

Pest Management Strategy for Taranaki: Animals

Taranaki Regional Council
Private Bag 713
Stratford

May 2007

#275137

Taranaki Regional Council

**PEST MANAGEMENT STRATEGY
FOR TARANAKI: ANIMALS**

The Taranaki Regional Council under Part V of the Biosecurity Act 1993 approved this document entitled '*Pest Management Strategy for Taranaki: Animals*'.

The Taranaki Regional Council approved the '*Pest Management Strategy for Taranaki: Animals*' at its Ordinary meeting on 4 April 2007 and it became operative on 1 May 2007.

DATED at Stratford this 4 April 2007

SIGNED by the TARANAKI REGIONAL COUNCIL

by affixing of its

common seal in the presence of



D E Walter (Chairman)

B G Chamberlain (Chief Executive)

Preface

This document is the *Pest Management Strategy for Taranaki: Animals*. Its purpose is to set out the statutory framework by which the Taranaki Regional Council will undertake the management of pest animals in the Taranaki region for the next 10 years.

This Strategy is the third Strategy prepared by the Taranaki Regional Council with respect to its pest management functions. This Strategy identifies and sets out management programmes in relation to 23 harmful animals that the Taranaki Regional Council believes warrant regional intervention. However, the focus of the Strategy is on the delivery of the Council's possum management programmes, which represents approximately 90% of the Strategy's costs. The principal means of achieving possum control is through the continued implementation of the 'Self-help Possum Control Programme' on the ring plain. That programme involves the Taranaki Regional Council working in partnership with land occupiers, undertaking initial possum control to reduce possum numbers to very low levels, with the occupier then taking responsibility for maintaining possum numbers at those reduced levels. To assist occupiers to maintain possum numbers at the reduced level the Council provides on-going specialised advice and other assistance.

Changes from the previous Strategy that have been incorporated in this Strategy are relatively minor and, in the main, look at building on the success of the previous Strategy. However, in brief, the following highlights and significant changes are noted:

- the long term goal of implementing the Self-help Possum Control Programme on the Taranaki ring plain and reducing possum numbers to very low levels in that area, will be achieved over the course of this Strategy;
- the inclusion of a new pest animals – the Argentine ant, brown bull-headed catfish, koi carp, mosquitofish and rudd – and new obligations to control these animals; and
- provision for the Council to undertake pest animal management on sites with regionally significant indigenous biodiversity values.

Some prioritising has necessarily been required to identify those animals that are of most concern and which meet the 'tests' required of the Act. In its prioritising, the Taranaki Regional Council has identified only three pest animals – Argentine ants, possums and rabbits – as warranting the imposition of rules on people requiring them to undertake control. For other pest animals, voluntary control by individuals will be encouraged and facilitated through advice and education programmes, and other forms of assistance, including direct control.

On behalf of the Taranaki Regional Council, I would like to thank all those who participated in the preparation of the *Pest Management Strategy for Taranaki: Animals*. I look forward to working with you in achieving effective pest animal management in the Taranaki region.

David Walter
Chairman of the Taranaki Regional Council

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Part One

Introduction and background

1. Introduction

1.1 Title

This regional pest management strategy is known as the *'Pest Management Strategy for Taranaki: Animals'* (the 'Strategy').

1.2 Purpose

The purpose of this Strategy is to set out the strategic and statutory framework for the effective management of pest animals in the Taranaki region, so as to:

- (a) minimise the actual or potential adverse effects of pest animals on the environment; and
- (b) maximise the effectiveness of individual pest management action by way of a regionally co-ordinated approach.

Objectives specific to each pest animal are set out in sections 5, 6 and 7 of this Strategy.

1.3 Commencement and duration

This Strategy is a 10 year strategy, 2007-2017. The Strategy was approved by the Taranaki Regional Council on 4 April 2007 and became operative on 1 May 2007. The Strategy will remain in force until 2017 or until such time as a review establishes that this Strategy must be extended, amended or revoked (see Section 12.2 of the Strategy).

1.4 Area of effect

The Strategy has effect over the Taranaki region, excluding the land within that region managed by the Crown (refer Figure 1).

The Taranaki region covers the land shown on SO Plan No 13043 deposited with the Chief Surveyor of the Taranaki Land District and as prescribed by

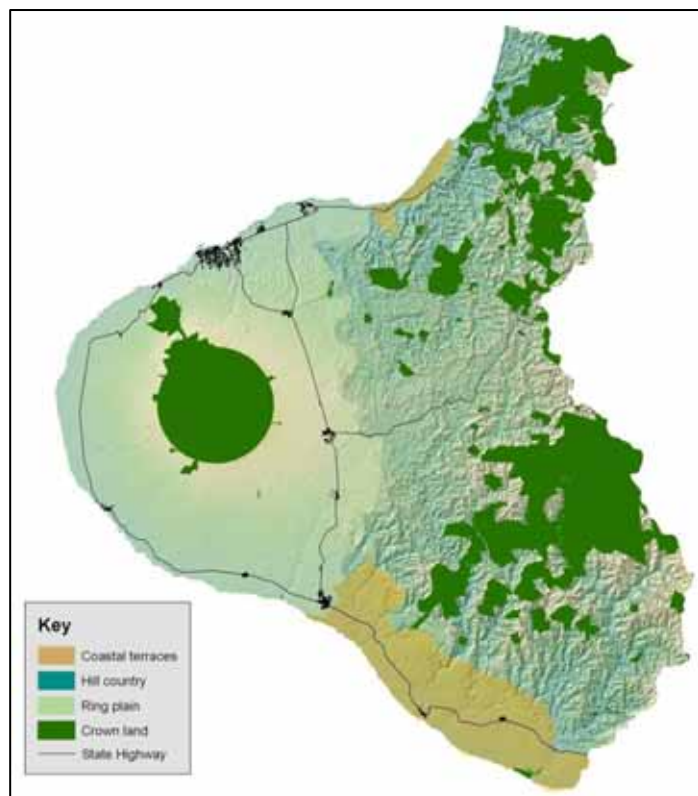


Figure 1: The Taranaki region

the Local Government (Taranaki region) Reorganisation Order 1989. The region covers a land area of 723,610 hectares on the North Island's west coast. The boundaries of the Taranaki Regional Council conform to those of water catchments and extend from the Mohakatino catchment in the north to the Waitotara catchment in the south and inland to, but not including, the Whanganui catchment.

1.5 Structure

The structure of this Strategy is based upon the requirements for a regional pest management strategy as set out in sections 80A of the Biosecurity Act 1993.

Part One presents background information to facilitate the reader's understanding of this Strategy. Part One is further divided into a number of sections.

Section 1 contains the **introduction** to this Strategy. Section 1 states the title, purpose, duration, effect and structure of the Strategy.

Section 2 contains the **definition of terms** used in this Strategy.

Section 3 outlines the **statutory and planning framework** relevant to the administration and implementation of this Strategy. Section 3 also explains the criteria used in the assessment of pest animals and outlines the positive and adverse effects that the implementation of the Strategy might have.

Section 4 identifies the **affected parties**, i.e. those with management obligations and responsibilities pursuant to this Strategy.

Part Two is also divided into a number of sections that reflects the different levels of regional intervention adopted for pest animals. For each pest animal, a management programme is set out. These programmes identify the pest animal's effects that are to be addressed, the objective to be achieved, the principal methods (including the alternatives) to achieve the objective and the strategy rules relating to that animal species.

Section 5 sets out a management programme pertaining to an **eradication pest animal**. This management programme addresses a pest animal species not yet established in the region and for which the objective is eradication – these are rooks.

Section 6 sets out the management programmes pertaining to **containment pest animals**. These management programmes address pest animal species established in the region and for which land occupier obligations apply to control these animals – these are Argentine ants, possums and rabbits.

Section 7 sets out the management programmes pertaining to **surveillance pest animals**. These management programmes address pest animal species in the region (with the exception of brown bull-headed catfish), for which land occupier obligations to control these animals are **not** considered appropriate – these are brown bull-headed catfish, koi carp, mosquitofish, rudd, hares, feral cats, feral deer, feral goats, feral pigs, magpies, and mustelids.

Part Three details the Taranaki Regional Council's administrative policies and procedures pertaining to its responsibilities as the management agency for this

Strategy. These include the powers conferred to the Taranaki Regional Council as management agency, and the policies and procedures relating to advice and education, monitoring and inspections, regulatory management, site-led pest animal control programmes, other direct control programmes, and biological control programmes. Procedures to address integrated management and cross boundary issues and information on Strategy funding and the review of the management agency and Strategy are also presented in this part of the Strategy.

2. Definition of terms

This section provides the meaning of words used in this Strategy and in the Biosecurity Act 1993. When a word is followed by an asterisk (*), the meaning of which follows is the meaning provided in section 2 [Interpretation section] of the Act. Users of this Strategy are advised that they should refer to the Act (or other relevant legislation) to ensure that the definition that is included in the Strategy is the current statutory definition. In the case of any inconsistency or amendment of the definition, the statutory definition prevails.

Act* means the Biosecurity Act 1993.

Agrichemicals means substances intended by the manufacturer, distributor, vendor, or discharger to cause or promote or facilitate any of the following effects:

- (a) the control of plant growth (other than primarily as a fertiliser or soil conditioner) by the use of substances such as but not restricted to categories of herbicides, algaecides, defoliants or fruit-setting hormones;
- (b) the control of bacteria, protozoa, fungi and viruses, by the use of substances such as but not restricted to the categories bactericides, fungicides or viricides; or
- (c) the control of vertebrates and invertebrates, by the use of substances such as but not restricted to the categories nematocides, miticides, acaricides, arachnicides, molluscicides, insecticides, or other pesticides.

Appropriate means as determined to be appropriate by the Taranaki Regional Council or its officers acting under delegated authority.

Authorised person* means a person for the time being appointed an authorised person under section 103 of the Act.

Beneficiary means the receiver of benefits accruing from the implementation of a pest management measure or this Strategy.

Biological diversity (or biodiversity) means the variability among living organisms, and the ecological complexes of which they are a part, including diversity within species, between species, and of ecosystems.

Biological control means the introduction and establishment of living organisms, and the ecological complexes of which they are part, including diversity within species, between species, and of ecosystems.

Bovine tuberculosis means the state of being infected with *Mycobacterium bovis*. *Mycobacterium bovis* is an infectious, zoonotic, bacterial disease, characterised by the formation of tubercle lesions on affected animals.

Containment pest animal refers to a pest animal species that is abundant in suitable habitats in a region and for which land occupier obligations may apply to manage the density or abundance of the species in the region, or part of the region, and to prevent the species spreading to new areas or to neighbouring properties.

Crown¹

- (a) means her Majesty the Queen in right of New Zealand; and
- (b) includes all Ministers of the Crown and all departments; but
- (c) does not include:
 - i) an Office of Parliament;
 - ii) a Crown entity; or
 - iii) a State enterprise named in the First Schedule to the State-Owned Enterprises Act 1986.

Direct control means pest animal control undertaken by or funded by the Taranaki Regional Council.

Domestic cat means a cat that is kept as a pet and which is dependant upon people to provide their food, water and shelter, as well as their social structure and mortality, through disease control.

Effect² includes:

- (a) any positive or adverse effect; and
- (b) any temporary or permanent effect; and
- (c) any past; present or future effect; and
- (d) any cumulative effect which arises over time or in combination with other effects,
 - regardless of the scale; intensity; duration or frequency of the effect; and also includes:
- (e) any potential effect of high probability; and
- (f) any potential effect of low probability which has a high potential impact.

Effectively control

- (a) in relation to section 6.1.2.3(a) of this Strategy, means to kill, cause to kill, or otherwise dispose of Argentine ants to a level whereby, following treatment, an inspection does not identify any trail of Argentine ants originating from the property; or
- (b) in relation to section 6.2.2.4(a) of this Strategy, means to kill, cause to kill or otherwise dispose of possums and to reduce population numbers on a property to a level such that a Residual Trap Catch sample mean is not greater than 10%; or
- (c) in relation to section 6.3.2.3(a) of this Strategy, means to kill, cause to kill or otherwise dispose of rabbits and to reduce population levels on a property to level three on the Modified McLean Scale, or below.

Endemic means the presence of Bovine tuberculosis in feral animal populations.

Environment includes:

- (a) ecosystems and their constituent parts, including people and their communities; and

¹ *Public Finances Act 1989.*

² *Resource Management Act 1991.*

- (b) all natural and physical resources; and
- (c) amenity values; and
- (d) the social, economic, aesthetic and cultural conditions which affect the matters stated in paragraphs (a) to (c) of this definition or which are affected by those matters.

Eradicate, in relation to an organism, means to totally clear from New Zealand, or region or part of a region.

Eradication pest animal refers to a pest animal species that is of limited distribution or density in a region and for which the Strategy objective is to eradicate the species from the region or part of the region.

Exacerbator means a person, who by his or her activities or inaction, contributes to the creation, continuance, or exacerbation of a pest management problem.

Farmed situation, in relation to feral goats and pigs, means animals:

- held behind effective fences or otherwise constrained, and
- identified in accordance with an identification system registered under section 3 of the Animal Identification Act 1993.

Feral means free-ranging, living in a wild state.

Feral cat means those cats living independent of people or breeding in the wild, and includes domestic cats that have been abandoned by or strayed from their owners.

Habitat means the place or type of site where an organism or population naturally occurs.

Indigenous means native to New Zealand.

Key Native Ecosystems refers to terrestrial sites (sites on land) identified by the Taranaki Regional Council to have regionally significant indigenous biodiversity values.

Mana whenua means customary authority and title exercised by Iwi or hapu over the general environment within tribal rohe.

Management agency* means the department, authority, or body corporate specified in a pest management Strategy as the agency given the task of implementing the Strategy. For the purposes of the Strategy, the Taranaki Regional Council is the management agency responsible for implementing this Strategy.

Means of achievement means the general management options, tactics or technical methods by which the Taranaki Regional Council or land occupiers will achieve an objective or objectives.

Mitigate means to reduce or moderate the severity of something.

Monitor means to measure and record parameters, which indicate the level of effectiveness of this Strategy.

Notice of direction refers to a notice served by officers of the Taranaki Regional Council to note non-compliance with a strategy rule and to identify and direct remedial action.

Objective means a statement of a desired, specific environmental outcome.

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.

Occupier obligations means the requirement in a strategy rule for a land occupier to undertake, or cause to be undertaken, control measures for pest animals.

Operational plan means a plan prepared by the management agency under section 85 of the Act.

Person* includes the Crown, a corporation sole, and a body of persons (whether corporate or unincorporated).

Pest* means an organism specified as a pest in a pest management strategy.

Pesticide means a substance for destroying harmful insects.

Pest management strategy and Strategy* means a Strategy made under Part V of the Act, for the management or eradication of a particular pest or pests.

Principal officer* means, -

- (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 principal officer.

Region³, in relation to a regional council, means the region of the regional council as determined in accordance with the Local Government Act 2002.

Regional council means a regional council within the meaning of the Local Government Act 2002.

Regional significance, in relation to pest animals, means of public concern, widespread throughout the region, about, or interest in the pest's actual or potential harmful and unintended effects on the environment.

Rule* means a rule included in a pest management strategy in accordance with section 69B or section 80B [of the Act].

Silviculture means the growing and tending of trees.

³ Resource Management Act 1991.

Stray cats means those cats not kept by people as a companion pet and which are only indirectly dependent on people to provide their food and shelter.

