

# The Otago Catlins Invasive Mammal Management Plan 2025 - 2035

Drafted by:

Catlins Pest Management Ltd

For:

The Otago Catlins community and ICMP Governance  
Group as part of the Catlins Catchment Action Plan  
with support from funding from Otago Regional Council

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This plan reflects the strength of a shared commitment to protecting and enhancing the Catlins' natural heritage. The willingness of individuals and organisations to work together, share knowledge, and invest in the future of the region has been fundamental to its development. Catlins Pest Management Ltd acknowledges and appreciates the collective effort that continues to support the health, resilience, and biodiversity of the Catlins for generations to come.

## Executive Summary

The Otago Catlins Invasive Mammal Management Plan sets out a clear pathway for reducing the impact of pest mammals across the Otago side of the Catlins over the next ten years. The plan brings together information from landowners, mana whenua, community groups, government agencies, and ecological data to identify where pest control should begin, which species should be targeted, and how work can be coordinated across the landscape.

Catchment A (Chaslands-Tautuku) is identified as the highest priority for immediate action. This area contains the largest and most connected native forest, important coastal habitats, and several threatened species, including hoiho, pekapeka (long-tailed bat), and mātātā (fernbird). It also has the strongest base of existing pest control projects, making it the most practical place to establish a coordinated, multi-species control programme. Work in this catchment should focus on possums, rats, stoats, feral cats, deer, and goats.

Catchments B, C, and D have lower ecological value or lower readiness for coordinated control. These areas will require further engagement, monitoring, and support before large-scale operations can begin. Catchment B is the most likely candidate for future expansion once more information is available and social licence improves.

Mana whenua input has been central to shaping the plan. Their priorities include protecting taonga species, restoring mahika kai and safeguarding culturally significant coastal and wetland areas. The plan recommends that mana whenua be involved in governance, decision-making, monitoring, and delivery, and that cultural values be considered alongside ecological ones when setting priorities.

The plan also identifies several barriers that need to be addressed. These include cost and time pressures on landowners, concerns about toxins and pet safety, limited local workforce capacity, and the risk of reinvasion from the Southland side of the Catlins where no equivalent planning has yet occurred. Clear communication, practical support, and long-term funding will be essential to maintain social licence and ensure community participation.

Urgency triggers were developed to identify situations where immediate action is required to protect endangered species. While no control triggers were activated during this planning phase, the presence of nationally critical species resulted in several pest species being reprioritised for monitoring in catchments B, C, and D to inform future work and priorities.

To support long-term success, the plan recommends establishing a dedicated coordinator role, improving data sharing between agencies and landowners, strengthening partnerships with mana whenua and community groups, and securing

multi-year funding. The plan also recommends the development of a broader monitoring framework that combines pest, ecological, and cultural monitoring to demonstrate programme outcomes, support adaptive management, and strengthen future funding applications. Over time, coordinated control in Catchment A can be expanded outward to create larger control areas, eventually linking with projects in neighbouring catchments and, ideally, with future work in Southland.

Overall, this plan provides a practical, staged approach to pest management in the Otago Catlins. By focusing first on areas with the highest ecological value and strongest community support, and by building strong partnerships across the region, the Catlins can move toward a more coordinated, resilient, and culturally grounded approach to protecting its unique wildlife and landscapes.

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# 1 Context and Background

## 1.1 Project Context

The Catlins Invasive Mammal Management Plan forms part of the Otago Regional Council's Integrated Catchment Management Programme (ICMP) and associated Catchment Action Plan (CAP), which aim to deliver coordinated, long-term environmental outcomes across the Otago Catlins (Otago Regional Council, 2024). The CAP is a community-led plan to protect and enhance the Catlins environment. It is intended to set the direction for actions to enhance the environment of the Otago part of the Catlins region. Introduced mammal control was identified as one of the priority strategies required to facilitate this. As a result, ORC funded a 2025–2035 mammalian pest management planning programme for the Otago portion of the Catlins, recognising the need for strategic, landscape-scale coordination to address long-standing fragmentation in pest control.

This report presents the prioritisation framework and supporting analysis that will guide delivery of this work. The framework is designed as a decision-support tool, not a simple ranking system. It integrates landowner values, ecological context, mana whenua perspectives, spatial habitat analysis, agency inputs, and endangered species triggers to identify where pest control should begin, why, and under what conditions.

A significant contextual factor is the absence of a parallel programme in the Southland portion of the Catlins. Environment Southland was unable to co-fund the planning phase, meaning that the current work applies only to the Otago side of the regional boundary. Because ecological systems, predator populations, cultural landscapes, and community relationships span both regions, this creates unavoidable limitations for landscape-scale outcomes. The lack of Southland alignment results in:

- inconsistent pest control coverage
- reinvasion risk across the regional boundary
- misaligned priorities and delivery models
- reduced community confidence in long-term outcomes

This report recognises that long-term success across the Catlins will be strengthened through continued collaboration and alignment across regional boundaries. While the current planning process has focused on the Otago portion of the Catlins, future opportunities for broader coordination may further enhance the effectiveness, resilience, and long-term sustainability of landscape-scale pest management outcomes.

This project is being delivered during a period of significant governance transition, with the potential abolition of regional councils creating uncertainty around future biosecurity responsibilities. While this presents risks, it also creates an opportunity to design new governance structures capable of operating across former regional boundaries and supporting long-term, stable, landscape-scale pest management in the Catlins.

## 1.2 Overview of the Otago Catlins

The Catlins environment is characterised by extensive native forests, wetlands, dune systems, estuaries, and rugged coastal environments. These ecosystems support a wide range of threatened and at-risk species, including:

- Hoiho/yellow-eyed penguin
- Southern rātā remnants
- Kākāriki
- Lizards and invertebrates sensitive to predation
- Wetland and estuarine species (Department of Conservation, 2025).

The region's ecological richness is matched by its cultural significance. The Catlins holds deep ancestral connections for Waitaha, Kāti Mamoe, and Kāi Tahu, with numerous historic kāinga, nohoanga, and mahika kai sites along the coastline and river mouths. Places such as Pounawea, Kuramea (Catlins Lake), Papatowai, Tautuku, Waipāti, Waikawa, Haldane, and Waipapa/Tokenui are central to cultural identity, food gathering, and intergenerational knowledge (Otago Regional Council, 2025).

The Catlins economy is shaped by farming, forestry, tourism, and small rural communities. These sectors rely on healthy ecosystems, safe access, and predictable land management conditions. However, the region's low population density and limited local workforce create challenges for sustained pest control delivery, particularly given that government programmes have historically been short-term or inconsistent (Yang, 2022).

The Catlins landscape is also defined by its connectivity. Forested catchments flow into estuaries and coastal systems, and pest species move freely across land tenures and regional boundaries. This interconnectedness underpins the need for coordinated, multi-tenure, multi-agency pest management.

### 1.2.1 CAP Area Description and Habitat

The area covered in this plan encompasses the entirety of the Otago Catlins area, spanning approximately 1302km<sup>2</sup>. The area is separated into 4 catchment areas (see Figure 1 below for catchment locations and names).



Figure 1: Project Catchment Areas

These catchments are notably different in habitat composition, with catchments A and B being dominated by indigenous native forest, and catchments C and D being dominated by exotic pasture (see Figure 2 for further information on habitat types and land areas by catchment).

The catchments range in area from 147km<sup>2</sup> (for catchment A) to the largest at 472m<sup>2</sup> (Catchment C). Table 1 provides a summary of land areas and habitat types by catchment.

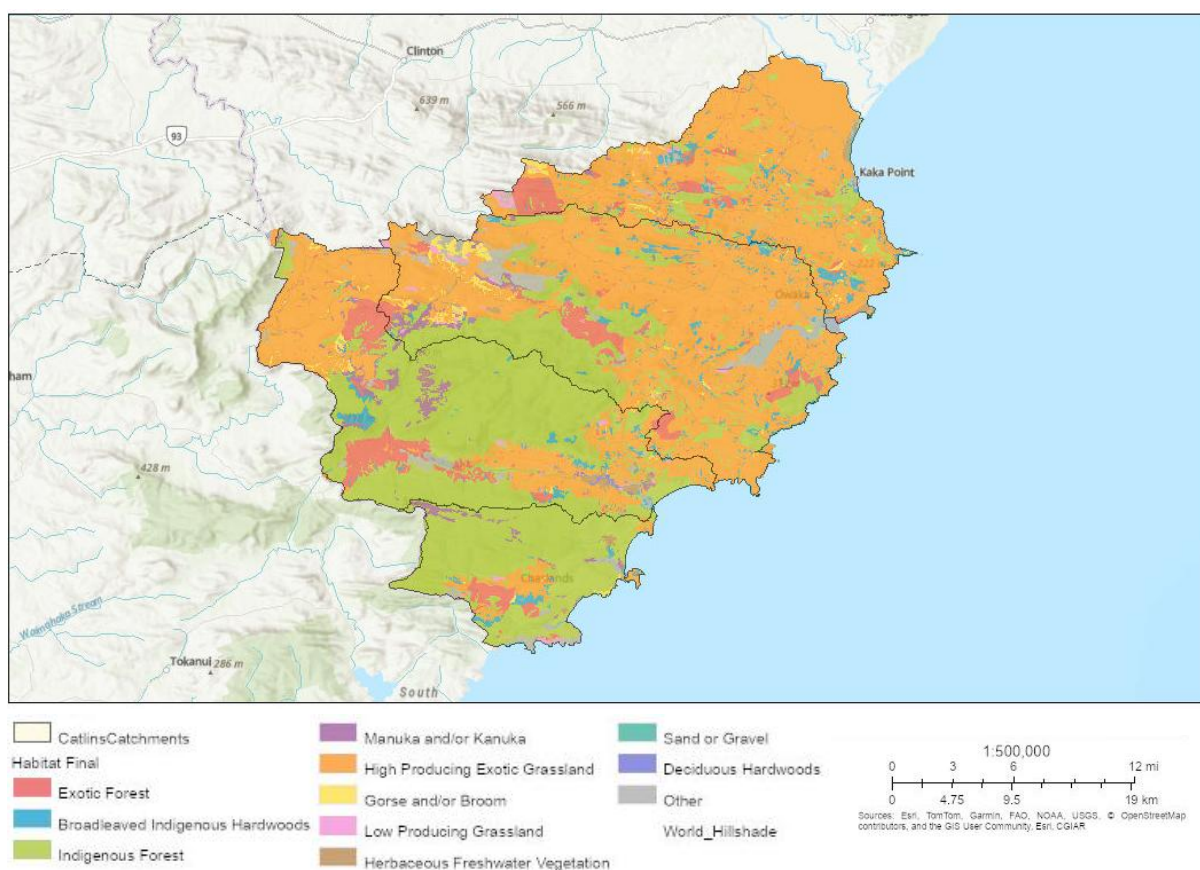


Figure 2: Habitat Types in the Catlins Catchments

Table 1: Catchment Descriptions

| Catchment Name               | Land Area (km <sup>2</sup> ) | Dominant Habitat Type           |
|------------------------------|------------------------------|---------------------------------|
| <b>A – Chaslands-Tautuku</b> | 147                          | Indigenous Forest               |
| <b>B – Tahakopa</b>          | 397                          | Indigenous Forest               |
| <b>C – Catlins River</b>     | 472                          | High Producing Exotic Grassland |
| <b>D – Puerua</b>            | 286                          | High Producing Exotic Grassland |

### 1.3 History of Pest Issues in the Catlins

Mammalian pests have long exerted significant pressure on the Catlins' ecosystems. Key issues include:

- Mustelids (stoats, ferrets, and weasels) and feral cats driving predation on ground-nesting birds, lizards, and invertebrates.
- Possums, deer, and goats causing browsing damage to forest canopies, understory vegetation, and southern rātā (Forest and Bird, 2021).

- Feral pigs disturbing wetlands, coastal forests, and waterways through rooting and sedimentation (Veblen & Stewart, 1982).
- Disease vectors, including bovine tuberculosis (possums) and toxoplasmosis (cats), affecting both wildlife and livestock (Warburton & Livingstone, 2015).

Historically, pest control in the Catlins has been fragmented, sporadic, and inconsistent. Programmes such as OSPRI operations and Jobs for Nature initiatives provided valuable control and workforce development, but both have largely ceased (Department of Conservation, N.D.). The Department of Conservation (DOC) undertakes some operations, but these are limited to discrete areas (e.g., Beresford Range) and do not provide region-wide coverage (Department of Conservation, 2025).

The result has been:

- Stop-start control cycles
- Loss of trained operational capacity
- High reinvasion rates
- Limited coordination between agencies and landowners
- Community distrust of government-led programmes

This history underscores the need for a cohesive, long-term, landscape-scale strategy that integrates ecological, cultural, social, and operational considerations.

## 1.4 Population, Capacity, and Capability

The Otago Catlins covers approximately 1,302 km<sup>2</sup> and has a resident population of around 1,460 people. This equates to a population density of just over one person per square kilometre, making it one of the more sparsely populated areas of New Zealand. While low population density contributes to the area's rural character and ecological values, it also presents challenges for the planning, delivery, and long-term sustainability of pest management programmes.

Effective landscape-scale pest management requires a combination of funding, skilled personnel, equipment, coordination, and ongoing monitoring. In areas with small and dispersed populations, the pool of available staff, contractors, volunteers, and community champions is inherently limited. This can constrain the scale and continuity of pest control operations, particularly where programmes rely on local participation or require specialised technical skills.

Governance complexities further compound these challenges. Responsibility for pest management is distributed across multiple organisations and land tenures, each with differing mandates, priorities, funding arrangements, and operational approaches. In

the absence of a single coordinating entity, limited local capacity can become fragmented across numerous initiatives, reducing opportunities to achieve efficient, landscape-scale outcomes.

Capability is also an important consideration. The management of multiple mammalian pest species requires a diverse range of technical competencies, including trapping, toxin use, monitoring, data management, health and safety compliance, project management, and community engagement. Maintaining these skills within a small rural population can be challenging, particularly where programmes are intermittent, funding is uncertain, or training opportunities are limited. Building and retaining local capability will therefore be critical to the long-term success of any expanded pest management programme.

These demographic and capacity constraints do not preclude effective pest management across the Catlins. Rather, they highlight the importance of approaches that maximise existing resources, strengthen coordination between organisations, support landowner participation, and build local capability over time. Recognising and addressing these factors will be essential to achieving sustained, landscape-scale pest control outcomes across the region.

