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# Surveying pet owners' attitudes towards roaming cats in Aotearoa New Zealand

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## ABSTRACT

**Aim:** To examine the attitudes of pet owners towards roaming cats in New Zealand.

**Materials and methods:** Data was used from a survey of New Zealand residents aged over 18 conducted online between January and March 2019. Along with demographic questions, the respondents were asked, “Do you think that roaming pet dogs and cats are a problem?” (yes, no, never thought about it) and if they answered “yes”, were invited to explain their answers. Thematic analysis was applied to open-text responses focused on cats, while quantitative data were analysed using descriptive statistics.

**Results:** Of a total of 2,744 participants, 2,292 answered the question regarding roaming pets, with 72% (n = 1,654) viewing roaming pets as problematic. While gender, ethnicity, and rural upbringing showed no significant association with this view, age, education level, place of residence, and pet ownership did. Explanations for their choice of answer were given by 1,479 respondents and highlighted key concerns about free-roaming pets including cats: compromised animal welfare due to risks and neglect; the need for more responsible pet ownership and owner education; calls for stricter regulations and enforcement, including mandatory microchipping and desexing, and regulating cats similarly to dogs; the negative influence of social media; the importance of desexing to control populations and improve behaviour; increased risks to the roaming animals themselves, other animals, humans, and the environment; nuisance behaviours; and differing opinions on whether roaming cats or dogs are more of an issue.

**Conclusion:** The findings align with previous research indicating a growing but inconsistent public awareness of animal welfare and environmental impacts associated with free-roaming cats. They highlight the need for education and targeted policy to address inconsistencies in attitudes and promote responsible cat ownership.

**Clinical relevance:** Addressing these issues through enhanced public education and policy measures will help to balance animal welfare with community safety and environmental protection.

**Abbreviations:** NZCAT: New Zealand Companion Animal Trust

## ARTICLE HISTORY

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## Introduction


Currently, Aotearoa New Zealand (NZ) is grappling with the complex issue of managing free-roaming cats, which intersects with animal welfare, environmental conservation, and public opinion. Domestic cats are valued companions, with NZ having the highest population of pet cats per capita globally (Rowan *et al.* 2019). However, free-roaming cats pose serious threats to native and non-native wildlife, livestock, and public health (Tompkins 2014; Glen *et al.* 2023). Cats can move from a human-dependent state (companion or stray) to wild living (feral) within a single generation (Farnworth *et al.* 2010), with both human-dependent and feral cats being seen as

threats to biodiversity (Kikillus *et al.* 2016; Glen *et al.* 2023). Cats are invasive predators, contributing to the decline of wildlife species and disease transmission (Morgan *et al.* 2009; Duffy and Capece 2012; Conrad *et al.* 2021). Zoonotic pathogens spread by cats, particularly *Toxoplasma gondii*, can have significant health consequences for humans and animals (Dabritz *et al.* 2006; Dabritz and Conrad 2010). Outdoor cat defecation contributes to environmental contamination, and cats that roam freely are more likely to contract and spread parasites and other pathogens (Chalkowski *et al.* 2019). Public concerns around free-roaming cats also extend beyond environmental and health risks. In urban areas, cats

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are often viewed as nuisances due to noise and public safety issues (Levy *et al.* 2003).

Cats, therefore, hold a unique position in NZ in that they can be both valued pets and environmental and public pests. Practices such as microchipping, desexing, containment, and trap-neuter-return are promoted to mitigate the latter. New Zealand currently lacks a comprehensive cat management framework, and management strategies remain fragmented and inconsistent across regions despite strong public support for a coordinated approach (Walker *et al.* 2017; NCMSG 2020; Sumner *et al.* 2022). Calls for national legislation and a unified strategy have been echoed by the National Cat Management Strategy Group (NCMSG 2020), alongside recommendations to target high-density and socioeconomically deprived areas and promote owner education (Rinzin *et al.* 2008; Bruce *et al.* 2019; Gates *et al.* 2019; Sumner *et al.* 2022). However, the legal status of cats in NZ is complex, contributing to uncertainty in enforcement and regulation, and without national legislation, progress remains slow (Sumner *et al.* 2022; Palmer and Thomas 2023). Thus, research priorities have focused on improving monitoring methods, developing humane and effective management techniques, and engaging with cat owners (Glen *et al.* 2023). Effective cat management must be tailored to local contexts and grounded in an understanding of public beliefs, values and behaviours (Coleman and Temple 1993; Glasser 2021).

