Christchurch City Council Parks

Operational pest animal management plan

2023 – 2033

Christchurch City Council

Approvals Panel			
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Contents

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Executive summary

The Christchurch City Council's (Council) Operational Pest Animal Management Plan for parks has been prepared in response to Council's statutory obligations to 1) halt the decline of indigenous biodiversity, 2) mitigate biosecurity threats, and 3) maintain the integrity of public infrastructure. The focus is on both the ecological impact of pest animals, as well as the economic damage and nuisance they cause. The Plan has been prepared in accordance with the guidance provided in the Canterbury Regional Pest Management Plan 2018-2038 (RPMP) and the Council's Biodiversity Strategy 2008-2038.

The purpose of this plan is to enable prioritisation and coordination of animal pest management across parks. The Pest Animals section (p101) of Council's Biodiversity Strategy acknowledges the following key conservation action:

> *"Develop a collective strategy to allow for greater coordination, control and recognition of pest animal problems. A cooperative approach is the only viable means to achieve long term control of pests across large areas."*

The plan will be implemented and monitored by the annual operational animal pest management programme formulated each year through the meeting of representative parks staff from each team with pest animal projects and manawhenua representative(s). These representatives will include staff from Regional Parks, Urban Parks (including Cemeteries), Botanic Gardens, Hagley Park, City Centre, Garden and Heritage Parks, Residential Red Zone, and Papatipu Rūnanga. It should be noted that fish, invertebrates, birds and reptiles regarded as pests will not be included in this plan and shall be dealt with on a case-by-case basis.

Figure 1: *Brushtail Possum (Trichosurus Vulpecula). Photo Credit: Geof Wilson (http://www.lakeheron.co.nz/)*

Introduction

Context

Councils have a core statutory obligation under the Resource Management Act 1991 (RMA) to protect and maintain indigenous biodiversity on Council land, and on private land through advocating for indigenous biodiversity generally. Managing pests is also important to maintain the operational integrity of core council assets and infrastructure. The Biosecurity Act 1993 requires councils to control organisms declared as pests in Regional Pest Management Strategies on land that they occupy and to meet the costs of doing so. Managing animal pests is also important to maintain the operational integrity of core parks assets and infrastructure. The Predator Free 2050 initiative further reinforces the importance of this plan, with Council being a partner in Pest Free Banks Peninsula.

There is a need for a collaborative and systematic approach to animal pest control across the Parks Unit, to ensure we are concentrating efforts and funding on priority sites. Knowledge sharing and a consistency of approach is crucial. We need to make sure that we are continually developing our knowledge of pest animal presence and behaviour across the district to ensure the correct methods of control are used to protect biodiversity and meet ECan requirements and community expectations. It is important that any animal pest control is led by ecologically meaningful outcomes that can be measured, and that monitoring of pest species is in place to measure the efficacy of the control.

In terms of biodiversity, the Christchurch district comprises a diverse assemblage of ecosystems that support a wealth of indigenous plant and animal species. Owing to the combined impacts of habitat loss, degradation, fragmentation, and pest plant and animal invasion, a high proportion of our biodiversity is now rare and threatened with extinction. At least 22 plant species and 18 bird species are now considered extinct in the Christchurch district. The most recent review of threatened species classifications in New Zealand[1] confirm that 124 plant species are now ranked as "Threatened" or "At Risk" within the Christchurch district alone. More than a dozen plant species are only found in the Christchurch district[2] and nowhere else in the world.

There are five confirmed reptile species found in the Christchurch District. This includes the Canterbury spotted skink (*Oligosoma lineoocellatum*) which is restricted to the Canterbury region and classified as threatened – nationally vulnerable.

Some 260 bird species have been recorded in and around Christchurch since 1840. Currently 53 bird species are classified as "threatened" or "at risk" and more than two dozen species occur in nationally and internationally important numbers, including for example:

- 55% of the World population of White-flippered Penguin
- >50% of the World population of Spotted Shag
- >20% of the World population of New Zealand Scaup
- >1% of the World population of Bar-tailed Godwit and
- >30% of the New Zealand population of Royal Spoonbill

[1] The latest revision of New Zealand's threatened plant species by DOC for plants (de Lange *et al.* 2018); birds (Robertson *et al.* 2021) and lizards (Hitchmough *et al.* 2021)

[2] Banks Peninsula (10 plant species), the Canterbury Plains (1 plant species), or at Kaitorete Spit (2 plant species)

Halting the on-going decline of indigenous biodiversity is a matter of national importance. Te Mana o Te Taiao - Aotearoa New Zealand Biodiversity Strategy 2020 sets the statutory imperative to achieve this with the key objective of maintaining and restoring a full range of remaining natural habitats, ecosystems, and viable populations of indigenous species. It identifies that invasive pests pose the greatest single threat to indigenous biodiversity, and includes goals, objectives and actions intended to address this threat. Central government is also currently developing a National Policy Statement on Indigenous Biodiversity that will guide biodiversity management under the Resource Management Act (RMA). It is expected to address the threat posed by pests to indigenous biodiversity and will provide further direction on the management of this under the RMA (including the Christchurch District Plan).

Canterbury regional pest management plan 2018-2038

The Canterbury Regional Pest Management Plan 2018-2038 (RPMP) legally requires district councils to control plants and animals declared as pests.

A pest is defined by the RPMP as an organism capable of causing serious and unintended effects in relation to the Canterbury region in one or more of the following:

- Economic wellbeing.
- The viability of threatened species or organisms, the survival and distribution of indigenous plants or animals, or the sustainability of natural and developed ecosystems, ecological processes, and biological diversity.
- Soil resources or water quality.
- Human health or enjoyment of the recreational value of the natural environment.
- The relationship of Māori and their culture and traditions with their ancestral lands, water, sites, wāhi tapu and taonga.

The RPMP currently places designations on 13 animal species found within the Greater Christchurch area (Refer Table 1).

Table 1: *Animals declared as Pests or Organisms of Interest in the Regional Pest Management Plan (RPMP).*

Common name	Scientific name	RPMP designation
Feral goat	*Capra aegagrus hircus*	Declared Pest
Feral rabbit	*Oryctolagus cuniculus*	Declared Pest
Possum	*Trichosurus vulpecula*	Declared Pest
European hedgehog	*Erinaceus europaeus*	Organism of interest
Feral cat	*Felis catus*	Organism of interest
Feral red deer	*Cervus elaphus*	Organism of interest
Feral fallow deer	*Dama dama*	Organism of interest
Feral pig	*Sus scrofa*	Organism of interest
Ferret	*Mustelo furo*	Organism of interest
Stoat	*Mustelo ermine*	Organism of interest
Weasel	*Mustelo nivalis*	Organism of interest
Norway rat	*Rattus norvegicus*	Organism of interest
Ship rat	*Rattus rattus*	Organism of interest

Only three animal species (feral rabbit, feral goat and possum) are currently listed as pests in the RPMP. A further ten animal species are listed as 'organisms of interest' (OOI). An OOI is an animal that ECAN monitors for changes in abundance and distribution which may necessitate its future inclusion as a declared pest. Many animals listed as OOIs are also a high priority for management because of the threat they pose to a range of biodiversity values or assets for which council has some level of responsibility. From Council's perspective, four additional animal species that are not listed as either pests or OOIs in the RPMP (house mouse, brown hare, feral sheep and feral cattle) also have potential in certain circumstances to detrimentally impact indigenous biodiversity or to cause other nuisance across Council's public land and water assets. These animals therefore are also included in the Pest Animal Management Plan.

