

INQUIRY INTO NATURE IN OUR CITY

STANDING COMMITTEE ON ENVIRONMENT AND TRANSPORT AND CITY
SERVICES

FEBRUARY 2020

REPORT 10

THE COMMITTEE

COMMITTEE MEMBERSHIP

CURRENT MEMBERS

Ms Tara Cheyne MLA	Chair (from 23 August 2019)
Miss Candice Burch MLA	Member (from 15 Feb 2018) and Deputy Chair (from 28 Feb 2018)
Mr James Milligan MLA	Member (from 20 September 2018)

PREVIOUS MEMBERS

Mr Steve Doszpot MLA	Deputy Chair (until 25 November 2017)
Mr Mark Parton MLA	Member (until 15 February 2018)
Ms Tara Cheyne MLA	Member (until 20 September 2018)
Ms Nicole Lawder MLA	Member (15 February 2018 to 20 September 2018)
Ms Suzanne Orr MLA	Chair (until 23 August 2019)

SECRETARIAT

Danton Leary	Committee Secretary (from June 2019)
Annemieke Jongasma	Committee Secretary (April 2019 to June 2019)
Brianna McGill	Committee Secretary (May 2018 to April 2019)
Frieda Scott	Senior Research Officer
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RESOLUTION OF APPOINTMENT

The Legislative Assembly for the ACT (the Assembly) agreed by resolution on 13 December 2016 to establish legislative and general purpose standing committees to inquire into and report on matters referred to them by the Assembly or matters that are considered by the committees to be of concern to the community, including:

A Standing Committee on Environment and Transport and City Services to examine matters related to city and transport services, public infrastructure, heritage, and sport and recreation and matters related to all aspects of climate change policy and programs, water and energy policy and programs, provision of water and energy services, conservation, environment and ecological sustainability.¹

TERMS OF REFERENCE

The Terms of Reference for this inquiry were adopted by the Committee on 6 December 2017 and announced in the Assembly on 22 February 2018.

The Standing Committee has resolved to conduct the following inquiry –

Noting the importance of the natural environment to Canberra, including the level of public support for nature and the natural environment, the growing importance of urban open spaces and bushland reserves and the benefits they bring to Canberra and opportunities for development of Blue – through water – and Green – through natural form – infrastructure in Canberra resolved to inquire into and report on the matters affecting the value of the natural environment to an urbanising Canberra, including:

1. The level of public support for and satisfaction with amount and quality nature and natural environment areas in Canberra, particularly in urban areas.
2. The types of nature and natural environmental areas within Canberra e.g. urban open spaces or bushland reserves and the existing or potential benefits and challenges they bring to Canberra's:
 - Social amenity;
 - Economic development;
 - Biodiversity; and/or
 - Climate resilience.

¹ Legislative Assembly for the ACT, *Minutes of Proceedings* No. 2, 13 December 2016, p. 13, accessible at: https://www.parliament.act.gov.au/_data/assets/pdf_file/0008/1017980/MoP002F1.pdf.

3. Opportunities for Blue (water) and or Green (natural) Infrastructure in Canberra including;

- Functional requirements of proposed infrastructure;
- Cost and Maintenance considerations;
- Amenity benefits; and
- Conservation and biodiversity benefits.

4. Managing the interface between the natural environment and urban areas particularly in regards to conserved environmental areas.

5. Current policy or regulatory settings that impede the integration of the natural environment within optimal urban development and design.

6. Any other relevant matter.

ACRONYMS

ACTAAEE	ACT Chapter Australian Association for Environmental Education
ACTEA	ACT Equestrian Association
AILA ACT	Australian Institute of Landscape Architects ACT
BMNR	Black Mountain Nature Reserve
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CURF	Canberra Urban and Regional Futures
DRA	Deakin Residents Association
EPSDD	Environment, Planning and Sustainable Development Directorate
FOG	Friends of Grassland
GCG	Ginninderra Catchment Group
NAC	National Arboretum Canberra
NCA	National Capital Authority
NCDC	National Capital Development Commission
NCOSS	National Capital Open Space System
NPA ACT	National Parks Association of the ACT
NRM	Natural Resource Management
SACTCG	Southern ACT Catchment Group
TCCS	Transport Canberra and City Services (Directorate)
UHI	Urban Heat Island (Effect)
WSUD	Water Sensitive Urban Design

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RECOMMENDATIONS

RECOMMENDATION 1

- 3.11 The Committee recommends that the ACT Government re-commit to the concept of the City in a Landscape.

RECOMMENDATION 2

- 3.12 The Committee recommends that the ACT Government develop a City in a Landscape Strategy reflecting the ACT's current and anticipated future needs.

RECOMMENDATION 3

- 3.20 The Committee recommends that the ACT Government work with the Traditional Custodians of the ACT and region to ensure the City in a Landscape Strategy incorporates cultural knowledge and traditional practices.

RECOMMENDATION 4

- 3.21 The Committee recommends that the ACT Government consult with the broader Aboriginal and Torres Strait Islander community for advice on:
- identifying native plants and grasses suitable for the ACT Government planting program;
 - traditional practices for caring for our natural environment; and
 - nature burns, plantings and land management and maintenance practices suitable for the region.

RECOMMENDATION 5

- 3.53 The Committee recommends that the ACT Government, preferably as part of the City in a Landscape Strategy, articulate the vision for the urban landscape within the ACT, including what defines quality greenspace

RECOMMENDATION 6

- 3.54 The Committee recommends that the ACT Government, preferably as part of the City in a Landscape Strategy, articulate the vision for managing interfaces between urban and non-urban landscapes.

RECOMMENDATION 7

- 3.55 The Committee recommends that the ACT Government, preferably as part of the City in a Landscape Strategy, prioritise opportunities for wilding the city.

RECOMMENDATION 8

- 3.63 The Committee recommends that the ACT Government, preferably as part of the City in a Landscape Strategy, prioritise biodiversity.

RECOMMENDATION 9

- 3.87** The Committee recommends that the ACT Government, preferably as part of the City in a Landscape Strategy, prioritise the identification of areas within the urban area for nature play.

RECOMMENDATION 10

- 3.88** The Committee recommends that the ACT Government, preferably as part of the City in a Landscape Strategy, prioritise the identification of areas within the urban area for parks.

RECOMMENDATION 11

- 3.89** The Committee recommends that the ACT Government consider how best to formally recognise the significance of Canberra Nature Park.

RECOMMENDATION 12

- 3.104** The Committee recommends that the ACT Government, preferably as part of the City in a Landscape Strategy, prioritise public tree canopy coverage as a feature of the landscape.

RECOMMENDATION 13

- 3.105** The Committee recommends that the ACT Government articulate how tree maintenance, planting and replacement will occur.

RECOMMENDATION 14

- 3.118** The Committee recommends that the ACT Government, preferably as part of the City in a Landscape Strategy, prioritise the identification of nature corridors to link environmental areas.

RECOMMENDATION 15

- 3.132** The Committee recommends that the ACT Government, preferably as part of the City in a Landscape Strategy, prioritise further restoration of urban waterways.

RECOMMENDATION 16

- 3.138** The Committee recommends that the ACT Government, preferably as part of the City in a Landscape Strategy, prioritise green systems rather than discrete pieces of green infrastructure such as individual walls or roofs.

RECOMMENDATION 17

- 4.23** The Committee recommends that the ACT Government implement the City in a Landscape Strategy by embedding the strategy in current and future planning controls and regulations.

RECOMMENDATION 18

- 4.24** The Committee recommends that the ACT Government consider ways developers can be encouraged to undertake landscaping beyond the minimum requirements.

RECOMMENDATION 19

- 4.25 The Committee recommends that the ACT Government require maintenance plans for new developments to be lodged with the planning approvals to demonstrate viability and transparency of the proposals.

RECOMMENDATION 20

- 4.26 The Committee recommends that the ACT Government progress policy that minimises the encroachment of development on higher-value natural areas.

RECOMMENDATION 21

- 4.34 The Committee recommends that the ACT Government continue to support the trial of re-wilding projects in conjuncture with the ANU Fenner School of Environment and Society and other similar stakeholders.

RECOMMENDATION 22

- 4.53 The Committee recommends that the ACT Government review the *Tree Protection Act 2005* to ensure best outcomes are being achieved.

RECOMMENDATION 23

- 4.54 The Committee recommends that the ACT Government prioritise the planting of tree species that are as adaptable to a changing climate as possible.

RECOMMENDATION 24

- 4.55 The Committee recommends that the ACT Government review the viability and appropriateness of tree species that are less adaptable to climate change.

RECOMMENDATION 25

- 4.63 The Committee recommends that the ACT Government consider how green infrastructure could be implemented in high rise developments.

RECOMMENDATION 26

- 4.64 The Committee recommends that the ACT Government consider current impediments to establishing balcony, courtyard or roof gardens.

RECOMMENDATION 27

- 4.65 The Committee recommends that the ACT Government develop, or commission, planting guides for balconies, courtyards and larger-sized yards.

RECOMMENDATION 28

- 4.73 The Committee recommends that the ACT Government evaluate the application of Transport Canberra and City Services standards to ensure that the best outcomes are being achieved.

RECOMMENDATION 29

- 4.78 The Committee recommends that the ACT Government continue to develop urban water sensitive design guidelines through the monitoring and evaluation of past initiatives.

RECOMMENDATION 30

- 4.85 The Committee recommends that the ACT Government liaise with asset managers, such as ICON Water, to identify technical requirements for infrastructure and how to best balance these through the implementation of the City in a Landscape Strategy.

RECOMMENDATION 31

- 4.86 The Committee recommends that the ACT Government liaise with asset managers, such as ICON Water, to identify any opportunities for combined implementation of the City in a Landscape Strategy.

RECOMMENDATION 32

- 5.61 The Committee recommends that the ACT Government develop and implement a strategy that is co-designed with, and supports, volunteer environmentalists to guide and sustain community stewardship of the environment within the ACT.

RECOMMENDATION 33

- 5.62 The Committee recommends that the ACT Government continue to invest in the Landcare and Parkcare programs and give consideration to longer-term funding for these.

RECOMMENDATION 34

- 5.63 The Committee recommends that the ACT Government, in conjunction with Landcare and similar groups, consider further partnership opportunities.

RECOMMENDATION 35

- 5.64 The Committee recommends that the ACT Government, in conjunction with Landcare and similar groups, identify and implement further opportunities for Junior Landcare and Junior Parkcare.

RECOMMENDATION 36

- 5.65 The Committee recommends that the ACT Government consider if there are opportunities for streamlined community project approvals that make it easier and less burdensome for community groups.

RECOMMENDATION 37

- 5.66 The Committee recommends that the ACT Government introduce a pilot scheme to enable local communities to lead, or be involved in, the design and implementation of low-cost alternative urban spaces in their neighbourhood (including ecological restoration, natural play spaces, informal pathways/cycleways, smaller areas of well-maintained dryland grass and community-based maintenance).

RECOMMENDATION 38

- 6.14 The Committee recommends that the ACT Government continue to partner with research and education institutions, including primary and secondary schools, to develop and share the knowledge and expertise of environmental practice in the ACT.

RECOMMENDATION 39

- 6.21 The Committee recommends that the ACT Government consider joining the Biophilic Cities Network.

RECOMMENDATION 40

- 6.32 The Committee recommends that the ACT Government further strengthen the relationship and knowledge exchange between it and local universities and research institutions through increased research partnerships.

RECOMMENDATION 41

- 7.15 The Committee recommends that the ACT Government work with Friends of Grassland and other interested stakeholders to realise the potential of the North Mitchell Grasslands.

RECOMMENDATION 42

- 7.16 The Committee recommends that the ACT Government more broadly consider the opportunities for improving, rather than maintaining, areas of natural value.

RECOMMENDATION 43

- 7.33 The Committee recommends that the ACT Government prioritise the continued effort to remove weeds from impacted areas within the ACT.

RECOMMENDATION 44

- 7.34 The Committee recommends that the ACT Government provide information to the community on how to identify and respond to (known) problem weeds.

RECOMMENDATION 45

- 7.35 The Committee recommends that the ACT Government identify opportunities to reduce the spread of weeds as a result of current practices within the mowing regime.

RECOMMENDATION 46

- 7.77 The Committee recommends that the ACT Government work with wildlife rescuers and carers to reduce the number of injured animals needing care as well as support those animals that do need care.

RECOMMENDATION 47

- 7.78 The Committee recommends that the ACT Government improve the use of fine-grade fruit tree netting in the ACT.

RECOMMENDATION 48

- 7.79 The Committee recommends that the ACT Government consider undertaking further programs aimed at combatting wombat mange.

RECOMMENDATION 49

- 7.80 The Committee recommends that the ACT Government continue to implement cat containment across the ACT.

RECOMMENDATION 50

- 7.91 The Committee recommends that the ACT Government commit to being a bee friendly city.

RECOMMENDATION 51

- 7.92 The Committee recommends that the ACT Government develop a guide for gardeners to support the bee friendly city, in particular, looking at pollination corridors.

RECOMMENDATION 52

- 7.93 The Committee recommends that the ACT Government phase out the use of harmful pesticides and chemicals distributed or used within the ACT by government and non-government bodies as well as members of the public.

RECOMMENDATION 53

- 7.119 The Committee recommends that the ACT Government consider additional funding for maintenance of landscaped and natural environment areas, including funding to support the various fauna and flora groups in the Territory.

RECOMMENDATION 54

- 7.120 The Committee recommends that the ACT Government introduce a water retention scheme for recycled water to be used to maintain local green spaces.

RECOMMENDATION 55

- 8.7 The Committee recommends that the ACT Government consider including independent climate change impact analysis in the assessment of development proposals.

RECOMMENDATION 56

- 8.15 The Committee recommends that the ACT Government develop an ecotourism strategy which articulates how tourists can be attracted to engage with our natural environment.