The complexities around cat management are reflected in the data from a 2019 national pet owners survey, conducted as part of the *Furry Whānau Wellbeing Research Study* (Forrest *et al.* 2019, 2022, 2023a, 2023b). While 97% of the surveyed cat owners reported their cats were desexed, and 85.4% supported microchipping, only 6% of cats were always kept inside (Forrest *et al.* 2023a, 2023b). Containment is promoted in many countries in Oceania; however public attitudes remain divided, suggesting the need for targeted interventions (Tan *et al.* 2021; Dalais *et al.* 2023; Chamberlain *et al.* 2024). Containment is often perceived to conflict with feline welfare or autonomy (Macdonald *et al.* 2015); addressing practical, emotional, and cultural barriers is therefore key to improving containment compliance (McLeod *et al.* 2015; Kaine *et al.* 2024). Public education remains a key strategy in improving responsible cat ownership and reducing biodiversity threats in NZ (NCMSG 2020). Social media is an important influence (Lenzi *et al.* 2019; Riddle and MacKay 2020) and therefore a valuable education tool, with nuanced messaging that fosters empathy and promotes practical, welfare-positive actions needed (Deak *et al.* 2019; McLeod *et al.* 2019; Cobb *et al.* 2020). Such messaging, however, requires an understanding of public opinion and attitudes.

Currently, there is limited research into NZ pet guardians' attitudes toward cat roaming. This study

examines the attitudes of NZ residents towards cat roaming, using data from the *Furry Whānau Wellbeing Research Study* (Forrest *et al.* 2019, 2022, 2023a, 2023b) that was funded by the New Zealand Companion Animal Trust (NZCAT). By identifying participant-related factors associated with the perception that roaming cats and dogs are problematic, and themes within the responses, the findings aim to inform the development of education strategies for the management of roaming cats in a way that supports the well-being of animals, people, and the environment.

## Materials and methods

The NZCAT Furry Whānau Wellbeing research was carried out with approval from the Eastern Institute of Technology (Napier, NZ) Research and Ethics Approval Committee (REAC ref 19/53).

### Participants and data collection

An online survey was developed and offered to New Zealanders via SurveyMonkey (San Mateo, CA, USA). The survey link was distributed through organisational email networks (including tertiary institutes and CANZ) and online via social media websites (in particular, Facebook and LinkedIn), with a snowball sampling approach being used to promote the survey and recruit participants from 8 January 2019 to 31 March 2019. Respondents were not required to answer all of the questions and were provided with the option to skip questions if they desired, therefore denominators for different questions may differ. The survey asked the following roaming-specific question: "Do you think that roaming pet dogs and cats are a problem? Choose from: Yes, No, Never thought about it. If yes, please explain why". An extract from the survey questionnaire providing the questions from which the data in this study is derived is provided as Supplementary Information 1, and the full questionnaire can be found in Forrest *et al.* (2019).

### Data analysis

The quantitative data, which consisted of forced-choice responses to survey questions, were analysed using descriptive statistics. To investigate the associations between demographic variables and participant responses, Pearson's  $\chi^2$  tests of homogeneity were employed. Following a significant  $\chi^2$  result, post-hoc pairwise comparisons were conducted to identify which specific group proportions were significantly different from one another. This was achieved using z-tests for column proportions, with a Bonferroni correction applied to the p-values to adjust for multiple comparisons and control for the risk of Type I error.

All statistical analyses were carried out using IBM SPSS Statistics (version 25) software (Armonk, NY, USA).

To analyse the qualitative responses from the question about whether roaming cats and dogs are a problem, inductive thematic analysis was undertaken independently by two researchers (RF, MP) using the methods described in Thomas (2006). Briefly, this approach involved an initial phase of deep familiarisation with the raw text data, followed by the systematic development of open codes that directly emerged from the participant responses. These initial codes were then collated into broader, more refined categories or themes. The researchers iteratively reviewed and defined these themes to ensure they accurately represented the dataset. Finally, the results were compared and consolidated to provide the final themes (Thomas 2006). Selected quotes that illustrate each identified theme are included in the Supplementary Material.