## 1.5 Legislative and Governance Context

Pest management in the Catlins is shaped by a complex and sometimes misaligned legislative environment. The Otago Regional Pest Management Plan (RPMP) provides the regulatory basis for pest control in the Otago portion of the Catlins, but its species priorities, enforcement mechanisms, and resource allocation differ from those in the Southland RPMP. Importantly, the Otago RPMP lists only one major mammalian pest (rabbits) as a declared pest animal, and does not include possums, deer, goats, pigs, mustelids, or feral cats (Otago Regional Council, 2019). These species fall outside the RPMP's regulatory scope and are instead managed through national programmes, DOC operations, or voluntary landowner action. As a result, neither the Otago nor Southland RPMP currently supports a fully integrated, multi-species, landscape-scale approach across the entire Catlins.

In contrast, the Southland Regional Pest Management Plan (RPMP) adopts a broader approach to mammalian pest management, with both rabbits and possums identified as pest animals subject to formal management programmes (Environment Southland, 2019). While many significant pest species in both regions continue to be managed through Department of Conservation programmes, community initiatives, industry partnerships, or voluntary landowner action, the differing priorities of the two RPMPs create an inconsistent management framework across the Catlins. As a result,

opportunities for coordinated, landscape-scale pest management are limited, particularly for mobile species whose impacts extend across regional boundaries.

Additional governance and delivery challenges include:

- Fragmented agency responsibilities, values, and aspirations (DOC, councils, MPI, forestry companies, landowners)
- Limited coordination mechanisms for cross-boundary delivery
- Variable levels of community confidence in agency-led programmes, influenced by historical changes in priorities, funding, and delivery approaches.

Collectively, these challenges reflect the absence of a single entity with the mandate, resources, and authority to coordinate pest management across the entire Catlins landscape. Without such coordination, pest management is likely to continue operating through separate programmes and organisational priorities, limiting opportunities for landscape-scale integration and collective action.

However, ongoing discussions regarding local government reform, while creating additional uncertainty, may also provide an opportunity to reconsider governance arrangements for landscape-scale environmental management that:

- Operates across former regional boundaries
- Integrates cultural, ecological, and community priorities
- Provides long-term stability and leadership
- Supports coordinated investment and delivery.

This report therefore presents the prioritisation framework within a changing governance landscape, recognising both the current constraints on coordinated pest management and the opportunities for a more integrated approach in the future.

## 2 Pest Control Delivery Summary

The prioritisation framework identifies where pest control should begin, why, and under what conditions.

The prioritisation framework is intended as a living document and can (and should) be adjusted when additional data is provided. This report is a snapshot of the current context and available data only; therefore, it is recommended that ongoing engagement and data collection be undertaken to ensure that recommendations are up to date with the current context.

## 2.1 Pest Control Prioritisation Framework Summary

The methodology is broadly summarised in Table 2 below. A full description of the framework methodology and design can be found in Appendix 2. The prioritisation framework (weighted spreadsheet model providing outputs for stages 1,2, 4, and 5) can be found in Appendix 1.

*Table 2: Summary of the framework structure used to produce mammalian pest control recommendations*

| Stage | Method                                             | Data captured                                                                                                                                               | Outputs/Intent                                                                                                                           |
|-------|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| 1     | Landowner survey                                   | Landowner survey responses on pest concern, ecological/cultural values, readiness, feasibility, social licence.                                             | Ranked catchments/areas. Indicative timeframes for implementation. Priority pest species within catchments.                              |
| 2     | Spatial habitat overlay                            | Habitat patch size and continuity (GIS). Landscape-scale opportunity.                                                                                       | Ranked catchments/areas according to habitat values, and spatial feasibility.                                                            |
| 3     | Mana whenua – cultural values and considerations   | Mana whenua values (through survey) and direct engagement.                                                                                                  | Constraints and opportunities for delivery.                                                                                              |
| 4     | Agency inputs                                      | Operational knowledge from local government, NGOs, and industry; existing or planned pest control operations, delivery capacity, partnership opportunities. | Refined starting points for coordinated pest control, aligned with existing programmes and delivery potential.                           |
| 5     | Endangered species urgency triggers and escalation | Verified presence of endangered or nationally significant species/populations.                                                                              | Identification of areas requiring immediate action or elevated management response. Informs final operational priorities and sequencing. |

## 2.2 Priority Catchments, Species, and Habitats

### 2.2.1 Catchment Rankings

Stages 1 and 2 of the framework produced a clear differentiation between the four catchments. The final rankings are shown in Table 3, with Catchment A emerging as the only catchment with a sufficiently strong combination of ecological value and social feasibility to justify immediate control.

Table 3: Final priority of Catchments as determined by stages 1 and 2 of the framework.

| Catchment | Final Priority |
|-----------|----------------|
| A         | High           |
| B         | Low            |
| C         | Very Low       |
| D         | Very Low       |

Catchments B, C, and D fall into lower priority categories due to weaker species signals, lower ecological value, and higher barriers to participation. These catchments are not excluded from future control, but they require further engagement, monitoring, and feasibility support before any large-scale operations can be justified.

The Stage 1 and Stage 2 components contributing to these rankings are shown in Table 4, which highlights the relative ecological and social feasibility of each catchment.

Table 4: Stages 1 and 2 rankings resulting in final scores shown in Table 3 above.

| Catchment | Stage 1 Ranking | Stage 2 Ranking |
|-----------|-----------------|-----------------|
| A         | Medium          | High            |
| B         | Low             | Medium          |
| C         | Low             | Low             |
| D         | Low             | Low             |

Catchment A's high spatial ranking reflects its extensive native forest cover, large and continuous habitat blocks, and high connectivity. Its Stage 1 ranking (Medium) reflects strong landowner concern about pests and high social licence, but also significant cost barriers that limit independent action.

Catchments B–D scored lower across both stages. Catchment B has moderate ecological value but low social licence and high time-related barriers. Catchments C and D are dominated by exotic pasture, have fragmented habitat, and show weak species signals.

## 2.2.2 Interpretation of Results

### 2.2.2.1 Catchment A

Catchment A stands out due to its extensive native forest cover, large and continuous habitat blocks, and high spatial connectivity. These ecological characteristics make it one of the few areas in the Otago Catlins where landscape-scale pest control can be both ecologically meaningful and operationally defensible. Landowner survey data

indicates strong concern about pest impacts and the health of native ecosystems, and generally high comfort with pest control methods. Although cost barriers are significant, willingness to participate is high, and existing control networks provide a strong operational foundation.

#### *2.2.2.2 Catchment B*

Catchment B presents a more mixed picture. It has moderate ecological value and high collaboration readiness, suggesting that landowners are willing to work together if the right support is provided. Species signals for possums, rats, stoats, and deer are relatively strong. However, social licence is low, driven by concerns about pet safety and toxin use, and time is a major barrier to participation. These factors reduce the feasibility of immediate control, despite ecological potential.

#### *2.2.2.3 Catchment C*

Catchment C has lower ecological value, with habitat dominated by exotic pasture and fragmented native vegetation. Species signals are weak, and while collaboration readiness is moderate, social licence remains low. At this stage, there is insufficient justification for coordinated pest control. Although future monitoring or changes in landowner sentiment may alter this assessment.

#### *2.2.2.4 Catchment D*

Catchment D ranks lowest across almost all indicators. It has a comparatively low ecological value, low collaboration readiness, and low social licence, with barriers dominated by cost and safety concerns. This catchment requires foundational engagement and trust-building before any landscape-scale coordination is feasible.

While there are some pest control operations occurring in both catchments C and D, the area covered by these operations is small and largely targeted around discrete, isolated patches of native habitat. Therefore, while these individual projects have significant value for specific environmental outcomes, they lack potential in terms of large-scale control that can be reached in other, more contiguous habitat areas such as those found in catchment A.

This interpretation provides the context for determining where control should begin and where further information or engagement is required before action can be justified.

## 2.3 Control Recommendations

The species priorities identified through Stage 1 are summarised in Table 5 below, which outlines the species of concern in each catchment and a summary of recommended actions. Pest species were identified through three mechanisms:

1. Landowner data identifying pest species of concern by catchment (expressed as a percentage),
2. Level of ecological impact pests incur on the environment, and
3. A “habitat linkage” weighting, linking the pest species to the habitats they affect and the level/presence of that habitat in each catchment.

*Table 5: Species control recommendations driven by stages 1 and 2. Recommended actions are listed for each catchment.*

| Catchment | Pest Species of concern                                  | Recommended Actions                                                                                                       |
|-----------|----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| <b>A</b>  | Possums<br>Rats<br>Stoats<br>Feral Cats<br>Deer<br>Goats | Control needed.<br>Review existing control in catchment and identify opportunities for collaboration.                     |
| <b>B</b>  | Possums<br>Rats<br>Stoat<br>Deer                         | Not sufficient priority – no control recommended at this stage.<br>Likely candidate for medium term control (3-5 years).  |
| <b>C</b>  | Possums<br>Feral Cats<br>Deer<br>Rabbits                 | Not sufficient priority – no control recommended at this stage.<br>Possible candidate for long-term control (5-10 years). |
| <b>D</b>  | Possums<br>Deer<br>Goats                                 | Not sufficient priority – no control recommended at this stage.<br>Possible candidate for long-term control (5-10 years). |

### 2.3.1 Immediate Control (2026-28)

Catchment A is the only catchment where immediate control is recommended. Control should target possums, rats, stoats, feral cats, deer, and goats. These species were identified as high-priority through landowner reporting, ecological vulnerability, and known pest presence. Control should be delivered as a coordinated, multi-species programme, supported by cost-reduction measures, shared equipment access, and integration with existing control networks.

Because the need for control is urgent, monitoring for these species is initially suppressed. The priority in the first 2–3 years is to establish sustained control across a significant proportion of the catchment.

### 2.3.2 Future Control Potential (2028-2031)

Catchment B is not recommended for immediate control. However, it is the most likely candidate for future expansion. Control may be justified in later iterations of the framework if pre-monitoring confirms species presence and distribution, and if engagement efforts improve social licence and reduce time-related barriers.

### 2.3.3 Long-Term Control (2031 Onwards)

There is insufficient evidence to justify coordinated control in Catchments C and D at this stage. These catchments may be reconsidered in future iterations if monitoring, engagement, or ecological conditions change.

## 3 Monitoring Recommendations

### 3.1 Monitoring Framework Summary

Monitoring is an essential component of long-term pest management. However, the framework recognises that in some situations the risks of delaying control outweigh the benefits of collecting baseline data. In Catchment A, multiple lines of evidence, including previous DOC operations such as the J4N project, landowner reports, and recent control activity, indicate that pest populations are already high. In these circumstances, extensive pre-control monitoring would be unlikely to alter management decisions and would divert limited resources from urgent control work.

The primary consequence of deferring monitoring is reduced certainty about initial population densities. However, this risk is outweighed by the ecological urgency of the site, the presence of nationally critical species, and the need to demonstrate early progress. Where multiple sources of evidence indicate that pest populations are already high, there is often limited management value in refining estimates of abundance. Above a certain population threshold, the exact density becomes less important because the required management response remains the same: rapid and sustained control. In these circumstances, detailed baseline monitoring is unlikely to alter decision-making and may divert resources from actions that deliver immediate biodiversity benefits. Tangible outcomes, such as reduced pest sign and landowner-

reported improvements, are often more effective at building confidence and support than collecting detailed baseline data before control begins.

During the initial stages of control, particularly in Catchment A, population trends can be assessed using operational indicators such as trap catch rates, bait uptake, and cyanide kill returns. Where pest populations are already known to be high, these measures provide a practical and cost-effective proxy for monitoring. Relying on operational data allows resources to be focused on reducing pest numbers while still providing information to assess programme performance.

More robust, scientifically designed monitoring will be introduced once control has stabilised and pest densities have declined to levels where detailed data is required to guide future management decisions, evaluate outcomes, and support funding applications.

This staged approach ensures monitoring effort is applied where it provides the greatest value, supports adaptive management, and responds to landowner concerns that rapid and visible progress is needed.

Monitoring recommendations were developed using a set of operational and ecological criteria that reflect both the strength of available evidence and the current level of knowledge within each catchment. The framework considers:

- Species signal strength: the likelihood that a species is present at ecologically significant levels.
- Existing monitoring effort: whether monitoring has already been undertaken for that species within the catchment.
- Control intensity: the extent of current or recent control activity (within the last three years), which influences whether additional monitoring is needed to inform future management.
- Evidence of population size or impact: including known population levels, detections, reported kills, or observations from landowners and agencies.
- Urgency of control needs: whether immediate control is required, in which case monitoring may be deferred to avoid delaying action.

Together, these factors determine whether monitoring is required, recommended, not required, or deferred due to urgent control needs.

## 3.2 Catchment A

### 3.2.1 Initial Monitoring

Monitoring recommendations in Catchment A are largely deferred due to the need for immediate control of most species within this catchment. Multiple lines of evidence already confirm high pest numbers, including previous DOC operations (e.g., J4N), landowner observations, and recent control data. Additional baseline monitoring would therefore provide limited new information and would delay urgently needed control.

Suppressing monitoring in the first phase also supports social licence. Early control results - such as reductions in trap catch rates, lower bait uptake over time, and community-reported improvements - provide visible evidence of progress. This is important for maintaining trust, demonstrating success to funders, and supporting future expansion of the programme.

Only ferrets and pigs are recommended for initial monitoring, as these species have high ecological impacts but lack current control mechanisms. Early monitoring will help determine whether targeted ferret or pig control should be integrated into the Catchment A programme during the initial control phase or staged for later years.

Table 6: Catchment A monitoring triggers

| Catchment | Species | Justification/Trigger                                                                                                                                        |
|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A         | Ferret  | Previous control programme (known kills) but no ongoing control.<br>High ecological impact for coastal seabirds.<br>No known current mechanisms for control. |
| A         | Pig     | High ecological impacts.<br>Known increasing population in Catlins area.<br>No known mechanisms for control.                                                 |

### 3.2.2 Deferred Monitoring

Monitoring for possums, rats, stoats, feral cats, deer, and goats is initially deferred because control has been identified as the priority response. Deferred monitoring is focused on species where distribution, abundance, or impact remains uncertain, and where additional information is required to guide future management decisions.

