PARLIAMENT OF THE COMMONWEALTH OF AUSTRALIA

Tackling the feral cat pandemic: a plan to save Australian wildlife

Report of the inquiry into the problem of feral and domestic cats in Australia

House of Representatives Standing Committee on the Environment and Energy

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Foreword

Australia is one of the most biodiverse nations on Earth, hosting an immense range of native species. The arrival of Europeans to Australian shores, however, heralded the introduction of species foreign to Australia, including cats. More than 6.5 million cats are now present across some 99.3% of the Australian landmass, and have had a pervasive and harmful impact on Australian wildlife.

The Committee's inquiry sought to examine the prevalence and impact of feral, stray and domestic cats, and the effectiveness of various legislative, regulatory and collaborative responses across Australian jurisdictions. We reached six broad recommendations, which are set out in this report.

The Committee recommends that a body of work be conducted to improve understanding of cat impacts, including through the development of a nationally consistent definition for feral, stray and domestic cats; and commissioning further research in areas such as the prevalence, impact and control of cats, management of cat-borne diseases, and the relationship between cat predation and habitat degradation.

The Committee recommends a 'reset' of the Australian Government's current policy, planning and resourcing in relation to the feral cat problem. This requires a new iteration of the Threat Abatement Plan for feral cats; a revised Threatened Species Strategy (currently under consultation); and consideration of the reform opportunities identified through the current review of the Environment Protection and Biodiversity Conservation Act 1999.

The Committee has also recommended strengthened governance and collaboration frameworks between Commonwealth, State, Territory and local governments to underpin new strategies for the control of feral, stray and domestic cats.

Among various approaches to protect native species from cat predation, there is no single solution. The Committee nevertheless concluded that predator-free fenced

areas and islands can be a particularly effective short- and medium-term response, pending the greater viability of emerging cat control technologies.

The Committee has therefore recommended a significant expansion of these feral-free areas across a range of ecosystems, under a new conservation mission to be called Project Noah. This should be spearheaded by the Australian Government, in partnership with communities, the private sector and philanthropic groups where possible. Project Noah should be based on proven models, and be ambitious in its scale.

I would like to thank all those who contributed to the inquiry, including the many individuals and organisations who made submissions and participated in public hearings.

I would also like to acknowledge my fellow Committee members who worked collaboratively to develop a report focussed on proposing positive solutions to a complex and longstanding problem. We urge the Government to seriously consider the recommendations in this report, in order to better address the urgent threat to Australia's wildlife posed by feral, stray and domestic cats.

Ted O'Brien MP

Chair

Members

Chair

Mr Ted O'Brien MP	Fairfax, QLD

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Ms Zali Steggall OAM MP	Warringah, NSW
Mr Rick Wilson MP	O'Connor, WA
Mr Trent Zimmerman MP	North Sydney, NSW

Terms of Reference

The House of Representatives Standing Committee on the Environment and Energy will inquire into the problem of feral and domestic cats in Australia, with particular reference to:

a. the prevalence of feral and domestic cats in Australia;

b. the impact of feral and domestic cats including on native wildlife and habitats;

c. the effectiveness of current legislative and regulatory approaches;

d. the effectiveness of Commonwealth action and cooperation with states and territories on this issue, including progress made under the Threat Abatement Plan, national framework and national declaration relating to feral and domestic cats in Australia;

e. the efficacy (in terms of reducing the impact of cats), cost effectiveness and use of current and emerging methods and tools for controlling feral cats, including baiting, the establishment of feral cat-free areas using conservation fencing, gene drive technology;

f. the efficacy of import controls for high-risk domestic cat varieties to prevent the impacts of feral and domestic cats, including on native wildlife and habitats;

g. public awareness and education in relation to the feral and domestic cat problem; and

h. the interaction between domestic cat ownership and the feral cat problem, and best practice approaches to the keeping of domestic cats in this regard.

In conducting its inquiry the Committee will take account of the recommendations and outcomes of the 2017 Victorian parliamentary inquiry into invasive animals, and any other relevant recent inquiries or reviews.

List of Recommendations

Recommendation 1

6.3 The Committee recommends that the Australian Government recognise and prioritise the problem of feral cats in Australia consistent with its status as a matter of national environmental significance, that must be addressed effectively to ensure the continued survival of Australia's native wildlife and ecological communities.

Recommendation 2

6.15 The Committee recommends that the Australian Government undertake a body of work to improve understanding of the impact of feral, stray and domestic cats in Australia by:

- **a. Collaborating with state and territory governments and other relevant stakeholders to develop and adopt a consistent definition of feral, stray and domestic cats, to be applied across national, state, territory and local government legislative and regulatory frameworks relating to cats.**
- **b. Commissioning further research on:**
  - **i. the prevalence, impact and control of feral, stray and domestic cats including in urban environments;**
  - **ii. emerging cat control methodologies such as gene drive technology;**
  - **iii. the impacts and management of toxoplasmosis and other cat-borne diseases on native species and productive farmland; and**

iv. **the relationship between habitat degradation and cat predation, including with respect to bushfire impacts.**

Recommendation 3

6.34 The Committee recommends that the Australian Government develop a clear strategy to inform its resourcing of and response to the problem of feral cats, including through a 'reset' of its current policy and planning. This should comprise:

a. **A new iteration of the Threat Abatement Plan for predation by feral cats addressing:**

   i. **how it is to be evaluated, implemented, and resourced; and**

   ii. **a requirement that the Australian Government work with state and territory governments to develop complementary and localised plans.**

b. **A revised Threatened Species Strategy comprising:**

   i. **relevant targets focused on the rehabilitation of threatened species and ecological communities, accompanied by details of how each target will be achieved, resourced and reported; and**

   ii. **restatement of the need to cull feral cats, with new targets for culling consistent with contemporaneous prevalence data.**

c. **Appropriate consideration of reform opportunities identified through the current review of the *Environment Protection and Biodiversity Conservation Act 1999* and its administration, including but not limited to:**

   i. **the extent to which recovery plans are created and their actions resourced [see paragraph 3.18].**

Recommendation 4

6.35 The Committee recommends that the Australian Government spearhead, in partnership with the states and territories, an expansion of Australia's network of predator-free safe-haven enclosures and feral cat-free islands through a new program, Project Noah, as a new national conservation mission.

- **The expansion of feral-free areas should be opportunistic in terms of land and island availability, but also specifically identify and**

reference species that can be saved through Project Noah, as part of the Conservation Advices, Recovery Plans and Key Threatening Processes. Governments should work to create feral-free areas across a range of ecosystems and be ambitious in their scale.

- **Wherever possible, Project Noah projects should be developed in partnership with communities, the private sector and philanthropic groups, based on proven models such as those that have been developed with organisations like the Australian Wildlife Conservancy.**

Recommendation 5

6.48 The Committee recommends that the Australian Government, in partnership with the states and territories, develop a clear strategy for the management of stray and domestic cats. The strategy should feature the following measures:

a. Develop and disseminate best practice domestic and stray cat management strategies, including increasing public awareness of the impact of cats on Australia's native wildlife and habitats.

b. Develop a positive national cat ownership education campaign to be delivered through the Australian Veterinary Association, local councils and community groups.

c. Reduce the barriers to responsible domestic cat ownership with programs to support desexing, registration, and microchipping for domestic cats, as well as night curfew and containment programs.

d. Require all local governments to actively consider whether night-time curfews should be put in place for all or part of their areas of responsibility.

e. Design and implement a pilot program for subsidised or free desexing of pet cats in areas of high need, redeemable through vouchers issued by veterinarians or local governments in targeted locations.

Recommendation 6

6.58 The Committee recommends that the Australian Government develop a governance framework to give effect to the new strategies and programs

outlined in recommendations 3, 4 and 5. This should include governance measures that:

a. Expand the membership of the National Feral Cat Taskforce to include experts on agricultural and veterinary issues, including the ethical treatment of animals, and any other matters deemed relevant.

b. Strengthen the remit of the National Feral Cat Taskforce to enable it to lead a process to harmonise existing feral cat legislation and regulation across Australia. In particular, a strengthened Taskforce should:

i. review the effectiveness and consistency of current state and territory feral cat legislation, regulation and management plans;

ii. develop principles for the harmonisation of existing state and territory feral cat-related legislative and regulatory instruments to the best-practice standard; and

iii. develop principles for best practice cat management plans.

c. Establish a mechanism for collaboration with state and territory Environment Ministers and relevant agencies, to improve harmonisation of legislative and regulatory approaches, and best practice principles, in relation to domestic and stray cats.

d. Remove barriers to the full implementation by all jurisdictions of the National Declaration: feral cats as pests.

e. Facilitate collaboration with relevant Commonwealth agencies, scientists and states and territories to consider the most effective feral cat control methods, and provide advice on the broad scale usage of these methods.

f. Ensure that local governments are resourced appropriately to deal with cats, including requiring all local governments to develop and implement domestic cat management plans consistent with relevant state and territory laws.

g. Develop principles for local government animal management staff to manage local cat issues, including easily accessible resources.

List of Abbreviations

APVMA	Australian Pesticides and Veterinary Medicines Authority
AWC	Australian Wildlife Conservancy
CISS	Centre for Invasive Species Solutions
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DAMP	Domestic Animal Management Plan
DAWE	Department of Agriculture, Water and the Environment
EPBC Act	*Environmental Protection, Biodiversity and Conservation Act 1999*
KTP	Key Threatening Processes
PAPP	Para-aminopropiophenone
TAP	Threat Abatement Plan
TNR	Trap, Neuter, Release
TSRH	National Environmental Science Program Threatened Species Recovery Hub
TSSC	Threatened Species Scientific Committee
WABSI	Western Australian Biodiversity Science Institute

1. Introduction

Overview

1.1 The European settlement of Australia brought with it the introduction of a new species to the continent, *Felis Catus* (cats). Since then, domesticated cats have become a loved member of many Australian family homes. Contrastingly, feral cats have become a pervasive harmful aspect of Australia's ecological story, and a significant environmental impact issue, contributing to biological decline (especially for smaller mammals), destroying habitats, and more recently, being declared as pests in most states and territories.

1.2 Both feral and domestic cats are present in large numbers across the nation. Estimates given to the inquiry indicate that there may be approximately 3.77 million pet cats and around 2.8 million feral cats in Australia.

1.3 Cats have been responsible for the rapid and catastrophic loss of wildlife, causing some species to become threatened, endangered and even extinct. Under the Australian Government's Threat Abatement Plan, feral cats are recognised as a potential threat to 74 mammal species and sub-species as well as 40 birds, 21 reptiles and four amphibians. According to estimates, discussed further in Chapter 2, predation by cats is responsible for the loss of 1.6 billion native animals every year, with feral cats responsible for some 1.4 billion of this number. On average a single feral cat in the bush kills about 370 invertebrates, 44 frogs, 225 reptiles, 130 birds and 390 mammals per year. Pet cats collectively kill some 1 million animals per day.

1.4 Efforts have been underway for some time to manage the growth and spread of the cat population. A complex patchwork of laws and regulations sets up shared responsibilities between the Commonwealth, states, territories and local governments. The Australian Government's Threatened

Species Strategy provides an overarching architecture and targets, while the implementation of measures including feral cat culling and domestic cat controls are the primary domain of the states, territories and local government. Other factors contributing to the growth of the cat population in Australia include restrictions on the use of some control methodologies and limited community understanding of cat impacts.

Referral of the inquiry

1.5 Recognising the importance of the problem of the management and control of feral and domestic cats for both governments and communities, the Committee decided to conduct an inquiry and wrote to the Minister for the Environment, the Hon. Sussan Ley MP, proposing terms of reference.

1.6 Following the Minister's agreement, on 18 June 2020, the Committee adopted and commenced an inquiry into the problem of feral and domestic cats in Australia (the inquiry).

Conduct of the inquiry

1.7 The Committee received 202 submissions, 16 supplementary submissions, and held six public hearings in Canberra with the assistance of teleconferencing facilities. The Committee also conducted a site inspection at Mulligans Flat Woodland Sanctuary in Canberra's north, where the Committee was provided with a tour of its feral predator-free fence. Details of submissions received and public hearings can be found in the appendices.

1.8 The Committee is grateful to all the individuals and organisations who contributed to the inquiry.

Structure of this report

1.9 This report is divided into six chapters, including this introduction. Chapter 2 considers the prevalence and impact of feral and domestic cats in Australia. Chapter 3 examines Commonwealth, state and territory legislation, regulation, and cooperation. Chapter 4 looks at feral cat control methods. Chapter 5 discusses domestic cat control, and improved public awareness and education relating to the feral and domestic cat problem. Chapter 6 sets out the Committee's views and recommendations.

2. The prevalence and impact of feral and domestic cats

2.1 This Chapter considers how feral and domestic cats are defined under state and territory legislation, their prevalence across Australia and impact on Australia's biodiversity, habitats and urban environments.

Classifying feral and domestic cats

2.2 All cats belong to the same species, *Felis catus*, however for the purposes of cat management instruments, governments across Australia have adopted different terminology to classify cats, often based on characteristics such as 'ownership' status or the circumstances in which the animal lives or is cared for.[1]

2.3 The Australian Government Department of Agriculture, Water and the Environment (DAWE), advised the Committee that classifications for cats vary widely between jurisdictions, but that for the purposes of its own work administering key environmental legislation and coordinating national-level responses, it uses three definitions to classify cats:

- *feral cats* are those that live and reproduce in the wild (e.g. forests, woodlands, grasslands, deserts) and survive by hunting or scavenging; none of their needs are satisfied intentionally by humans;
- *stray cats* are those found in and around cities, towns and rural properties; they may depend on some resources provided by humans but are not owned; and

[1] See for example: The Western Australian Biodiversity Science Institute, *Submission 135*, p. 4.

- *domestic cats* are those owned by an individual, a household, a business or corporation; most or all of their needs are supplied by their owners.[2]

2.4 DAWE cited research which concluded that these '… categories of cats are artificial and reflect a continuum, and individuals may move from one category to another …'[3]

2.5 Evidence to the inquiry highlighted different legislative definitions used across Australia. Some jurisdictions used three cat classifications in a similar manner to DAWE.[4] Others made distinctions between 'domestic' and 'non-domestic' cats, [5] or made no distinction at all.[6]

Table 2.1 Outline of the terminology used across Commonwealth, state and territory jurisdictions

Jurisdiction	Terminology
Commonwealth	Defines 'feral', 'stray' and 'domestic' cats
Queensland	Does not differentiate by 'feral' or 'stray'
New South Wales	Defines 'cat' as 'an animal of the species Felis catus, whether or not domesticated'
Australian Capital Territory	Groups all cats together as an example of 'domestic' animals
Victoria	Does not explicitly define 'feral' or 'domestic'
Tasmania	Defines 'stray and 'feral' cats
Northern Territory	Defines 'feral animals' but not specifically cats

2 Department of Agriculture, Water and the Environment, *Submission 58*, p. 5.

3 Department of Agriculture, Water and the Environment, *Submission 58*, p. 5. See also: The Western Australian Biodiversity Science Institute, *Submission 135*, p. 4.

4 The Western Australian Biodiversity Science Institute, *Submission 135*, p. 5.

5 The Western Australian Biodiversity Science Institute, *Submission 135*, p. 5.

6 Sutherland Shire Council, *Submission 53*, p. 2.

South Australia	Defines 'cat' as 'an animal of the species *Felis catus*
Western Australia	Does not refer to 'feral', 'domestic' or 'stray' animals except in relation to powers to destroy 'feral' cats

2.6 Inquiry contributors argued that there was a need for clear and consistent legislative definitions for cats across Australia. The Western Australian Biodiversity Science Institute (WABSI) told the Committee that:

> There is a clear need for consistency of terminology nationally in Australia …. To achieve this consistency, there is a need for a balanced, evidence-based and fully inclusive conversation around the pros and cons of chosen terminology, and the implications for management that this choice creates.[7]

2.7 WABSI argues that the '… lack of consistent terminology for these categories causes confusion and disagreement, creating inconsistencies in legislation and challenges with implementing management strategies and enforcing regulations.'[8] Local governments also argued that a clear definition for cats would improve their ability to manage cats within communities.[9]

2.8 Some inquiry participants submitted that the definitions used for classifying cats should be further disaggregated.[10] The Australian Veterinary Association, for example, suggested that any definition of 'stray cats' should include those cats that were 'semi-owned' and 'unowned'.[11] Another submitter, Heather Crawford, made the point that:

> The management of stray cats is currently a grey area in the legislation of various states because of the difficulty in determining whether a stray is actually owned or was ever owned by a person.[12]

2.9 In relation to domestic cats, RSPCA Australia was of the view that:

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7 The Western Australian Biodiversity Science Institute, *Submission 135*, p. 5.

8 The Western Australian Biodiversity Science Institute, *Submission 135*, p. 5.

9 Sutherland Shire Council, *Submission 53*, p. 2; Georges River Council, *Submission 80*, p. 3. See also Heather Crawford, *Submission 162*, p. 3.

10 See for example: BirdLife Australia, *Submission 94*, p. 7.

11 Australian Veterinary Association, *Submission 180*, p. 6.

12 Heather Crawford, *Submission 162*, p. 3.

Cat management strategies should recognise three subcategories of domestic cats using the following definitions:

- Owned – these cats are identified with and cared for by a specific person and are directly depending on humans. They are usually sociable although sociability varies.
- Semi-owned – these cats are fed or provided with other care by people who do not consider they own them. They are of varying sociability with many socialised to humans and may be associated with one or more households.
- Unowned – these cats are indirectly depending on humans with some having casual and temporary interactions with humans. They are of varying sociability, including some who are unsocialised to humans, and may live in groups.[13]

2.10 The RSPCA's proposed definition was supported by a range of inquiry contributors.[14]

The prevalence of feral and domestic cats

2.11 The prevalence of feral and domestic cats in Australia is difficult to accurately determine due to a range of factors, including the availability of prey and climate variability. Research shows that cats are found all over Australia, but cat prevalence varies over time and location. According to the National Environmental Science Program's Threatened Species Recovery Hub (TSRH) '… cats are absent in Australia only from a set of mostly small islands and a network of relatively small mainland exclosures: i.e., cats are present over 99.9% of the Australian land mass.'[15]

2.12 TSRH submitted to the Committee that the total population of feral cats in Australia is about 2.8 million, comprising a population size in natural landscapes of 2.1 million and in modified (or urban) landscapes of about 0.7 million.[16]

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13 RSPCA Australia, *Submission 124*, p. 4.

14 See for example: Sutherland Shire Council, *Submission 53*; Australian Institute of Animal Management, *Submission 63*, p. 1; Georges River Council, *Submission 80*, p. 3; and Campbelltown City Council, *Submission 86*, p 3.

15 National Environmental Science Program Threatened Species Recovery Hub, *Submission 72*, p. 15.

16 National Environmental Science Program Threatened Species Recovery Hub, *Submission 72*, pp. 13-14. Supported by Department of Agriculture, Water and the Environment, *Submission 58*, p. 7.

2.13 While estimates of feral cat prevalence across all states and territories were not readily available, some jurisdictions did provide the Committee with more localised information. The Tasmanian Government submitted to the Committee that:

> The density of feral cat populations varies across the State. A number of published and unpublished reports (~28) on feral cats in Tasmania have estimated density between (0.02 – 68.20 cats/km²) … Generalised trends in the density estimate data suggest a gradient of relatively lower densities in the southern and western wilderness areas (~ 0.02- 0.1 cats/km²) through to high densities in the eastern part of the state (~0.5- 1.5 cats/km²).[17]

2.14 The NSW Government noted that state government surveys 'found that feral cats occur across the entirety of NSW.'[18]

2.15 In terms of the prevalence of domestic cats, the Tasmanian Government submitted to the Committee that based on research:

> Australia has one of the highest rates of pet ownership in the world, and cats are the second most common pets with 29% of households owning a cat (Animal Health Alliance 2013).This equates to 15 in every 100 people in Australia having a cat. In Tasmania, it is estimated that 34% of households own a cat, the highest rate in Australia …[19]

2.16 Animal Medicines Australia told the Committee of its research which found:

> Domestic cats are one of the most popular pets in Australia. Approximately 27% of households have a cat. Overall, there are approximately 3.77 million pet cats. Cat owning households have an average of 1.4 cats each. 43% of households have had a cat at some point. AMA's survey found that 77% of pet cats are microchipped and 89% of pet cats are desexed.[20]

Factors influencing prevalence of feral cats

2.17 According to evidence presented to the inquiry, a range of environmental factors determine the prevalence of feral cats including the availability of prey, climate variability and rainfall.[21]

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17 Tasmanian Government, *Submission 7*, p. 1.

18 National Parks and Wildlife Service (on behalf of NSW Government), *Submission 95*, p. 1.

19 Tasmanian Government, *Submission 7*, p. 1.

20 Animal Medicines Australia, *Submission 122*, p. 2.

21 See for example: National Parks and Wildlife Service (on behalf of NSW Government), *Submission 95*, p. 1; Birdlife Australia, *Submission 94*, p. 4; Professor Sarah Legge, Deputy

2.18 Commenting on the variability of feral cat populations due to climate, Australia's Threatened Species Commissioner, Dr Sally Box told the Committee that:

> When times are lean, you'll have feral cat populations at the lower end …When times are plentiful, when you've got good rainfall in the desert and there's high prey availability, you'll see an increase in feral cat population…[22]

2.19 TSRH similarly stated that:

> Densities [of feral cats] vary in inland Australia with decrease during drought periods and rapid increase (aided by the cat's high potential reproductive output and capability for long-distance movement) after widespread rains…[23]

2.20 Dr Andy Sheppard from the CSIRO told the Committee that:

> … there are many factors that determine the abundance and impacts of feral cats in the landscape, which are pretty well documented … the main ones are the state of the environment, the habitat, the amount of habitat, the prevalence of fires in the landscape—which provide an opportunity for feral cats to forage more openly—but also the availability of other prey such as rabbits in the landscape … [24]

Understanding cat population distributions

2.21 Inquiry contributors told the Committee that a better understanding of the distribution of feral cats in Australia would improve population management strategies.[25]

2.22 Dr Sheppard from CSIRO was of the view that understanding and measuring feral cat impacts and movements, along with those of other feral animals, was vital:

Director, Co-Leader of Research Program on Feral Cat Impacts and Management, Threatened Species Recovery Hub, National Environmental Science Program, *Committee Hansard*, 28 August 2020, p. 22.

22 Dr Sally Box, Assistant Secretary, Office of the Threatened Species Commissioner, Department of Agriculture, Water and the Environment, *Committee Hansard*, 26 August 2020, p. 3.

23 Threatened Species Recovery Hub, *Submission 72*, p. 13

24 Dr Andy Sheppard, Research Director, CSIRO Health and Biosecurity, CSIRO, *Committee Hansard*, 28 August 2020, p. 3.

25 Australian Veterinary Association, *Submission 180*, p. 5 and National Environmental Science Program, Threatened Species Recovery Hub, *Submission 72*, p. 15.

> … as most control programs simply focus on population reduction. Feral cat populations are often sustained by populations of other feral animals, such as rabbits, and it is therefore also vital to understand and utilise these interactions in the design of management programs …[26]

2.23 Dr Tony Buckmaster from the Centre for Invasive Species Solutions (CISS) advised that understanding the prevalence of feral cats would require examination beyond simply cat populations, while effective management strategies should be assessed on measureable outcomes:

> It involves identifying the problem in terms of damage. For native species, rather than the number of cats or the area that cats inhabit, it would be better to look at how many native species are being impacted or, if you're measuring the increase in native species, what level of increase is obtained through cat management…[27]

The impact of feral and domestic cats

2.24 Inquiry contributors impressed upon the Committee that both feral and domestic cats have contributed to significant impacts on native wildlife and their habitats. A major concern was evidence pointing to the significant involvement of cats in the extinction of many Australian mammal species since European settlement.

On native wildlife

2.25 Evidence to the inquiry provided the Committee with an insight into the impact that feral and domestic cats have had on Australia's native wildlife (including threatened species), with many emphasising concerns about the overall decline in native animal populations. Cat predation occurs in a number of ways including through direct predation of individual animals, competitive exclusion, and disease transmission.[28]

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26 Dr Andy Sheppard, Research Director, CSIRO Health and Biosecurity, CSIRO, *Committee Hansard*, 28 August 2020, pp. 1-2.

27 Dr Tony Buckmaster, Research, Development and Extension Manager, Centre for Invasive Species Solutions, *Committee Hansard*, 28 August 2020, pp. 8-9.

28 See for example: Tasmanian Government, *Submission 7*, p. 3; Centre for EcoSystem Science, UNSW, *Submission 88*, p. 5.