## Results

### Demographic description of the respondents

The demographics of the respondents (n = 2,744) to the 2019 NZCAT-funded Furry Whanau Wellbeing survey are detailed in previous publications (Forrest *et al.* 2019, 2023a, 2023b). In summary, most respondents (2,521/2,731; 92.3%) were female, with 2,277/

2,693 (83.4%) identifying as NZ European and 229/2,693 (8.5%) as Māori. All age groups were represented by gender and ethnicity. Respondents at each income level and educational level were represented, with gender and ethnicity distributions similar across these categories. Of those who answered the question about where they lived as a child, a quarter (600/2,387; 25.1%) of respondents reported a rural upbringing. At the time of the survey, 1,818/2,384 (76.3%) were living in urban areas. There were no significant associations between ethnicity or gender and whether respondents had a rural upbringing or currently lived in a town or city. A total of 2,358 respondents answered the pet ownership questions. Of these, 885 (37.5%) owned both a cat and a dog, 652 (28%) owned only a cat, and 609 (26%) owned only a dog. The remaining 212 (9%) did not own a cat or dog at the time of the survey but had owned a pet previously.

### Quantitative analysis: associations between demographic variables and whether roaming pet cats and dogs were thought to be a problem

Table 1 summarises responses to the question “Do you think that roaming pet dogs and cats are a problem?” stratified by demographic categories, and shows the results of  $\chi^2$  analyses investigating associations between demographic variables and responses to

**Table 1.** Responses to a 2019 New Zealand pet survey question “Do you think that roaming pet dogs and cats are a problem?”, by demographic category of the respondents.

Variable and category (n)	Yes % (n)	No % (n)	Never thought about it % (n)	P-value <sup>a</sup>
Ethnicity <sup>b</sup>				0.773
Māori (n = 198)	75.8% (150)	13.6% (27)	10.6% (21)	
NZ European (n = 1,777)	72.0% (1,280)	15.8% (281)	12.2% (216)	
Other (n = 278)	70.5% (196)	17.3% (48)	12.2% (34)	
Age range (years)				< 0.001
18–24 (n = 296)	64.5% (191) <sup>x</sup>	13.9% (41) <sup>x,y</sup>	21.6% (64) <sup>x</sup>	
25–34 (n = 449)	74.2% (333) <sup>y,z</sup>	10.9% (49) <sup>y</sup>	14.9% (67) <sup>y</sup>	
35–44 (n = 454)	70.5% (320) <sup>x,z</sup>	18.3% (83) <sup>x,z</sup>	11.2% (51) <sup>y,z</sup>	
45–54 (n = 510)	77.1% (393) <sup>y</sup>	14.5% (74) <sup>x,y</sup>	8.4% (43) <sup>z</sup>	
55–64 (n = 378)	71.7% (271) <sup>y,z</sup>	20.6% (78) <sup>z</sup>	7.7% (29) <sup>z</sup>	
≥ 65 (n = 203)	72.0% (139) <sup>x,y,z</sup>	17.6% (34) <sup>x,z</sup>	10.4% (20) <sup>y,z</sup>	
Highest education level				< 0.001
Pre-degree: levels 1–4 (n = 467)	71.3% (467) <sup>x</sup>	12.8% (84) <sup>x</sup>	15.9% (104) <sup>x</sup>	
Undergraduate: levels 5–7 (n = 992)	73.1% (725) <sup>x</sup>	16.3% (162) <sup>x,y</sup>	10.6% (105) <sup>y</sup>	
Postgraduate: levels 8–10 (n = 478)	72.4% (346) <sup>x</sup>	18.2% (87) <sup>y</sup>	9.4% (45) <sup>y</sup>	
Have children				0.056
Yes (n = 622)	74.8% (465)	12.7% (79)	12.5% (78)	
No (n = 1,648)	71.4% (1,177)	16.8% (277)	11.8% (194)	
Rural upbringing				0.381
Yes (n = 577)	74.4% (429)	14.2% (82)	11.4% (66)	
No (n = 1,703)	71.4% (1,216)	16.2% (276)	12.4% (211)	
Live in a town/city				< 0.001
Yes (n = 1,739)	70.0% (1,218) <sup>x</sup>	16.9% (294) <sup>x</sup>	13.1% (227) <sup>x</sup>	
No (n = 543)	79.4% (431) <sup>y</sup>	12.0% (65) <sup>y</sup>	8.7% (47) <sup>y</sup>	
Own a dog				0.008
Yes (n = 1,456)	74.2% (1,081) <sup>x</sup>	14.1% (206) <sup>x</sup>	11.6% (169) <sup>x</sup>	
No (n = 832)	68.5% (570) <sup>y</sup>	18.5% (154) <sup>y</sup>	13.0% (108) <sup>x</sup>	
Own a cat				0.007
Yes (n = 1,496)	70.5% (1,054) <sup>x</sup>	17.4% (261) <sup>x</sup>	12.1% (181) <sup>x</sup>	
No (n = 792)	75.4% (597) <sup>y</sup>	12.5% (99) <sup>y</sup>	12.1% (96) <sup>x</sup>	