However, farm animals, dogs, and domestic cats are excluded from Councils pest animal management plan for a variety of reasons.

Farm animals: Management of contained farm animals (e.g.: cattle, sheep, farmed goats, farmed deer, alpacas, llamas, horses, donkeys) are not considered by the RPMP nor by this plan. Instead, these animals are catered for in government legislation and council bylaws.

Dogs: The nuisance and dangerous activities of domestic dogs (including attacking, maiming, killing and harassing wildlife and livestock) are managed by specific national legislation (e.g.; NZ Dog Control Act 1996, NZ Wildlife Act 1953, etc) and by the Christchurch City Council's Dog Control Policy and Bylaw 2016. Thus, domestic dogs are managed by the Council's Animal Management Team under their own policy and procedures without need for further consideration in the Pest Animal Management Plan.

Domestic cats: Domestic cats are not covered by this Pest Animal Management Plan, unless they have escaped and are living wild - in which case they will be managed as feral cats.

Pest management programmes

The RPMP also provides a framework for district councils to undertake pest control that are outlined in five pest management programmes (refer below). These programmes provide direction to councils in undertaking appropriate pest management. They reflect the extent of the pest's invasion within the region, and whether it is realistic to achieve effective control.

1. **Exclusion:** to prevent the establishment of the pest that is present in New Zealand but not yet established in an area.
2. **Eradication:** to reduce the infestation level of the pest to zero levels in an area in the short to medium term.
3. **Progressive containment:** to contain or reduce the geographic distribution of the pest to an area over time.
4. **Sustained control:** to provide for ongoing control of the pest to reduce its impacts on values and spread to other properties.
5. **Protecting values in places (site-led):** that the pest that is capable of causing damage to a place, is excluded or eradicated from that place, or is contained, reduced, or controlled within the place to an extent that protects the values of that place.

Figure 2: *Feral goat (Capra aegagrus hircus). Photo Credit: Wikimedia Commons (File:Bouc Provençal.jpg - Wikimedia Commons)*

Operational pest animal management plan (parks)

Purpose

The purpose of this plan is to implement pest control that meets Council's obligations for indigenous biodiversity, address biosecurity threats, and maintain the operational integrity of council infrastructure. It provides a framework consistent with the RPMP that enables prioritised pest control to be undertaken across the district by operational teams in the Council's Parks Unit in a coordinated and systematic manner. In particular its purpose is to:

a. Control pests on all parks' assets owned or managed by Christchurch City Council for economic, social and cultural well-being and to protect, enhance and restore native biodiversity,

b. Implement the responsibilities and obligations of Christchurch City Council as a landowner consistent with the Canterbury RPMP,

c. Implement coordinated and effective pest management on all parks owned or managed by Christchurch City Council,

d. Work in an inclusive and practical way with the community to provide safe and sustainable pest management on parks owned or managed by Christchurch City Council which are accessible by the public, and

e. Work in an open and inclusive way with other agencies with responsibility for pest management, most notably Department of Conservation, Environment Canterbury, Waimakariri and Selwyn District Councils.

Operational guiding principles

The operational guiding principles for pest management apply to all parks where pest animal control is occurring. They do not prevent other pest management activities taking place as a result of annual priority setting, recommendations from monitoring surveys, or provisions identified in more detailed management plans. These principles include:

a. Meet Council's responsibilities and obligations for pest animal control.

b. Maintain Council parks to the standard required to sustain and enhance the asset, to be a good neighbour[3] and to be environmentally responsible.

c. Work closely with ECan, DOC, Biosecurity New Zealand, iwi, neighbouring Territorial Local Authorities (TLAs) and other agencies as appropriate to support integrated and coordinated pest animal management and to respond to biosecurity issues on Council park land.

d. Work closely with landowners and the community to develop optimal pest animal management on park land by integrating community and landowner pest management with Council's efforts.

e. Promote greater understanding and awareness in all sectors of the community of the importance of pest animal management and encourage public engagement in best practice such as safe and humane methods of pest animal control.

f. Ensure that pest animal management activities allow for safe public access to park.

g. Respond in a timely way to changing pest animal management requirements or opportunities, such as new species incursions, new funding, resources, or new technology.

h. Prevent the spread of pest animals into areas where they have not previously occurred as well as reinvasion.

i. Undertake pest management to minimise or prevent impacts on ecological values on park land.

j. Identify pest management priorities on an annual basis and allocate funding and staff resources accordingly.

k. Use of appropriate control methods for particular situations and pest species and following best practice methods for safe and efficient pest control, including using NAWAC tested traps and abiding by relevant legislation.

l. Use an ecosystem approach to ensure correct control is used to reduce chances of unintended outcomes, including bycatch, bioaccumulation of toxins and harmful effects on predator guild (Appendix 3).

m. Monitor, record and analyse data to inform on the progress and effectiveness of projects by providing measures of pest animal population trends and other ecologically meaningful outcomes.

[3] Good neighbour means undertaking reasonable and practicable measures to prevent or minimise the impact of pests on neighbouring properties from land and water assets owned or managed by the Council.

Controlling pest animals in the Christchurch district

Threat levels

The species listed in Table 1 as pest animals in the RPMP within the Christchurch area (feral goat, feral rabbit and possum) comprise only three of a larger assemblage of predatory, browsing and grazing mammals that threaten ecological values or cause other types of nuisances. Consequently, for Council to better meet its responsibilities - for indigenous biodiversity in particular – a more extensive list of pest animal species has been considered in this plan. The hierarchy of threat and the actions required at each level are outlined in Table 2 (below), and threat level scores for each of these species in various key ecosystems are covered later in Table 3. The highest threat category is a rating of 5.5, decreasing in urgency to 1 where a species currently requires very limited or no control.

