



SPCA Policy Brief

# National Cat Legislation for New Zealand: Background Document



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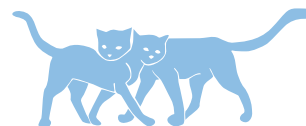
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# Introduction

This document is provided as background for [SPCA's Policy Brief on National Cat Legislation for New Zealand](#).

## Part 1: Benefits of cat management

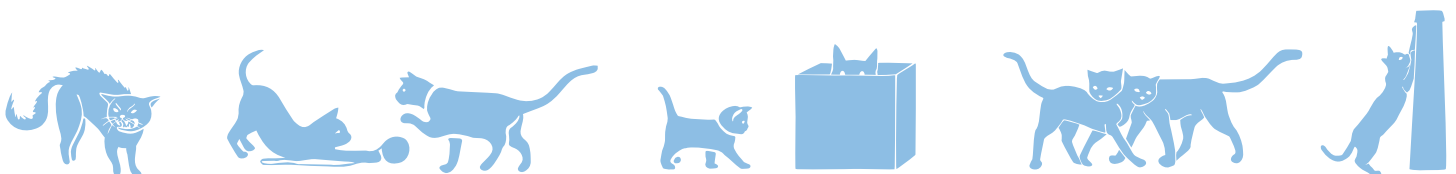
Desexing, microchipping, and keeping cats at home are important tools to address problems with cat overpopulation (Farnworth et al., 2013; Joyce & Yates, 2011; Yates et al., 2013), and reduce the number of kittens that enter shelters and euthanased (New et al., 2000; Marston & Bennett, 2009; Marsh, 2010).

### Welfare Benefits of Desexing

Desexing can also improve the welfare of cats directly as it can reduce risk of certain disease, reduce likelihood of roaming (which can increase risks of harms such as disease and infection, injury, and becoming lost), and increase lifespan. Desexing can also prevent the mortality of unwanted kittens which is often overlooked as a welfare impact.

**Table 1: Welfare benefits of desexing cats**

Decreased risk of reproductive disease	
<ul style="list-style-type: none"><li>• 16.3 % of all tumours are in mammary glands, making this the second most common tumour (Vascellari et al., 2009). 8.2 % of tumours in a Swiss feline cancer registry (1965-2008) were mammary gland tumours (Graf et al., 2016). Previous reports showed 2.5 % incidence of mammary gland tumours in female cats, and make up 12 % of all tumours making this the third most common tumour (Dorn et al., 1968; Verstegen &amp; Onclin, 2003).</li><li>• &gt;90 % of mammary gland tumours in cats are malignant (Dorn et al., 1968; Hampe &amp; Misdorp, 1974; Hayes et al., 1981). A more recent study with a Swiss feline cancer registry found that 83 % of mammary tumours were malignant (Graf et al., 2016).</li><li>• Japanese and Siamese breeds are at increased risk of mammary tumours (Graf et al., 2016; Sorenmo, 2003; Verstegen &amp; Onclin, 2003).</li><li>• Pyometra risk increase significantly with age for female cats (Potter et al., 1991).</li></ul>	
Benefits of desexing	Source
Sexually intact females are increased risk of mammary tumours.	Hayes et al., 1981
Sexually intact cats have 7 times the risk of developing mammary gland neoplasms when they get older compared to spayed female cats.	Dorn et al., 1968
Ovariectomy was found to protect against mammary carcinomas but not against benign mammary tumours. Intact cats 7 times overrepresented in population of cats diagnosed with mammary tumours.	Misdorp et al., 1991

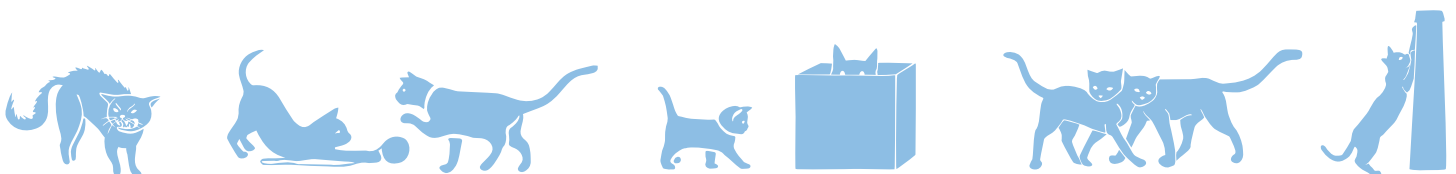


Spay prior to one year of age is protective against mammary carcinoma: 91 % risk of reduction if desexed before 6 months, 86 % reduction if prior to one year. Spay done after two years increased the risk (likely due to very few cats spayed after this age).	Overley et al., 2005
Desexed female cats had significantly lower odds than entire female cats of developing tumour/malignant tumour in the mammary gland.	Graf et al., 2016
Reviews on this topic: <ul style="list-style-type: none"> <li>• Root Kustritz, 2007; 2012</li> <li>• Reichler, 2009</li> </ul>	

## Increased lifespan and improved overall health

- Lifespan and quality of life should be considered important factors for welfare. This point has been made for interpreting the benefits of desexing dogs, as desexing has been demonstrated to increase lifespan (Urfer & Kaeberlein, 2019).
- Lifespan should be cautiously interpreted, as it can be a proxy measure for overall better care provided for both owned and stray cats. There is very little research on this topic, so it is difficult to make strong claims about the specific impact of desexing on increasing lifespan.
- Improved health for both male and female cats in managed colonies may be related to decreased risk of infectious disease, nutritional deficiencies, and stress associated with reproduction (Gilhofer et al., 2019) and reduced reproduction related aggression in males (Cafazzo et al., 2019; Finkler et al., 2011; Gunther et al., 2018).

Benefits of desexing	Source
Desexed male cats live a mean of 62 percent longer than undesexed male cats, and desexed female cats live a mean of 39 percent longer than undesexed female cats.	Banfield Pet Hospital, 2013
Desexed stray cats were in better welfare condition compared to intact cats.	Gunther, et al., 2018
Undesexed males and females in a TNR managed colony were more likely to be injured or have impaired health.	Gilhofer et al., 2019



## Decreased roaming risks

- Intact male cats are at higher risk of traffic accidents, injuries, bite wounds, and disease transmission compared to desexed males (Finkler et al., 2011; Gunther et al., 2015; 2018).
- Decreased roaming is most relevant for cat owners who do not keep their cats confined to their property (either garden or house).

### Benefits of desexing

### Source

Roaming (and fighting and spraying) reduced or eliminated in 80-90 % of cats.

Hart & Cooper, 1984

Desexing reduces activity related to territorial behaviour. Authors note cats are less active, which they do not specify includes roaming.

Cafazzo et al., 2019

Reviews on this topic:

- Bain, 2020

## Improved kitten welfare

- Unplanned kittens contribute to high numbers of animals surrendered to shelters. Kittens under the age of 6 months made up the largest proportion of owner-surrender cats to an animal shelter in Australia; 34 % of all owner-surrendered animals were emaciated (Marston & Bennett, 2009).
- Kittens that enter the shelter system because they are from unplanned breeding can often be in a poor state of welfare. This is prior to shelter entry and not related to shelter stay.
- Free-roaming kittens had highest prevalence of emaciation and thinness, lowest BCS scores, higher prevalence of severe injury or disability than adults (Gunther et al., 2018).
- There is high variability among kitten mortality in stray cats, however, at least one study showed 75 % mortality before 6 months, with trauma being the most common cause of death (Nutter et al., 2004).

### Benefits of desexing

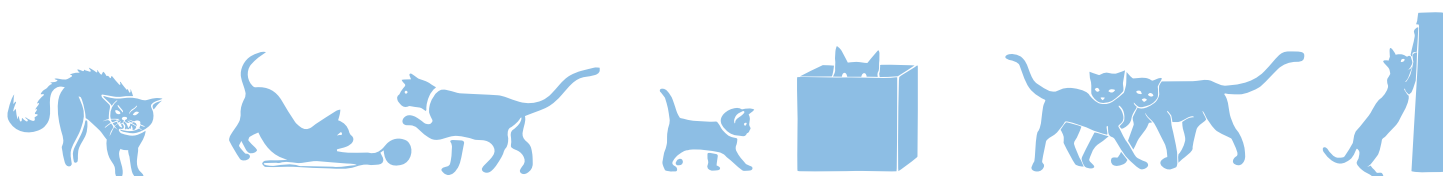
### Source

28.3 % of kittens that came into SPCA Centres were categorised as not healthy at intake. Not healthy categories include: Dead on Arrival; Unhealthy not treatable; Unhealthy treatable (urgent); Unhealthy treatable (non-urgent).