<sup>a</sup>Significance of Pearson's  $\chi^2$  test for homogeneity.

<sup>b</sup>Respondents could select more than one category.

<sup>x,y,z</sup>Statistically (p < 0.05) different proportions are denoted by different superscript letters within columns for a demographic variable.

this question. Overall, 1,654/2,292 (72%) respondents answered “yes”, 360/2,292 (16%) answered “no”, and 278/2,292 (12%) indicated they had “never thought about it”. While gender, ethnicity and rural upbringing were not significantly associated with response patterns, significant differences were observed between the proportions that gave the different answers for categories within the variables of age, highest qualification level, place of residence and pet ownership (Table 1). A significantly lower percentage of younger respondents (18–24 years old) selected “Yes”, with a higher percentage selecting “Never thought about it” compared to most other age groups, whereas a higher percentage of respondents aged 44–54 selected “yes” compared to other subsets in the age category. Regarding the respondents’ highest education level, a similar percentage for each subset selected “yes” while a significantly lower percentage of respondents with levels 1–4 (pre-degree) selected “no” (12.8% vs 16.3% for levels 5–7 and 18.2% for levels 8–10), with a higher percentage in this education level subset selecting “never thought about it” (15.9% vs 10.6% and 9.4%, respectively) when compared to the other subsets. Respondents not living in town or city areas were more likely to view roaming as a problem (79% vs 70%), while those respondents who lived in a town or city were more likely to answer “no” (16.9% vs 12.0%) or “never thought about it” (13.1% vs 8.7%). Interestingly a significantly higher percentage of respondents who owned a dog selected “yes” compared to those without dogs (74% vs 69%) and a significantly lower percentage selected “no” (14% vs 19%), but the reverse was true for cat owners, with a significantly lower percentage selecting “yes” (71% vs 75% for non-cat-owners) and a significantly higher percentage selecting “no” (17% vs 13%). Whether or not a respondent had children also tended to be associated with the answer selected, with a higher percentage of those who did not have children selecting “no”, they did not think roaming pets were a problem (16.8% vs 12.7%).

### ***Thematic analysis: reasons why roaming pet cats and dogs were considered to be a problem***

Of the 1,654 respondents who selected “yes”, they considered roaming pets an issue, 1,479 respondents explained their answer. A thematic analysis of the explanations concerning free-roaming cats is presented in Supplementary Table 1, which includes representative quotes as evidence. The major themes identified were animal welfare, better ownership qualities, regulations and restrictions (more required and enforcement), the impact of social media, desexing, increased risks (to the roaming animal, other animals,

humans or the environment), nuisance and, lastly, differing views on whether dogs or cats are more of an issue. The key findings within each theme, evident from the analyses, are as follows.

#### ***Animal welfare concerns***

This main theme highlighted the compromised welfare of roaming cats. Participants expressed concern that roaming cats are at risk of injury from being hit by cars, are vulnerable to malnourishment and mistreatment, and may lack necessary veterinary care (e.g. vaccinations). Many respondents believed roaming indicates a lack of adequate care and that all cats have a right to a safe home.

#### ***Owner-related factors***

Respondents emphasised the need for pet owners to be more responsible, ensuring their animals’ safety and security. Protecting other pets from distress or harm caused by roaming animals was also highlighted. This included a call for more education on responsible practices, such as the use of “cat condos” and keeping cats supervised to protect other people and pets from distress or harm.