RECOMMENDATION 57

- 8.20 The Committee recommends that the ACT Government invest in more environmental signage at nature reserves in the Territory to better inform visitors of safe bush etiquette.

RECOMMENDATION 58

- 8.28 The Committee recommends that the ACT Government continue to investigate and promote 'Nature Prescriptions' in the ACT.

FINDINGS

FINDING 1

- 2.48** Canberrans place great value on being the bush capital and having a healthy and natural environment within their city and surrounds.

FINDING 2

- 2.49** Nature in our city provides Canberra and Canberrans with health, social and economic benefits and opportunities.

1 INTRODUCTION

- 1.1 The Standing Committee on Environment and Transport and City Services (the Committee) commenced an inquiry into ‘matters affecting the value of the natural environment to an urbanising Canberra’—Nature in Our City—on 22 February 2018.

BACKGROUND

CONTEXT FOR THE INQUIRY

- 1.2 The Committee announced this self-referred inquiry to examine how the urban environment can best interact with the natural environment as Canberra grows into the future. As our population increases and the city develops, there are both opportunities and challenges to maintaining and integrating natural spaces within the urban environment and ensuring optimal outcomes in the city’s interaction with its surrounding natural environment. The Committee explores these issues in this report.

ACKNOWLEDGING ABORIGINAL PERSPECTIVES ON LANDSCAPE

- 1.3 In conducting this inquiry, the Committee acknowledges the continuing contribution of the Traditional Custodians of the land of the Canberra region, the Ngunnawal people, and more broadly the Aboriginal and Torres Strait Islander community in the ACT, and pays respect to Elders past, present and emerging.
- 1.4 The Committee greatly valued the opportunity to meet with staff from the Healthy Country unit within the Environment, Planning and Sustainable Development Directorate (EPSDD) to hear a description of the history of Aboriginal people in this region, the songlines and significant sites in the Canberra landscape, and the importance of landscape and Country in the lives of Aboriginal people.

LIMITS TO COMMITTEE JURISDICTION

- 1.5 The Committee recognises that this inquiry raises issues which are also relevant to another standing committee of the Assembly.

- 1.6 The resolution establishing the Committee gives it authority to examine matters related to (among other things) ‘conservation, environment and ecological sustainability’, and ‘climate change policy and programs’.²
- 1.7 In preparing this report, the Committee has been conscious of the need to operate within its defined field of responsibility, and in particular to not impinge upon the jurisdiction of the Standing Committee on Planning and Urban Renewal, which has authority to examine matters related to (among other things) ‘planning, land management, the planning process’.³
- 1.8 At the same time, how the city manages the interface between the built urban environment and the surrounding natural environment, and how the city enhances and optimises green and blue infrastructure within its urban setting necessarily touch on matters related to planning. Contributors to the Inquiry provided evidence to this effect. Thus, while the primary focus of the Inquiry is not planning, the Committee felt obliged to reflect the concerns raised in evidence in its findings and in its recommendations.
- 1.9 With these matters in mind, the Committee wrote to the Standing Committee on Planning and Urban Renewal on 19 September 2019, noting that evidence received for the Inquiry necessarily delves into the realm of planning and that some of the Committee’s recommendations deal with planning matters.

CONDUCT OF THE INQUIRY

- 1.10 The Committee adopted this inquiry on 6 December 2017 and announced it on 22 February 2018. At that time, the Committee also called for public submissions to be lodged with the Committee by 29 June 2018.
- 1.11 This opportunity was publicised through media releases, notice in *The Canberra Times*, notice on the Committee website, mainstream media coverage, and social media channels. The Committee also wrote by email to individuals, groups and organisations it considered likely to be interested in the Inquiry.
- 1.12 During the Inquiry, the Committee received 71 submissions, which are published on the Committee website and listed in Appendix B to this report.⁴

² Legislative Assembly for the ACT, *Minutes of Proceedings* No. 2, 13 December 2016, p. 13, accessible at: https://www.parliament.act.gov.au/_data/assets/pdf_file/0008/1017980/MoP002F1.pdf.

³ Legislative Assembly for the ACT, *Minutes of Proceedings* No. 2, 13 December 2016, p. 13, accessible at: https://www.parliament.act.gov.au/_data/assets/pdf_file/0008/1017980/MoP002F1.pdf.

⁴ <https://www.parliament.act.gov.au/in-committees/standing-committees-current-assembly/standing-committee-on-environment-and-transport-and-city-services/Nature-in-our-City>.

- 1.13 As noted, the Committee recognises the importance of Aboriginal perspectives on landscape, and requested a meeting with staff from the Healthy Country unit within EPSDD to inform the conduct of the Inquiry. This discussion took place on 21 November 2018 on Mount Ainslie.
- 1.14 The Committee considered ways to make the formal inquiry process more accessible for the Aboriginal community and extended an invitation to meet for a discussion On Country at Jerrabomberra Wetlands on 6 March 2019.
- 1.15 The Committee heard evidence from 69 witnesses at seven public hearings on 13 March, 27 March, 10 April, 1 May, 8 May, 22 May and 29 May 2019. The transcripts of proceedings are available on the Assembly website.⁵
- 1.16 There were two questions taken on notice at the public hearings; these are available on the Committee website.⁶
- 1.17 On 11 September 2019, Committee Members visited the Ginninderry development in West Belconnen at the invitation of Riverview Projects. The Committee appreciated the chance to see firsthand some of the innovative approaches to integrating the natural environment with build urban spaces undertaken by Riverview Projects.

STRUCTURE OF THE REPORT

- 1.18 This report is informed by research, submissions, and evidence provided at public hearings.
- 1.19 This report consists of the following nine chapters:
1. Introduction (the present chapter);
 2. The ACT and Landscape;
 3. City in a Landscape Strategy;
 4. Implementing the City in a Landscape Strategy;
 5. Community Stewardship;
 6. Research and Knowledge;
 7. Flora and Fauna;

⁵ <http://www.hansard.act.gov.au/hansard/2017/comms/default.htm#environment>.

⁶ <https://www.parliament.act.gov.au/in-committees/standing-committees-current-assembly/standing-committee-on-environment-and-transport-and-city-services/Nature-in-our-City>.

8. Other Considerations; and
9. Conclusions.

ACKNOWLEDGEMENTS

- 1.20 The Committee wishes to thank the following people, and acknowledge their important contribution to the Inquiry:
 - The individuals and organisations who made submissions to the Inquiry and appeared before the Committee at the public hearings.
 - The staff of the Health Country unit within EPSDD, who generously shared their time and knowledge with the Committee.
 - Representatives of Riverview Projects, who facilitated a visit to the Ginninderry development by Committee members.
- 1.21 The Committee acknowledges that several submissions to this Inquiry contain detailed recommendations and suggestions on niche topics and locally-specific issues. While the Committee recognises the significance of these topics and issues, the nature of this report—which is focussed on higher-level strategic themes—has meant that these recommendations and suggestions have not necessarily been included.
- 1.22 The Committee would encourage such contributors to direct their recommendations and suggestions to the relevant ACT Government Minister.

2 THE ACT AND LANDSCAPE

- 2.1 As a planned city of national significance, the place of landscape has been inseparably interwoven into the fabric of Canberra’s design. The city represents the culmination of human endeavour to create a city in balance with its natural setting; a city planned along international best practice lines to reflect geometric, socio-political and democratic ideals. The planning genius behind Canberra has made the city ‘an outstanding national outdoor museum of the world’s best practice in planning from the 1910s’.⁷
- 2.2 This chapter provides background on Canberra’s relationship with its landscape and natural setting. It also outlines the views expressed by contributors to the Inquiry on the importance of this relationship and the wide-ranging benefits it affords the city and its residents.

NATURAL SETTING

- 2.3 The Australian Capital Territory comprises an area of 2,358 square kilometres within the Southern Tablelands of New South Wales. Around 70 per cent of the total area of the ACT is protected in parks and nature reserves.⁸
- 2.4 Canberra is located on tableland at an elevation of approximately 600 metres above sea-level; it is characterised by limestone plains, divided to the north and south by the Molonglo River, buffeted to the west and south by the northern extent of the Australian Alps and surrounded by hilly outcrops—Black Mountain to the west; Mount Taylor, Cooleman Ridge and Urambi Hills to the southwest; Mount Majura, Mount Ainslie, Mount Pleasant to the east; and Mount Mugga Mugga, Red Hill, and Isaacs Ridge to the southeast.

EARLY HISTORY

- 2.5 Aboriginal people have lived in the Canberra region for at least 25,000 years, and their descendants still live here today.⁹ The first habitation of the Canberra region was probably seasonal and nomadic; more permanent habitation of the region began around 5,000 years BCE.¹⁰

⁷ R Freestone, cited in Australian Government, ‘Celebrating Canberra: A nation’s cultural and democratic landscape’, June 2012, p. 5.

⁸ Standing Committee on Environment and Transport and City Services, Inquiry into the Annual and Financial Reports 2018-19, Mr Ian Walker, Executive Group Manager, Environment; Environment, Planning and Sustainable Development Directorate, *Transcript of Evidence*, 13 November 2019, p. 22.

⁹ ACT Government (undated) brochure ‘Aboriginal cultural heritage of the ACT’.

¹⁰ N Brown, *A History of Canberra*, (Port Melbourne: Cambridge University Press, 2014), p. 8.

- 2.6 The landscape of the Canberra region has spiritual significance to Aboriginal people:
Every Aboriginal group has its own ancestral Dreamtime stories which have been handed down through generations. These stories describe how Aboriginal people are connected to certain plants, animals and the land.¹¹
- 2.7 For millennia, the Aboriginal people of the region have lived in ecological balance with the natural environment, acting as its custodians through practices such as ‘firestick farming’.
- 2.8 In the early nineteenth century, British explorers passing through the region named it the ‘Limestone Plains’ based on its geology. In the 1820s the first Europeans settled in the area, established livestock grazing estates, and cleared the land of much of its native forests.
- 2.9 Records indicate that the landscape of the Canberra region had a different appearance before European settlement.¹² The clearing of native forest made the land windswept and dusty; largely denuded of trees, and prone to soil erosion.¹³
- 2.10 Throughout the nineteenth century more White settlers came to live in the Canberra area, primarily to work on several large dispersed sheep grazing estates, or to establish small landholdings.¹⁴

SELECTION AS THE SITE FOR THE NATIONAL CAPITAL

- 2.11 The idea of a national capital distinct from the State capitals arose in the lead-up to Federation. This notion became enshrined in Australia’s Constitution:
The seat of Government of the Commonwealth...shall be in the State of New South Wales, and be distant not less than one hundred miles from Sydney.
Such territory shall contain an area of not less than one hundred square miles...¹⁵
- 2.12 From the outset, landscape featured predominately in the choice of location for the new capital. In 1908, the then-Minister for Home Affairs, Hugh Mahon, emphasised the importance of landscape in his instructions to surveyor Charles Scrivener in his search for the site:
...the Federal Capital should be a beautiful city, occupying a commanding position, with extensive views and embracing distinctive features which will lend themselves to a design worthy of the object, not only for the present but for all time; consequently the

¹¹ ACT Government (undated) brochure ‘Aboriginal cultural heritage of the ACT’.

¹² D Meyers, *Lairds, Lags and Larrikins: An early history of the Limestone Plains*, (Canberra: Sefton Publications, 2010), pp. 14-15.

¹³ National Capital Development Commission, *Canberra: From Limestone Plains to Garden City*, (Canberra: National Capital Development Commission, 1988), p. 2.

¹⁴ Brown, *A History of Canberra*, p. 44.

¹⁵ *Australia’s Constitution*, Section 125.

potentialities of the site will demand most careful consideration from an hygienic standpoint, with a view to securing picturesqueness, and also with the object of beautification and expansion.¹⁶

- 2.13 In 1909, the Canberra region was designated as the site for the new national capital.¹⁷ In 1911, New South Wales transferred the land of the Federal Capital Territory to the Commonwealth. The city of Canberra was officially named in 1913.
- 2.14 Also in 1911, the then-Minister for Home Affairs, King O'Malley, announced a Commonwealth Federal Capital Design Competition to inform a plan for the new capital. From the 137 entries received for the competition, the design by Walter Burley Griffin and Marion Mahony Griffin was declared the winner; however, O'Malley determined that the government would be justified in compiling a composite scheme, using parts of the Griffins' vision alongside elements from other designs.¹⁸

CANBERRA AS A PLANNED CITY

- 2.15 As noted above, Canberra is a planned city which utilises best practice urban design thinking. The Griffins' design was influenced by the 'City Beautiful' and 'Garden City' planning movements prominent at the time in North America and Europe.
- 2.16 The 'City Beautiful' was a reform movement popular among North American architects and urban planners during the 1890s and 1900s. It sought to bring to cities a European-style beautification and monumental grandeur in the neo-Renaissance and Beaux-Arts traditions. It was based on a belief that awe-inspiring planning and architecture could not only improve landscape, but also cultivate community moral uplift and civic virtues.
- 2.17 The 'Garden City' was a style of urban planning, developed in the United Kingdom in 1898, involving planned, self-contained communities surrounded by 'green belts' or parks and agricultural lands. The Garden City concept is intended to produce relatively economically independent cities with short commute times that preserve the natural landscape, as well as leading to social reform and uplift.¹⁹ In Canberra,

¹⁶ Hugh Mahon, quoted in Ken Taylor, *Submission 51*.

¹⁷ *Commonwealth Seat of Government Acceptance Act 1909*.

¹⁸ K F Fischer, 'Canberra: Myths and Models', *The Town Planning Review*, vol. 60, no. 2, April 1989, pp. 160-1; Brown, *A History of Canberra*, p. 52; J Banks and C Brack, 'Canberra's Urban Forest: Evolution and planning for future landscapes', *Urban Forestry, Urban Greening*, no. 1, 2003, p. 152.