SPCA Intake Health Data: 1 Apr 2021- 9 December 2021

## Welfare benefits of microchipping & microchip registration

Microchipping and microchip registration can help ensure a lost or injured cat's owner can be identified and contacted (Lord et al., 2009; Lancaster et al., 2015). This can be especially true during emergencies. In areas where cats are targets of pest control, microchipping and microchip registration or other forms of identification can help distinguish owned or managed stray cats from feral cats in pest management plans.



**Table 2: Welfare benefits of Microchipping**

Benefit of Microchipping	Source
During the 2011 Christchurch earthquake, 85 % of owners of microchipped animals were contacted within 3 hours by the New Zealand Companion Animal Register, compared to only 25 % of non-microchipped animals reunited with their owners within a 7-day period.	CANZ, 2020a
39 % of microchipped cats were returned to their owners, compared to 2 % returned for un-microchipped cats.	Lord et al., 2009
51 % of microchipped cats were returned to their owners compared to only 5 % of un-microchipped cats.	Lancaster et al., 2015

### Welfare benefits of keeping cats at home

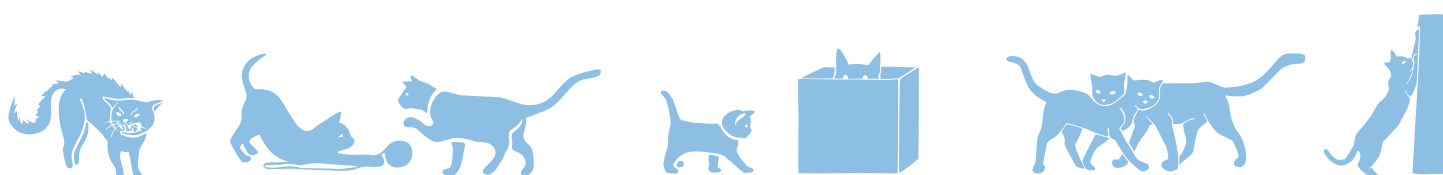
Cats who are allowed to roam from home face numerous welfare risks including threats to their health, consequences of becoming lost or straying, and if not desexed, can contribute to the unwanted kitten population in New Zealand.

**Table 3: Decreased roaming**

Benefit of keeping cats at home	Source
Reduces the risk of injury and death from vehicles, fighting with cats and other animals, infectious disease transmission, and ingestion of harmful substances.	Bruce et al., 2019; Loyd et al., 2013, Rochlitz, 2004a, b
Reduces risk of disease transmission to people and other animals (e.g., ringworm, FIV).	Hosie et al., 2009; Stull et al., 2015

### Other Benefits of Cat Management

Desexing, microchipping, and keeping cats at home can also reduce the negative impacts cats can have including nuisance, predation on native wildlife, and spread of toxoplasmosis to both native animals and pastoral animals. Desexing and microchipping are longer term strategies that will address problems with overpopulation of cats. Keeping cats at home can provide immediate local benefits for reducing nuisance such as spraying and toileting on neighbour property and reducing predation. Keeping cats from defecating away from home can also contribute to a reduction in the spread of toxoplasmosis to other animals and people.



**Table 4: Other benefits of cat management**

Benefit of Cat Management	Source
Reduces risk of disease transmission to people and other animals (e.g., ringworm, FIV).	Hosie et al., 2009; Stull et al., 2015
Reduces risk of toxoplasmosis transmission to farmed animals and native wildlife.	Aguirre et al., 2019; Stelzer et al., 2019
Decreases predation pressure on native wildlife	Bell & Bell, 2003; Bellingham et al. 2010; Dowding & Murphy, 2003; Farnworth et al., 2013; Imber et al., 2003; Veitch et al., 2011

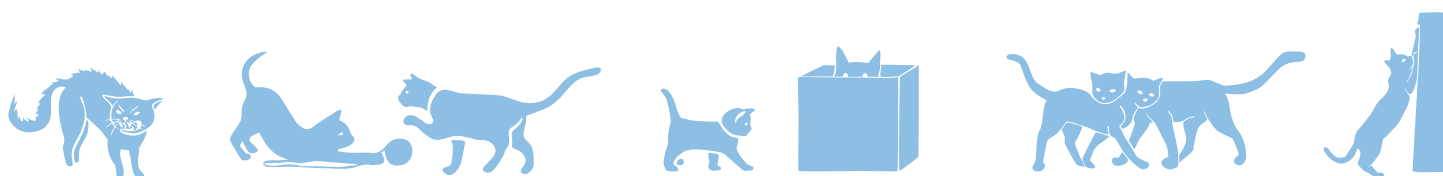
A more detailed report related to the need for desexing and microchipping cats and keeping them at home has been conducted as part of the [National Cat Management Strategy Working Group Report](#). A brief overview of the National Cat Management Strategy Working Group report can be found in Appendix 1.

## Part 2: Cat management policy mechanisms and outcomes in New Zealand

In our recent review of cat policy in New Zealand (Sumner, Walker, & Dale, 2022), we evaluated the implications of the different policy mechanisms on cat welfare and found there to be both positive and negative outcomes for cats. However, understanding the impact of these policies on cat welfare and other goals such as reducing nuisance and protecting native wildlife are less clear, mostly due to a lack of monitoring and reporting. In some instances, the policies are more recent in their implementation, therefore limiting interpretation of impact. However, reporting information related to policy goals should be readily available and public because monitoring data is integral to assessing if the objectives of the policy are on track and if there is need to adjust. Below we have included instances where cat policy has been evaluated.

### Impact of Desexing Policy

Desexing rates for owned cats in New Zealand are relatively high. The most recent figures from Companion Animals New Zealand (CANZ, 2020b) indicate that 88 % of cat owners desex their animals (CANZ, 2020b). However, there has been a downward trend from previous reports where 93.2 % (Gates et al., 2019), and 93 % (CANZ, 2016) of owners reported desexing their cats.

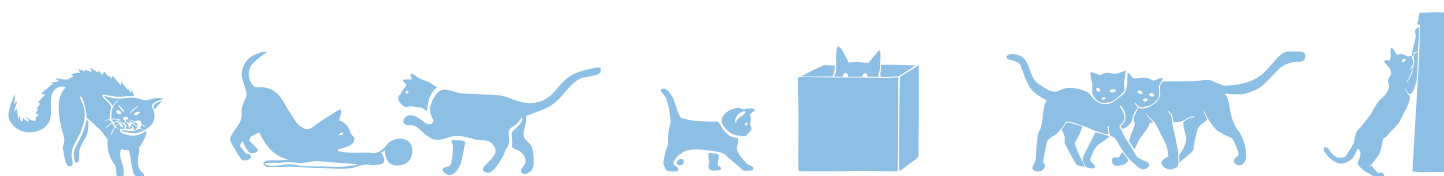


Cost of the procedure is most common reason for not desexing cats, however, nearly as many people have not desexed their cat because they have not prioritised it (CANZ, 2020b). Other responses included people felt it wasn't necessary/didn't think it was important, or that they felt it was important for an animal to have offspring (CANZ, 2020b).

There are a few places in New Zealand where desexing is locally mandated:

- Palmerston North City Council bylaws passed in 2018 mandate desexing for all cats over six months of age, born after the 1st of July 2018 (exemptions are in place for registered breeders) (Palmerston North City Council, 2018).
- New Plymouth bylaws passed in 2020 allow for the Council to include terms and conditions such as requiring desexing of cats if a person seeks approval to keep more than three cats of kittens over the age of six months on their property (New Plymouth District Council, 2020).
- Whanganui District Council bylaws passed in 2020 require any cat over four months of age was required to be desexed unless for breeding purposes and nationally registered; or the owner provides a certificate from a veterinarian indicating desexing will adversely affect the cat's health and/or welfare (vets, SPCA, and cat boarding premises are exempt from this requirement) (Whanganui District Council, 2020).
- Whangārei District Council passed bylaws in 2022 mandating desexing for all cats over six months of age unless the cat is kept for breeding purposes and registered with a nationally recognised breeders' body, or the owner provides a veterinarian certificate that desexing will adversely impact the health or welfare of the cat.
- Ruapehu District Council passed bylaws in 2022 mandating desexing for all cats over six months of age (unless kept for breeding purposes and registered with a nationally recognised breeders' body, including New Zealand Cat Fancy Ltd. and Cats Inc.). Cats are exempt if a veterinarian deems the procedure will endanger the cat's life.

Policies that mandate desexing are controversial for reasons listed below. Many of the stated reasons are due to concerns that perverse outcomes have or will occur if desexing is mandated. However, there is a lack of quality data related to this type of policy, and it is difficult to disentangle outcomes related to other policies.