2.26 Some inquiry contributors viewed predation by cats as the key threat to Australia's native wildlife.[29] While cats are not the only cause of the decline in native animal populations, the NSW National Parks and Wildlife Service offered the Committee a stark reminder:

> For our mammal fauna, which has suffered the most substantial decline of any faunal group, feral cats and foxes are identified as the greatest threat, along with changed fire regimes.[30]

2.27 The NSW National Parks and Wildlife Service cited research estimating that predation by cats is responsible for the loss of 1.6 billion native animals every year, with feral cats responsible for some 1.4 billion of this figure.[31] The Australian Government's *Threat Abatement Plan for Predation by Feral Cats* advises that feral cats are 'recognised as a potential threat to 74 mammal species and sub-species … 40 birds, 21 reptiles and four amphibians.'[32] Some submissions to the inquiry also provided numerous examples of the impacts on individual species,[33] although it is beyond the scope of this report to examine each of these in detail.

2.28 In further examining the impacts of feral cats on native wildlife, the TSRH estimated that:

> … on average a single feral cat in the bush kills about 370 invertebrates, 44 frogs, 225 reptiles, 130 birds and 390 mammals per year; and the collective toll of Australian animals killed per year by all feral cats (including unowned stray cats, but excluding pet cats) in Australia is ca. 1.1 billion invertebrates, 90 million frogs, 600 million reptiles, 320 million birds and 960 million mammals … [34]

2.29 The CSIRO's Dr Andy Sheppard was blunt in his assessment of the impact of feral cats, stating that:

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29 See for example: Mr Andrew Cox, Chief Executive Officer, Invasive Species Council, *Committee Hansard*, 28 August 2020, p. 17.

30 National Parks and Wildlife Service (on behalf of NSW Government), *Submission 95*, p. 2.

31 National Parks and Wildlife Service (on behalf of NSW Government), *Submission 95*, p. 1. See also: Australian Mammal Society, *Submission 8*, p. 2.

32 Department of the Environment, *Threat Abatement Plan for Predation by Feral Cats*, p. 7.

33 See for example: Birdlife Australia, *Submission 94*, pp. 4-7; Tasmanian Government, *Submission 7*, p. 3; and Ecological Society of Australia, *Submission 48*, p. 4.

34 National Environmental Science Program Threatened Species Recovery Hub, *Submission 72*, p. 19.

> … feral cats are increasingly the final nail in the coffin of some endangered vertebrate species rather than the original driver of decline. … it is widely accepted that controlling feral cats nonetheless will provide significant benefits to Australian threatened and endangered species.[35]

2.30 In terms of pet cats, TSRH cited research concluding that '… collectively pet cats in Australia kill 390 million animals per year (i.e. more than one million animals per day) … '.[36]

2.31 According to the Australian Veterinary Association's assessment of the impacts of stray cats:

> It is likely that the abundance of native and non-native wildlife, as well as the relative proportions of different species in any given area, are altered by the presence of cats. Cats are opportunistic hunters preying upon species in proportion to their availability.[37]

Extinctions

2.32 Evidence to the Committee presented a disturbing picture of the involvement of cats in the extinction of native mammals since the European settlement of Australia.[38] While the figures vary slightly, inquiry contributors provided evidence that largely corroborated the view of the TSRH, which concluded that:

> … cats were a major cause of the extinctions of 25 of the 34 Australian mammal species lost since 1788, and a likely contributing factor for a further three of those species; and a likely contributing factor to three of the nine extinctions of Australian bird species since 1788.[39]

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35 Dr Andy Sheppard, Research Director, CSIRO Health and Biosecurity, CSIRO, *Committee Hansard*, 28 August 2020, p. 1.

36 National Environmental Science Program Threatened Species Recovery Hub, *Submission 72*, p. 20.

37 Australian Veterinary Association, *Submission 180*, p. 7.

38 Australian Mammal Society, *Submission 8*, p. 1. See also: National Farmers Federation, *Submission 140*, p. 6 and Ecological Society of Australia, *Submission 48*, p. 4.

39 National Environmental Science Program Threatened Species Recovery Hub, *Submission 72*, p. 16. See also Australian Veterinary Association, S*ubmission 180*, p. 6; National Parks and Wildlife Service (on behalf of NSW Government), *Submission 95*, p. 1.

On habitats

2.33 The impact of feral and domestic cats on the habitats of Australia's native wildlife and threatened species may be more difficult to quantify than estimates of individual animals killed by cat predation.

2.34 Professor Christopher Dickman told the Committee about the importance of habitats:

> Habitat is crucial. Species that have survived the impacts of cats and other predators do occur in structurally complex areas. They occur in areas like rock pile habitats, such as the MacDonnell Ranges. They occur in areas where there is very dense ground level vegetation. Until there were fires and development in parts of the southwest of Western Australia things like the dibbler had small but fairly secure populations. When that habitat was removed those species disappeared as the predators began to move in.[40]

2.35 Evidence to the Committee made it clear that habitat destruction through human activity and natural disasters such as bushfires contributed to species decline and also improved the ability of cats to hunt native wildlife.

2.36 The inquiry was told that human-induced factors had contributed to the impact on habitats making it easier for cats to hunt. The Cat Protection Society of NSW observed that the '… environment (and its animals) are significantly threatened by habitat loss, land clearing, climate change and extreme weather events including bushfire and drought.'[41]

2.37 Other factors cited in evidence included urban housing development, logging, mining,[42] and livestock grazing.[43] The Australian Mammal Society's submission to the inquiry advised that:

> A major reason why cats are able to suppress their mammal prey is that native mammals are exposed by habitat degradation, particularly intensified fire regimes and inappropriate grazing that continually remove ground cover, understorey plants and fallen timber that mammals use for shelter.[44]

2.38 Some inquiry contributors sought to provide the Committee with an understanding of how the damage caused to Australian landscapes during

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40 Professor Christopher Dickman, *Committee Hansard*, 9 September 2020, p. 31.

41 Cat Protection Society of NSW, *Submission 28*, p. 1. See also: Jan Kendall, *Submission 25*, p. 3.

42 Mr Charles Davis, *Submission 32*, p. 1.

43 Society for Conservation Biology Oceania Section, *Submission 41*, p. 7.

44 Australian Mammal Society, *Submission 8*, p. 3.

regular summer bushfires made it easier for feral cats to hunt, not least because it made it harder for native fauna to hide.

2.39 The TSRH concluded that in relation to bushfires:

> Cats occur at higher density and/or hunt more efficiently in recently burnt areas, in fragmented landscapes, and in heavily grazed landscapes, mostly because these factors lead to reduction in ground cover and hence shelter for many native animals … For example, it is likely that in the aftermath of the 2019-2020 wildfires, any surviving wildlife in burnt areas will be much more susceptible to cat predation than they were before the fires … [45]

2.40 Dr Tony Buckmaster from the CISS told the Committee that:

> … following fires, the native species are more at risk from predation by feral cats. They have less food available to them. They become less fit. They have less shelter so they can't hide as well. And feral cats are incredible predators.[46]

2.41 Threatened Species Commissioner, Dr Box told the Committee that:

> … while feral cats also perish in fire alongside the native species, they're much more effective hunters in a burnt landscape because the native species have lost that protection. Some of the things that we can do immediately after a fire—and this is being supported through the government's investment in bushfire recovery—is target feral cat management around the unburnt patches on the edges of the burnt areas to try to protect the native species that are left.[47]

On urban environments

2.42 Australia's urban environments vary widely and include natural features such as 'creeks, waterways, rivers and streams, reserves, and remnant native vegetation on public and private residential land'[48] and also modified features such as residential and industrial developments. These

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45 National Environmental Science Program Threatened Species Recovery Hub, *Submission 72*, pp. 17-18. See also Professor Christopher Dickman, *Committee Hansard*, 9 September 2020, p. 30.

46 Dr Tony Buckmaster, Research, Development and Extension Manager, Centre for Invasive Species Solutions, *Committee Hansard*, 28 August 2020, p. 11.

47 Dr Sally Box, Assistant Secretary, Office of the Threatened Species Commissioner, Department of Agriculture, Water and the Environment, *Committee Hansard*, 26 August 2020, p. 6.

48 Save Tootgarook Swamp, *Submission 64*, p. 5.

environments are often home to large numbers of wildlife, particularly birds, which may fall prey to feral and domestic cats.[49]

2.43 According to BirdLife Australia the predation rate of '… roaming pet cats per square kilometre in residential areas is 28–52 times larger than predation rates by feral cats in natural environments … '.[50] BirdLife Australia's submission to the inquiry cites examples of research that conclude that pet cats have been complicit in the decline of local populations of birds in Victoria, some 47 bird species in urban Canberra and another 13 bird species in suburban Perth.[51]

2.44 BirdLife Australia advises of the importance of urban environments for bird populations:

> Urban landscapes are used by and important for 634 bird species in Australia, from our most common birds through to 71 state and/or federally listed threatened species … Despite pressures from cats, our urban spaces can be important refuges for birds, particularly those impacted by recent fire and drought events … Appropriate management of threats such as cats is required for these areas to remain a viable refuge for our native fauna.[52]

Pathogens and disease control

2.45 Cats can carry and spread a variety of pathogens including those that cause toxoplasmosis, cryptosporidiosis, giardiasis, bartonellosis (cat scratch disease), salmonellosis, and visceral larval migrans.[53] Evidence to the Committee focussed mainly on the impact that the cat-borne disease toxoplasmosis may have on human health, wildlife and agricultural food production. [54]

Toxoplasmosis

2.46 Some inquiry contributors focussed on toxoplasmosis (*T. gondii*), which is caused by a protozoan parasite of which cats are the only definitive host.

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49 Save Tootgarook Swamp, *Submission 64*, p. 5.

50 BirdLife Australia, *Submission 94*, p. 5.

51 BirdLife Australia, *Submission 94*, p. 5.

52 BirdLife Australia, *Submission 94*, p. 5.

53 Animal Management in Rural and Remote Indigenous Communities, *Submission 90*, p. 3.

54 See for example: Dr Michael Calver, *Submission 12*, p. 3; National Environmental Science Program Threatened Species Recovery Hub, *Submission 72*, p. 40.

2.47 Dr Jasmin Hufschmid informed the Committee that:

> Toxoplasmosis is caused by the parasite Toxoplasma gondii and can infect any mammal, including humans, or birds (Dubey 2010). Infection occurs after ingestion of either an infective oocyst (=parasite egg), which can only be shed by a cat, from the environment, or through ingestion of muscle tissue including the cyst stage of the parasite …[55]

2.48 According to TSRH, 'this parasite would disappear from Australia in the absence of cats (or other felines)'.[56]

2.49 Some inquiry contributors discussed the impacts that toxoplasmosis can have on human health. According to the Australian Veterinary Association:

> Toxoplasmosis is a public health problem due to the presence of bradyzoites (tissue cysts) in meat … In Australia this most often affects pork, sheep and chicken meat. Toxoplasmosis, although rare, can result in neurological damage in immunocompromised people and abortion or stillbirth when immunologically naïve women are exposed for the first-time during pregnancy.[57]

2.50 Further, the Australian Veterinary Association stated that *T. gondii*:

> … infects about 25% of the world's human population … Human infection occurs via ingestion of oocysts directly from the environment (for example, on unwashed vegetables) or improperly cooked meat. Cats are typically infected by Toxoplasma in their first year of life and shed oocysts for 2-3 weeks before becoming immune.[58]

2.51 Animal Management in Rural and Remote Indigenous Communities told the Committee that given the immunocompromised health status of many of Australia's Aboriginal and Torres Strait Islander community residents, zoonotic conditions, such as toxoplasmosis, are of significant concern, potentially contributing to the high burdens of illness experienced by many residents.[59]

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55 Dr Jasmin Hufschmid, *Submission 83*, p. 2.

56 National Environmental Science Program Threatened Species Recovery Hub, *Submission 72*, p. 19.

57 Australian Veterinary Association, *Submission 180*, p. 7. See also Dr Jasmin Hufschmid, *Submission 83*, p. 2.

58 Australian Veterinary Association, *Submission 180*, p. 7. See also Australian Pet Welfare Foundation, *Submission 142*, p. 9; National Farmers Federation, *Submission 140*, p. 6.

59 Animal Management in Rural and Remote Indigenous Communities, *Submission 90*, p. 3.

2.52 In relation to the impacts of toxoplasmosis on agricultural livestock and the farming industry, Australian Pet Welfare Foundation submitted to the Committee that in Australia '16% of lambs and 32% of sheep have evidence of prior infection with Toxoplasma gondii … '.[60]

2.53 WoolProducers Australia elaborated on the impact that toxoplasmosis has on sheep, advising the Committee that:

> Ewes infected during early pregnancy will suffer resorption of the foetus, while ewes infected during late gestation will abort the foetus if perinatal death has not occurred. If the lamb is born alive, it may be weak or it could be affected by complications caused from infection with the parasite. There is no treatment for toxoplasmosis in sheep. Once infected, ewes become immune.[61]

2.54 The Australian Veterinary Association submitted to the Committee that:

> *Toxoplasma gondii* infections in farm cats may result in environmental contamination and contribute to toxoplasmosis in livestock, particularly sheep. Cats predate rodents and produce litters of immunologically naïve kittens, which become infected and shed oocysts around areas where the sheep are corralled for husbandry procedures e.g. shearing sheds and yards.[62]

2.55 The Committee was apprised of evidence that pointed to significant financial losses in the agricultural industry as a result of toxoplasmosis in livestock.[63]

2.56 Inquiry submitters also considered the impacts of toxoplasmosis on the health of Australian wildlife. TSRH advised that:

> Toxoplasmosis infection is now known to occur in many Australian bird and mammal species, with many consequences including spontaneous abortions, changed and aberrant behaviours and increased mortality.[64]

2.57 The Tasmanian Government advised the Committee that toxoplasmosis was a reported cause of death for Tasmanian marsupials including the eastern

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60 Australian Pet Welfare Foundation, *Submission 142*, p. 9.

61 WoolProducers Australia, *Submission 55*, p. 3. See also Sheep Producers Australia, *Submission 139*, p. 2.

62 Australian Veterinary Association, *Submission 180*, p. 7.

63 See for example: National Farmers Federation, *Submission 140*, p. 6; Australian Pet Welfare Foundation, *Submission 142*, pp. 9-10.

64 National Environmental Science Program Threatened Species Recovery Hub, *Submission 72*, p. 19.

barred bandicoot, pademelon, Bennett's wallaby and eastern quoll.[65] Predation by cats was also an issue for seabirds and Little Penguin colonies in Tasmania.[66]

2.58 According to many inquiry contributors, the impacts of *T. gondii* are poorly understood and there remains significant scope for more research to understand how the disease impacts native wildlife, farm animals and humans.[67]

Improving the survival of Australia's native animals and their habitats

2.59 While the Committee was presented with a grim view about the future of Australia's native wildlife, there remained hope that these animals could learn to adapt to the threat of cat predation in some circumstances. Professor Woinarski told the Committee that:

> … many of these species may eventually be able to tolerate or live with cat predation, but that cat predation is compounding the impacts of many other threats, such as fire, habitat loss, rabbits and a whole range of other factors. Native species may be able to survive with cats, but the combined impacts of cats and those other factors is sufficient to continue to drive decline.[68]

2.60 As to the question of 'how' this could be done, Professor Woinarski suggested that:

> … we can prevent extinction of the most cat-susceptible native mammal species through the use of predator-proof exclosure fencing and through the use of translocation of those species to islands. These mammal species that have proven most susceptible to cats—and foxes as well— can thrive in the absence of foxes and cats. So there is hope. It is not entirely a gloomy picture. We can remove these mammals from predation in specified circumstances, and those mammals will then recover.[69]

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65 Tasmanian Government, *Submission 7*, p. 3.

66 Tasmanian Government, *Submission 7*, pp. 5-6.

67 See for example: Dr Jacquie, Executive Director and Chief Scientist, *Committee Hansard*, 9 September 2020, p. 15, Wildlife Health Australia, *Submission 36*, p. 2; National Environmental Science Program Threatened Species Recovery Hub, *Submission 72*, p. 19.

68 Professor John Woinarski, Deputy Director, Threatened Species Recovery Hub, National Environmental Science Program, *Committee Hansard*, 28 August 2020, p. 22.

69 Professor John Woinarski, Deputy Director, Threatened Species Recovery Hub, National Environmental Science Program, *Committee Hansard*, 28 August 2020, p. 23.

2.61 Dr Box provided the Committee with an example, stating that through:

> … the strategic use of fire and other indirect tools. … the brush-tailed rabbit rat on Melville Island, as a threatened species, appears to be able to use parts of the island where the shrub density is high and feral cats are rarely detected … and reduce the efficacy of feral cat hunting.[70]

2.62 The Society for Conservation Biology Oceania Section stated that:

> … artificial refuges are one method currently being trialled to provide small mammals with movement pathways and protection from cats and foxes in fire-affected areas, in an attempt to reduce the risk of predation and improve population persistence … The artificial refuges are wire mesh tunnels that allow small mammals to enter and exit from any point, whilst physically excluding cats and foxes …[71]

2.63 Inquiry contributors supported the need to conduct further research into the impact and prevalence of cats on native wildlife and habitats.[72]

Research on prevalence, impact and control

2.64 Throughout the inquiry, the Committee heard examples of innovative and world-leading research projects.

2.65 Dr Sarah Legge from the TRSH told the Committee about its work:

> In light of the broad-scale impacts of cats on threatened species, our hub included a major research program on the ecology impacts and management of cats. Our research team has provided the best assessment of the number of feral cats in Australia and the distribution. We've catalogued the impacts of cats in detail, including the extinction they've already caused to our mammal fauna and their ongoing predation toll on mammals, birds, reptiles, frogs and invertebrates. We've revealed underappreciated components of cat impacts, including the very high predation rates of pet cats on native animals and the fact that cat-dependent diseases like toxoplasmosis and macrocytosis, which affect people and livestock and cost Australia over $6 billion each year. We've documented how the pressure from cats is exacerbated by other threats like

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70 Dr Sally Box, Assistant Secretary, Office of the Threatened Species Commissioner, Department of Agriculture, Water and the Environment, *Committee Hansard*, 26 August 2020, p. 6.

71 Society for Conservation Biology Oceania Section, *Submission 41*, p. 7.

72 See for example: Australian Veterinary Association, *Submission 180*, p. 6.

> rabbits overgrazing and extensive severe fire, showing it's essential that we manage cats holistically with the management of these other threats.[73]

2.66 The CISS is equally involved in leading and conducting innovative Australian research:

> CISS plays a leadership and enabling role in relevant National Biosecurity System collaborative RD&E initiatives and develops new knowledge, tools and practices to continually improve best practice invasive species management. We currently facilitate 40 collaborative projects involving environmental, community and agriculturally based invasive species issues across the entire invasion curve. CISS is maintaining the knowledge and innovation momentum gained through the national collaborative research pursued through the Invasive Animals Cooperative Research Centre and its participants.[74]

2.67 The Committee also heard that there is a need for further research in a number of areas. Dr Andy Sheppard of the CSIRO told the Committee that:

> … we see the need for better understanding of impacts, benefits and the efficacy of control in different management and environmental settings linked to monitoring; better understanding of feral cat ecology and population genetics to support future management strategies, including potential genetech based approaches; better understanding of the drivers of cat abundance and developing our ability to track them to inform management strategies; and integration of the human dimension around cats into management, both Indigenous and non-Indigenous.[75]

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73 Professor Sarah Legge, Deputy Director, Co-Leader of Research Program on Feral Cat Impacts and Management, Threatened Species Recovery Hub, National Environmental Science Program, *Committee Hansard*, 28 August 2020, p. 20.

74 Centre for Invasive Species Solutions, *Submission 120*, p. 1.

75 Dr Andy Sheppard, Research Director, CSIRO Health and Biosecurity, CSIRO, *Committee Hansard*, 28 August 2020, p. 2.

3. Commonwealth, state and territory legislation, regulation and cooperation

Commonwealth legislative and regulatory approaches to feral cats

3.1 The Australian Government's approach to feral cats focusses on its legislative responsibility for pests, threatened species and habitats in matters of national environmental significance, and on Commonwealth land. This Chapter considers the levers available to the Australian Government in discharging this role, including legislative and policy frameworks to protect the environment and biodiversity, along with its role in bringing a more coordinated focus to feral cat management. This Chapter also considers the role of state, territory and local governments across Australia, as the primary custodians of legislative responses and regulatory actions to manage cats within their jurisdictions.

Environmental Protection, Biodiversity and Conservation Act 1999

3.2 The *Environmental Protection, Biodiversity and Conservation Act 1999* (EPBC Act) is the Australian Government's principal environmental legislation. The Act is administered by the Minister for the Environment through the Department of Agriculture, Water and the Environment (DAWE).[1]

[1] Department of the Prime Minister and Cabinet, 'Administrative Arrangements Order made on 5 December 2019 with effect from 1 February 2020' https://www.pmc.gov.au/resource-

3.3 According to DAWE, the EPBC Act:

> … enables the Australian Government to join with the states and territories in providing a truly national scheme of environment and heritage protection and biodiversity conservation. The EPBC Act focuses Australian Government interests on the protection of matters of national environmental significance, with the states and territories having responsibility for matters of state and local significance.[2]

3.4 In its submission to the inquiry, DAWE advised that some aspects of the EPBC Act are relevant to the Committee's inquiry. In particular the EPBC Act provides for the identification and listing of key threatening processes, and recognises the impact of predation by feral cats on threatened species and ecological communities.[3] Key provisions within the EPBC Act provide the basis for feral cats to be:

- listed as a Key Threatening Process;
- identified for action in Conservation Advices and Recovery Plans for listed Threatened Species and Ecological Communities;
- identified during environmental assessments of actions that may impact on Matters of National Environmental Significance or as part of an offset strategy; and
- taken into consideration when assessing applications to amend the List of Specimens Suitable for Live Import.[4]

3.5 The EPBC Act identifies Key Threatening Processes (KTPs) impacting on listed threatened species and ecological communities, or that may cause species or ecological communities to become listed. The EPBC Act provides for the Minister to establish a list of KTPs which include impacts from invasive species.

Threat Abatement Plan for predation by feral cats (2015)

3.6 Threat Abatement Plans (TAP) provide for the actions necessary to reduce the impact of a listed KTP on native species and ecological communities.

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centre/government/aao-made-5-december-2019-effect-1-february-2020, viewed 6 November 2020.

2 Department of Agriculture, Water and the Environment, 'About the EPBC Act', https://www.environment.gov.au/epbc/about, viewed 6 November 2020.

3 Department of Agriculture, Water and the Environment, *Submission 58*, p. 2.

4 Department of Agriculture, Water and the Environment, *Submission 58*, pp. 10-11.

Implementing a TAP should assist the long term survival of the respective native species or ecological community.[5]

3.7 The EPBC Act authorises the Minister to determine the need for TAP for a KTP if the plan is a feasible, effective and efficient way to abate the process. There has been a TAP for Predation by Feral Cats in force under the EPBC Act since 2000, with the most recent iteration released in 2015.[6]

3.8 In developing and implementing TAPs, DAWE works in collaboration with other governments, natural resource managers and scientific experts. The Department submitted to the inquiry that:

> Threat Abatement Plans are viewed by stakeholders as useful in providing a framework for shared implementation of threat abatement actions across jurisdictions, NGOs and local groups, and provide clear direction for research at a national level. They allow groups to leverage funding and resources because the Key Threatening Processes are nationally recognised.[7]

3.9 DAWE explained to the Committee that the purpose of the TAP for predation by feral cats was to establish:

> … a national framework to guide and coordinate Australia's response to the impacts of feral cats on biodiversity. It identifies the research, management and other actions needed to ensure the long-term survival of native species and ecological communities affected by predation by feral cats. Successful implementation of the Threat Abatement Plan depends on a high level of cooperation between landholders, non-government organisation, community groups, individual volunteers, local governments, state and territory conservation and pest management and research agencies and Australian Government agencies.[8]

3.10 As stated in Chapter 2, the TAP for predation by feral cats recognises that feral cats are a potential threat to 74 mammal species and sub-species, 40

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5 Department of Agriculture, Water and the Environment, 'Threat abatement plans', https://www.environment.gov.au/biodiversity/threatened/threat-abatement-plans, viewed 16 November 2020.

6 Department of Agriculture, Water and the Environment, *Submission 58*, p. 11. Predation by feral cats was also a feature of the first and now superseded list under the former *Endangered Species Protection Act 1992* (Cth).

7 Department of Agriculture, Water and the Environment, *Submission 58*, p. 11.

8 Department of Agriculture, Water and the Environment, *Submission 58*, p. 5.

birds, 21 reptiles and four amphibians.[9] The TAP outlines four objectives to manage the threat of feral cats:

1. Effectively control feral cats in different landscapes;

2. Improve effectiveness of existing control options for feral cats;

3. Develop or maintain alternative strategies for threatened species recovery;

4. Increase public support for feral cat management and promote responsible cat ownership.[10]

3.11 According to the TAP, each 'objective is accompanied by a set of actions, which, when implemented, will help to achieve the goal of the plan. Performance indicators have been established for each objective.'[11] DAWE advised that actioning the TAP:

> … requires operational planning. Regional natural resource management plans and site-based plans generally provide the best scale and context for developing operational plans to manage invasive species. They allow primary production and environmental considerations to be jointly addressed and allow management to be integrated across the local priority vertebrate pests within the scope of other natural resource management priorities.[12]

3.12 The TAP states that it 'may be difficult to assess directly the effectiveness of the plan in abating the impacts of feral cats on Australia's biodiversity' because:

> … feral cat management is only an element of a complete recovery plan so being able to accurately assess impact of feral cat control may be difficult. Individual feral cat control programs with comprehensive monitoring may be able to see a recovery in the threatened species populations.[13]

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9 Australian Government, Department of the Environment (2015) *Threat Abatement Plan for Predation by Feral Cats*, p. 7.