Table 2: *Threat level scores and management actions*

Threat Level	Control level	Action required
5.5	Total Control - all sites	Eradicate all individuals of a pest animal species at all sites as soon as possible
5	Total Control - selected sites	Eradicate all individuals of a pest animal species at selected sites as soon as possible
4.5	Progressive Control - all sites	Control all individuals of a pest animal species at all sites, aim for eradication over medium term
4	Progressive Control - selected sites	Control individuals of a pest animal species at selected sites, aim for eradication over medium term
3.5	Containment Control - all sites	Control all individuals of a pest animal species at all sites, aim to contain spread immediately and reduce population over long term
3	Containment Control - selected sites	Control all individuals of a pest animal species at selected sites, aim to contain spread immediately and reduce population over long term
2	Restricted	Do not release or allow to escape. Observe establishment and spread. Control if necessary.
1	No control	Control not currently required

Priority levels for control of pest animals in key ecosystems

Across the Christchurch district, 17 pest animal species currently require management or monitoring (Table 3). If populations were left unchecked each of these species has the potential to cause significant adverse effects to Council assets and infrastructure, the quality of life of residents of the city and Banks Peninsula, and important biodiversity values in often sensitive sites. These sensitive sites are typically natural ecosystems and other lands that have, or are close to (buffer zones), important values/assets that require protection. For Parks teams (and other council units), preliminary work needs to occur to identify sensitive sites that should be focal points for animal pest control.

As a general guide, sensitive sites are likely to include the following:

- All council Scenic Reserves.
- All land (public and private) that is a site of ecological values[4] .
- All parks and reserves in rural and peri-urban zones with significant habitat values
- All coastlines (including cliffs) and non-urban land behind the coast.
- All estuarine, inter-tidal mudflat, saltmarsh and salt meadow habitats.
- All islets and rock stacks that can be identified as Council land or identified in the district plan.
- All roads adjoining and in close proximity to land (public and private) with ecological values.
- All natural rivers, streams, wetlands, lakes, lagoons, and their margins.
- The Waimakariri Riverbed within the Council boundary.
- The entirety of Kaitorete Spit.
- Retention basins adjoining and in close proximity to land (public and private) with identified, significant ecological values.
- Oxidation Ponds.
- Waterbird and coastal bird roosting, feeding, and breeding areas, including grasslands.
- Seabird and penguin colonies.
- Penguin moulting areas.
- Council properties/facilities/assets adjoining and in close proximity to land (public and private) with identified significant ecological values.

Table 3 (below) sets out Council's priority level for pest animal control across nine key ecosystems that are considered to be ecologically sensitive ecosystem types. A list of pest animal species, their distributions, habitats, and threats to biodiversity are listed in Appendix 1, and a guide to their identification is provided in Appendix 2.

[4] https://districtplan.ccc.govt.nz/pages/plan/Book.aspx?exhibit=districtplan&hid=87733

Table 3: *Council priority level for pest animal control in different ecosystems: TC – A (Total Control – All Sites); TC – S (Total Control --Selected Sites); CC – A (Containment Control – All Sites); CC – S (Containment Control – Selected Sites); PC – A (Progressive Control – All Sites); PC – S (Progressive Control – Selected Sites); NC (No Control); RC (Restricted Control).*

Common name	Indigenous forest & shrubland	Freshwater waterways & wetlands	Wet grasslands with significant bird values	Braided riverbeds	Estuarine & saltmarsh environments	Oxidation ponds	Coastal cliffs	Banks Peninsula islands and rock stacks	Dry grasslands
Feral goat	TC - A	TC - A	TC - A	TC - A	TC - A	TC - A	TC - A	TC - A	TC - A
Feral rabbit	CC - S	CC - S	PC - S	CC - S	CC - S	PC - S	CC - S	TC - A	CC - A
Possum	CC - S	CC - S	CC - S	CC - S	CC - S	PC - S	PC - S	TC - A	PC - S
Hedgehog	CC - S	CC - S	PC - S	CC - S	CC - S	PC - S	CC - S	TC - A	PC - S
Feral cat	CC - S	PC - S	PC - A	PC - A	PC - S	TC - A	PC - A	TC - A	PC - A
Red deer	PC - S	TC - A	TC - A	TC - A	TC - A	TC - A	TC - A	TC - A	RC
Fallow deer	PC - S	TC - A	TC - A	TC - A	TC - A	TC - A	TC - A	TC - A	RC
Feral pig	PC - S	TC - S	TC - S	TC - S	TC - A	TC - A	TC - S	TC - A	TC - S
Ferret	CC - S	PC - A	PC - A	PC - A	PC - S	TC - A	PC - S	TC - A	PC - A
Stoat	CC - S	PC - A	PC - A	PC - A	PC - S	TC - A	PC - S	TC - A	PC - A
Weasel	CC - S	PC - A	PC - A	PC - A	PC - S	TC - A	PC - S	TC - A	PC - A
Norway rat	CC - S	CC - S	PC - S	PC - S	CC - S	PC - A	PC - S	TC - A	PC - S
Ship rat	CC - S	CC - S	PC - S	PC - S	CC - S	PC - A	PC - S	TC - A	PC - S
House mouse	NC	NC	NC	NC	NC	NC	NC	TC - A	NC
Brown hare	CC - S	CC - S	PC - S	PC - S	CC - S	CC - S	CC - S	TC - A	PC - A
Feral sheep	PC - A	TC - A	TC - A	TC - A	TC - A	TC - A	TC - A	TC - A	RC
Feral cattle	PC - A	TC - A	TC - A	TC - A	TC - A	TC - A	TC - A	TC - A	TC - A

Prioritising sites for pest control

Prioritisation of sites shall be discussed and agreed at the annual meeting for the operational animal pest management programme, and decisions shall be based on the best available knowledge and expert advice at the time. Decisions should generally be made by consensus at these meetings and as agreed by the officer responsible for the budget. This process will allow funds, staff and other resources time to be managed sustainably.

The 'urgent-important matrix' will be used to prioritise sites (Table 5). Urgent sites need immediate pest control within a short timeframe. Important sites require pest control to support threatened species. The same sites may be prioritised over several years.

Table 5: The urgent-important matrix for prioritising sites for pest control.

	Urgent	Not urgent
Important	*First priority* These sites will have high biodiversity values that are being significantly impacted by pest animals resulting in ongoing biodiversity decline, *and* it is agreed that urgent control action is needed to halt and ideally reverse this decline.	*Second priority* Although not urgent, it is likely that these sites will have high biodiversity values that will significantly benefit from pest animal control. They should therefore be prioritised over more urgent sites that have lower biodiversity values and lower overall benefits from pest animal control
Not important	*Third priority* Although there is an argument for urgent control where (for example) pest animals are shown to be increasing, these sites will generally have lower biodiversity values. In these cases, priority (and resources) should always be given to sites of higher biodiversity value and anticipated ecological outcomes as a result of pest animal control.	*Fourth priority* These sites will generally have lower biodiversity values that are either not currently impacted by pest animals, or where pest animal control is likely to result on only negligible biodiversity outcomes. These sites shall therefore not be prioritised and are unlikely to receive Council-supported pest animal control.