Population trends for species under active control will be assessed using operational performance measures such as trap catch rates, bait uptake, and cyanide kill returns until the programme reaches the thresholds outlined below. Once these thresholds are reached, more formal monitoring may be introduced to support ongoing management and evaluation.

For species subject to initial control, conditional monitoring should be triggered once defined control thresholds have been met, generally following the first three years of control. These thresholds and recommended monitoring approaches are outlined in Table 7. Recommendations were developed with consideration of:

- The logistical and financial feasibility of undertaking monitoring.
- The level of monitoring required to provide confidence in pest presence, distribution, or abundance.
- The relevance of monitoring where existing or recent control activity has already confirmed widespread pest presence.
- Species home range characteristics and other behavioural factors that influence detectability.
- The availability, reliability, and suitability of monitoring methodologies.

This approach ensures monitoring effort is directed towards information gaps that are important for future management decisions, while avoiding unnecessary duplication of information already obtained through control operations.

*Table 7: Recommended monitoring in Catchment A from years 3-5.*

| <b>Species</b> | <b>Conditions to be met to trigger monitoring</b>                                                                                          | <b>Monitoring recommendations</b>                                                                                                                                                         |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Possums</b> | Sustained (continuous) control in 2 years previous, AND control occurring over at least 50% of catchment area.                             | Monitoring undertaken within immediate area of control plus at least 5km buffer around control area.                                                                                      |
| <b>Rats</b>    | Localised control.                                                                                                                         | Localised, and only in areas of high native forest coverage where targeted control occurring, or in areas where leghold trapping undertaken for other species (to assess bycatch impact). |
| <b>Stoats</b>  | Sustained control (>12 months) on targeted (high risk) sites at a minimum.                                                                 | Targeted to high-risk habitats/species.                                                                                                                                                   |
| <b>Deer</b>    | Targeted (commercial) control in at least 20% of catchment area, returning at least 6 repeats of control for last 12 months                | Catchment-wide.                                                                                                                                                                           |
| <b>Goats</b>   | Targeted control of species at identified hotspot sites (hotspots identified in McLennan Range goat survey undertaken by Forest and Bird). | Unknown – refer to previous survey undertaken.                                                                                                                                            |

It is not recommended at this stage for any monitoring to be undertaken for weasels, hedgehogs, or rabbits. This is mainly due to:

- The lack of current control activity either targeting or reporting high by kill rates of pest species (weasels and hedgehogs);
- A comparatively lower level of urgency attached to these species in terms of control needs; and
- Comparatively lower ecological impacts due to diet and associated habitat types within the catchment (rabbits).

## 3.3 Catchment B

### 3.3.1 Pre-Monitoring (Next 1-3 Years)

Catchment B is the only catchment where monitoring could elevate its priority in future iterations of the framework. Pest presence, distribution, and density are less well understood here due to fewer active or recent control operations, and monitoring is essential to determine whether coordinated control is justified.

Monitoring in Catchment B is therefore recommended because populations may be less prevalent or more variable, and information gaps genuinely limit decision-making. This targeted use of monitoring ensures resources are directed to areas where data will influence future priorities and sequencing.

Engagement activities for forestry properties in this catchment indicated that there were significant numbers of forestry blocks likely to undertake deer control in the next 2-3 years, as well as several parties already doing deer control. Therefore, if catchment B was to proceed, it is likely that deer will be a strong candidate for starting control.

Table 8: Pre-Monitoring recommendations for Catchment B

| Species        | Priority                                               | Immediate Action Recommended                                          |
|----------------|--------------------------------------------------------|-----------------------------------------------------------------------|
| <b>Possums</b> | High – species identified as high priority for control | Pre-monitor (next 1-3 years)                                          |
| <b>Rats</b>    | High – species identified as high priority for control | Pre-monitor (next 1-3 years)                                          |
| <b>Stoats</b>  | High – species identified as high priority for control | Pre-monitor (next 1-3 years)                                          |
| <b>Deer</b>    | High – species identified as high priority for control | Pre-monitor (next 1-3 years)                                          |
| <b>Goat</b>    | Monitoring Recommended                                 | Pre-monitor<br>Recommended only if control proceeds in this catchment |

Monitoring operations should be built around existing control and monitoring operations. As a result, it may not be necessary to monitor across the whole catchment for all species.

### 3.4 Catchments C and D

No monitoring is required in Catchments C and D at this stage. Their low ecological value, weak species signals, and low social licence mean that monitoring effort would not currently support decision-making, as it is unlikely that these catchments will trigger conditions for control within the next 3 years. These catchments may be reconsidered if new information emerges or if landowner engagement shifts.

### 3.5 Ecological Outcome Monitoring

While the development of an ecological outcome monitoring framework was not a specific objective of this report, recommendations have been included due to its close alignment with the proposed pest monitoring framework. Outcome monitoring is also likely to play an important role in securing future funding, as it demonstrates the ecological and cultural benefits achieved through pest control rather than simply changes in pest abundance.

Potential ecological outcome measures include:

- Improvements in habitat condition and vegetation health
- Increased abundance, occupancy, or breeding success of native species
- Changes in biodiversity indicators that reflect ecosystem recovery
- Improvements in ecosystem function and resilience

Ecological outcome monitoring complements targeted pest monitoring by providing a broader picture of ecosystem recovery and programme success. Alongside the cultural monitoring outcomes discussed in Section 6.7, it helps demonstrate whether pest control is delivering meaningful benefits on the ground. Importantly, outcome monitoring can be implemented alongside immediate control activities and will not delay the commencement of work in Catchment A or undermine programme momentum and social licence.

A comprehensive monitoring programme recognises that reducing pest numbers is not the ultimate objective of the work, but rather a means of achieving improved ecological, cultural, and community outcomes.

## 4 Social Licence and Barriers

Table 9 below shows a breakdown of how each catchment scored for:

1. Social licence (how willing to engage landowners are, and the level of faith in agency-led control).
2. Which was their highest concern regarding large-scale pest control.
3. How high the barriers to engaging in pest control were in each catchment,
4. The main barriers preventing engagement in pest control, and
5. How ready each catchment was to engage in pest control, based either on their current activity, and/or their willingness to collaborate with other groups.

Social licence and barriers are central determinants of whether coordinated pest control can be delivered across the Otago Catlins. While ecological value and species signals shape the *need* for pest control, social licence and barriers shape the *feasibility* of delivering it. The landowner survey provides detailed insight into how comfortable landowners are with pest control methods, what concerns they hold, and what prevents them from participating.

The landowner survey shows that social licence concerns and practical barriers to participation are widespread across all four catchments, although the nature and intensity of these issues vary. While the detailed results are presented in Table 9, several clear themes emerge.

Table 9: Breakdown of Stage 1 categories contributing to final Stage 1 ratings

| Catchment | Social Licence Score | Highest Concern(s) | Barrier Score | Highest Barrier(s) | Collaboration Readiness |
|-----------|----------------------|--------------------|---------------|--------------------|-------------------------|
| A         | Medium               | Method             | High          | Cost               | Moderate                |
| B         | Low                  | Safety, Method     | High          | Time               | High                    |
| C         | Low                  | Safety             | High          | Time               | Moderate                |
| D         | Low                  | Safety             | High          | Cost               | Low                     |

### 4.1 Barriers to Participation

Across all four catchments, barriers to participation are widespread. The proportion of landowners indicating at least one barrier is extremely high: 92% in Catchment A, 77% in B, 86% in C, and 93% in D. This indicates that barriers are not isolated issues but are systemic across the landscape.

Table 10: Barriers indicated by landowners. All values are expressed as a % of landowners within that catchment.

| Catchment | At least one barrier | % Cost | % Time | Skills and Equipment | Access |
|-----------|----------------------|--------|--------|----------------------|--------|
| A         | 92                   | 69     | 46     | 15                   | 8      |
| B         | 77                   | 31     | 77     | 23                   | 8      |
| C         | 86                   | 40     | 52     | 29                   | 7      |
| D         | 93                   | 57     | 50     | 36                   | 0      |

Cost and time are the most common barriers. Cost pressures are particularly pronounced in Catchments A and D, while time limitations dominate in Catchments B and C. Skills and equipment gaps are present to a lesser extent but remain relevant, especially in catchment D.

## 4.2 Social Licence Considerations

Social licence concerns are also widespread, with 31–57% of landowners in each catchment indicating at least one concern, as indicated in Table 11 below.

Table 11: Concerns expressed by landowners related to large-scale pest control operations. All values are expressed as a % of landowners within the catchment.

| Catchment | At least one concern | Safety of pets/ livestock | Pest control methods | Lack of trust in agencies | Cultural concerns |
|-----------|----------------------|---------------------------|----------------------|---------------------------|-------------------|
| A         | 31                   | 15                        | 23                   | 15                        | 8                 |
| B         | 54                   | 31                        | 31                   | 12                        | 0                 |
| C         | 52                   | 31                        | 17                   | 26                        | 0                 |
| D         | 57                   | 36                        | 29                   | 29                        | 7                 |

The most frequent concerns relate to pet and livestock safety and method acceptability, followed by varying levels of trust in agencies. Cultural concerns are limited to a small number of respondents.

## 4.3 Collaboration Readiness and Existing Activity

Despite the above constraints, current pest control activity is relatively high across all catchments, with many landowners already undertaking some form of control on their properties. Collaboration readiness varies, with Catchment B showing the strongest potential for coordinated action, while Catchment D will require more foundational engagement due to lower knowledge levels and higher concern profiles.

Table 12: Collaboration readiness of catchments, with recommendations based on level of readiness

| Catchment | Collaboration Readiness | Recommendation                                                                                                                              |
|-----------|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| <b>A</b>  | Moderate                | Moderate opportunity for collaboration. Engagement and capacity-building recommended to strengthen readiness.                               |
| <b>B</b>  | High                    | Provide support to connect landowners and strengthen emerging networks                                                                      |
| <b>C</b>  | Moderate                | Moderate opportunity for collaboration. Engagement and capacity-building recommended to strengthen readiness.                               |
| <b>D</b>  | Low                     | Low collaboration readiness. Focus on individual landowner engagement and awareness-building before promoting landscape-scale coordination. |

Overall, the results indicate that while ecological need is concentrated in Catchment A, there is a strong opportunity in years 1-3 to strengthen social licence, reduce barriers, and build the foundations for future coordinated control in other catchments. This will require targeted engagement, practical support, and clear communication to address the specific concerns and constraints identified in the survey.

Table 13: Self-reported level of knowledge on pest control methods. Figures are an average of responses per catchment where landowners rated themselves as having "No Knowledge" - 1, "A Little Knowledge" - 2, "Somewhat Knowledgeable" - 4, or "Very Knowledgeable" – 5.

| Catchment | Landowner Knowledge (self-rated) |
|-----------|----------------------------------|
| <b>A</b>  | 4.64                             |
| <b>B</b>  | 3.17                             |
| <b>C</b>  | 3.13                             |
| <b>D</b>  | 2.64                             |

The survey data also indicated that landowner knowledge is highest in Catchment A (4.64) and lowest in Catchment D (2.64). This suggests that Catchment A is well-positioned for landowner-supported control, while Catchment D will require more foundational training and support.

Table 14: Estimate of area within catchments under private control. Data is based on landowner survey responses indicating that they are undertaking control of some type.

| Catchment | Estimated area under current control (ha) | Number of properties indicating current control |
|-----------|-------------------------------------------|-------------------------------------------------|
| A         | 2,145                                     | 10                                              |
| B         | 1,495                                     | 11                                              |
| C         | 4,685                                     | 32                                              |
| D         | 1,470                                     | 10                                              |

Catchment C has the largest area under control, driven by a high number of participating properties (32). This indicates that while social licence is low, individual control is widespread – a valuable foundation for future engagement.

## 4.4 Implications for Years 1-3 and Pathways for Implementation

The first three years of the programme provide an important window to strengthen social licence, reduce barriers, and prepare catchments beyond A for future coordinated pest control. Several practical mechanisms can support this early work and ensure that landowners receive the guidance, reassurance, and operational support needed to participate confidently.

A key requirement might be the establishment of a dedicated coordinator or public-facing role. This position would act as a single, trusted point of contact for landowners, helping them navigate cost, time, and method-related concerns while also linking them to contractors, equipment, and training opportunities. The coordinator would play a central role in connecting landowners to existing pest control programmes already operating in the Catlins, and in providing clear, consistent engagement on issues such as toxin safety, trap use, and pet or livestock protection. This role could be hosted by the regional council, mana whenua, a community trust, a joint governance group, or a contracted provider.

To complement this, a Landowner Support and Connection Programme would help formalise the process of linking landowners to each other and to established initiatives. Many landowners already undertake pest control, and this existing activity provides a strong foundation for peer learning. Field days, demonstration events, and short training workshops would help address skills gaps and build confidence in safe and effective control methods. A simple referral pathway into existing programmes would further reduce uncertainty for landowners who are interested in participating but unsure where to begin.

The governance group also has an important role in building trust and maintaining transparency. A governance-led communication stream – including regular updates on

progress in Catchment A, clear information about method safety, and co-branded messaging from ORC and mana whenua – would help address concerns about agency trust and ensure consistent communication across the region. Annual catchment meetings and an accessible online information hub would support ongoing engagement.

Addressing practical constraints will also require a contractor and workforce support pathway. Coordinated contractor visits, subsidised hours, and training support for local residents would help reduce the time and skills barriers that affect many landowners, particularly in Catchments B, C, and D. This approach also contributes to long-term workforce development, which is essential for sustained pest control delivery.

Finally, the early years offer an opportunity to strengthen collaboration networks in catchments that show potential for future coordinated control. Catchment B has strong collaboration readiness, while Catchment C has a large number of active properties. Facilitating small cluster groups, supporting shared traplines or monitoring routes, and providing small grants for collaborative projects would help build momentum whilst acknowledging time or resource constraints that landowners face. Demonstrating early progress in Catchment A will also be important for building confidence across the wider region.

Together, these mechanisms provide a practical and achievable pathway for delivering the recommended actions in Years 1-3. They focus on strengthening relationships, reducing barriers, and building capability – laying the groundwork for expanding coordinated pest control beyond Catchment A as conditions allow.