10 Australian Government, Department of the Environment (2015) *Threat Abatement Plan for Predation by Feral Cats*, p. 10.

11 Australian Government, Department of the Environment (2015) *Threat Abatement Plan for Predation by Feral Cats*, p. 10.

12 Department of Agriculture, Water and the Environment, *Submission 58*, p. 11.

13 Australian Government, Department of the Environment (2015) *Threat Abatement Plan for Predation by Feral Cats*, p. 28.

Concerns with the Threat Abatement Plan

3.13 Inquiry stakeholders raised several concerns about the current TAP. The Threatened Species Recovery Hub (TSRH) commented that the EPBC Act imposes little obligation to implement actions outlined in TAPs (other than on Commonwealth land).[14]

3.14 Suggestions for improvements to future iterations of the TAP included:

- an obligation to implement or resource actions specified in TAPs;[15]
- the development of subsidiary abatement plans by each state and territory specifying intended actions, coupled with action at the local level;[16]
- requiring mandatory monitoring of threatened species and key threatening process management;[17]
- targets for eradicating cats from, and improving the biosecurity of islands; [18]
- strategically expanding the network of mainland fenced areas;[19]
- developing landscape-scale methodologies to limit cat impacts;[20] and
- intensive management of cats through trapping, shooting and other options available at locations that have vulnerable populations of native species.[21]

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14 National Environmental Science Program Threatened Species Recovery Hub, *Submission 72*, p. 22. See also Australian Veterinary Association, *Submission 180*, p. 7.

15 National Environmental Science Program Threatened Species Recovery Hub, *Submission 72*, p. 22. See also: Professor Sarah Legge, Deputy Director, Co-Leader of Research Program on Feral Cat Impacts and Management, Threatened Species Recovery Hub, National Environmental Science Program, *Committee Hansard*, 28 August 2020, p. 20.

16 Invasive Species Council, *Submission 121*, p. 7.

17 Ecological Society of Australia, *Submission 48*, p. 9.

18 See for example: Professor Sarah Legge, Deputy Director, Co-Leader of Research Program on Feral Cat Impacts and Management, Threatened Species Recovery Hub, National Environmental Science Program, *Committee Hansard*, 28 August 2020, p. 23.

19 See for example: Professor Sarah Legge, Deputy Director, Co-Leader of Research Program on Feral Cat Impacts and Management, Threatened Species Recovery Hub, National Environmental Science Program, *Committee Hansard*, 28 August 2020, p. 23.

20 See for example: Professor Sarah Legge, Deputy Director, Co-Leader of Research Program on Feral Cat Impacts and Management, Threatened Species Recovery Hub, National Environmental Science Program, *Committee Hansard*, 28 August 2020, p. 23.

21 See for example: Professor Sarah Legge, Deputy Director, Co-Leader of Research Program on Feral Cat Impacts and Management, Threatened Species Recovery Hub, National Environmental Science Program, *Committee Hansard*, 28 August 2020, p. 23; Mr Kyle Grant, *Submission 13*, p. 4.

3.15 Methods for the control of feral cats are discussed further in Chapter 4.

Recovery Plans

3.16 According to DAWE, the listing of threatened species and ecological communities under the EPBC Act requires the development of Conservation Advice and possibly also a Recovery Plan, if determined by the Minister. A Conservation Advice provides 'guidance on immediate recovery and threat abatement activities that can be undertaken'.[22]

3.17 On recovery plans, DAWE advised that:

> Recovery Plans set out the research and management actions necessary to stop the decline of, and support the recovery of, listed threatened species or threatened ecological communities. The aim of a recovery plan is to maximise the long-term survival in the wild of a threatened species or ecological community. Recovery Plans state what must be done to protect and restore important populations of threatened species and habitat, as well as how to manage and reduce threatening processes.[23]

Concerns with recovery plans

3.18 With respect to recovery plans, inquiry stakeholders commented that, while feral cat management is seen as a priority for those threatened species that do have recovery plans; the EPBC Act provides no obligation to implement or fund the actions within recovery plans. The TSRH further advised that most listed species either did not have a recovery plan, or if one existed, there was no obligation to implement it.[24]

3.19 The Committee raised its concern about the lack of operational recovery plans with the Threatened Species Commissioner, noting that only 40 per cent of threatened species have recovery plans. Dr Sally Box, Australia's Threatened Species Commissioner, told the Committee that:

> We've got 1,800 threatened species on our list. I think the Threatened Species Strategy has raised the profile of the issue with the community. While we haven't hit all of our targets, I think good progress has been made against many of them and it has really focused our efforts. We need to continue on this journey. We need to continue to set outcomes and base targets for our

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22 Department of Agriculture, Water and the Environment, *Submission 58*, p. 10

23 Department of Agriculture, Water and the Environment, *Submission 58*, pp. 10-11.

24 National Environmental Science Program Threatened Species Recovery Hub, *Submission 72*, p. 22.

> threatened species and work towards them. That's going to require new research. It's going to require investment in on-ground action. It obviously requires an effective legislative framework to underpin it.[25]

Threatened Species Scientific Committee

3.20 The EPBC Act establishes a Threatened Species Scientific Committee (TSSC). The key functions of the TSSC include advising the Minister regarding:

- the amendment and updating of lists for threatened species, threatened ecological communities and key threatening processes;
- making and adopting of recovery plans and threat abatement plans;
- approving conservation advices; and
- other matters relating to the conservation of threatened native flora and fauna at the Minister's request.[26]

3.21 According to the DAWE website, the TSSC:

> … plays a critical role in the Australian Government's protection of native species and ecological communities, and management of key threatening processes, by providing independent scientific advice to the Minister for the Environment.[27]

3.22 The TSSC's membership includes experts with significant expertise in flora and fauna conservation and ecology. In discharging its functions, the Committee receives nominations for listings to be assessed. The public can comment on the assessments being undertaken and expert groups may be invited to undertake assessments. The Committee's advice and determinations are published.[28]

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25 Dr Sally Box, Assistant Secretary, Office of the Threatened Species Commissioner, Department of Agriculture, Water and the Environment, *Committee Hansard*, 26 August 2020, p. 7.

26 Department of Agriculture, Water and the Environment (DAWE), 'Threatened Species Scientific Committee' https://www.environment.gov.au/biodiversity/threatened/tssc, viewed 4 November 2020.

27 Department of Agriculture, Water and the Environment (DAWE), 'Threatened Species Scientific Committee' https://www.environment.gov.au/biodiversity/threatened/tssc, viewed 4 November 2020.

28 Department of Agriculture, Water and the Environment (DAWE), 'Threatened Species Scientific Committee' https://www.environment.gov.au/biodiversity/threatened/tssc, viewed 4 November 2020.

Independent review of the EPBC Act 1999 (2020)

3.23 The EBPC Act requires a review to be undertaken every ten years to examine the operation of the EPBC Act, and the extent to which its objects have been met.[29] At the time of this inquiry, the second independent review of the Act was being conducted by Professor Graeme Samuel AC. While the terms of reference for the independent review are quite broad, some aspects were relevant to the Committee's inquiry.

3.24 Mr Andrew Cox of the Invasive Species Council told the Committee that he was keen to see the independent review consider and recommend further improvements to the EPBC Act to better manage the threat of feral cats including:

- further advances around how major threats, like feral cat predation, should be addressed;[30] and
- delivery of a more effective threat abatement planning and recovery system.[31]

3.25 Professor Samuel released an interim report in July 2020.[32] The interim report made observations, including that:

- Coordinated national action to address key threats—such as feral animals—are ad hoc, rather than a key national priority.[33]
- Strategic national plans should be developed for 'big-ticket', nationally pervasive issues such as the management of feral animals … [and] should guide the national response and enable action and investment by all parties to be effectively targeted …[34]

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29 Independent review of the EPBC Act, 'About the review', https://epbcactreview.environment.gov.au/about-review, viewed 1 December 2020.

30 Mr Andrew Cox, Chief Executive Office, Invasive Species Council, *Committee Hansard*, 28 August 2020, p. 15.

31 Mr Andrew Cox, Chief Executive Office, Invasive Species Council, *Committee Hansard*, 28 August 2020, p. 15.

32 Independent review of the EPBC Act, 'Media statement: Professor Graeme Samuel AC releases Interim Report', *Media Release*, 20 July 2020.

33 Professor Graeme Samuel AC, Independent review of the EPBC Act, *Interim Report (June 2020)*, p. 3.

34 Professor Graeme Samuel AC, Independent review of the EPBC Act, *Interim Report (June 2020)*, p. 5.

- The listing of key threatening processes and the development and implementation of threat abatement plans 'are not achieving their intent and many threats in Australia are worsening'.[35]

3.26 The final report for the independent review is due in late 2020.

Threatened Species Commissioner

3.27 Dr Sally Box, Australia's second Threatened Species Commissioner, has been in her role since December 2017. The Commissioner brings a national focus to conservation efforts and works to address the growing number of native flora and fauna in Australia facing extinction. The Commissioner works collaboratively with the national Threatened Species Scientific Committee and the community, including the non-profit sector, industry, scientists and all levels of government. The role includes building on and initiating new initiatives and strategic approaches to threatened species conservation.[36]

3.28 The Commissioner's role complements the government's responsibilities for threatened species protection and recovery under the EBPC Act by having oversight of the development, implementation and reporting of threatened species recovery programs.[37]

Threatened Species Strategy

3.29 The Threatened Species Strategy (2015) sets out a road map, and highlights an approach of science, action and partnership to be used to achieve a long-term goal of reversing species declines and supporting species recovery. The Strategy sets ambitious targets for tackling the impacts of feral cats such as the eradication of feral cats from five islands; establishing 10 feral cat-free mainland exclosures; 12 million hectares of feral cat management; and two million cats culled by 2020.[38]

3.30 The Threatened Species Commissioner publishes an annual report on progress made under the Strategy. The most recent report, covering the

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35 Professor Graeme Samuel AC, Independent review of the EPBC Act, *Interim Report (June 2020)*, p. 22.

36 Department of Agriculture, Water and the Environment, 'Commissioner's role' https://www.environment.gov.au/biodiversity/threatened/commissioner/role, viewed 2 December 2020.

37 Department of Agriculture, Water and the Environment, 'Commissioner's role' https://www.environment.gov.au/biodiversity/threatened/commissioner/role, viewed 2 December 2020.

38 Department of Agriculture, Water and the Environment, *Submission 58*, p. 14.

period from mid-2018 to mid-2019, identified a number of key successes under the Strategy. These included restoration of some threatened flora and fauna, and progress in establishing new predator-free fenced areas.

3.31 In June 2019, Newhaven Wildlife Sanctuary, in Central Australia, was declared free of all feral predators, including feral cats, making it the largest feral predator-free area in Australia. [39]

Concerns with the Threatened Species Strategy

3.32 Some inquiry participants saw the Strategy as a welcome development; [40] others were interested in establishing whether its target to cull two million feral cats by 2020 was too ambitious or even appropriate.[41] Dr Box explained that in developing the initial target, it was estimated that there:

> … were close to 18 to 20 million cats in Australia. The research that's been undertaken since then has revealed that the number of cats … isn't quite as high as we initially thought. There's a sense that the targets were ambitious. There's been some learning that's happened over the course of the implementation of the strategy which made us realise just how challenging some of those targets are …[42]

3.33 Dr Box acknowledged that while the target was ambitious, it had brought 'public attention to the scale of the issue that feral cats pose to native fauna.'[43] Dr Box was clear that achieving the targets within the Strategy was not simply a Commonwealth responsibility, noting that there existed a 'shared responsibility across Commonwealth and state and territory

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39 Department of Agriculture, Water and the Environment, 'Threatened Species Strategy - Year Four Progress Report', https://www.environment.gov.au/biodiversity/threatened/publications/threatened-species-strategy-year-four-progress-report, viewed 2 December 2020.

40 See for example: Mr Andrew Cox, Chief Executive Office, Invasive Species Council, *Committee Hansard*, 28 August 2020, p. 19.

41 See for example: School of Biological sciences, Monash University, *Submission 49*, pp. 1-2; Animal Justice Party, *Submission 76*, p. 8.

42 Dr Sally Box, Assistant Secretary, Office of the Threatened Species Commissioner, Department of Agriculture, Water and the Environment, *Committee Hansard*, 26 August 2020, p. 2. See also Animal Liberation, *Submission 171*, p. 18.

43 Dr Sally Box, Assistant Secretary, Office of the Threatened Species Commissioner, Department of Agriculture, Water and the Environment, *Committee Hansard*, 26 August 2020, p. 2.

governments and landholders to continue to keep up the work on feral cat control.'[44]

3.34 Dr Box commented on how the Australian Government is working to ensure that the targets are linked to outcomes:

> … our investments are very targeted at where we're going to get threatened species outcomes. And, while we might not have seen the improvements in the trajectory of as many species as we would like in a short time frame, certainly our investment in feral cat management in particular locations is bearing fruit and giving results for our threatened species.[45]

New ten-year Threatened Species Strategy

3.35 In September 2020, the Australian Government committed to the development of a new ten-year Threatened Species Strategy.[46] DAWE proposes developing the new Strategy in two stages:

- stage one - an updated Threatened Species Strategy, which is being developed in 2020, outlining the Australian Government's ten-year vision, objectives, prioritisation principles and action areas; and
- stage two - a five-year Action Plan, to be developed in 2021, which sets out practical targets, priority species, actions, deliverables, responsibilities, partners and timelines.[47]

3.36 In October 2020, as part of the first stage, DAWE released a discussion paper and sought feedback through a public survey on the existing Strategy and to inform priorities, prioritisation principles and action areas for the new Strategy.[48]

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44 Dr Sally Box, Assistant Secretary, Office of the Threatened Species Commissioner, Department of Agriculture, Water and the Environment, *Committee Hansard*, 26 August 2020, p. 2.

45 Dr Sally Box, Assistant Secretary, Office of the Threatened Species Commissioner, Department of Agriculture, Water and the Environment, *Committee Hansard*, 26 August 2020, p. 2.

46 The Hon. Sussan Ley MP, Minister for the Environment, 'Australia commits to 10 year Threatened Species Strategy', *Media Release*, 7 September 2020.

47 Australian Government, *Developing a new Threatened Species Strategy – Discussion paper* (2020), p. 6.

48 Department of Agriculture, Water and the Environment, 'New Threatened Species Strategy', https://haveyoursay.awe.gov.au/1new-threatened-species-strategy?fbclid=IwAR0sdq02CacSPdtaYyIBz50ljzcGR70eCe0X-rji4HwA5qPcK1oBhbFPID4, viewed 2 December 2020.

Feral Cat Taskforce

3.37 The Feral Cat Taskforce was established in 2015 under the Threatened Species Strategy. It is chaired by the Threatened Species Commissioner and brings together feral cat researchers, non-government organisations, practitioners and representatives from every state and territory to track and report on implementation of the TAP, share knowledge, coordinate action and build momentum within the community for improved best practice feral cat control.[49] The Taskforce meets approximately six monthly and at each meeting considers what work has been undertaken against the actions in the TAP.[50]

3.38 DAWE advised the Committee that the role of the Taskforce was to drive the delivery of initiatives to tackle feral cats and their impacts by:

- linking initiatives, innovations and progress on managing feral cat threats;
- building relevant partnerships and national cooperation on feral cat management;
- informing government policy, planning and investment on strategic feral cat management; and
- providing clear and accessible data, monitoring and public reports on feral cat management activity.[51]

Expanding the feral cat taskforce

3.39 Some inquiry participants were of the view that the membership and role of the Feral Cat Taskforce should be expanded. Ms Candice Bartlett of the Invasive Species Council proposed that the Taskforce should include the agricultural sector and other stakeholders, as well as broadening its coverage to include a leadership role on domestic cats.[52] The Australian Veterinary Association was of the view that, as a key peak body, it should also be included in an expanded Taskforce to provide veterinary expertise in animal health, welfare and public health.[53]

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49 Department of Agriculture, Water and the Environment, *Submission 58*, pp. 18-19.

50 Department of Agriculture, Water and the Environment, *Submission 58*, p. 11.

51 Department of Agriculture, Water and the Environment, *Submission 58*, p. 20.

52 Ms Candice Bartlett, Conservation Officer, Invasive Species Council, *Committee Hansard*, 28 August 2020, p. 14.

53 Australian Veterinary Association, *Submission 180*, p. 10.

3.40 The TSRH submitted that the Taskforce 'is a model that could be usefully applied to help coordinate actions for other nationally listed threats. However, its operation would be enhanced if it were able to fund a substantial component of the Threat Abatement Plan.'[54]

National declaration: feral cats as pests (2015)

3.41 The key driver of change within state and territory government legislation giving effect to the use of a full suite of tools to control feral cats is the 2015 National Declaration: feral cats as pests. [55]

3.42 In the Declaration, Australia's federal, state and territory Environment Ministers agreed:

- that effective and humane techniques to control feral cats, that do not pose an unacceptable threat to the survivability and ecological function of non-target protected species in the treatment area, should be pursued in coordination with other pest control activities to benefit threatened species;
- to commit to reviewing their jurisdictional arrangements including consultation with key stakeholders and interested community members and, based on this review, remove any unnecessary legal impediments to land managers undertaking feral cat control and management within a 12 month timeframe, where possible;
- that the management of feral cats will be considered a priority in threatened species recovery programs; and
- to support community efforts to undertake and promote responsible pet ownership, and to pursue the development of a national best practice approach to the keeping of domestic cats.[56]

3.43 The Committee was told that not all states and territories have declared feral cats as pests under relevant biosecurity or natural resource management legislation.[57] TSRH submitted to the Committee that:

> Feral cats are declared as pests in some jurisdictions (Queensland, Northern Territory, South Australia, on public lands of Victoria, and on an 'unassigned

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54 National Environmental Science Program, Threatened Species Recovery Hub, *Submission 72*, p. 25.

55 Department of Agriculture, Water and the Environment, *Submission 58*, p. 21.

56 Department of Agriculture, Water and the Environment, *Submission 58*, p. 21.

57 See for example: Birdlife Australia, *Submission 94*, p. 7; National Farmers Federation, *Submission 140*, p. 7.

> control' basis in Western Australia, meaning that there is no obligation on individuals or agencies to undertake management). Feral cats are not declared as a pest in the ACT, New South Wales, or Tasmania.[58]

3.44 Birdlife Australia was of the view that it was important for all jurisdictions to implement the declaration as it 'is a key step in recognising the need for urgent action to address the impacts of feral cats.'[59] In some circumstances, the lack of a declaration could prevent effective local government action on feral cat management.[60]

Import controls for high risk domestic cat varieties

3.45 Under the *Biosecurity Act 2015* (Cth), domestic cats can be imported to Australia under strict conditions to manage biosecurity risks. The conditions are applicable to all breeds of domestic cats. An important condition for import is that the cat 'must not be a hybrid between domestic and non-domestic species.'[61]

3.46 DAWE submitted to the Committee that the reason that hybrid cats cannot be imported into Australia is because:

> The unique features that makes hybrid cats attractive pets to people also may mean they are potential feral animals in their own right or could breed with feral cats to produce a more effective feral animal …[62]

3.47 According to DAWE, the EBPC Act also contains relevant restrictions. It 'only permits a live specimen (including hybrid animals) to be imported if it is included on the List of Species Suitable for Live Import (the Live Import List).'[63] There are currently no hybrid cat breeds on the Live Import List, and Savannah Cats are specifically excluded.

3.48 One exception to the live import restrictions has been made for Bengal cats that were present in Australia prior to 2008. This is because these 'were present in Australia prior to the Savannah cat decision and are considered a

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58 National Environmental Science Program Threatened Species Recovery Hub, *Submission 72*, p. 23.

59 Birdlife Australia, *Submission 94*, p. 7.

60 Sutherland Shire Council, *Submission 53*, p. 2 and Georges River Council, *Submission 80*, p. 2.

61 Department of Agriculture, Water and the Environment, *Submission 58*, p. 30.

62 Department of Agriculture, Water and the Environment, *Submission 58*, p. 32.

63 Department of Agriculture, Water and the Environment, *Submission 58*, p. 30.

legacy issue.'[64] DAWE raised concerns about Bengal cats, submitting to the Committee that:

> An average domestic cat weighs between 3.6 and 4.5 kg, a Bengal's weight is between 3.6 and 6.8 kg. The Bengal's coat is a mixture of marbling or rosettes that is likely to confer excellent camouflage for a hunting animal. They are described as a highly intelligent, excellent hunter, fiercely territorial and athletic cat …If these traits entered the stray or feral cat populations it is possible that this may result in a bigger more efficient feral animal that due to its size, coat and behaviour would have a positive selection pressure in the wild.[65]

3.49 Importers of Bengal cats must demonstrate that the animal is:

> … at least an F5 animal, that is the animal's parents, grandparents, great-grandparents and great-great-grandparents were not an Asian Leopard cat. To import a Bengal cat into Australia the importer must provide the Department with a pedigree which lists it and its preceding four generations.[66]

3.50 DAWE advised the Committee that it is reviewing the policy on hybrids and the exception for Bengal cats may be removed in the future.[67] Other inquiry stakeholders expressed support for a general prohibition on the import of hybrid cats into Australia.[68]

State and territory legislative and regulatory approaches, and the role of local governments

3.51 Australia's states and territories have varying legislative frameworks and regulatory responses to managing feral and domestic cats. In most cases, local governments around Australia are primarily responsible for carrying out duties in relation to cat management under relevant state and territory legislative and regulatory instruments.

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64 Department of Agriculture, Water and the Environment, *Submission 58*, p. 30.

65 Department of Agriculture, Water and the Environment, *Submission 58*, p. 32.

66 Department of Agriculture, Water and the Environment, *Submission 58*, p. 31.

67 Department of Agriculture, Water and the Environment, *Submission 58*, p. 32.

68 See for example: National Environmental Science Program Threatened Species Recovery Hub, *Submission 72*, p. 37; Nicole Galea, *Submission 112*, p. 20; Australian Veterinary Association, *Submission 180*, p. 13.

3.52 Evidence to the Committee highlighted just how different each jurisdiction's legislative frameworks were. As an example, the Ecological Society of Australia pointed out the inconsistencies of cat containment laws between NSW and the ACT, stating that:

> … in New South Wales, the Companion Animals Act 1998 does not enforce state-wide cat confinement, and cats from NSW can easily move in and out of the ACT, potentially reducing the effectiveness of the ACT's Domestic Animals Act 2000 cat confinement regulation.[69]

3.53 The Ecological Society of Australia also highlighted inconsistencies within jurisdictions, submitting to the Committee that:

> In Western Australia, for example, the *Animal Welfare Act 2002* provides a defence against a charge of animal cruelty for killing pest animals (defined as an animal declared as such in sections 12 or 22 of the *Biosecurity and Agriculture Management Act 2007*). However, the WA *Biosecurity and Agriculture Management Act 2007* does not list feral cats as pests, meaning that landowners and land managers who lethally control feral cats could be prosecuted under the *Animal Welfare Act 2002*.[70]

3.54 Table 3.1 below summarises the key legislative instruments in force in each state and territory.

Table 3.1 Legislative instruments for cat control within Australia's states and territories

Jurisdiction	Feral cats	Domestic cats
Queensland	*Biosecurity Act 2014*	Nil
New South Wales	Nil	*Companion Animals Act 1998*
Australian Capital Territory	Nil	*Domestic Animals Act 2000*
Victoria	*Catchment and Land Protection Act 1994*	*Domestic Animals Act 1994*
Tasmania	*Cat Management Act 2009*	*Cat Management Act 2009*

69 Ecological Society of Australia, *Submission 48*, p. 8.

70 Ecological Society of Australia, *Submission 48*, p. 8.

Northern Territory	Nil	*Territory Parks And Wildlife Conservation Act 1976*
South Australia	*Landscape South Australia Act 2019*	*Dog and Cat Management Act 1995*
Western Australia	*WA Biosecurity and Agriculture Management Act 2007* *Biodiversity Conservation Act 2016*	*Cat Act 2011*

2017 Victorian parliamentary inquiry and government response

3.55 The terms of reference for this inquiry required the Committee to consider the findings of the Victorian Parliamentary Inquiry into the Control of Invasive Animals on Crown Land conducted by its Environment, Natural Resources and Regional Development Committee in 2017.[71]

3.56 The Victorian Legislative Assembly Committee's inquiry focused on the benefits of state agencies such as Parks Victoria and the Game Management Authority using community hunting organisations and individuals in the control of invasive animals on Crown land. It included the application of these types of programs for invasive animal species control in partnership with Crown land managers; and assessment of the relative costs and benefits, financial or otherwise, of other forms of pest control in national parks.[72]

3.57 The Victorian Committee presented its report on 20 June 2017, examining the background, control and future management of a range of invasive species, including deer, feral and wild cats, horses, rabbits, foxes, goats, pigs and dogs.