¹⁹ R Freestone, 'Canberra as a Garden City, 1901-1930', *Journal of Australian Studies*, vol. 10, issue 19, May 2009, pp. 3-5; Australian Government, 'Celebrating Canberra', p. 3.

...the Garden City influence is evident in the screening of residential areas from major highways by the use of parks, and in the use of street patterns which change direction so as to discourage through-traffic in settlements of dwellings.²⁰

2.18 The natural setting of Canberra is the main framework for the city's structure.²¹ The Griffin Plan envisioned a city featuring monumental architecture and landscaping with generous public green spaces and a concentrated population inhabiting terrace housing, connected by an extensive network of tramlines. However, the Griffins' plan was later revised towards a focus on dispersed low-density suburbs and autonomous New Towns connected via rapid vehicular transport routes.²²

2.19 The planned nature of Canberra has underpinned the city's entwinement with nature:

The genesis of Canberra as a planned city enabled a deliberate approach to incorporating nature in the city, with extensive tree plantings a feature of Canberra's early development.²³

EARLY CONSTRUCTION OF THE CITY

2.20 Official landscaping of Canberra commenced in 1913 when Charles Weston significantly re-afforested the capital site and surrounding hills with a mixture of native and exotic species.²⁴ Trees were seen as essential to improve the barren landscape and reduce erosion, wind, and dust.

2.21 Early construction of the city was managed by the Federal Capital Commission. Development of Canberra largely stalled with the Great Depression and Second World War until the late 1950s.

2.22 In 1957, the National Capital Development Commission (NCDC) was established by Prime Minister Robert Menzies to provide an integrated and independent approach to Canberra's development; combining town planning, engineering, building architecture, design, construction, roads and services, and landscape architecture.²⁵

2.23 The NCDC established a 'New Town' model of development consisting of moderately self-sufficient suburban satellites, separated by greenbelts, each inhabited by 100,000 residents in

²⁰ National Capital Development Commission, *Tomorrow's Canberra*, (Canberra: Australian National University Press, 1970), p. 8.

²¹ National Capital Development Commission, *Tomorrow's Canberra*, p. 61.

²² Fischer, 'Canberra', p. 167; Brown, *A History of Canberra*, pp. 58, 67.

²³ CSIRO, *Submission 31*, p. 4.

²⁴ NCDC, *Canberra: From Limestone Plains to Garden City*, pp. 5-6.

²⁵ Banks and Brack, 'Canberra's Urban Forest', p. 153; Brown, *A History of Canberra*, pp. 144-6.

a dozen neighbourhoods and tied together with rapid transit routes.²⁶ To achieve this vision, the NCDC devised the so-called 'Y-Plan', consisting of linear suburban corridors connected by freeways which converged on the city centre.²⁷ This model of development:

has protected the major hills and ridges from development, and has created a scenic backdrop and natural setting for urban areas. It has reinforced the garden character for which Canberra is renowned.²⁸

- 2.24 From the 1970s, the NCDC incorporated the National Capital Open Space System (NCOSS) into planning regulation. The NCOSS ensured that the hills and ridges around and within the urban areas, the major lakes and river corridors and the distant mountains to the west and south of Canberra would be kept free of urban development. Two-thirds of the ACT falls under the NCOSS, which not only provides Canberra with its natural backdrop but also ensures the quality of Canberra's water supply.²⁹

CANBERRA'S GROWTH SINCE SELF-GOVERNMENT

- 2.25 When the ACT obtained self-government in 1988, the governance framework for decision making about Canberra's natural environment and urban development changed significantly.
- 2.26 The NCDC was abolished, and in 1989 the National Capital Authority (NCA) was established to maintain planning oversight of Designated Areas (defined as lands that have the 'special characteristics of the National Capital'),³⁰ and to administer the *National Capital Plan*, a document designed 'to ensure that Canberra and the Territory are planned and developed in accordance with their national significance'.³¹
- 2.27 At the same time, the ACT Planning Authority (later the Planning and Land Authority; and since subsumed within EPSDD) was established to administer the *Territory Plan*, which is:
- ...the key statutory planning document in the ACT, providing the policy framework for the administration of planning in the ACT. The purpose of the Territory Plan is to manage land use change and development in a manner consistent with the strategic

²⁶ Fischer, 'Canberra', p. 175; Brown, *A History of Canberra*, p. 165.

²⁷ Fischer, 'Canberra', p. 181; Brown, *A History of Canberra*, pp. 163-6; D Wright, 'Building Canberra from 1958-1988', no date, <<https://www.nca.gov.au/factsheet/building-canberra-1958-1988-0>>, viewed 16 July 2018.

²⁸ Australian Government, *National Capital Plan*, (Canberra: National Capital Authority, 2016), p. 13.

²⁹ M Hendry, 'Urban and Rural Landscape Development in Canberra', *Ekistics*, no. 60, May/June/July/Aug 1993, p. 136; A MacKenzie, 'The City in a Fragile Landscape: An Exploration of the Duplicitous Role Landscape Plays in the Form and Function of Canberra in the Twenty First Century', *Urban Transformations: Booms, Busts and other Catastrophes. Proceedings of the 11th Australian Urban History/Planning History Conference*, E Galton, J Gregory and S McQuade (eds.), (Crawley: University of Western Australia, 2012), pp. 159-60; Australian Government, *National Capital Plan*, p. 24.

³⁰ Australian Government, *National Capital Plan*, p. 12.

³¹ Australian Government, *National Capital Plan*, p. 9.

directions set by the ACT Government, Legislative Assembly and the community. It must not be inconsistent with the National Capital Plan.³²

2.28 The ACT Government's *Canberra Spatial Plan* and the National Capital Authority's *The Griffin Legacy* report were published in 2004. Both recommended the connection of the lake to the city centre; city centre revitalisation; and urban intensification and infill for higher population density in the city, Town Centres and along main transit routes.³³

2.29 In 2012 the *Canberra Spatial Plan* was replaced with the *ACT Planning Strategy*, which declared nine strategies to guide the development of Canberra, including (among others):

(1) Create a more compact, efficient city by focusing on urban intensification in town centres, around group centres and along major transportation routes, and balancing where greenfield expansion occurs.

...

(5) Provide vibrant, pleasant urban parks for everyone to enjoy by ensuring they are safe and accessible for the most vulnerable in our community.

...

(8) Value the land and natural resources of the region by working collaboratively to manage urban growth, ensure connectivity and continuity in the natural systems and conserve, where appropriate, agriculturally productive land.³⁴

2.30 In 2018, this Strategy was refreshed. The 2018 Strategy outlined a vision of Canberra as:

...a sustainable, competitive and equitable city that respects Canberra as a city in the landscape and the national capital, while being responsive to the future and resilient to change.³⁵

2.31 This vision, the 2018 Strategy claimed:

...continues the original vision of Walter and Marion Mahoney Griffin of Canberra being a city within the landscape that celebrates its bushland setting. It protects and enhances the qualities that we value about Canberra while managing growth and change across the city.³⁶

2.32 The Strategy, among other things, commits the Government to making Canberra a 'compact and efficient' city by increasing population density 'around town and group centres and along major transport routes' and confining 70 per cent of new housing to 'within our existing urban

³² ACT Government, *Canberra Spatial Plan*, (Canberra: ACT Planning and Land Authority, 2004), p. 3.

³³ National Capital Authority, *The Griffin Legacy*, (Canberra: National Capital Authority, 2004); ACT Government, *Canberra Spatial Plan*, (Canberra: ACT Planning and Land Authority, 2004).

³⁴ ACT Government, *ACT Planning Strategy*, (Canberra: Environment and Sustainable Development Directorate, July 2012), pp. 6-7.

³⁵ ACT Government, *ACT Planning Strategy*, (Canberra: Environment and Sustainable Development Directorate, 2018), p. 4.

³⁶ ACT Government, *ACT Planning Strategy*, (Canberra: Environment and Sustainable Development Directorate, 2018), p. 4.

footprint'. The Strategy also seeks to make Canberra 'sustainable and resilient' by 'protecting and expanding living infrastructure, managing our waterways, reducing emissions, protecting our parks and reserves for both our community and our biodiversity, and reducing our ecological footprint'.³⁷

VIEWS FROM CONTRIBUTORS TO THE INQUIRY

CANBERRA AS THE 'BUSH CAPITAL'

- 2.33 Many submissions referred in positive terms to Canberra's reputation as the 'bush capital'. It is described in one submission as 'the interweaving of suburbs and nature reserves' across the 'length and breadth' of Canberra;³⁸ and in another as 'access to nature for everyone not far from where they live and work.'³⁹ The Woodlands and Wetlands Trust submitted that:

One of the oft-quoted aspects about living in Canberra is the proximity in the urban areas to nature reserves, parks and green areas. It is this consideration for many people that defines Canberra as the 'bush capital' and goes to the heart of what differentiates Canberra from other major cities.⁴⁰

- 2.34 The Committee was told that the term 'bush capital' was originally used to deride Canberra as a city lacking sophistication.⁴¹ However, in recent years it has been invested with a different meaning; submissions to the Inquiry celebrated Canberra's status and identity as the 'bush capital', and some expressed the view that this is under threat by development. One submission noted that 'Canberra is known as the "bush capital" and there is strong support for keeping it that way'.⁴²

- 2.35 Landcare ACT argued that Canberra Nature Park is integral to Canberra as the 'bush capital' and called for the significance of the Park to be recognised:

The city's most important natural asset is Canberra Nature Park, derived from the planning concept of the National Capital Open Space System [NCOSS]. This retention of hilltops and ridges free of development with open space reserves and buffers between the 'new town' districts of Canberra, is what provides the landscape character of the 'bush capital' and access to nature for everyone not far from where they live and work.

³⁷ ACT Government, *ACT Planning Strategy*, (Canberra: Environment and Sustainable Development Directorate, 2018), p. 5.

³⁸ National Parks Association of the ACT, *Submission 34*.

³⁹ Landcare ACT, *Submission 55*.

⁴⁰ Woodlands and Wetlands Trust, *Submission 18*, p. [2].

⁴¹ Lake Burley Griffin Guardians, *Submission 52*, p. 2.

⁴² Canberra Bushwalking Group, *Submission 16*, p. 3.

LACT suggest that a key finding from this inquiry to be to uphold the concept of and extension to Canberra Nature Park as integral to Canberra's amenity and identity as the 'bush capital'.⁴³

- 2.36 Given the centrality of the NCOSS to the identity of Canberra as the 'bush capital', some contributors pointed out the importance of ensuring these areas remain free of development. Elaine Hooke, for instance, argued that:

Canberra is Australia's bush capital. It is one of the world's great cities because of its unique bushland urban areas between towns and suburbs and along the sides of roads connecting the city and town centres. If these urban areas are developed, we will become like any other big city and we will lose our unique Canberran identity and Australian heritage.⁴⁴

HEALTH, SOCIAL AND ECONOMIC BENEFITS OF THE NATURAL ENVIRONMENT

- 2.37 A theme running through much of the evidence received by the Committee was that nature and green spaces within our urban environment hold immense health, social and economic benefits for the city and its residents.

- 2.38 Numerous submissions described the positive benefits of natural spaces for people's physical and mental health. The Field Naturalists' Association of the ACT, for instance, highlighted that:

There are quantifiable benefits of the natural environment for health, wellbeing, fitness and children's development.⁴⁵

- 2.39 The Committee was told that the natural environment adds to the amenity and 'liveability' of Canberra; promotes stress reduction and relaxation; and enhances quality of life for residents. On this, Hughes Residents' Association stated:

Many people move to Canberra and stay here precisely because they want to live amongst green spaces and woodland, because they want to be close to nature and want their children to grow up healthy and active, with green spaces to play in and a safe and natural environment to roam and explore.⁴⁶

- 2.40 The Australian Institute of Landscape Architects ACT Chapter, likewise, noted:

There is an increasing number of studies that show the valuable effect of green space on our physical and mental well-being. While there is an enormous body of anecdotal

⁴³ Landcare ACT, *Submission 55*, p. 2.

⁴⁴ Elaine Hooke, *Submission 63*, p. [2].

⁴⁵ Field Naturalists' Association of the ACT, *Submission 38*, p. [3].

⁴⁶ Hughes Residents' Association, *Submission 10*, p. 2.

evidence for the healing powers of nature, research is putting evidentiary weight behind these contentions. Humans are dependent on nature not only for material needs (food, water, shelter etc) but perhaps more importantly for psychological, emotional and spiritual needs. Parks and other natural environments play a vital role in human health and wellbeing through providing access to nature, and is associated with lower levels of perceived job stress and higher levels of job satisfaction. Experiences of nature reduce psychological stress, and can build resilience to stress. The growing body of research shows a connection between Australia's health and wellbeing and the design and structure of our built environment. As Canberra grows, high quality green spaces need to be provided.⁴⁷

2.41 Landcare ACT echoed these sentiments:

At the most basic level, humans are 'hardwired' with a need to experience nature with our senses. Many studies from around the world recognises access to nature is a benefit for human health and wellbeing. This is particularly so for recovery from illness, particularly mental health and for development of children...⁴⁸

2.42 Submissions to this inquiry described the positive social impact of natural space on the Canberra community, with references to connectedness, identity, belonging, sense of place, and social capital. Contributors noted, for example:

- ...natural environment areas in Canberra provide... [s]ocial amenity by bringing people together informally as they enjoy the natural environment in their diverse ways... Communities evolve when individuals spend time in nature;⁴⁹
- Green spaces, urban biodiversity, community gardens, places of stillness, safe green spaces of kids to play and old folks to mingle will be ever more important.⁵⁰

2.43 Canberra Bushwalking Club similarly pointed to the positive social benefits derived from the use of natural spaces for such activities as bushwalking:

It is also a significant social activity, bringing people together and providing a great introduction to Canberra for those who are new to the city.⁵¹

2.44 The Commissioner for Sustainability and the Environment advised the Committee of research showing that urban green space contributes to increased social cohesion.⁵²

⁴⁷ The Australian Institute of Landscape Architects ACT Chapter, *Submission 60*, p. [3].