## 5 Sample size confidence

*Table 15: Sample size confidence based on estimated area covered by survey responses. Area determined through indicated parcel size (included in survey data).*

| Catchment | # Respondents | Estimated area covered by landowner responses | Total catchment area (ha) | Indicative Coverage of Catchment area (%) |
|-----------|---------------|-----------------------------------------------|---------------------------|-------------------------------------------|
| A         | 13            | 2145                                          | 31290                     | 6.85                                      |
| B         | 13            | 1495                                          | 92987                     | 1.61                                      |
| C         | 32            | 4685                                          | 131908                    | 3.55                                      |
| D         | 14            | 1470                                          | 46753                     | 3.14                                      |

Interpreting the landowner survey results requires careful consideration of sample size and coverage across the four catchments. While the survey provides valuable insights

into landowner values, barriers, and species concerns, the overall level of participation was relatively low, with indicative coverage ranging from 1.61 to 6.85% of each catchment's land area. This reflects the inherent challenges of engaging a dispersed rural population, particularly within a short project timeframe.

Catchment A achieved the highest proportional coverage, with 13 respondents representing approximately 6.85% of the catchment area. Although still modest, this level of engagement provides a more reliable basis for interpreting social licence, barriers, and species signals compared with the other catchments. The presence of larger average parcel sizes in catchment A respondents also means that each respondent represents a relatively substantial landholding, increasing the relevance of their responses to operational planning.

Catchment C, while having a significantly higher number of respondents than all other catchments (32), had a similar catchment coverage % to Catchment D. Catchment C and D's coverage indicate that while the survey captured a range of perspectives, the results should be interpreted with caution. Additional engagement will be required to validate species concerns, collaboration readiness, and feasibility barriers before committing to large-scale control.

Catchment B had the lowest coverage at 1.61%, with only 13 respondents representing small average parcel sizes. This limits confidence in the representativeness of the results and suggests that further targeted engagement is essential before any landscape-scale coordination is attempted. The high collaboration readiness identified for this catchment may also reflect the limited sample rather than a definitive community position, and so caution must be applied here.

Overall, while the survey provides a useful foundation for prioritisation, the low coverage across all catchments reinforces the need for ongoing engagement, iterative data collection, and adaptive management. Thresholds for adjusting priority scores were intentionally set conservatively to reflect these limitations, ensuring that catchments are neither prematurely elevated nor unfairly deprioritised based on incomplete information.

## 6 Mana Whenua Perspectives and Recommendations

Mana whenua perspectives were incorporated into the prioritisation framework through a dedicated Stage 3 cultural values overlay, supported by spatial mapping, questionnaire responses, and direct engagement with Awarua Rūnaka and Māori landowners. This ensures that cultural values, mahika kai systems, and intergenerational responsibilities shape how pest control is prioritised and delivered across the Otago Catlins. Feedback from mana whenua strongly supports an integrated, whole-of-landscape approach consistent with ki uta ki tai thinking, and emphasises the importance of enabling mana whenua-led projects and programme alongside collaborative delivery.

The cultural landscape of the Catlins is dense and interconnected. The Ngā Ingoa and Kā Ara Tūpuna maps show a region layered with historic occupation, travel routes, mahika kai sites, wāhi tapu, and Māori land parcels. These layers reinforce that pest management cannot be separated from cultural values: the health of the ngahere, awa, repo, and takutai directly affects the ability of mana whenua to exercise kaitiakitanga and maintain cultural relationships with place.

### **Statement of Takata Whenua in Te Ākau Tai Toka (Catlins) on Introduced Animals**

The introduction of animals by European settlers from the mid-19th century (including deer, possums, rabbits, goats and pigs) has had significant and long-lasting impacts on Te Ākau Tai Toka, particularly on mahika kai species and customary practices.

Some of these species have been incorporated into contemporary Kāi Tahu mahika kai practices (e.g., deer and pigs) and have also provided employment for whānau (e.g., possums and rabbits).

However, their largely unchecked growth in recent years has contributed to the decline of native species and ecosystems, with ongoing impacts still felt by our people today.

The effects of introduced animals on mahika kai, native ecosystems and customary practices are a critical concern for Takata Whenua in Te Ākau Tai Toka. Many populations are already beyond sustainable levels, placing significant pressure on indigenous flora and fauna.

We request that the control of introduced animals be urgently prioritised and adequately funded in the Catlins to reduce these impacts on Mahika kai and native ecosystems. This should include coordinated pest control across public conservation land (including DOC and councils, private land and Māori reserve land).

## 6.1 Areas of Particular Cultural Interest

Engagement identified a wide range of culturally significant areas across the Catlins, many of which align with mapped cultural layers. These include:

- Mahika kai sites such as Pounawea, Kuramea (Catlins Lake), Papatowai, Tautuku, Waipāti, Waikawa, Haldane, and the Waipapa/Tokanui River mouth.
- Lowland and coastal podocarp forests, which support taonga species and are central to cultural identity and customary harvest.
- Coastal margins and seabird habitats, including Tokatā/Nugget Point, Tautuku, and Waipāti.
- Freshwater systems, including the Tahakopa, Owaka, and Puerua catchments, which support tuna, inanga, kōura, and kanakana.
- Historic kāinga, nohoanga, and travel routes, many of which follow river valleys and coastal corridors.
- Wāhi tapu and wāhi tūpuna, including sites recorded in the NZAA database and areas identified through rūnaka knowledge.

Mana whenua emphasised that all indigenous species within these landscapes are taonga tuku iho – inherited from tūpuna and held in trust for future generations – and therefore cannot be viewed in isolation.

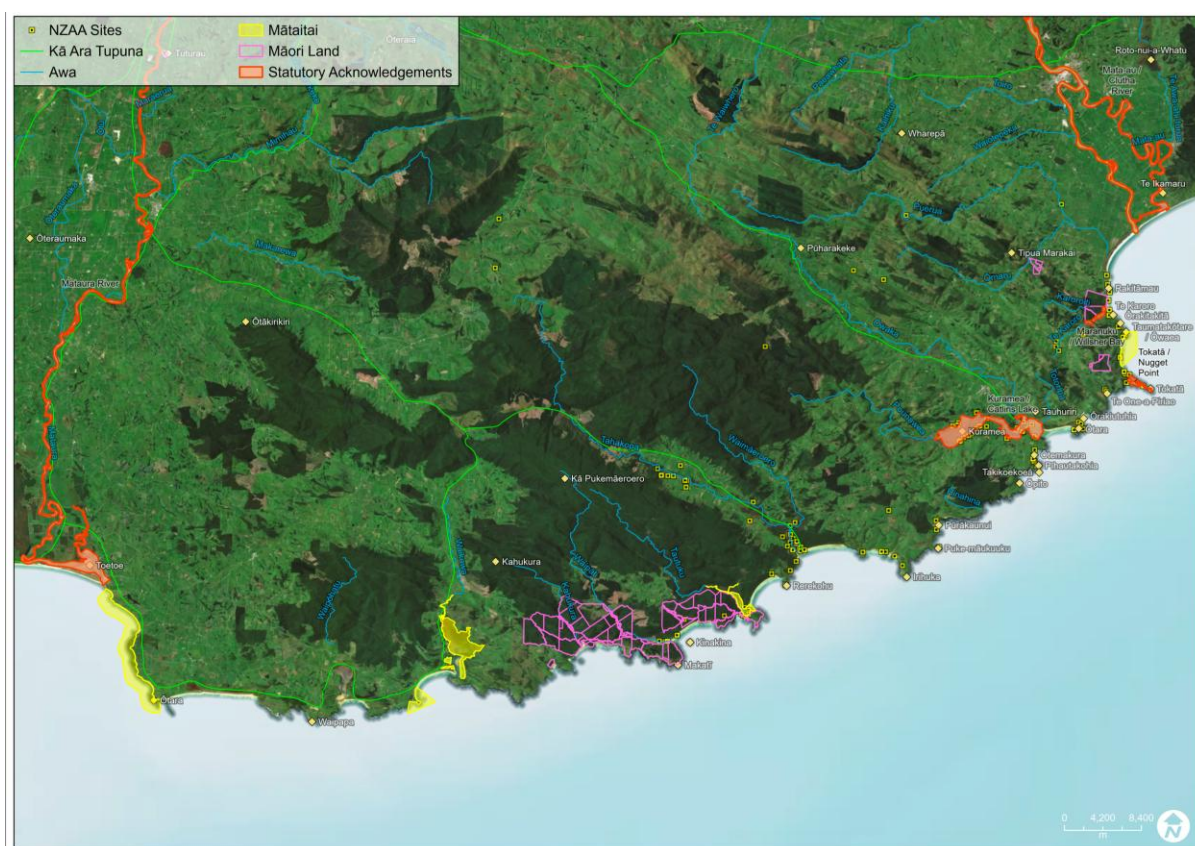


Figure 3: Map of Maori land, Mataitai, and statutory acknowledgement areas for the Catlins Data

Table 16: Māori land/native reserves located within Te Ākau Tai Toka/Catlins (Waitangi Tribunal, N.D.)

| Location                    | Comments                                                                                                         | Reserve Type            |
|-----------------------------|------------------------------------------------------------------------------------------------------------------|-------------------------|
| <b>Tautuku</b>              | 6,281 acres granted to 366 persons under the South Island Landless Natives Act 1906 (Tautuku Block).             | Landless Natives Grant. |
|                             | 1,000 acres set aside in 1868 for those who signed Kemps Deed but did not receive land. Tautuku A and B.         | Native Reserve.         |
| <b>Glenomaru</b>            | 350 acres, granted under the South Island Landless Natives Act 1906. Located south of Kaka Point in South Otago. | Landless Natives Grant. |
| <b>Maranuku</b>             | Granted in 1844 as part of the Otago Purchase 1848.                                                              | Native Reserve.         |
|                             | Also known as Te Karoro Native Reserve, split into two reserves Maranuku A and B.                                |                         |
| <b>Ōtara ½ cast</b>         | Sections 3, 4, 5, 21, 22, 23 and 24.                                                                             | Half-Caste Reserves.    |
|                             | Reserved under the Stewart Island Grants Act 1873 and the Middle Island Half-Caste Grants Act 1888.              |                         |
| <b>Fortrose ½ cast</b>      | Section 44, Fortrose Town                                                                                        | Half-Caste Reserve.     |
| <b>Tuturau</b>              | Granted in 1853 as part of the Murihiku Purchase                                                                 | Native Reserve.         |
| <b>Waikawa Block</b>        | 5,238 acres granted under the South Island Landless Natives Act 1906. Adjoining the Tautuku Block to the south.  | Landless Natives Grant. |
| <b>Waikawa Crown Grants</b> | Granted under the Native Land Act 1931                                                                           | Crown Grant.            |

## 6.2 Pests of Concern

Mana whenua identified a suite of mammalian pests of concern, which closely aligns with the landowner survey:

- Possums, rats, stoats, feral cats, and hedgehogs: due to predation on manu, invertebrates, and taonga species, and their contribution to “silent forests.”
- Ungulates (deer, pigs, goats): due to browsing pressure, canopy decline, suppression of forest regeneration, and damage to wetlands and riparian systems.
- Pigs: specifically noted for habitat disturbance and impacts on mahika kai.

This is largely consistent with landowner survey findings, where possums, rats, stoats, feral cats, deer, pigs, and goats were the most frequently reported species of concern.

### 6.2.1 Customary harvest considerations

Approximately half of mana whenua respondents indicated that ungulates (deer, pigs, goats) contribute to customary harvest. Respondents also noted that customary harvest practises evolve over time, and that the decline of traditional taonga species has influenced current reliance on deer and pigs. As native species are restored, customary harvest patterns may shift again.

It will therefore be important to identify areas where harvest of deer and pigs may continue to be culturally relevant alongside the restoration of traditional mahika kai species, to ensure that cultural practices can continue to adapt without being constrained by pest management decisions.

This highlights the need for pest management that:

- Respects customary harvest where appropriate,
- Reduces ecological impacts,
- Does not unintentionally remove access,
- Allows harvest to occur alongside population reduction, provided it is planned collaboratively, and
- Supports the long-term goal of restoring taonga species so that customary harvest can return to its original cultural foundation.

This also reinforces the importance of enabling mana whenua-led pest management and other environmental initiatives that reflect local priorities, tikanga, and aspirations.

## 6.3 Methodology Considerations

Feedback on pest control methods was nuanced and context-specific:

- Toxins (including 1080) were not rejected outright; several respondents noted that aerial 1080 and ZIP-style operations have demonstrated ecological benefits when used methodically.
- Concerns centred on mahika kai safety, non-target impacts, and long-term reliance on toxins.
- There was strong support for trap-based and targeted ground control, particularly where new technologies improve efficiency and reduce risk.
- Shooting was supported for ungulate management, especially where customary harvest can be integrated.
- Respondents emphasised that method selection must be culturally informed, reflect ki uta ki tai thinking, and be guided by both mātauranga Maori and science.

Overall, mana whenua support a “toolbox approach,” provided methods are applied with cultural oversight and transparent monitoring.

## 6.4 Cultural Priorities for Pest Management

Mana whenua consistently emphasised that pest management should prioritise:

- Lowland and coastal podocarp forests, which are both ecologically vulnerable and culturally significant.
- Coastal forest margins and seabird breeding areas, where predator pressure is acute.
- Freshwater systems and riparian zones, supporting key mahika kai species.
- Ecological corridors, enabling species movement and supporting landscape-scale restoration.

These priorities reflect a holistic view of the landscape, where all species and habitats are interconnected and must be managed collectively rather than in isolation.

Mana whenua also highlighted the importance of supporting mana whenua-led restoration and predator management projects within these landscapes.

## 6.5 Cultural Indicators of Success

Mana whenua described success as the restoration of mauri and the return of abundance across the landscape. Key indicators include:

- Return of taonga species and visible recovery of manu, ika, and invertebrates.
- Abundant, safe mahika kai, enabling customary harvest in accordance with tikanga.
- Strengthened intergenerational knowledge, with whānau actively engaged in kaitiakitanga.
- Healthy, functioning ecosystems, from ngahere to repo to awa to takutai.
- Reduced reliance on intensive intervention, as ecosystems regain resilience.
- Embedded mana whenua rangatiratanga, with cultural values central to governance and delivery.
- Restoration of mauri across the landscape.
- Restored relationships between people and place.

These measures align closely with the landowner survey, where “return of species,” “abundant harvest,” and “strengthened intergenerational knowledge” were the most frequently selected indicators of success.