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71 Parliament of Victoria, Environment, Natural Resources and Regional Development Committee, *Report of the inquiry into the control of invasive animals on Crown land*, June 2017.

72 Parliament of Victoria, Environment, Natural Resources and Regional Development Committee, *Report of the inquiry into the control of invasive animals on Crown land*, June 2017, p. xi.

3.58 In relation to feral cats, the report found that it was difficult to establish the prevalence of feral cats in Victoria 'as efforts to monitor their populations are hampered by the wary nature of feral cats…'[73]

3.59 Under Victorian law, each species can be classified differently according to rules and regulations around the animals' treatment, protection and management.[74] With respect to the classification and management of cats in Victoria, the report noted that:

> Cats (even those living in the wild) are not categorised as a pest or wildlife. Their management is prescribed under the *Domestic Animals Act 1994* and *Wildlife Act 1975*, which do not differentiate feral cats from pet cats. Dogs are covered by the same or similar provisions, but an order of the Governor in Council has declared dogs to be 'established pest animals' if they are feral or wild. The same has not been done for cats.[75]

3.60 The report found that Victorian legislation prevents any effective control of feral cats.[76] With the exception of areas within the state that do not have a local council, the report states that 'in most other circumstances, a cat found on public or private land must be captured and delivered to the local council so that it can be recovered by an owner (if it has one).'[77]

3.61 Authorised officers can destroy a cat 'at large' if it is:

- where animals or birds are kept for farming purposes (owners of the animals or birds may also destroy cats in this situation)
- in designated zones
- attacking or harassing wildlife
- on certain public land and reasonable attempts have been made to catch it but these attempts have been unsuccessful.[78]

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73 Parliament of Victoria, Environment, Natural Resources and Regional Development Committee, *Report of the inquiry into the control of invasive animals on Crown land*, June 2017, p. 24.

74 Parliament of Victoria, Environment, Natural Resources and Regional Development Committee, *Report of the inquiry into the control of invasive animals on Crown land*, June 2017, p. 54.

75 Parliament of Victoria, Environment, Natural Resources and Regional Development Committee, *Report of the inquiry into the control of invasive animals on Crown land*, June 2017, p. 57.

76 Parliament of Victoria, Environment, Natural Resources and Regional Development Committee, *Report of the inquiry into the control of invasive animals on Crown land*, June 2017, p. 203.

77 Parliament of Victoria, Environment, Natural Resources and Regional Development Committee, *Report of the inquiry into the control of invasive animals on Crown land*, June 2017, p. 204.

78 Parliament of Victoria, Environment, Natural Resources and Regional Development Committee, *Report of the inquiry into the control of invasive animals on Crown lan*d, June 2017, pp. 203-204.

3.62 The Committee's report made one recommendation targeted specifically at cats:

> That the Government declare feral or wild cats to be 'established pest animals' under the *Catchment and Land Protection Act 1994*, mirroring the way wild dogs are classified.[79]

3.63 Many of the other recommendations relating to the management of invasive species more generally may also be relevant to feral cats. These include recommendations for the Victorian Government to develop a monitoring framework designed to better understand the relative effectiveness of control methods for invasive species to ascertain which provide the best value;[80] to investigate barriers preventing proper consultation and collaboration in relation to invasive animal control;[81] and that initiatives are developed to educate the public on the invasive species problem.[82]

3.64 In its response to the Committee's inquiry in December 2017, the Victorian Government fully supported the recommendation relating to feral cats, advising that:

> The Government intends to declare the feral cat as an established pest animal on public land in Victoria under the *Catchment and Land Protection Act 1994* to help enable public land managers to humanely, effectively and efficiently reduce the impact of feral cats in areas where key biodiversity values are at risk. The declaration will not affect private land. The declaration of feral cats as pest animals is part of a national commitment to the control of feral cats and

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79 Parliament of Victoria, Environment, Natural Resources and Regional Development Committee, Report of the inquiry into the control of invasive animals on Crown land, June 2017, *Recommendation 9*, p. 206.

80 Parliament of Victoria, Environment, Natural Resources and Regional Development Committee, Report of the inquiry into the control of invasive animals on Crown land, June 2017, *Recommendation 7*, p. 164.

81 Parliament of Victoria, Environment, Natural Resources and Regional Development Committee, Report of the inquiry into the control of invasive animals on Crown land, June 2017, *Recommendation 29*, p. 290.

82 Parliament of Victoria, Environment, Natural Resources and Regional Development Committee, Report of the inquiry into the control of invasive animals on Crown land, June 2017, *Recommendation 32*, p. 296.

is a very important milestone in the protection of Victoria's biodiversity and threatened wildlife.[83]

3.65 The government response further advised that feral cats are the main threat to the persistence of threatened fauna in Australia, with some forty-three listed threatened species directly at risk from feral cat predation. The Victorian Government also recognised that feral cats are regarded as distinctly different from domestic cats, noting their importance as companion animals and the benefits that responsible cat ownership brings. The Victorian Government stated that consultations would commence as part of the pest declaration process, while ongoing consultation would be integral to the implementation of control programs for feral cats on public land.[84]

Making and enforcing local laws

3.66 The Committee received evidence attesting to the key role of local governments in cat management under state and territory law, particularly in relation to domestic cats in urban communities. While it is beyond the scope of this report to conduct an exhaustive analysis of the regulatory regimes in operation at the local level, key themes emerged in the evidence that pointed to concerns about the management of domestic cats at the local level.

3.67 The ability of local government to make and enforce local laws relating to domestic cat management varies widely and may be constrained by state and territory legislative frameworks, and high-level cat management plans within each state and territory. In most cases, state and territory legislation allows local governments to make by-laws to suit their own particular local and geographic circumstances.[85]

3.68 Some local governments have cat management plans in place. According to RSPCA Australia, a 'cat management plan may be a useful tool for local

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83 The State of Victoria, *Government Response to the Environment, Natural Resources and Regional Development Committee Inquiry into the Control of Invasive Animals on Crown Land*, December 2017, p. 12.

84 The State of Victoria, *Government Response to the Environment, Natural Resources and Regional Development Committee Inquiry into the Control of Invasive Animals on Crown Land, December 2017*, p. 12.

85 See for example: Albury and Wodonga Councils, *Submission 92*, p. 6; Tasmanian Government, *Submission 7*, p. 10; Australian Veterinary Association, *Submission 180*, p. 9; Ms Meredith Brownhill, *Submission 45*, p. 2.

councils to identify key priorities, develop strategic and operational plans as well as evaluation measures.'[86]

3.69 According to Albury and Wodonga Councils, for example, the Victorian *Domestic Animals Act 1994*, requires each council to prepare and regularly review a Domestic Animal Management Plan (DAMP). The aim of the DAMP is to support the effective management of domestic animals (dogs and cats) within the city of Wodonga while addressing the issues relating to animal management in urban and rural areas.[87] Other councils also told the Committee that they had similar plans.[88]

3.70 Inquiry contributors highlighted some challenges associated with making by-laws at a local government level. These included that by-laws:

- could be overridden or disallowed by the state government;[89]
- may be challenged by community and lobby groups;[90]and
- the lengthy process and costs associated with establishing and implementing local by-laws for domestic cats.[91]

3.71 Examples of local government actions that reduce barriers to responsible cat ownership, including powers to regulate the registration, microchipping and desexing of domestic cats, will be discussed in Chapter 5.

Roaming cats

3.72 One concern raised by local government and others was the power to deal with roaming domestic cats that may be predating on wildlife or otherwise impacting property.

3.73 In NSW for example, submitters raised in evidence that the *Companion Animals Act 1998* (NSW) limited their ability to deal with roaming domestic

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86 RSPCA Australia, *Submission 124*, p. 9.

87 Albury and Wodonga Councils, *Submission 92*, p. 5.

88 Banyule City Council, *Submission 141*, p. 3 and Byron Shire Council, *Submission 115*, p. 2.

89 National Environmental Science Program Threatened Species Recovery Hub, *Submission 72*, pp. 23.

90 Sutherland Shire Council, *Submission 53*, p. 3 and Wyndham City Council, *Submission 85*, p. 2.

91 National Environmental Science Program Threatened Species Recovery Hub, *Submission 72, pp. 23-24.*

cats that were predating on wildlife.[92] RSPCA Australia submitted to the Committee that under this legislation, the ability to prevent domestic cats from roaming is limited to 'wildlife protection areas and food preparation/consumption areas … or where the cat is threatening personal property.'[93]

3.74 In Victoria, Albury and Wodonga Councils advised that:

> In Wodonga (Victoria) a night time curfew (7pm to 7am) is applied through Local Laws provisions under the *Local Government Act 1989*. Outside of this curfew cats are legitimately free to roam outside the owners' property.[94]

3.75 The capacity of local government to assist local residents in managing roaming cats varies. Evidence to the Committee suggested that the most common solutions were the provision of cat traps for residents to capture cats that have impacted on their property.[95] Evidence highlighted the mixed successes of this approach.[96]

3.76 Albury and Wodonga Councils commented on the need for laws relating to both dogs and cats to be better aligned, calling for the government to play a leading hand in issues relating to cat containment and:

> Take the lead in influencing the societal expectations of cat owners to shift to more closely align with the obligations and expectation of dog owners. It is generally and widely accepted that dogs are confined at all times, and that there are consequences when this does not occur. Currently the same is not true for cats, despite overwhelming evidence in support of cat containment.[97]

3.77 This alignment is a feature of laws in Tasmania. The Tasmanian Government advised that in this respect:

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92 See for example: Sutherland Shire Council, *Submission 53*, p. 2; Campbelltown City Council, *Submission 86*, p. 9. See also: Australian Wildlife Society, *Submission 15*, p. 1; BirdLife Australia, *Submission 94*, p, 7.

93 RSPCA Australia, *Submission 124*, p. 7.

94 Albury and Wodonga Councils, *Submission 92*, p. 5.

95 See for example: Mr David Moore, *Submission 1*, p. 1; Greg Flint, *Submission 21*, p. 1; Colin White, *Submission 24*, p. 1; Name Withheld, *Submission 47*, p. 2.

96 See for example: Denise Maclean, *Submission 3*, p. 1; Name Withheld, *Submission 47*, p. 2.

97 Albury and Wodonga Councils, *Submission 92*, p. 9. See also Friends of Paganoni Swamp, *Submission 18*, p. 1; Mrs Elizabeth Balogh, *Submission 38*, p. 1; Ku-ring-gai Council, *Submission 74*, p. 2; Wollondilly Shire Council, *Submission 93*, p. 3.

> Local government officers authorised under the *Dog Control Act 2000* are automatically authorised under the *Cat Management Act 2009* to enforce compliance with the Cat Management Act within their own municipalities.[98]

3.78 Perspectives on the need to encouraging containment of domestic cats as one method of reducing the barriers to responsible cat ownership will be discussed in Chapter 5.

Animal management facilities

3.79 One option available to many local governments is the power to have feral or stray cats caught by residents taken to local animal management facilities.

3.80 Eurobodalla Shire Council in NSW told the Committee that:

> Council have cat traps for residents to humanely trap primarily feral or wandering cats which may be predating on wildlife. The animals are then managed through the animal pound and in accordance with the legislation. It may be problematic where a pet may not be registered. This becomes resource intensive to enable the return of a cat to its owner; to alternatively rehoming a cat; or to ultimately enthanize the animal if required.[99]

3.81 One submitter observed that in relation to one facility in NSW:

> … they were poorly resourced. The shelter was only open for a certain number of hours a day – mostly in the mornings and late afternoon – and that they only carried a limited number of traps. They also commented that my experience was not unique – there were a number of other individuals faced with similar circumstances, and that the shelter's stray cat supply was regular and plentiful.[100]

3.82 The Tasmanian Government described its approach to cat management facilities which are run by private operators in the state:

> While facilities operate independently of the State Government and each has their own policies and operational guidelines, facilities have specific obligations under the Cat Management Act in relation to activities such as scanning for microchips; notification of owners; release of cats to owners; and destruction of cats.[101]

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98 Tasmanian Government, *Submission 7*, p. 10.

99 Eurobodalla Shire Council, *Submission 73*, p. 2.

100 Name Withheld, *Submission 47*, p. 2

101 Tasmanian Government, *Submission 7*, p. 10.

Towards a national approach

3.83 A theme repeated often in contributions to the inquiry was the need for the Australian Government to take a national, coordinated approach to the management of feral cats.[102]

3.84 RSPCA Australia advised the Committee that despite the inconsistencies between various state, territory and local government laws:

> There has been some work towards national consistency including the draft Australian Code of Practice for the Welfare of Cats which was initiated under the Australian Animal Welfare Strategy and the Australian Cat Action Plan but further work is needed.[103]

3.85 The TSRH submitted to the Committee that the key elements of a national framework should include mandatory pet cat registration, mandatory desexing, limiting the number of cats per household, cat-free or cat containment areas, 24 hour containment or curfews, with corresponding resourcing for compliance and enforcement, and not allowing Trap-Neuter-Release programs.[104]

3.86 Birds Queensland also suggested elements that a national cat management strategy should include. In its view, public education, the involvement of the Australian Veterinary Association, mandatory registration, microchipping and neutering of domestic cats were all elements of a successful national framework.[105]

3.87 Dr Tony Buckmaster from the Centre for Invasive Species Solutions was of the view that the management of feral cats should be coordinated through a role similar to Australia's wild dog coordinator. Dr Buckmaster outlined the duties of the position of the wild dog coordinator:

> It allows for community based management of wild dogs in areas. The wild dog coordinator goes to those areas, talks to those people, explains best management practice and assists them with creating management plans that

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102 See for example: Australian Veterinary Association, *Submission 180*, p. 10; Ms Meredith Brownhill, *Submission 45*, p. 3; Sutherland Shire Council, *Submission 53*, p. 3; Eurobodalla Shire Council, *Submission, 73*, p. 4; Wyndham City Council, *Submission 85*, p. 2; Wollondilly Shire Council, *Submission 93*, p. 2.

103 RSPCA Australia, *Submission 124*, p. 7.

104 National Environmental Science Program Threatened Species Recovery Hub, *Submission 72*, pp. 24-25.

105 Birds Queensland, *Submission 14*, p. 2.

> are outcome based and appropriate to that area. There's no one-size-fits-all plan for Australia for any pest species. It has to be specific to the area and to the damage that's being done. The wild dog coordinator position is exceptionally good at arranging for those meetings and for those committees to be effective.[106]

3.88 Many inquiry contributors were also of the view that for any national cat management initiative to be successful there needs to be a commensurate level of resourcing.[107] In the view of some inquiry participants, the resources required extended well beyond financial capacity to include more streamlined sources of cat management information for local government.

3.89 Southern Downs Regional Council told the Committee that:

> A potential solution is for the Federal government to co-ordinate and promote a nationwide "knowledge base" that shares details on cat management programs (including indicative costs) from across the country. Organisations running cat management programs could register their project and upload information and results. This would give pest managers the opportunity to examine a variety of management options in a single location.[108]

3.90 Eurobodalla Shire Council submitted to the Committee that it would welcome information on best practice cat management approaches 'inclusive of trials, case studies, website information, funding and targeted projects across the country.'[109]

International comparisons

3.91 While Australia is one of the most biodiverse countries in the world, there is much that can be learned from the experiences of comparable nations. Some submitters drew the Committee's attention to an ambitious goal in New Zealand aimed at eradicating invasive predators.[110]

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106 Dr Tony Buckmaster, Research, Development and Extension Manager, Centre for Invasive Species Solutions, *Committee Hansard*, 28 August 2020, p. 10.

107 See for example: Mr Andrew, Chief Executive Officer, Invasive Species Council, *Committee Hansard*, 28 August 2020, p. 17; Georges River Council, *Submission 80*, p. 5; Sutherland Shire Council, *Submission 53*, p. 3.

108 Southern Downs Regional Council, *Submission 77*, p. 2.

109 Eurobodalla Shire Council, *Submission 73*, p. 4.

110 Mr Andrew, Chief Executive Officer, Invasive Species Council, *Committee Hansard*, 28 August 2020, p. 19; Mrs Virginia Wallace, *Submission 109*, p. 2.

3.92 According to the New Zealand Government, the *Predator Free 2050* program aims 'to eradicate stoats ('stoats' includes all three mustelid species of stoats, ferrets and weasels), rats and possums.'[111] As an interim target, the program aims by 2025 to:

- eradicate predators from blocks of at least 20,000 hectares (without the use of fences)
- suppress introduced predators on a further 1 million hectares
- eradicate all predators from offshore island nature reserves
- achieve the capability to eradicate at least one introduced predator.[112]

3.93 The tactics that the program plans to employ are cooperative in nature and include connecting the efforts of communities with Maori nations, private businesses, philanthropists, scientists, and government. The program will also distribute funds, including for researching new predator control technology, coordinate resources, and champion projects and campaigns which sustain threatened species and create knowledge for securing their future.[113]

3.94 One submitter argued that the New Zealand approach should be model for a similar goal in Australia.[114]

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111 New Zealand Department of Conservation, 'Goal, tactics and new technology for Predator Free 2050', https://www.doc.govt.nz/nature/pests-and-threats/predator-free-2050/goal-tactics-and-new-technology/, viewed 3 December 2020.

112 New Zealand Department of Conservation, 'Goal, tactics and new technology for Predator Free 2050', https://www.doc.govt.nz/nature/pests-and-threats/predator-free-2050/goal-tactics-and-new-technology/, viewed 3 December 2020.

113 New Zealand Department of Conservation, 'Goal, tactics and new technology for Predator Free 2050', https://www.doc.govt.nz/nature/pests-and-threats/predator-free-2050/goal-tactics-and-new-technology/, viewed 3 December 2020.

114 Mrs Virginia Wallace, *Submission 109*, p. 2.

4. Feral cat control

4.1 This Chapter considers matters pertaining to feral cat control raised in evidence to the inquiry, particularly relevant considerations for different methods of control, including animal welfare.

Feral cat control methods

4.2 Submitters to the inquiry suggested that no single method for controlling feral cats is effective. One estimate provided to the Committee was that current feral cat control methods result in the decline of less than ten per cent of the population annually.[1]

4.3 The Society for Conservation Biology Oceania Section submitted that:

> There is no silver bullet for reducing the impacts of cats and the best approach, or combination of approaches requires a broad suite of techniques that include both lethal and non-lethal approaches …[2]

4.4 Dr Andy Sheppard of the CSIRO told the Committee that:

> Control strategies require robust impact assessments and monitoring programs based on pre-defined objectives associated with the reduction in cat populations and changes in the numbers of relevant listed species. Attempts at widespread culling are rarely sustainable but can be effective where effectively coordinated and targeted at key times—for example, under drought. Eradication has little relevance except in a very limited number of situations.[3]

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1 Ecological Society of Australia, *Submission 48*, p. 10

2 Society for Conservation Biology Oceania Section, *Submission 41*, p. 3 and p. 9.

3 Dr Andy Sheppard, Research Director, CSIRO Health and Biosecurity, CSIRO, *Committee Hansard*, 28 August 2020, p. 2.

4.5 In its submission to the inquiry, the Department of Agriculture, Water and the Environment (DAWE) included a table of the feral cat control tools available in each state and territory. This is included at Figure 4.1.

Figure 4.1 Snapshot of tools available in each state/territory

Table 1: Snapshot of tools available in each state/territory.

*In Queensland use of some baits is permitted under APVMA minor use permits (1080 fresh meat baits, Eradicat, Curiosity PAPP baits).

	ACT	VIC	NSW	WA	TAS	QLD	SA	NT
Shooting	Under regulation	Only by authorised persons	Under regulation	Under regulation	Under regulation	Under regulation	Under permit	Under regulation
Baiting	Only by authorised persons	Curiosity (PAPP) under permit 1080 prohibited	Curiosity Pesticide Control order under consideration	Only by authorised persons	Under permit	Under permit*	Only by authorised persons	Under permit
Cage Traps	Under permit	Under regulation	Under regulation	Under permit	Under regulation	Under regulation	Under regulation	Under regulation
Leghold Traps	Under permit	Only under Minister exemption	Under regulation	Only under special exemption	Only under Minister exemption.	Under regulation	Under regulation	Under regulation
Dogs**	Prohibited for hunting	Under regulation	Under regulation	Under regulation	Under regulation	Under regulation	Under regulation	Under regulation
Felixer Traps***	Under research permit	Under research permit 1080 prohibited	Under research permit and Pesticide Control Order	Under research permit	Under research permit	Under research permit	Under research permit	Under research permit

**Dogs are only allowed to locate, point and flush cats.

***Felixer Grooming Traps are under assessment for registration with the Australian Pesticides and Veterinary Medicines Authority. Limited use is permitted under research permits while the registration is being assessed.

Table colour guide:

Permitted for use under regulation

Under permit/only by authorised persons

Only under exemption/prohibited

Department of Agriculture, Water and the Environment, Submission 58, p. 22.

Poison baiting

4.6 The most common method for feral cat control in Australia is poison baiting. Essentially, poison baiting is the technique of embedding a toxin in an edible protein that is dispersed in areas of feral cat prevalence. The bait is then ingested by the animal and leads to its likely death.

4.7 DAWE told the Committee that:

> Baiting can be the cheapest and most effective broadscale technique for controlling the numbers of animals.[4]

Regulation by APVMA

4.8 Toxins used for feral cat management are regulated by the Australian Pesticides and Veterinary Medicines Authority (APVMA), under the *Agricultural and Veterinary Chemicals Act 1994* and *Agricultural and Veterinary Chemicals Code Act 1994*.[5]

4.9 Ms Lisa Croft of the APVMA described the regulator's processes in approving products:

> The APVMA is the independent statutory authority responsible for the assessment, registration and regulation of agricultural and veterinary chemicals in Australia. Agvet chemical products must be evaluated and registered by the APVMA before they can be legally sold, supplied or used in Australia. The APVMA takes a systematic scientific and evidence based approach to decision-making and operations. We evaluate the safety and performance of chemicals intended for use and sale in Australia to protect the health and safety of people, animals, crops and the environment and to ensure that registered products do not jeopardise Australia's trade.[6]

4.10 DAWE advised the Committee that to obtain registration for a product to manage feral cats:

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4 Department of Agriculture, Water and the Environment, *Submission 58*, p. 26.

5 National Environmental Science Program, Threatened Species Recovery Hub, *Submission 72*, p. 22.

6 Ms Lisa Croft, Acting Chief Executive Officer, Australian Pesticides and Veterinary Medicines Authority, *Committee Hansard*, 9 September 2020, p. 1.

> … a comprehensive evaluation of the efficacy and risks of the toxin and product to people, the environment and to specific native animals that could encounter the product is undertaken.[7]

4.11 Some submitters were of the view that the APVMA approvals process, while geared towards risk management, was onerous and time consuming.[8] The Invasive Species Council noted for example that it took three and a half years for the APVMA to approve the Curiosity bait (discussed further below).[9]

4.12 In discussing the process to approve the Curiosity bait, Ms Croft told the Committee that:

> It was a particularly complex application … It was a new novel toxin delivery mechanism. Often when we are assessing new products in the APVMA, the delivery mechanism by which it might be delivered in the marketplace is something that we may have already assessed for a different product at some other point in time, but this was a completely new novel toxin delivery mechanism. In particular, that hard shell delivery vehicle for Curiosity was new technology and therefore it did require an additional amount of consideration beyond what we might expect for other normal new products in the marketplace.[10]

4.13 According to Ms Croft, the factors that required the product to have an extended approval time included the requirement for DAWE to provide additional data and mitigation strategies for the product's intended use. Ms Croft further advised that:

> … it is a restricted chemical product and, under the Agvet Code, that requires additional consultations and authorisations by state and territory governments. Also, as part of the application, we were keen to ensure the broadest applicability of the product once it was registered.[11]

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7 Department of Agriculture, Water and the Environment, *Submission 58*, p. 12. See also: National Environmental Science Program, Threatened Species Recovery Hub, *Submission 72*, p. 22.

8 National Environmental Science Program, Threatened Species Recovery Hub, *Submission* 72, p. 22.

9 Invasive Species Council, *Submission 121*, p, 11.

10 Ms Lisa Croft, Acting Chief Executive Officer, Australian Pesticides and Veterinary Medicines Authority, *Committee Hansard*, 9 September 2020, p. 2.

11 Ms Lisa Croft, Acting Chief Executive Officer, Australian Pesticides and Veterinary Medicines Authority, *Committee Hansard*, 9 September 2020, p. 3.