⁴⁸ Landcare ACT, *Submission 55*, p. 2.

⁴⁹ Field Naturalists Association of the ACT, *Submission 38*, p. [3].

⁵⁰ Molonglo Catchment Group, *Submission 15*, p. 3.

⁵¹ Canberra Bushwalking Club, *Submission 16*, p. 2.

⁵² Commissioner for Sustainability and the Environment, *Submission 32*, p. [1].

2.45 Some submissions described the economic benefits of natural spaces, such as being a source of attraction both for tourists and permanent residents,⁵³ and increasing adjacent property values.⁵⁴ The Woodlands and Wetlands Trust highlighted the positive economic benefits derived from our natural environment:

Close proximity with the natural environment is recognized as one the major attractions that Canberra offers to both existing residents and newcomers. It is an integral element of what makes Canberra a special place and drives much of the economic benefits that come from increased population, infrastructure needs, tourism, and social amenity and other broader benefits such as healthy lifestyles.⁵⁵

2.46 The Committee was told of recent efforts to value or measure the range of services that nature provides to urban areas, to better inform decision making about urban development:

Nature provides a range of services to urban areas that are not valued and not accounted for in decision making. Part of the reason for this is because existing asset and accounting systems are not commonly applied to nature or the services and benefits that we accrue from them. On 27 April 2018 the Meeting of Commonwealth, state and territory environment ministers endorsed a strategy to deliver a common national approach to implementing the United Nations System of Economic Environmental Accounting (SEEA). The SEEA takes account of, and provides where possible a monetary value for, the 'stocks and flows' of nature to help balance the ledger and enable a more complete consideration of values by decision makers.⁵⁶

2.47 Landcare ACT suggested that the ACT Government 'invest in SEEA accounting for our existing assets to determine what we have. By providing this common denominator of value, people from across our community will be better able to understand the benefits of nature in the city'.⁵⁷

Finding 1

2.48 Canberrans place great value on being the bush capital and having a healthy and natural environment within their city and surrounds.

Finding 2

2.49 Nature in our city provides Canberra and Canberrans with health, social and economic benefits and opportunities.

⁵³ Friends of Black Mountain, *Submission 36*, p. 12.

⁵⁴ Fenner School of Environment and Society, *Submission 12*, p. [2].

⁵⁵ Woodlands and Wetlands Trust, *Submission 18*, p. [2].

⁵⁶ Landcare ACT, *Submission 55*, pp. 3-4.

⁵⁷ Landcare ACT, *Submission 55*, p. 4.

3 CITY IN A LANDSCAPE STRATEGY

- 3.1 This chapter outlines reasons why the city should adopt a City in a Landscape Strategy and discusses what the main elements of this strategy should be.

CANBERRA AS A CITY IN THE LANDSCAPE

- 3.2 A majority of contributors emphasised the importance of landscape to the character, identity and amenity of Canberra. As noted in Chapter 2, the place of landscape has been integral to Canberra since its inception. The landscape of the region was important in the initial decision to locate the nation's capital city here and was central to the original design for the cityscape developed by Walter Burley and Marion Mahoney Griffin. Some submitters suggested that it would be difficult to name another city in the world in which the interaction between landscape and the built environment has played as large a role as it does in Canberra. Canberra is quintessentially a city in the landscape.
- 3.3 In his submission to the Inquiry, Ken Taylor provided extracts from his book *Canberra City in the Landscape*, which expressed well these sentiments:

Canberra is a remarkable city. In the true sense of the word it is unique; there is no city like it in the world... There are roads, houses, offices, schools, shops, parks—all the components we associate with urban development—as in any other city, yet it is unlike every other city.

The reason lies in the way landscape defines and articulates the city plan... The form of the physical landscape—natural and created—is a palpable, tangible presence defining the city; but equally so is its content or intangible, symbolic meaning. Places like Zurich and Kyoto are similar in the way landscape open space surrounds and penetrates the city, but not to the comprehensively planned extent nor with the same founding visions.⁵⁸

- 3.4 The ACT Monaro Riverina Branch of the Australian Garden History Society also pointed out the national and historical significance of landscape to the design of Canberra:

The landscape has always been the principle element. From the beginning, emphasis was placed on the importance of the surrounding mountains, hills and ridges to articulate the form and structure of the city, whilst the more intimate spaces within the built environment of later periods were developed by knowledgeable and innovative foresters. The natural and the planned landscape, the mountains, hills, trees, gardens,

⁵⁸ Ken Taylor, *Submission 51*, p. 3.

school ovals, playing fields, lakes, wetlands have all contributed towards creating what is now an historically significant place in Australia's heritage.⁵⁹

3.5 Despite the critical importance of landscape to Canberra's identity and amenity, Landcare ACT pointed out that currently there 'is no landscape policy for Canberra city, no document that considers the broader issues, or concepts of beauty and human interaction with nature'. It also noted the lack of a Natural Resources Plan. The lack of these documents, it argued, 'impede the potential for integration of the natural environment with optimal urban development'.⁶⁰

3.6 Given the importance of landscape to Canberra, some contributors suggested the need for the ACT Government to adopt a landscape strategy, policy, or plan. Canberra Ornithologists Group, for instance, submitted 'that the ACT should adopt more sustainable, whole-of-landscape planning and environmental conservation policies'. Further, they suggested that:

There is a need or a whole-of-landscape plan into the future, say for the next 30 years, which will deliver more sustainable outcomes for biodiversity than is being achieved under current systems, and the same time cater for a growing city. This needs to be underpinned by comprehensive, scientific evidence which includes patterns of landscape use by species of birds and other animals.⁶¹

3.7 The Australian Institute of Landscape Architects ACT Chapter informed the Committee that a landscape strategy is particularly important given the context of Canberra's ongoing process of densification and urban infill—a process for which they expressed approval. They recommended the following:

An extensive and detailed landscape strategy plan be prepared. This plan must:

- Quantify and qualify the symbolic, ecological and community contribution of 'nature';
- Identify the places and elements (parks, streets, nature reserves, buffers tec.) that are critical to the physical and visual connectivity of the landscape setting and nature;
- Develop guidance on the distribution of 'landscape spaces' to ensure local, walkable access for people of all ages and abilities; and
- Set out a hierarchy of landscape spaces and places (and corresponding maintenance/management regimes) according to its primary function, intended intensity of use.⁶²

⁵⁹ ACT Monaro Riverina Branch of the Australian Garden History Society, *Submission 1*, p. [1].

⁶⁰ Landcare ACT, *Submission 55*, p. 5.

⁶¹ Canberra Ornithologist Group, *Submission 25*, p. [1].

⁶² Australian Institute of Landscape Architects ACT Chapter, *Submission 60*, p. [2].

COMMITTEE COMMENT

- 3.8 Landscape has been central to the identity of nation's capital even before the city of Canberra was named and planned. The selection of this location as the site for the city was deeply related to the picturesque quality of the landscape. Drawing inspiration from the surrounding geography, Walter Burley Griffin's and Marion Mahoney Griffin's plans for the city sought to build a city in the landscape of world-class standards and this vision has driven the subsequent development of Canberra as a garden city and the nation's bush capital. Given the continuing importance of landscape to the city and its future, the Committee recommends that the ACT Government re-commit to the concept of the City in the Landscape.
- 3.9 The premise of this Inquiry was to investigate how Canberra can best manage its interactions with its surrounding natural environment and enhance green spaces within its urban setting during a time when the city faces a number of significant challenges: 1) increasing population and urban density; 2) the impact of climate change and the urban heat island effect (UHI effect); 3) the loss of urban green space; and 4) the degradation of natural habitat and loss of biodiversity. These issues are addressed throughout this report.
- 3.10 An updated City in a Landscape Strategy must contribute to the city's ability to overcome these challenges and, further, anticipate the emergence of hitherto unforeseen challenges into the future. The City in a Landscape Strategy, in short, must 'future proof' the city through the careful management of its interaction with its natural surroundings and through the utilisation of world-class urban green and blue infrastructure throughout the city's footprint.

Recommendation 1

- 3.11 The Committee recommends that the ACT Government re-commit to the concept of the City in a Landscape.**

Recommendation 2

- 3.12 The Committee recommends that the ACT Government develop a City in a Landscape Strategy reflecting the ACT's current and anticipated future needs.**

THE TRADITIONAL CUSTODIANS OF THE LAND

- 3.13 Australia's nature is the product of millennia of interaction between the natural environment and the Traditional Custodians of the continent—the Australian Aboriginal people—and the sophisticated land-management techniques they used, most centrally the use of low-intensity

fire.⁶³ The Canberra region, too, has been the home of Aboriginal people for at least 25,000 years. The region's Traditional Custodians carefully managed the environment and built strong cultural and cosmological connections with it. The perspectives of the region's Aboriginal population remains vitally important to the continued care and management of our natural environment.

3.14 Reflecting on this, Ngunnawal Elder Mr Wally Bell told the Committee that:

There is a total lack of understanding about Aboriginal cultural heritage and what it means to us especially in relation to our connection with country. It is where all of our custom and our belief comes from. It is place we have looked after for thousands of years and that has entailed a lot of natural land management skills.⁶⁴

3.15 The importance of incorporating the perspectives, knowledge and experience of the region's Traditional Custodians was expressed by contributors to the Inquiry. Comments from contributors included the following:

- Be inclusive of aboriginal connection to country and caring for country in all future planning;⁶⁵
- Aboriginal people lived in and managed the landscape in this region for thousands of years and have maintained a connection to the land to the present day.⁶⁶

3.16 The Australian Association for Environmental Education ACT Chapter suggested that '[h]igh quality urban spaces and corridors also provide learning opportunities and resources for learning Aboriginal and Torres Strait Islander perspectives and cultural understanding'.⁶⁷ In a similar way, the Ginninderra Catchment Group, stated that 'increased attention needs to be focussed on community education to increase respect, appreciation and value placed on nature by the community'. They suggested such educational activities could potentially increase engagement with 'Aboriginal cultural heritage'.⁶⁸

3.17 The ACT Government informed the Committee of the importance of participation in the management of the Territory's natural environment for the Aboriginal people of the area:

An ongoing connection to Country is an important part of Aboriginal culture. Active engagement in land management helps to maintain identity and has direct benefits to community health and financial wellbeing.⁶⁹

⁶³ B Gammage, *The Biggest Estate on Earth: How Aborigines Made Australia*, (Sydney: Allen and Unwin, 2011).

⁶⁴ Mr Wally Bell, Member, Ginninderra Catchment Group and Ngunnawal Elder, *Transcript of Evidence*, 27 March 2019, p. 49.

⁶⁵ Sara Nolan, *Submission 61*, p. [2].

⁶⁶ Friends of Black Mountain, *Submission 36*, p. 7.

⁶⁷ Australian Association for Environmental Education ACT Chapter, *Submission 57*, p. [3].

⁶⁸ Ginninderra Catchment Group, *Submission 58*, p. [2].

⁶⁹ ACT Government, *Submission 67*, p. 3.

3.18 The Government told the Committee of some of the initiatives that have been undertaken to bring Aboriginal perspectives into the actions of Government in its management of the ACT's natural environment. Officials spoke about how the Government is drawing on the knowledge and experience of the area's Traditional Custodians through capacity building programs and the establishment of the Traditional Custodians Committee. Through these initiatives, the Government aims to draw on the history, experience, and knowledge of the Traditional Custodians of the land in their management of the Territory's natural assets:

Marrying both Aboriginal culture and the western science elements, and how we conserve and enhance nature in the city, are hand in glove. I think an important step for us to recognise is that traditional custodians have understood that the "caring for country, country will look after me" philosophy is at the heart of how we are now progressing into the management of nature in the city. Combining that with the work that the planning part of the directorate undertakes in ensuring a compact and efficient city also gives us strength around building connection with our traditional custodians.⁷⁰

COMMITTEE COMMENT

3.19 The Committee recognises that the Government has endeavoured to bring Aboriginal perspectives into its management of the Territory's parks and nature reserves. Despite this, the Committee believes that the City in the Landscape Strategy would be enriched through further engagement with the region's Traditional Custodians and their deep well of knowledge on how best the city's landscape can be valued in government policy and by the wider community and managed by government and interested stakeholders.

Recommendation 3

3.20 The Committee recommends that the ACT Government work with the Traditional Custodians of the ACT and region to ensure the City in a Landscape Strategy incorporates cultural knowledge and traditional practices.

Recommendation 4

3.21 The Committee recommends that the ACT Government consult with the broader Aboriginal and Torres Strait Islander community for advice on:

- **identifying native plants and grasses suitable for the ACT Government planting program;**

⁷⁰ Mr Ian Walker, Executive Group Manager, Environment and Heritage, Environment, Planning and Sustainable Development Directorate, *Transcript of Evidence*, 29 May 2019, p. 196.

- **traditional practices for caring for our natural environment; and**
- **nature burns, plantings and land management and maintenance practices suitable for the region.**

THE URBAN AND NON-URBAN LANDSCAPES AND THEIR INTERFACE

- 3.22 The Committee has adopted a broad definition of ‘nature’ for this inquiry to enable a comprehensive discussion of the relevant issues. For most Canberrans, ‘nature’ is experienced in their daily lives most closely in the urban landscapes in which they live, including private gardens and public green spaces. As the city continues to densify and go through urban infill, space allocated to private gardens is gradually decreasing, thus increasing the importance of public green space. It is vital that Canberrans can enjoy the amenity offered by urban green spaces designed, constructed and maintained to the highest standards of quality. How this built green space is formed and how it interfaces with Canberra’s surrounding natural environment is a key consideration of this inquiry.
- 3.23 Noting the crucial importance of such urban green space to Canberra as a ‘garden city’, it is vital that a City in the Landscape strategy adequately articulate a vision for the city’s urban landscape that values, enhances and increases these spaces and seeks to appropriately integrate them with the surrounding non-urban environment.

