exotic	A species, subspecies or lower taxon occurring outside its natural range (past or present) and dispersal potential.
Fecundity	In relation to an individual, its productivity or fertility as measured by the number of offspring produced annually or during its lifetime.
Habitat	The place or type of place where an organism or population normally lives. A description for areas that are similar to each other but different from others.
Indigenous	A species, subspecies or lower taxon, occurring within its natural range (past or present) and dispersal potential.

Introduced	A species brought from its natural range to New Zealand by a human agency.
Iwi	A political grouping comprised of several hapū, each recognising descent from a common ancestor(s). The hapū not only recognise genealogical ties but geographical, political and social ties. Today iwi are represented by many organisations, including trust boards, runanga, iwi authorities etc, but only in specific areas where the mandate to do so has been given by the constituent hapū.
Mauri	Principle of life, life force.
Mustelid	Any member of the genus <i>Mustela</i> – specifically stoats, ferrets/polecats, and weasels.
Natural Area	An area of particular indigenous habitat type that naturally occurs at the given site.
Occupier*	a) in relation to any place physically occupied by any person, means that person; and b) in relation to any other place, means the owner of the place; and c) in relation to any place, includes any agent, employee, or other person, acting or apparently acting in the general management or control of the place.
Organism	A genetic structure capable of replicating itself, and includes animals, plants and micro-organisms, but does not include human beings (a more detailed definition is provided in the Biosecurity Act).
Palmate	In relation to the antlers of deer - having part of the antler spreading out from a central point like fingers from a hand.
Peri-urban	Properties on the urban fringe, such as life-style blocks, that are managed as rural properties but are constrained by urban rules or norms with regard to shooting, poisoning, or trapping animals.
Person*	Includes the Crown, a corporation sole, and a body of persons (whether corporate or unincorporated).
Pest*	An organism specified as a pest in a pest management strategy.
Pest Management Strategy*	A strategy, made under Part V of the Act, for the management of a particular pest or pests.
Plant	Any plant, tree, shrub, herb, flower, nursery stock, culture, vegetable, or other vegetation; and also includes any fruit, seed, spore and portion or product of any plant; and also includes all aquatic plants.
Prehensile	In relation to possums, the ability to grasp things by wrapping the tail around them.

Principal Officer*	a) in relation to a regional council, its chief executive; and b) in relation to a region, the chief executive of the region's regional council and includes an acting chief executive.
Property Boundary	Legal boundary that divides one property from another (usually associated with different owners).
Risk Goods*	Means any organism, organic material, or other thing, or substance, that (by reason of its nature, origin, or other relevant factors) it is reasonable to suspect constitutes, harbours, or contains an organism that may - a) cause unwanted harm to natural and physical resources or human health in New Zealand; or b) interfere with the diagnosis, management, or treatment, in New Zealand, of pests or unwanted organisms
Region	The term Region (with a capital 'R') refers to the Manawatu-Wanganui Region over which Horizons has jurisdiction as determined in accordance with the Local Government Act 1974.
Regional Council	A regional council constituted under Part 1A of the Local Government Act 2002.
Service Delivery	Works conducted by Horizons with no direct cost to the property owner.
Stakeholders	The beneficiaries and exacerbators identified in this Strategy as bound by and contributing to the Strategy.
Significant	In relation to indigenous biological diversity means areas of significant indigenous vegetation and significant habitats of indigenous fauna.
Site-led	A programme that focuses on protecting certain values at certain sites.
Species-led	A proactive programme, concentrating on a specific species throughout the Region.
Strategy	With a capital 'S', refers to this document - Horizons Regional Pest Animal Management Strategy.
Surveillance	The active searching for new incursions of invasive pests.
Territorial Local Authority	A District or City Council.
Taonga	Treasures, entities (living and inanimate) with great value.
Unwanted Organism* (Unwanted Organism Register)	Organisms that have been determined unwanted by Chief Technical Officers of government departments with biosecurity interests. The Register also contains organisms declined importation by the Environmental Risk Management Authority (ERMA NZ) and organisms listed in the second schedule of the Hazardous Substances and New Organisms Act 1996.

Viability	Of sites - measure of ability to retain site values over time, either in terms of retaining soil (soil conservation) or maintaining genetic, species, or ecosystem diversity (biodiversity) or in terms of retaining natural processes, cycles or systems within an ecosystem.
Working Day*	Means any day except - a) a Saturday, a Sunday, Good Friday, Easter Monday, Anzac Day, Labour Day, the Sovereign's birthday, and Waitangi Day; and Wellington Anniversary Day; and b) a day in the period commencing on the 20th day of December in any year and ending with the 15th day of January in the following year.
Zero-Density	In relation to the staged eradication of rooks, a medium-term target to maintain an area rook-free. Rooks from neighbouring areas might be seen in the rook-free area, but they are not a permanent presence.

24.1 Abbreviations

AHB	Animal Health Board
BMI	Bite Mark Index (possum monitoring index)
CBD	Convention on Biological Diversity
DoC	Department of Conservation
Landcare	Manaaki Whenua Landcare Research
LINZ	Land Information New Zealand
LTCCP	Long Term Community Council Plan
MAF	Ministry of Agriculture and Forestry
NPCA	National Possum Control Agencies
NZBDS	New Zealand Biodiversity Strategy
NZBSS	New Zealand Biosecurity Strategy
PCA	Possum Control Area
PCO	Possum Control Operation
RHD	Rabbit Haemorrhagic Disease
RMA	Resource Management Act 1991
RPAMS	Regional Pest Animal Management Strategy
RPPMS	Regional Pest Plant Management Strategy
RTCI	Residual Trap Catch Index (possum monitoring index)
SHPG	Self Help Possum Group
SLUI	Sustainable Land Use Initiative
TLA	Territorial Local Authority

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