Surveillance pest animal refers to a pest animal species for which there is no strategy rule requiring the land occupier to control the species.

Tangata whenua⁴, in relation to a particular area, means the Iwi or hapu that holds mana whenua over that area.

Unwanted organism* means any organism that a chief technical officer believes is capable or potentially capable of causing unwanted harm to any natural and physical resources or human health, and

- (a) Includes—
 - (i) Any new organism, if the Authority [Environmental Risk Management Authority] has declined approval to import that organism; and
 - (ii) Any organism specified in the Second Schedule of the Hazardous Substances and New Organisms Act 1996; but
- (b) Does not include any organism approved for importation under the Hazardous Substances and New Organisms Act 1996, unless—
 - (i) The organism is an organism which has escaped from a containment facility; or
 - (ii) A chief technical officer, after consulting the Authority [Environmental Risk Management Authority] and taking into account any comments made by the Authority concerning the organism, believes that the organism is capable or potentially capable of causing unwanted harm to any natural and physical resources or human health.

Vector means a carrier of disease.

Vertebrate toxic agent⁵ means a toxic substance used to kill or reduce the viability of vertebrate animals. It does not include attractant or repellent substances that are not toxic.

Wāhi tapu means places or things, which are sacred or spiritually endowed. These are defined locally by the hapu and Iwi.

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
- (b) the day observed in the region of a regional council as the anniversary day of the province of which the region forms part; and
- (c) a day in the period beginning on 20 December in any year and ending with 10 January in the following year.

⁴ Resource Management Act 1991.

⁵ Hazardous Substances and New Organisms Act 1996.

3. Statutory and planning framework

3.1 Legislative framework

3.1.1 Biosecurity Act

The Biosecurity Act is an Act to “...restate and reform the law relating to the exclusion, eradication, and effective management of pests and unwanted organisms”.

Under the Biosecurity Act, regional councils are not necessarily required to be involved in pest animal management. Any involvement is now at the discretion of the regional council and is undertaken subject to the preparation of a regional pest management Strategy.

This Strategy is the third Strategy prepared by the Taranaki Regional Council with respect to its pest animal management functions under the Biosecurity Act. The first Strategy was prepared in 1996, reviewed in 2001 and has been reviewed once more in 2006. In accordance with section 88 of the Biosecurity Act a pest management strategy that has been in force for five years must be reviewed. The review process involved the preparation of a proposed Strategy, which provided another opportunity for the regional community and other affected parties to have input into determining appropriate pest animal management programmes and funding levels for the next 10 years.

The Strategy sets out objectives, methods and rules that are specific to each of the 23 species declared to be ‘pests’. Under the Strategy, the Taranaki Regional Council and land occupiers (including road controlling authorities and the Department of Conservation) are responsible for pest animals on their land. For possums (on properties in the Self-help Possum Control Programme), Argentine ants and rabbits, land occupiers are required to carry out control measures pursuant to the rules included in Part Two of the Strategy.

This Strategy also empowers the Taranaki Regional Council to exercise the appropriate enforcement and funding provisions of the Act.

3.1.2 Other statutes, regulations and pest management strategies

In addition to the Biosecurity Act, there are other statutes, regulations and strategies that this Strategy must have regard to. Nothing in this Strategy should be interpreted so as to affect or derogate from other legislation, regulations or rules of law relating to pest animal management. These include, but are not restricted to, those Acts specified in section 7 [Relationships with other enactments] of the Biosecurity Act, particularly:

- the **Wild Animal Control Act 1977**, which deals with the control of a specified list of animals called ‘wild animals’ including their recreational and commercial status;
- the **Conservation Act 1987**, which is the primary Act for the management of the conservation estate;
- the **Reserves Act 1977**, which deals with the management of public reserves;
- the **National Parks Act 1980**, which deals with the management of National Parks;

- the **Health Act 1956**, which deals with the protection, promotion and conservation of public health; and
- the **Resource Management Act 1991**, which deals with the sustainable management of land, air and water.

In addition to this Strategy, the Council has also made a plant pest strategy by authority of section 79F of the Biosecurity Act. While both strategies are 'stand-alone' documents they are in fact complementary and together will address integrated 'pest' management for the Taranaki region.

Procedures addressing integrated management and cross-boundary issues are presented in section 10 of this Strategy.

3.2 Pest animals to be managed

3.2.1 Prerequisites for proposal

In the preparation of this Strategy, the Taranaki Regional Council undertook a 'screening process' for a large number of potentially harmful animals, to determine what (if any) regional intervention would be appropriate. The screening process was based on what the Council could most effectively and efficiently achieve, and those matters specified in section 72 (1) of the Act.

Section 72 (1) of the Act requires that before notifying the strategy, the Council is of the opinion that:

- (a) The animals are capable of causing serious adverse and unintended effects in relation to the Taranaki region. With respect to the consideration of these effects and the level of regional intervention considered applicable, the Council has also had regard to the following criteria:
 - i) **adverse impacts:** Refers to the severity of an animal's external, uncompensated, actual or potential effects on the environment (includes agricultural production, indigenous biodiversity and amenity values) and Maori culture and traditions. The regional impacts of an animal have to be ranked medium to high to warrant being declared a 'pest';
 - ii) **the biological characteristics of an animal:** Refers to the features and characteristics that make an animal a pest. The animals of most concern are those animals able to establish and spread in a range of habitats and are difficult to control; and
 - iii) **the population dynamics of an animal:** Refers to whether an animal is limited, restricted or widespread in its distribution and with respect to potentially suitable habitat(s) it can potentially occupy. Population dynamics will have a bearing on the type and level of regional intervention considered appropriate by the Council. The less widespread the animal, the more cost effective it is to manage or eradicate.
- (b) The benefits of having this Strategy outweigh the costs (this includes taking into account the likely consequences of inaction or alternative courses of action).
- (c) The net benefits of regional intervention exceed the net benefits, which would accrue from an individual's intervention.
- (d) For those persons required to contribute to the costs of administering and implementing this Strategy, the benefits that accrue to those persons as a group

will exceed the costs, or, those persons contribute to the creation, continuance or exacerbation of the problems proposed to be resolved by the Strategy.

3.2.2 Animals declared to be pests

3.2.2.1 Pest animals

Having regard to section 72 of the Act, the Taranaki Regional Council declares the following 23 animals to be pest animals:

Common name	Scientific name	Reference in the Strategy
Argentine ant	<i>Linepithema humile</i>	Section 6.1
Brown bull-headed catfish	<i>Ameiurus nebulosus</i>	Section 7.1
Brown hare	<i>Lepus europaeus occidentalis</i>	Section 7.2
Brush-tail possum	<i>Trichosurus vulpecula</i>	Section 6.2
European rabbit	<i>Oryctolagus cuniculus</i>	Section 6.3
Feral cat	<i>Felis catus</i>	Section 7.3
Feral deer ⁶		
– Red deer	<i>Cervus elaphus</i>	Section 7.4
– Sika deer	<i>Cervus nippon</i>	Section 7.4
– Sambar deer	<i>Cervus unicolor</i>	Section 7.4
– Rusa deer	<i>Cervus timorensis</i>	Section 7.4
– Fallow deer	<i>Cervus dama</i>	Section 7.4
– Wapiti deer	<i>Cervus elaphus nelsoni</i>	Section 7.4
– White-tailed deer	<i>Odocoileus virginianus boreali</i>	Section 7.4
Feral goat	<i>Capra hircus</i>	Section 7.5
Feral pig	<i>Sus scrofa</i>	Section 7.6
Koi carp	<i>Cyprinus carpio</i>	Section 7.1
Magpie	<i>Gymnorhina tibicen</i>	Section 7.7
Mosquitofish	<i>Gambusia affinis</i>	Section 7.1
Mustelids		
– Ferret	<i>Mustela furo</i>	Section 7.8
– Stoat	<i>Mustela erminea</i>	Section 7.8
– Weasel	<i>Mustela nivalis vulgaris</i>	Section 7.8
Rook	<i>Corvus frugilegus</i>	Section 5.1
Rudd	<i>Scardinius erythrophthalmus</i>	Section 7.1

Sections 5, 6, and 7 of this Strategy categorise pest animals according to the different levels of regional intervention considered appropriate. An explanation of the different levels of intervention proposed is provided in the preamble to Part Two of the Strategy.

3.2.2.2 Other management responses

Not all harmful animals are addressed in this Strategy. For many harmful animals it is not appropriate, necessary or reasonable to include them in the Strategy. Notwithstanding that, other management responses may apply including:

- voluntary control actions undertaken by individuals such as land occupiers and recreational and professional hunters;
- control operations undertaken by government departments using Part VI powers available under the Biosecurity Act, the Wild Animal Control Act or under other legislation;

⁶ Feral deer, does not include farmed or escaped farmed deer.

- small-scale management programmes undertaken by the Taranaki Regional Council for 'unwanted organisms' under section 100 of the Act. These programmes are targeted against harmful animals not yet found in a region but which may arrive during the Strategy period; and
- through national or regional pest management strategies prepared and implemented by other parties such as Crown agencies and industry groups.

Further to the above, the Taranaki Regional Council may still provide advice and education or undertake monitoring and surveillance of harmful or potentially harmful animals under section 13 of the Act. In other circumstances, eg, to protect regionally significant indigenous biodiversity values in Key Native Ecosystems, and with the permission of the land occupier, the Taranaki Regional Council may undertake direct control operations that target a variety of harmful animal species.

The Taranaki Regional Council will also continue to recognise and facilitate other management responses with respect to harmful animals through the integrated management measures set out in section 10 of the Strategy.

4. Management responsibilities and obligations

4.1 Taranaki Regional Council

4.1.1 Proposer of this Strategy

By authority of the Act the Taranaki Regional Council resolved to be the proposer of this Strategy.

4.1.2 Management agency

The Taranaki Regional Council will be the management agency responsible for administration and implementation of this Strategy. The Council, as the management agency, develops and undertakes those programmes identified in Part Two of the Strategy, including:

- (a) advisory, education and information programmes;
- (b) inspectorial and enforcement programmes; and
- (c) direct control programmes.

The Taranaki Regional Council, as management agency, also develops and implements administrative systems and programmes associated with funding this Strategy, monitoring its implementation and effectiveness and ensuring that the Strategy's implementation is undertaken in a manner that is consistent with the Act and any other statutory provisions.

4.2 Stakeholders

Strategy stakeholders are those persons that are either a beneficiary of this Strategy's implementation, or are an exacerbator of particular pest animal problems, and, accordingly, will be bound by the provisions of the Strategy and will contribute to the funding of the Strategy.

4.2.1 Private land occupiers (bound by the provisions of the Strategy)

Land occupiers, excluding the Crown⁷, are required to control pest animals on land that they occupy as set out in any strategy rules prescribed in Part Two of this Strategy. In accordance with individual circumstances, the Taranaki Regional Council may, in accordance with section 9.3.3 of this Strategy, exempt any person from any requirement included in a strategy rule.

Private land occupiers will further contribute to funding the implementation and administration of this Strategy in accordance with the funding provisions set out in section 11 of the Strategy.

⁷ Note: the Crown under the Biosecurity Act refers to Crown departments or agencies such as the Department of Conservation (but not Crown entities or State Owned Enterprises).

4.2.2 Road controlling authorities

4.2.2.1 Transit New Zealand

Transit New Zealand is the road controlling authority for 387 kilometres of state highways⁸ in the Taranaki region. The land on which state highways lie, including those parts of road, roadway or road margin extending to adjacent property boundaries, accounts for approximately 1,278 hectares in the Taranaki region.

Transit New Zealand is required to control pest animals on land that it occupies, including all formed roads, roadways or road margins for which Transit is responsible, in accordance with the strategy rules prescribed in Part Two of this Strategy. In individual circumstances, the Taranaki Regional Council may, in accordance with section 9.3.3 of the Strategy, exempt any person from any requirement included in a strategy rule.

4.2.2.2 Territorial authorities

There are three territorial authorities within the Taranaki region. These are the South Taranaki District Council, Stratford District Council (excluding parts of the district that lie in the Whanganui catchment), and the New Plymouth District Council. Territorial authorities are occupiers of land and are road controlling authorities in their district. With respect to roads, territorial authorities are jointly responsible for 3,467 kilometres of local roads⁹ in the Taranaki region.

Territorial authorities are required to control pest animals on land that they occupy, including formed local roads, roadways or road margins for which that authority is responsible, in accordance with strategy rules prescribed in Part Two of this Strategy. In individual circumstances, the Taranaki Regional Council may, in accordance with section 9.3.3 of the Strategy, exempt a territorial authority from any requirement included in a strategy rule.

For the purposes of this Strategy, roadside responsibilities for pest animal management only apply to 'formed' roads and do not apply to 'unformed' [paper] roads occupied by another person. Pest animal control on unformed roads remains the responsibility of the person physically occupying that land.

4.2.3 OnTrack

OnTrack is, on behalf of the Crown, the owner and manager of New Zealand's railway infrastructure. There is approximately 214 kilometres of railway line in the Taranaki region accounting for 763 hectares of railway land.^{10 11}

OnTrack is required to control pest animals on land that it administers, as set out in strategy rules prescribed in Part Two of this Strategy. In individual circumstances, the Taranaki Regional Council may, in accordance with section 9.3.3 of the Strategy, exempt any person from any requirement included in a strategy rule.

⁸ Taranaki Regional Council (2006): 'Regional Land Transport Strategy for Taranaki'.

⁹ Taranaki Regional Council (2006): 'Regional Land Transport Strategy for Taranaki'.

¹⁰ Taranaki Regional Council (2006): 'Regional Land Transport Strategy for Taranaki'.

¹¹ Pursuant to section 87 of the Act, an Order in Council must be obtained from the Governor General should the Strategy impose obligations or costs on the Crown (ie, the Department of Conservation). OnTrack and Transit New Zealand, fall outside the definition of the 'Crown' (refer section 2 [Interpretation section] of the Public Finance Act 1989) and therefore an Order in Council is not necessary.

4.3 Other affected parties (not bound by the provisions of the Strategy)

4.3.1 Department of Conservation

The Department of Conservation manages 146,973 hectares of Crown-land in the Taranaki region (or 21% of the total land area of the region) under the Reserves Act, the National Parks Act and the Conservation Act. The Department also has particular responsibilities and expertise in the management of pest animals that pose a threat to indigenous biodiversity.

Under the Wild Animal Control Act, the Department of Conservation is funded and empowered, in its own right, to undertake pest animal management on the public conservation estate (and, in limited circumstances, on privately owned land).

Section 87 of the Biosecurity Act exempts the Crown from being legally bound by the funding provisions or the rules in a regional pest management strategy. The Crown under the Biosecurity Act refers to Crown departments or agencies such as the Department of Conservation (but not Crown entities or State Owned Enterprises).

The Department of Conservation (and other agencies) may however seek to be bound to the Strategy rules and seek funding from the Crown through an Order in Council (or agree to make a voluntary contribution towards the Strategy). However, the Department has neither sought an Order in Council nor agreed to it making a voluntary contribution.

4.3.2 The Animal Health Board Inc

The Animal Health Board is the management agency responsible for the implementation of the '*National Pest Management Strategy for Bovine Tuberculosis*'. The Animal Health Board is funded and empowered, in its own right, to undertake feral vector control work in the Taranaki region for Bovine tuberculosis management purposes. It is not bound by the provisions of this Strategy, nor contributes to Strategy funding.