REDUCED GREEN SPACE WITHIN THE URBAN LANDSCAPE

- 3.24 A theme running through many of the submissions is concern about the reduction of green spaces within the urban environment associated with development. Many submissions mentioned that current trends toward smaller residential blocks in new suburbs of Canberra, and redevelopment projects in older suburbs filling blocks with multi-unit residences, are reducing the space left for gardens, trees, open spaces and permeable surfaces. Comments included:
- Backyards, a major component of the ACT open-space/natural environment, have all but disappeared in new suburbs. They must be reinstated;⁷¹
 - It is depressing... to witness row after row of cheek by jowl dwellings with barely a tree in sight, with increased hard scape and decreased soft landscaping;⁷²

⁷¹ Jack Kershaw, *Submission 7*, p. [4].

⁷² Deakin Residents Association, *Submission 48*, p. 3.

- As Canberra’s built-form densifies, levels of private open space can be as small as 6m². As such, it is even more vital to provide sufficient shared open space for people to use and enjoy;⁷³
- ...current planning policy seems to be leading to small plots with large houses on them, leaving little green space as the building take up most of the land giving little room for vegetation and possible canopy trees that might help reduce the heat island effect in summer;⁷⁴
- Some single dwellings have been knocked down and replaced with houses that are wall to wall on the block. Other dwellings have been converted to dual occupancies which also are wall to wall on the block with removal of practically all vegetation and soft landscaping and a significant increase in hard landscaping, features which are visually unattractive and not conducive to combatting the effects of climate change or reducing carbon emissions;⁷⁵
- To the casual observer, the loss of vegetation across the city is apparent;⁷⁶
- ...if Canberra was a Bush Capital, it is becoming less so every day; and⁷⁷
- Nature in our city is disappearing at an alarming rate...⁷⁸

3.25 Several submissions called for public open space to be better integrated into new commercial and residential developments. The Australian Garden History Society, for example, noted that ‘[i]t is evident that loss of lawn, trees and gardens resulting from intensive development diminishes the availability of green spaces to the community’ and called for planning to take account ‘of this loss of private green areas caused by in fill [sic] development and compensate through conserving current public parks and providing new green spaces for public benefit’.⁷⁹

3.26 Other suggestions included greater scrutiny to improve the quality of green space in designs for new developments;⁸⁰ and legislated minimum requirements for greenery in new developments.⁸¹ These suggestions are discussed in the next chapter.

SUPPORT FOR URBAN DENSIFICATION

3.27 While one segment of contributors to the Inquiry expressed concern about the reduction of natural space within urban areas (described above), another segment expressed a positive

⁷³ ACT Young Planners Division, Planning Institute of Australia, *Submission 64*, p. [2].

⁷⁴ Tuggeranong Community Council, *Submission 46*, p. [4].

⁷⁵ Deakin Residents Association, *Submission 48*, p. 6.

⁷⁶ The Australian Institute of Landscape Architects ACT Chapter, *Submission 60*, p. [9].

⁷⁷ Ginninderra Falls Association, *Submission 11*, p. [1].

⁷⁸ Jack Kershaw, *Submission 7*, p. [1].

⁷⁹ ACT Monaro Riverina Branch of the Australian Garden History Society, *Submission 1*, p. [2].

⁸⁰ Ken Taylor, *Submission 51*.

⁸¹ ACT Young Planners Division, Planning Institute of Australia, *Submission 64*.

attitude towards urban densification or infill. In this view, 'compact', 'efficient' and 'smart' urban design is preferable to further outward expansion of the footprint of the city, which inevitably affects the surrounding nature. Comments included:

- The Fenner School supports a more compact—as opposed to sprawling—Canberra urban landscape.⁸²
- AILA ACT concurs with the ACT Government's strategic intentions to make Canberra's urban/built form more efficient. To achieve this, urban density is critical. However, it is also critical that in creating a more compact, dense city, the spatial relationship between the urban and natural environments, a relationship that characterises Canberra, is recognised.⁸³

3.28 These submissions recommended that, within the context of higher density living and reduction of green spaces, the ACT Government maximise the use and benefits of the space allocated to vegetation within the city, through careful spatial design and selection of plant species. The Fenner School of Environment and Society, for instance, suggested that any reduction in *volume* of urban open space can be offset by increasing the *quality* of urban open space to promote biodiversity.⁸⁴

3.29 The Australian Institute of Landscape Architects, similarly, noted that within the context of increasing housing density, 'vegetation and green space produces the greatest benefit' and argued that:

There is going to be a trade-off between space for vegetation and space for building, roads and other infrastructure. The benefits of the space that is allocated to vegetation has to be maximised.⁸⁵

3.30 Riverview Projects cited evidence highlighting the importance of increasing the quality of green spaces to offset the reduction in the volume of green space caused by increasing density:

...the higher the density of housing, the greater the need for well-designed, well-managed public spaces to aid liveability... research from Japan ... shows that good neighbourhood green spaces promote longer life expectancy for local people.⁸⁶

3.31 Even among submitters who expressed concerns about the decline in green spaces in the suburbs connected to new multi-dwelling developments, some expressed support for the principle of higher density dwellings if these were appropriately located, of appropriate sizes

⁸² Fenner School of Environment and Society, *Submission 12*, p. [6].

⁸³ Australian Institute of Landscape Architects, *Submission 60*, p. [2].

⁸⁴ Fenner School of Environment and Society, *Submission 12*, p. [2].

⁸⁵ Australian Institute of Landscape Architects, *Submission 60*, p. [7].

⁸⁶ CABE SPACE cited in Riverview Projects (ACT), *Submission 43*, p. 22.

and included adequate public green spaces. Deakin Residents Association, for one, argued that high-rise developments in the Town Centres:

...are largely supported by DRA given their proximity to employment hubs and existing infrastructure and services, [but] DRA questions their scope and magnitude as well as the apparent lack of attention being given in these areas to promotion of adequate green space and availability of public and community land for use by residents and the wider community.⁸⁷

3.32 In a similar way, Ken Taylor argued that increasing densification from the mid-1990s coincided with the dissipation of a 'central vision for the city as a city in the landscape', but noted that:

This is not an argument against densification, but against the lack of spaces and effective tree planting between and around buildings leading to soulless built zones.⁸⁸

URBAN AND NON-URBAN INTERFACE

3.33 The submissions to this inquiry present a range of perspectives on the interface between the urban and natural environments. The significance of this issue was noted by Mr Rod Griffiths, National Parks Association of the ACT: '[w]e have to remember that the Canberra Environment probably has the greatest amount of urban and natural environment interface of any city in Australia'.⁸⁹

3.34 Many submissions recognised that balance is required in order to facilitate development while also protecting the environment; however, there were different opinions on whether the balancing of these two priorities is appropriately weighted in Canberra at the present time.

3.35 Contributors noted that outward expansion of the city puts pressure on the surrounding natural environment. For example, some people told the Committee they are concerned about the impact of 'unlimited and uncontrolled sprawl' and 'encroachment of new suburbs' into natural spaces on the edges of the city.⁹⁰ Others noted 'a growing concern that pressures on development will lead to encroachment on our urban open space as well as rural and natural areas'.⁹¹

3.36 A few submissions articulated the dilemma that presently sits before the ACT Government and the Canberra community; describing the difficult questions that need to be addressed as decisions are made about future development in the ACT. For example, the Commissioner for Sustainability and the Environment noted that:

⁸⁷ Deakin Residents Association, *Submission 48*, p. [2].

⁸⁸ Ken Taylor, *Submission 51*, p. 1.

⁸⁹ Mr Rod Griffiths, National Parks Association of the ACT, *Transcript of Evidence*, 27 March 2019, p. 45.

⁹⁰ PR Temple and advisers, *Submission 22*, p. [1]; National Parks Association of the ACT, *Submission 34*, p. 3.

⁹¹ Tuggeranong Community Council, *Submission 46*, p. [2].

...in order to accommodate a growing population, it is necessary to construct additional residential areas. As the city continues to expand, decisions regarding density such as block size, height of dwelling and provision of open space become more critical. Should we still build suburbs on the outskirts of Canberra or do we need to increase the number of apartment buildings in inner city areas to reduce transport time, cost and emissions? And how will this affect our access to the natural environment.⁹²

- 3.37 Dr Jacquelyn Ruth Fogerty from the Hughes Residents Association, highlighted the importance of managing the city's interface with its nature surrounding:

Our natural and cultural heritage, Canberra's sustainability and the future quality of life of its citizens depend on effectively managing the interface between our urban lives and our precious natural environment and ensuring that we have the policy and regulatory settings to support this.⁹³

- 3.38 Contributors emphasised the need to ensure that Canberra's surrounding bushland, and the wildlife which inhabits this, is protected from the negative impact of nearby urban areas through the provision of adequate buffer zones. The Woodlands and Wetlands Trust noted that:

These areas are critical for protecting the values of the natural environment and their contribution to social amenity; economic development; biodiversity; and/or climate resilience benefits.⁹⁴

- 3.39 Using the case of Ginninderry as an example, Riverview Projects suggested one method of managing the interface between a higher density urban environment and the surrounding nature reserves and open spaces:

...the urban design for Ginninderry is based on a transect approach to density. In simple terms, the closer to the centre the higher the density, the closer to the urban edge the lower the density.⁹⁵

- 3.40 Some contributors pointed to what they saw as past failings in adequately managing the urban non-urban interface. The Ginninderra Falls Association, for instance, submitted that the development of West Macgregor had been allowed to encroach too closely to the Ginninderra Creek resulting in loss of biodiversity; the 'suburb's house presence, domestic animals, extra light and noise all impact on wildlife'. For future development in the vicinity of Ginninderra Creek, they argued that '[a]dequate buffer zones need to be retained around the border of urban areas to protect all wildlife species in the reserve'.⁹⁶

⁹² Commissioner for Sustainability and the Environment, *Submission 32*, p. 1. See also Tuggeranong Community Council, *Submission 46*.

⁹³ Dr Jacquelyn Ruth Fogerty, Secretary, Hughes Residents Association, *Transcript of Evidence*, 13 March 2019, p. 16.

⁹⁴ Woodlands and Wetlands Trust, *Submission 18*, p. [9]. Also see: Friends of Black Mountain, *Submission 36*, p. 17.

⁹⁵ Riverview Projects (ACT), *Submission 43*, p. 14.

⁹⁶ Ginninderra Falls Association, *Submission 11*, p. [4].

3.41 The Canberra Ornithologists Group pointed to ‘[i]nadequate urban edge buffers and poor interface management, particularly in cases involving sensitive, threatened ecological communities such as grassy woodlands, and riparian areas’. They submitted that:

Buffer areas and how they are managed need to be based on sound evidence, such as urban edge effects on particular species, not simply be arbitrary lines on maps or based on minimal, required fire management protection zones.⁹⁷

3.42 They further noted that the 100 metre urban edge buffer between Throsby and ‘an important Superb Parrot nesting site’ potentially imperils ‘the long term-survival [sic] of this breeding colony, one of only two known breeding colonies in the ACT’.⁹⁸

3.43 The Commissioner for Sustainability and the Environment pointed out the general problems caused by such ‘edge effects’ on the health of nature reserves:

This is an issue which affects any area where urban development is adjacent to a natural area, especially an area reserved for the protection of a particular species or ecological community. The potential impacts of edge effects include the predation on native species by domestic cats, the spread of weeds, clearing of vegetation for bushfire protection and increase in nutrients entering the stormwater system which can effect aquatic species downstream.⁹⁹

WILDING THE CITY

3.44 Recent years has seen the emergence of a global trend towards ‘wilding’, or ‘re-wilding’, of cities and nature areas.¹⁰⁰ These projects ‘aim to restore functional ecosystems’ under the rationale that ‘by reactivating the often complex relationships between species...these ecosystems once again become able to sustain themselves’.¹⁰¹

3.45 A key outcome of such projects is to increase biodiversity, vital to the health and sustainability of ecosystems. Addressing this topic, Canberra Urban and Regional Futures noted that while ‘[g]lobal efforts to develop more systematic approaches to conservation planning have historically focused on identifying priorities for conservation and protection within the formal conservation estate based on nature reserves’, there are increasing ‘calls for greater attention

⁹⁷ Canberra Ornithologists Group, *Submission 25*, p. 2.

⁹⁸ Canberra Ornithologists Group, *Submission 25*, p. 2.

⁹⁹ Commissioner for Sustainability and the Environment, *Submission 32*, p. 2.

¹⁰⁰ Canberra Urban and Regional Futures, *Submission 6*, attachment, Alexandra J, Norman B, Steffen W and Maher W. *Planning and Implementing Living Infrastructure in the Australian Capital Territory – Final Report*, Canberra Urban and Regional Futures, University of Canberra, Canberra, 2017, p. 65.

¹⁰¹ O Sweeney, J Turnbull, M E Jones, M Letnic, T Newsome, ‘We can “rewild” swathes of Australia by focusing on what makes it unique’, *The Conversation*, 27 February, 2019, <http://theconversation.com/we-can-rewild-swathes-of-australia-by-focusing-on-what-makes-it-unique-111749>, viewed 2 October 2019.

to off-reserve conservation including through urban and near-urban conservation and restoration strategies'.¹⁰²

3.46 One such strategy is urban wilding, 'aiming to enhance biodiversity' within cities and underpinned by 'connectivity in and through urban areas'.¹⁰³ In the urban setting, these projects aim to create green spaces as close to a naturally occurring state as possible and connect these throughout the city and into the surrounding nature reserves. By doing so, these projects reduce maintenance costs, enhances appearance and amenity, produce habitat for wildlife and encourage community engagement with the management of nature in the city.