**Table 8: Mandating desexing**

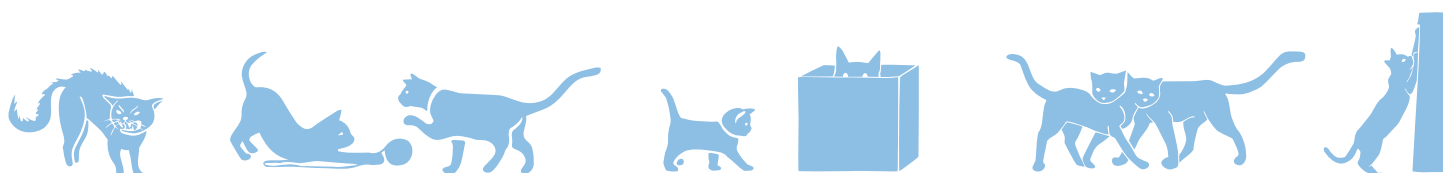
Impact	Source
In the Australian Capital Territory, there was no positive association between mandated desexing at 6 months of age and shelter intake or euthanasia at one of two area shelters.	Hayward, 2007
The legislation is difficult to enforce or is inconsistently enforced.	AVA, 2017; ASPCA, n.d.
Does not address the root causes of animals ending up in shelters.	AVA, 2017; ASPCA, n.d.; AVMA, 2019
Desexed animals are difficult to identify.	ASPCA, n.d.
Decreasing numbers of cats in these countries (indicating other mechanisms are working).	AVA, 2017; ASPCA, n.d.
No evidence to support current mandatory desexing laws lead to a reduction in the number of cats entering shelters.	AVA, 2017; ASPCA, n.d.
Increases in the number of animals surrendered to shelters, and disproportionately targets owners or lower-economic status.	Crawford, 2019; ASPCA, n.d.
Cat sterilisation at 6 months of age has mixed support, with 16 % indicating it is not appropriate, 46 % unsure, and 37 % indicating it is appropriate.	Government of Western Australia, Department of Local Government, Sport and Cultural Industries, 2019

The AVA, AVMA, and ASPCA advocate for the benefits of desexing to control populations of cats and improve the cat welfare, however, these organisations do not support mandating it.

We acknowledge these concerns with mandating desexing. It is imperative that mandatory desexing is one of multiple approaches to ensure effective and humane cat management in New Zealand. In addition to mandatory desexing of cats at point of sale or transfer of ownership, SPCA will continue to provide desexing services to individual cat owners and communities to advance the welfare of all animals.

### Microchipping and Microchip Registration

There has been an increase in the number of cats in New Zealand reported as microchipped with 31.2% earlier reported in 2019 (Gates et al., 2019), and more recently in 2020 at 49% microchipped with 36% reported registration of the microchip details (CANZ, 2020b). New Zealand’s incidence of microchipped cats (49%) is lower than that of Australia (77%) and UK (71%) (CANZ, 2020b). It is not clear why there has been an increase in the number of cats microchipped, however, it has been suggested that this is due in part to local governments enacting mandatory microchipping, and SPCA requiring all cats must be microchipped prior to rehoming (CANZ, 2020b).

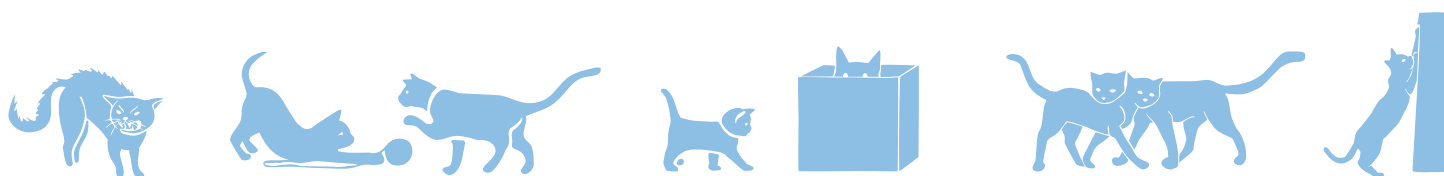


We do know that half of cat owners in New Zealand still have not microchipped their cat (CANZ, 2020b). Microchipping cats is one of the more common cat management practices enacted internationally, indicating an increasing interest in this being a tool for improved outcomes for cats. See Appendix 2 for a table of countries that have microchipping and microchip registration legislation.

Mandatory identification requires cats are microchipped and the owner details for the microchipped animal be registered on a microchip registration platform from a specific age, or if the cat is transferred among owners. There are few places in New Zealand where microchipping and microchip registration are mandatory:

- Wellington City Council bylaws passed in 2016 require all cats over the age of 12 weeks be microchipped and registered on the New Zealand Companion Animal Register (Wellington City Council, 2016).
- Palmerston North City Council bylaws passed in 2018 require all cats over 6 months of age and born after 1st of July 2018 be microchipped and registered on the New Zealand Companion Animal Register (Palmerston North City Council, 2018).
- Whanganui District Council bylaws passed in 2020 require any cat over four months of age was required to be microchipped and registered with the New Zealand Companion Animal Register (Whanganui District Council, 2020).
- Selwyn District Council passed bylaws in 2021 that require every person who keeps a cat over the age of four months is required to microchip and register the cat with the New Zealand Companion Animal Register or other approved registry (Selwyn District Council, 2020).
- Whangārei District Council passed bylaws in 2022 mandating the microchipping for all cats over six months of age and that the microchips are registered on the New Zealand Companion Animal Register.
- Ruapehu District Council passed bylaws in 2022 requiring microchipping for all cats over six months of age and microchip registration with the New Zealand Companion Animals Register or other Council approved microchip registry.

There have been a few studies looking at the impact of mandating microchipping of dogs and owner/animal reunions were evaluated. Additionally, there has been at least one post-implementation review on mandating microchipping which reported on public perception.



**Table 9: Evaluation of legislation related to microchipping (dogs) and registration, and keeping cats at home**

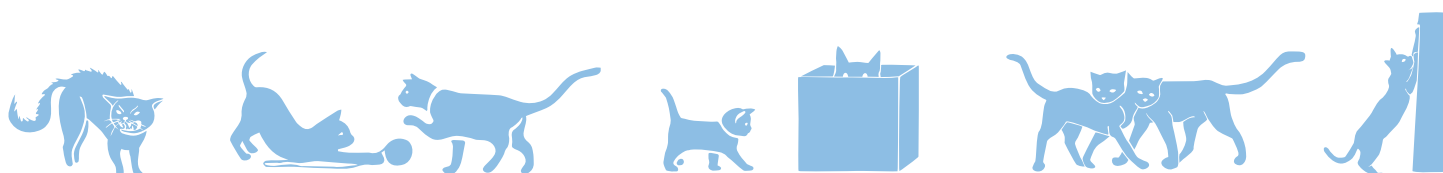
Post implementation evaluation	Location	Source
After mandatory microchipping of dogs enacted, 57.1 % of dogs were reunited with their owners (increase from 48.2 % ) 61.4 % of these dogs were microchipped (increase from 24.5 % ). There was also a reduction in length of stay at the shelter and a decrease in cost for reclaimed dogs.	Czechia	Zak et al., 2017
Increase in the number of dogs reunited with owners post implementation of required microchipping, increase number of dogs microchipped. Decrease in costs to local authorities, animal charities, and kennels due to increase reunification.	England	DEFRA, 2021
Public support of the requirements to register (85 % of survey respondents), with lifetime registration being the most popular.	Western Australia	Department of Local Government, Sport and Cultural Industries, 2019
Public support is high for mandatory microchipping (95 % of survey respondents) and 60 % think it is effective, but concerns exist with details being kept up to date. 88 % of survey respondents in WA felt cats should be kept in at night.	Western Australia	Government of Western Australia Department of Local Government, Sport and Cultural Industries, 2019
As of 30 June 2021, there were 70, 354 cats registered, (36 % increase from previous year), and 91 cats were returned home safely.	South Australia	Government of South Australia Dog and Cat Management Board, 2021

### Cat Management Plans, Advisory Groups, Toolkits

In addition to mandating responsible cat owner behaviours such as desexing, microchipping and microchip registration, and keeping cats at home, cat management legislation should also include provisions for cat management advisory groups, cat management plans, and the adoption of toolkits for humane and effective cat management.

These mechanisms provide local governments with more flexibility to motivate responsible cat ownership and engagement. These mechanisms are a softer approach to cat management and can help motivate behaviour change as a voluntary response, rather than solely relying on policy mechanisms such as penalties. These mechanisms have many benefits including:

- Facilitating multistakeholder engagement and shared responsibilities,
- Provide an agreed upon document and strategies that can help find common ground,
- Identify resources and supports,



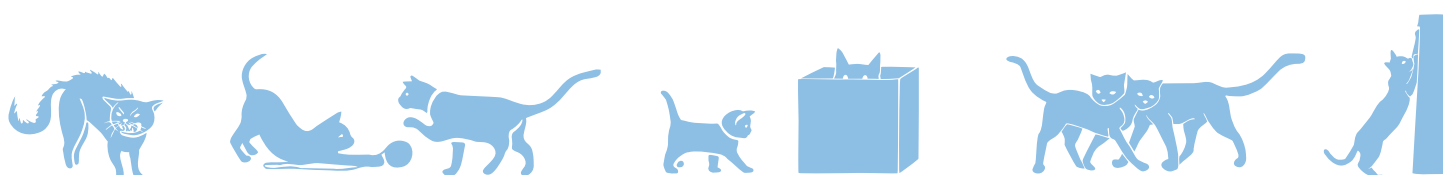
- Help keep progress on track through robust monitoring, which is important in tracking costs and use of funds and a demonstration of the effectiveness of management,
- Remain locally relevant leading to cat management needs, and
- Help ensure the welfare of cats remains at the heart of cat management.