Example criteria to refer to when using the matrix:

- Presence of threatened or ecologically important species requiring protection.
- Proximity to existing site(s) of pest control.
- Reinvasion of a pest species or incursion of a new pest species.
- Sites of Ecological Significance (SES).
- Sites of interest to mana whenua such as mahinga kai.

Flexibility will be important so that operational staff can react when events occur that need to be dealt with immediately.

Treatment of new out-of-range incursions

One pest mammal species (Bennett's wallaby) and one pest reptile species (red-eared slider terrapin) have been recorded in the Christchurch District as "out-of-range incursions" (Refer Table 4 and Appendix 2). Potential also exists for additional deer species to be released by people with the intention of establishing new populations, often for recreational hunting or for aesthetic reasons. Because of the potential threat such incursions could impose there's an obvious imperative to take rapid action if they are detected. Regular surveillance is important to detect new incursions and take timely action. The public and staff shall report any new out of range pest animal incursions immediately to ECan[5].

Table 4: *Surveillance for new out of range pest animal incursions*

Common name	RPMP designation	Priority
Bennett's wallaby	Declared pest	Eradication
Additional deer species	Not considered	Eradication
Red-eared slider terrapin	Not considered	Eradication

Figure 4: *Norway rat (Rattus norvegicus). Source: Wikimedia Commons (File: Rattus norvegicus - Brown rat 05.jpg - Wikimedia Commons)*

[5] ECan phone number: 0800 324 636

Implementation

Objectives & actions

Across all Christchurch City Council parks and park related assets such as waterways, oxidation ponds, wetlands, grasslands with high biodiversity values, coastal cliffs, rock-stacks and unformed legal roads where pest animal control is being carried out, all parks operational teams shall:

- Give effect to the RPMP and Council's Biodiversity Strategy.
- Set a good example in pest management practices.
- Determine ecologically meaningful outcomes for pest animal control in collaboration with Council ecologists.
- Contribute to community understanding and awareness of pest animal management issues.
- Liaise and coordinate with the rest of Council asset managers with regard to pest animal management.
- Liaise and coordinate with DOC, ECan, Ngāi Tahu and community groups with regard to pest animal management.

In particular, across all Council managed parks, staff tasked with pest animal control responsibilities shall undertake the following actions:

- Prepare a list of priority sites and assess biodiversity values and threats posed by pest animals.
- Identify priority sites where pest animal species require management via the Annual Pest Management Programme.
- Set up monitoring, recording, and reporting for all animal pest management operations in parks.
- Adopt management techniques that reduce toxin use over time wherever practically possible and as other technologies become available. There shall be emphasis on using more sustainable and humane methods of pest animal control such as technologically "smart" traps, predator-proof exclosures, water moating, etc., that increase effectiveness.
- Seek sufficient funding and resources to enable effective implementation of the Pest Animal Management Plan in parks and reserves.
- Share information and resources across the Council and with other key agencies and the community.

Note that all reserves are vulnerable to edge effects and invasion from adjoining land. As a result, the incorporation of buffer zones into pest animal management programmes, and where practicable undertaking pest animal control on land surrounding reserves, is often necessary to protect the ecological integrity of a reserve's ecological values.

Approaches to specific park types

Different park types will often have a range of different conditions – both physically and culturally – and any pest animal control programme will need to be carefully tailored to the unique operating environments.

Regional parks

For all Regional Parks that are gazetted under the Reserves Act there is a necessity to undertake pest control to protect and enhance natural values. Many other 'generically' gazetted areas have very high ecological values that also fall under Regional Parks management. Although these areas may not be strictly gazetted as 'reserves', they can also be a high priority for pest management.

Due to the often higher biodiversity values found in Regional Parks compared to other park types, additional actions are necessary in addition to the general objectives and actions shared by all Council parks mentioned above. These additional actions include:

- Undertaking comprehensive multi-species pest animal management in priority sites where high biodiversity values require protection.
- Delivering measurable reductions in pest animal populations, combined with measurable improvements in biodiversity values.
- Undertaking pest animal inventories in all Regional Parks where these have not yet been completed.
- Liaising and coordinating with DOC, ECan, tangata whenua, and community conservation groups such as: Banks Peninsula Conservation Trust, Pest Free Banks Peninsula, Summit Road Society/Predator Free Port Hills, Avon-Heathcote Estuary Trust, Styx Living Laboratory Trust, Ōpāwaho-Heathcote River Network, and other stakeholder groups and the community about pest animal management.

The Regional Parks team also conducts pest control on key ecological sites that are not managed by Parks (e.g., Bromley Oxidation Ponds/Te Huingi Manu Wildlife Refuge – managed by Three Waters).

Urban Parks

Although there may often be strong demand from local community groups, animal pest control in most urban parks can be problematic, not just due to the issues of domestic pet and non-target bycatch. With urban parks having more open areas, it is also difficult to incorporate traps and bait stations in a way that reduces health and safety risks to park users. Many Urban Parks are too small to benefit from mammalian pest control, since it would be difficult to establish an effective control and monitoring network, and there would be invasion from adjacent residential and commercial properties. Whilst biodiversity outcomes are unlikely to be achieved in highly urban areas, there may be times that pest control may be considered to (e.g.) protect specimen trees or other amenity values.

However, there are some Urban Parks that do have ecological values that may warrant pest animal control. These include sites around estuaries, waterways and wetlands, sites with either original growth or planted bush/shrubland habitats, and sites located near other areas of high ecological value. Creating inventories for these sites to confirm biodiversity values and to assess pest animal presence shall be a priority and will inform ongoing management approach.

Currently, most animal pest control in Urban Parks is carried out by community groups or contractors. If there is community interest or a request to trap in an Urban Park, this is assessed by staff in terms of key criteria related to its ecological significance, location, and probability of success. Where a park is deemed not well suited to pest animal control, staff shall work with the community group to identify alternative locations that can be better supported.

Cemeteries have similar issues to Urban Parks but have the added consideration of their sensitive nature.

Botanic Gardens, Hagley Park, City Centre, and Garden & Heritage parks

These parks have similar issues to Urban Parks. They have high public activity and generate complaints about pest animals, though there are likely not many suitable areas to set up traps or bait stations. Furthermore, there are many hospitality businesses and neighbouring residences that may be sources of pest animal re-invasion for parks. However, the Botanic Gardens has an existing trap network, and they routinely manage pest control operations to protect resident wildlife, specimen trees, garden borders and other amenity values. Being a popular park in a central location, and already being a place of learning, the Botanic Gardens has the potential of being an educational example of urban pest control.