3.47 Michael Sim argued for actions to increase the biodiversity of nature strips through a process that could be described as 'wilding':

Roadsides and medians are often green space with mainly exotic grasses (including invasive African lovegrass) and limited biodiversity. There should at least be islands of native plants to form an ecosystem, not just occasional patches of trees or shrubs. Multi-layer plantings will aid in retaining native diversity as well as increasing the ability of the landscape to absorb water and reduce urban temperatures in extreme weather events.¹⁰⁴

3.48 The National Parks Association of the ACT argued a similar point: 'Planted forests, or woodland patches in the suburbs can have important biodiversity benefits if they are primarily native trees and are integrated with native shrubs and grasses which are not mown'. They also argued that such spaces provide movement corridors for wildlife throughout the cityscape.¹⁰⁵

3.49 Chapter 4 discusses such wilding, or re-wilding, initiatives in more detail.

COMMITTEE COMMENT

3.50 The Committee has heard contrasting evidence on what the vision for Canberra's urban landscape should look like. Many contributors are concerned about the loss of space for private gardens associated with urban infill. Others see densification as a positive process that can be adequately managed to ensure that it corresponds to an increase in the quality and quantity of public green space available for the community to enjoy. Importantly, increasing density within the existing footprint of the city places less pressures on the city's surrounding natural environment.

¹⁰² Canberra Urban and Regional Futures, *Submission 6*, attachment, J Alexandra, B Norman, W Steffen and B Maher, *Planning and Implementing Living Infrastructure in the Australian Capital Territory – Final Report*, Canberra Urban and Regional Futures, University of Canberra, Canberra, 2017, p. 65.

¹⁰³ Canberra Urban and Regional Futures, *Submission 6*, attachment, J Alexandra, B Norman, W Steffen and B Maher, *Planning and Implementing Living Infrastructure in the Australian Capital Territory – Final Report*, Canberra Urban and Regional Futures, University of Canberra, Canberra, 2017, p. 65.

¹⁰⁴ Michael Sim, *Submission 24*, p. [4].

¹⁰⁵ National Parks Association of the ACT, *Submission 34*, p. 7.

- 3.51 At the same time, the interface between the city setting and the surrounding natural environment requires careful consideration and management. The Committee believes that ensuring that adequate buffer zones are in place between the urban and non-urban environments to minimise the impact of ‘edge effects’ is a key factor in managing this interface.
- 3.52 Wilding projects that aim to restore, or create, functioning ecosystems connected to each other and the surrounding nature reserves offers one mechanism to enhance the quality of the city’s green spaces. Such efforts increase diversity, strengthening the resilience of the ecosystem. The Committee sees wilding projects as an integral component within the vision for Canberra’s urban landscape that should be articulated by the ACT Government.

Recommendation 5

- 3.53 The Committee recommends that the ACT Government, preferably as part of the City in a Landscape Strategy, articulate the vision for the urban landscape within the ACT, including what defines quality greenspace**

Recommendation 6

- 3.54 The Committee recommends that the ACT Government, preferably as part of the City in a Landscape Strategy, articulate the vision for managing interfaces between urban and non-urban landscapes.**

Recommendation 7

- 3.55 The Committee recommends that the ACT Government, preferably as part of the City in a Landscape Strategy, prioritise opportunities for wilding the city.**

BIODIVERSITY

- 3.56 As touched on above, biodiversity is vitally important to the health, resilience and sustainability of Canberra’s fauna and flora. The *Australia State of the Environment 2016* report identified five core values biodiversity has for human society:
- Economic—biodiversity provides humans with raw materials for consumption and production. Many livelihoods, such as those of farmers, fishers and timber workers, are dependent on biodiversity;
 - Ecological life support—biodiversity provides functioning ecosystems that supply oxygen, clean air and water, pollination of plants, pest control, wastewater treatment and many ecosystem services;

- Recreation—many recreational pursuits rely upon biodiversity, such as birdwatching, hiking, camping and fishing. Our tourism industry also depends on biodiversity;
- Cultural—the Australian culture is closely connected to biodiversity through the expression of identity, through spirituality and through aesthetic appreciation. Indigenous Australians have strong connections and obligations to biodiversity arising from spiritual beliefs about animals and plants;
- Scientific—biodiversity represents a wealth of systematic ecological data that helps us to understand the natural world and its origins.¹⁰⁶

3.57 Contributors noted the importance of protecting and increasing biodiversity within the Territory, particularly within the urban area.

3.58 Related to the earlier point on the benefits that re-wilding can have for the city, the National Parks Association of the ACT pointed out the negative outcomes for biodiversity that Canberra’s conventional approach to urban open spaces has: ‘many urban open spaces in Canberra are urban parks and scattered trees and mown grass which have low biodiversity benefits, and higher maintenance costs’. Such spaces, they argued, provide habitat for only a limited range of bird species which are usually aggressive and drive out other types of birds.¹⁰⁷

3.59 The Fenner Schools of Environment and Society shared this concern:

Replacing a proportion of mown grass in Canberra’s urban open space with different forms of ecological restoration will attract greater biodiversity to Canberra’s urban open space, considerably reduce maintenance costs and provide a vehicle for greater community engagement in the creation, management and maintenance of Canberra’s urban open space.¹⁰⁸

3.60 The Woodlands and Wetlands Trust provided the following points on how the city can sustain its biodiversity into the future:

- The retention of remaining natural habitats/mature eucalypt trees across the landscape (both urban and rural); functional connectivity (movement) corridors for fauna;
- Adequate urban edge buffers and interface management, particularly in cases involving sensitive threatened ecological communities and species’ habitats.

¹⁰⁶ I D Cresswell and H Murphy, ‘Biodiversity: Importance of biodiversity’, *Australia State of the Environment 2016*, Australian Government Department of the Environment and Energy, Canberra, 2016, <https://soe.environment.gov.au/theme/biodiversity/topic/2016/importance-biodiversity>, viewed 27 September 2019.

¹⁰⁷ National Parks Association of the ACT, *Submission 34*, p. 7.

¹⁰⁸ Fenner School of Environment and Society, *Submission 12*, p. [4].

- The impacts and management of domestic animals (dogs, cats), and feral species such as foxes, could be part of a holistic approach to conservation planning and management.¹⁰⁹

3.61 The Molonglo Catchment Group submitted that the ‘single largest threat to biodiversity is weeds’. They highlighted that weed management efforts in the ACT are currently under resourced and rely on the work of community Parkcare and Landcare volunteer groups. They called for improved education of the public concerning weeds, particularly because ‘[s]uburban gardens are a source of weeds which encroach on nearby urban reserves’.¹¹⁰

COMMITTEE COMMENT

3.62 The importance of biodiversity for the sustainability of the environment and wildlife is widely recognised. The Committee hopes that a City in a Landscape Strategy, too, recognises this fact and prioritises the protection and increase of biodiversity throughout the Territory.

Recommendation 8

3.63 The Committee recommends that the ACT Government, preferably as part of the City in a Landscape Strategy, prioritise biodiversity.

RECREATION SPACES

3.64 Contributors noted that humans innately have a sense of biophilia—that is, an instinctive attraction to green spaces and nature (this concept is discussed in further detail in Chapter 6).¹¹¹ Chapter 2 noted the many benefits for the health, well-being and social amenity of Canberrans afforded by ready access to green spaces and nature zones. A wide range of contributors highlighted the many recreational uses derived from Canberra’s natural environment and open spaces; including walking, running, photography, nature appreciation, land caring, bird watching, dog walking, cycling, children’s nature play spaces, horse riding, and camping.

3.65 For these reasons, people told the Committee that they value living within walking distance of natural spaces. Esther Gallant, for instance, explained that her ‘decision made nearly 20 years ago to live here permanently was heavily influenced by the abundance of green space for daily walking, running and biking’.¹¹²

¹⁰⁹ Woodlands and Wetlands Trust, *Submission 18*, p. [8].

¹¹⁰ Molonglo Catchment Group, *Submission 15*, p. 3.

¹¹¹ Lake Burley Griffin Guardians, *Submission 52*, p. 6.

¹¹² Ester Gallant, *Submission 4*.

NATURE PLAY

- 3.66 Several submissions pointed to the importance of encouraging children to play in spaces that bring them into direct contact with nature. The Australian Association for Environmental Education highlighted the importance of connection to nature to children's development:

'Being in Nature' is particularly critical in a child's early years - many people in the community are increasingly familiar with Nature Play as one example of this - but it in fact remains important throughout a child's schooling.¹¹³

- 3.67 Michael Sim also saw nature play as a means to educate children about the environment and its care:

Education about Canberra's environment is important. While children are taught about plastic bags killing turtles they don't know that removing logs and rocks destroy habitat for animals. Children know more about microbeads than their parents know about fertiliser runoff. While nature reserves should be protected from damage it is possible to have recreation areas for bikes and cubby houses in some urban spaces and borders near the reserves. This will help people interact with nature without fear of 'wild' places.¹¹⁴

- 3.68 He called for the Government to provide 'education resources to children and adults about Canberra's environment' and that 'nature play opportunities and structured outdoor learning opportunities' be provided to all school students.¹¹⁵ The Lyneham Commons, similarly, called for the Government to work with community groups to provide 'low risk nature play spaces outside conventional playgrounds'.¹¹⁶

- 3.69 Other contributors pointed out that providing such opportunities for 'nature play' can be tied to efforts to improve the quality of the city's open space and act as a catalyst for engaging people in the care of nature. Helen Oakey, Executive Director, Conservation Council (ACT Region), suggested that 'we should be working with our young people, making sure they have really good opportunities to get into nature play spaces. We could invest in our nature reserves and the Canberra Nature Park more strongly and make those places where people, in an appropriate way, engage with those nature parks'.¹¹⁷

- 3.70 Philip Gibbons, Associate Professor, Fenner School of Environment and Society, likewise called for an improvement of Canberra's open spaces through the provision of 'nature play' opportunities:

¹¹³ Australian Association for Environmental Education, *Submission 57*, p. [3].

¹¹⁴ Michael Sim, *Submission 24*, p. [5].

¹¹⁵ Michael Sim, *Submission 24*, pp. [5-6].

¹¹⁶ The Lyneham Commons, *Submission 47*, p. [2].

¹¹⁷ Ms Helen Oakey, Executive Director, Conservation Council (ACT Region), *Transcript of Evidence*, 22 May 2019, p. 184.

...you can potentially put in logs and things for nature play spaces. You can put little informal paths that kids can ride their bikes through. You can potentially develop the equivalent to a ParkCare movement in local parks where people can engage in citizen science. They could weed the site; you could have a weed bin that everyone walks past, pulls out a weed. That happens in ParkCare. There is lots of support for ParkCare, so why would that not happen in our reserves? Schools could adopt these sites.¹¹⁸

BUSHWALKING

- 3.71 A number of submissions highlighted the value of nature reserves and open spaces for bushwalking. The Canberra Bushwalking Club noted that regular bushwalking destinations for its members include ‘Tidbinbilla, Aranda Bushland, Black Mountain, Goorooyaroo and Mulligan’s Flat; Mt Taylor; Cooleman Ridge and Rob Roy’ and highlighted the multiple benefits people gain from bushwalking, including ‘overall well-being, physical fitness and stamina, confidence and positive mood’.¹¹⁹
- 3.72 While the submission noted that the city is ‘well-served’ by ‘landscape resources of the National Capital Open Space System’, it cautioned that:
- ...the development of this system has not kept pace with the city’s expanding population. In particular, residents in the Gungahlin area lack access to adjacent national parks and well-conserved natural areas for walking.¹²⁰
- 3.73 One submission argued that the popularity of bushwalking is increasing year after year. Using Mount Taylor as an example, the Woodland and Wetlands Trust cited anecdotal evidence to suggest that in 2017 ‘conservatively around 170,000 people’ made use of nature reserve’s walking trails. The submission suggested that the ‘trails and natural environment, vistas and wildlife may well be inspiring many to maintain healthy lifestyles—thereby reducing health costs’.¹²¹

BIRDWATCHING

- 3.74 Several submissions pointed to the rich birdlife present in the Territory. Friends of Black Mountain pointed out that the reserve is home to ‘[m]ore than 90 species of birds’, while the Inner South Canberra Community Council noted in relation to the Jerrabomberra Wetlands

¹¹⁸ Dr Philip Gibbons, Associate Professor, Fenner School of Environment and Society, the Australian National University, *Transcript of Evidence*, 1 May 2019, p. 100.

¹¹⁹ Canberra Bushwalking Group, *Submission 16*, p. 2.

¹²⁰ Canberra Bushwalking Group, *Submission 16*, pp. 1-2.

¹²¹ Woodlands and Wetlands Trust, *Submission 18*, p [2].

that ‘over 200 bird species including most of the wetland species occurring in southern Australia visit or live here’.¹²²

- 3.75 This abundant birdlife makes the Territory well suited to birdwatching and several submissions noted that this is one of the most popular recreational use of the city’s nature reserves.¹²³ Two submitters noted their personal interest in birdwatching.¹²⁴
- 3.76 The Canberra Ornithologists Group, meanwhile, called for measures by the Government to protect the habitat that sustains the Territory’s bird populations.¹²⁵

HORSE RIDING

- 3.77 Horse riding was mentioned by contributors as another activity which benefits from the city’s open spaces and natural areas. The ACT Equestrian Association Incorporated pointed to the positive economic and social contribution horse riding brings to the community and noted that:

The ACT has the largest ratio of recreational horse per capita in Australia. Horses live and are used, as befits the Bush Capital, in close quarters to Canberra’s urban landscape.¹²⁶

- 3.78 The ACT Equestrian Association acknowledged the ‘extensive network of equestrian trails’ around the city developed in the 1970s and 1980s, but called for ‘increased equestrian access to Wanniasa Hills, Mount Taylor, Oakley Hill, McQuoids Hill, Isaacs Ridge and Cooleman Ridge Reserve’.¹²⁷ They also argued that there is ‘no evidence-based rationale for why mountain bikes have access to formed vehicle tracks in most reserves while equestrian remains significantly restricted’.¹²⁸

APPROPRIATE USE OF THE TERRITORY’S NATURE RESERVES

- 3.79 While it is clear from submissions that the Territory’s nature reserves are popular among a wide range of users, submissions presented different views on the appropriate use of Canberra Nature Park, the national park and other parks and reserves.