Part Two

Pest animal management programmes

Preamble

Part Two of this Strategy details the pest animal management programmes in relation to each pest animal, or pest animals of a very similar type, to which the Strategy applies.

Each management programme includes: a description of the adverse effects associated with that pest animal; the reasons for including it in this Strategy, including the rationale for adopting the preferred management approach (refer to the infestation curves); an objective to be achieved by the Taranaki Regional Council for the duration of the Strategy; the principal measures by which the Council intends to achieve that objective; the alternative measures for achieving the objective; and the strategy rules pertaining to the pest animal.

In relation to each pest animal species, strategy rules apply. All pest animals are banned from being sold, released or distributed. Additional strategy rules are prescribed requiring the occupier to treat Argentine ant, possums and rabbit infestations on their property (refer section 6).

A breach of any rule prescribed in Part Two of the Strategy would create an offence under section 154 (r) of the Act, or may result in default work under section 128 of the Act, or both.

The Taranaki Regional Council in determining the most appropriate and cost effective management response for individual pest animals has had regard to an ecological 'infestation curve' model and the 'reasonableness' of imposing costs and obligations on people to control the animal species.

The **infestation curve model** (refer Figure 2 overleaf) essentially has four phases:

Phase 0 – Potential pest not currently in the region (curve is 'flat');

Phase 1 – Initial establishment in the region: These species are of limited distribution and density, or in small numbers, in the Taranaki region (curve is 'flat');

Phase 2 – Consolidation of initial populations and extension of range: These species are established in the Taranaki region but are of limited to moderate distribution or density (curve is 'steep'); and

Phase 3 – Widespread in most or all available habitat: These species are widespread or well entrenched throughout the region (the curve levels off again – as the pest animal fills most of its available habitat).

The '**reasonableness**' test refers to the appropriateness of imposing costs and obligations on people to control the animal species, given: the high cost to the Taranaki Regional Council or occupier to control or manage the animal; the animal's behavioural characteristics; uncertainty about the nature or significance of the actual or potential problem; and or the lack of effective treatment options. The lack of effective integration with other parties with statutory pest management roles and responsibilities may also have a bearing on determining the appropriate management category for a pest such as where there is confusion or potential conflict with other legislation. For example, the 'surveillance pest animal' category¹² includes species that lie in Phase 1 and 2 of the

¹² *Surveillance pest animals also includes species where it may not be cost effective or appropriate to undertake direct control or impose land occupier obligations and instead the focus is on promoting and facilitating individual and community action against these animals.*

infestation curve, however, for the aforementioned reasons it is considered unreasonable to apply a strategy rule requiring the land occupier to undertake control measures. Notwithstanding this, there is an opportunity on a case-by-case basis for the Council to consider targeted direct control of 'surveillance pest animals' (eg, to protect indigenous biodiversity values in Key Native Ecosystems) and through the enforcement of strategy rules banning the sale, release or distribution of surveillance pest animals the Council may contribute to restricting their spread and distribution by people.

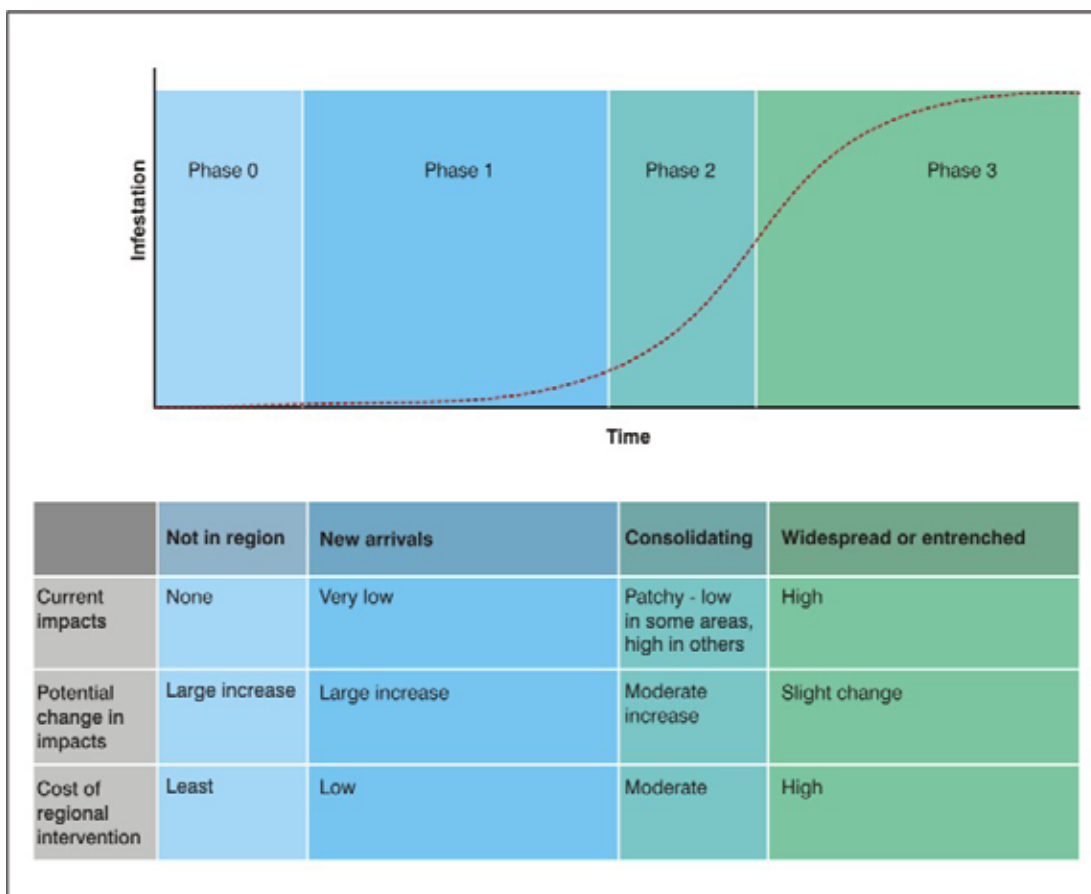


Figure 2: Infestation curve model

Sections 5, 6 and 7 of the Strategy categorise pest animals according to the different levels of regional intervention considered appropriate. A description of the specific adverse and unintended effects being avoided or mitigated, on an animal-by-animal basis, is presented, and follows, in this Part of the Strategy. These effects are further summarised in Appendix I.

5. Eradication pest animals

5.1 Rooks (*Corvus frugilegus*)

5.1.1 Description of the problem

Rooks are large, totally black birds with a violet-blue glossy sheen. The birds stand about 45 centimetres high.

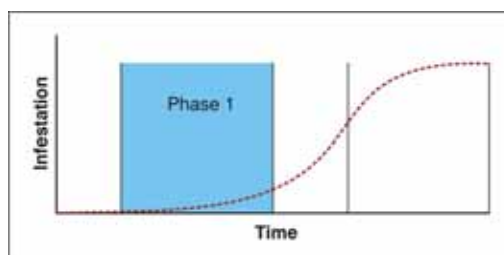
A distinguishing feature of the social system of rooks is the conspicuous breeding colonies or rookeries that the birds form. Rookeries are generally built in pine and eucalyptus trees but oak, poplar and walnut trees may also be used. Where established, rookeries may approach several hundred birds.

Initially introduced in the Hawkes Bay to control grass grub, rook numbers, in many parts of New Zealand, now pose a particularly serious threat to cropping and horticulture production.



Most of the year the birds will feed in small groups, on soil invertebrates, and do not represent a problem. However, during the summer, when the soil becomes hard and difficult to work, rooks aggregate into larger groups targeting easier food supplies. On such occasions, the rooks show a strong preference for foraging on fields of cereal at all stages of the crop. Rooks can also tear up large areas of pasture in their search for grass grub and other invertebrates.

Rooks are currently in Phase 1 of establishment throughout Taranaki and are only believed to be in very small numbers in the region. At present the impacts of rooks in the Taranaki region are negligible, because of their small numbers. However, in neighbouring regions rooks have demonstrated that they increase many-fold, within a short period of time, if not strictly controlled. Juvenile birds migrating from the Manawatu-Wanganui region are an on-going source of re-infestation.



5.1.2 Pest animal management programme

5.1.2.1 Objective

To prevent the establishment of rooks in the Taranaki region by eradicating all known (as at 1 May 2007) populations of rooks in the Taranaki region by 2017 and, as practicable, destroying any new populations of rooks that are identified over the duration of the Strategy.

5.1.2.2 Means of achievement

To achieve the objective for rooks, the Taranaki Regional Council shall:

- (a) Provide **advice and information** to assist in the identification of rooks and to encourage the public to report any sightings.
- (b) **Inspect and monitor** properties with suspected or confirmed rooks or rookeries to ascertain direct control options.
- (c) As appropriate, undertake the **direct control** of rooks in accordance with section 9.4 of this Strategy.
- (d) **Enforce** the provisions of the Act in circumstances where a person is not complying with the Strategy rule.
- (e) Undertake **liaison and advocacy** to promote effective integrated pest animal management in accordance with section 10 of this Strategy.

5.1.2.3 Strategy rules

- (a) *No person shall knowingly distribute to other persons, or release, or sell, or offer for sale, or hold in premises where animals are offered for sale, rooks (Corvus frugilegus).*
- (b) *All sightings of rooks (Corvus frugilegus) in the Taranaki region must be reported promptly to the Taranaki Regional Council.*

6. Containment pest animals

6.1 Argentine ants (*Linepithema humile*)

6.1.1 Description of the problem

The Argentine ant is native to Argentina and Brazil, but is now considered one of the world's most invasive and problematic ant species. The wingless worker Argentine ant (most commonly seen), is light to dark honey-brown, and 2-3 mm long (most other common household ants in New Zealand are black).



Because they are so small, the best way to tell Argentine ants from other ants is by their colour and their trails. Argentine ants breed prolifically (they do not swarm ie, fly off to establish new nests) and are highly active in searching for food. Their trails are often five or more ants wide and may travel up trees or buildings. Other species of ants don't tend to climb trees, and would not have such strong trails unless they were moving a nest (in which case you would see ants carrying their eggs).

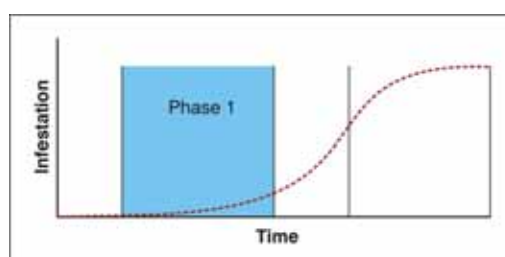
Argentine ants pose a particularly serious threat to people's amenity and lifestyle values. When a building or property is infested it will have a very high number of ants and colonies (up to six nests per square metre). Their huge numbers mean a huge appetite, and they will utilise just about any food source they can find. They are even known to make their way into microwaves, refrigerators and screw-top jars. Argentine ants also have a painful bite and are considered to be one of the world's worse household pests.

Argentine ants also pose a significant threat to horticulture production. Argentine ants feed directly on fruit crops, and their sheer numbers can damage flowers and reduce fruit set. They are one of the worst pests of citrus in Australia, and a serious pest of viticulture, avocado and tomato crops.

Argentine ants also 'farm' populations of aphids, scale insects and other pests that produce honeydew. The ants protect these harmful insects from predators, and will even move them to new plants or to new parts of the plant. This is particularly serious for organic growers and those using integrated pest management techniques involving the use of predators to control horticultural 'pests'.

Argentine ants climb trees, are very aggressive and kill or drive away other insects. They can prey on Monarch butterflies and young birds and compete strongly with native invertebrate species and other insect species thereby reducing biodiversity (both indigenous and valued exotic) values in their area.

Argentine ants were first discovered in Taranaki in 2006 and currently have a limited distribution range (Phase 1 of the



infestation curve model). Infestations of the ant have so far been identified in Waitara, Bell Block, Oakura, New Plymouth and Patea. However, their distribution in Taranaki is likely to be more widespread than this and, as public awareness increases, new infestations are expected to be discovered in Taranaki over time.

6.1.2 Pest animal management programme

6.1.2.1 Objective

To protect amenity, horticultural production, and biodiversity values by preventing the spread of Argentine ants from affected properties to neighbouring properties for the duration of this Strategy.

6.1.2.2 Means of achievement

To achieve the objective for Argentine ants, the Taranaki Regional Council shall:

- (a) Provide **advice and information** (including the provision of specialised advice and equipment) on the control of Argentine ants to interested parties.
- (b) Provide **pesticides**¹³ to treat Argentine ants at cost to land occupiers.
- (c) **Inspect and monitor** properties with suspected or confirmed Argentine ant infestations and identify any remedial action to be taken.
- (d) **Enforce** the provisions of the Act in circumstances where a person is not complying with the Strategy rule.
- (e) As appropriate, undertake the **direct control** of Argentine ants in accordance with section 9.4 of this Strategy.
- (f) In relation to **Key Native Ecosystems** and in accordance with section 9.5 of the Strategy, the Council will consider undertaking the **direct control** of Argentine ants where the presence of that animal threatens regionally significant indigenous biodiversity values.
- (g) Undertake **liaison and advocacy** to promote effective integrated pest animal management.

6.1.2.3 Strategy rules

- (a) *The land occupier is required to effectively control Argentine ants (*Linepithema humile*) on their land.*
- (b) *No person shall knowingly distribute to other persons, or release, or sell, or offer for sale, or hold in premises where animals are offered for sale, Argentine ants (*Linepithema humile*).*

¹³ To date only two pesticides are available in New Zealand which are proven to be effective against Argentine ants - Xstinguish® Argentine ant bait and Ant Stop Granuals. The Taranaki Regional Council has determined to obtain and make these products available to the public at cost.

6.2 Brushtail possum (*Trichosurus vulpecula*)

6.2.1 Description of the problem

The brushtail possum is an introduced marsupial animal widespread throughout New Zealand. A small to medium sized omnivore, the possum is a nocturnal animal with large ears, pointed face, close woolly fur and bushy tail.



Brushtail possums represent a major threat to the Taranaki region in terms of their actual or potential harmful effects on economic production and on indigenous biodiversity values.

In Taranaki, the main economic impact of possums is reduced economic returns associated with agricultural production. First, pasture comprises approximately 33% of the possum's diet. Possums therefore compete directly with livestock for pasture, reducing the carrying capacity of farmland and reducing farm income. Second, possums can reduce the value of plantation forests by a substantial amount. This largely occurs through damage to the terminal shoots of young seedlings, broken branches and ringbarking of pines when in pollen. This damage leads to slower growth and distortion of the trees, reducing the value of timber processed. The consequential need to control possums imposes added production costs on the land occupier.

In other parts of New Zealand, the main economic impact of the possum is through its role as a vector for Bovine tuberculosis. Bovine tuberculosis continues to be New Zealand's principal animal health problem with concerns that the presence of the disease in New Zealand may lead to the loss of access to overseas markets for the dairy, beef and venison industries. In efforts to eradicate Bovine tuberculosis, the Animal Health Board Inc undertakes possum (and other pest) control and imposes stock control movements throughout New Zealand. These controls, in turn, impose substantial costs on farmers through interference to farming operations, reduced farm profitability, and the cost of increased feral vector control.