Residential Red Zones

The Residential Red Zone, particularly the Ōtākaro Avon River Corridor, will comprise substantial areas of newly developed habitat for the benefit of indigenous flora and fauna. Pest animal populations are increasing in this area and new species (particularly mustelids and rabbits) continue to colonise. If aspirations of wildlife population recovery and reintroduction of locally extinct species are to be realised, a comprehensive pest animal control plan must be implemented. The Residential Red Zone is a relatively recent team in the Parks Unit and an extensive area scattered across Ōtautahi, so it is apt timing to prioritise sites and develop biodiversity outcomes for these areas.

Figure 5: *Domestic cat (Felis catus) at Ka Putahi Creek, Belfast. Photo Credit: Antony Shadbolt 2022*

Tangata whenua partnership

To align with the Te Tiriti o Waitangi, there needs to be partnership with Ngāi Tahu during the implementation of this plan.

Objective

- Acknowledge and incorporate the relevant aspirations of the Mahaanui Iwi Management Plan in pest animal management.

Activities

- Actively engage with tangata whenua in setting priorities for pest management and programme delivery.

Community engagement

Interest from community members to trap in their local park has increased. Some volunteer groups have been trapping in Council parks for many years, but in 2021 a protocol was established to form a more systematic way for this to happen with the approval and guidance of Council staff[6]. This means Council can ensure correct health and safety procedures are taking place and that the trapping is being carried out correctly. It also allows park managers to have oversight to achieve the goals of this plan. A flowchart was created to help prioritise which parks to approve for community trapping projects (Figure 6). This is a tool to help staff make decisions, and staff have the right to decline approval of a community trapping project, such as for health and safety concerns.

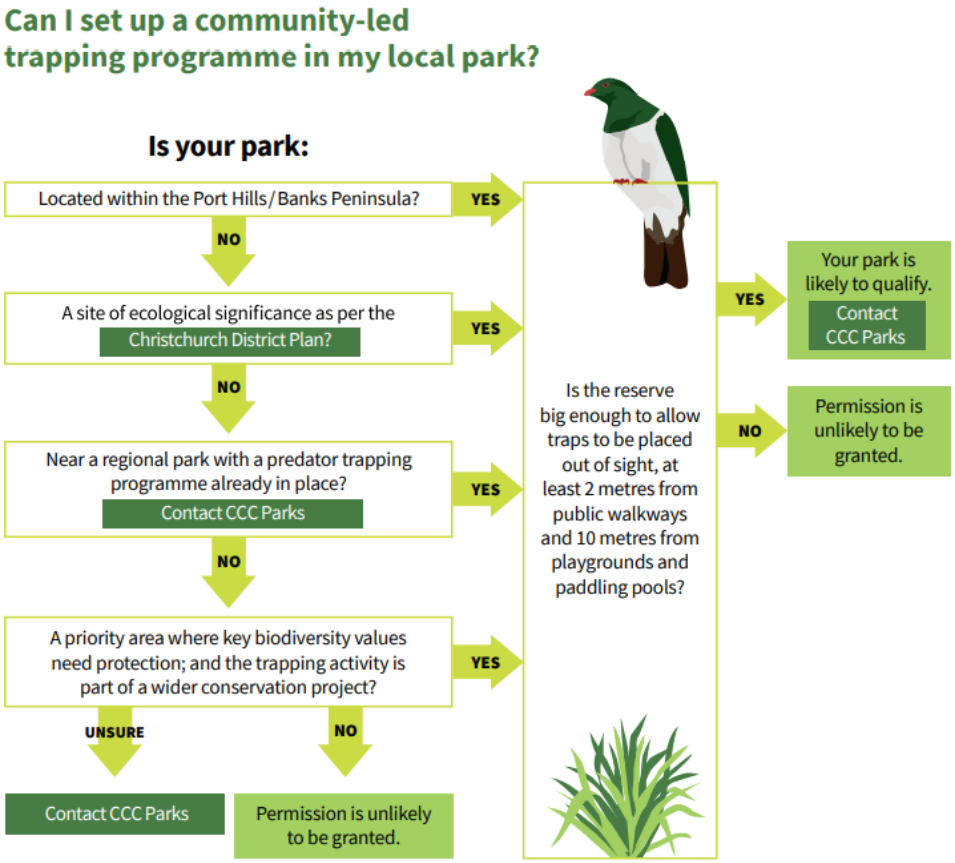

Figure 6: *Flowchart taken from "Get involved: trapping in parks" informational brochure to help prioritise parks for community trapping projects.*

[6] "Get involved: trapping in parks" informational brochure: https://ccc.govt.nz/assets/Documents/Parks-Gardens/Volunteering/Get-involved-trapping-in-parks-A5-brochure-WEB.pdf

Objective

- Promote and facilitate community involvement in pest animal management issues. Liaise and coordinate with community partners and stakeholder groups such as the Banks Peninsula Conservation Trust, Pest Free Banks Peninsula, Summit Road Society/Predator Free Port Hills, Avon-Heathcote Estuary Trust, Styx Living Lab Trust, Ōpāwaho-Heathcote River Network, landowners, other community groups and individuals with regard to pest animal management.
- Be open and transparent in the determination if ecologically meaningful outcomes for pest animal control.
- Promote effective coordinated management where appropriate.

Activities

- Recognise and promote community interest and engagement in pest animal control, whilst also acknowledging public sensitivities related to animal pest control and methods.
- Promote understanding and identification of pest animals via a coordinated programme of website information, presentations, field days, training sessions and other opportunities that arise.
- Continue to support community and volunteer groups involved in pest animal management, including development of collaborative projects and programmes.
- Support landowners where appropriate as they carry out their pest animal management responsibilities and support mutually beneficial pest management projects.

Monitoring

Underpinning the successful implementation of this pest plan is the need for inventory, appropriate levels of control and ongoing monitoring. Currently our understanding of pest animal occurrence, abundance and distribution on and near council park land is varied and sometimes poor or even non-existent. In order to improve Council's performance, inventory and systematic monitoring of pest presence on priority sites is important.

Pest animal control undertaken by the Council should be ecologically meaningful and sufficiently versatile to respond to changing pest animal community structure and pressures. Outcomes shall be based on the desired effects from the control, such as population increases in flora and fauna impacted by pest species. The measures to determine the success of a control operation will depend on the specific biodiversity outcomes sought.

Monitoring programmes should be set up to measure populations of target pests over time, and to assess the success of control operations. Baseline monitoring is important for understanding the pest species present at a site, and to determine the most appropriate methods of control. Monitoring should occur before and after control, and subsequently at regular intervals. The number of monitoring events per year will depend on the desired outcome of the control operation, and type of monitoring used will depend on the target pest species.