4.14 The Invasive Species Council said that while it understood the reasoning behind the lengthy approvals process:

> Proving the efficacy and safety of new methods across large areas of Australia is complex and expensive. The development of new products for controlling feral cats and other harmful invasive animals is very much in the public interest, so should be facilitated rather than impeded by the processes developed for agricultural products that are applied over very large areas and affect the safety of food for humans.[12]

4.15 UNSW's Centre for Ecosystem Science submitted to the Committee that the current approach to approvals via the APVMA is:

> … a state by state approach to regulation. This is an area where there could be considerable harmonisation in approaches whereby one state could adopt legislative and regulatory approaches from another jurisdiction once there has been sufficient review of the potential impacts on non-target fauna.[13]

4.16 UNSW's Centre for Ecosystem Science was of the view that a more risk-managed approach should be adopted to hasten the approval of products. In particular, the risk to wildlife of *not* conducting feral cat control should be considered.[14]

Approved baits: Eradicat and Curiosity

4.17 There are two bait products registered for use in parts of Australia, the Eradicat bait which is registered for use in Western Australia, and the Curiosity cat bait which is registered nationally.[15] The Centre for Invasive Species Solutions (CISS) has developed a collaborative project, led by the Government of South Australia, to facilitate the national registration of the Eradicat bait through the APVMA.[16]

4.18 The CISS described the Eradicat bait that 'consists of a chipolata sausage style bait matrix into which the toxin 1080 is directly injected'.[17]

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12 Invasive Species Council, *Submission 121*, p, 11

13 UNSW Centre for Ecosystem Science, *Submission 88*, p. 6.

14 UNSW Centre for Ecosystem Science, *Submission 88*, p. 6.

15 Department of Agriculture, Water and the Environment, *Submission 58*, p. 26.

16 Centre for Invasive Species Solutions, *Submission 120*, p. 13.

17 Centre for Invasive Species Solutions, *Submission 120*, pp. 12-13.

4.19 DAWE told the Committee that the Curiosity bait is also a small meat-based sausage, but it contains a small hard plastic pellet, delivering 'a new humane toxin called para-aminopropiophenone, or PAPP, which is considered best-practice world-wide'.[18]

Effectiveness of baits

4.20 Some inquiry participants commented on the effectiveness of baits. Broadly, DAWE advised that:

> Baiting techniques for feral cats tend to be much less effective than techniques for baiting wild dogs and European red foxes because feral cats prefer live prey.[19]

4.21 Dr Tony Buckmaster from the CISS advised the Committee that:

> … national registration of an effective bait such as Eradicat is quite likely going to assist in turning the tide. … The majority of the tools that we have are limited area use—exclusion fencing, trapping, shooting. They're very good in small areas, but only baiting, in reality, is good for a larger area.[20]

4.22 Professor Sarah Legge from the Threatened Species Recovery Hub (TSRH) told the Committee that:

> Poison baiting with Eradicat has made a really positive contribution to conserving animals in south-west WA, where native fauna have high tolerance to that toxin.[21]

4.23 Dr Buckmaster told the Committee that the PAPP toxin contained in Curiosity is not a replacement for Eradicat's 1080 toxin:

> It's a supplement. It's an additional item in our toolbox. We're loath to use PAPP in areas where there's high goanna activity, because reptiles are generally more susceptible.[22]

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18 Department of Agriculture, Water and the Environment, *Submission 58*, p. 27.

19 Department of Agriculture, Water and the Environment, *Submission 58*, p. 26.

20 Dr Tony Buckmaster, Research, Development and Extension Manager, Centre for Invasive Species Solutions, *Committee Hansard*, 28 August 2020, p. 9.

21 Professor Sarah Legge, Deputy Director, Co-Leader of Research Program on Feral Cat Impacts and Management, Threatened Species Recovery Hub, National Environmental Science Program, *Committee Hansard*, 28 August 2020, p. 22.

22 Dr Tony Buckmaster, Research, Development and Extension Manager, Centre for Invasive Species Solutions, *Committee Hansard*, 28 August 2020, p. 10.

Emerging bait technologies

4.24 The Committee was advised that there are other emerging bait technologies that may be more effective in targeting feral cats while being less harmful for other species.

4.25 DAWE submitted that the APVMA:

> … also issues research and minor use permits for … other 1080-based baits such as Hisstory. These are typically issued where a product is in a research and development phase prior to applying for registration or are intended to be applied in [a] small area for a restricted time with minimal risks.[23]

4.26 CISS advised that the 'Hisstory® bait is similar to the Curiosity bait however uses encapsulated 1080 rather than PAPP as the toxin. This bait is not currently registered for use in Australia.'[24]

Risks and concerns about feral cat baits

4.27 A number of inquiry participants drew the Committee's attention to the risks and concerns associated with feral cat baits.

4.28 DAWE told the Committee that generally:

> Baiting can pose risks to other species that may eat a bait. Baits are designed to contain the least amount of toxin required, which reduces the risk to species that have some tolerance (e.g. goanna species that are tolerant to a cat-sized dose of 1080 toxin).[25]

4.29 The Department noted that the placement and timing of baiting can also reduce risks, such as using them when and where reptiles are less active.[26]

4.30 With respect to Curiosity, DAWE also explained that its design improved target specificity:

> The use of the pellet has been found to minimise exposure to many native species to the toxin. … [In addition,] Felids and canids (cats, dogs and foxes) are particularly susceptible to this toxin meaning only low doses are required,

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23 Department of Agriculture, Water and the Environment, *Submission 58*, p. 12.

24 Centre for Invasive Species Solutions, *Submission 120*, p. 13.

25 Department of Agriculture, Water and the Environment, *Submission 58*, p. 26. See also: Dr Tony Buckmaster, Research, Development and Extension Manager, Centre for Invasive Species Solutions, *Committee Hansard*, 28 August 2020, p. 10.

26 Department of Agriculture, Water and the Environment, *Submission 58*, p. 26.

> less than what is necessary to harm many native species if they managed to consume the pellet.[27]

4.31 A number of submitters nevertheless raised ethical concerns about both the 1080 and PAPP toxins. Concerns included that:

- animal welfare concerns once the toxin is ingested by a feral cat are poorly understood,[28] and it may take several hours or days for the animal to pass away;[29] and
- wildlife including dingoes; and pets, can be inadvertently impacted or killed by baits containing the toxin.[30]

Traps

4.32 The use of cat traps is one of the more common cat control methodologies. As discussed in Chapter 3, traps are often used in cat control schemes managed in urban and regional areas by local governments. The Committee was told that there are two types of traps in use – cage traps and padded-jaw traps.

4.33 DAWE told the Committee that:

> Cage trapping is considered to be an ineffective tool for large areas, but it may be useful in urban/residential areas where domestic cats are present, or where populations have already been reduced and individual cats need to be targeted. Padded-jaw traps are useful for sites where the feral cat can be destroyed by shooting while still held in the trap. They may also be more effective than cage traps for hard-to-catch feral cats that have had minimal exposure to humans.[31]

4.34 DAWE explained that:

> With both techniques of trapping, skilled operators are required to set the traps and lures to attract the feral cats. Trapping is expensive, labour intensive

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27 Department of Agriculture, Water and the Environment, *Submission 58*, p. 27.

28 Invasive Species Council, *Submission 121*, p. 11.

29 Ms Jan Kendall, *Submission 25*, p. 11; Ms Vicki Ioannou, *Submission 54*, p, 2.

30 Cat Protection Society of NSW, *Submission 28*, p. 2. Professor Sarah Legge, Deputy Director, Co-Leader of Research Program on Feral Cat Impacts and Management, Threatened Species Recovery Hub, National Environmental Science Program, *Committee Hansard*, 28 August 2020, p. 22.

31 Department of Agriculture, Water and the Environment, *Submission 58*, p. 26.

> and time consuming; and is only recommended on a small scale or where eradication is the objective.[32]

4.35 Other types of traps also exist but are either banned, such as the steel-jaw trap[33] or are currently being developed under a research permit, such as the Felixer grooming trap.

Felixer grooming trap

4.36 The Felixer grooming trap is a technological advance under development. DAWE told the Committee that:

> Felixer grooming traps are under assessment for registration as a product with the Australian Pesticides and Veterinary Medicines Authority. Limited use is permitted under research permits while the registration is being assessed.[34]

4.37 DAWE told the Committee that the benefits of the Felixer grooming trap include provision of:

> … a novel technique for controlling feral cats by ejecting a dose of poison onto the fur of a target animal, which is subsequently ingested through grooming. A series of infrared laser-based range-finding sensors detect object[s] moving in front of the Felixer. The sensors' positions allow for feral cats to be distinguished from other non-target animals.[35]

4.38 Dr John Read submitted to the Committee that the Felixer grooming trap has:

> … proven to be highly targeted and efficient at controlling feral cats with particular value in areas where baiting is not permitted or for cats that are reluctant to take baits or enter traps. Felixers have also proven useful in eradicating cats from fenced reserves and for minimising cat incursions and reducing cat predation outside fenced reserves (where cats congregate to prey on emigrating wildlife). Greater attention to deploying Felixers around reserves and along feral cat reinvasion pathways and native wildlife corridors should assist threatened wildlife to colonise areas outside reserves. Other fences and barriers (e.g. along highways or around rubbish dumps) are also

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32 Department of Agriculture, Water and the Environment, *Submission 58*, p. 26.

33 Centre for Invasive Species Solutions, *Submission 120*, p. 12.

34 Department of Agriculture, Water and the Environment, *Submission 58*, p. 27.

35 Department of Agriculture, Water and the Environment, *Submission 58*, p. 27.

> prime locations for Felixers to be deployed to reduce feral cat and fox predation without exposing wildlife or pets.[36]

4.39 The Society for Conservation Biology Oceania Section commented that the Felixer:

> … can be loaded with 20 dischargeable doses of 1080 and are powered by batteries with solar rechargers ... Therefore, they can be left in situ for months, making them a less labour-intensive management option compared to trapping, shooting and poison baiting.[37]

4.40 On the future potential and success rates for the traps, DAWE told the Committee that:

> Felixer grooming traps have the potential to provide feral cat, and European red fox, control at conservation sites where the feral cats can be directed to walk in front of the site, such as along a management track or stream bed.[38]

4.41 The Society for Conservation Biology Oceania Section submitted that:

> Felixers record data on detections of both target and non-target species, and two recent trials suggest they have a low rate of false-positives (i.e. non-target species squirted; 8.53% and 0.00%, respectively), and a high rate of correctly identifying as cats as targets (82% and 77%, respectively ...[39]

Feral cat-free areas

4.42 According to evidence presented to the Committee, feral cat-free areas are very effective in the management of feral cats and importantly, in the recovery and reintroduction of native wildlife. Two types of feral cat-free areas exist in Australia: predator-free fences and islands.

Predator-free fences

4.43 Predator-free fencing is considered an effective technique against feral animals and provides native animal populations with a safe and secure environment within which to be reintroduced without the threat of predation. DAWE submitted to the Committee that:

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36 Dr John Read, *Submission 70*, p. 2.

37 Society for Conservation Biology Oceania Section, *Submission 41*, p. 5.

38 Department of Agriculture, Water and the Environment, *Submission 58*, p. 27.

39 Society for Conservation Biology Oceania Section, *Submission 41*, p. 5.

> Exclusion fencing to protect against invasive species is an effective technique for native fauna vulnerable to feral cats. There are at least 24-30 functional fenced areas maintaining wild, self sustaining populations of threatened species across Australia.[40]

4.44 One of Australia's key developers of predator-free fencing is Australian Wildlife Conservancy (AWC). AWC told the Committee that:

> Well-designed and maintained conservation fences are highly effective in protecting and recovering small- to medium-sized mammals vulnerable to feral cats. Conservation fences are substantial pieces of infrastructure requiring careful planning and competent, long-term management, as well as scientific capacity for planning and managing populations/genetic integrity over the long-term. Fences have relatively high capital costs and up-front feral predator eradication costs, but modest running costs.[41]

4.45 One of the key benefits of predator-free fencing is the ability for the recovery and reintroduction of native wildlife.[42] AWC submitted to the Committee that its fences currently support a total of 15 nationally threatened mammal species: Kangaroo Island Echidna, Northern Quoll, Western Quoll, Red-tailed Phascogale, Kangaroo Island Dunnart, Numbat, Golden Bandicoot , Western Barred Bandicoot, Greater Bilby, Western Ringtail Possum, Burrowing Bettong, Woylie, Northern Bettong, Mala, Banded Hare-wallaby, Bridled Nailtail Wallaby, Black-footed Rock-wallaby, Greater Stick-nest Rat, Plains Mouse, Shark Bay Mouse, and Central Rock-rat.[43]

4.46 AWC submitted that there were a range of advantages to predator-free fencing:

- Efficacy - at present, conservation fences are the only proven method for conserving and reintroducing species highly vulnerable to predation by feral cats on the mainland and large islands.
- Security - fences secure populations of threatened species, allowing more risky control measures to be attempted in adjacent areas 'outside the fence'.
- Ecological understanding - conservation programs associated with fences enable research on otherwise locally-extinct species and their ecological interactions; and allow for ready comparison of animal communities and environments with and without the distortion due to introduced predators.

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40 Department of Agriculture, Water and the Environment, *Submission 58*, p. 25.

41 Australian Wildlife Conservancy, *Submission 22*, p. 7.

42 Australian Veterinary Association, *Submission 180*, p. 12.

43 Australian Wildlife Conservancy, *Submission 22*, p. 9.

- Cost-effectiveness - long-term cost savings, compared with on-going direct control.
- No requirement for long-term poison baiting, with its accompanying risks of non-target impacts.
- Exclusion of other feral pests (e.g., goats, donkeys), with benefits to ecosystems.
- Community engagement – reintroduction programs in fenced exclosures allow the public to realise that Australian mammals can and should be abundant, and offer hope and a basis for a restored future.[44]

4.47 Predator-free fences do have some limitations. DAWE told the Committee that:

> Their use is increasing but tends to be limited to the management of highly valued threatened species that can live in relatively small areas from which feral cats can be eradicated. Fencing also affects the movement of other wildlife and may prevent their dispersal and interbreeding with other populations.[45]

4.48 AWC summarised the disadvantages of predator-free fencing:

- Scale - the largest completely feral predator-free fenced areas on the Australian mainland are 95 km^2. While large enough to support viable populations of many threatened species, and larger than many protected areas, nevertheless this is a tiny proportion of the Australian continent.
- Landscape suitability - limitations on fence construction in steep, high rainfall and/or flood-prone landscapes.
- Connectivity - fences may constrain the movement of terrestrial species.
- Collision/entanglement - potential impacts on some birds and reptiles.
- Predator naiveté - removes opportunity for populations to adapt to introduced predators, although evidence that such adaptation may occur in vulnerable Australian species is extremely limited, and some animals in fenced areas can be exposed to feral cats to develop predator awareness.
- 'Overabundance' – in the absence of feral predators, native mammals may reach relatively high densities, with knock-on effects for vegetation/habitat. These issues appear mostly to be associated with small enclosures and arid environments. Densities in AWC large fenced areas generally appear similar to remnant 'wild' populations, and respond to resource availability (increase/decrease with rainfall, etc).

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44 Australian Wildlife Conservancy, *Submission 22*, p. 7.

45 Department of Agriculture, Water and the Environment, *Submission 58*, p. 25.

4.49 Society for Conservation Biology Oceania Section noted the costs of predator-free fencing:

> Exclosure fencing also requires a considerable upfront cost, including feral eradication, fence construction, and ongoing maintenance and repairs, resulting in an estimated cost of $120,000 for 1km² and $400,000 for 10 km.[46]

4.50 Despite these concerns, some inquiry participants were of the view that there should be more predator-free fencing erected around Australia to ensure the survival of more threatened species.[47]

4.51 During the inquiry, Committee members learned about the AWC's proposal to use 'social bonds' as a tool for the funding of predator-free exclosures. AWC submitted to the Committee that:

> AWC has been engaging in ongoing discussions with government in relation to this Proposal. The Proposal…is an innovative 10 year $50 million Biodiversity Impact Bond (BIB) which will be invested in by Australian superannuation funds (First State Superannuation) and be matched dollar for dollar by philanthropic contributions to AWC, resulting in projects with a total value of circa $100 million. Importantly, the Proposal will deliver circa $100 million of projects but will have no impact on the Federal Budget over the forward estimates.[48]

4.52 Professor Legge discussed the advantages of this type of innovation, advising the Committee that:

> … One of the advantages of an NGO is that they can have quite a focused objective and they can push all of their energies towards achieving that objective and demonstrate that it works. Sometimes in government things are more complicated, so having private innovation mixed with the scale of government and the responsibility and obligations that governments have can be very productive.[49]

4.53 As part of the inquiry, the Committee had the opportunity to visit Mulligans Flat Woodland Sanctuary, which includes a predator-free fence and is home

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46 Society for Conservation Biology Oceania Section, *Submission 41*, p. 6.

47 See for example: Australian Wildlife Conservancy, *Submission 22*, p. 1; Dr Phil Tucak, *Submission 40*, p. 1; National Parks and Wildlife Service (on behalf of NSW Government), *Submission 95*, p. 3.

48 Australian Wildlife Conservancy, *Submission 22.1*, p. 1.

49 Professor Sarah Legge, Deputy Director, Co-Leader of Research Program on Feral Cat Impacts and Management, Threatened Species Recovery Hub, National Environmental Science Program, *Committee Hansard*, 28 August 2020, p. 24.

to a number of reintroduced native species. The Committee also explored the work of AWC, and in particular, a project that it is undertaking in northern NSW. Unfortunately, travel restrictions imposed during the Covid-19 pandemic prevented the Committee from undertaking a proposed visit to the AWC site. Boxes 4.1 and 4.2 provide further information about these projects.

Box 4.1 Mulligans Flat Woodland Sanctuary

Mulligans Flat Woodland Sanctuary[50] is situated within the Mulligans Flat Nature Reserve. The Sanctuary is owned by the ACT Government, is part of the ACT's nature reserve system, and is managed by the ACT Parks and Conservation Service as one of the many areas that are known collectively as Canberra Nature Park. The Sanctuary includes a predator-free conservation fence.

The Sanctuary fence encloses approximately 485 hectares of Mulligans Flat Nature Reserve and has a perimeter of 11.5 km. The fence design is largely based on the cat, fox and rabbit-proof fence surrounding the Arid Recovery Reserve near Roxby Downs, South Australia. The design was adapted by the ACT Parks and Conservation Service using local expertise in ACT reserves, and in consultation with fencing contractors to cater for the grassy-woodland habitat at the site.

The fence is 1.8m high, with 7 plain wires supporting rabbit-proof mesh (30 mm), two electric wires, a 60cm 'floppy overhang', and with trenched/buried netting for a width of 45cm on either side of the centre of the fence.

Nineteen gates are located on the main management tracks along the entire length of the fence to facilitate public access in the Sanctuary and to allow for routine and emergency vehicle access. Each gate has a self-closing mechanism designed to maintain the integrity of the barrier to predators, and remote sensing of the gates alerts ranger staff to any malfunction to gate closures.

Some specially designed internal fences have been erected within the Sanctuary as part of an experimental research program being conducted by the Australian National University. These fences are designed to exclude kangaroos or bettongs from several groups of experimental sites.

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50 Capital Woodlands and Wetlands Conservation Trust, Mulligans Flat Woodland Sanctuary, 'Restoring' https://mulligansflat.org.au/restoring/#1455856538458-b884eeab-30a2, viewed 3 December 2020.

Box 4.2 AWC Pilliga

Australian Wildlife Conservancy's project in NSW's Pilliga National Park is managed under a partnership between the NSW National Parks and Wildlife Service and AWC.[51] The agreement provides a new model for collaboration between the public sector and the private (not-for-profit) sector. As part of the NSW Government's Saving Our Species program, a feature of the partnership is the construction of a large predator-free area, and the reintroduction of several regionally extinct mammals.

The Pilliga project is part of the traditional area of the Gamilaraay (also known as Gamilaroi or Gomeroi) people. Extending over half a million hectares, the Pilliga forests are the largest consolidated block of forest and woodlands in western New South Wales, giving them extraordinary conservation value.

Across the 35,632 hectare Pilliga project area, AWC is implementing a landscape-scale feral animal control program, combined with intensive weed control. The research effort by AWC informs ecological fire management practices.

The focus of AWC's science and land management at the Pilliga project area has been the establishment of a large (5,800 hectare) fenced fox and cat-free area. This will be one of the first large feral predator-free area in the NSW national parks estate, and allows for the reintroduction of species that have been extinct in the area for more than 100 years:

- Greater Bilby;
- Western Quoll;
- Western Barred Bandicoot;
- Brush-tailed Bettong;
- Bridled Nailtail Wallaby; and
- Plains Mouse.[52]

[51] Australian Wildlife Conservancy, 'The Pilliga' https://www.australianwildlife.org/where-we-work/the-pilliga/, viewed 2 December 2020.

[52] Australian Wildlife Conservancy, 'The Pilliga' https://www.australianwildlife.org/where-we-work/the-pilliga/, viewed 2 December 2020.

Island eradication

4.54 TSRH considered the prevalence of cats on Australian islands, concluding that:

> … feral cats are now present on about 100 Australian islands, representing about 2% of the number of Australian islands larger than one hectare (ca. 5500 islands); however, cats are present on most larger islands, so their island occurrence represents about 80% of the total area of Australian islands (ca. 33,000 km²). The total area of islands known, or likely, to be unoccupied by cats is between 5,539 km² to 8,074 km² (about 0.1% of the Australian land mass).[53]

4.55 In relation to islands, TSRH said:

> Australian islands are critical for the conservation of many Australian animal species that are susceptible to introduced predators (cats and foxes); and many also have significant breeding colonies for seabirds and marine turtles that are also readily depleted or destroyed by introduced predators.[54]

4.56 DAWE submitted to the Committee that eradication of feral cats is 'an attractive option because, once achieved, it requires no further commitment of resources other than for monitoring and maintaining biosecurity'. DAWE advised that:

> There are a number of conditions necessary to achieve eradication from a site:
>
> 1 The rate of removal exceeds the rate of increase at all population densities
>
> 2 There is no immigration
>
> 3 All reproductive animals are at risk (e.g. all females in the population can be eliminated).
>
> 4 All animals can be detected at low densities
>
> 5 Discounted cost-benefit analysis favours eradication
>
> 6 There is a suitable socio-political environment.[55]

4.57 In terms of island eradications, DAWE told the Committee that it has:

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53 National Environmental Science Program, Threatened Species Recovery Hub, *Submission 72*, p. 72.

54 National Environmental Science Program, Threatened Species Recovery Hub, *Submission 72*, p. 20.

55 Department of Agriculture, Water and the Environment, *Submission 58*, p. 24.

> … an expensive up-front cost. For all islands there will be planning and implementation costs, and highly variable costs for the remoteness of the island and managing non target native species risks. Any inhabited island or an island with cultural significance to Traditional Owners or interested people will require significant community engagement.[56]

4.58 The Ecological Society of Australia told the Committee that:

> There are many opportunities to increase the use of cat-free islands to recover native wildlife populations that have declined due to cat impacts on the mainland …Of the 592 Australian islands known to be cat free, only 101 are known to currently support populations of mammal species vulnerable to predation by cats … Many of the remaining islands are suitable for translocation of cat-sensitive species. A more coordinated, centralised approach to designating cat-free exclusion areas at a national scale is necessary.[57]

4.59 Many inquiry participants were supportive of the use of islands as a basis for feral cat eradication projects.[58] As part of the Action Plan within the Threat Abatement Plan, the Australian Government has targeted the eradication of cats from five Australian islands.[59] The Department highlighted some of this ongoing work:

> An ambitious program on Christmas Island that aims to eradicate all feral and stray cats. The program employs roadside baiting, cage trapping, soft-jaw leg-hold trapping and shooting. Since 2010, over 1,200 cats have been removed from the island. The program has a strong focus on evaluation and improvement … The program is underpinned by community engagement. Eradication is only possible because of support from the Christmas Island community. Christmas Island requires pet owners to register and de-sex all domestic cats on the island, and no new cats may be brought in.[60]

4.60 DAWE also told the Committee of another project that is underway:

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56 Department of Agriculture, Water and the Environment, *Submission 58*, p. 24.

57 The Ecological Society of Australia, *Submission 48*, p. 11.

58 See for example: Society for Conservation Biology Oceania Section, *Submission 41*, p. 1; Dr Tony Buckmaster, Research, Development and Extension Manager, Centre for Invasive Species Solutions, *Committee Hansard*, 28 August 2020, p. 11; Invasive Species Council, *Submission 121*, p. 9.