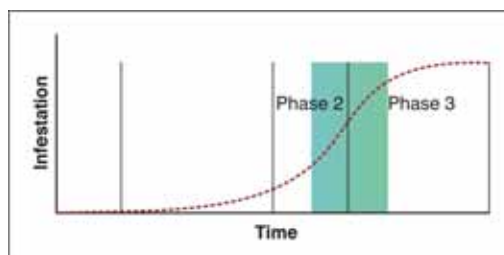
To date, farmers and the wider community in Taranaki have made considerable investment in Bovine tuberculosis measures and have been successful in preventing the disease becoming endemic in the region (one of only three regions where this has been the case).

Possums also cause considerable damage to indigenous vegetation. With respect to flora species, possums' preference for broadleaf and hardwood species has had a serious effect on the composition of much of the region's indigenous forested areas. Flora species most affected include kohekohe, kamahi, mahoe, fuchsia, northern rata, and *Pseudopanax* spp. By stripping indigenous forests of fruit, flowers, and leaves, possums also affect vital food sources for birds.

With respect to fauna species, possums also eat eggs and chicks and interfere with the breeding of indigenous bird species such as kokako, kiwi and wood pigeon. Possums

also eat indigenous invertebrates such as giant wetas and giant land snails. The cost of damage to the conservation estate and to other areas of high conservation value is high, but difficult to determine with accuracy. However, the net result is reduction in the vigour, density and diversity of native flora and fauna species.

Possum population densities within the region vary according to the topography, vegetation and history of control in any specific area. The highest possum population densities lie in the margins where forest and pasture meet, as these margins provide a plentiful supply of food and suitable habitat. In those areas where the Taranaki Regional Council has implemented the 'Self-help Possum Control Programme' (refer section 6.2.2.3 on the next page), possums are considered to be controlled at an equivalent of a Phase 2 of establishment, as possum numbers are very low and have been maintained at these low levels for a number of years. Possum numbers outside the Programme are significantly higher and the pest is in Phase 3 of establishment.



The Department of Conservation undertakes its own management programmes on public conservation land. This includes possum control for most indigenous forest and bush in the eastern hill country at a level designed to preserve the forest canopy, usually as part of a seven-year treatment rotation.

6.2.2 Pest animal management programme

6.2.2.1 Objective

To protect agricultural production values and indigenous biodiversity values, for the duration of this Strategy, by:

- (a) *reducing infestations of brushtail possums to below a 10% residual trap catch¹⁴ on the ring plain through the implementation of the Self-help Possum Control Programme; and*
- (b) *promoting the voluntary control of possums throughout the region.*

6.2.2.2 Means of achievement

To achieve the objective for brushtail possums, the Taranaki Regional Council shall:

- (a) Provide **advice and information** (including the provision of specialised advice and equipment) on the control of possums to affected occupiers and other interested parties.
- (b) **Inspect and monitor** properties to establish the extent of possum infestations and to identify any remedial action to be taken.
- (c) **Enforce** the provisions of the Act in circumstances where a person is not complying with the Strategy rule.
- (d) As appropriate, undertake the **direct control** of possums in accordance with section 9.4 of this Strategy.

¹⁴ A description of the Residual Trap Catch monitoring technique is provided in Appendix IIA.

- (e) Undertake **liaison and advocacy** to promote effective integrated pest animal management in accordance with section 10 of this Strategy.
- (f) Implement the **Self-help Possum Control Programme**, which includes components of (a) to (e) above, in accordance with section 6.2.2.3 below.
- (g) In relation to **Key Native Ecosystems** and in accordance with section 9.5 of the Strategy, the Council will consider undertaking the direct control of possums where the presence of that animal threatens regionally significant indigenous biodiversity values.

6.2.2.3 The Self-help Possum Control Programme

Programme objectives

The Taranaki Regional Council shall implement the Self-help Possum Control Programme on the Taranaki ring plain with the aim of:

- (a) including approximately 235,000 hectares of rateable land in the Programme by 2011; and
- (b) reducing possum population levels in areas included in the Programme to at least a 5% residual trap catch and facilitating land occupier maintenance of reduced possum numbers to at least a 10% residual trap catch.

Areas included in the Programme

For the purposes of this Strategy, the Self-help Possum Control Programme comprises of rateable properties that:

- (a) lie in an area where at least 75% of land occupiers, covering at least 75% of the land area targeted, indicate, or have indicated, that they wish to be included in the Programme and will accept land occupier obligations; and
- (b) for which the Taranaki Regional Council has undertaken initial possum control.

Prior to initial possum control being undertaken, the Taranaki Regional Council shall individually notify land occupiers that the Council is proposing to undertake possum control and include their property in the Self-help Possum Control Programme. This notification process also constitutes part of the survey of determining local land occupier interest and support for including a new area into the Programme.



Figure 3: Implementation of the Self-help Possum Control Programme over time (indicative only)

Based upon current and foreseeable resourcing inputs (see section 11.2 of this Strategy), the Taranaki Regional Council shall continue to incrementally apply the Self-help Possum Control Programme on rateable land on the ring plain, primarily in the north-eastern Inglewood area (see Figure 3 on page 31). This will involve the Council undertaking, on average, initial possum control on approximately 4,000 to 6,000 hectares per annum for the duration of the Strategy and facilitating the land occupiers' maintenance of reduced possum numbers and their compliance with the Strategy rules on page 33. The amount of land that the Council undertakes initial possum control on in any given year depends upon the topography, vegetation and history of control in that area.

Component parts of the Programme

Implementation of the Self-help Possum Control Programme involves three parts:

- (a) **Planning, consulting and obtaining land occupier support:** Prior to including any area in the Programme, the Taranaki Regional Council shall consult with affected land occupiers and other affected persons to explain the Programme and ascertain their willingness to be included in the Programme. At least 75% of private land occupiers, covering at least 75% of the land area targeted, must indicate that they wish to be included in the Programme and accept land occupier obligations.¹⁵
- (b) **Initial possum control:** This involves the Taranaki Regional Council undertaking the initial control of possums on properties to be included in the Programme and reducing possum population levels in that area to at least a 5% residual trap catch. In conjunction with the initial possum control, the Council will also provide training to interested land occupiers on possum control techniques.
- (c) **Possum control maintenance:** Subsequent to the Taranaki Regional Council undertaking initial possum control and reducing possum population levels in that area to at least a 5% residual trap catch:
 - i) the *land occupier* thereafter shall be responsible for controlling possums and complying with Strategy rule 6.2.2.4 (on page 33) and
 - ii) the *Council* thereafter shall facilitate land occupiers' possum control maintenance through an advisory, inspection and enforcement service and the provision of possum control products, materials and equipment at cost. As appropriate, the Council may in limited circumstances (refer section 9.4 of this Strategy) undertake further possum control where the sustainability or effectiveness of the Programme is threatened or where an added level of possum control is needed to protect Key Native Ecosystems (refer section 9.5 of this Strategy).

Concerns regarding the long term viability of the Programme near the Egmont National Park

The Egmont National Park is Taranaki's singlemost iconic landscape. Its ecological, recreational, and aesthetic values are of national as well as regional importance. Therefore, in the early 1990s, when the Department of Conservation proposed to undertake aerial possum control for the whole Park (an exercise repeated in 2002), the Taranaki Regional Council agreed to undertake possum control on adjacent properties and include these properties in the Self-help Possum Control Programme. This represented a very significant investment, by this Council and the private land

¹⁵ The Taranaki Regional Council will annually review new areas to be included in the Self-help Possum Control Programme and indicate such areas in its Annual Plan for that year. However, an area's inclusion is only confirmed following a survey of land occupiers in the area that confirms majority support to be in the Programme.

occupiers involved, but recognised the mutual benefits of the organisations working together to achieve effective possum control in both the Park and adjacent farmland.

In recent times, Taranaki Regional Council monitoring has identified 'hot spots' where possum numbers in the bush/pasture margin of the Egmont National Park are unacceptably high. Council liaison with farmers along the Egmont National Park boundary suggest that such problems are widespread along the Park boundary.

High possum numbers in the bush/pasture margin of the Egmont National Park impose significant, external and uncompensated costs on the Taranaki Regional Council and local land occupiers in terms of added costs associated with addressing possum reinfestation. These added costs threaten the long term viability of the Self-help Possum Control Programme on farmland in that area.

Through liaison and technical collaboration the Taranaki Regional Council trusts that it can work with the Department of Conservation to develop collaborative control and monitoring programmes that will maintain low possum numbers along the bush/pasture margin of the Egmont National Park and avoid the problem of possums in the Park reinfesting adjacent farmland. However, if the Department cannot, to the satisfaction of this Council undertake effective possum control in the bush/pasture margin of the Egmont National Park (as confirmed by independently audited monitoring of the Park boundary) and reduce and keep possum numbers in those areas at a level comparable to that being sustained on adjacent private land, the Council will withdraw the Self-help Possum Control Programme from areas adjacent to or near the Park. That is, land occupiers adjacent to or near the Egmont National Park will no longer be required by Rule 6.2.2.4(a) to control possums.¹⁶

6.2.2.4 Strategy rule

- (a) *For properties included in the Self-help Possum Control Programme, the land occupier is required to effectively control brushtail possums (*Trichosurus vulpecula*) on that land.*
- (b) *No person shall knowingly distribute to other persons, or release, or sell, or offer for sale, or hold in premises where animals are offered for sale, brushtail possums (*Trichosurus vulpecula*).*

¹⁶ *Should the Taranaki Regional Council determine to withdraw the Self-help Possum Control Programme from areas adjacent to or near the Egmont National Park, affected land occupiers will be granted an immediate exemption from Rule 6.2.2.4(a) pursuant to section 9.3.3 of the Strategy with a view that land occupier obligations in the area will be permanently rescinded when this Strategy is next reviewed (ie, 2017).*

6.3 European rabbit (*Oryctolagus cuniculus*)

6.3.1 Description of the problem

The European rabbit is a small to medium sized herbivore, usually grey-brown in colour.

Rabbits breed throughout the year and produce several litters comprising of three to seven young. On average, adult female rabbits produce 45 to 50 young a year. However, survival rates are low. Where conditions are favourable, the rabbit's mortality rate is lowered and the population has the ability to increase rapidly.

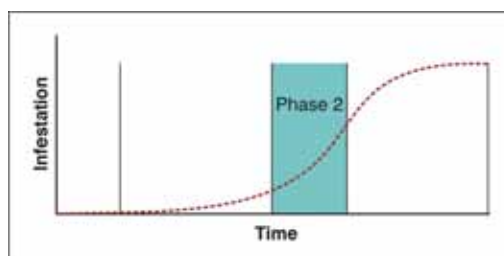


Rabbits, under favourable conditions, and if not controlled, can become enormously abundant and very destructive to pastoral farmland over large parts of Taranaki – particularly sheep and beef properties. On improved pasture, 13 adult rabbits consume the equivalent pasture to one 50-kilogram ewe.¹⁷ Further to this, rabbits selectively browse the most palatable pasture species. This can 'sour' the pasture. By competing directly with stock for grazing, rabbits reduce the carrying capacity of agricultural land. The consequential need to control the animal then imposes added farm production costs on the land occupier.

Rabbits may also have localised impacts on silviculture and horticulture values by eating new tree and crop plantings.

Where present in large numbers, the overgrazing and burrowing of pasture by rabbits may, in time, result in soil erosion and the loss of valuable topsoil, the sedimentation of waterways and creates more favourable conditions for less desirable plant species to grow.

Rabbits have a restricted distribution range in the Taranaki region (Phase 2 of the infestation curve model). Rabbits are present throughout Taranaki, however, they are only likely to be present in large numbers (and therefore constitute a serious problem) on very rabbit prone land. 'Very rabbit prone land' occurs in a narrow band along the south Taranaki coast and refers to land characterised by low rainfall, soils which are suitable for burrowing, and topography which allows good drainage and protection from weather. Other areas moderately at risk from rabbit impacts are pastoral areas east of the ring plain. In such areas, the presence of light volcanic ash soils and favourable environmental conditions means that rabbits can be a significant but largely localised problem.



¹⁷ King, C M (1995). 'The Handbook of New Zealand Mammals', p. 148.

6.3.2 Pest animal management programme

6.3.2.1 Objective

To protect agricultural production values by preventing the spread of European rabbits from affected properties to neighbouring properties for the duration of this Strategy.

6.3.2.2 Means of achievement

To achieve the objective for European rabbits, the Taranaki Regional Council shall:

- (a) Provide **advice and information** (including the provision of specialised advice and equipment) on the control of rabbits to affected occupiers and other interested parties.
- (b) **Inspect and monitor** properties to establish the extent of rabbit infestations and to identify any remedial action that needs to be taken.
- (c) **Enforce** the provisions of the Act in circumstances where a person is not complying with the Strategy rule. In accordance with the rule 6.3.2.3 (a), land occupiers are required to 'effectively control' rabbits on his or her land. For the purposes of this rule 'effectively control' means to kill, cause to kill or otherwise dispose of rabbits and to reduce population levels on a property to level three of the Modified McLean Scale, or below. An explanation of the Modified McLean Scale monitoring technique is in Appendix IIB.
- (d) As appropriate, undertake the **direct control** of rabbits in accordance with section 9.4 of this Strategy.
- (e) In relation to **Key Native Ecosystems** and in accordance with section 9.5 of the Strategy, the Council will consider undertaking the **direct control** of rabbits where the presence of that animal threatens regionally significant indigenous biodiversity values.
- (f) Undertake **liaison and advocacy** to promote effective integrated pest animal management in accordance with section 10 of this Strategy.

6.3.2.3 Strategy rule

- (a) *The land occupier is required to effectively control European rabbits (*Oryctolagus cuniculus*) on their land.*
- (b) *No person shall knowingly distribute to other persons, or release, or sell, or offer for sale, or hold in premises where animals are offered for sale, European rabbits (*Oryctolagus cuniculus*).*

7. Surveillance pest animals

7.1 Brown bull-headed catfish (*Ameiurus nebulosus*), Koi carp (*Cyprinus carpio*), Mosquitofish (*Gambusia affinis*) and Rudd (*Scardinius erythrophthalmus*)

The species listed above constitute a class of pests known as 'pest fish' – they prey on native species and their eggs and play havoc with the quality of the region's water.

7.1.1 Brown Bull-Headed Catfish (*Ameiurus nebulosus*)

7.1.1.1 Description of the problem

The brown bull-headed catfish is a large headed fish with eight long whisker-like barbels around the mouth.

Their skin is slimy and eel like to touch. Their colour is dark brown to greenish-olive on the back, with a pale underside. They grow to at least 500mm in length and 3kg in weight.



Catfish are predatory scavengers, eating diverse foods including snails, insects such as caddisfly larvae, crustaceans including koura, plant material, detritus and small fish.

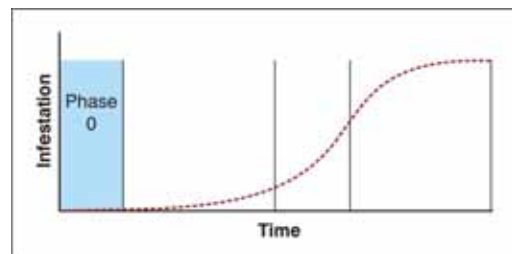
Catfish move into native fish habitat and effectively push them out by taking over their territory and eating many of the same foods.

Catfish are extremely robust and tolerate low oxygen levels, high turbidity, poor water quality and a range of temperatures. It is also thought that catfish can hibernate in bottom mud if necessary. Catfish are able to stay alive for long periods out of water if kept moist, making intentional and accidental transfer very easy.