¹²² Inner South Canberra Community Council, *Submission 35*, p. 2.

¹²³ Woodlands and Wetlands Trust, *Submission 18*, p. [6]; Hughes Residents Association, *Submission 10*, p. 1.

¹²⁴ Peter Cranston, *Submission 26*; Kevin McCue, *Submission 5*.

¹²⁵ Canberra Ornithologists Group, *Submission 25*, p. 1.

¹²⁶ The ACT Equestrian Association Incorporated, *Submission 23*, p. [1].

¹²⁷ The ACT Equestrian Association Incorporated, *Submission 23*, pp. [2-3].

¹²⁸ The ACT Equestrian Association Incorporated, *Submission 23*, p. [3].

3.80 Some submissions celebrated the fact that the proximity of nature reserves to the urban environment promotes physical activity, health and well-being. Taryn Langdon argued that accessibility to these places should be maximised while their natural values protected:

There should be a focus on creating infrastructure that ensures our Nature Reserves are accessible to the community—with a view to also protecting the biodiversity in the area.

The cross-portfolio place based vision for the development of appropriate and quality infrastructure in our open spaces to enable and encourage the full utilisation of space.¹²⁹

3.81 Other submissions expressed the view that some recreational activities are damaging the Territory's nature reserves (distinguishing 'low-impact' or 'passive' recreation from 'high impact' or 'active' recreation).¹³⁰ These submissions called on park users to abide by the rules for using the city's nature reserve and for stricter enforcement of these rules by the Government. Comments included:

- The biodiversity of BMNR and other reserves needs to be protected and conserved from high impact recreation (notably mountain bikes and horse riding), which conflicts with the concept of sustainability of the Reserve;¹³¹
- ...sections are "loved to death" by overuse by heavy impact activities e.g. mountain bike riding on Bruce Ridge;¹³²
- The challenge of nature reserves being used for social amenity lie in people disregarding the restrictions on activities in a reserve, such as dog-walking off leash, mountain biking off formed trails, wood collection, lighting campfires etc... Compliance in both Urban reserves and Nature Reserves is not sufficiently resourced in the ACT.¹³³
- People walk their dogs without a leash...everyday, morning after morning, year after year, flouting the law... So many mornings I have witnessed my beautiful little furry friends race for their lives because someone's dog has scampered up into the bush away from its owner, unleashed, unobserved, undisciplined.¹³⁴

3.82 From this perspective, the primary purpose of the nature reserves is conservation and nature appreciation, and opportunities for high impact recreation should be made available in other areas of the city.¹³⁵

¹²⁹ Taryn Langdon, *Submission 45*, p. 1.

¹³⁰ Field Naturalists Association of Canberra, *Submission 38*; Molonglo Catchment Group, *Submission 15*; National Parks Association of the ACT, *Submission 34*; Friends of Aranda Bushland, *Submission 28*; Friends of Black Mountain, *Submission 36*; Name withheld, *Submission 71*.

¹³¹ Friends of Black Mountain, *Submission 36*, p. 3.

¹³² National Parks Association of the ACT, *Submission 34*, p. 3.

¹³³ Molonglo Catchment Group, *Submission 15*, p. 2.

¹³⁴ Name withheld, *Submission 71*, p. [1].

¹³⁵ Friends of the Pinnacle, *Submission 49*; National Parks Association of the ACT, *Submission 34*; Friends of Black Mountain, *Submission 36*.

3.83 From a slightly different perspective, Icon Water suggested that there needs to be outlets for higher impact nature-based recreation activities in appropriate locations to ensure that the water catchment zone is protected from undesirable impacts:

The whole of the west of Canberra is all around the Cotter catchment. Source water protection is our first point of control in protecting that drinking water supply and, with the parks and conservation service as land managers, when they are regulating what activities are and are not allowed in the catchment they need a place to direct undesirable activities somewhere else.¹³⁶

COMMITTEE COMMENT

3.84 The importance of public green spaces and urban parks is increasing for Canberra as the city undergoes urban infill and densification. As more and more Canberrans choose to reside in apartments, town houses, dual occupancy and detached dwellings on relatively small blocks, easy access to common green zones and public parks becomes increasingly important. Moreover, as more and more Canberran children grow up in higher density housing, priority must be given to the provision of space for nature play within the urban area.

3.85 The Committee welcomes recent funding commitments by the ACT Government to invest in new nature play spaces across the city.¹³⁷

3.86 Given the significance of urban green spaces for the city, the City in a Landscape Strategy must ensure that adequate amounts of public land are reserved as parkland that cater to a wide range of users. It is particularly important that areas be set aside for 'high impact' user to ensure that the Territory's nature reserves, including the water catchment area, remain as pristine possible.

Recommendation 9

3.87 The Committee recommends that the ACT Government, preferably as part of the City in a Landscape Strategy, prioritise the identification of areas within the urban area for nature play.

Recommendation 10

3.88 The Committee recommends that the ACT Government, preferably as part of the City in a Landscape Strategy, prioritise the identification of areas within the urban area for parks.

¹³⁶ Mr Benjamin Bryant, Manager, Environment and Sustainability, Icon Water, *Transcript of Evidence*, 22 May 2019, p. 187.

¹³⁷ L Roberts, 'Government to spend \$1.9m to build three nature play spaces across ACT', *The Riot ACT*, <https://the-riotact.com/government-to-spend-1-9m-to-build-three-new-nature-play-spaces-across-act/275524>, viewed 6 February 2020.

Recommendation 11

3.89 The Committee recommends that the ACT Government consider how best to formally recognise the significance of Canberra Nature Park.

THE URBAN TREE CANOPY

3.90 Canberra's reputation as a 'garden city' rests to a large degree on the extensive tree coverage provided by the city's urban forest, comprising trees on public land and private leases. The Committee heard about the social, economic and environmental value of this urban forest; how trees act as windshields, provide shade and help mitigate the urban heat island (UHI) effect, and create habitat for wildlife. Noting the significance of the city's tree canopy as a feature of the landscape, contributors pointed out the need to ensure that the urban forest be protected, extended to newer developments, and replaced as mature trees die off.

3.91 Contributors pointed to the multiple benefits derived from having a healthy coverage of trees throughout the city. For example, comments included:

- Trees beautify the city and provide shade thus moderating increasingly hot summer temperatures;¹³⁸
- As far as climate change is concerned, maximising tree cover in the city is imperative. Shade from deciduous trees can reduce temperatures by up to 15 degrees C on hot days;¹³⁹
- The improved amenity of well vegetated suburbs through parks and street trees is highly valued by people. This is reflected in property values;¹⁴⁰
- Trees and plants act as the 'lungs' of our cities and towns. Their leaves naturally filter the air by stabilising dust and absorbing pollutants.¹⁴¹

3.92 The CSIRO highlighted the importance of trees in mitigating higher temperatures associated with climate change and the UHI effect:

Warmer areas in summer, with above-average surface temperatures, are characterised by large expanses of impervious surface cover such as rooftops and paving, and few trees. This is common in commercial and industrial areas, carparks and new housing developments. Areas that have been cleared for development or have low, sparse, dry vegetation cover, such as grasses and pasture are also hotter during the day.

¹³⁸ Esther Gallant, *Submission 4*.

¹³⁹ Jenny Goldie, *Submission 9*.

¹⁴⁰ Australian Institute of Landscape Architects, *Submission 60*, p. [2]. Also: CSIRO, *Submission 31*.

¹⁴¹ ACT Government, *Submission 67*, p. 5.

Residential areas with above-average surface temperatures were characterised by little tree cover.

Cooler areas in summer, with below average surface temperatures, typically have green vegetation, more tree cover, are irrigated or are near water. Areas shaded by trees, buildings or topography are also cooler. In rural areas, vegetation that has a higher proportion of tree canopy cover also tends to be cooler.¹⁴²

- 3.93 On the importance of increasing urban cooling through the planting of shade trees, the Australian Institute of Landscape Architects ACT Chapter noted that:

Every 1°C temperature reduction that can be achieved through the better design of cities can equate to five per cent energy saving through reduced cooling loads.

Reduced cooling loads will have significant social, economic and environmental impact on the long-term sustainability of Australian cities.¹⁴³

- 3.94 Related to the mitigation of the impact of climate change, trees not only reduce the UHI effect by providing shade, they also are significant as carbon sinks:

...the growing of trees, especially in their early stages, are known to take up large amounts of carbon from the atmosphere.¹⁴⁴

- 3.95 Some submitters argued that Canberra's urban forest should predominately be made up of native trees (typically evergreens), with non-native deciduous shade trees used where needed to protect buildings and recreation spaces from the heat of summer.¹⁴⁵ Some suggested that 'native trees and native vegetation' should be prioritised 'to promote biodiversity and grasp opportunities to enhance natural vegetation and wildlife corridors'.¹⁴⁶ Others called for the removal of certain species of street tree that are now considered to be invasive, such as *celtis australis* and *pistacia chinensis*, and which spread seeds into surrounding nature reserves.¹⁴⁷

- 3.96 On this issue, the Australian Institute of Landscape Architects ACT Chapter argued for use of deciduous trees within the urban built environment:

It needs to be recognised that the full range of plant material can be used in our city. Native plants should also form the basis of green corridors and many open spaces, but Canberra's climate means that deciduous trees are a far better option for built up areas for the solar access that they provide – solar access that has a flow on benefit to heating and cooling costs, and greenhouse gas production.¹⁴⁸

¹⁴² CSIRO, *Submission 31*, p. 6. Also see: ACT Young Planners Division, Planning Institute of Australia, *Submission 64*.

¹⁴³ Australian Institute of Landscape Architects, *Submission 60*, p. [6].

¹⁴⁴ Friends of the National Arboretum Canberra, *Submission 14*, p. 4. Also see: Esther Gallant, *Submission 4*.

¹⁴⁵ Ginninderra Falls Association, *Submission 11*, p, [2].

¹⁴⁶ Friends of Black Mountain, *Submission 36*, p. 15.

¹⁴⁷ Michael Sim, *Submission 24*, p. [3].

¹⁴⁸ Australian Institute of Landscape Architects ACT Chapter, *Submission 60*, p. [4].

3.97 Many submissions expressed concern about the lack of trees in new suburbs, where dwellings fill a large proportion of the block and there is no room for large tree planting within private gardens. A consistent attitude among submissions is that '[a] coordinated approach to growing the urban forest is required.'¹⁴⁹ Comments from contributors included:

- Wall to wall houses in the suburbs such as mine are filling what were once ¼ acre blocks with trees shrubs and gardens...¹⁵⁰
- We are concerned about the current and prospective changes to zoning rules that allow for construction of houses, including but not limited to dual occupancy developments, that leave little room for permeable areas on residential blocks for trees, which help to reduce the heat island effect and also maintain the current feel of Yarralumla.¹⁵¹

3.98 The importance of protecting mature trees was noted by several submitters. Friends of Black Mountain argued that '[l]oss of mature, native trees within the city's urban forest and on the urban fringe is detrimental. Old trees are a key element of the natural environment and ecosystem, and need to be retained and protected'.¹⁵² Pete Cranston, meanwhile, pointed out that 'old growth trees... provide natural nesting holes for mammals and parrots' and expressed concern at the loss of mature trees associated with the widening of Gundaroo Drive. He submitted:

We do not conserve our natural environment by useless offsets, by expensive offsets and purported 'consultation'. Replanting (as we do) is a century long wait until hollows develop, so this is no solution—our hole-nesters (many parrot species but much more including possums) will be long gone.¹⁵³

3.99 Barbara Mabbott similarly called for the retention of mature trees with hollows in existing and new suburbs and suggested that where this cannot be done 'equivalent artificial hollows...should be installed' to provide nesting places for fauna.¹⁵⁴

3.100 Several submitters emphasised that consideration should be given not only to the health of the tree canopy but also to the tree understory. Sue McIntyre, for example, pointed out that while the Government works to identify and protect significant trees in areas where new developments are taking place, 'ongoing management of these trees is counter to, and

¹⁴⁹ Australian Institute of Landscape Architects, *Submission 60*.

¹⁵⁰ Kevin McCue, *Submission 5*.

¹⁵¹ Yarralumla Residents Association, *Submission 21*, p. [3].

¹⁵² Friends of Black Mountain, *Submission 35*, p. 14.

¹⁵³ Pete Cranston, *Submission 26*. Also see: Australian Association for Environmental Education ACT Chapter, *Submission 57*, p. [4].