The recent recovery of Pukunui/Southern Dotterel at Awarua was highlighted as a powerful example of what long-term commitment to predator management can achieve. Monitoring has shown a significant population increase following a successful breeding season, demonstrating the impact of sustained effort by whanau, mana whenua, agencies, and landowners working together to support the recovery of taonga species.

## 6.6 Governance, Partnership, and Resourcing

Mana whenua emphasised the need for:

- A co-governance model grounded in Te Tiriti o Waitangi.
- Joined-up governance across regional boundaries, recognising the ecological and cultural continuity of the Catlins.
- Clear roles, shared accountability, and adequate resourcing to support meaningful participation.
- Long-term, landscape-scale planning, aligned with intergenerational aspirations such as the Reimagining Maitai project, whose restoration vision for the awa spans the next 100 years.
- Alignment with iwi management plans, noting that further engagement will be required to identify the most relevant plans and ensure they are appropriately reflected.
- Recognition that every landowner has a responsibility.
- Resourcing for a coordinator or public-facing role, to support engagement, communication, and operational delivery.
- Dedicated support for mana whenua-led projects, ensuring space for mana whenua to pursue their own priorities alongside collaborative initiatives.

Respondents stressed that without appropriate resourcing; time, pūtea, and capacity; partnership risks becoming symbolic rather than substantive.

Lastly, respondents also emphasised the importance of building and maintaining relationships between mana whenua, agencies, and neighbouring landowners as a foundation for long-term success.

## 6.7 Recommendations

The following recommendations reflect mana whenua priorities and are directly aligned with the cultural measures of success identified through engagement. This must reflect ki uta ki tai thinking and the understanding that all species are taonga.

### 1. Embed Mana Whenua in Planning, Delivery, and Monitoring

Active involvement supports kaitiakitanga, strengthens intergenerational knowledge, and ensures pest management contributes to the restoration of mauri and the return of taonga species. This includes enabling mana whenua-led projects and ensuring decision-making reflects mana whenua aspirations.

### 2. Prioritise Pest Control in Culturally Significant Landscapes

Focusing on lowland forests, coastal margins, freshwater systems, and ecological corridors directly supports the return of species and the recovery of mahika kai.

### 3. Use Culturally Informed, Evidence-Based Methods

Method selection must balance ecological urgency with cultural considerations, ensuring mahika kai safety and maintaining trust.

### 4. Implement Cultural Health Monitoring

Integrating mātauranga Māori indicators with ecological monitoring supports intergenerational knowledge transfer and provides a holistic assessment of ecosystem recovery. Monitoring should draw upon existing information, rūnaka-developed tools, and mātauranga Māori indicators. Mana whenua must be supported to identify and use the tools they consider most appropriate, with continued engagement and adequate resourcing to enable this.

### 5. Support Rangatahi Pathways and Local Employment

Training and employment opportunities strengthen cultural connections and build long-term capability for pest management.

### 6. Respect Customary Harvest While Managing Ungulate Impacts

Work with mana whenua to maintain appropriate access for customary harvest while reducing ecological impacts from deer, pigs, and goats. Recognise that restoration of native species may shift customary harvest practises over time.

### 7. Ensure Data Sovereignty

Cultural information must be stored and used in ways that uphold mana whenua authority and protect sensitive knowledge.

### 8. Commit to Long-Term Partnership and Resourcing

Stable funding, a dedicated coordinator role, and enduring governance arrangements are essential to achieving the long-term outcomes identified by mana whenua. Planning should reflect intergenerational timeframes, consistent with long-term restoration visions such as Reimagining Mātaura. Resourcing must also support mana whenua-led

projects, programmes, and monitoring, ensuring that mana whenua have the capacity to lead where appropriate.

## 7 Existing Pest Control

Suggested starting points focus on the existence of current control projects, and pest associations to habitat types, to provide indications of where in the catchment control would be best advised to begin. This is based on known ecological data as well as the need to coordinate control where possible to create an initial stronghold that control can then be expanded from. The maps and tables in this section illustrate where existing control aligns with high-value habitats, where gaps exist, and where early coordination will yield the greatest ecological return.

The intent of this section is to identify practical, defensible starting points for multispecies control in Catchment A, based on:

- Clusters of existing control projects
- Habitat suitability for each pest species
- Opportunities to link projects into cohesive strongholds
- Reinvasion risks (particularly from Southland)
- Existing infrastructure that can be reactivated
- Alignment with high-value native forest, coastal, and wetland habitats

## 7.1 Possum Control

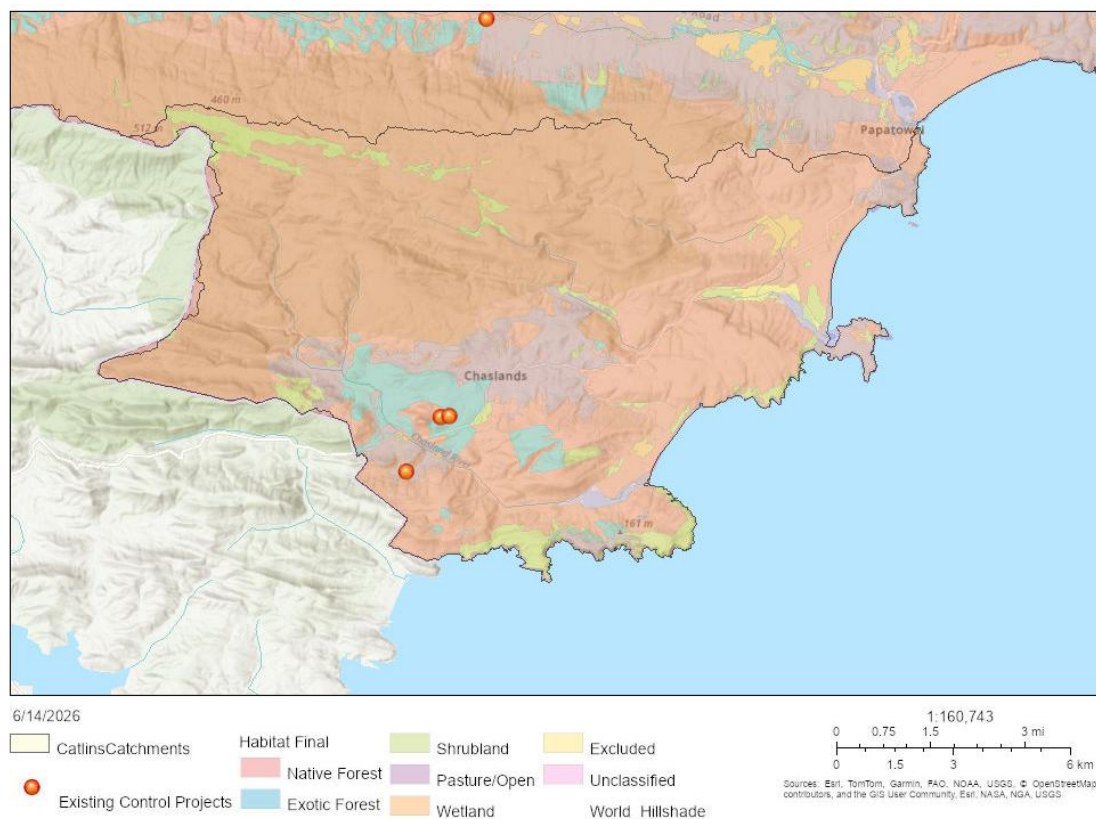


Figure 4: Existing Possum Control Projects in Catchment A

Figure 3 shows three closely linked possum control projects forming a natural focal point on the forest–pasture interface. These projects sit at the convergence of native forest, exotic forestry, and open pasture; the habitat types most strongly associated with possum activity (Table 16).

Table 17: Habitat association of possums. Scores indicate level of usage of habitat type by pest species.

| Habitat Type  | Strength of Relationship (0-3) |
|---------------|--------------------------------|
| Native Forest | 3                              |
| Shrubland     | 2                              |
| Exotic Forest | 2                              |
| Open Pasture  | 1                              |
| Wetland       | 1                              |

Possum control is largely being undertaken in exotic forestry and on the edge of native forest and pasture. These three projects present a strong opportunity to begin coordinated control, as they already form a semi-connected network. Due to the extent

of native forest in this area, it would be most effective to start on the forest-pasture edges adjacent to existing projects and expand inward as captures decline.

The proximity of these hotspots to the Otago-Southland boundary means reinvasion pressure from uncontrolled habitat in Southland is likely to be significant. Establishing a stronghold here will require sustained effort and, ideally, future cross-boundary coordination.

The presence of the historical Hokonui Catlins J4N project suggests possum populations may still be suppressed but recovering. Initiating control now would capitalise on this legacy and reduce the risk of rapid reinvasion and population rebound.

## 7.2 Rat Control

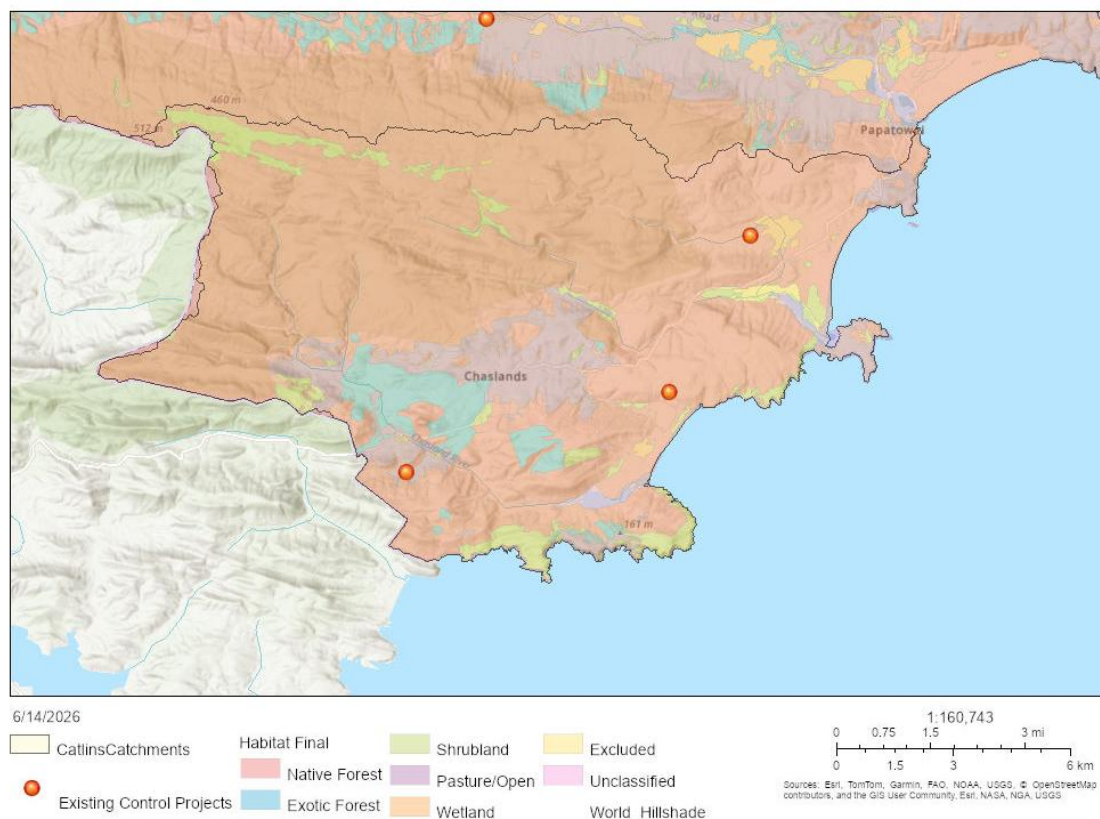


Figure 5: Existing rat control projects in Catchment A

Figure 4 above shows that existing rat control is widespread but highly fragmented, with no single cluster large enough to form a cohesive control block.

Table 18: Habitat association of rats. Scores indicate level of usage of habitat type by pest species.

| Habitat Type         | Strength of Relationship (0-3) |
|----------------------|--------------------------------|
| <b>Native Forest</b> | 3                              |
| <b>Shrubland</b>     | 2                              |
| <b>Exotic Forest</b> | 2                              |
| <b>Open Pasture</b>  | 0                              |
| <b>Wetland</b>       | 1                              |

Because rat habitat associations closely mirror those of possums (except in open pasture), rat control should be integrated with possum control to maximise efficiency. Targeting the same forest-pasture edge zones will provide the greatest ecological benefit and reduce duplication of effort.

### 7.3 Stoat Control

Figure 5 shows only two active stoat control projects in Catchment A.

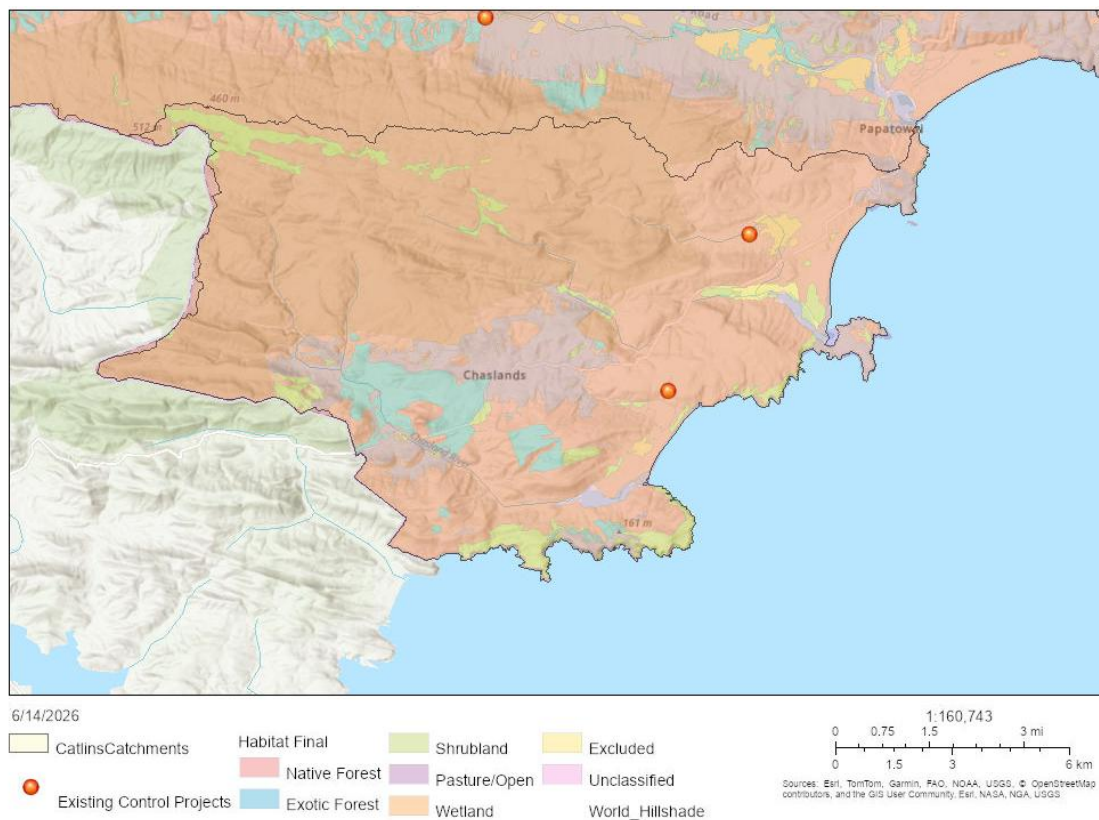


Figure 6: Existing stoat control in Catchment A.