As at 1 May 2007, no confirmed sightings of catfish had been reported in the region¹⁸ Therefore at present, the impact of catfish in the Taranaki region are negligible.

However, in neighbouring regions catfish have demonstrated that they may increase many-fold, within a short period of time, can survive in poor conditions and have a detrimental impact on native fish populations, if not strictly controlled.

Catfish have therefore been included in the Strategy to reduce the risk of the fish species becoming a problem in the future.



¹⁸ Note: this is not to say that catfish are not currently present in the region.

7.1.1.2 Pest animal management programme

7.1.1.2.1 Objective

To promote public understanding of the 'pest' characteristic of brown bull-headed catfish, and to facilitate the control of brown bull-headed catfish by the Department of Conservation and others, for the duration of this Strategy.

7.1.1.2.2 Means of achievement

To achieve the objective for brown bull-headed catfish, the Taranaki Regional Council shall:

- (a) Provide **advice and information** on the pest characteristics of brown bull-headed catfish and measures to prevent their spread, to land occupiers and other interested parties.
- (b) In relation to **Key Native Ecosystems** and in accordance with section 9.5 of the Strategy, the Council will consider undertaking the **direct control** of brown bull-headed catfish where the presence of that animal threatens regionally significant indigenous biodiversity values.
- (c) Undertake **liaison and advocacy** to promote effective integrated pest animal management in accordance with section 10 of this Strategy.

7.1.1.2.3 Strategy rule

- (a) *No person shall knowingly distribute to other persons, or release, or sell, or offer for sale, or hold in premises where animals are offered for sale, brown bull-headed catfish (*Ameiurus nebulosus*).*

7.1.2 Koi Carp (*Cyprinus carpio*)

7.1.2.1 Description of issue

Koi carp are an ornamental strain of the common or European carp. Koi carp are very similar in looks to a large gold fish but with a distinctive large head, a pair of barbels at each corner of the mouth, large scales and a large prominent dorsal fin. Like goldfish, koi carp can be bright orange with dark blotches, or a splotchy olive brown. In New Zealand koi carp commonly exceed 5kg and occasionally 10kg.



Koi carp were introduced to New Zealand as ornamental fish, but they now breed in natural waterways.

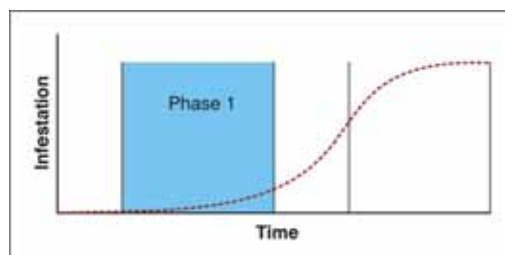
Koi carp pose a significant threat to the health of New Zealand's freshwater ecosystems. They uproot water plants, lower water quality and eat insects and other young fish. Their feeding disturbs bottom sediments leading to increased turbidity and general

muddying of waters, the effect of which is to reduce aquatic plant growth with flow-on impacts on other fish species, invertebrates and wildlife.

Koi carp prefer warm enclosed waters or slow flowing rivers and canals. They are tolerant of low oxygen levels and high turbidity.

Koi carp are classified as a noxious fish under the Third Schedule of the Freshwater Fisheries Regulations 1983, and an unwanted organism under the Biosecurity Act 1993.

Koi carp are currently in Phase 1 of establishment throughout Taranaki and are only believed to be in very small numbers in the region. At present the impact of koi carp in the Taranaki region are negligible, because of their small numbers. However, in neighbouring regions koi carp have demonstrated the detrimental impact that they have on native fish populations, if not strictly controlled.



7.1.2.2 Pest animal management programme

7.1.2.2.1 Objective

To promote public understanding of the 'pest' characteristic of koi carp, and to facilitate the control of koi carp by the Department of Conservation and others, for the duration of this Strategy.

7.1.2.2.2 Means of achievement

To achieve the objective for koi carp, the Taranaki Regional Council shall:

- (a) Provide **advice and information** on the pest characteristics of koi carp and measures to prevent their spread, to land occupiers and other interested parties.
- (b) In relation to **Key Native Ecosystems** and in accordance with section 9.5 of the Strategy, the Council will consider undertaking the **direct control** of koi carp where the presence of that animal threatens regionally significant indigenous biodiversity values.
- (c) Undertake **liaison and advocacy** to promote effective integrated pest animal management in accordance with section 10 of this Strategy.

7.1.2.2.3 Strategy rule

- (a) *No person shall knowingly distribute to other persons, or release, or sell, or offer for sale, or hold in premises where animals are offered for sale, koi carp (Cyprinus carpio).*

7.1.3 Mosquitofish (*Gambusia affinis*)

7.1.3.1 Description of the problem

Mosquitofish are small fish introduced to New Zealand in the 1930s to control mosquito larvae. However, they proved to be ineffective in the control of



mosquitoes and instead became pests.

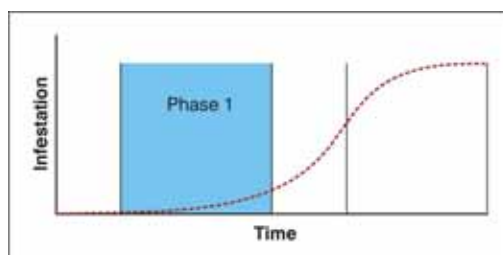
Mosquitofish have thick bodies, small mouths and large round dorsal fins and are an olive green silvery colour. The female grows to about 60mm in length, with the male reaching about 35mm in length.

Mosquitofish consume a wide range of small aquatic and terrestrial insects and crustaceans. They feed mainly on the surface of the water or only a few inches deep below the surface. They can breed rapidly when conditions are suitable and may attack larger fish by nibbling their fins.

Mosquitofish are found in vegetated ponds and lakes, rivers, creeks, springs and ditches. They reproduce several times throughout the year.

It is illegal to catch or hold mosquitofish under section 64 of the Freshwater Fisheries Regulations 1983, and they are an Unwanted Organism under the Biosecurity Act 1993.

Mosquitofish are currently in Phase 1 of establishment throughout Taranaki and are only believed to be in very small number in the region. At present the impacts of mosquitofish in the Taranaki are negligible, because of their very small numbers. However, in neighbouring regions mosquitofish have demonstrated the detrimental impact that they have on native fish populations, if not strictly controlled.



7.1.3.2 Pest animal management

7.1.3.2.1 Objective

To promote public understanding of the 'pest' characteristic of mosquitofish, and to facilitate the control of mosquitofish by the Department of Conservation and others, for the duration of this Strategy.

7.1.3.2.2 Means of achievement

To achieve the objective for mosquitofish, the Taranaki Regional Council shall:

- (a) Provide **advice and information** on the pest characteristics of mosquitofish and measures to prevent their spread to land occupiers and other interested parties.

- (b) In relation to **Key Native Ecosystems** and in accordance with section 9.5 of the Strategy, the Council will consider undertaking the **direct control** of mosquitofish where the presence of that animal threatens regionally significant indigenous biodiversity values.
- (c) Undertake **liaison and advocacy** to promote effective integrated pest animal management in accordance with section 10 of this Strategy.

7.1.3.2.3 Strategy rule

- (a) *No persons shall knowingly distribute to other persons, or release, or sell, or offer for sale, or hold in premises where animals are offered for sale, mosquitofish (*Gambusia affinis*).*

7.1.4 Rudd (*Scardinius erythrophthalmus*)

7.1.4.1 Description of the problem

Rudd are stout-bodied freshwater sport fish of the carp family. They have yellow-orange eyes, bright orange fins, silver in colour and have a sharp-edged belly. Rudd may grow to at least 400mm in length and 2kg in weight.

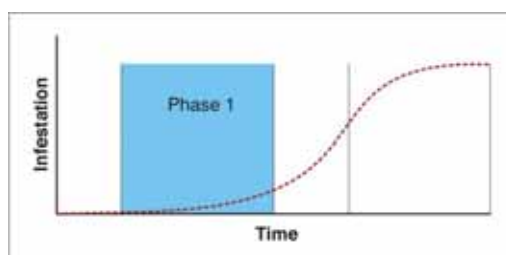


Rudd are mostly carnivorous, feeding on small aquatic crustaceans, snails and insects when small and, diversifying to small fish, worms, aquatic detritus, also aquatic plants and terrestrial insects when larger.

Rudd are found mostly in still or slow-flowing waters, especially those with prolific weed beds.

Rudd are classified as a Noxious Fish, under the Third Schedule of the Freshwater Fisheries Regulation 1983 (outside the Auckland/Waikato Fish and Game Region).

Rudd are currently in Phase 1 of establishment throughout Taranaki and are only believed to be in very small numbers in the region. At present the impacts of rudd in the Taranaki are negligible, because of their very small numbers. However, in neighbouring regions rudd have demonstrated the detrimental impact that they have on native fish populations, if not strictly controlled.



7.1.4.2 Pest animal management programme

7.1.4.2.1 Objective

To promote public understanding of the 'pest' characteristic of rudd, and to facilitate the control of rudd by the Department of Conservation and others, for the duration of this Strategy.

7.1.4.2.2 Means of achievement

To achieve the objective for rudd, the Taranaki Regional Council shall:

- (a) Provide **advice and information** on the pest characteristics of rudd and measures to prevent their spread, to land occupiers and other interested parties.
- (b) In relation to **Key Native Ecosystems** and in accordance with section 9.5 of the Strategy, the Council will consider undertaking the **direct control** of rudd where the presence of that animal threatens regionally significant indigenous biodiversity values.
- (c) Undertake **liaison and advocacy** to promote effective integrated pest animal management in accordance with section 10 of this Strategy.

7.1.4.2.3 Strategy rule

- (a) *No person shall knowingly distribute to other persons, or release, or sell, or offer for sale, or hold in premises where animals are offered for sale, rudd (*Scardinius erythrophthalmus*).*

7.2 Brown hares (*Lepus europaeus occidentalis*)

7.2.1 Description of the problem

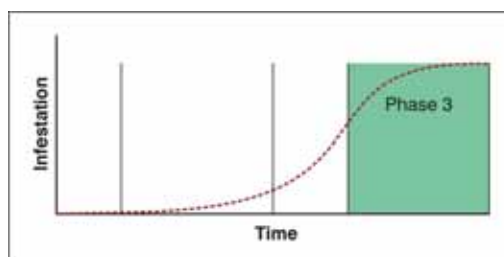
Brown hares are very similar to their close relative, the rabbit. However, it is distinguishable from the rabbit by its larger size and its larger muscular hind quarters. The hare is mostly brown in colour and its front legs are about half the size of its hind legs.



The hare's impacts in relation to agricultural production values are generally localised, however, because of their often quite destructive habits, those impacts can be significant – particularly with respect to silviculture, horticulture, cropping and amenity values. Hares damage new tree plantings, and horticultural, crop, riparian and amenity plantings, by nipping out the tops of seedlings even though they do not actually eat them. A single hare amongst such plantings can do considerable damage.

Selective browsing by hares may threaten rare and endangered indigenous plant species. It's preference for young tender growth such as regenerating plants can also affect the diversity and vigour of native vegetation in other areas. For example, in recent times there has been considerable investment by the farming community in the retirement and replanting of riparian margins¹⁹ on the ring plain. This work, amongst other things, is improving water quality and creating wildlife corridors through intensively farmed parts of the ring plain to the Egmont National Park. The damage caused by hares can be considerable resulting in added costs to the farmers through the need to replace plantings.

Brown hares are present, in relatively low numbers, throughout Taranaki. They have a widespread distribution range (Phase 3 of the infestation curve model) and occupy all kinds of grassland habitats. They are more prevalent in open and rolling countryside typical of the ring plain and southern coastal terraces of Taranaki. The hare population is not subject to large increases, as is the case for rabbits.



7.2.2 Pest animal management programme

7.2.2.1 Objective

To promote public understanding of the 'pest' characteristic of brown hares, and to facilitate the voluntary control of brown hares, for the duration of this Strategy.

¹⁹ Since 1996/1997, the Taranaki Regional Council has supplied, at cost, over 865,000 mostly native plants to farmers as part of the Riparian Management Programme.

7.2.2.2 Means of achievement

To achieve the objective for brown hares, the Taranaki Regional Council shall:

- (a) Provide **advice and information** (including the provision of specialised advice and equipment) on the control of hares to affected land occupiers and other interested parties.
- (b) **Inspect and monitor** properties with suspected or confirmed hare populations and identify any remedial action to be taken.
- (c) **Enforce** the provisions of the Act in circumstances where a person is not complying with the Strategy rule.
- (d) As appropriate, undertake the **direct control** of hares in accordance with section 9.4 of this Strategy.
- (e) In relation to **Key Native Ecosystems** and in accordance with section 9.5 of the Strategy, the Council will consider undertaking the **direct control** of hares where the presence of that animal threatens regionally significant indigenous biodiversity values.
- (f) Undertake **liaison and advocacy** to promote effective integrated pest animal management in accordance with section 10 of this Strategy.

7.2.2.3 Strategy rule

- (a) *No person shall knowingly distribute to other persons, or release, or sell, or offer for sale, or hold in premises where animals are offered for sale, brown hares (*Lepus europaeus occidentalis*).*

7.3 Feral cat (*Felis catus*)

7.3.1 Description of the problem

All cats are biologically the same. For management purposes, cats are generally divided into three categories – domestic, stray and feral (although individual cats may move between categories). However, for the purposes of this Strategy - feral cats are cats living independent of people or breeding in the wild, and includes domestic cats that have been abandoned by or strayed from their owners.

Feral cats are solitary and predominantly nocturnal animals. Feral cats are the same size and have the same range of colour as domestic cats. Although population densities are small, feral cats have an enormous home range of approximately 150 to 200 hectares. From the age of about one year, feral cats can breed in any season. They have up to two litters of about four kittens each year. They are carnivores and opportunistic feeders – feeding on a wide variety of wildlife.

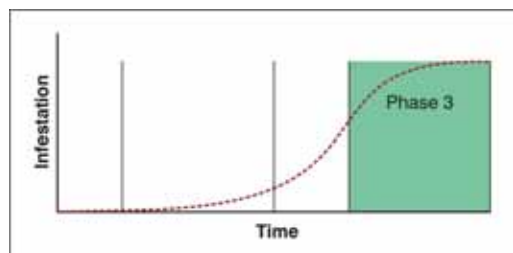


Both domestic²⁰ and feral cats are having an extraordinary impact on indigenous biodiversity values. In and around natural areas such as forests, shrubland, wetlands and dunelands, cats are significant predators of indigenous birds, reptiles and invertebrates. In such areas, even a small number of feral cats can have a disproportionate large impact on rare and endangered species, affecting the diversity, vigour and even survival of some species.

The presence of feral cats has been attributed to the extinction of a large number of indigenous bird species, on a number of offshore islands, and cats are continuing to have a detrimental impact on birds such as the kiwi on the mainland. Along with mustelids (refer section 7.8 of this Strategy), cats predate on young kiwi whereby 95% of juvenile kiwi are killed within the first six to nine months of leaving the nest.

Feral cats may also have a vector for a number of animal diseases, which, in turn, impact upon agricultural production values. Feral cats have been found with Bovine tuberculosis. Bovine tuberculosis continues to be New Zealand's principal animal health problem. Feral cats are also the primary host to *Sarcocystis spp.*, which can be spread to sheep, causing abortions and the possible rejection of meat for export.