#### ***Regulations and restrictions***

A call for stricter regulations (for example, microchipping and desexing) and their enforcement emerged. Specifically, there was a desire to see cats regulated similarly to dogs and for authorities to address the issue of roaming animals more effectively. Suggestions included restricting cats to their owners’ properties in cat runs or indoors. Some participants also highlighted the lack of resources and support to manage stray and feral populations.

#### ***Social media***

The role of social media was highlighted in relation to cats. Concerns were raised about people using platforms like Facebook to sell or give away cats, and posts about found cats without identification were common. Participants also noted that social media can stir negativity, citing community pages where people suggested killing a neighbourhood cat that was defecating in a garden.

#### ***Desexing***

Desexing was a prominent theme, identified as crucial for managing roaming cat populations and improving behaviour. Respondents noted that un-desexed male cats are more prone to fighting, and un-desexed females contribute to stray populations through unwanted litters. The cost of desexing was identified as a potential barrier for some owners.

### **Increased risks**

Roaming cats were perceived to impose risks on themselves and others. These risks included the spread of disease and uncontrolled breeding leading to more strays. A major concern was the danger roaming cats pose to wildlife, with participants specifically mentioning their role as a danger to native birds. The risk of injury to the cats themselves from cars or poisoning was also a point of concern.

### **Nuisance behaviours**

Participants identified several nuisance behaviours specifically associated with roaming cats. These included territorial behaviours like fighting with other pets and spraying. Damage to property was a frequently cited issue, such as cats defecating in vegetable gardens and disturbing rubbish bags.

### **Cats vs. dogs**

While both roaming cats and dogs were seen as problematic, there were differing opinions on which posed a bigger problem. Some participants felt roaming cats are a bigger issue due to their impact on wildlife, while others considered roaming dogs more problematic due to safety concerns and their potential for aggression.

The findings reveal strong concerns for the welfare of roaming animals and the negative consequences they pose for both the animals and the community. Respondents believed that responsible pet ownership, stricter regulations, and increased education are crucial to addressing the issue. Desexing and micro-chipping, along with better support and resources for managing stray and feral populations, were also highlighted as necessary measures.

## **Discussion**

The current study's findings provide insight into NZ pet owners' attitudes towards roaming pet cats, revealing strong public concern over their welfare and environmental impact, with 72% of respondents viewing roaming pet cats and dogs as problematic. This aligns with previous national and international studies highlighting increasing public concern over feline welfare and the impact of free-roaming cats on wildlife (Gates *et al.* 2019; Sumner *et al.* 2022; Ovenden *et al.* 2024).

### **Participant-related factors associated with attitudes towards roaming pets**

Several demographic patterns emerged from the data, with younger adults (18–24 years old) less likely to view roaming as a problem than several other age groups. International studies suggest that younger individuals and university students exhibit greater tolerance for free-roaming cats (Wald and Jacobson 2013;

Izaguirre and Montiel 2021), whereas older individuals and men are more likely to support cat control measures (Grayson *et al.* 2002). Life experiences and current responsibilities are likely to play a role in differing attitudes towards roaming pets. Younger adults might have had fewer direct negative encounters with roaming pets or might prioritise other concerns at their stage of life when compared to middle-aged adults, with potentially more established households and community ties, who might be more aware of or directly affected by issues arising from roaming animals. Education level also influenced responses in the current study. Although the percentage of participants who answered "yes" was similar across education levels (71–73%), there was a clearer difference in the proportion who said they had "never thought about it." Those with pre-degree qualifications were more likely to select this option (15.9%) compared to those with undergraduate (10.6%) or postgraduate (9.4%) qualifications. This suggests that while education may not greatly affect agreement with the issue, it is associated with greater awareness and engagement. Individuals with higher qualifications may prioritise animal welfare and environmental concerns, consistent with both NZ studies and international findings (Dolby 2017; Contina *et al.* 2021). These findings highlight the potential for education to shape attitudes and behaviours related to animal welfare.