Table 19: Habitat association of stoats. Scores indicate level of usage of habitat type by pest species.

| Habitat Type         | Strength of Relationship (0-3) |
|----------------------|--------------------------------|
| <b>Native Forest</b> | 3                              |
| <b>Shrubland</b>     | 2                              |
| <b>Exotic Forest</b> | 2                              |
| <b>Open Pasture</b>  | 3                              |
| <b>Wetland</b>       | 1                              |

Stoats are strongly associated with native forest, open pasture, and shrubland, reflecting their ability to move easily across multiple habitat types and exploit both forested and open environments. In Catchment A, existing stoat control is limited, with only two active projects currently operating (Figure 5). These projects are spatially isolated and do not form a cohesive control block, leaving large areas of suitable stoat habitat unmanaged.

As with rats, there are very few control operations for stoats in Catchment A, with only two currently operating. However, a historical control operation which intensely targeted stoats (Hokonui Catlins J4N) and the subsequent presence of an existing trap infrastructure on coastal areas presents a unique opportunity to intensify control around these stoat hotspots. This control operation stretched the majority of the coastline in this catchment, excluding only the Tautuku Peninsula.

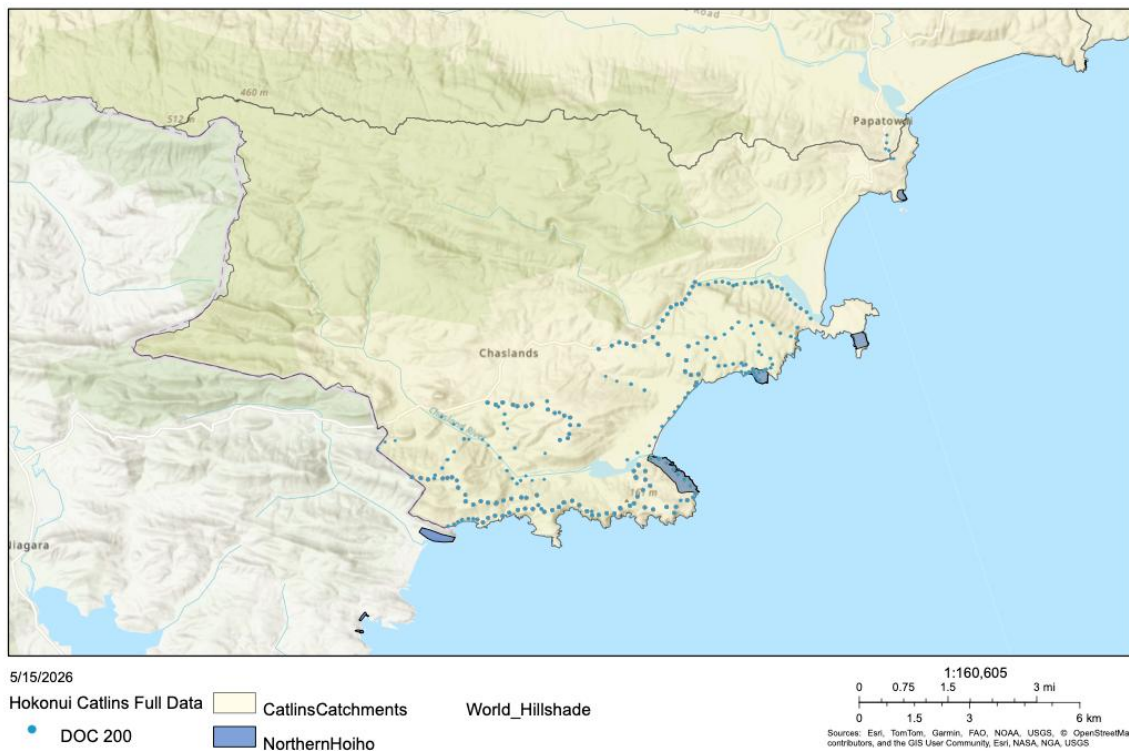


Figure 7: DOC200 trap locations from Hokonui Catlins J4N. Traps remain in situ for ongoing use as required.

Figure 6 shows DOC200 trap locations from the Hokonui Catlins J4N project. Traps remain in situ for ongoing use as required and provide an indication of trapline locations and associated hoiho habitat.

The presence of this extensive coastal trap network offers a rare opportunity to re-establish stoat control with relatively minimal new investment. A natural extension of this project would be to continue installing traps along the remainder of the coastline (including the Tautuku Peninsula) to join up with the northern project indicated in Figure 5, creating a continuous coastal predator barrier.

Over time, this coastal network could be expanded inland and linked with the Beresford aerial control area in adjacent catchments. This would create a broad, connected stoat control corridor across Catchments A, B, and C, significantly reducing reinvasion

pressure and supporting long-term suppression of stoats in high-value coastal and forest habitats.

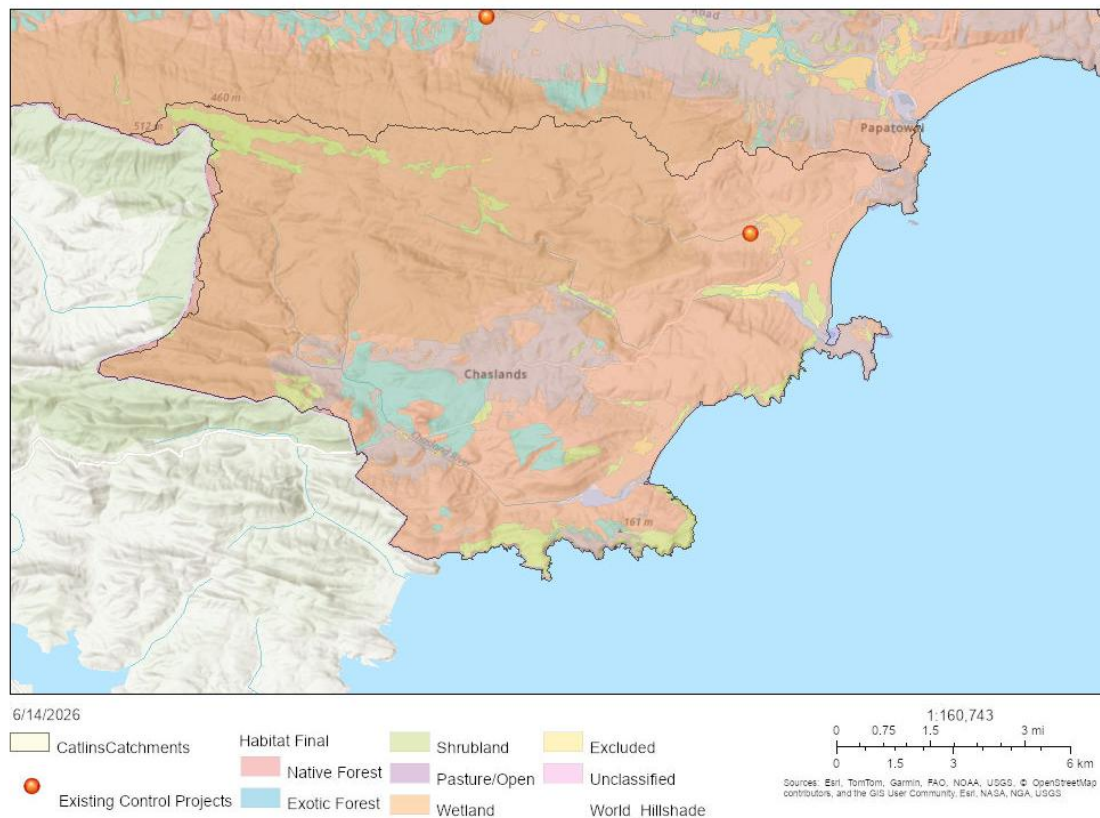


Figure 8: Existing feral cat control projects in Catchment A.

Table 20: Habitat association of feral cats. Scores indicate level of usage of habitat type by pest species.

| Habitat Type  | Strength of Relationship (0-3) |
|---------------|--------------------------------|
| Native Forest | 2                              |
| Shrubland     | 2                              |
| Exotic Forest | 2                              |
| Open Pasture  | 3                              |
| Wetland       | 2                              |

Although only one project reports feral cat captures, the spatial distribution of high-risk habitats (coastal margins, forest-pasture edges, and wetland complexes) indicates that feral cats are likely to be widespread across Catchment A. Their habitat association scores (Table 20) show strong use of open pasture and coastal areas, which aligns with known impacts on ground-nesting seabirds such as hoiho.

Because feral cats frequently use the same access routes and coastal corridors as stoats, the existing DOC200 trapline network from the Hokonui Catlins J4N project provides a practical foundation for establishing an initial cat control zone. While DOC200s are not cat-specific, the access tracks, trapline spacing, and coastal coverage significantly reduce the cost and effort required to install a parallel cat-focused network.

Reinvasion pressure for feral cats is expected to be high due to the open nature of the coastal landscape and the proximity to uncontrolled areas in Southland. For this reason, cat control should initially be limited to areas where it directly protects high-value species (e.g., hoiho breeding sites) and where access is already established.

The most defensible starting point for feral cat control is the coastal strip already serviced by the J4N stoat network. This area contains the highest concentration of vulnerable native species and provides the best opportunity to create a coastal predator stronghold.

## 7.4 Deer Control

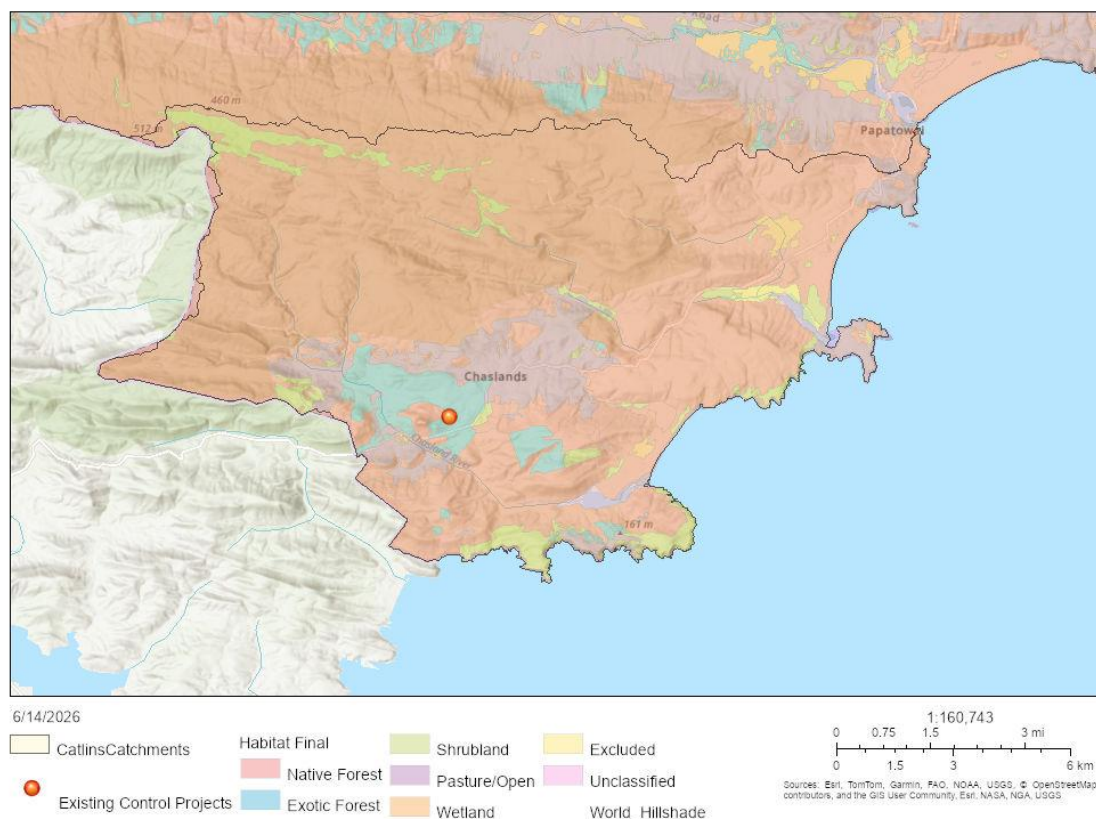


Figure 9: Existing deer control projects in Catchment A.

Table 21: Habitat association of deer. Scores indicate level of usage of habitat type by pest species.

| Habitat Type         | Strength of Relationship (0-3) |
|----------------------|--------------------------------|
| <b>Native Forest</b> | 3                              |
| <b>Shrubland</b>     | 2                              |
| <b>Exotic Forest</b> | 2                              |
| <b>Open Pasture</b>  | 3                              |
| <b>Wetland</b>       | 0                              |

The single deer control project shown in the maps is located on the forest–pasture interface, which aligns strongly with the habitat association scores (Table 20). Deer are likely to be present throughout the catchment, particularly in areas where native forest opens into pasture or shrubland.

As with possums, reinvasion from Southland is expected to be significant due to the lack of coordinated deer control across the regional boundary. This reinforces the need to focus early efforts on defensible margins rather than deep forest.