59 Department of Agriculture, Water and the Environment, *Submission 58*, p. 14.

60 Department of Agriculture, Water and the Environment, *Submission 58*, pp. 13-14.

> A feral cat management program that commenced on Norfolk Island in 2018 to reduce impacts on the island's threatened bird species, particularly the Norfolk Island green parrot. The program has seen an increase in trapping effort across the island, accompanied by monitoring to record changes in patterns of cat occurrence and evaluate effectiveness of management, as well as community engagement to strengthen management of domestic cats.[61]

4.61 Submitters told the Committee of work on other islands to eradicate feral cats including:

- A project underway on South Australia's Kangaroo Island which has included the trial of some emerging technologies, and the creation of a 'safe haven' for the Kangaroo Island dunnart and other priority threatened species.[62]
- Successful feral cat eradications on six Tasmanian islands (Little Green, Great Dog, Macquarie, Tasman, Wedge and historically Betsey Island). Cats have likely died out from seven islands (Deal, Outer Sister, Courts, Fulham, Swan, Schouten and St. Helens Island).[63]

Biological controls

4.62 Some inquiry contributors discussed the potential use of biological agents, such as the release of a virus, to assist in managing the feral cat problem. The Committee was told that such a strategy had been shown to be effective for rabbits. [64] According to the evidence before the inquiry however, it is clear that such a proposition for feral cats has yet to be proven effective.

4.63 DAWE told the Committee that:

> The use of a biological control, such as a cat-specific virus, has appeal as a broadscale control tool for feral cats. For Australia, a study … found it unlikely that any felid-specific pathogen may be suitable as a sufficiently virulent and humane biological control agent from which domestic cats can be protected. Research has been underway for a number of years to identify other potential viruses and pathogens however no new suitable pathogens have been

61 Department of Agriculture, Water and the Environment, *Submission 58*, p. 14.

62 Kangaroo Island Landscape Board, *Submission 130*, p. 3.

63 Tasmanian Government, *Submission 7*, p. 1.

64 See for example: Foundation for Rabbit-Free Australia, *Submission 52*, p. 1.

identified since 1995. None are available or acceptable for immediate application as a lethal biocontrol agent for cats.[65]

4.64 The Western Australian Biodiversity Science Institute (WABSI) told the Committee that:

> Feline leukaemia virus, feline immunodeficiency virus and feline panleucopaenia virus are all present in Australia, but have low transmission rates where cat density is low. However, feline panleucopaenia virus was successfully used as part of an integrated control program against feral cats on one small subAntarctic island … and, if social acceptability changes, may be effective as a control solution where cats occur at higher densities. If this approach was given further consideration, effective vaccinations are available for all three viruses to protect the pet cat population. As with any disease-causing biological control agent, humane aspects will also need to be considered to meet community expectations regarding animal welfare.[66]

4.65 Asked about whether the potential for a cat calicivirus or similar virus or a cat myxomatosis that could be selective for feral cats, Dr Tanja Strive of the CSIRO advised:

> There was a really extensive systematic review conducted in 1995 by Elizabeth Moody and funded by the Australian Nature Conservation Agency. This report systematically assessed over 150 known pathogens of cats, including seven viral diseases. But the recommendations of that report were that none of the pathogens was considered a suitable—or available, at least—biocontrol for cats in Australia, and to my knowledge no new cat pathogen has emerged since then that would meet the requirement for an ideal viral biocontrol agent and warrant a second look.[67]

Gene drive technology

4.66 Many submitters to the inquiry suggested that gene drive technology held promise as a method to control feral cats. However, development of the technology was in its infancy. Other submitters also noted ethical concerns.

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65 Department of Agriculture, Water and the Environment, *Submission 58*, p. 24. See also: Dr Andy Sheppard, Research Director, CSIRO Health and Biosecurity, CSIRO, *Committee Hansard*, 28 August 2020, p. 2; Western Australian Biodiversity Science Institute, *Submission 135*, p. 10; Dr Sally Box, Assistant Secretary, Office of the Threatened Species Commissioner, Department of Agriculture, Water and the Environment, *Committee Hansard*, 26 August 2020, p. 6.

66 Western Australian Biodiversity Science Institute, *Submission 135*, p. 10.

67 Dr Tanja Strive, Principal Research Scientist, CSIRO, *Committee Hansard*, 28 August 2020, p. 4.

4.67 According to DAWE:

> Novel gene drive technology is an emerging technology that has potential for use in feral animal control programs by genetically altering entire populations … Novel revolutionary genetic technologies have recently been developed that can force modified genetic traits into an animal population, defying the constraints of normal Mendelian inheritance.[68]

4.68 DAWE provided some examples of the potential application of gene drive technology, advising the Committee that it could be used 'to alter the sex bias of new animals that will eventually lead to a population crash or sensitising specific species to a particular toxin and thereby rendering them susceptible to it.'[69] DAWE added that:

> Delivered and spread through sexual reproduction, the potential of this powerful new technology is unprecedented, making species specific and more humane pest control or even eradication theoretically feasible.[70]

4.69 WABSI was of the view that:

> Synthetic gene drives could be used to force deleterious traits (many are being considered) through target populations or lead to male-only progeny. Alternatively, gene shears could be carried within germ cells that shred a sex chromosome to achieve the same result. Other potential approaches are still under development, including safety mechanisms to prevent uncontrolled spread to other species and the theory and understanding of their likelihood of success.[71]

4.70 Dr Owain Edwards from the CSIRO advised the Committee that the development of gene drive technology is in its early stages, is presently focussed only on laboratory work in mice and could take some 10 to 13 years before it is fully developed for use in species such as cats. Dr Edwards noted that following development, 'we then have to meet regulatory requirements and ensure that the public is accepting of the use of the technology. So it would probably be a 15- to 20-year time frame at least before it would actually be available for use.'[72]

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68 Department of Agriculture, Water and the Environment, *Submission 58*, p. 29.

69 Department of Agriculture, Water and the Environment, *Submission 58*, p. 29.

70 Department of Agriculture, Water and the Environment, *Submission 58*, p. 29.

71 Western Australian Biodiversity Science Institute, *Submission 135*, p. 9.

72 Dr Owain Edwards, Group Leader, Environmental Mitigation and Resilience, CSIRO, *Committee Hansard*, 28 August 2020, p. 5.

4.71 Dr Edwards also considered the research that is still required for gene drive technology's use on cats:

> … considerable research is required on feral cat reproductive biology, ecology and population genetics, which is necessary before we can assess whether feral cats are a feasible target for this technology. This research can be done while we wait for the technology to be fully evaluated in mice and will tell us whether it's worth making the investments with that technology for feral cats. It's good that this same research would also be relevant to other landscape focused management strategies.[73]

4.72 Given the relatively recent emergence of gene drive technology, the Committee was made aware of several projects that are underway to understand more about how it could be applied.

4.73 The Committee was advised that the CSIRO had begun to investigate the issue of gene drive technology but it was not yet considering such methods for cats:

> CSIRO is currently working as part of an international consortium called GBIRd or Genetic Biocontrol of Invasive Rodents, which is aiming to develop a gene drive type genetic control for mice on islands. But CSIRO will not start developing this technology in any other invasive vertebrate, including feral cats, until it has been proven safe and effective in mice. This is because mice, in addition to being environmental and agricultural pests, also have the benefit of being excellent laboratory animals for genetic research.[74]

Risks of gene drive technology

4.74 While some submitters were supportive of the development of gene drive technology,[75] others warned of the possible risks.

4.75 DAWE told the Committee that:

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73 Dr Owain Edwards, Group Leader, Environmental Mitigation and Resilience, CSIRO, *Committee Hansard*, 28 August 2020, p. 5.

74 Dr Owain Edwards, Group Leader, Environmental Mitigation and Resilience, CSIRO, *Committee Hansard*, 28 August 2020, p. 4. See also Centre for Invasive Species Solutions, *Submission 120*, p. 14. See also: Department of Agriculture, Water and the Environment, *Submission 58*, p. 29; Dr Andy Sheppard, Research Director, CSIRO Health and Biosecurity, CSIRO, *Committee Hansard*, 28 August 2020, p. 5.

75 Australian Wildlife Conservancy, *Submission 22*, p. 1; Ecological Society of Australia, *Submission 48*, p. 11; National Parks and Wildlife Service (on behalf of NSW Government), *Submission 95*, pp. 7-8; Australian Veterinary Association, *Submission 180*, p. 12.

> With the use of any form of genetic technology consideration will need to be given to the risk of movement (legal or illegal) of the gene-drive modified populations internationally to countries where *Felis catus* is a native or desired species. In addition, there will need to be public acceptance in Australia of both the technology and the specific application to feral cats prior to any release.[76]

4.76 WABSI told the Committee that:

> The social licence aspects of such a control solution are arguably just as important as the technology itself, which is why this is a high early research priority.[77]

4.77 Friends of the Earth Australia and GeneEthics submitted to the Committee that there 'is a concern that gene drives could potentially spread to populations that they are not intended to– or … related species.'[78]

Shooting and hunting

4.78 Traditional methods of lethal animal control, such as the hunting and shooting of feral cats, are a known quantity. These methods were a significant feature of the Victorian parliamentary inquiry that was discussed in Chapter 3.[79] Broadly, that report found:

> … that recreational hunting cannot remove enough animals by itself to manage the invasive animal problems in Victoria. Nonetheless, the evidence received by the Committee suggests that recreational hunting can be an effective part of programs involving multiple control methods for certain species in some circumstances, if the hunting effort can be focussed at particular times and places.[80]

4.79 Submitters to this committee's inquiry offered mixed views on the efficacy of these techniques. A number of submitters were supportive of hunting and shooting. In contrast, other submitters offered a different view, highlighting

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76 Department of Agriculture, Water and the Environment, *Submission 58*, pp. 29-30.

77 Western Australian Biodiversity Science Institute, *Submission 135*, p. 9.

78 Friends of the Earth Australia and GeneEthics, *Submission 97*, p. 2.

79 Parliament of Victoria, Environment, Natural Resources and Regional Development Committee, *Report of the inquiry into the control of invasive animals on Crown land*, June 2017.

80 Parliament of Victoria, Environment, Natural Resources and Regional Development Committee, *Report of the inquiry into the control of invasive animals on Crown land*, June 2017, p. xv.

the limited scope of the techniques and the circumstances in which these could be used.

4.80 DAWE submitted to the Committee that:

> As a control technique, shooting is most appropriate if applied for an extended period or timed for critical periods. Ongoing shooting is appropriate in areas where there is a continual immigration of feral cats from surrounding areas and the species being protected from predation is vulnerable all of the time. Critical periods of shooting can be undertaken in locations where either there is a rapid increase in feral cat numbers, such as in response to a prey irruption, or at a time in the threatened species life cycle, such as during breeding, when the population of the threatened species is at a higher risk.[81]

4.81 DAWE also told the Committee that:

> Shooting is usually done at night from a vehicle with the aid of a spotlight but can also be conducted during the day. Shooting is expensive, labour intensive, time consuming and can only be done on a relatively small scale because of the resource requirements and high cost.[82]

4.82 The CISS advised that shooting:

> … is both labour and time expensive and is not able to be used at a landscape level, nor …an option for management of feral or stray cats in urbanised areas.[83]

4.83 Some submissions advocated that scope for existed for recreational shooters to contribute to feral cat control efforts.[84] Some proposed the payment of a bounty.[85] Others advocated against the use of shooting on the basis that it was an inhumane practice.[86]

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81 Department of Agriculture, Water and the Environment, *Submission 58*, p. 26.

82 Department of Agriculture, Water and the Environment, *Submission 58*, p. 26.

83 Centre for Invasive Species Solutions, *Submission 120*, p. 12.

84 See for example: Ms Imogen Hubber, *Submission 6*, p. 1; Mr Kyle Grant; *Submission 13*, p. 3; Sporting Shooters' Association of Australia, *Submission 44*, p. 3; Mr Mason Lalor, *Submission 29*, p. 1; *Submission 37*, p. 4.

85 See for example: Mr Kyle Grant; *Submission 13*, p. 3; Feral Pest Control, *Submission 17*, p. 3;

86 Ms Jan Kendall, *Submission 25*, p. 7.

Feral and stray cat control in urban environments

4.84 Dr Sally Box told the Committee that:

> The control tools that you can use in an urban area for stray and feral cats are going to be limited because of roaming domestic cats. But there are certainly things that can be done, like fencing off rubbish dumps and things like that where you can get a concentration of stray and feral cats around those food sources. So, there's the work that you can do with domestic cats and responsible pet ownership and there's the work you can do to try to cut off the food sources for stray cats in cities. Then, obviously, there's the trapping that you can do to try to capture those stray and feral cats in the cities, but you're going to be limited with your shooting and baiting tools.[87]

Trap Neuter Release

4.85 One technique that was proposed by submitters to the inquiry was that of trap, neuter, release (TNR) – where urban stray cats are caught, desexed and then released. A number of inquiry submitters were supportive of this method of feral cat control which has been successful in the United States,[88] however the vast majority of submitters were not.[89]

4.86 Dr Jacquie Rand of the Australian Pet Welfare Foundation said that the TNR technique is often a used within community-based cat programs where residents take it upon themselves to care for a cat which they may not necessarily own.[90] Dr Rand elaborated on this notion:

> We're seeing that about 70 per cent of the cats that we're discussing are semi-owned cats. People are saying that, before they heard about the program, they didn't consider themselves the owner of the cat and that the cat was their property; they considered themselves the carer or the guardian, but they are

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87 Dr Sally Box, Assistant Secretary, Office of the Threatened Species Commissioner, Department of Agriculture, Water and the Environment, *Committee Hansard*, 26 August 2020, p. 6.

88 See for example: Ms Jan Kendall, *Submission 25*, p. 26; Ms Ildi Ehsman, *Submission 30*, p. 1; Mr Charles Davis, *Submission 32*, p. 4. Animal Justice Party, *Submission 76*, p. 13; Australian Pet Welfare Foundation, *Submission 142*, p. 22; Animal Defenders Office, *Submission 136*, p, 3.

89 See for example: Tasmanian Government, *Submission 7*, p.11; Dr Michael Calver, *Submission 12*, p. 2; Australian Wildlife Society, *Submission 15*, p. 2; Dr John Read, *Submission 70*, p. 3; Threatened Species Recovery Hub, *Submission 72*, p. 4; Michael Johnston, *Submission 110, p. 11*; Invasive Species Council, *Submission 121*, p. 13; Australian Academy of Science, *Submission 154*, p. 4; Heather Crawford, *Submission 162*, p. 11; Name Withheld, *Submission 167*, p. 6.

90 Dr Jacquie, Executive Director and Chief Scientist, Australian Pet Welfare Foundation, *Committee Hansard*, 9 September 2020, p. 18.

> happy to take ownership and have their name listed on the microchip database.[91]

4.87 Dr Rand provided an example to the Committee of how such programs operate:

> We were dealing with a farm. This lady lives right on the edge of the suburbs and she has about a dozen cats. There are adult females that keep having kittens. … She is happy to have them desexed. She wants to own three of them … [TNR is] only a small component but it's an important component, because you don't want those other nine cats continuing to produce kittens. It's been shown overseas to work. These people who are against it have no other solution but to increase the killing of cats …[92]

4.88 DAWE submitted to the Committee that it does not support TNR as a management tool for stray cats:

> … as effective programs require a well-defined and contained area with no immigration of other cats, where there is limited impact on wildlife and the wellbeing of the animals is able to be maintained. These requirements cannot be met in Australia.[93]

4.89 The TSRH submitted that:

> The evidence from numerous trials carried out in a range of countries show that TNR does not reduce the overall population size of urban ferals (owned, stray) cats because of continual immigration from outside the colony. Desexed cats that are returned to the area where they were caught continue to hunt, so their impacts on wildlife are unabated.[94]

4.90 Dr Tony Buckmaster from the CISS told the Committee that:

> It's undoubtable that the inquiry will have received submissions indicating that trap, neuter and release programs should be used to manage feral cats. There is, however, extensive evidence that these TNR programs are not capable of effectively reducing feral cat or stray cat populations even at a very small or localised scale. And, even if these programs could reduce feral and

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91 Dr Jacquie, Executive Director and Chief Scientist, Australian Pet Welfare Foundation, *Committee Hansard*, 9 September 2020, p. 18.

92 Dr Jacquie, Executive Director and Chief Scientist, Australian Pet Welfare Foundation, *Committee Hansard*, 9 September 2020, p. 18.

93 Department of Agriculture, Water and the Environment, *Submission 58*, p. 37.

94 National Environmental Science Program, Threatened Species Recovery Hub, *Submission 72*, p. 28.

stray cat populations, it would take many years and the cats would still be capturing and consuming prey items during this time.[95]

Animal welfare issues in feral cat control

4.91 Many submitters were very concerned about the welfare of all cats and implored the Committee to ensure that feral cat control methodologies were conducted humanely.

4.92 RSPCA Australia submitted that:

> There has been some work towards national consistency including the draft Australian Code of Practice for the Welfare of Cats which was initiated under the Australian Animal Welfare Strategy and the Australian Cat Action Plan but further work is needed.[96]

4.93 In particular, the RSPCA's strategy notes that:

> Best practice feral cat management requires an understanding of the animal welfare impacts (humaneness) of control techniques and how to carry them out in the best possible way. All existing control methods for feral cats cause some pain, suffering or distress: more humane methods need to be developed and adopted as a matter of urgency.[97]

4.94 Best practice considerations in relation to domestic cats will be addressed in Chapter 5.

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95 Dr Tony Buckmaster, Research, Development and Extension Manager, Centre for Invasive Species Solutions, *Committee Hansard*, 28 August 2020, p. 8. See also Centre for Invasive Species Solutions, *Submission 120*, p. 12.

96 RSPCA Australia, *Submission 124*, p. 7.

97 RSPCA Australia, *Submission 124. 1*, p. 9.

5. Domestic cat control, public awareness and education

5.1 This Chapter considers public awareness and education about the feral and domestic cat problem in Australia. It also considers responsible cat ownership, barriers encountered by some in the community and best practices for the regulation of domestic cats.

Public awareness of the feral and domestic cat problem

5.2 Some evidence received by the Committee highlighted the need to improve public awareness of Australia's feral and domestic cat problem. In doing so, it was seen as vital that information be delivered in a way that resonated across the community, and particularly to inform and influence pet cat owners.

5.3 This was seen as particularly important by contributors who expressed concern that cat owners in particular were protective of their pets and needed convincing that concerns raised by neighbours should be heeded.

5.4 Some people submitted allegations that cat owners dismissed concerns of neighbours about their pet cats;[1] and some owners did not believe that their pet cats killed wildlife or roamed at night.[2] The Committee also received an anecdotal report of a cat owner intimidating a complainant.[3]

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1 See for example: Duncan Dey, *Submission 35*, p. 1

2 See for example: Duncan Dey, *Submission 35*, p. 1; Ms Helene Forsythe, Program Manager, Southern Sydney Regional Organisation of Councils, *Committee Hansard*, 28 August 2020, p. 27.

3 Mrs Elizabeth Balogh, *Submission 38*, p. 1.

5.5 Inquiry submitters shared their observations about effective messaging techniques. Ms Candice Bartlett of the Invasive Species Council advised the Committee that delivering effective messages to the community required:

> … inspiring the community and building a social licence for feral cat control. This is founded on the community having a strong understanding of the need for cat management—both the control of feral cats and the management of domestic cats—inspiring responsible pet ownership.[4]

5.6 Dr Tony Buckmaster from the Centre for Invasive Species Solutions (CISS) told the Committee that its researchers were:

> … looking at different messages that could be given to make sure that people have their cats contained. There's no single message that will work. It needs to be done depending on the circumstances and depending on the area.[5]

5.7 Inquiry contributors proposed relevant factors for developing public awareness programs including that:

- awareness campaigns should be driven by the Commonwealth, states and territories rather than by local governments;[6]
- improved explanations should be provided to the community about the reasons behind cat control programs such as containment or curfews;[7]
- campaigns need to be developed on a strong evidentiary basis[8] including about cats' impact on wildlife;[9]
- there should be an emphasis on animal welfare,[10] and an acknowledgement that many people do not wish to see any animals, including cats, harmed.[11]

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4 Ms Candice Bartlett, Conservation Officer, Invasive Species Council, *Committee Hansard*, 28 August 2020, p. 14.

5 Dr Tony Buckmaster, Research, Development and Extension Manager, Centre for Invasive Species Solutions, *Committee Hansard*, 28 August 2020, p. 12.

6 See for example: Eurobodalla Shire Council, *Submission 73*, p. 3; Nicole Galea, *Submission 112*, p. 25.

7 See for example: Wyndham City Council, *Submission 85*, p. 2; School of Biological Sciences, Monash University, *Submission 49*, p. 11; National Environmental Science Program Threatened Species Recovery Hub, *Submission 72*, p. 37.

8 See for example: Ms Candice Bartlett, Conservation Officer, Invasive Species Council, *Committee Hansard*, 28 August 2020, p. 14.

9 See for example: Albury and Wodonga Councils, *Submission 92*, p. 7; Nicole Galea, *Submission 112*, p. 25.

5.8 The Committee was told that local councils,[12] veterinarians[13] and state governments should be supported to provide public awareness information relating to cats. The mode and responsibility for the development and distribution of public awareness content and programs was also considered. The Committee was advised that content delivery within communities should come through mechanisms including printed publications, guides, pamphlets, online content, videos, interpretive signage and community presentations.[14]

5.9 The Australian Veterinary Association was of the view that in developing programs, more research was needed to assess the general public's concerns regarding cat welfare in relation to cat control methods, including for migrant and remote communities.[15]

The interaction between owned cats and the feral cat problem

5.10 Evidence to the Committee highlighted how domestic cats contributed to the feral cat problem, particularly where previously owned cats became either 'stray' or 'semi-owned' as a result of being abandoned, not desexed or otherwise living in an environment where they were not cared for.[16]

5.11 Professor Sarah Legge of the Threatened Species Recovery Hub (TSRH) told the Committee that:

> As the human population grows, the pet cat population grows with it. We know that there is a leakage, if you like, of pet cats into the stray or urban feral cat population. Cats get dumped, cats go wandering and there are unwanted

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10 See for example: Ms Candice Bartlett, Conservation Officer, Invasive Species Council, *Committee Hansard*, 28 August 2020, p. 14; Susie Hearder, *Submission 132*, p. 1; Celeste Evans, *Submission 134*, p. 10; Animal Defenders Office, *Submission 136*, p. 2.

11 Susie Hearder, *Submission 132*, p. 1; Celeste Evans, *Submission 134*, pp. 13-14; Animal Defenders Office, *Submission 136*, p. 2; Mary Ann Gourlay, *Submission 150*, p. 2.

12 See for example: Dr Phil Tucak, *Submission 40*, p. 2.

13 See for example: Dr Phil Tucak, *Submission 40*, p. 2.

14 See for example: Dr Phil Tucak, *Submission 40*, p. 2; Nicole Galea, *Submission 112*, p. 10; Friends of Paganoni Swamp, *Submission 18*, p. 2.

15 Australian Veterinary Association, *Submission 180*, p. 14. See also Mary Ann Gourlay, *Submission 150*, p. 2.

16 See for example: Pat Carden, *Submission 31*, p. 1.

litters at the back of the shed. So they certainly do leak into that urban feral cat population.[17]

5.12 The CISS told the Committee that:

> Domestic cats that are intentionally and unintentionally released into [the] environment by their owners are likely to survive given that they still have all the hunting and behaviour instincts of their predecessors before the species became domesticated. In areas with abundant native or introduced wildlife, the released cat is likely to find sufficient food to survive.[18]

5.13 The CISS further explained that:

> There is extensive evidence to show that domestic cats contribute to the feral cat population however there is limited evidence as to the rate at which this occurs. It is likely that the rate varies depending on a range of factors including food availability, climatic conditions and location of release.[19]

5.14 Another issue raised in evidence and seen to contribute to the development of feral and stray cat populations is the feeding of unowned cats by kind-hearted community members.[20] Ms Helena Forsythe from the Southern Sydney Regional Organisation of Councils told the Committee that:

> One of the biggest problems we've observed is people feeding unowned cats in public places. We have very multicultural communities across our region, and it is a challenge to communicate to individuals that it's not a good thing to be doing. Personally, they feel that providing food for animals in the park, whether they be birds or cats, is a good thing. They feel that that's a generous thing to be doing, particularly if it's restaurant or bread shop food that might be going to waste. Quite often it's bulk amounts of food that are left out in the parks or reserves, and obviously that attracts not just cats but other animals as well. We don't have any legislation, apart from that on littering or dumping material, that we could impose upon people who do that, and generally

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17 Professor Sarah Legge, Deputy Director, Co-Leader of Research Program on Feral Cat Impacts and Management, Threatened Species Recovery Hub, National Environmental Science Program, *Committee Hansard*, 28 August 2020, p. 23.

18 Centre for Invasive Species Solutions, *Submission 120*, p. 16.

19 Centre for Invasive Species Solutions, *Submission 120*, p. 16. See also: Dr Tony Buckmaster, Research, Development and Extension Manager, Centre for Invasive Species Solutions, *Committee Hansard*, 28 August 2020, p. 10. See also National Environmental Science Program Threatened Species Recovery Hub, *Submission 72*, p. 38.

20 See for example: Name Withheld, *Submission 47*, p. 3; Australian Institute of Animal Management, *Submission 63*, p. 3.

> councils would not be inclined to fine elderly residents for leaving out leftover food, particularly in areas where we know there are cats being fed.[21]

Responsible cat ownership

5.15 Responsible cat ownership is a factor in improving community cohesion, reducing opportunities for predation on wildlife, and limiting domestic cat recruitment into feral cat populations.