Geographic location played a role in shaping attitudes; respondents living outside urban areas such as towns and cities were more likely to view roaming pets as problematic (79% vs 70% in urban areas). This finding aligns with previous research indicating that roaming pets are more visible in rural areas and often impact livestock and local wildlife, leading to higher awareness among rural residents (Levy *et al.* 2003; Hall *et al.* 2016). However, evidence does not directly support the claim that rural areas have higher populations of unowned free-roaming cats in NZ. Further research is needed to better understand cat population distributions across urban and rural areas (Rinzin *et al.* 2008; Sumner *et al.* 2022). Interestingly, despite this heightened awareness, rural residents are often more tolerant of free-roaming cats. Research from the USA shows that rural communities are more likely to feed unwanted cats and allow their pets to roam, largely due to cultural norms and the perceived utility of cats for rodent control (Coleman and Temple 1993; Lord 2008). These US-based studies also highlight that rural communities also perceive reduced government oversight, which can foster resistance to restrictive pet management policies (Coleman and Temple 1993; Lord 2008; Wald and Jacobson 2013; Sumner *et al.* 2022). While these findings provide useful insights, care must be taken when applying them to the NZ context, where rural values and regulatory frameworks may differ.

Nevertheless, the survey responses from NZ suggest similar patterns, with rural communities potentially displaying greater tolerance for roaming animals and differing expectations around regulation.

Conversely, urban residents frequently express concerns about the negative impacts of free-roaming cats, including noise pollution, sanitation issues, and potential harm to wildlife. US-based studies have shown that urban residents who encounter free-roaming cats more frequently in their neighbourhood were more likely to support stricter regulations, such as mandatory sterilisation and licencing, reflecting their concerns about the associated nuisances and ecological impacts (Ramon *et al.* 2010; Glasser 2021). Again, while cultural and policy differences must be considered, these findings offer a useful point of comparison and reinforce the idea that public attitudes vary by region and environment. This highlights the importance of developing regionally tailored policies that account for differing community values, priorities, and lived experiences, both in NZ and internationally.

### **Animal welfare and responsible cat ownership**

Animal welfare emerged as a dominant concern. Respondents highlighted the risks roaming cats may face, including disease, injury, poisoning and malnutrition. These concerns are well-supported by research showing that outdoor cats are more vulnerable to parasites, trauma, and infectious diseases (Chalkowski *et al.* 2019; Machado *et al.* 2021; Arhant *et al.* 2022). The need for greater owner responsibility was also emphasised, with respondents calling for pet owners to take measures to safeguard their cats and minimise community impact. This viewpoint is supported by research advocating for responsible pet ownership to prevent negative outcomes such as accidents, diseases, and community nuisance (Gow *et al.* 2021; Forrest *et al.* 2023b). Like Forrest *et al.* (2019), a recent study of NZ cat owners found only 6% fully engaged in containment practices (Chamberlain *et al.* 2024). Many owners allow their cats to roam due to beliefs about feline independence and their integration into the community (Bruce *et al.* 2019; Chamberlain *et al.* 2024; Ovenden *et al.* 2024). This inconsistency may stem from conflicting values. While desexing and microchipping are perceived as technical obligations, containment is more emotionally and ideologically contested, with many owners still viewing cats as semi-independent or communal animals (Bruce *et al.* 2019; Ovenden *et al.* 2024).

In alignment with a national cat management plan, respondents in this study called for stricter regulations and enforcement regarding pet ownership, including desexing, microchipping and registration, which is consistent with the views of Australians reported in previous studies (Grayson *et al.* 2002; Lilith *et al.* 2006). Both cat owners and non-owners in Australia and NZ generally

agree on the need for cat control legislation, although opinions differ on specific measures like cat-free zones (Grayson *et al.* 2002; Elliott *et al.* 2019). Furthermore, in NZ, perceptions of cat welfare and control methods differ based on the cat's classification as stray or feral, with lethal control more acceptable for feral cats (Farnworth *et al.* 2011). Therefore, research is needed about how to engage the different sectors of the public on important dog and cat management policy issues, as there is a need for a unified, evidence-based framework that considers the welfare of cats, the values of communities, and the broader ecological impact. Such measures would also align with international best practices to manage pet populations and reduce risks to public health and safety (Kennedy *et al.* 2020; Abdulkarim *et al.* 2021; Sumner *et al.* 2022). Recent Australian research provides useful parallels. Rand *et al.* (2024a) and Cotterell *et al.* (2025) advocate for integrated management of companion, stray and feral cats using containment, desexing and public education. Rand *et al.* (2024b) further emphasise co-designed interventions with local communities, especially in semi-owned cat contexts. These studies reflect a shift toward collaboration and positive engagement over punitive enforcement – an approach more likely to gain public support. Our findings reinforce the urgency of implementing a cohesive policy framework supported by science and aligned with public values (Walker *et al.* 2017).