Feral cats have a widespread distribution range in Taranaki (Phase 3 of the infestation curve model). The feral cat population is not large, but even small numbers can have a



²⁰ The impacts of feral cats are exacerbated by the impacts of domestic cats. Over 50% of New Zealand households own cats, and few farms are without them. Furthermore, regardless of how well-fed a domestic cat is – it will prey on live animals including indigenous birds, reptiles and invertebrates.

disproportionately significant impact on indigenous biodiversity values in some areas. Their population is continually being supplemented by pet cats that escape or are released into the wild.

7.3.2 Pest animal management programme

7.3.2.1 Objective

To promote public understanding of the 'pest' characteristics of cats, and facilitate the voluntary control of feral cats, for the duration of this Strategy.

7.3.2.2 Means of achievement

To achieve the objective for feral cats, the Taranaki Regional Council shall:

- (a) Provide **advice and information** (including the provision of specialised advice and equipment) on the control of feral cats to interested parties.
- (b) **Inspect and monitor** properties with suspected or confirmed feral cat populations and identify any remedial action to be taken.
- (c) **Enforce** the provisions of the Act in circumstances where a person is not complying with the Strategy rule.
- (d) As appropriate, undertake the **direct control** of feral cats in accordance with section 9.4 of this Strategy.
- (e) In relation to **Key Native Ecosystems** and in accordance with section 9.5 of the Strategy, the Council will consider undertaking the **direct control** of feral cats where the presence of that animal threatens regionally significant indigenous biodiversity values.
- (f) Undertake **liaison and advocacy** to promote effective integrated pest animal management.

7.3.2.3 Strategy rules

- (a) *No person shall knowingly abandon or release, or cause to abandon or release any cat, or actively assist in the maintenance of any cat (*Felis catus*) in a wild state.*

7.4 Feral deer

7.4.1 Description of the problem

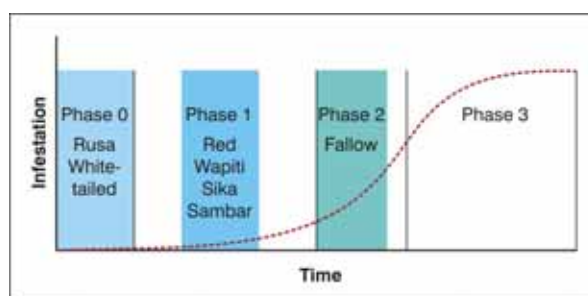
Feral deer, for the purposes of this Strategy, are red deer (*Cervus elaphus*), sika deer (*Cervus nippon*), sambar deer (*Cervus unicolor*), rusa deer (*Cervus timorensis*), fallow deer (*Cervus dama*), wapiti deer (*Cervus elaphus nelsoni*) and white-tailed deer (*Odocoileus virginianus boreali*) living in the wild but excluding farmed or escaped farmed deer²¹.

Feral deer range in size and colour, depending upon the species. Generally, however, feral deer are various shades of brown. The antlers of deer, worn by males only, are shed each year.

Feral deer are opportunist and highly adaptable feeders that can both browse and graze. That is, their diet is largely determined by what is locally available. In forested areas, feral deer will destroy the under-storey of vegetation which, when combined with possum damage to the upper canopy, can result in the severe deterioration of forested areas. Even small numbers of feral deer can cause such damage that result in the degradation of indigenous flora and fauna affecting the diversity, vigour and even survival of some rare and endangered species.

Feral deer may also have a significant impact on agricultural production values and animal health. Feral deer, along with the possum, are a major vector for Bovine tuberculosis. Bovine tuberculosis continues to be New Zealand's principal animal health problem. Feral deer can also have a significant impact in forestry production areas through browsing – particularly during the establishment phase (seedlings less than seven years old).

Established feral deer populations can adapt to, and thrive in habitats ranging from steep hill country to coastal flats and scrub margins. Approximately, 180,000 hectares in the Taranaki region is considered **potential** deer habitat. Five species of feral deer can be found in Taranaki – red deer, fallow deer, sambar deer, sika deer, and wapiti deer. Fallow deer are fairly well established over a large area in the Waitotara catchment. Elsewhere in Taranaki, there are small localised red, fallow, sambar, sika and wapiti deer populations (generally less than ten deer). The other two species of this genus – rusa and white-tailed deer – are not yet present in Taranaki but are included in this Strategy to address the risk of them becoming a problem in the future.



²¹ Farmed deer refers to deer registered in accordance with the Animal Identification Act 1993 (ie, have a registered eartag or brand).

7.4.2 Pest animal management programme

7.4.2.1 Objective

To promote public understanding of the 'pest' characteristics of feral deer, and to facilitate the voluntary control of feral deer, for the duration of this Strategy.

7.4.2.2 Means of achievement

To achieve the objective for feral deer, the Taranaki Regional Council shall:

- (a) Provide **advice and information** (including the provision of specialised advice and equipment) on the control of feral deer to affected land occupiers and other interested parties.
- (b) **Inspect and monitor** properties with suspected or confirmed feral deer populations to ascertain the range and density of deer numbers and to identify any remedial action to be taken.
- (c) **Enforce** the provisions of the Act in circumstances where a person is not complying with the Strategy rule.
- (d) As appropriate, undertake the **direct control** of feral deer in accordance with section 9.4 of this Strategy.
- (e) In relation to **Key Native Ecosystems** and in accordance with section 9.5 of the Strategy, the Council will consider undertaking the **direct control** of feral deer where the presence of that animal threatens regionally significant indigenous biodiversity values.
- (f) Undertake **liaison and advocacy** to promote effective integrated pest animal management.

7.4.2.3 Strategy rule

- (a) *No person shall knowingly distribute to other persons, or release, or sell, or offer for sale, or hold in premises where animals are offered for sale, feral deer.*

7.5 Feral goats (*Capra hircus*)

7.5.1 Description of the problem

Feral goats, for the purposes of this Strategy, are goats that are free ranging, and are not in a farmed situation.

Feral goats vary in size and colour. Both sexes may be white, brown, black, or a combination of these colours and have horns. The adult male, the larger of the two sexes, stands almost 70 centimetres high at the shoulder and weighs between 50 to 70 kilograms.

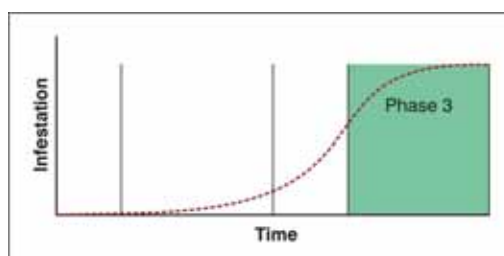


Feral goats have a high productive rate and prosper in a wide range of habitats, particularly in forested areas or areas adjacent to pasture and scrub margins.

The 'pest' potential of feral goats, in terms of their impact on indigenous vegetation, is second only to the possum. Feral goats destroy the under-storey of vegetation which, when combined with possum damage to the upper canopy, can result in the severe deterioration of forested areas. Such damage may result in the degradation of indigenous flora and fauna affecting the diversity, vigour and even survival of some rare and endangered species.

Feral goats can also impact upon agricultural production values, competing directly with livestock for pasture and potentially reducing the carrying capacity of farmland and thus reducing productivity. Feral goats can damage newly planted or young trees planted for forestry production and soil conservation purposes. In areas where feral goats are encroaching onto farms, the goats may represent a problem for stock hygiene. Goats and sheep carry and, therefore, can transmit many of the same parasites and diseases. Goats are notoriously difficult to contain by fences and goat escapees from farmland into forested areas represent an on-going problem.

In Taranaki, feral goats are widespread (Phase 3 of the infestation curve model) and are generally scattered in medium to high densities over much of the eastern hill country.



7.5.2 Pest management programme

7.5.2.1 Objective

To promote public understanding of the 'pest' characteristics of feral goats, and to facilitate the voluntary control of feral goats, for the duration of this Strategy.

7.5.2.2 Means of achievement

To achieve the objective for feral goats, the Taranaki Regional Council shall:

- (a) Provide **advice and information** (including the provision of specialised advice and equipment) on the control of feral goats to affected land occupiers and other interested parties.
- (b) **Inspect and monitor** properties with suspected or confirmed feral goat populations and identify any remedial action to be taken.
- (c) **Enforce** the provisions of the Act in circumstances where a person is not complying with the Strategy rule.
- (d) As appropriate, undertake the **direct control** of feral goats in accordance with section 9.4 of this Strategy.
- (e) In relation to **Key Native Ecosystems** and in accordance with section 9.5 of the Strategy, the Council will consider undertaking the **direct control** of feral goats where the presence of that animal threatens regionally significant indigenous biodiversity values.
- (f) Undertake **liaison and advocacy** to promote effective integrated pest animal management.

7.5.2.3 Strategy rule

- (a) *No person shall knowingly distribute to other persons, or release, feral goats (Capra hircus).*

7.6 Feral pigs (*Sus scrofa*)

7.6.1 Description of the problem

Feral pigs, for the purposes of this Strategy, are pigs that are free ranging, and are not in a farmed situation.

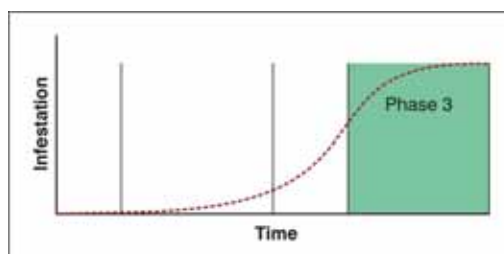
Feral pigs are smaller and more muscular than domestic pigs and have massive forequarters and smaller, shorter hindquarters. They also have longer and more coarse hair, longer, larger snouts and tasks and much narrower backs.



Feral pigs are omnivorous, opportunistic feeders. Historically, feral pigs were considered a problem to production values due to damage they caused to pasture, production forestry (in the early stages of establishment), and cropping. However, currently it is accepted that such damage is relatively localised.

More significant is the impact of feral pigs on indigenous biodiversity values. Where present in large numbers, feral pigs will eat the tops and dig up the roots of indigenous vegetation resulting in the decline of some plant species. Feral pigs may also have a significant effect on the diversity, vigour and even survival of rare native fauna. For example, by feeding on threatened populations of indigenous land snails, eating their eggs and by 'rooting' up and completely destroying their litter habitat.

In Taranaki, feral pigs are widespread (Phase 3 of the infestation curve model) and are particularly abundant throughout large parts of the eastern hill country. Their preferred habitats are in forested areas, pasture and scrub margins or reverting farmland on good soils.



7.6.2 Pest animal management programme

7.6.2.1 Objective

To promote public understanding of the 'pest' characteristics of feral pigs, and to facilitate the voluntary control of feral pigs, for the duration of this Strategy

7.6.2.2 Means of achievement

To achieve the objective for feral pigs, the Taranaki Regional Council shall:

- (a) Provide **advice and information** (including the provision of specialised advice and equipment) on the control of feral pigs to affected land occupiers and other interested parties.
- (b) **Inspect and monitor** properties with suspected or confirmed feral pig populations and identify any remedial action to be taken.

- (c) **Enforce** the provisions of the Act in circumstances where a person is not complying with the Strategy rule.
- (d) As appropriate, undertake the **direct control** of feral pigs in accordance with section 9.4 of this Strategy.
- (e) In relation to **Key Native Ecosystems** and in accordance with section 9.5 of the Strategy, the Council will consider undertaking the **direct control** of feral pigs where the presence of that animal threatens regionally significant indigenous biodiversity values.
- (f) Undertake **liaison and advocacy** to promote effective integrated pest animal management.

7.6.2.3 Strategy rule

- (a) *No person shall knowingly distribute to other persons, or release, or sell, or offer for sale, or hold in premises where animals are offered for sale, feral pigs (*Sus scrofa*).*

7.7 Magpies (*Gymnorhina tibicen*)

7.7.1 Description of the problem

Adult magpies are about 41 centimetres in length and weigh between 280 to 340 grams. The birds are black and white in colour with a range of patterns.



Magpies are gregarious and found in family groups of two to 24 birds. Their nests are usually high in exotic trees but occasionally in native trees and sometimes on man-made structures such as power pylons. Their breeding season is generally between August and November.

Breeding magpies, on average, rear one chick.

Extremely territorial, magpies have the reputation for being the most aggressive birds in New Zealand. Magpies will defend their nesting territory against all perceived threats, including people. On such occasions, magpies will aggressively harass intruders in their territory by swooping and sometimes raking them with their claws.

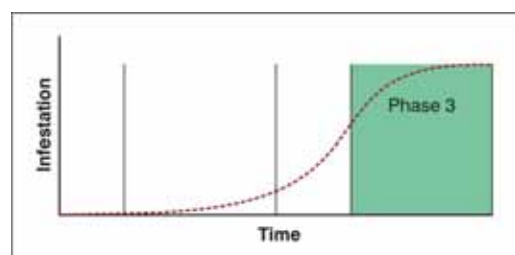
Magpie attacks on people are common, particularly during the breeding season, and can be quite terrifying. However, magpie attacks on children are of particular concern. There are many reported instances of magpies attacking children, usually around the head area, and causing physical injuries. Injuries in and around the eyes are common and can potentially be serious.

Magpies also exhibit the same aggressive behaviour against other birds and consequently are a perceived threat to indigenous biodiversity values. Though largely anecdotal, there is growing evidence that magpies can exclude indigenous birds from their breeding territory, which in turn affects the potential range available to particular indigenous bird species.

Magpies also prey on indigenous invertebrates such as skinks and geckos and indigenous bird chicks and eggs to feed their own young. This in turn may affect the abundance of indigenous fauna species in some areas.

Again there is anecdotal evidence noting a return and increase of bird life, both indigenous and introduced, following the control of large magpie populations. However, further research is required to confirm (or otherwise) anecdotal evidence concerning magpie impacts.

In Taranaki, magpies are widespread (Phase 3 of the infestation curve model) throughout the region. While their preferred habitat is open pastureland, magpies can also be found in urban areas and on the edge of indigenous forests and scrub and production forests.



7.7.2 Pest animal management programme

7.7.2.1 Objective

To gather information and promote public understanding of the 'pest' characteristics of magpies, and to facilitate the voluntary control of magpies, for the duration of this Strategy.

7.7.2.2 Means of achievement

To achieve the objective for magpies, the Taranaki Regional Council shall:

- (a) Provide **advice and information** (including the provision of specialised advice and equipment) on the control of magpies to affected land occupiers and other interested parties.
- (b) **Inspect and monitor** properties with suspected or confirmed magpie populations and identify any remedial action to be taken.
- (c) **Enforce** the provisions of the Act in circumstances where a person is not complying with the Strategy rule.
- (d) As appropriate, undertake the **direct control** of magpies where there is a significant potential risk to children's health and safety (refer section 9.4 of this Strategy).
- (e) In relation to **Key Native Ecosystems** and in accordance with section 9.5 of the Strategy, the Council will consider undertaking the **direct control** of magpies where the presence of that animal threatens regionally significant indigenous biodiversity values.
- (f) Undertake **liaison and advocacy** to promote effective integrated pest animal management.

7.7.2.3 Strategy rule

- (a) *No person shall knowingly distribute to other persons, or release, or sell, or offer for sale, or hold in premises where animals are offered for sale, magpies (*Gymnorhina tibicen*) except for the purpose of trapping and destroying magpies.*

7.8 Mustelids

7.8.1 Description of the problem

The ferret (*Mustela furo*), stoat (*Mustela erminea*) and weasel (*Mustela nivalis vulgaris*) belong to a group of small to medium sized carnivores known as mustelids. They are considered together in this Strategy, as their effects on the environment are largely the same.