5.16 Although the Australian Government does not have jurisdiction over the management of domestic cats, the Committee was told that the Threatened Species Commissioner has taken initiatives to strengthen public awareness about the risks posed by cats, and promote responsible cat ownership, including through widely shared social media posts about the impacts of cats on native wildlife.[22] In addition:

> The Office of the Threatened Species Commissioner has funded a collaborative research project with the Tiwi Land Council, University of New England, Animal Management in Rural and Remote Communities and the Ark Animal Hospital aimed to reduce the potential impact of cats on native wildlife by promoting responsible cat ownership in the Tiwi Island community of Wurrumiyanga. The project used a variety of methods including a census of cats in the community, a questionnaire to ascertain attitudes towards cat ownership, community education, vet visits for free de-sexing and a cat roaming behaviour study using owned pet cats. The community education included pamphlets about cat de-sexing in the local language.[23]

5.17 As noted in Chapter 3, states and territories are responsible for legislation relating to the management of domestic cats, and the laws and practices therefore vary between jurisdictions (see Figure 5.1 below).

5.18 The Western Australian Government submitted to the Committee that its *Cat Act 2011* commenced fully in 2013 and aimed to provide better control and management of domestic cats, and to promote responsible cat ownership within the community. The Act includes provisions relating to registration, sterilisation and microchipping of domestic cats within Western Australia.[24]

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21 Ms Helene Forsythe, Program Manager, Southern Sydney Regional Organisation of Councils, *Committee Hansard*, 28 August 2020, p. 25.

22 Department of Agriculture, Water and the Environment, *Submission 58*, p. 33.

23 Department of Agriculture, Water and the Environment, *Submission 58*, p. 35.

24 Western Australian Government, *Submission 143*, p. 2.

5.19 As discussed in Chapter 3, local governments that engaged with the inquiry believed that a more coordinated national effort to provide cat management resources for local governments was necessary. The Committee was made aware of a range of resources developed and used in various parts of the country, aiming to assist community members with improved cat management and ownership. Examples included:

- the TassieCat website (www.tassiecat.com) which provides a broad range of information on responsible cat ownership. The website provides expert advice and useful resources to help owners keep cats safe, healthy and happy while protecting the environment and the community.[25]
- A Zoos Victoria and RSPCA Victoria campaign about domestic cats called Safe Cat, Safe Wildlife (see https://www.safecat.org.au/) providing cat owners with advice on the best care for their cats to have an enriched life contained at home. The goals of the campaign are improved wellbeing for domestic cats and protecting native wildlife.[26]
- The Cat Protection Society of Victoria provides community members who adopt cats with 'a comprehensive handbook which includes essential medical information explaining that the CPSV has provided their cat with necessary vaccinations, has been de-sexed, wormed and microchipped.[27]
- In NSW, a package of 'Good Neighbour' resources released by the Cat Protection Society of NSW, with the support of the Government, councils and other stakeholders has been released to support cat owners and residents. This material aims to support pet owners to understand the importance of confining cats to their property and provides practical advice and support.[28]

Best practices in domestic cat management

5.20 The Committee was advised that many states and territories had enacted cat management plans. In most cases, the elements of these plans are to be implemented by local governments.

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25 Tasmanian Government, *Submission 7*, p. 15.

26 Department of Agriculture, Water and the Environment, *Submission 58*, p. 36.

27 Cat Protection Society of Victoria, *Submission 42*, p. 2.

28 National Parks and Wildlife Service (on behalf of NSW Government), *Submission 95*, p. 8.

5.21 Some inquiry contributors advocated for a model that had been developed by RSPCA Australia, set out in a 2018 document *Identifying Best Practice Domestic Cat Management in Australia*.[29] The (Commonwealth) Department of Agriculture, Water and the Environment (DAWE) advised the Committee that:

> The RSPCA has developed an approach to best practice management for domestic and stray (owned and semi-owned) cats that includes responsible cat ownership and containment and an approach for stray cats. Identifying Best Practice Domestic Cat Management in Australia was released in 2018. The Australian Government supported its development and the Feral Cat Taskforce has been briefed and consulted during development.[30]

5.22 RSPCA Australia submitted to the Committee that its best practice strategies to reduce unowned and semi-owned cat populations were:

- Limiting the flow of cats from the owned cat population into the unowned and semi-owned populations by reducing abandonment and the incidence of cats roaming and not returning home and the production of unwanted kittens.
- Reducing the number of unowned and semi-owned cats through removal of cats (through adoption, or euthanasia if the cat is unwell or injured; trap and kill programs should not be considered as an effective long-term solution to cat management).
- Controlling reproduction of unowned and semi-owned cats and supporting the long-term responsible care of semi-owned cats.[31]

5.23 RSPCA Australia submitted to the Committee that its strategies to manage owned cats were:

- Desexing to prevent the birth of unwanted kittens (particularly pre-pubertal desexing).
- Cat containment to prevent cats wandering, becoming lost and to reduce the risk of predation.
- Reducing loss, surrender or abandonment of cats by their owners by addressing the reasons why this occurs (for example, behavioural issues, inability to find accommodation that allows cats, financial hardship).[32]

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29 RSPCA Australia, Submission 124, attachment 1.See also: Campbelltown City Council, *Submission 86*, p. 3 and p. 9; City of Canterbury Bankstown, *Submission 111*, p. 4.

30 Department of Agriculture, Water and the Environment, *Submission 58*, p. 36.

31 RSPCA Australia, *Submission 124*, p. 28.

32 RSPCA Australia, *Submission 124*, p. 28.

5.24 RSPCA Australia's work has also led to the development of cat management plans in the ACT, Tasmania and South Australia. RSPCA Australia submitted to the Committee that:

> A cat management plan may be a useful tool for local councils to identify key priorities, develop strategic and operational plans as well as evaluation measures. Examples of work that has been done in this area include the Australian Cat Action Plan developed by the Animal Welfare League of Queensland and the South Australian Cat Management Plan developed by RSPCA and Animal Welfare League of South Australia.[33]

5.25 RSPCA Australia further told the inquiry that:

> Effective cat management requires a high level of government and community support, and communication and coordination between all stakeholders; aspects which are often difficult to achieve and maintain over time. [34]

5.26 The Australian Veterinary Association submitted that strategies in most cat management plans included:

- promoting responsible cat ownership;
- provision of affordable desexing in areas of high cat and kitten intake into shelters and pounds;
- reducing the number of semi-owned and unowned domestic cats;
- continuous improvement of domestic cat welfare and management practices, including improved compliance/enforcement;
- expanding cat containment and assisting owners to contain cats where there are threatened and endangered species; and
- reducing risks to human health.[35]

Barriers to responsible cat ownership

5.27 The Committee received a significant volume of evidence discussing the barriers to responsible cat ownership. These barriers related in particular to the registration, microchipping and desexing of domestic cats.

5.28 BirdLife Australia provided the Committee with a table broadly outlining the regulatory regimes pertaining to registration, microchipping, desexing and cat containment in each Australian jurisdiction.

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33 RSPCA Australia, *Submission 124*, p. 9.

34 RSPCA Australia, *Submission 124*, p. 2.

35 Australian Veterinary Association, *Submission 180*, p. 13.

Figure 5.1 Summary of the key measures used in pet cat management in each jurisdiction of Australia

Table 1: Summary of the key measures used in pet cat management in each jurisdiction of Australia

Jurisdiction	Desexing requirements	Microchipping requirements	Registration requirements	Provisions for 'nuisance' cats	Provisions for cat curfews/ containment
Australian Capital Territory	Y	Y	N	Y	Y-17 cat containment areas
New South Wales	N	Y	Y	Y	Y-in some areas, provision for cat curfews.
Victoria	N	Y	Y	Y	Y-in some areas.
Northern Territory	No territory-based legislation relating to pet cats, but council areas have local laws and regulations				
Tasmania	N	N	N	N	N
Queensland	N	Y	N	N	N
South Australia	Y-for cats born after 1 July 2018	Y	N-not at state level, but local governments can set by-laws	Y	Y-in some local government areas.
Western Australia	Y	Y	Y	Y	Some-Local governments can make by-laws about places where cats are prohibited or confined.

Birdlife Australia, Submission 94, p. 10.

Registration, microchipping and desexing

5.29 Inquiry participants made clear to the Committee that requirements across states and territories relating to the registration, microchipping and desexing of domestic cats varied significantly.

5.30 While submitters each had differing perspectives based on the jurisdiction which they were discussing, some key themes emerged about how each of these could best be managed.

Registration

5.31 Submissions to the inquiry considered ways in which cat registration could be used to improve responsible cat ownership. These included:

- reduction of registration fees where cats have been confined[36] or desexed;
- fines for failure to comply with registration requirements;[37] and
- mandatory registration.[38]

Desexing

5.32 Submissions to the inquiry considered ways in which desexing could be used to improve responsible cat ownership. These included:

- providing financial incentives for the desexing of cats; [39] and
- working closely with veterinarians and local councils to ensure that community groups could access reduced price or free desexing for clients,[40] including subsidies or vouchers for low-income residents.[41]

5.33 Emeritus Professor Jacquie Rand of the Australian Pet Welfare Foundation discussed how having cats desexed was often difficult for people on lower incomes who may look after a stray cat:

> … if you identify the areas where you've got really high levels of free-roaming cats, they will be the low socioeconomic areas, and we're talking about families of two or four people living on less than $650 a week, so how do they ever afford to have a cat desexed, microchipped and registered, which could cost from $250 to $500 in some areas? The cat has kittens and they either wander or are given away. It's not going to work by trying to legislate it, but

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36 See for example: Nicole Galea, *Submission 112*, p. 10; Wyndham City Council, *Submission 85*; Albury and Wodonga Councils, *Submission 92*, p. 8.

37 See for example: Wyndham City Council, *Submission 85*, p. 3; National Parks and Wildlife Service (on behalf of NSW Government), *Submission 95*, p. 8.

38 See for example: Mr Charles Davis, *Submission 32*, p. 1.

39 National Parks and Wildlife Service (on behalf of NSW Government), *Submission 95*, p. 7. See also: Wyndham City Council, *Submission 85*, p. 4.

40 Australian Veterinary Association, *Submission 180*, p. 14.

41 See for example: Nicole Galea, *Submission 112*, p. 15; Animal Welfare League Qld, *Submission 87*, p. 1; Blue Mountains City Council, *Submission 100*, p. 1; Banyule City Council, *Submission 141*, p. 4; Australian Veterinary Association, *Submission 180*, p. 14.

> we know that, if you doorknock and you offer free desexing of all those cats, the people are so grateful.[42]

5.34 Dr Michael Banyard from the Australian Veterinary Association was asked about whether it was cheaper to desex a dog or a cat. He advised the Committee that:

> … it's less expensive to desex a cat than a dog. Obviously, there are significant differences in sizes. The basic answer is it is less expensive to desex cats than dogs, and that includes with the current techniques that are recommended to desex cats prior to their reaching puberty, to overcome the early strays and the rapid breeding that occurs at a young age.[43]

5.35 A number of submitters highlighted the free desexing program instituted by Victoria's Banyule City Council as a best practice model for the provision of low cost desexing for domestic cats.[44]

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42 Dr Jacquie, Executive Director and Chief Scientist, Australian Pet Welfare Foundation, *Committee Hansard*, 9 September 2020, p. 15.

43 Dr Michael Banyard, Past President and Executive Committee Member, Australian Veterinary Conservation Biology, Australian Veterinary Association, *Committee Hansard*, 21 October 2020, p. 3.

44 Dr Jacquie Rand, Executive Director and Chief Scientist, Australian Pet Welfare Foundation, *Committee Hansard*, 9 September 2020, p. 16; Ms Nell Thompson, Secretary, Australian Institute of Animal Management, *Committee Hansard*, 9 September 2020, p. 20; Australian Pet Welfare Foundation, *Submission 142*, p. 16.

Box 5.1 Banyule City Council

5.36 Victoria's Banyule City Council is considered as a best practice model for the management of cats in an urban community as a result of its free domestic cat desexing program. Facing a significant volume of cat-related complaints along with the surrender of large numbers of healthy cats in the municipality, local animal management officers had little choice but to take the animals to local pounds. These facilities were often full, meaning that the animals would be euthanised, a difficult outcome for both animals and council staff.

5.37 Council staff understood that cost imperatives were the main reason that residents sought not to desex their animals which led to the birth of multiple litters each year. Council staff worked with the RSPCA to develop a free cat desexing program. Under the program, owners of cats in the municipality are provided with free desexing, microchipping, free council registration for the first year, and access to transport as part of the service if it is required. Based on the figures provided to the inquiry, the program, which has been running for seven years, has been very successful. Key outcomes have included increased number of cats desexed, many cats being rehomed, and a significantly reduced number of cats being euthanised.[45]

Microchipping

5.38 The use of microchipping was also considered by inquiry participants. The key recommendation from many was the consideration of a requirement that domestic cats be microchipped, unless owned by a registered breeder.[46]

Cat containment

5.39 In the main, the implementation and enforcement of cat containment or curfew policies are within the domain of local government. DAWE submitted to the Committee that:

> The NESP Threatened Species Recovery Hub has surveyed local governments to understand by-laws and found that a small, but increasing, number of local governments in South Australia, New South Wales and Western Australia have or are working towards introducing curfews or containment for domestic

45 Banyule Ciy Council, *Submission 141*, pp. 5-8; Ms Jenny Cotterell, Senior Animal Management Officer, Banyule City Council, *Committee Hansard*, 25 September 2020, p. 5.

46 See for example: Sutherland Shire Council, *Submission 53*, p. 2; BirdLife Australia, *Submission 94*, p. 8; Southern Downs Regional Council, *Submission 77*, p. 1.

> cats. For example: 17 new suburbs are cat containment areas in the ACT; 10 local government areas in Victoria, such as the Frankston City Council, have a dusk to dawn curfew and seven have a 24/7 curfew; Mt Barker District Council in South Australia has a night curfew; and a cat outside of its yard in Alice Springs can be impounded.[47]

5.40 Submitters told the Committee about the benefits of cat containment. The TSRH advised that containment 'is an increasingly used management strategy for domestic cats, particularly in urban and suburban areas.' Further, the TSRH noted that 'Many cat owners understand that an outdoor lifestyle brings with it threats to the health and safety of their cats…'. TSRH added that owners were most likely to take advice from their veterinarians about cat care and management.[48]

5.41 Dr Buckmaster from the CISS told the Committee that a curfew might be beneficial to reduce the impacts of cats on native wildlife:

> They do hunt more effectively at night. There was actually work done in Canberra in the nineties that showed that, during the day, cats will roam only 200 or 300 metres into the natural areas, but at night they might go up to a kilometre. They're more effective at hunting at night, but they're still able to hunt during the day. Quite often cats are bringing home birds. It's likely that a 24-hour curfew would be beneficial. But, again, it depends on the data.[49]

5.42 Local governments across Australia told the Committee about their own curfew and cat containment programs,[50] or cited the need to establish one in their communities.[51]

5.43 Cat containment was strongly supported by inquiry participants,[52] particularly in areas where native wildlife was prevalent.[53] It was

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47 Department of Agriculture, Water and the Environment, *Submission 58*, pp. 36-37. See also Mr Kyle Grant, *Submission 13*, p. 2.

48 National Environmental Science Program Threatened Species Recovery Hub, *Submission 72*, p. 38.

49 Dr Tony Buckmaster, Research, Development and Extension Manager, Centre for Invasive Species Solutions, *Committee Hansard*, 28 August 2020, p. 12.

50 See for example: Mr Allan Benson, *Submission* 11, p. 2; Society for Conservation Biology Oceania Section, *Submission 41*, p. 9; Albury and Wodonga Councils, *Submission 92*, p. 7; Action Sweetwater Creek Inc, *Submission 117*, p. 3; Alexia White, *Submission 177*, p. 1.

51 See for example: Southern Sydney Regional Organisation of Councils, *Submission 56*, p. 3; Wyndham City Council, *Submission 85*, p. 3.

52 See for example: Mason Lalor, *Submission 29*, p. 1; Name Withheld, *Submission 46*, p. 2; Solomon Gordon, *Submission 58*, p. 1; UNSW Sydney, *Submission 88*, p. 10.

acknowledged that requiring cats to be contained on properties, such as by erecting a 'cat run' could be costly to the property owner.[54] The benefit of a night time curfew was also advocated by multiple submitters.[55]

5.44 BirdLife Australia submitted to the Committee that more needed to be done:

> Management strategies that aim to keep free-roaming cats (be that feral or pet) at supposed manageable or stable levels in the landscape are not compatible with native species conservation. Desexing and/or cat night-time curfews are not sufficient. While night curfews are likely to decrease domestic cat predation of mammals, they will not protect diurnal bird and reptile species... Cats also readily learn how to take specific prey, meaning a single cat can have a disproportionately devastating impact on the local populations of particular species.[56]

53 See for example: Society for Conservation Biology Oceania Section, *Submission 41*, p. 9.

54 See for example: Wyndham City Council, *Submission 85*, p. 2.

55 See for example: The Friends of Damper Creek Reserve Inc, Submission 16, p. 1; Albury and Wodonga Councils, *Submission 92*, p. 7.

56 BirdLife Australia, *Submission 94*, p. 6.

6. Committee view and recommendations

Recognising the threat of feral cats

6.1 Australia is home to one of the most biodiverse ecologies on the planet with unique flora and fauna in abundance. Many of these have evolved on our continent for thousands of years and smaller native mammals have learned to adapt to their environments. Throughout this inquiry, the Committee has learned that the impact of introduced species at European settlement, cats in particular, has caused a significant decline in the populations of many smaller native mammals. In some cases, predation by cats has been the catalyst for extinction.

6.2 This Chapter summarises the Committee's findings and views on the inquiry and makes recommendations.

Recommendation 1

6.3 The Committee recommends that the Australian Government recognise and prioritise the problem of feral cats in Australia consistent with its status as a matter of national environmental significance, that must be addressed effectively to ensure the continued survival of Australia's native wildlife and ecological communities.

Conduct of a body of work

6.4 In the Committee's view, there is a body of work that needs to be undertaken by the Australian Government to develop a consistent national definition of cats; improve understanding of the prevalence and impact of

cats, including their capacity to carry and spread disease; and evaluate emerging cat control methodologies.

Classifying cats

6.5 The Committee recognises concerns raised by inquiry stakeholders that classifications for cats varied across Commonwealth, state, territory and local legislative and regulatory instruments. This makes consistent approaches difficult, and may constrain cat management practices at the local government and vet level including decisions about returning domestic cats to their homes or taking strays to animal management facilities.

6.6 In the Committee's view, given the variance in, or lack of, legislative definitions, an agreed legislative definition is a logical starting point in developing a more nationally consistent way of managing the prevalence and impact of cats. The Committee notes support from inquiry contributors for the definition proposed by RSPCA Australia which, when considered alongside the definition used by the Department of Agriculture, Water and the Environment (DAWE), may provide some guidance.

6.7 In seeking to reach consensus on the definition and classification of cats across levels of government, the Committee is of the view that the Australian Government should canvass the perspectives of stakeholders including governments, researchers and animal welfare practitioners. A nationally agreed definition of cats could then be adopted for incorporation into the relevant cat management legislation and regulatory framework of each state and territory. The same definition should also be incorporated into Commonwealth instruments such as the Threatened Species Strategy and National Declaration: Feral Cats as Pests.

The prevalence and impact of cats

6.8 The prevalence of feral, stray and domestic cats in Australia is significant, with cats being found across the nation in all landscapes and environments. The Committee acknowledges the work of the National Environmental Science Program Threatened Species Recovery Hub (TSRH), cited by many inquiry contributors, to establish credible estimates of the prevalence of cats. The headline result of this research—that cats are prevalent across the entire continent—is sobering and leads to the conclusion that more research on prevalence is required to support targeted cat management strategies. A starting point should be the establishment of prevalence estimates for each state and territory, supplemented with further analysis on geographic

presence. The Committee notes that such estimates will vary due to climate and seasonal variability and the availability of prey.

6.9 The Committee acknowledges the many examples of species impacted by cat predation provided during the inquiry, however, it was not possible for the inquiry to examine the individual impacts on each species. The sheer numbers of native and non-native animals that are killed on a daily and annual basis are staggering and should be of concern to all Australian governments and environmental policy makers. Such statistics are a stark reminder of the need to improve policy and cat control strategies across Australia.

6.10 The consequences of the bushfires in 2019-20 will be felt throughout Australia for many years to come. Estimates of the loss of native animals from these events are sadly counted in the billions. One of the issues raised with the Committee during the inquiry was that native wildlife were more vulnerable to fall prey to feral cats on barren landscapes following the bushfires, where there are fewer places to hide.

Research on prevalence, impact and control

6.11 The Committee considers that while Australian Government funded research agencies such as TSRH are best placed to manage more in-depth research on the prevalence and impact of cats, there is ample invasive species research expertise in Australia's university sector which could be drawn upon to develop collaborative projects.

6.12 It is also imperative that the Australian government consider how this research can be more quickly translated into practical outcomes for cat management through both funding mechanisms and other in-kind assistance. Ongoing commitments towards research to better understand the impacts of emerging feral cat control methodologies, such as gene drive technology, will place Australia at the forefront of international research efforts.

6.13 The Committee emphasises that procedures, testing and cat control techniques should be carried out in accordance with the highest ethical standards, ensuring humane treatment and consistent with the laws of each jurisdiction.

Pathogens and disease control

6.14 The Committee was interested to learn about the impacts of toxoplasmosis and other cat-borne diseases on Australian birds, mammals and farm

animals. The Committee considers that it is vital that more is learned about these diseases and that Australia's world class scientific researchers are well-placed to capitalise on this, given appropriate resources.

Recommendation 2

6.15 The Committee recommends that the Australian Government undertake a body of work to improve understanding of the impact of feral, stray and domestic cats in Australia by:

a. Collaborating with state and territory governments and other relevant stakeholders to develop and adopt a consistent definition of feral, stray and domestic cats, to be applied across national, state, territory and local government legislative and regulatory frameworks relating to cats.

b. Commissioning further research on:

i. the prevalence, impact and control of feral, stray and domestic cats including in urban environments;

ii. ii. emerging cat control methodologies such as gene drive technology;

iii. iii. the impacts and management of toxoplasmosis and other cat-borne diseases on native species and productive farmland; and

iv. iv. the relationship between habitat degradation and cat predation, including with respect to bushfire impacts.

Strategy, planning and resourcing

6.16 The Committee recognises the importance of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) in protecting and conserving Australia's environment and biodiversity. Key elements of the Act allow for the identification of feral cats as a key threatening process to native wildlife and ecological communities, and the development of a Threat Abatement Plan (TAP) to lessen the risks posed by feral cats on these. The Committee notes that the review of the EPBC Act is underway and looks forward to its final report, including a focus on how the EPBC Act can be strengthened to

better protect Australia's threatened species and ecological communities from predation by feral cats.

6.17 The Committee is of the view that, separate from the review of the EPBC Act, there is scope for the Australian Government to strengthen and better align its strategy, planning and resourcing to ensure that its response to the overall issue of feral cats is appropriate and proportionate to the problems identified. As such, the Committee is of the view that the overall strategy in this respect should be recast to address a number of issues.

Threat Abatement Plans

6.18 The Committee is concerned that the current Threat Abatement Plan (TAP) has shortcomings that should be addressed by the Australian Government in a new and updated Plan.

6.19 First, the Australian Government should consider whether and how the TAP's objectives can be adequately evaluated. While the Committee understands that feral cats are one of multiple threats for some threatened species, the primary purpose of the TAP should be to assess the means by which the threat of feral cats is reduced. The development of recovery plans (see below) would seem to be an example of how the effectiveness of threat abatement could be measured.

6.20 Second, a TAP that fails to include an obligation to implement or resource actions would seem in the Committee's view to defeat its purpose. While the Committee understands that the allocation of resources may need to be assessed in line with normal Budget processes, the TAP should be resourced as a priority given the significance of the issue. In developing an updated TAP, the Australian Government should assess the level of resourcing required to abate the feral cat threat, to ensure that the Plan is fully operational and that responsibilities for implementation are clearly allocated.

6.21 Third, the Committee notes commentary from DAWE that to action each of the TAP's objectives requires the development of regional natural resource management plans and site-based plans. In the Committee's view, a new iteration of the TAP should obligate the Australian Government to work with states and territories to develop complementary and localised plans. A new TAP would also strengthen the role of the Threatened Species Commissioner. In framing its response to better managing feral cats, the Australian Government should monitor and have regard to lessons and best

practices arising from comparative international programs such as New Zealand's 'Predator Free 2050' strategy.

Recovery Plans

6.22 The Committee was surprised to learn that many threatened species subject to predation by feral cats did not have current recovery plans in place. While the Committee understands that the development of recovery plans requires careful assessment and planning; a clear, systemic plan for how and when recovery plans will be developed, finalised and implemented does not seem apparent. Where they have been finalised, the Committee notes stakeholder concerns that an obligation for their implementation does not exist.