Often reports of pest animals present on council land come from observational or anecdotal evidence from staff or the general public. In highly sensitive areas, core habitats, and areas where prevention of new incursions of pest species is desirable, an ability for rapid response is important. In situations where pest animals reported are already widespread and common in that location, or where the animal poses only a minor threat to high value biodiversity sites, a discretionary approach to determine the appropriate response is required.

Data management

A consistent approach to data management across Council's Parks Unit is important for accessibility of data, assessing KPIs and comparing results between sites. Trap.NZ[7] has been adopted and shall be used as the method of mapping and recording results from monitoring lines, traps and bait stations. It can be used in the field to record results using a mobile device application, and can also be used create graphs, tables and maps for analysing results. Trap.NZ shall also be used to record incidental or non-programmed control events such as euthanizing a feral cat. Some vertebrate toxic agents must be tracked throughout their lifecycle. Sodium cyanide, potassium cyanide and pindone are examples of this. Worksafe outlines requirements for tracking[8].A database will be created to record toxin use across parks.

Best practice and legal requirements

All animal pest control operations must follow best practice as much as possible, and comply with any legal guidelines, manufacturer's guidelines, and Council standard operating procedures[9] relevant with the pest control activities. There are health and safety risks for operators and the public associated with some pest control methods, and any incidents that result from an operation may have negative repercussions on future pest control work.

Signage

When using a class 6 vertebrate toxic agent (VTA) in pest control operations, operators must follow legal requirements for signage[10].

Although not a legal requirement, the Parks Visitor Experience Team have also developed a sign that can be used where trapping is being carried out in parks (Figure 7 on next page). This sign may be especially appropriate for use in Urban Parks where the public may not expect trapping to occur.

Figure 7: *Example of a sign that can be displayed at parks where pest animal trapping is being carried out.*

[7] https://trap.nz/

[8] https://www.worksafe.govt.nz/topic-and-industry/hazardous-substances/managing/tracking-hazardous-substances/

[9] Parks Maintenance Standard Operating Procedure Record no. 22/1435525

[10] https://www.legislation.govt.nz/regulation/public/2017/0131/latest/DLM7366722.html

Trapping humanely

The National Animal Welfare Advisory Committee (NAWAC) tests traps to assess how humane they are for different pest animal species[11]. Any traps used must be legal, appropriate for the target pest species, and have passed NAWAC testing for the target pest species.

The Animal Welfare Act 1999 must be complied with, especially in regard to ensuring live capture traps are checked within the legal timeframe (refer to section 36 in Act[12]).

Staff ownership of plan

Staff tasked with implementing the annual operational pest animal management programme shall be team leaders or managers responsible for operational budgets, oversight, and deployment of operational staff. They will also be staff who are actively engaged with partner agencies & organisations, community pest control groups, local Rūnanga and other stakeholders. Therefore, it shall be the biodiversity team leaders in Regional Parks and their equivalents in the Urban Parks, Red Zone and Garden & Heritage Parks (Table 6) responsible for delivering these annual programmes.

Table 6: *Various Parks Unit operational staff with pest animal control responsibilities.*

Parks team	Staff lead
Regional Parks • Coastal & Plains • Port Hills & Banks Peninsula	• Team Leader – Biodiversity C & P • Team Leader – Biodiversity PH & BP
Garden & Heritage Parks • Botanic Gardens • Harewood Nursery	• Team Leader – Operations Support • Team Leader – Production Nursery
Metropolitan Parks	
Red Zone	Team Leader - Residential Red Zone
Community Parks	Community Partnership Ranger
Parks Planning	TBC
Mana whenua representative	TBC
Animal Pest Management Programme Coordinator	Business case to be developed

[11] https://www.landcareresearch.co.nz/discover-our-research/biodiversity-biosecurity/animal-pest-management/welfare-performance-of-animal-traps/traps-tested/
https://www.bionet.nz/assets/Uploads/Trap-summary-table-18-July-2022.pdf

[12] https://www.legislation.govt.nz/act/public/1999/0142/latest/DLM50445.html

Annual operational pest animal programme

Each year, representatives from each group listed above (Table 6) shall meet to agree priorities for pest animal control across the district for the next financial year in the form of the annual operational pest management programme. The programme shall provide a review of the previous year's pest animal control work across parks, and identify priority pest animals, priority sites and monitoring requirements for pest animal management over an up-coming 12-month Council financial year period. It shall also include sufficient detail around the allocation of any resources required to meet the annual priorities.

Figure 8: *Ferret (Mustelo furo). Photo credit: Cloudtail the Snowleopard (https://www.flickr.com/photos/blacktigersdream/30001767854A)*

Key performance indicators

Refinements to Key Performance Indicators (KPIs) will be workshopped internally each year with participation by all relevant Parks teams involved in pest animal management to reach consensus, confirm support and make a commitment to undertake agreed work. Priority sites shall be identified at these workshops.

Ongoing key performance indicators (KPIs) include:

- An annual pest animal plan for Council Parks has been finalised and approved by 30th June each year for the following Council financial year period.
- All management of animals listed as Designated Pests in the RPMP is undertaken to a level consistent with expectation in the RPMP and complies with legal obligations.
- All animal pest control undertaken on Council parks is recorded and reported in Trap.NZ.
- A database including all vertebrate toxic agents (VTAs) used on Council parks has been developed and is being regularly updated and maintained.
- All new incursions of Declared Pests and Organisms of Interest reported on Council parks are investigated and responded to appropriately.
- Reporting on pest animal population trends at identified priority sites is completed by 31st May each year and reported to Head of Parks.
- Outcome monitoring of prey species response to pest animal control is conducted at identified priority sites at (maximum) five-yearly intervals.
- Monitoring of vegetation response to pest animal control is conducted at identified priority sites annually.
- Ensure new staff receive appropriate training for pest animal operations.
- Ensure staff keep up to date with new developments in animal pest control technology and new biodiversity threats.
- At least two site specific pest animal plans created each year (starting with existing projects).

Key performance indicators specific to 2023

- By 28th July 2023, each operational team conducting animal pest control in Council parks will have designated a staff member responsible for pest animal control operations, including inter-team collaboration, reporting and recording.
- By 29th September 2023, a register of vertebrate toxic agents (VTAs) used in Council parks will have been developed and all staff using VTAs will have received instruction on its use.
- By 27th October l 2023, determine need, and if necessary, establish a business case for Animal Pest Control Programme Coordinator to oversee the implementation of this plan, collate reports and monitor progress.
- By 24th November 2023, all operational parks teams shall be competent in using the same Trap.NZ field data collection methods.
- By 24th November 2023, all Parks teams will have identified priority sites (if any) where pest animal control will be conducted.