Jurisdictions in Australia have adopted a number of these approaches to implement cat management legislation.

**Table 10: Advisory groups, cat management plans, and toolkits**

Jurisdiction	Advisory groups	Cat management plans	Toolkits
<b>New South Wales</b>	RPO Programme/ NSW RPO Reference Group  <a href="#">Companion Animals Task Force</a>		<a href="#">The Good Neighbour Project</a> (developed by Cat Protection Society of NSW)
<b>Western Australia</b>			Fact Sheets on Dept website
<b>Australian Capital Territory</b>	State-wide education programmes for RPO/ RPO Steering Committee		
<b>Tasmania</b>	<a href="#">Tassie Cat Programme</a>	<a href="#">Cat Management Plan</a> , 7 Objectives, Implementation plan is voluntary, supports local cat management strategies.	<a href="#">Tassie Cat</a>
<b>Victoria</b>	<a href="#">Who's for Cats campaign</a>	Required under the <a href="#">Domestic Animal Management Plans (DAMP)</a> which aim to support effective management of domestic animals. Regular reviews are required.	
<b>South Australia</b>	<a href="#">Dog and Cat Management Board</a>	Required under the Dog and Cat Management Act 1995. See <a href="#">RSPCA (2019) Cat Management Plan for South Australia</a>	<a href="#">RSPCA recommended</a>

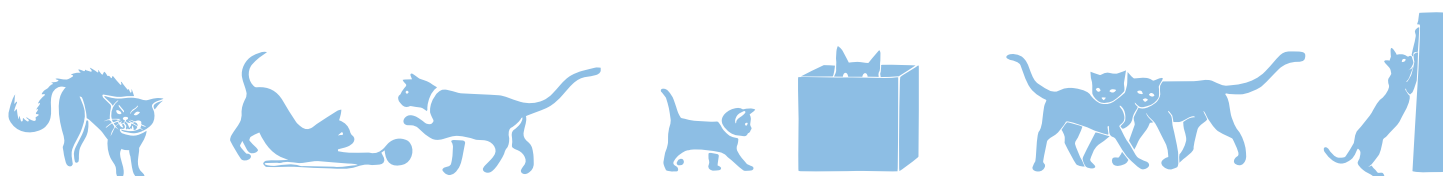
There are some local councils in New Zealand that provide advice for the public related to responsible cat ownership and stray and feral cat management. This information is through the local council animal management services. The advice provided on these pages ranges from providing brief information for where to find help with cats to in depth information for welfare concerns related to stray cats and companion cats. At least one Council (Auckland) has a guideline for responsible cat ownership available to download from their website.



**Table 11: Local NZ government advice on cat management**

Council	Desexing	Microchipping	Keeping cats at home	Strays	Ferals	Other
<a href="#">Auckland</a>	X	X	X	X		
<a href="#">Dunedin City Council</a>	X	X		X		
<a href="#">Gisborne District</a>				X	X	
<a href="#">Hamilton City Council</a>	X	X	X	X	X	
<a href="#">Invercargill City Council</a>	X	X				Additional RPO, Limits on numbers
<a href="#">Mackenzie District Council</a>	X		X (at night)			
<a href="#">Marlborough</a>				X	X	Additional RPO advice
<a href="#">Nelson City Council</a>	X	X	X	X	X	Additional RPO advice
<a href="#">Palmerston North City Council*</a>	X	X		X		Deterring nuisance
<a href="#">Rangitīkei District Council</a>						Limits on numbers
<a href="#">Waipā District Council</a>				X	X	
<a href="#">Waitaki District Council</a>	X	X		X		Deterring nuisance, lost/ found cat advice
<a href="#">Wairoa District Council</a>	X	X		X	X	Limits on numbers
<a href="#">Wellington City Council*</a>		X		X		
<a href="#">Whangārei District Council*</a>	X	X		X		

\*Information is linked to bylaw requirements.

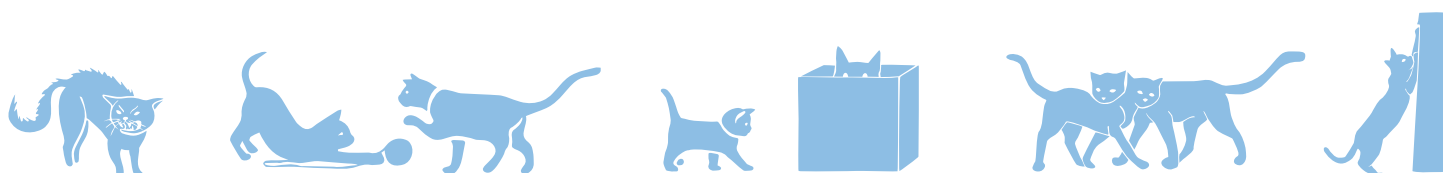


## How can national cat management be achieved?

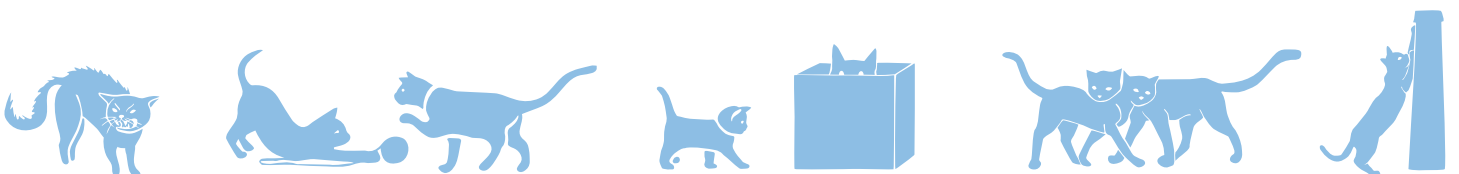
National, comprehensive cat management can be achieved through a range of policy mechanisms.

**Table 12: Pros and Cons of cat management policy**

Legislative option	Pros	Cons
<b>Inclusion in Animal Welfare Regulations.</b>	<p>Would be clearly prescribed in regulation &amp; send a strong message of the importance of desexing, microchipping, and containing cats.</p> <p>Would be nationally consistent.</p> <p>May protect cat welfare in the ways described above.</p>	<p>Not currently a priority for the Ministry.</p> <p>There are currently no regulations requiring a surgical procedure on any animal.</p> <p>Does not fit well with the purpose of the Animal Welfare Act.</p>
<b>Amendment to the Animal Welfare Act 1999.</b>	<p>Would be definitive &amp; prescribed in primary legislation.</p> <p>Would send a strong message of the importance of desexing, microchipping, and containing cats.</p>	<p>A review of the AWA is unlikely to occur soon.</p> <p>Enforcement would potentially fall on to SPCA (rather than MPI) without recompense.</p>
<b>Enactment of a Cat Act or Animal Management Act.</b>	<p>Would be definitive &amp; prescribed in primary legislation.</p> <p>The primary legislation would be about population management - and desexing, microchipping, and containing cats fits better with this purpose than with the Animal Welfare Act.</p> <p>Could also make microchipping &amp; chip registration mandatory.</p> <p>Would send a strong message of the importance of desexing, microchipping, and containing cats.</p> <p>Would allow for an income stream to local councils if cats are required to be registered (same provision as for dogs under the DCA) to cover enforcement costs.</p> <p>Would be nationally consistent.</p> <p>Would address multiple concerns (biodiversity, public health, local council concerns).</p>	<p>Responsible department is unclear.</p> <p>May have unintended consequences in relation to cat management if poorly drafted.</p>



<p><b>Inclusion of mandatory desexing, microchipping, and containment as a Minimum Standard in the relevant Codes of Welfare: Cats &amp; the Temporary Housing of Companion Animals.</b></p>	<p>Would be clearly prescribed in tertiary legislation &amp; send a strong message of the importance of desexing, microchipping, and containing cats.</p> <p>Would be nationally consistent.</p>	<p>NAWAC will not begin reviewing the relevant Code of Welfare for at least 5 years.</p> <p>Minimum standards are not directly enforceable.</p> <p>Not currently a priority for NAWAC or MPI.</p> <p>Does not align well with the purpose of the Animal Welfare Act.</p>
<p><b>Inclusion in local animal bylaws.</b></p>	<p>There is already precedence for inclusion of desexing and microchipping in bylaws.</p>	<p>Councils will often choose non-regulatory routes to achieve outcomes.</p> <p>There is no income stream to support enforcement.</p> <p>There are 76 Territorial Authorities so this option will result in an inconsistent approach across NZ.</p>



# Appendix 1:

## NCMSG recommendations

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### Executive Summary

The National Cat Management Strategy Group (NCMSG) recognises the intrinsic value of cats as complex and sentient beings, their value as a companion animal in New Zealand, and their value to communities, and New Zealand society. The NCMSG also recognises the importance of balancing the needs of cats, cat owners, and cat carers with the potential negative impacts of cats on communities, other species, and ecosystems. The New Zealand National Cat Management Strategy Report outlines recommendations and supporting evidence to achieve humane management of cats in New Zealand to protect both cat welfare and our unique environment.