6.23 In the Committee's view there is a shortfall between the Australian Government's intention to protect threatened species predated by cats and its enactment of the necessary plans to do so. In the Committee's assessment, based on the previously cited figures of native wildlife killed by cat predation each year, the likelihood of further losses of wildlife or even extinction is high. The ecological costs are unlikely to be evident until assessed by future generations of Australians.

Threatened Species Strategy

6.24 The Committee is encouraged by the work conducted by DAWE and the Threatened Species Commissioner, including the work now underway to develop a new Threatened Species Strategy and related Action Plan. The Committee received compelling evidence that there is an insufficient nexus between the current Threatened Species Strategy and the outcomes which it seeks to achieve. As such, the Committee believes that the new iteration of the Strategy should include more realistic targets focused on the rehabilitation of threatened species and ecological communities rather than only on the numbers of cats exterminated.

6.25 In addition, targets such as the culling of two million cats by the year 2020 need to be accompanied by details making clear how they will be achieved, resourced and reported. The Australian Government should not resile from its strategy of culling cats where necessary. A well-targeted culling program will buy time for threatened species and ecological communities as better feral cat control measures are developed. However, as noted in Chapter 3, culling targets need to be revised to ensure these reflect current feral cat prevalence data.

6.26 As outlined in Chapter 4, widespread support existed for the expansion of Australia's network of predator-free fences and islands. In the Committee's

view, both mechanisms are seemingly very effective in the rehabilitation of threatened species and as a deterrent to the re-emergence of feral cats, once eradicated. A revised Threatened Species Strategy should account for this expansion, providing details of how it will be achieved, resourced, and outcomes reported.

Commentary on cat control methodology

6.27 A broad range of methods exist for the control of feral cats from the traditional trapping, hunting and shooting to the experimental, such as gene drive technology. The Committee does not want to single out a particular method as being more or less effective: it is clear from the evidence received that multiple approaches undertaken together are the most effective approach. The Committee does however wish to address a number of issues in relation to some of the methodologies raised in evidence.

Emerging technology

6.28 The Committee acknowledges the emergence of new feral cat control methodologies including Felixer grooming traps and gene drive technology. While there is much more research and testing to be done, the Committee wishes to make clear that new technologies must be safe to use, treat animals humanely and ethically and have limited impact on native species and habitats.

Predator-free conservation areas

6.29 The Committee acknowledges the effectiveness of islands and predator-free fenced areas as one of the most effective short- and medium-term strategies to prevent the further loss of endangered and threatened species. The Committee has seen the effectiveness of these at locations such as Mulligans Flat Woodland Sanctuary. The Committee notes the work of Australian Wildlife Conservancy and other conservation groups to establish feral cat-free areas and reintroduce threatened species into them.

6.30 The Committee notes support for the further development of predator-free fencing, but also acknowledges that the fences are resource intensive and expensive. However, given the extent of the feral cat problem in Australia, the Committee considers expansion of predator-free fencing a worthwhile investment, to ensure the longer term viability of many threatened species and to buy time for the development of emerging cat control technologies.

6.31 The Committee welcomes community and philanthropic interest in the further development of predator-free fences including the use of innovative financial arrangements such as social bonds.

6.32 It is the Committee's view that the Australian Government should consider a dedicated program, perhaps entitled Project Noah, to achieve an expansion of Australia's network of predator-free exclosures and feral-cat free islands, with a clear focus on the conservation of critically endangered species, including by developing partnerships with communities, the private sector and philanthropic groups.

Trap, Neuter, Release

6.33 Some inquiry submitters asked the Committee to consider the trap, neuter release (TNR) technique as a way of managing feral cats. While the Committee acknowledges that the use of this technique has been successful overseas, it is clear that the evidence does not support a similar conclusion for Australia. In particular, the Committee notes that proponents of TNR fail to consider the ongoing impacts to native wildlife when cats are released after having been desexed. Given the significant impact of feral cats on native wildlife, the Committee does not support TNR as a credible technique in Australia. The Committee believes that the Australian Government, working with states and territories, should seek to limit the use of the TNR control method to situations where impacts on Australian native wildlife are negligible.

Recommendation 3

6.34 The Committee recommends that the Australian Government develop a clear strategy to inform its resourcing of and response to the problem of feral cats, including through a 'reset' of its current policy and planning. This should comprise:

- **a. A new iteration of the Threat Abatement Plan for predation by feral cats addressing:**
  - **i. how it is to be evaluated, implemented, and resourced; and**
  - **ii. a requirement that the Australian Government work with state and territory governments to develop complementary and localised plans.**
- **b. A revised Threatened Species Strategy comprising:**

i. **relevant targets focused on the rehabilitation of threatened species and ecological communities, accompanied by details of how each target will be achieved, resourced and reported; and**

ii. **restatement of the need to cull feral cats, with new targets for culling consistent with contemporaneous prevalence data.**

c. **Appropriate consideration of reform opportunities identified through the current review of the *Environment Protection and Biodiversity Conservation Act 1999* and its administration, including but not limited to:**

i. **i. the extent to which recovery plans are created and their actions resourced [see paragraph 3.18].**

Recommendation 4

6.35 **The Committee recommends that the Australian Government spearhead, in partnership with the states and territories, an expansion of Australia's network of predator-free safe-haven enclosures and feral cat-free islands through a new program, Project Noah, as a new national conservation mission.**

- **The expansion of feral-free areas should be opportunistic in terms of land and island availability, but also specifically identify and reference species that can be saved through Project Noah, as part of the Conservation Advices, Recovery Plans and Key Threatening Processes. Governments should work to create feral-free areas across a range of ecosystems and be ambitious in their scale.**

- **Wherever possible, Project Noah projects should be developed in partnership with communities, the private sector and philanthropic groups, based on proven models such as those that have been developed with organisations like the Australian Wildlife Conservancy.**

Import controls

6.36 The Committee notes with interest that DAWE is currently reviewing its 'hybrid list' which may result in legacy provisions relating to the import of Bengal cats being removed. The Committee would support the removal of any current legacy exemptions for Bengal cats or any other hybrid species.

Public awareness and education

6.37 The Committee acknowledges that pet cats enrich the lives of many Australians and are loved members of families and households. At the same time, the Committee shares the range of community concerns raised during the inquiry in relation to the role of domestic cats and their owners, including limited public awareness of the feral and domestic cat problem, and the barriers to ensuring that all Australians are responsible cat owners.

6.38 The Committee notes the views of many submitters to the inquiry that the welfare of all cats is important. The Committee agrees, but also emphasises that cats bear significant responsibility for damage to native wildlife and ecological communities. There is no doubt that domestic cats are part of this problem.

6.39 Evidence to the Committee suggests that some cat owners and others in the community may be either dismissive or apathetic about the impact of cats on wildlife, the interactions between domestic and feral cats, and the concerns of neighbours about the behaviour of local domestic cats. The Committee believes that more needs to be, and can be, done to ensure effective domestic cat management and responsible cat ownership.

6.40 In the Committee's view, the Australian Government, working with states and territories, can and should do more to significantly increase public awareness and education about the impact of cats, including the interaction between domestic and feral cat populations.

6.41 The Committee suggests that the Australian Government should work with the states and territories to develop an awareness campaign relating to the impacts of cats and the obligations and responsibilities of cat owners. Such a campaign could be led by veterinarians (for example through the Australian Veterinarians Association) and animal welfare organisations such as the RSPCA.

Domestic cat management

6.42 Promoting best-practice domestic cat regulation and responsible ownership, and dealing with semi-owned and stray cats in populated areas, is a multifaceted challenge. It includes but is not limited to building education and awareness.

6.43 The *Best Practice Domestic Cat Management* approach developed by RSPCA Australia, with the support of the Australian Government, would seem to be one well developed model that could be considered as part of this process.

6.44 The Committee acknowledges that other good practice models may also exist and encourages extensive consultation to agree on the best solutions.

Barriers to responsible cat ownership

6.45 The Committee is concerned that despite the work that has been done by local governments, the RSPCA and others, many submitters express concerns about the barriers to responsible cat ownership including with respect to registration, desexing and microchipping of domestic cats. The Committee also considers that work needs to be done to implement an easy to understand and systematic program of night time cat curfews.

6.46 The Committee would like to see consistent strategies leading to responsible cat ownership implemented across the nation. The Committee does acknowledge that many local governments have implemented their own strategies based on higher level state cat management plans.

6.47 Some have gone further, recognising that, despite cat management plans, the path to responsible cat ownership may still be unattainable for some in the community. Strategies such as the free desexing program run by Banyule City Council, and other programs providing subsidies or vouchers through community groups and local veterinarians, have clearly been of assistance. The Committee applauds these initiatives and believes that their successes can be built upon through expanding the development and trial of such programs.

Recommendation 5

6.48 The Committee recommends that the Australian Government, in partnership with the states and territories, develop a clear strategy for the management of stray and domestic cats. The strategy should feature the following measures:

a. Develop and disseminate best practice domestic and stray cat management strategies, including increasing public awareness of the impact of cats on Australia's native wildlife and habitats.

b. Develop a positive national cat ownership education campaign to be delivered through the Australian Veterinary Association, local councils and community groups.

c. **Reduce the barriers to responsible domestic cat ownership with programs to support desexing, registration, and microchipping for domestic cats, as well as night curfew and containment programs.**

d. **Require all local governments to actively consider whether night-time curfews should be put in place for all or part of their areas of responsibility.**

e. **Design and implement a pilot program for subsidised or free desexing of pet cats in areas of high need, redeemable through vouchers issued by veterinarians or local governments in targeted locations.**

Governance to support effective strategy

6.49 The Committee considers that improvements could be made to the mechanisms and processes governing Commonwealth activity and inter-governmental cooperation on cats. These would enhance the Australian Government's ability to develop and implement the recast strategies and new programs recommended in Recommendations 3, 4 and 5 above.

National Feral Cat Taskforce

6.50 In the Committee's view, the Australian Government should consider expanding the membership and role of the National Feral Cat Taskforce. The Australian Government should consider the need for adequate representation on the Taskforce to provide views and advice on matters concerning agricultural and veterinary issues and the ethical treatment of animals.

6.51 The Committee believes that there is also scope to consider expanding the role of the Taskforce to include an improved national coordination role. In particular, it is the Committee's view that the Taskforce should undertake an analysis of the effectiveness of the laws in place in each state and territory and how these could be better harmonised.

6.52 Emphasising that the issue of feral cats is a significant threat to Australia's biodiversity, species and habitats, the Committee would like to see the Taskforce make objective recommendations to the Australian Government about the allocation of funding or resources to the most effective projects to reduce the threat of predation.

2015 National Declaration: feral cats as pests

6.53 The Committee notes that several state and territory jurisdictions have yet to invoke the 2015 National Declaration: feral cats as pests. While the Committee understands that the remaining jurisdictions may have localised concerns, it is imperative that the Australian Government seek to engage them and help to develop solutions that will lead to the agreement of all domestic jurisdictions. The Australian Government should keep the Committee apprised of progress.

Supporting local governments

6.54 The Committee's inquiry has identified the problem of varied legislative and regulatory approaches to managing issues relating to feral and domestic cats across Australia. As recommended above, the Committee believes that work should begin through an expanded Feral Cat Taskforce to harmonise feral cat laws and cat management plans.

6.55 In addition, evidence to the inquiry made it clear that local governments across the nation undertake a significant role in the management of domestic cats, but are often poorly resourced and not supported with clear plans for how processes and outcomes could be improved. The Committee acknowledges the work of local communities and the challenges they face as a result of the varied legislative, regulatory and practice approaches across Australia.

6.56 In the Committee's view, there is a significant opportunity for the Australian Government to assume strong leadership in driving change in this respect. As a first step, the Committee recommends that the Australian Government work with state and territory governments to develop principles and consistent guidance for the regulation of domestic cats and localised cat management plans (which should include unambiguous powers relating to the registration, desexing and microchipping of, and the enactment of curfews for, domestic cats). Such guidance should also include an easily accessible national resource for best practice and effective cat management strategies, along with clear guidance on the roles and responsibilities of each tier of government. In return, states and territories should ensure that all local governments have developed and implemented domestic cat management plans consistent with relevant state and territory laws.

6.57 Given the scale of the feral cat problem and their distribution around Australia, the Committee is of the view that the Australian Government should seek to work with a variety of stakeholders including

Commonwealth, state and territory government agencies and the nation's scientists, to evaluate existing and emerging methodologies and develop advice on the most effective feral cat control techniques that could be deployed on a broad scale. In seeking this advice, the Australian Government should have regard to matters including unintended impacts on native wildlife, landscapes or human health, regulatory approvals, and the costs of procurement and deployment.

Recommendation 6

6.58 The Committee recommends that the Australian Government develop a governance framework to give effect to the new strategies and programs outlined in recommendations 3, 4 and 5. This should include governance measures that:

a. Expand the membership of the National Feral Cat Taskforce to include experts on agricultural and veterinary issues, including the ethical treatment of animals, and any other matters deemed relevant.

b. Strengthen the remit of the National Feral Cat Taskforce to enable it to lead a process to harmonise existing feral cat legislation and regulation across Australia. In particular, a strengthened Taskforce should:

i. review the effectiveness and consistency of current state and territory feral cat legislation, regulation and management plans;

ii. develop principles for the harmonisation of existing state and territory feral cat-related legislative and regulatory instruments to the best-practice standard; and

iii. develop principles for best practice cat management plans.

c. Establish a mechanism for collaboration with state and territory Environment Ministers and relevant agencies, to improve harmonisation of legislative and regulatory approaches, and best practice principles, in relation to domestic and stray cats.

d. Remove barriers to the full implementation by all jurisdictions of the National Declaration: feral cats as pests.

e. Facilitate collaboration with relevant Commonwealth agencies, scientists and states and territories to consider the most effective feral cat control methods, and provide advice on the broad scale usage of these methods.

f. Ensure that local governments are resourced appropriately to deal with cats, including requiring all local governments to develop and implement domestic cat management plans consistent with relevant state and territory laws.

g. Develop principles for local government animal management staff to manage local cat issues, including easily accessible resources.

Mr Ted O'Brien MP

Chair

A. Submissions

1 Mr David Moore

2 Ms Dianne Kelly

3 Denise Maclean

4 Mr John Seddon

5 *Name Withheld*

6 Ms Imogen Hubber

7 Tasmanian Government

8 Australian Mammal Society

9 Mrs Barbara Fogarty

10 Mr Allan Benson

11 Mr Barrie Price

12 Dr Michael Calver

13 Mr Kyle Grant

14 Birds Queensland

15 Australian Wildlife Society

16 The Friends of Damper Creek Reserve Inc

17 Feral Pest Control

18 Friends of Paganoni Swamp

19 *Name Withheld*

20 Ms Angela Turner

21 Greg Flint

22 Australian Wildlife Conservancy

- 22.1 Supplementary to submission 22

23 Friends of Grasslands

24 Colin White

25 Ms Jan Kendall

26 Ian Cross

28 Cat Protection Society of NSW

29 Mr Mason Lalor

30 Ms Ildi Ehsman

31 Pat Carden

32 Mr Charles Davis

33 Mrs Laura Noble

34 Detection Dog Services

35 Duncan Dey

36 Wildlife Health Australia

37 Shoalhaven Hunting Club

38 Mrs Elizabeth Balogh

39 Mr Edward Stacey

40 Dr Phil Tucak

41 Society for Conservation Biology Oceania Section

42 The Cat Protection Society of Victoria

43 Miss Shirley Handy

44 Sporting Shooters' Association of Australia

45 Ms Meredith Brownhill

46 *Name Withheld*

47 *Name Withheld*

48 Ecological Society of Australia

49 School of Biological Sciences, Monash University

50 Maneki Neko Cat Rescue Inc

52 Foundation for Rabbit-Free Australia

53 Sutherland Shire Council

54 Ms Vicki Ioannou

55 WoolProducers Australia

56 Southern Sydney Regional Organisation of Councils (SSROC)

57 Mrs Margaret Jungwirth

58 Department of Agriculture, Water and the Environment

- 58.1 Supplementary to submission 58
- 58.2 Supplementary to submission 58
- 58.3 Supplementary to submission 58
- 58.4 Supplementary to submission 58

59 Sutherland Shire Council Animal Shelter

60 Byron Environment Centre

61 Lisa Roberts-Daintree

62 Mrs Barbara Linley

63 Australian Institute of Animal Management

- 63.1 Supplementary to submission 63
- 63.2 Supplementary to submission 63

64 Save Tootgarook Swamp

65 Ms Di Shanks

66 Andersons Creek Landcare

67 *Name Withheld*

68 Mr Andris & Deborah Bergs & Hall

69 Mr Robert Jackson

70 Dr John Read

71 Phillip Island Nature Parks

72 National Environmental Science Program Threatened Species Recovery Hub

73 Eurobodalla Shire Council

74 Ku-ring-gai Council

75 *Confidential*

76 Animal Justice Party

77 Southern Downs Regional Council

78 *Name Withheld*

79 Shepparton Mooroopna Urban Landcare Group

80 Georges River Council

81 *Name Withheld*

82 Mrs Ellie Robertson

83 Dr Jasmin Hufschmid

84 *Name Withheld*

85 Wyndham City Council

86 Campbelltown City Council

87 Animal Welfare League Qld

- 87.1 Supplementary to submission 87

88 UNSW Sydney

89 Peel-Harvey Catchment Council

90 Animal Management in Rural and Remote Indigenous Communities (AMRRIC)

91 Upper Meander Catchment Landcare Group

92 Albury and Wodonga Councils

93 Wollondilly Shire Council

94 BirdLife Australia

95 National Parks and Wildlife Service (on behalf of NSW Government)

- 95.1 Supplementary to submission 95

96 Friends of the Brush-tailed Rock-wallaby

97 Friends of the Earth Australia and GeneEthics

98 Australian Local Government Association

99 Friends of Warrandyte State Park

100 Blue Mountains City Council

101 Mr Charles Cameron

102 Ms Jennifer Taplin

103 Wheatbelt NRM

104 *Name Withheld*

105 *Name Withheld*

106 Mrs Melissa Watt

107 *Confidential*

108 *Name Withheld*

109 Mrs Virginia Wallace

110 Mr Michael Johnston

111 City of Canterbury Bankstown

112 Nicole Galea

113 Landcare Tasmania

114 Mars Petcare Australia

115 Byron Shire Council

116 *Name Withheld*

117 Action Sweetwater Creek Inc

118 NRM South

119 Julie McConnell

120 Centre for Invasive Species Solutions

- 120.1 Supplementary to submission 120

121 Invasive Species Council

- 121.1 Supplementary to submission 121

122 Animal Medicines Australia

123 Wildlife Preservation Society of Queensland

124 RSPCA Australia

- 124.1 Supplementary to submission 124

125 Sentient, The Veterinary Institute for Animal Ethics

126 Victorian National Parks Association

127 Eastern Region Pest Animal Network

128 Tasmanian Conservation Trust

129 Alley Katz Australia

130 Kangaroo Island Landscape Board

131 Joanne Douglas

132 Susie Hearder

133 Kathryn McConnochie

134 Celeste Evans

135 Western Australian Biodiversity Science Institute

136 Animal Defenders Office

137 John and Josie Stacey

139 Sheep Producers Australia (SPA)

140 National Farmers Federation

141 Banyule City Council

142 Australian Pet Welfare Foundation

- 142.1 Supplementary to submission 142
- 142.2 Supplementary to submission 142
- 142.3 Supplementary to submission 142

143 Western Australian Government

144 Sydney North Vertebrate Pest Committee (SNVPC)

145 PetRescue

146 Tasmanian Farmers & Graziers Association

147 RiverConnect

148 Anne Phefley

149 Dr Graham Harrington and Dr Amanda Freeman

150 Mary Ann Gourlay

151 Dr Sophie Riley, Dr Peter Wolf, Dr Julie Levy, Associate Professor Joan Schaffner and Emeritus Professor Geoffrey Wandesforde-Smith

152 Conservation Council

153 Northern Beaches Council

154 Australian Academy of Science

155 Mr John Jenkins

157 The Glebe Society

158 Solomon Gordon

159 Australian Pesticides and Veterinary Medicines Authority

- 159.1 Supplementary to submission 159

160 *Name Withheld*

161 Cat Welfare Society Inc T/A Cat Haven

162 Heather Crawford

163 Ellen Quemer

164 Cheryl Venables

165 John Butler

166 Lesley King

167 *Name Withheld*

168 Victorian Scientific Advisory Committee

169 Rohan Anderson

170 Rodney Maier

171 Animal Liberation

172 Franklin Hynes

173 Mrs Danielle Davison

174 Florence Lindhaus

175 *Name Withheld*

176 *Name Withheld*

177 Alexia White

178 Tess Vietz

179 Jennifer Hall

180 Australian Veterinary Association

181 Ms Alison Breen

182 Mrs Martine Dodd

183 Mr Stephen Flint

184 Brendan Dennis

185 James Robertson

186 *Name Withheld*

187 Mr Michael Squires

188 Dr Fred Orr

189 *Name Withheld*

190 Mr Mark Konemann

191 SAFE

192 Mrs Birgit Ecker

193 Mrs Valerie Pitman

194 Mrs Gillian Walker

195 Noela Kirkwood

196 John Seddon

197 *Name Withheld*

199 Ms Yasmin Broughton

200 Miss Sharon McNeil

201 Miss Fiona Hadley

202 Jane

B. Public hearings

Wednesday, 26 August 2020

Canberra

Department of Agriculture, Water and the Environment

- Mr Ian Thompson, Chief Environment Biosecurity Officer
- Dr Sally Box, Assistant Secretary, Office of the Threatened Species Commissioner
- Mr Karl Dyason, Assistant Secretary, Uluru and Island Parks

Friday, 28 August 2020

Canberra

CSIRO

- Dr Tanja Strive, Principal Research Scientist
- Dr Andy Sheppard, Research Director, Health & Biosecurity
- Dr Owain Edwards, Group Leader, Environmental Mitigation and Resillience

Centre for Invasive Species Solutions

- Dr Tony Buckmaster, RD&E Manager

Invasive Species Council

- Mr Andrew Cox, Chief Executive Officer
- Ms Candice Bartlett, Conservation Officer

National Environmental Science Program Threatened Species Recovery Hub

- Professor Sarah Legge, Deputy Director, Co-Leader of Research Program on Feral Cat Impacts and Management
- Professor John Woinarski, Deputy Director

Southern Sydney Regional Organisation of Councils (SSROC)

- Ms Helene Forsythe, Program Manager

Mrs Virginia Wallace, Private capacity

Wednesday, 2 September 2020

Canberra

Australian Wildlife Conservancy

- Dr John Kanowski, Chief Science Officer

Wednesday, 9 September 2020

Canberra

Australian Pesticides and Veterinary Medicine Authority

- Dr Rachel Chay, Acting Executive Director, Registration Management and Evaluation
- Ms Lisa Croft, Acting Chief Executive Officer
- Dr Jason Lutze, Executive Director, Risk Assessment Capability

National Parks and Wildlife Service (NSW Government)

- Mr Atticus Fleming, Deputy Secretary
- Mr Robert Quirk, Executive Director, Park Programs
- Dr Benjamin Russell, Manager, Pests and Weeds Unit

Australian Pet Welfare Foundation

- Emeritus Professor Jacquie Rand, Executive Director and Chief Scientist

Australian Institute of Animal Management

- Dr Brooke Rankmore, Vice President
- Ms Nell Thompson, Secretary

RSPCA Australia

- Dr Dianne Evans, Senior Scientific Officer
- Dr Sarah Zito, Senior Scientific Officer

Professor Christopher Dickman, Private capacity

The University of Sydney

- Dr Tim Doherty, Australian Research Council DECRA Fellow; and Chair of Policy Committee, Society for Conservation Biology Oceania

Deakin University and the Ecological Society of Australia

- Professor Euan Ritchie, Associate Professor of Wildlife Ecology and Conservation

Friday, 25 September 2020

Canberra

Birdlife Australia

- Dr Monica Awasthy, Urban Bird Program Manager
- Dr Holly Parsons, Urban Bird Program Manager

Banyle City Council

- Ms Jenny Cotterell, Senior Animal Management Officer

Southern Downs Regional Council

- Mr Craig Magnussen, Manager Environmental & Regulatory Services

Peel-Harvey Catchment Council

- Mrs Melanie Durack, Program Manager, Hotham-Williams
- Mrs Christine Townsend, Project Support Officer

Ecological Society of Australia

- Dr Rebekah Christensen, President
- Dr Ayesha Tulloch, Vice President, Policy and Outreach

National Farmers Federation

- Mr Warwick Ragg, General Manager, Natural Resource Management
- Dr Adrienne Ryan, General Manager, Rural Affairs
- Mr Angus Atkinson, Chair, Sustainable Development Committee

Wednesday, 21 October 2020

Canberra

Australian Veterinary Association

- Dr Michael Banyard, Past-president and current Executive Committee Member - Australian Veterinary Conservation Biology