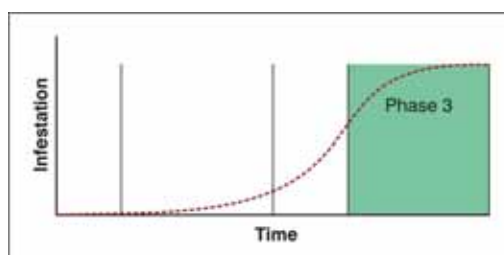
Mustelids share the characteristic long body, short legs and a smooth pointed face. Mustelids vary in size. The adult male ferret, the largest of the three species is, on average, about 41 centimetres long, the stoat 29 centimetres, and the weasel 22 centimetres.

Mustelids search for prey through all possible cover, down every accessible hole and up every likely tree in the course of each hunting excursion. Killing behaviour is independent of hunger, mustelids will, if the opportunity arises, kill any suitable prey that it can, and cache the surplus for future use.

Mustelids are serious predators of indigenous bird-life. Mustelid, and particularly stoat predation, is considered to be the primary factor contributing to the decline of mainland kiwis and has been linked to the disappearance of a number of other threatened indigenous bird species such as the kokako. Along with cats (refer section 7.3 of this Strategy), mustelids predate on young kiwi whereby 95% of juvenile kiwi are killed within the first six to nine months of leaving the nest.

Mustelids also have an unknown but suspected participation in the Bovine tuberculosis cycle. Further, mustelids carry parasites and toxoplasmosis which causes abortions in sheep and illness in humans.

In Taranaki, mustelids are in Phase 3 of establishment. Mustelids are widely distributed in low densities, in a variety of habitats, throughout the region. Stoats are the most abundant of the three species.



7.8.2 Pest animal management programme

7.8.2.1 Objective

To promote public understanding of the 'pest' characteristics of mustelids, and to facilitate the voluntary control of mustelids, for the duration of this Strategy.

7.8.2.2 Means of achievement

To achieve the objective for mustelids, the Taranaki Regional Council shall:

- (a) Provide **advice and information** (including the provision of specialised advice and equipment) on the control of mustelids to interested parties.
- (b) **Inspect and monitor** properties with suspected or confirmed mustelid populations and identify any remedial action to be taken.
- (c) **Enforce** the provisions of the Act in circumstances where a person is not complying with the Strategy rule.
- (d) As appropriate, undertake the **direct control** of mustelids in accordance with section 9.4 of this Strategy.
- (e) In relation to **Key Native Ecosystems** and in accordance with section 9.5 of the Strategy, the Council will consider undertaking the **direct control** of mustelids where the presence of that animal threatens regionally significant indigenous biodiversity values.
- (f) Undertake **liaison and advocacy** to promote effective integrated pest animal management.

7.8.2.3 Strategy rule

- (a) *No person shall knowingly distribute to other persons, or release, or sell, or offer for sale, or hold in premises where animals are offered for sale, any ferret (*Mustela furo*), stoat (*Mustela erminea*) or weasel (*Mustela nivalis vulgaris*).*

Part Three

Administrative provisions

8. Powers conferred

To achieve the objectives of this Strategy and to give effect to its objectives and means of achievement, the Taranaki Regional Council shall use the statutory powers from Part VI of the Act as listed in Table 1 below.

The Principal Officer of the Taranaki Regional Council shall appoint Authorised Persons and Accredited Persons for the purpose of exercising functions, powers and duties under the Act. Most of these functions, powers and duties relate to the implementation of this Strategy.

When carrying out his or her duties, an Authorised Person shall be limited to using those powers specified in his or her Instrument of Appointment. The powers specified in an Authorised Person's Instrument of Appointment are based upon those powers identified in Table 1 below and reflect the officer's experience, technical competence and qualifications relevant to his or her responsibilities. Authorised persons also have the power to request information from land occupiers under section 43 of the Act.

Table 1: Administrative powers under the Act

Administrative powers	Reference in the Biosecurity Act
The appointment of authorised and accredited persons	Section 103(3) and (7)
Delegation to authorised persons	Section 105
Power to require assistance	Section 106
Power of inspection	Sections 109, 110 and 112
Power to record information	Section 113
General powers	Section 114
Application of articles or substances from aircraft	Section 114A
Use of dogs and devices	Section 115
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
Power to give directions	Section 122
Power to vaccinate etc	Section 123
Power to act on default	Section 128
Liens	Section 129
Declaration of restricted place	Section 130
Declaration of controlled area	Section 131
Options for cost recovery	Section 135
Failure to pay	Section 136

9. Implementation

This section of the Strategy sets out the policy and provisions relating to achieving and giving effect to the objectives for individual pest animals. Table 2 below summarises the means of achievement.

Table 2: Summary of the means for achieving individual pest animal management objectives

Pest animals	Advise & educate	Monitor & inspect	Enforce strategy rules		Direct control (KNEs)	Direct control (to eradicate)	Self-help possum control programme
			Sale, distribute & exhibit controls	Occupier obligations			
Eradication pest animal							
Rooks	♦	♦	♦		♦	♦	
Containment pest animals							
Argentine ants	♦	♦	♦	♦	♦		
Brushtail possums	♦	♦	♦	♦	♦		♦
European rabbits	♦	♦	♦	♦	♦		
Surveillance pest animals							
Brown bull-headed catfish	♦				♦		
Brown hares	♦	♦	♦		♦		
Feral cats	♦	♦	♦		♦		
Feral deer*	♦	♦	♦		♦		
Feral goats	♦	♦	♦		♦		
Feral pigs	♦	♦	♦		♦		
Koi carp	♦				♦		
Magpies	♦	♦	♦		♦		
Mosquitofish	♦				♦		
Mustelids**	♦	♦	♦		♦		
Rudd	♦				♦		

Note: * Includes red, sika, sambar, rusa, fallow, wapiti & white-tailed deer

** Includes ferrets, stoats and weasels

In addition to implementing the various programmes above, the Taranaki Regional Council, as the management agency shall be responsible for the general administration of this Strategy. General administration includes servicing the Council in relation to general reporting, liaison and advocacy, fiscal planning and rate collection associated with the administration of the Strategy, the maintenance of information databases, and

the preparation of and reporting on the Operational Plan for this Strategy (refer section 12.1 of the Strategy).

9.1 Provision of advice and education

9.1.1 Policy

Policy

The Taranaki Regional Council shall, in relation to each pest animal, provide technical advice and information to land occupiers and the wider community for the purposes of:

- (a) promoting greater public awareness of the potential or actual adverse effects associated with pest animals;*
- (b) promoting greater public awareness of an individual's responsibilities under this Strategy; and*
- (c) promoting effective pest animal control or the adoption of management techniques that will avoid, minimise or remedy the adverse impacts associated with pest animals.*

9.1.2 Advice and education programmes

The Taranaki Regional Council shall implement advisory and educational pest management programmes, which includes the following components:

- (a) an annual programme of information transfer for all properties in the **Self-help Possum Control Programme** including property specific advice on possum control techniques and recommended timeframes for undertaking control;
- (b) maintain the Council's website www.trc.govt.nz and respond to **public requests** for information or enquiries relating to the identification of pest animals, and information on their impacts, and appropriate control options;
- (c) the provision of advice and information to land occupiers when undertaking **property inspections** and other pest animal management activities;
- (d) the preparation and distribution of **pamphlets and other educational material** to schools and other interest groups and individuals in relation to pest animal management;
- (e) as appropriate, organise timely and relevant **media and publicity programmes** to highlight particular pest animal management issues; and
- (f) undertake, on request, **presentations** to interested groups and, as appropriate, organise and attend **field days, meetings and discussion groups**.

9.2 Monitoring and inspections

9.2.1 Policy

Policy

The Taranaki Regional Council shall monitor the location, nature and extent of pest animal infestations in order to:

- (a) establish whether, and to what degree, land occupiers are complying with the strategy rules prescribed in Part Two of this Strategy; and*
- (b) establish the extent to which the objectives set out in Part Two of this Strategy are being achieved.*

9.2.2 Inspection programme

The Taranaki Regional Council shall monitor land occupier compliance with the rules prescribed in Part Two of this Strategy by:

- (a) inspecting properties in the **Self-help Possum Control Programme** to ensure land occupiers are undertaking effective possum control;
- (b) inspecting **other properties** following the identification of a problem either by the public or by an Authorised Person of the Council;
- (c) inspecting **retail outlets** known to be selling animals to ensure no pest animals are being sold or offered for sale; and
- (d) recording the number of **public complaints** pertaining to individual pest animals, **instances of non-compliance** with the strategy rules, and the **Council's response**.

9.2.3 Monitoring the achievement of Strategy objectives

The Taranaki Regional Council shall monitor the extent to which the objectives set out in Part Two of this Strategy are being achieved by:

- (a) annually mapping the **implementation** of the **Self-help Possum Control Programme**;
- (b) monitoring **possum population densities** in new areas included in the **Self-help Possum Control Programme**, immediately prior to and following initial possum control;
- (c) monitoring **possum population densities and trends**, over time, in areas included in the **Self-help Possum Control Programme**;
- (d) developing with the Department of Conservation a **Memorandum of Understanding** that sets out **agreed collaborative monitoring, reporting and management programmes addressing possum control around the buffer of the Egmont National Park**;
- (e) annually surveying and mapping the **presence and distribution of rooks and heavy infestations of Argentine ants**;
- (f) monitor, for each pest animal, the effectiveness of **direct control** undertaken by the Taranaki Regional Council;
- (g) recording the number of **public complaints** pertaining to individual pest animals and **instances of non-compliance** with the strategy rules; and

- (h) recording the number of **public enquiries** in relation to individual pest animals, including requests for information.

9.2.4 Monitoring other effects of this Strategy

The provisions of this Strategy do not replace other legislation or regulations relating to the use of toxins and impacts on Maori culture and traditions, and public health and safety. Where appropriate, the Taranaki Regional Council shall monitor and report on any impacts arising through the use of toxins through systems and processes established under the Resource Management Act. The Taranaki Regional Council will also routinely record and report any adverse effects arising from its direct control operations, including non-target kills.

Agencies other than the Taranaki Regional Council are more likely to undertake monitoring and respond to any problems under the Health and Safety in Employment Act 1992, the Hazardous Substances and New Organisms Act 1996 and the Agricultural Compounds and Veterinary Medicines Act 1997.

9.3 Regulatory management

9.3.1 Policy

Policy

In the event that a land occupier fails to comply with any requirement included in a rule prescribed in Part Two of this Strategy, an Authorised Person of the Taranaki Regional Council shall:

- (a) advise the occupier of their non-compliance and direct him or her to take remedial action; and*
- (b) follow up the initial inspection to confirm what remedial action has been taken and identify any outstanding requirements.*

In instances of continued non-compliance, the Authorised Person will report to Council.

9.3.2 Failure to comply

In instances of continued non-compliance, the Taranaki Regional Council shall consider enforcement action. Depending upon the individual circumstances of the case, the Taranaki Regional Council may undertake one or both enforcement options:

- (a) **prosecute** under section 154 of the Act; or
- (b) undertake **default action** under section 128 of the Act. Default action involves the Council undertaking the works or measures specified in a Notice of Direction and recovering the costs and expenses of that work from the occupier to whom the Notice was given.

9.3.3 Exemption provisions

The Taranaki Regional Council may, upon the written request of a land 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 Taranaki Regional Council shall be satisfied that:

- (a) the requirements have been substantially complied with and that further compliance is unnecessary; or
 - (b) 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
 - (c) the prescribed requirements are clearly unreasonable or inappropriate in the particular case; or
 - (d) events have occurred that make the prescribed requirements unreasonable or inappropriate in the particular case; and
- that the granting of the exemption will not significantly prejudice the attainment of the objectives of this Strategy.

On receipt of any request, the Taranaki Regional Council shall advise that person within ten (10) working days of its decision whether or not to exempt him or her from any requirement in any strategy rule included in Part Two of this Strategy.

Any exemption may be subject to conditions ensuring that:

- (a) measures are taken to minimise any adverse and unintended effects of the pest animal; or
- (b) any beneficial effects associated with the pest animal are safeguarded or enhanced.

9.4 Direct control programmes (and other assistance)

Land occupiers are generally responsible for pest animal management in the first instance. However, the Taranaki Regional Council shall consider undertaking and funding the direct control of the pest animals in the following circumstances:

- (a) Direct control to facilitate the **eradication** of rooks.²²
- (b) In relation to the **Self-help Possum Control Programme**, the direct control of possums in association with:
 - Initial possum control – this involves the Council, on an area being initially included in the Programme, undertaking possum control on all properties in that area and reducing possum density levels to at least a 5% residual trap catch (approximately 4,000 to 6,000 hectares per annum); and
 - Maintenance assistance – this involves the Council undertaking possum control on properties already in the Programme in situations where the Council is satisfied that the land occupier has made a reasonable effort to achieve effective possum control but has failed despite that effort.²³
- (c) Direct control of pest animals and other harmful animals having an impact on indigenous biodiversity values associated with privately-owned **Key Native Ecosystems** (refer section 9.5).

²² For pest animals that are of limited or very restricted distribution, ie rooks in Taranaki, proactive control can be undertaken at a relatively modest cost. The more widespread the animal, the more difficult and costly the control for both the region and individual land occupiers.

²³ For example, in areas with large amounts of favourable possum habitat, or in areas where possums have become 'bait shy' and alternative techniques must be applied.

- (d) **Possum control assistance** in the **eastern hill country**. This will generally involve the provision of technical and planning assistance to land occupiers in the eastern hill country undertaking possum control, as time and circumstances permit.
- (e) In response to a public enquiry and, as time and circumstances permit, **direct control for any other pest animals**. This would generally involve the control of magpies (particularly where they pose a threat to children's health and safety) and Argentine ants.
- (f) **By-control of other pest animals**. This involves Council officers, when carrying out their pest management duties, controlling pest animals as the opportunity arises.

Where direct control is considered appropriate, the Taranaki Regional Council shall adopt the most appropriate and cost effective control technique(s). The treatment techniques to be applied may be one of, or a combination of the following:

- (a) **Chemical control**: relates to the use of approved and registered pesticides, fumigicides or repellents, in accordance with manufacturers' instructions and in compliance with relevant statutory requirements;
- (b) **Shooting**, following correct safety procedures;
- (c) **Trapping**, using correct safety and humane methods;
- (d) **Management control**: relates to the adoption of land management practices that will minimise problems associated with pest animals, eg maintaining a vigorous pasture sward minimises hare and rabbit habitat.

The Taranaki Regional Council shall also:

- (a) on request, assist land occupiers within the Self-help Possum Control Programme to acquire the necessary knowledge and expertise to obtain a Test Certificate to use vertebrate toxic agents (ie, pesticides);
- (b) on occasion, provide, on a cost-recovery basis, selected pest animal control products, material and equipment to all persons who can legally buy them; and
- (c) maintain a register of suitably qualified contractors who may be contacted by land occupiers to control pest animals on their land. 'Suitably qualified' contractors refers to those that have over time demonstrated to the Council that they have pest management expertise, are authorised to use appropriate vertebrate toxic agents, and have obtained or comply with other required approvals, including liability insurance and health and safety policies.