Deer control can be efficiently integrated with possum and goat control along shared access routes, particularly in areas where landowners already undertake browsing-related pest management.

The most effective starting points for deer control are the same forest-pasture edges identified for possum and rat control. These areas provide good visibility, easier access,

and higher encounter rates, making them suitable for establishing an initial deer control stronghold.

## 7.5 Goat Control

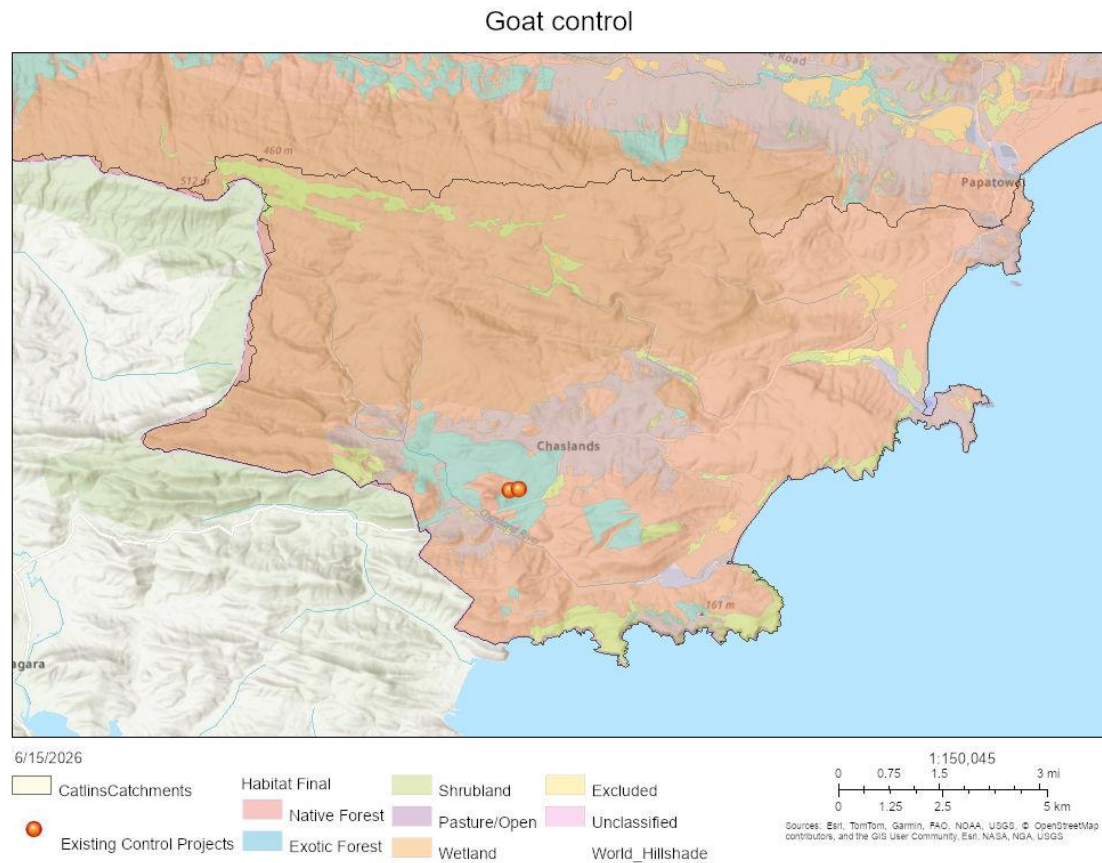


Figure 10: Existing goat control projects in Catchment A.

Table 22: Habitat association of goats. Scores indicate level of usage of habitat type by pest species.

| Habitat Type  | Strength of Relationship (0-3) |
|---------------|--------------------------------|
| Native Forest | 2                              |
| Shrubland     | 2                              |
| Exotic Forest | 1                              |
| Open Pasture  | 3                              |
| Wetland       | 0                              |

The two goat control projects in the southern part of Catchment A are located in close proximity and occur within areas of suitable goat habitat, including open pasture and

shrubland (Table 22). Together, they provide a strong foundation for coordinated goat management across this part of the catchment.

Strengthening coordination between the two projects would help align management objectives, improve operational efficiency, and reduce the risk of reinvasion between treatment areas. Given the mobility of goats and the extent of suitable habitat surrounding the current project areas, there is also a strong case for significantly expanding the treatment area over time. Expanding control across a larger, contiguous area would better reflect the species' range and movement patterns, increase the likelihood of sustained population suppression, and improve long-term outcomes.

Because goats and deer share similar habitat preferences and movement corridors, there is an opportunity to integrate control for both species along forest-pasture margins and ridge systems.

## 8 Urgency Triggers

Urgency triggers are applied to identify situations where pest control action must be escalated immediately due to risks to endangered species or high-value biodiversity features. This stage acts as an override to the standard prioritisation framework, ensuring that threatened biodiversity values receive rapid intervention even when other indicators (e.g., social licence, feasibility, or catchment priority) may not yet support implementation.

Urgency triggers are evaluated at the pest species x catchment level and require all three of the following conditions to be met:

- Presence of an endangered or locally prioritised species that is vulnerable to the pest species
- Evidence that the pest population is increasing or potentially increasing
- Evidence that current or historical control is insufficient

Where all three conditions are met, the pest–catchment combination is flagged as Urgent, and this status overrides the standard prioritisation logic.

### 8.1 Automatic Trigger for Nationally Critical Species

To ensure the framework remains responsive to the highest-risk biodiversity values, any Nationally Critical (NC) fauna species automatically triggers a monitoring override for all associated pest species. This reflects the extremely high vulnerability of NC species to

predation and disturbance, and the limited tolerance for delay in management response.

If a Nationally Critical species is confirmed within a catchment, the urgency trigger activates immediately, bypassing the standard three-step assessment. Monitoring is then used to determine whether associated pest species are increasing, which may subsequently override control logic.

In the Otago Catlins context, the key Nationally Critical species requiring automatic monitoring override is:

1. Pekapeka / Long-tailed bat (*Chalinolobus tuberculatus*)

Although not recorded in BFA datasets, pekapeka are known from the Catlins River and adjacent forest systems and are highly vulnerable to rats, stoats, and cats. Their cryptic nature means absence of detection cannot be interpreted as absence of presence.

Other Nationally Critical fauna listed for Otago (e.g., Whenua Hou diving petrel, kākāpō, shore plover) are regionally extinct, non-resident, or unaffected by terrestrial mammalian predators, and therefore do not trigger urgency in this project area.

## 8.2 Use of Biodiversity Focus Areas (BFAs) as a Proxy

In the absence of comprehensive species-level distribution data for the project area, Biodiversity Focus Areas (BFAs) identified by the Otago Regional Council were used as a supplementary indicator of ecological sensitivity.

Within the project area:

- Several BFAs contain Endangered or Vulnerable ecosystems
- No Critically Endangered ecosystems were identified
- No Nationally Critical species were confirmed present
- Some Nationally Endangered or At Risk species may occur within BFAs, but these do not independently trigger urgency

BFAs therefore serve as a precautionary proxy, helping identify areas where threatened species may be present without inflating urgency triggers where they are unlikely.

## 8.3 Species Likely to Trigger Future Urgency Conditions

Although no urgency triggers were activated in this assessment (due to the absence of historical species signal data), several species present or likely present in the Otago Catlins may trigger urgency conditions in future iterations.

These species are grouped according to the inclusion rules applied in this framework. A full list can be found in Appendix 3.

#### 1. Nationally Critical Fauna (Automatic Monitoring Override)

- Pekapeka / Long-tailed bat - confirmed in Catlins River; highly vulnerable to mammalian predators
- Australasian bittern / matuku-hūrepo - present in Otago wetlands; may occur in Catlins wetland BFAs
- Southland green skink - present in coastal Otago/Southland; may occur in Catlins shrublands

#### 2. Nationally Endangered Fauna (Standard Urgency Escalation)

- Hoiho / Yellow-eyed penguin - confirmed along the Catlins coast; recognised as a regional conservation priority in ORC species lists and a DOC Priority Species
- Kea - occasional presence in upland Otago/Southland; include only if confirmed locally

#### 3. Nationally Vulnerable or At Risk Species (Conditional Inclusion)

Included only where present and either a stronghold population exists or a large-scale programme of work is underway.

- Mohua / Yellowhead - present in Catlins Forest Park; DOC Priority Species
- Fernbird / mātātā - present in Catlins wetlands

#### 4. Species Excluded From Urgency Triggers

Excluded categories include:

- Regionally extinct/extirpated species.
- Regionally vagrant species.
- Regionally non-resident native species.
- Species unaffected by mammalian predators.
- Marine species due to complexity of inclusion at this stage.
- Vascular plants (unless NC/NE, present, and threatened by mammalian pests - none currently confirmed).

#### 5. Species That May Become Relevant in Future

A small number of species have historical presence or suitable habitat in the Catlins and may become resident again. These should be noted for future monitoring but are not included in urgency triggers at this stage.

Due to the current ecological state in the Catlins and level of pest pressures, the above framework is suggested as a way of applying resources where they are the most effective. If pest context changes significantly in the future, it is recommended that this stage of the framework is reviewed to allow for a more comprehensive suite of escalation triggers. Additional inclusions may expand to plants and marine mammals if feasible.

## 8.4 Monitoring Recommendations

Because no urgency triggers were activated in this assessment, the focus is on monitoring overrides and building the data required for future urgency assessments. Table 23:23 below provides a summary of the native species present in the project area that will trigger a monitoring override.

*Table 23:23 Native species in project area triggering or likely to trigger a monitoring override.*

| <b>Native Species</b>            | <b>Catchment(s) present</b> | <b>Status</b>         | <b>Known Presence</b> |
|----------------------------------|-----------------------------|-----------------------|-----------------------|
| <b>Pekapeka/long-tailed bat</b>  | C                           | Nationally critical   | Confirmed             |
| <b>Hoiho/Yellow-eyed penguin</b> | A, B, C, D                  | Nationally endangered | Confirmed             |
| <b>Mohua/ yellowhead</b>         | A, B, C                     | Nationally vulnerable | Confirmed             |
| <b>Mātātā/Fernbird</b>           | A, B                        | At risk – declining   | Confirmed             |
| <b>Australasian Bittern</b>      | D, B                        | Nationally Critical   | Confirmed             |
| <b>Southland green skink</b>     | Unknown                     | Nationally critical   | Possible              |

Monitoring of pest species for the above native species should be prioritised where they pose direct threats to the native species listed above. Existing DOC and Forest & Bird predator data should be used wherever available.

Monitoring recommendations based on urgency overrides are summarised in table 24 below, however broadly summarised, these monitoring recommendations are targeted

towards cats, mustelids, and rats around coastal areas for hoiho, known mohua habitat, forested areas in catchment C, and wetland areas.

Due to the lack of data on presence of some of the native species mentioned in the above table, some monitoring recommendations may be updated as more data on native species becomes available. At this stage, it is recommended that additional data be actively sought on the Southland Green Skink to better guide monitoring of associated mammalian pest species.

Table 24: Pest monitoring recommendations for urgency overrides.

| Catchment | Pest Species | Associated Native Species  | Existing Predator Monitoring Data OR Species Monitoring | Strategic Recommendation                                                                                                                                  |
|-----------|--------------|----------------------------|---------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>A</b>  | Mustelids    | Hoiho<br>Mohua             | Nil<br>DOC (forest)                                     | Target monitoring around known coastal habitat<br>Supplement monitoring in unmonitored forest blocks adjacent to known habitat<br>Monitor in wetland BFAs |
|           |              | Fernbird                   | Forest and Bird (some wetlands)                         |                                                                                                                                                           |
|           | Cats         | Hoiho<br>Fernbird, bittern | DOC (coastal)<br>Forest and Bird (some wetlands)        | Target monitoring around known coastal habitat<br>Monitoring in unmonitored wetland BFAs where species confirmed                                          |
|           | Rats         | Mohua                      | DOC (forest)                                            | Supplement monitoring in unmonitored forest blocks adjacent to known habitat<br>Monitor in wetland BFAs                                                   |
|           |              | Fernbird                   | Forest and Bird (some wetlands)                         |                                                                                                                                                           |
|           |              |                            |                                                         |                                                                                                                                                           |
| <b>B</b>  | Mustelids    | Hoiho<br>Bittern           | DOC (coastal)<br>Unknown                                | Target monitoring around known coastal habitat<br>Monitor in wetlands where Bittern confirmed                                                             |
|           | Cats         | Hoiho                      | DOC (coastal)                                           | Target monitoring around known coastal habitat<br>Monitoring in unmonitored wetland BFAs where species confirmed                                          |
|           |              | Fernbird; Bittern          | Forest and Bird (some wetlands)                         |                                                                                                                                                           |
|           | Rat          | Mohua                      | DOC (forest)                                            | Supplement monitoring in unmonitored forest blocks adjacent to known habitat<br>Monitor in unmonitored wetland BFAs                                       |
|           |              | Fernbird                   | Forest and Bird (some wetlands)                         |                                                                                                                                                           |
|           | Stoats       | Mohua                      | DOC (forest)                                            | Supplement monitoring in unmonitored forest blocks adjacent to known habitat<br>Monitor in unmonitored wetland BFAs                                       |
|           |              | Fernbird                   | Forest and Bird (some wetlands)                         |                                                                                                                                                           |

| Catchment | Pest Species | Associated Native Species | Existing Predator Monitoring Data OR Species Monitoring | Strategic Recommendation                                                                                                           |
|-----------|--------------|---------------------------|---------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| <b>C</b>  | Rats         | Pekapeka<br>Mohua         | Nil<br>DOC (forest)                                     | Prioritise monitoring in forested catchments<br>Supplement mohua monitoring in unmonitored forest blocks adjacent to known habitat |
|           | Stoats       | Pekapeka<br>Mohua         | Nil<br>DOC (forest)                                     | Prioritise monitoring in forested catchments<br>Supplement mohua monitoring in unmonitored forest blocks adjacent to known habitat |
|           | Cats         | Pekapeka<br>Hoiho         | Nil<br>Nil                                              | Prioritise monitoring in forested catchments<br>Target monitoring around known coastal habitat                                     |
|           | Mustelids    | Hoiho                     | Nil                                                     | Target monitoring around known coastal habitat                                                                                     |
| <b>D</b>  | Mustelids    | Hoiho<br>Bittern          | DOC (coastal)<br>Forest and Bird (some wetlands)        | Target monitoring around known coastal habitat<br>Monitor wetlands where bittern presence is confirmed                             |
|           | Cats         | Hoiho<br>Bittern          | DOC (coastal)<br>Limited wetland data                   | Target monitoring around known coastal habitat<br>Monitor wetlands where bittern presence is confirmed                             |
|           | Rats         | Bittern                   | Limited                                                 | Monitor wetlands where bittern presence is confirmed                                                                               |

## 8.5 Recommendation: Develop a Native Species Monitoring Programme

Although outside the scope of this project, it is recommended that ORC and partners develop a baseline ecological monitoring programme to support future urgency assessments. This should:

- Build on existing DOC monitoring of hoiho, mohua, and forest birds
- Build on Forest & Bird monitoring of bittern and fernbird
- Extend monitoring only into areas not currently covered, such as:
  - Hoiho on SILNA and private coastal land
  - Mohua in non-DOC forest blocks
  - Fernbird in unmonitored wetland BFAs
  - Pekapeka in forested catchments beyond Catlins River
  - Reptile surveys in coastal shrublands

This will ensure that the urgency trigger system becomes more accurate and effective over time, enabling rapid response where biodiversity risk is highest.