The role of social media in shaping perceptions of roaming pets at a community level was an interesting aspect of our study's findings. Respondents mentioned how social media platforms frequently feature posts about lost or found pets, contributing to public awareness and sometimes negative sentiments towards roaming animals. This highlights the influence of digital media in contemporary discourse on pet management (Zhang *et al.* 2023), particularly regarding free-roaming cats (Gow *et al.* 2021). The way in which different age groups consume media likely has a significant impact on their perception of roaming pets. Social media is particularly influential among younger demographics, whose issue agendas often align with media coverage (Coleman and McCombs 2007). Younger adults' reliance on social media, where content is often fragmented, personalised, and driven by engagement, might lead to a less comprehensive or consistent understanding of the issue compared to older adults, whose broader media diet might include more in-depth news coverage (Anderson 2024). If social media content related to roaming pets is limited and focuses on specific aspects (e.g. individual lost pet stories) it could contribute to the lower concern observed among younger respondents in the current study. Furthermore, high rates of news avoidance have been observed in NZ (Beattie *et al.* 2025), which may also contribute to the "never thought about it" response among younger adults. Interestingly, recent research shows that while

widespread press coverage of cat-related issues often presents an oversimplified and unbalanced picture – focusing primarily on cat welfare and management strategies like trap-neuter-release, and under-representing environmental impacts and expert opinions (Gow *et al.* 2021) – young adults in NZ show higher awareness and concern about the environmental impacts of free-roaming cats compared to the broader public (Dickie and Medvecky 2023). Taken together, these findings highlight the complex interplay between media influence and the public. Understanding the complex relationship between social media, public opinion, and animal welfare is fundamental for developing effective management strategies for free-roaming cats.

In the context of NZ, research that captures the voices of all sectors of society is required. Our study was limited in that NZ European females were over-represented at over 90% of respondents, limiting generalisability to other demographic groups such as Māori, Pasifika and men: the participant group cannot be assumed to be representative of the NZ population as a whole. Furthermore, the high level of agreement with the statement that roaming cats and dogs are a problem (72%) suggests that the participants were motivated by and interested in the survey, perhaps indicating some response bias.

The study had several other limitations. Conducted in early 2019, the findings may not reflect current public attitudes, but they offer a valuable baseline for future comparison. The online survey also required internet access and digital literacy, and as it was distributed via email networks and social media, those who own pets or have strong opinions about them would be more likely to see and respond to the invitation, introducing self-selection bias. As the original survey question asked participants: “Do you think that roaming pet dogs and cats are a problem?”, some responses were specifically related to cats and some were based on cats and dogs collectively, such that it could not be determined whether they were referring to cats, dogs, or both cats and dogs. The analysis, interpretation, and discussion are based on the assumption – supported by the broader context of the study and follow-up questions – that participants’ responses reflect their perceptions of cats, particularly given the heightened public concern and ongoing debate around cat management in NZ. Lastly, the study did not explore other influential factors such as cultural beliefs, community norms, or prior experiences, which could provide deeper insights into public perceptions of cat roaming.

## Conclusion

This study highlights the pressing issue of roaming cats in New Zealand, emphasising the complexities of pet welfare, public safety and opinion, and environmental impact. The findings indicate a notable concern among

NZ residents about roaming pets and their impact on the community, wildlife, and the environment. Many respondents expressed a strong preference for stricter regulations and enhanced enforcement to address the issue. This reflects a growing awareness of the challenges of roaming pets and a call for more proactive measures. Further research is necessary to deepen our understanding of the factors influencing attitudes and behaviours towards free-roaming cats across diverse populations and how best to educate the public using appropriate media platforms. Such research will be crucial for developing more effective and context-sensitive management strategies that address the needs and concerns of different residential communities. Future research should focus on evaluating the impact of implemented policies and exploring innovative solutions to improve cat management. Addressing the issue of roaming cats requires a multifaceted approach that combines policy improvements, public education, and community involvement. Collaboration between Māori iwi, local authorities, animal welfare organisations, and the public is crucial to developing and enforcing effective strategies. By taking these steps, New Zealand can create a future where cats are recognised as sentient and valued, responsibly owned, and humanely managed to protect both their welfare, the welfare of other animals and people, and the unique environment.

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