9.5 Site-led pest control programmes in Key Native Ecosystems

9.5.1 Policy

Policy

The Taranaki Regional Council shall consider undertaking and funding the direct control of any pest animal (and other harmful animals) having significant and adverse impacts on indigenous biodiversity values associated with privately owned Key Native Ecosystems.

9.5.2 Key Native Ecosystems

Key Native Ecosystems refers to terrestrial sites (ie, sites on land) identified by the Taranaki Regional Council as having regionally significant indigenous biodiversity values.²⁴

The Taranaki Regional Council has a mandate under the Resource Management Act to maintain indigenous biodiversity. As part of that mandate, the Council will assess and identify sites that contain values of regional significance and apply a targeted (ie, site-led) approach to prioritise the protection of these sites, particularly in relation to pests and weeds.

The targeted approach seeks to focus on maintaining and enhancing indigenous biodiversity values that are particularly threatened or rare in the region. As appropriate, the Taranaki Regional Council will consider the use of financial incentives and other forms of assistance, including pest and weed control, to maintain and enhance regionally significant values associated with Key Native Ecosystems.

9.5.3 Direct control and other assistance

In relation to this Strategy the aim of any pest animal control assistance is to manage potentially harmful animal species in a manner and to a level that protects the regionally significant values associated with a particular site.

Taranaki Regional Council assistance will be considered on a case-by-case basis with particular regard being given to the following matters:

- (a) **Privately owned land:** Regionally significant indigenous biodiversity values have been identified throughout the region – on both private and Crown land. The Department of Conservation is separately empowered and resourced to manage the public conservation estate. Therefore the Council's focus will be on privately owned land in Key Native Ecosystems. The Council will also endeavour to control non-Strategy pests²⁵ in relation to protecting Key Native Ecosystems.
- (b) **Self-help:** The Council may undertake initial pest animal and other control where private land occupiers agree to undertake subsequent control and treat any re-infestation or new infestations.
- (c) **Working with other private land occupiers:** In some cases, Council assistance may facilitate private land occupier efforts to control pest animals (and other harmful animals) that have actual or potential adverse effects on the values of a Key Native Ecosystems. This assistance may be in the form of site specific advice and information or the provision of pest animal control chemical and equipment for the land occupier to use. In other circumstances, it may be more appropriate for the Council to undertake the direct control of infestations.
- (d) **Working with other agencies:** The Council's actions are in addition to actions that will be undertaken by other agencies and, where appropriate, the Council will endeavour to co-ordinate and collaborate with other agencies to maximise benefits of respective efforts.

²⁴ The Taranaki Regional Council has identified Key Native Ecosystems pursuant to criteria set out in the Draft 'Proposed Regional Policy Statement for Taranaki' (2006).

²⁵ Non-Strategy pests include: rats, mice, myna and other animals not included in this Strategy but which may threaten the indigenous biodiversity values of Key Native Ecosystems.

- (e) **Animal threats:** Direct control and other assistance is not confined to animals declared to be 'pests' in this Strategy but will target any harmful animal that threatens the regionally significant values associated with a Key Native Ecosystem and to a level that protects those values.

9.6 Biological control programmes

In addition to the above, the Taranaki Regional Council may provide financial and logistical support in relation to research for suitable and approved biological control agents for pest animals. Should a suitable biological control agent be developed during the duration of the Strategy, the Council may undertake to release, propagate and re-distribute those agents.

The Taranaki Regional Council may also provide financial and logistical support in applied research on biosecurity related matters.

10. Integrated management and cross-boundary issues

The aim of integrated management is to promote the purpose of this Strategy (section 1.2 of this Strategy) by minimising the effects of cross-boundary issues and promoting complementary, efficient and effective pest animal management.

Cross-boundary issues may occur in a number of ways. For example, when the environmental effects of one resource use are felt in another part of the environment (for example, water quality may be affected by the discharge of pesticides) or when management approaches and techniques are constrained by administrative boundaries. To minimise the effects of cross boundary issues, the Taranaki Regional Council shall adopt the following procedures:

- (a) coordinate pest animal control operations with the Department of Conservation, the Animal Health Board and other pest management agencies (including Environment Waikato or Horizons.mw), where practicable and there are agreed benefits;
- (b) liaise, as appropriate, with the Department of Conservation, the Animal Health Board (Inc), Biosecurity New Zealand and other pest management agencies over pest animal management issues which are best dealt with or coordinated at a national or regional level;
- (c) develop with the Department of Conservation a Memorandum of Understanding that sets out agreed collaborative monitoring, reporting and management programmes addressing possum control around the buffer of the Egmont National Park;
- (d) advocate and encourage other authorities to adopt policies, practices or measures which will avoid, mitigate or remedy adverse effects associated with pest animals;
- (e) make submissions on pest management in respect of documents prepared by other authorities; and
- (f) when reviewing this Strategy, have regard to any relevant national or regional pest management strategy concerning the same animal, any regulation, or any regional policy statement, or regional plan prepared under the Resource Management Act.

Coordination with other pest management strategies will be achieved through a process based on consultation and communication between the Taranaki Regional Council and other persons or organisations proposing and implementing strategies.

Any other Pest Management Strategy made by the Taranaki Regional Council under section 79F of the act will not be inconsistent with this Strategy.

11. Funding provisions

11.1 Strategy costs

In the first year of the Strategy the total cost to the region to administer and implement the Strategy is estimated at **\$1,548,706**. The costs of administering and implementing the Strategy principally relate to the implementation of the Self-help Possum Control Programme (which represents approximately 90% of the Strategy's total cost).

The services provided by this Strategy include:

- (a) The provision of advice and information;
- (b) Monitoring;
- (c) Enforcement of the Strategy's rules;
- (d) Undertaking direct control and other assistance; and
- (e) General administrative functions.

The cost of the Strategy reflects a similar level of pest plant management funding to previous years. The Taranaki regional Council expects that the relative cost of pest animal management will be similar for the duration of the Strategy.

11.2 Funding sources

The Taranaki Regional Council has determined that achieving the purpose and objectives of this Strategy benefits land occupiers collectively and is a 'public good' (that is, the regional community generally benefits from the implementation of the Strategy). Therefore, to ensure equity, encourage collective efficiencies, and minimise transactional costs associated with collecting Strategy funds, Strategy costs will be recovered from land occupiers by the means and to the extent identified below.

General rate and investment revenue

Private land occupiers will contribute to the Strategy through a proportion of the general rate that is levied on every separately rateable property in the region under section 33 of the Rating Powers Act 1988 and a proportion of the Taranaki Regional Council's investment revenue.

Recovery of direct costs

The Taranaki Regional Council will recover costs for a particular function or service under section 135 of the Act. In the event that the Council incurs costs arising from a land occupier's failure to comply with a notice of direction, the Council will recover such costs under section 128 of the Act. The amount of money recovered from direct charges will vary from year-to-year depending on the number of cost recovery pest animal control operations undertaken, if any.

Table 3 (on the next page) sets out a snapshot of the indicative revenues and costs up until the 2010/11 period of the Strategy including the effect of inflation. Funding sources include direct charges and a proportion of the general rate.

Table 3: Indicative costs and sources of funds (exclusive of GST) ²⁶

	2006/07	2007/08	2008/09	2009/10	2010/11
	\$	\$	\$	\$	\$
Expenditure					
Pest management	1,548,706	1,583,745	1,602,136	1,630,835	1,646,312
Total expenditure	1,548,706	1,583,745	1,602,136	1,630,835	1,646,312
Revenue					
Direct charges	77,200	77,200	77,200	77,200	77,200
Government Grants	-	-	-	-	-
Total revenue	77,200	77,200	77,200	77,200	77,200
Net cost of service	1,471,506	1,506,545	1,524,936	1,553,635	1,569,112
Funded by:					
General rates and investment revenue	1,471,506	1,506,545	1,524,936	1,553,635	1,569,112
Total Funding	1,471,506	1,506,545	1,524,936	1,553,635	1,569,112

11.3 Rating provisions

Rate remissions, postponements and additional charges

The New Plymouth, Stratford and South Taranaki district councils collect general rates on behalf of the Taranaki Regional Council. The policies adopted by the Taranaki Regional Council in relation to rate remissions, postponements and additional charges are those adopted by the respective district councils.

Compensation

No compensation will be payable by the Taranaki Regional Council for any claims brought, for any matters, as a result of the implementation of the Strategy.

In terms of section 80A(h) of the Act, no compensation will be payable by the Taranaki Regional Council in respect of losses incurred as a direct result of this Strategy's implementation. Notwithstanding that, in incidents where any person as a result of an Authorised Person's negligence or unreasonable action has incurred losses, the Council will consider all means for resolving any disagreement including the payment of compensation.

Administrative problems or costs

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

²⁶ Taranaki Regional Council (2006) *'Long-Term Council Community Plan 2006/2016'*.

12. Review of the management agency and the Strategy

12.1 Operational Plan

Under section 85(1)(a) of the Act, the Taranaki Regional Council, as the management agency, must prepare an Operational Plan (to be reviewed annually) within three months of this Strategy being approved.

As required under section 85(1)(b) and (c) of the Act, the Operational Plan will be reviewed annually and a report prepared for the Taranaki Regional Council on its implementation. Assessment of the Council's performance, as the management agency, will be reported each year in an annual report for pest animal management. These reports are available to any stakeholder or member of the public, on request.

12.2 Review of the Strategy

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

- (a) When and if new issues arise with respect to other harmful animals, or if regional monitoring shows a significant change in an existing issue or shows that a review would otherwise be appropriate.
- (b) As required by the Act, a full review (within the meaning of section 88 of the Act) will be carried out no later than five years after the date upon which this Strategy was made. That review will include a review of the Strategy, as well as any minor changes made to the Strategy under section 88A of the Act, and will involve renotifying a proposal for a regional pest management strategy.

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Appendices

Appendix I: Problems caused and parties affected by pest animals

Pest animals	Adverse and unintended effects	Current level of impact	Potential level of impact	Principal beneficiary/exacerbator	Beneficiary(B)/exacerbator(E)	
					Minor	Major
Argentine ants	Diminished amenity values	Low	High	Occupier		B,E
	Diminished ecological values	Nil	High	Regional community		B
	Diminished horticulture production values	Nil	High	Horticultural sector		B
Brown bull-headed catfish	Diminished ecological values	Nil	Medium	Occupier		B
				Regional community		B
				Intentional releases		E
Brown hare	Diminished livestock and production values	Low	Medium	Occupier		B,E
				Farming sector	B	
Brush-tail possum	Diminished livestock and production values	Low to Medium	High	Occupier		B,E
				Regional community		B
				Farming sector		B
	Diminished ecological values	High	High	Regional community		B
	Maori values	Low	Low	Tangata whenua		B
European rabbit	Diminished livestock and production values	Low	High	Occupier		B,E
				Farming sector	B	
				Regional community		B
Feral cat	Diminished ecological values	Low to Medium	High	Regional community		B
				Intentional releases		E
Feral deer*	Diminished livestock, production and agriculture values	Low	Low	Occupier	B	E
				Farming sector	B	
				Regional community	B	
	Diminished ecological values	Low	High	Regional community		B
				Intentional releases		E
Feral goat	Diminished ecological values	Low to Medium	High	Regional community		B
				Intentional releases		E
	Diminished livestock, production and agriculture values	Low	Medium	Occupier	B	E
				Forestry sector		B
	Farming sector		B			
	Maori values	Low	Low	Tangata whenua	B	
Feral pig	Diminished ecological values	Low	Medium	Regional community		B
				Intentional releases		E
Koi carp	Diminished ecological values	Low	Medium	Occupier		B
				Regional community		B
Magpie	Public health and safety	Low	Low	Regional community		B
	Diminished ecological values	Low	Medium	Regional community		B
Mosquitofish	Diminished ecological values	Low	Medium	Occupier		B
				Regional community		B
Mustelids**	Diminished ecological values	Low	High	Regional community		B
Rook	Diminished production values	Low	Medium	Cropping sector		B
				Farming sector	B	
				Occupier who mismanage attempts at control		E
Rudd	Diminished ecological values	Low	Medium	Occupier		B
				Regional community		B

Note: * Includes red, sika, sambar, rusa, fallow, wapiti & white-tailed deer

** Includes ferrets, stoats and weasels

A fuller description of adverse and unintended environmental effects attributable to this Strategy's nominated pest animals is presented in sections 5, 6 and 7 of this Strategy. An explanation of the need for regional intervention is also outlined in those sections.

Appendix IIA: Trap Catch Technique for monitoring occupier compliance with strategy rules for possums

Trap Catch Index

Occupiers of land in the Self-help Possum Control Programme are required to keep possum infestation levels on the land they occupy at or below a Trap Catch Index of 10% (refer section 6.1.2.4 of this Strategy).

The Trap Catch Index for possum infestation levels on a property is measured according to the national protocol for monitoring possum populations (2005)²⁷.

The Trap Catch monitoring technique involves trapping and recording the number of possums and non-target animals (such as rats) caught and sprung (empty) traps on a property.

Trap lines, comprising of 10 or 20 traps, are set on a property at 20-metre intervals along possum habitat areas, such as scrub or bush cover. The number of traps set on a property depends upon the size of a property and the amount of possum habitat present. Traps are checked daily for two or three days and the number of possums and non-target animals caught and traps that are sprung are recorded.

The number of possums caught over that period determines the Trap Catch Index for a property (and the occupier's compliance with the Strategy rule).

The Trap Catch Index is determined by the number of possums caught, divided by the number of corrected trap nights x100. (e.g. 60 traps equals two trap lines, comprising of 10 traps each, monitored over three nights less half a night per trap sprung or non target catch). (9) For example, a 10% residual trap catch means that for every 60 traps set 6 possums are caught. If more than 6 possums are caught, then a compliance breach has occurred.

²⁷ *National Possum Control Agencies' Protocol for Monitoring Using the Trap-Catch Method – September 2005'* .

Appendix IIB: Modified McLean Scale for monitoring occupier compliance with strategy rules for rabbits

Modified McLean Scale

Occupiers are required to keep rabbit infestation levels on the land they occupy at or below three on the Modified McLean Scale (refer section 6.3.2.3 of this Strategy).

The Modified McLean Scale involves an Authorised Person inspecting a property, walking a number of transects (never fewer than four)²⁸ covering a different area, and, for each transect, assigning a score based principally on faecal pellet heap density, and fresh rabbit sign.

At the end of the property inspection all scores are added up and divided by the total number of transects giving the average rabbit density level for the property. As indicated in the Table below scale of three to four on the Modified McLean Scale represents 'moderate' infestation and is the level at which the land occupier is required to undertake control.

The Modified McLean Scale of rabbit infestation

McLean Scale	Indications of rabbit infestation
1	No signs seen. No rabbits seen
2	Very infrequent sign present. Unlikely to see rabbits
3	Sign infrequent with heaps more than 10 metres apart. The occasional rabbit may be seen
4	Sign frequent with some heaps more than 5 metres but less than 10 metres apart. Groups of rabbits may be seen
5	Sign very frequent with heaps less than 5 metres apart in pockets. Rabbits spreading
6	Sign very frequent with heaps less than 5 metres apart over the whole area. Rabbits may be seen over the whole area
7	Sign very frequent with 2 – 3 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 heaps often less than 5 metres apart over the whole area. Rabbits likely to be seen in large numbers over the whole area

²⁸ A series of transects is undertaken, covering different areas, to obtain an 'average' score that avoids the possibility of a biased figure based on the worst 'pockets' of rabbit infestations having been monitored.