Improved categorisation of cats which reflect the complexity of cat overpopulation are needed for successful management. The companion, stray, and feral cat categories have limited the ability to effectively manage cats in the past, particularly grouping all 'stray' cats together; this category should include better differentiation among stray cats to inform management strategies. The divisions within each of the proposed categories in this report will enable effective and legal management of different types of cat populations, whilst also providing added safety for previously unprotected cats.

The National Cat Management Strategy Group has assessed the existing literature and available resources concerning feral and domestic cat management strategies and taken into consideration feedback from stakeholder consultation to devise evidence-based recommendations for parties undertaking cat management in New Zealand.

Efforts to manage cats in New Zealand should be monitored and evaluated to determine their effectiveness in controlling cat populations and providing benefits to local wildlife. Robust evaluation of cat management programmes will provide much needed information for other governments, cat advocates, and environmental organisations that undertake steps to address problems with cat overpopulation.

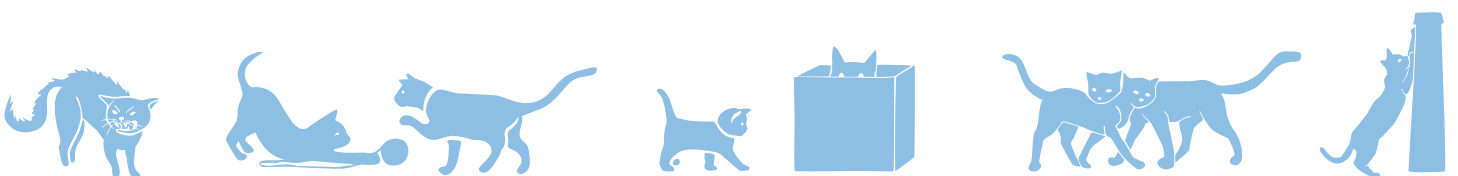
Cat management is complex, and the interests of all parties should be considered in decision-making. There is no 'one solution' for humane cat management and environmental protection; instead, different solutions are needed for different contexts. Humane and effective cat management requires all stakeholders to work together to ensure the diverse values associated with cats (including the intrinsic value of cats as sentient beings, their companionship, and the value of New Zealand's biodiversity) remain the guiding motivation for action.

### Key recommendations of the NCMSG for effective and humane cat management:

#### 1. Acknowledge that all cats are sentient.

All legislation and plans to manage feral and domestic cats:

- Must recognise cats are sentient beings under the Animal Welfare Act 1999;





- Be informed by science and ethics to:
  - > promote of the value of cats to enhance the human-cat bond, advance responsible ownership, break down barriers preventing ownership, and reduce cat surrender and abandonment; and
  - > determine the most humane approaches to stray and feral cat management.
- Use improved categories of cats to inform cat management. The following cat population categories provide the basis for a management framework:
  - > Feral cats; and
  - > Domestic cats;
    - » Companion (owned) cats; and
    - » Stray cats;
      - Socialised stray cats (managed and unmanaged); and
      - Unsocialised stray cats (managed and unmanaged).

**2. Community education programmes about the negative impact of cats are enacted to:**

- reduce nuisance behaviour;
- reduce the risk of disease transmission; and
- reduce the negative impacts of cats on biodiversity.

**3. Government leadership in developing a national integrated, one welfare approach to toxoplasmosis management to:**

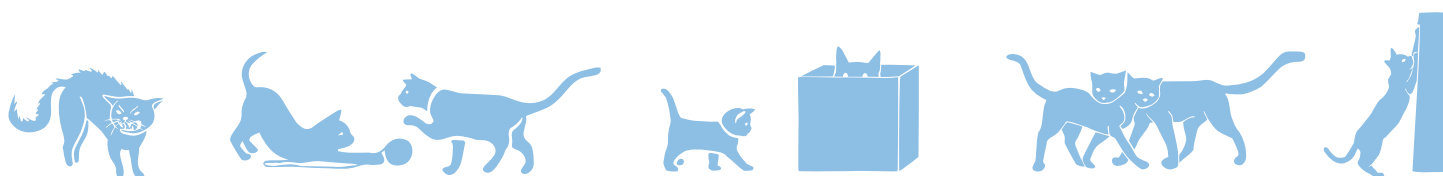
- ensure consistent vaccine coverage for farmed animals;
- support research into toxoplasmosis vaccine development for humans and animals;
- develop tools to measure the risk of toxoplasmosis on all farmed animal species, wildlife, and human health;
- ensure implementation of integrated pest management on farms (e.g., rodents and feral cats) including: rodent control, and improvement of food and water hygiene; and
- ensure implementation of action plans to mitigate the risks of toxoplasmosis on marine wildlife.

**4. Sensitive wildlife areas are identified and protected from cats.**

Sensitive wildlife areas should be identified nationwide for effective cat management. Subsequently, implementation of comprehensive and humane removal of cats from within those areas is required. Cats should be permanently removed and excluded from future re-inhabitation.

**5. Integrate best practice cat management nationally for all cats.**

Feral and domestic cat management should be integrated to ensure no gaps in responsibilities, laws, and initiatives. Individual cat movement between different populations is fluid, therefore, a coordinated and multifaceted approach through the development of national cat management



plan is needed to address all sources of cats in a population. This management plan should provide a framework for best practice management for companion, stray, and feral cats, and include:

- the development of relevant Codes of Practice and Standard Operating Procedures for national cat management methods to ensure consistency in cat management practices; and
- the development of an auditing programme to promote compliance with best practice cat management.

#### Best practice responsible cat ownership

Responsible cat ownership should include:

- mandatory identification (microchipping) and desexing of all cats prior to puberty and the regulation of breeding; and
- implementation of cat containment (mandatory in sensitive wildlife areas).

#### Best practice stray cat management

The intention of stray cat management is to humanely and effectively reduce the population of unowned cats. Stray cat management should include the development and implementation of:

- best practice Stray Cat (including colonies) Management Guidelines. Guidelines should include managed and targeted trap-neuter-return (mtTNR) programmes;
- a managed stray cat registry; and
- nationwide programmes for stray cat carers about responsible cat management with an emphasis on desexing, identification, and appropriate health care of managed stray cats.

#### Best practice cat management in sensitive wildlife areas

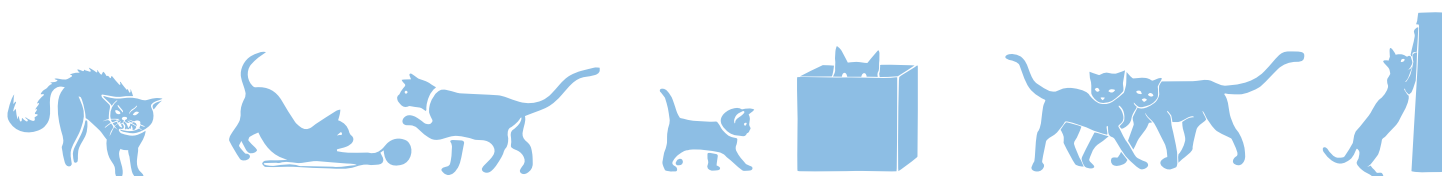
Sensitive wildlife areas are not suitable for mtTNR programmes.

Where mtTNR is inappropriate due to proximity of a sensitive wildlife area, the NCMSG supports trap and rehome as a strategy to manage stray cats. Where no other humane and non-lethal approaches are available the NCMSG reluctantly acknowledges that trap and humane killing methods for stray cats may be necessary to protect vulnerable native species. These methods are only acceptable if they are carried out in accordance with best practice guidelines to safeguard cat welfare.

### **6. Consistent legislation, approach, and commitment to cat management from Government**

The enactment of a National Cat Management Act will allow for mandated, comprehensive, and consistent implementation of nationwide humane management of all cat populations in New Zealand and ensure that enforcement can occur under the legislation.

The enactment of a National Cat Management Act will allow for the creation and implementation of local cat bylaws to assist with the humane management of cats.