## 9 Opportunities and Enablers

### 9.1 Partnership Opportunities

There is strong potential to build a more coordinated and resilient pest management network by strengthening relationships between agencies, mana whenua, landowners, and community groups. The maps and engagement findings show that many existing projects operate in isolation, despite being geographically close or targeting the same species. A coordinated approach would allow these efforts to function as a connected system rather than a series of standalone projects.

Partnership opportunities include:

- Aligning agency programmes (DOC, ORC, Forest & Bird, forestry companies) so that control in high-value habitats is sequenced and mutually reinforcing.
- Supporting mana whenua-led initiatives, particularly where cultural values, mahika kai, and coastal species intersect with pest control priorities.
- Strengthening cross-boundary collaboration with Environment Southland, especially along the southern edge of Catchment A where reinvasion risk is high.

- Building a shared operational network where access tracks, traplines, and monitoring sites are used collaboratively rather than duplicated.

These partnerships would reduce fragmentation, improve efficiency, and create the foundation for long-term, landscape-scale delivery.

## 9.2 Funding and Resourcing Opportunities

The Catlins has a history of short-term, project-based funding that has limited continuity and workforce retention. The prioritisation framework highlights the need for stable, multi-year investment to support stronghold establishment and expansion.

Key opportunities include:

- Coordinated funding pathways that combine ORC investment with national programmes (e.g., Predator Free 2050 Ltd, MPI, philanthropic funds) to support multi-species, multi-tenure control.
- A dedicated coordinator role to maintain relationships, support landowners, manage data, and ensure continuity across funding cycles.
- Leveraging forestry and industry capability, particularly where companies already maintain access networks, staff capacity, and pest control infrastructure.
- Supporting community groups and mana whenua to access contestable funding, enabling them to expand existing projects or initiate new ones in priority areas.

These resourcing opportunities would help stabilise delivery, reduce duplication, and ensure that strongholds can be maintained over time.

## 9.3 Operational and Structural Enablers

Beyond partnerships and funding, several structural enablers would significantly improve the feasibility and impact of coordinated pest control.

Suggested additions:

- Shared data systems: A centralised platform for recording pest control, monitoring results, and project boundaries would allow agencies and landowners to see where work is occurring, identify gaps, and avoid overlap.
- Staged expansion from strongholds: Beginning in areas with existing control (e.g., coastal stoat network, forest-pasture possum cluster) provides a defensible starting point and reduces reinvasion risk.

- Integrated access and logistics planning: Many projects already use the same forestry roads, coastal tracks, and ridge systems. Coordinating access reduces cost and improves operational efficiency.
- Cross-regional governance alignment: While Southland is not currently part of this plan, early alignment on priorities and data sharing would reduce reinvasion pressure and support future expansion.
- Capability development: Supporting local operators, contractors, and community groups to build skills ensures long-term capacity and reduces reliance on external providers.

These enablers help shift the Catlins from fragmented, project-based control to a coordinated, strategic, and resilient pest management system.

Together, these opportunities and enablers provide a pathway for the Catlins to move from isolated, short-term pest control efforts to a coordinated, multi-agency, multi-tenure programme capable of delivering sustained ecological outcomes. By building on existing projects, strengthening partnerships, securing long-term resourcing, and establishing defensible strongholds, the region can progressively expand control across the landscape in a way that is both feasible and durable.

## 10 Final Recommendations

The Catlins Invasive Mammal Management Plan outlines a clear, evidence-based pathway for coordinated, landscape-scale pest management across the Otago Catlins. While earlier sections provide detailed recommendations for individual species, catchments, and operational considerations, the following final recommendations synthesise these findings into a single strategic roadmap. These recommendations reflect ecological priorities, mana whenua values, social licence and barriers, urgency triggers, and the operational realities identified through engagement and spatial analysis.

### 10.1 Immediate Priorities (2026–2028)

The highest priority for the first three years is the establishment of a coordinated, multispecies control programme in Catchment A, where ecological value, habitat connectivity, and existing control networks provide the strongest foundation for success. Control should focus on possums, rats, stoats, feral cats, deer, and goats, with

effort concentrated along forest-pasture margins, coastal corridors, and areas where existing projects already operate.

Mana whenua feedback emphasises the need to protect taonga species, mahika kai, and culturally significant coastal and wetland areas. These values reinforce the urgency of control in Catchment A, particularly along the coastline where hoiho, coastal forest remnants, and archaeological and wāhi tapu sites are vulnerable to predation and browsing. Early control should therefore prioritise areas where ecological and cultural values overlap.

During this phase, social licence barriers must be actively managed. Engagement findings indicate strong willingness to participate in Catchment A, but cost, time, and safety concerns remain significant. Early delivery should include:

- Clear communication about methods and safety
- Support for landowners through shared equipment, coordination, and cost-reduction measures
- Transparent reporting of progress to maintain trust and momentum

Monitoring for most species in Catchment A should remain suppressed during this phase, as the urgency of control outweighs the need for baseline data. The urgency trigger framework identifies no immediate overrides for this iteration, but the presence of high priority species such as pekapeka) reinforces the need for rapid, coordinated action.

Engagement and pre-monitoring should begin in Catchment B, where social licence is currently low but collaboration readiness is high. Improvements in trust, communication, and feasibility may elevate this catchment in future iterations.

A dedicated Catlins pest management coordinator should be established early to support landowners, maintain relationships, and ensure alignment between agencies, mana whenua, and community groups.

## 10.2 Medium-Term Priorities (2028–2032)

As strongholds become established in Catchment A, control should expand outward in a staged manner, linking coastal and inland projects and progressively reducing reinvasion risk. The reactivation and extension of the coastal stoat network, combined with inland expansion toward the Beresford control area, provides a clear opportunity to create a multi-catchment predator corridor.

Mana whenua have emphasised the importance of long-term commitment, intergenerational outcomes, and restoration of culturally significant landscapes.

Medium-term expansion should therefore prioritise areas where mana whenua have identified:

- High cultural value
- Opportunities for mana whenua-led delivery
- Areas where pest control supports the return of taonga species
- Areas where mahika kai restoration is feasible if predator pressure is reduced

During this period, monitoring thresholds for possums, rats, stoats, deer, and goats in Catchment A should be activated as control stabilises. Monitoring should be targeted, habitat-specific, and aligned with the urgency trigger framework to ensure that any emerging risks to endangered species are detected early.

Catchment B should be reassessed once pre-monitoring results are available. If species presence, landowner readiness, and feasibility indicators improve, Catchment B may become the next priority for coordinated control. Social licence barriers identified in the survey - particularly concerns about toxins and pet safety - should be addressed through tailored engagement and method selection.

Strengthening cross-boundary collaboration with Environment Southland becomes increasingly important during this phase to reduce reinvasion pressure and support long-term landscape-scale outcomes.

### 10.3 Long-Term Priorities (2032–2035+)

In the longer term, the focus should shift to maintaining established strongholds, expanding control into remaining unmanaged areas, and embedding pest management into enduring governance and funding structures. Catchments C and D may be reconsidered if ecological conditions, monitoring results, or landowner engagement change over time.

Mana whenua have highlighted the need for enduring governance arrangements, data sovereignty, and long-term resourcing to support their role as kaitiaki. Long-term delivery should therefore include:

- Sustained funding for mana whenua participation
- Support for mana whenua-led monitoring and restoration projects
- Integration of cultural monitoring indicators alongside ecological ones
- Recognition of mana whenua authority in decision-making

Adaptive management should be used to refine priorities as new data becomes available, particularly regarding urgency triggers, species presence, and habitat-specific risks.

## 10.4 System-Level Recommendations

### 10.4.1 Governance and Coordination

A multi-agency, mana whenua-inclusive governance structure should be established to oversee implementation, ensure accountability, and maintain alignment across tenures and regions. This structure should:

- Embed mana whenua leadership and decision-making, consistent with the cultural values and aspirations identified in Section 3
- Uphold mana whenua data sovereignty, particularly for cultural and species-related information
- Support cross-boundary coordination with Southland
- Provide long-term strategic direction and continuity

### 10.4.2 Funding and Resourcing

Multi-year funding commitments are essential to maintain continuity and avoid the stop-start cycles that have historically undermined pest control in the Catlins. Funding should:

- Support landowners, community groups, and mana whenua to participate meaningfully
- Resource mana whenua-led projects and cultural monitoring
- Leverage national programmes and industry partnerships
- Support a dedicated coordinator role
- Enable monitoring and data management systems

## 10.5 Social Licence and Community Participation

Social licence is a critical determinant of feasibility. To maintain and strengthen social licence:

- Engagement should be ongoing, transparent, and responsive
- Landowners should be supported with practical tools, cost-sharing, and clear communication
- Community groups should be empowered to expand or align their work with catchment priorities
- Concerns about toxins, pet safety, and workload should be addressed directly

## 10.6 Urgency Triggers and Monitoring

The urgency trigger framework should be embedded into ongoing monitoring and decision-making. Although no triggers were activated in this iteration, the presence of nationally critical and other high priority species requires:

- Targeted monitoring in high-risk habitats
- Rapid escalation pathways if triggers are met
- Integration of DOC and Forest & Bird monitoring data
- Clear documentation of override decisions

## 10.7 Data, Information Sharing, and Technology

A shared data platform should be developed to integrate monitoring results, control records, and spatial information from DOC, Forest & Bird, forestry companies, and landowners. Consistent monitoring standards and regular data updates will support adaptive management and future prioritisation.

## 10.8 Partnerships and Capability

Partnerships with mana whenua, community groups, forestry companies, and local operators should be strengthened to build capability, reduce duplication, and support long-term delivery. Training and workforce development opportunities should be explored with local providers such as Telford.

## 10.9 Summary

The recommendations in this section provide a clear, staged pathway for coordinated pest management across the Otago Catlins. By establishing strongholds, strengthening partnerships, addressing social licence barriers, embedding mana whenua leadership, integrating urgency triggers, securing long-term resourcing, and building robust governance and monitoring systems, the region can move from fragmented, short-term control to a cohesive, landscape-scale programme capable of delivering enduring ecological and cultural outcomes.

Importantly, this approach is also about safeguarding the taonga species and mahika kai that remain, ensuring they continue to be part of the living landscape and cultural identity of the Otago Catlins, rather than becoming stories remembered only through the experiences of tūpuna. In doing so, the programme can help protect both the biodiversity and the cultural heritage of the region for future generations.

## References

- Department of Conservation. (2025). *Operational report for Rat control in the Catlins Beresford Range*. Department of Conservation.
- Department of Conservation. (N.D.). *Jobs for Nature – Mahi mō te Taiao*. Retrieved from Department of Conservation: <https://www.doc.govt.nz/our-work/jobs-for-nature-mahi-mo-te-taiao/>
- Environment Southland. (2019). *Southland Regional Pest Management Plan 2019-2029*. Retrieved from Environment Southland: <https://www.es.govt.nz/about-us/plans-and-strategies/regional-plans/southland-regional-pest-management-plan>
- Forest and Bird. (2021). *Native habitat carbon in crisis*. Forest and Bird.
- Otago Regional Council. (2019, September). *Otago Pest Management Plan 2019-2029*. Retrieved from Otago Regional Council: [https://www.orc.govt.nz/media/zhjbeqya/orc-regional-pest-management-plan-2019-29\\_final\\_corrected-21-1.pdf](https://www.orc.govt.nz/media/zhjbeqya/orc-regional-pest-management-plan-2019-29_final_corrected-21-1.pdf)
- Otago Regional Council. (2024, November 21). *Catlins ecosystems plan ready for action*. Retrieved from Otago Regional Council: [https://www.orc.govt.nz/your-council/latest-news/news/2024/november/catlins-ecosystems-plan-ready-for-action?utm\\_source=copilot.com](https://www.orc.govt.nz/your-council/latest-news/news/2024/november/catlins-ecosystems-plan-ready-for-action?utm_source=copilot.com)
- Otago Regional Council. (2025). *A Catchment Action Plan for the Catlins' Environment*. Dunedin: Otago Regional Council.
- StatsNZ. (2025, June 30). *Place and ethnic group summaries: Catlins*. Retrieved from StatsNZ: <https://tools.summaries.stats.govt.nz/places/SA2/catlins>
- StatsNZ. (2026, June 7). *Place and ethnic group summaries: Catlins*. Retrieved from StatsNZ: <https://tools.summaries.stats.govt.nz/places/SA2/catlins>
- Veblen, T., & Stewart, G. (1982). *The effects of introduced wild animals on New Zealand forests*. Landcare Research.
- Waitangi Tribunal. (N.D.). *Ngai Tahu: Reports and publications*. Retrieved from Waitangi Tribunal: <https://www.waitangitribunal.govt.nz/en/inquiries/district-inquiries/ngai-tahu>
- Warburton, B., & Livingstone, P. (2015). Managing and eradicating wildlife tuberculosis in New Zealand. *New Zealand Veterinary Journal*.
- Yang, Y. (2022, November). *Catlins Freshwater Management Unit Economic Snapshot*. Dunedin: Otago Regional Council. Retrieved from Otago Regional Council.