Appendix 1: Pest animal habitat, distribution and threats

Common name	Habitat	Distribution	Threats from this Species	RPMS Designation
Feral goat	Forest, shrubland, cliffs and rocky outcrops, riverbanks, grassland	Small pockets remaining on Banks Peninsula and the Port Hills following sustained control operations.	Browse foliage and bark causing extensive damage to trees, shrubs and understorey vegetation. Trample soil, carve out trails & exacerbate erosion. Good climbers so able to access threatened plants on cliffs and rocky outcrops.	Declared Pest
Feral rabbit	Short grasslands including pastures, shorelines, road edges, some parkland.	Widespread over rural landscape around the city, on Port Hills, Banks Peninsula, and Kaitorete Spit. Not on islets/stacks. Removed from Quail Island.	Other than browsing ground cover, they also selectively browse low-growing herbaceous plants and seedlings of palatable tree and shrub species. Damage to grasslands and competition pressure on livestock. Burrows exacerbate soil erosion.	Declared Pest
Possum	Indigenous and exotic forest, shrubland, orchards, gardens, parkland, agricultural lands, rocky outcrops and cliffs.	Widespread over rural landscape around the city, on Port Hills, Banks Peninsula, and Kaitorete Spit. Not on islets/stacks. Eradicated from Quail Island.	Omnivorous diet means they eat foliage, flowers, fruit, seeds, buds, shoots and bark of palatable trees, and opportunistically prey on fauna including invertebrates, the eggs and chicks of birds from ground level to outer branches. Possums also compete with birds for nest sites by occupying tree cavities.	Declared Pest
Hedgehog	Farmland, parks, gardens, exotic tree plantations and woodlands; shrubland, drier wetland margins and riverbeds; forest edge and small pockets of indigenous forest but do not	Widespread over rural landscape around the city, on Port Hills, Banks Peninsula, and Kaitorete Spit. Not on islets/stacks. Eradicated from Quail Island.	Feeds on slugs, snails, beetles, caterpillars, grubs, millipedes, weta, spiders, insects, frogs, lizards and eggs of ground-nesting birds. Often “clogs up” trap lines when abundant, making it more difficult to productively target other predators.	Organism of interest

	penetrate deep inside larger forests.			
Feral cat	Unlike domestic cats and abandoned/stray cats, feral cats are multi-generational wild animals that shun humans and are found through the wider landscape including dunes, farmland, riparian habitats, forests, shrublands, wetlands and grasslands.	Widespread over the rural landscape around the city, on Port Hills, Banks Peninsula, and Kaitorete Spit. Not on islets/stacks. Eradicated from Quail Island.	Unlike most domestic cats, feral cats will habitually swim, scale cliffs and travel large distances. They prey on adult birds, eggs and chicks, lizards, invertebrates, frogs, fish, eels and worms. They also prey or kill smaller mammals.	Organism of interest
Feral red deer	Indigenous and exotic forest and shrubland, forest edge and nearby grasslands.	Widespread on southern PH and contiguous low-med density. Not Kaitorete spit. Red deer come down the Waimakariri River corridor and swim across the river to the NE pine plantations where they occur (residence not confirmed) in low densities. Not on islands.	Diet of palatable vegetation including trees, shrubs, tussock, grasses herbs and ferns. The selective browsing of deer modifies vegetation structure and reduces diversity by targeting certain favoured plant species, eating out undergrowth and stopping succession. They also damage forest structure, trample soil, carve out trails & exacerbate erosion. Reds are taller than fallow deer so browse to a higher level.	Organism of interest
Feral fallow deer	Indigenous and exotic forest and shrubland, forest edge and nearby grasslands	In small pockets on southern Port Hills, Inner Lyttelton harbour basin, eastern bays, SW bays. Not on islands.	Graze more than red deer and also browse trees, shrubs, tussock, grasses herbs and ferns. The selective browsing of deer modifies vegetation structure and reduces diversity by targeting certain favoured plant species, eating out undergrowth and stopping succession. They also	Organism of interest

			damage forest structure, carve out trails & cause erosion.	
Feral pig	Indigenous and exotic forest, forest edge, nearby grasslands and scrub	Widespread over Banks Peninsula, southern Port Hills, Waimakariri R corridor and NE exotic forests. Not on islands.	Omnivorous diet including roots, berries, fruit, fungi, invertebrates, worms, fish, frogs, eggs and young of ground-nesting birds (incl. seabirds), lambs, and also animal carcasses. They damage pasture, forest floor vegetation and rip up the soil. Destroy fences and are aggressive to humans.	Organism of interest
Ferret	Farmland, forest edge, shrubland, wetland edge, coastal margins, riparian habitats. Don't penetrate far into native forest but present in bush patches, pine forests etc.	Widespread over rural landscapes including Port Hills, Banks Peninsula, and Kaitorete Spit. Not thought to be on islets/stacks although formerly on Quail Island and eradicated.	Largest mustelid, preying mainly on rabbits and ground-nesting/roosting birds like waders, terns, gulls, penguins and waterfowl. Numbers around CHCH and BP vary with rabbit population size.	Organism of interest
Stoat	Highly mobile, exploratory and tree-climbing. Found on roadsides, farmland, hedges, forest, shrubland, cliffs, dunes, riverbeds, wetlands, riparian habitats, & shorelines.	Widespread in peri-urban and rural habitats incl. Port Hills, Banks Peninsula, and Kaitorete Spit. Actively colonising the Ōtākaro Avon River Corridor Presence on islands/stacks requires survey. Eradicated from Quail Island.	Prey upon a wide range of species from small-medium mammals to adult and juvenile birds, nestlings, chicks and eggs. Also prey on lizards and invertebrates. Stoats keep weasel numbers suppressed.	Organism of interest
Weasel	Increasingly the most abundant mustelid where predator control has reduced numbers of larger predators. Occur on road sides, farmland, forest,	Widespread in peri-urban/rural habitats around CHCH, Port Hills, Banks Peninsula, and Kaitorete Spit. Actively colonising the OARC red zone. Eradicated from Quail Island.	Smaller animal with smaller home ranges than stoats so harder to control. Documented local cases of a surge in abundance of weasels and substantial increases in density of animals/ha when larger predators (stoats, cats) eradicated or severely	Organism of interest