## **7. Incremental change to legislation**

Changes in cat management under legislation should be incremental to allow public education, acceptance, and compliance with new requirements. It will likely be necessary to mandate components of the plan to make it effective. These changes must come from central and local government and be implemented locally.

## **8. Develop public engagement strategies to understand community support for cat management and facilitate human behaviour change**

Public engagement is needed to understand the diverse values, beliefs, attitudes, and social norms related to cats. Public engagement can also include activities to educate and support human behaviour change including:

- Responsible Cat Ownership; and
- humane non-lethal and lethal control of stray and feral cats.

## **9. Robust monitoring and evaluation are integrated into all cat management strategies to identify problems and solutions.**

Evaluation of cat management strategies is needed to determine their effectiveness and inform changes to ongoing cat management plans at the national and local level and should include:

- evaluation measures and processes for data collection agreed upon by all stakeholders;
- positive and negative outcomes publicly reported to ensure transparency;
- assessment of the effect of owned and stray cat management strategies on feral cat numbers and their impacts on wildlife;
- cat management strategies that are adapted and improved as new evidence becomes available; and
- creation and implementation of a centralised national database to track relevant cat management statistics.

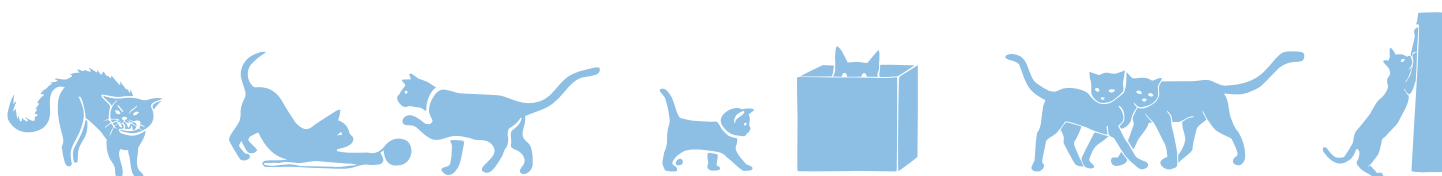
## **10. Establish a national cat management advisory committee.**

A National Cat Management Advisory Committee should oversee research, operationalise management plans, and coordinate and oversee evaluation of management strategies. Funding and support from government and other stakeholder groups will be necessary to achieve this. An important component of the National Cat Management Advisory Committee will be the use of research to inform ongoing humane cat management strategies, including national allocation of resources, coordination, and priority setting.

## **11. Establish local cat management advisory groups.**

Local governments should consider establishing cat management advisory groups with terms of reference that include:

- introducing and monitoring cat management plans in coordination with national mandatory requirements;



- consulting with key local stakeholders and communities; and
- identifying key metrics to evaluate the effectiveness of cat management plans.

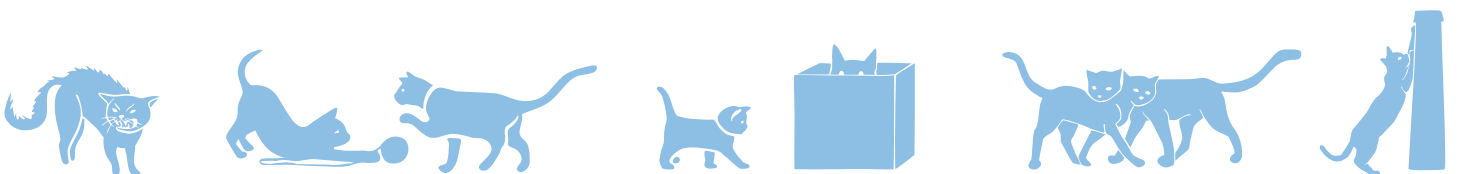
**12. Development of strategic partnerships among organisations with an interest in cat management**

Humane and effective cat management requires all stakeholders to work collaboratively, including the adoption of MOUs between major stakeholders. This collaboration will require ongoing communication and involvement of all cat stakeholders in decision making processes.

**13. Prioritise community engagement to determine the most appropriate strategies for cat management and promote sustainable outcomes for all interested parties.**

Effective and humane cat management will require identifying and engaging local community members with an interest in cat management based on their relationships with cats.

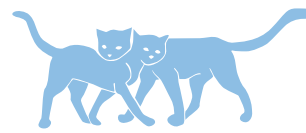
The full National Cat Management Strategy Group Report can be found [here](#).



## Appendix 2:

# List of countries with legislation for desexing and microchipping of cats

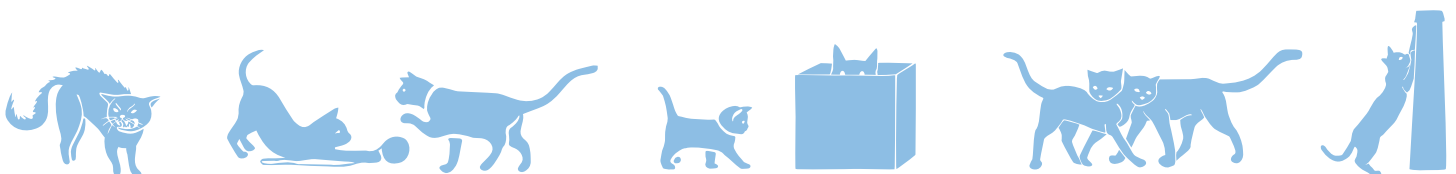
Country	Desexing	Microchipping	Registration
Canada	X (locally)	-	X (locally)
Lithuania	-	X	X
Belgium	-	X	X
Bulgaria	-	X (breeding animals)	X (breeding animals)
Estonia	-	X (locally)	X (locally)
France	-	X	X
Germany	X (stray cats)	X (stray cats)	X (stray cats)
Greece	-	X	X
Italy	-	X (for sold cats and colony cats)	X (for sold cats and colony cats)
Latvia	-	X	X
Luxembourg	-	X	X
Malta	-	X (if sold in a pet shop)	X (if sold in a pet shop)
Portugal	-	X	-
Slovenia	-	X	-
Spain	-	X (locally)	X (locally)
United Kingdom	-	X	-
United States	X (locally)	-	-



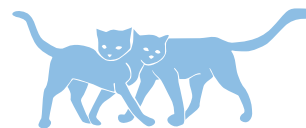
# References

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- Aguirre, A. A., Longcore, T., Barbieri, M., Dabritz, H., Hill, D., Klein, P. N., ... Sizemore, G. C. (2019). The one health approach to toxoplasmosis: Epidemiology, control, and prevention strategies. *EcoHealth*, 16, 387-390.
- ASPCA. (n.d.) Position statement on Mandatory spay/neuter laws. Retrieved from: <https://www.aspc.org/position-statement-mandatory-spayneuter-laws>.
- AVA. (10 Mar 2017). Desexing (surgical sterilisation) of companion animals. Retrieved from: <https://www.ava.com.au/policy-advocacy/policies/companion-animals-health/desexing-surgical-sterilisation-of-companion-animals/>
- AVMA. (June 2019). Mandatory spay/neuter laws. Retrieved from: <https://www.avma.org/advocacy/state-local-issues/mandatory-spayneuter-laws>
- Bain, M. (2020). Surgical and behavioral relationships with welfare. *Front. Vet. Sci.*, <https://doi.org/10.3389/fvets.2020.00519>
- Baker, P. J., Molony, S. E., Stone, E., Cuthill, I. C., & Harris, S. (2008). Cats about town: Is predation by free-ranging pet cats *Felis catus* likely to affect urban bird populations. *Ibis*, 150, 86-99.
- Banfield Pet Hospital. (2013). State of Pet Health 2013 Report. Retrieved from: <https://www.banfield.com/Home/pet-health/State-of-pet-health>.
- Bell, M., & Bell, D. (2003). The recolonisation of Mangere Island by New Zealand white-faced storm petrels (*Pelagodroma marina maoriana*). *Notornis*, 50, 57-58.
- Bellingham, P. J., Towns, D. R., Cameron, E. K., Davis, J. J., Wardle, D. A., Wilmshurst, J. M., & Mulder, C. P. H. (2010). New Zealand island restoration: Seabirds, predators, and the importance of history. *NZJ Ecol.*, 34, 115-136.
- Bruce, S. J., Zito, S., Gates, M. C., Aguilar, G., Walker, J. K., Goldwater, N., & Dale, A. (2019). Predation and risk behaviors of free-roaming owned cats in Auckland, New Zealand. *Front. Vet. Sci.*, 6.
- Cafazzo, S., Bonanni, R., & Natoli, E. (2019). Neutering effects on social behaviour of urban unowned free-roaming domestic cats. *Animals*, 9, 1105.
- Companion Animals New Zealand (CANZ) (2016). Companion animals in New Zealand 2016. Retrieved from: [https://static1.squarespace.com/static/5d1bf13a3f8e880001289eeb/t/5f556c917d0bb54905a22858/1599433901911/Companion+Animals+in+New+Zealand+2016+Report\\_web.pdf](https://static1.squarespace.com/static/5d1bf13a3f8e880001289eeb/t/5f556c917d0bb54905a22858/1599433901911/Companion+Animals+in+New+Zealand+2016+Report_web.pdf)
- Companion Animals New Zealand (CANZ) (2020a). Animal microchip implantation best practice guide. Retrieved from: <https://static1.squarespace.com/static/5d1bf13a3f8e880001289eeb/t/5fbb1cd4158b28734be7d8bc/1606098220556/Microchip+Implantation+Best+Practice+Guide+2020.pdf>.
- Companion Animals New Zealand (CANZ) (2020b). Companion Animals in New Zealand 2020. Auckland, New Zealand. Retrieved from: <https://static1.squarespace.com/static/5d1bf13a3f8e880001289eeb/t/5f6af15ae8ebd4ff4379612/1600844200674/Companion+Animals+in+NZ+2020.pdf>