	shrubland, dunes, grassland and waterway & wetlands edge.	Presence on other islands/stacks requires survey.	reduced. This is a highly problematic outcome.	
Norway rat	In urban and rural environments near water including wetlands, waterways, shorelines, sewers, buildings, farms and rubbish dumps.	Found throughout Christchurch city, surrounding rural areas, Port Hills, Banks Peninsula and Kaitorete Spit. Few appear to live on coastal cliffs. Presumed present on some islets/stacks but requires survey.	Omnivorous, feeding on a wide range of plant foods and on birds, eggs, lizards, invertebrates, snails, crabs, worms, crustaceans, etc. Also scavenges refuse, stored grains, fruits, etc.	Organism of interest
Ship rat	Urban and rural buildings, all types of farmland, parks, gardens, exotic & indigenous forest, orchards, shrublands, riparian habitats, wetlands, dunes, cliffs, beaches and even mudflats at night. Presumed present on some islets/stacks and survey required.	Found throughout Christchurch city, surrounding rural areas, Port Hills, Banks Peninsula and Kaitorete Spit. Presumed present on some islets/stacks. Eradicated from Quail Island.	Better climbers than Norway rats so widespread in tree canopies, cliffs, etc, where they are a serious predator of birds, lizards and invertebrates. Omnivorous diet, feeding on a wide range of plant foods and on birds, eggs, lizards, invertebrates, snails, crabs, worms, crustaceans, etc. Also scavenges refuse, stored grains, fruits, etc.	Organism of interest
House mouse	Almost all urban and rural habitats from buildings to farmland, scrub, wetlands, forests, grasslands and cliffs. Presumed present on some islets/stacks.	Occur everywhere from coastline to hill tops.	Feeds on seeds, grains, nuts, small invertebrates, bird nestlings and eggs, fish eggs (ie; inanga eggs in riparian grasses at spawning sites), human food scraps, and food in storage or spillage.	Not listed
Brown hare	Grasslands, shrublands, forest and waterway edge, braided riverbeds. Do not	Widespread over rural landscape around the city, on Port Hills, Banks Peninsula, and	Sub-alpine herbs and plants, nibble and suppress regeneration.	Not listed

	penetrate urban areas as rabbits do.	Kaitorete Spit. Not on islets/stacks.		
Feral sheep	Grasslands, shrubland and forest.	Increasingly rare on Banks Peninsula	Eat grass, seedlings, and palatable vegetation. Carve out trails, exacerbate soil erosion and pug stream banks, wetlands, etc.	Not listed
Feral cattle	Grasslands, shrubland and forest.	Increasingly rare on Banks Peninsula	Eat grass, seedlings, and palatable vegetation. Trample forest floor and wetland vegetation. Produce a large quantity of dung. Carve out trails, exacerbate soil erosion and pug stream banks, wetlands, etc. Can be dangerous to people.	Not listed

Appendix 2: Pest animal identification

Common name	Identification[13]	
Feral goat *(Capra aegagrus hircus)*	Similar to domestic goat. They can come in different colours – black, brown, white or a combination. May be confused for sheep when looking from a distance but have tails that point up (sheep's tails point down); have horns that point up and slightly back (sheep's horns curl and point forward).	
Feral rabbit (*Oryctolagus cuniculus)*	Brown to grey-brown fur. Ears are long, but not as long as hares. White and black tails. Brown iris of eye.	
Brown hare (*Lepus europaeus)*	Larger and more "athletic looking" than a rabbit, with longer ears with distinctive black tips. Fur is yellow-brown on back, reddish on shoulders, neck and legs, and white underneath. Golden iris in eyes.	

Brushtail possum (*Trichosurus Vulpecula)*	Nocturnal marsupial, although can be seen during the day. They have brown eyes, large ears, pink fleshy nose and a long bushy tail.	
European hedgehog (*Erinaceus europaeus)*	Distinctive small mammal with brown and white spines. Curl up into a defensive ball when frightened or picked up.	
Feral cat (*Felis catus)*	Similar in appearance to domestic cats. Behaviour is different though – feral cats hiss and are more skittish in general compared to domestic cats.	
Feral red deer (*Cervus elaphus)*	Medium to large-sized deer. Both stag and hind are reddish-brown in colour.	

Feral fallow deer (*Dama dama)*	Medium-sized deer. Stag variable color from black to dark brown, fawn to white. Hind, smaller in size, with a diagnostic a white-spotted back and rump	
Feral pig (*Sus scrofa)*	Unmistakable body shape and head, with body densely covered in hair (in contrast to escaped domestic pigs which appear bare-skinned.	
Ferret (*Mustelo furo)*	The largest of the mustelid species in NZ. The size of a small cat with a distinctive black “bandit’s” face mask.	
Stoat *(Mustelo ermine)*	The middle-sized mustelid, with brown and white body and medium-length, bushy, black-tipped tail.	

Weasel (*Mustelo nivalis)*	The smallest mustelid in New Zealand (although some size overlap between big male weasels and small female/juvenile stoats). Short, narrow, brown tail.	
Norway rat (*Rattus norvegicus)*	The largest rodent species in NZ. Have small ears with some hair. Their tail is shorter than the length of their body and head.	
Ship rat/roof rat/black rat (*Rattus rattus)*	Have large hairless ears. Tail reaches nose or is longer than body and head.	
House mouse (*Mus musculus)*	The smallest rodent found in NZ but could be mistaken for a young rat (which are similar sized but have larger feet and head). The tail is the about the same length as the body.	

Feral sheep (*Ovis aries)*	Usually distinguished from farmed sheep by long, straggly fleece and sometimes, horns.	
Feral cattle (*Bos taurus)*	Difficult to separate from farmed cattle but usually much wilder (sometimes aggressive to human and dogs), poor coat condition and habitat (bush or scrub away from fenced paddocks).	
Bennett's (red-necked) wallaby (*Macropus rufogriseus rufogriseus)*	Obvious wallaby/kangaroo.	
Red-eared slider terrapin (*Trachemys scripta)*	*Turtle with an orange-red patch of skin behind the eye. Variable size.*	

Reference: http://www.pestdetective.org.nz/culprits/

[1] Photo credits: All © A Crossland, except © N. Crossland (wallaby); © Y. Williams (possum); © Pickpic (fallow deer); © Dreamstime.com (weasel, Norway rat, ship rat, ferret); © D. Rate-Smith (Red-eared slider terrapin)

Appendix 3: Additional information and links

Christchurch City Council

Get involved: trapping in parks

Information and guidelines for community members/groups wanting to trap in a park:

https://ccc.govt.nz/assets/Documents/Parks-Gardens/Volunteering/Get-involved-trapping-in-parks-A5-brochure-WEB.pdf

Department of Conservation

Predator Free 2050 Practical guide to Trapping. 2nd Edition. June 2021.

Although this is targeted at backyard trappers, it is a useful guide to introduced mammalian predators and how to identify them, monitor them and trap them:

https://www.doc.govt.nz/globalassets/documents/conservation/threats-and-impacts/pf2050/pf2050-trapping-guide.pdf

Environment Canterbury

Canterbury Regional Pest Management Plan 2018-2038

https://www.ecan.govt.nz/your-region/plans-strategies-and-bylaws/canterbury-regional-pest-management-plan/