- Crawford, H. (2019). Improving nine lives: Trialling and assessing management strategies for stray cats (*Felis catus*) in Australia. (Doctoral dissertation. Murdoch University, Murdoch, Australia). Retrieved from: <https://researchrepository.murdoch.edu.au/id/eprint/53841/>
- Dempster, R. P., Wilkins, M., Green, R. S., & de Lisle, G. W. (2011). Serological survey of *Toxoplasma gondii* and *Campylobacter fetus fetus* in sheep from New Zealand. *N. Z. Vet. J.*, 59, 155-159.
- Department of Environment, Food, and Rural Affairs (DEFRA). 2021. The microchipping of dogs (England) regulations 2015: Post-implementation review. Retrieved from: [https://www.legislation.gov.uk/uksi/2015/108/pdfs/uksiod\\_20150108\\_en.pdf](https://www.legislation.gov.uk/uksi/2015/108/pdfs/uksiod_20150108_en.pdf)
- Dorn, C.R, Taylor, D.O.N., & Schneider R. (1968). Survey of animal neoplasms in Alameda and Contra Costa counties, California. II. Cancer morbidity in dogs and cats from Alameda county. *J. Natl. Cancer Inst.*, 40:307-318.
- Dowding, J. E., & Murphy, E. C. (2001). The impact of predation by introduced mammals on endemic shorebirds in New Zealand: a conservation perspective. *Biol. Conserv.* 98, 47-64.
- Dubey, J. P. (2009). Toxoplasmosis in sheep- The last 20 years. *Vet. Parasitol.*, 163, 1-14.
- Dubey, J. P. (2016). *Toxoplasmosis of animals and humans* (Second edition). Boca Raton, US: CRC Press.
- Farnworth, M. J., Muellner, P., & Benschop, J. (2013). A systematic review of the impacts of feral, stray and companion domestic cats (*Felis catus*) on wildlife in New Zealand and options for their management. New Zealand Veterinary Association, Wellington, New Zealand.
- Finkler, H., Gunther, I., & Terkel, J. (2011). Behavioral differences between urban feeding groups of neutered and sexually intact free-roaming cats following a trap-neuter-return procedure. *JAVMA*, 238, 1134-1140.
- Fitzgerald, B. M. (1988). Diet of domestic cats and their impact on prey populations In: *The domestic cat: the biology of its behaviour*. Cambridge University Press, Cambridge.
- Fitzgerald, B. M., & Veitch, C. R. (1985). The cats of Herekopare Island, New Zealand; their history, ecology and effects on birdlife. *N. Z. J. Zool.*, 12, 319-330.
- Gates, M. C., Walker, J. K., Zito, S., & Dale, A. (2019). A survey of opinions towards dog and cat management policy issues in New Zealand. *N. Z. Vet. J.*, 67 (6) 315-322.
- Gilhofer, E. M., Windschnurer, I., Troxler, J., & Heizmann, V. (2019). Welfare of feral cats and potential influencing factors. *J. Vet. Behav.: Clin. Appl. Res.*, 30, 114-123.
- Gillies, C., & Clout, M. (2003). The prey of domestic cats (*Felis catus*) in two suburbs of Auckland City, New Zealand. *J. Zool.*, 259, 309-315.
- Gordon, J. K., Matthaei, C., & Van Heezik, Y. (2010). Belled collars reduce catch of domestic cats in New Zealand by half. *Wildl*, 37, 372-378.
- Government of Western Australia. Statutory review of the Cat Act 2011 and Dog Amendment Act 2013 Report. Retrieved from: <https://www.dlgsc.wa.gov.au/department/publications/publication/statutory-review-of-the-cat-act-2011-and-dog-amendment-act-2013#2>



Government of South Australia Dog and Cat Management Board (2022). 2021 dogs and cats. Retrieved from: <https://dogandcatboard.com.au/about/achievements>

Graf, R., Grüntzig, K., Boo, G., Hässig, M., Axhausen, K.W., Fabrikant, S., ...Pospischil, A. (2016). Swiss Feline Cancer Registry 1965-2008: The influence of sex, breed, and age on tumour types and tumour location. *J. Comp. Path.*, 154, 195-210.

Greenwell, C. N., Calver, M. C., & Loneragan, N. R. (2019). Cat gets its Tern: A case study of predation on a Threatened Coastal Seabird. *Animals*, 9(7), 445.

Gunther, I., Raz, T., Berke, O., & Klement, E. (2015). Nuisances and welfare of free-roaming cats in urban settings and their association with cat reproduction. *Prev. Vet. Med.*, 119, 203-210.

Gunther, I., Raz, T., & Klement, E. (2018). Association of neutering with health and welfare of urban free-roaming cat population in Israel during 2012-2014. *Prev. Vet. Med.*, 157, 26-33.

Hampe, J.F., & Misdorp, W. (1974). Tumours and dysplasias of the mammary gland. *Bull. World Health Organ.*, 50:111-133.

Hart B, L., & Barrett, R. E. (1972). Effects of castration on fighting, roaming, and urine spraying in adult male cats. *JAVMA*, 163, 290-2.

Hart, B.L., & Cooper, L.C. (1984). Factors relating to urine spraying and fighting in prepubertally gonadectomized cats. *JAVMA*, 184(10):1255-8. 83.

Hayes, H.M., Milne, K.L., Mandel, C.P. (1981). Epidemiological features of feline mammary carcinoma. *Vet. Record*, 108:476-479.

Hayward, M. (2007). Mandatory desexing in the ACT: Has it worked? Australian Institute of Animal Management Annual Conference. Retrieved from: <https://aiam.org.au/resources/Documents/2007%20Workshop%20presentations/Mandatory%20Desexing%20in%20the%20ACT%20-%20Has%20it%20worked,%20Dr%20Michael%20Hayward.pdf>

Hosie, M. J., Addie, D., Belák, S., Boucraut-Baralon, C., Egberink, H., Frymus, T.... Lloret, A. (2009). Feline immunodeficiency: ABCD guidelines on prevention and management. *J. Feline Med. Surg.*, 11, 7, 575-584.

Howe, L., Hunter, S., Burrows, E., & Roe, W. (2014) Four cases of fatal toxoplasmosis in three species of endemic New Zealand birds. *Avian Dis.*, 58, 171-5.

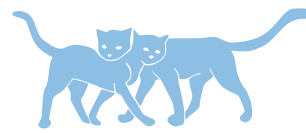
Hunter, S. A., & Alley, M. R. (2014). Toxoplasmosis in wild birds in New Zealand. *Kokako*, 21, 58-59.

Imber, M. J., West, J. A., & Cooper, W. J. (2003). Cook's petrel (*Pterodroma cookii*): Historic distribution, breeding ecology and effects of predators. *Notornis*, 50, 221-230.

Jessup, D. A. (2004). The welfare of feral cats and wildlife. *JAVMA*, 1225(9), 1377-1383.

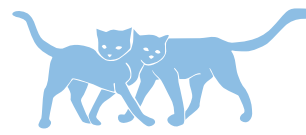
Joyce, A., & Yates, D. (2011). Help stop teenage pregnancy! Early-age neutering in cats. *J. Feline Med. Surg.*, 13, 3-10.

Kikillus, K. H. Chambers, G.K., Farnworth, M.J., & Hare, K.M. (2017). Research challenges and conservation implications for urban cat management in New Zealand. *Pac. Conserv. Biol.*, 23, 15-24.

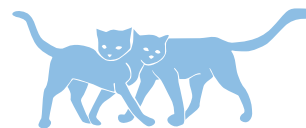
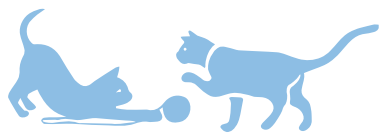




- Lancaster, E., Rand, J., Collecott, S., & Paterson, M. (2015). Problems associated with the microchip data of stray dogs and cats entering RSPCA Queensland shelters. *Animals*, 5, 332-348.
- Loyd, K. A. T., Hernandez, S. M., Abernathy, K. J., Shock, B. C., & Marshall, G. J. (2013). Risk behaviours exhibited by free-roaming cats in a suburban US town. *Vet. Record*, 173, 295.
- Lord, L. K., Griffin, B., Slater, M. R., & Levy, J. K. (2010). Evaluation of collars and microchips for visual and permanent identification of pet cats. *JAVMA*, 237, 387-394.
- Marsh, P. (2010). Replacing myth with math: Using evidence-based programs to eradicate shelter overpopulation. Retrieved from: [www.shelteroverpopulation.org/Books/Replacing\\_Myth\\_with\\_Math.pdf](http://www.shelteroverpopulation.org/Books/Replacing_Myth_with_Math.pdf).
- Marston, L. C., & Bennett, P. C. (2009). Admissions of cats to animal welfare shelters in Melbourne, Australia. *J. Appl. Anim. Welf. Sci.*, 12, 189-213.
- Michael, S. A., Howe, L. M., Chilvers, B. L., Morel, P. C. H., & Roe, W. D. (2016). Seroprevalence of *Toxoplasma gondii* in mainland and sub-Antarctic New Zealand sea lion (*Phocarctos hookeri*) populations. *N. Z. Vet. J.*, 64, 293-297.
- Misdorp, W., Romijin, A., & Hart, A.A.M. (1991). Feline mammary tumors: A case-control study of hormonal factors. *Anticancer Res.* 11: 1793-1798.
- New Zealand National Cat Management Strategy Group (NCMSG) (2020). New Zealand National Cat Management Strategy Discussion Paper. Retrieved from: <http://www.nzcac.org.nz/nzcac/nzcac-resources/nzcac-newsletters/7-blog/83-national-cat-management-strategy-discussion-paper>
- New, J. C., Salman, M. D., King, M., Scarlett, J. M., Kass, P. H., & Hutchison, J. M. (2000). Characteristics of shelter-relinquished animals and their owners compared with animals and their owners in U.S. pet-owning households. *Appl. Anim. Behav. Sci.*, 3, 179-201.
- New Plymouth District Council. Animals Bylaw (2020). Retrieved from: <https://www.npdc.govt.nz/media/aiza04ri/animals-bylaw-2020.pdf>
- Norbury, G., & Heyward, R. (2008). Predictors of clutch predation of a globally significant avifauna in New Zealand's braided river ecosystems. *Anim. Conserv.*, 11, 17-26.
- Nutter, F. B., Levine, J. F., & Stoskopf, M. K. (2004). Reproductive capacity of free-roaming domestic cats and kitten survival rate. *JAVMA* 225, 9, 1399-1402.
- Overley, B., Shofer, F.S., Goldschmidt, M.H. Sherer, D., & Sorenmo, K. U. (2005). Association between ovariectomy and feline mammary carcinoma. *J. Vet. Intern. Med.*, 19, 56-563.
- Palmerston North City Council. Draft Animals and Bees Bylaw (2018). Available online: <https://www.pncc.govt.nz/media/3130963/animals-and-bees-bylaw-2018.pdf>
- Patel, K. K., Burrows, E., Heuer, C., Asher, G. W., Wilson, P. R., & Howe, L. (2019). Investigation of *Toxoplasma gondii* and association with early pregnancy and abortion rates in New Zealand farmed red deer (*Cervus elaphus*). *Parasitol. Res.*, 118, 7, 2065-2077.
- Potter, K., Hancock, D.H., & Gallina, A.M. (1991). Clinical and pathologic features of endometrial hyperplasia, pyometra, and endometritis in cats: 79 cases (1980–1985). *JAVMA* 1991;198:1427–1431.



- Rochlitz I. (2003a). Study of factors that may predispose domestic cats to road traffic accidents: Part 1. *Vet. Record*, 153:549–53. doi: 10.1136/vr.153.18.549
- Rochlitz I. (2003b). Study of factors that may predispose domestic cats to road traffic accidents: Part 2. *Vet Record*, 153:585–88. doi: 10.1136/vr.153.19.585
- Roe, W. D., Howe, L. M., Baker, E. J., Burrows, L., & Hunter, S. A. (2013). An atypical genotype of *Toxoplasma gondii* as a cause of mortality in Hector’s dolphins (*Cephalorhynchus hectori*). *Vet. Parasitol.*, 192, 67-74.
- Root Kustritz, M.V. (2007). Determining the optimal age for gonadectomy of dogs and cats. *JAVMA*, 231(11), 1665-1675.
- Root Kustritz, M.V. (2012). Effects of surgical sterilization on canine and feline health and on society. *Reprod. Domes. Anim.*, 47, 214-222. doi: 10.1111/j.1439-0531.2012.02078.x.
- Reichler, I. M. (2009). Gonadectomy in cats and dogs: A review of risks and benefits. *Reprod. Domes. Anim.*, 2009, 44, 29-35.
- Selwyn District Council. Selwyn District Council Bylaw for Keeping Animals, Poultry and Bees (2020). Retrieved from: [https://www.selwyn.govt.nz/\\_data/assets/pdf\\_file/0009/463077/SELWYN-DISTRICT-COUNCIL-Keeping-of-Animals-Poultry-and-Bees-Bylaw-2021....pdf](https://www.selwyn.govt.nz/_data/assets/pdf_file/0009/463077/SELWYN-DISTRICT-COUNCIL-Keeping-of-Animals-Poultry-and-Bees-Bylaw-2021....pdf)
- Sorenmo K. (2003). Canine mammary gland tumors. *Vet. Clin. North Am. Small Anim. Pract.*, 33:573-596.
- Stelzer, S., Basso, W., Benavides Silván, J., Ortega-Mora, L. M., Maksimov, P., Gethmann, J.... Schares, G. (2019). *Toxoplasma gondii* infection and toxoplasmosis in farm animals: Risk factors and economic impact. *Food Waterborne Parasitol.*, 12, e0037.
- Stull, J. W., Brophy, J., & Weese, J. S. (2015). Reducing the risk of pet-associated zoonotic infections. *CMAJ*, 187, 10, 736-743.
- Stewart, M. (2014). Chicken-killing cat prowls unpunished. *Dominion Post*. Retrieved from: <http://www.stuff.co.nz/dominion-post/10029913/Chicken-killing-cat-prowls-unpunished>
- Sumner, C.L., Walker, J. K., & Dale, A. D. (2022). The implications of policies on free-roaming cat welfare. *Animals*, 12(3), 237.
- Urfer, S. R., & Kaeberlein, M. (2019). Desexing dogs: A review of the current literature. *Animals*, 9, 12, 1086.
- Vascellari, M., Baioni, E., Ru, G., Carminato, A., Mutinelli, F. (2009). Animal tumor registry of two provinces in northern Italy: Incidence of spontaneous tumors in dogs and cats. *BMC Vet. Res.* 5, 39 (2009).
- van Heezik, Y., Smyth, A., Adams, A., & Gordon, J. (2010). Do domestic cats impose an unsustainable harvest on urban bird populations? *Biol. Conser.*, 143, 121-130.
- Veitch, C. R., Gaskin, C., Baird, K., & Ismar, S. M. H. (2011). Changes in bird numbers on Raoul Island, Kermadec Islands, New Zealand, following the eradication of goats, rats, and cats. In: *Island Invasives: Eradication and Management. Proceedings of the International Conference on Island Invasives, IUCN, Gland, Switzerland*, pp. 372-376.



Verstegen, J., & Onclin, K. (2003). Mammary tumors in the queen, in Proceedings. Annu. Conf. Soc. Theriogenol., 239-245.

Walker, I. (2014). Toxoplasmosis in Hawke's Bay. A report prepared by Vet Services Hawke's Bay for Hawke's Bay Regional Council, Hawke's Bay, New Zealand.

Wellington City Council. Statement of Proposal Wellington Consolidated Bylaw 2008, Part 2: Animals-Review (2016). Retrieved from: <https://wellington.govt.nz/your-council/plans-policies-and-bylaws/bylaws/wellington-consolidated-bylaw-2008/part-2-animals>

Whanganui District Council. Keeping of Animals, Poultry and Bees Bylaw (2020). Retrieved from: <https://www.whanganui.govt.nz/files/assets/public/bylaws/keeping-of-animals-poultry-and-bees-bylaw-2020.pdf>

Yates, D., Yeates, J., & Roberts, M. (2013). Optimum age for neutering cats. Vet. Record, 172, 53.

Zak, J., Voslarova, E., Vecerek, V., & Bedanova, I. (2017). Impact of mandatory microchipping on traceability of sheltered dogs in the Czech Republic. J. Appl. Anim. Welf. Sci., 21, 108-119.