¹⁵⁴ Barbara Mabbott, *Submission 69*, p. 6.

unsympathetic to their requirements'.¹⁵⁵ She outlined a number of steps she argued should occur to ensure the conservation of such trees:

1. Sufficient space under and around significant trees, that is managed sympathetically to their health;
2. Sympathetic management includes no hard surfaces, soil excavation and no nutrient additions and sowing of exotic grasses;
3. Practical recognition that limb shedding is a natural process of a maturing tree that is developing hollows;
4. Discouraging human activities under the crowns of mature eucalypts, bearing in mind that some of this limb falling risk to humans is tolerated in nature reserves, but that more intensively used areas may require simple barriers around tree crowns.¹⁵⁶

3.101 In a similar vein, SEE Change pointed out that although 'Canberra's urban open space has many mature trees underlain by mown grass it lacks an understory to support smaller species and favours larger more aggressive birds'.¹⁵⁷

COMMITTEE COMMENT

3.102 The Committee welcomes the ACT Government's commitment to increase the coverage of Canberra's tree canopy from the existing 21 per cent to 30 per cent by 2045, as announced in the Government's *Climate Change Strategy 2019-2025* and *Canberra's Living Infrastructure Plan 2019*.¹⁵⁸ The Committee, further, welcomes the allocation of \$7.5 million 'for a four-year rolling program of tree planting and replacement' announced as part of the Government's Better Suburbs Statement and included in the 2019-2020 Budget. According to the Government, the funding 'will see a significant boost in tree canopy coverage through the planting of over 17,000 trees over the next four years'.¹⁵⁹

3.103 The Committee acknowledges the importance of Canberra's urban tree canopy for the identity of the city and the multiple benefits the treescape provides the city and its residents. The Committee, further, acknowledges the overwhelming support for more tree planting and better maintenance of existing stock expressed by contributors to this inquiry. Given the

¹⁵⁵ Sue McIntyre, *Submission 2*, p. [1].

¹⁵⁶ Sue McIntyre, *Submission 2*, p. [2].

¹⁵⁷ SEE Change, *Submission 50*, p. [2].

¹⁵⁸ ACT Government, *Climate Change Strategy 2019-2025*, 2019, https://www.environment.act.gov.au/_data/assets/pdf_file/0003/1414641/ACT-Climate-Change-Strategy-2019-2025.pdf / recache, viewed 29 October 2019; ACT Government, *Canberra's Living Infrastructure Plan: Cooling the City*, 2019, https://www.environment.act.gov.au/_data/assets/pdf_file/0005/1413770/Canberras-Living-Infrastructure-Plan.pdf, viewed 15 October 2019.

¹⁵⁹ ACT Government, *Better Suburbs, Making Progress 2019-20*, no date, https://s3.ap-southeast-2.amazonaws.com/hdp.au.prod.app.act-yoursay.files/2215/5962/1685/Better_Suburbs_Making_Progress_2019-20.pdf, viewed 26 September 2019.

importance of trees to Canberra, the Committee recommends that increased tree planting, and the maintenance and renewal of the city's existing tree stock, be prioritised in the City in a Landscape Strategy.

Recommendation 12

3.104 The Committee recommends that the ACT Government, preferably as part of the City in a Landscape Strategy, prioritise public tree canopy coverage as a feature of the landscape.

Recommendation 13

3.105 The Committee recommends that the ACT Government articulate how tree maintenance, planting and replacement will occur.

CONNECTIVITY OF NATURAL SPACES

3.106 The strength and vitality of the city's native fauna and flora is only as strong as the health of the habitat which supports it. The settlement and growth of the city, however, has meant that much of region's natural habitat has inevitably been degraded and fragmented by the urban environment.

3.107 In order to minimise the impact of the expansion of Canberra's urban footprint on its natural environment, some submissions invited the Committee to consider the importance of corridors connecting green spaces throughout the city; maximising connectivity between urban open spaces by creating links between nature reserves, large public parks, small neighbourhood parks, street tree plantings, and private spaces and gardens around dwellings.¹⁶⁰

3.108 The Committee was told that connections between natural spaces act as wildlife corridors and promote biodiversity;¹⁶¹ provide space for recreation and improve physical fitness and wellbeing;¹⁶² and help meet carbon neutral targets.¹⁶³ The Inner South Canberra Community Council, for example, submitted that:

It is also important to take into account connectivity between high value natural environments when undertaking planning and development. This will ensure the

¹⁶⁰ Ginninderra Falls Association, *Submission 11*; Canberra Ornithologists Group, *Submission 25*; Friends of Aranda Bushland, *Submission 28*.

¹⁶¹ Jane Aitken, *Submission 44*; Lake Burley Griffin Guardians, *Submission 52*, p. 6.

¹⁶² Esther Gallant, *Submission 4*; Australian Association for Environment Education ACT Chapter, *Submission 57*.

¹⁶³ Michael Sim, *Submission 24*, p. [3].

continued existence of biodiversity/wildlife corridors that can enhance mobility and resilience in the face of climate change and increasing urbanization.¹⁶⁴

3.109 Friends of Black Mountain, likewise, emphasised the importance of maintaining connectivity between Canberra's nature areas. They suggested that:

This green inter-connectivity would be considerably enhanced by the provision of road design that included underpasses and/or overpasses for wildlife to cross safely between Black Mountain and nearby reserves or natural areas that have been segmented by roads.¹⁶⁵

3.110 Sara Nolan made a similar point, suggesting that the Centenary Trail should be connected across nature reserves though land bridges over roads and also recommending, more generally, to '[c]onnect the mountains to the lake and connect nature parks/bush reserves to other bush reserves'.¹⁶⁶

3.111 The Animal Justice Party also highlighted this point, recommending 'the establishment of wildlife corridors to connect all ACT reserves and green spaces, allowing wild animals, particularly kangaroos, to move around their ranges and maintain their own natural stable populations, without having to cross deadly roads'.¹⁶⁷ Other contributors made similar cases in their submissions.¹⁶⁸

3.112 Lake Burley Griffin Guardians also addressed the issue of connectivity in their submission:

Bushland of all descriptions across the city is fragmented so creating connectivity must be given a high priority; wherever possible urban bushland should connect with the larger reserves and green belt. Every effort must be made to create trans-city corridors and this requires the setting aside of corridor zones including through existing urban zones, clearly a long term view.¹⁶⁹

3.113 Marianne Albury-Colless stressed in her submission that connectivity must be underpinned by an integrated 'ecosystems approach' that encompasses all natural and green spaces in the Territory, and which emphasises:

...the importance of ecological connectivity across the urban space comprising Canberra. There is an interaction between the health of rural lands and conservation spaces with urban nature. What appears to be lacking is an integrated approach linking

¹⁶⁴ Inner South Canberra Community Council, *Submission 35*, p. 5.

¹⁶⁵ Friends of Black Mountain, *Submission 36*, p. 16.

¹⁶⁶ Sara Nolan, *Submission 61*, p. [1].

¹⁶⁷ Animal Justice Party, *Submission 68*, p. 1.

¹⁶⁸ Kevin McCue, *Submission 5*; Barbara Mabbott, *Submission 69*.

¹⁶⁹ Lake Burley Griffin Guardians, *Submission 52*, p. 8.

policy, monitoring, evaluation and implementation that is inclusive of both urban and non-urban spaces and landscapes i.e. an ecosystems approach.¹⁷⁰

3.114 The ACT Chapter Australian Association for Environmental Education pointed out a number of other benefits deriving from the connectivity of Canberra's natural spaces:

- Linking spaces measurably improves the viability of species within the urban landscape;
- Linking spaces provides easy-access to quality 'outdoor education'; and
- Linking spaces increases community involvement in the well being of species unique to the bush capital.¹⁷¹

3.115 Helen Oakey, Executive Director, Conservation Council (ACT Region), argued that connectivity throughout the city's natural areas could be enhanced through a shift away from lawns to more native plantings; 'bushes and shrubs and things like that'. She explained: 'It reduces some of the maintenance, potentially, and also provides connectivity for different species across the city. Big trees provide habitat connectivity for certain species, but lower shrubs and ground-level habitats provide connectivity for other, different species'. She also highlighted that this could also be a strategy for the city to mitigate the impact of climate change.¹⁷²

3.116 The importance of nature corridors for the health and vitality of the Territory's bee population is discussed in Chapter 7.

COMMITTEE COMMENT

3.117 The Committee recognises the importance of connectivity throughout Canberra's urban green spaces and surrounding nature reserves in promoting biodiversity and the resilience of nature in the city. The Committee recommends that the Government identify and promote nature corridors as part of the City in a Landscape Strategy.

Recommendation 14

3.118 The Committee recommends that the ACT Government, preferably as part of the City in a Landscape Strategy, prioritise the identification of nature corridors to link environmental areas.

¹⁷⁰ Marianne Albury-Colless, *Submission 54*, p. 2.

¹⁷¹ Australian Association for Environmental Education ACT Chapter, *Submission 57*, p. [2].

¹⁷² Ms Helen Oakey, Executive Director, Conservation Council (ACT Region), *Transcript of Evidence*, 22 May 2019, p. 181.

URBAN WATERWAYS

3.119 Conventionally, stormwater drainage in many of Canberra’s suburbs is by concrete stormwater drains—a type of ‘grey infrastructure’. According to the National Parks Association of the ACT:

These drains collect water and convey it, along with the pollutants and litter that it carries, rapidly to somewhere else, where it may cause problems. The high rainfall event of 25 February, 2018 showed the disadvantages of this principle, when water collected over the inner north area of the city was concentrated by the stormwater system and caused flash flooding in O’Connor.¹⁷³

3.120 In contrast to this type of conventional approach, several submissions to this inquiry referred to the increasing use of natural systems, such as urban wetlands, to provide stormwater management services in Canberra. The Committee was told that urban wetlands hold multiple benefits for Canberra, including improving water quality, enhancing the amenity of the city, reducing costs and increasing biodiversity and climate change resilience.¹⁷⁴

3.121 Principal Research Consultant, CSIRO, Mr Guy Barnett, addressing this issue, told the Committee that:

I think naturally in parts of Canberra there have historically been chains of ponds and wetlands. I think there is a role for looking back at how those sorts of systems worked and particularly, I think, having good riparian buffers to our wetlands. You are trying to reduce, I guess, the flow of nutrients into those waterways which often drive a lot of blue-green algae issues.¹⁷⁵

3.122 Contributors discussed this issue under the concept of Water Sensitive Urban Design (WSUD). The ACT Young Planners Division, Planning Institute of Australia, noted the following benefits of stormwater management practices based on WSUD principles:

Stormwater management strategies that aim to mimic natural hydrological cycles within existing reticulation networks has the potential to reduce the significant costs faced by local government associated with stormwater management.

Water sensitive urban design such as permeable pavement, bioretention systems, and urban water traps, can slow the speed at which water passes through the whole system, reducing wear and tear and in turn upkeep costs.

Apart from network costs, water sensitive urban design also raises the quality of water as it moves through the system. It can remove refuse, sediments, and other foreign contaminants that lowers the cost of end cycle water treatment. It can also reduce the

¹⁷³ National Parks Association of the ACT, *Submission 34*, p. 5.

¹⁷⁴ Fenner School of Environment and Society, *Submission 12*; Woodlands and Wetlands Trust, *Submission 18*; CSIRO, *Submission 31*; ACT Young Planners Division, Planning Institute of Australia, *Submission 64*.

¹⁷⁵ Mr Guy Barnett, Principal Research Consultant, Land and Water, Commonwealth Scientific and Industrial Research Organisation, *Transcript of Evidence*, 1 May 2019, p. 124.

overall volume of water that reaches the end of the cycle and therefore reduces the volume of water that requires treatment.¹⁷⁶

3.123 These benefits of WUSD principles in stormwater management were recognised by the ACT Government in its submission to the Inquiry, which noted that WUSD ‘planning requirements for greenfield and infill development in the Territory Plan helps maintain water and vegetation in our urban environments’. It also pointed out additional benefits of WSUD:

- Increased amenity and biodiversity;
- Improved microclimates and property values;
- Improved mental and physical health outcomes; and
- Improved social interaction.¹⁷⁷

3.124 Several submissions highlighted that ‘landscapes, waterways and communities are interconnected in complex ways’,¹⁷⁸ and called for the integration of systems to manage land and water in the city.¹⁷⁹ One submission drew attention to Victoria Government guidelines on blue-green infrastructure, noting that:

Often ‘green’ assets (trees, parks, gardens) and ‘blue’ assets (Water Sensitive Urban Design (WSUD), drainage areas and flood storage) are planned separately. However, often the same asset can provide multiple services that benefit both ‘green’ and ‘blue’ objectives.¹⁸⁰

3.125 Directly related to this point, though in slightly broader terms, Canberra Urban and Regional Futures discussed recent trends in urban water management through ‘living infrastructure’. They defined ‘living infrastructure’ as:

...the integration of trees, shrubs, grass and open space (green infrastructure), with rainscapes and waterways (blue infrastructure), and soils, surface and man-made structures (grey infrastructure) that are designed to deliver multiple social (people), environmental (place), and economic (prosperity) services to urban communities.¹⁸¹

3.126 In the context of urban water management strategies:

...living infrastructure approaches redirect and reconceive of waste waters, especially stormwater, as a resource, that can be managed to enhance urban amenity with

¹⁷⁶ ACT Young Planners Division, Planning Institute of Australia, *Submission 64*, p. [4].

¹⁷⁷ ACT Government, *Submission 67*, p. 4.

¹⁷⁸ Molonglo Catchment Group, *Submission 15*; see also Woodland and Wetlands Trust, *Submission 18*; and National Parks Association of the ACT, *Submission 34*.

¹⁷⁹ National Parks Association of the ACT, *Submission 34*.

¹⁸⁰ Victoria Government cited in National Parks Association of the ACT, *Submission 34*, p. 5.

¹⁸¹ Canberra Urban and Regional Futures, *Submission 6*, p. 1.

wetlands or urban forests. A wide range of viable strategies and technologies exist for redirecting stormwater towards biologically and industrially productive uses, including through flood outs, ponds, dams, wetlands, water gardens and soaks that can be constructed on both public and private land.¹⁸²

3.127 The Woodlands and Wetlands Trust pointed to the Jerrabomberra Wetlands as a ‘valuable example of the inter-relation of people, land uses, infrastructure and nature’. The Wetlands, according to their submission, retain many natural functions, including:

...amelioration of stormwater peak flows, treatment of flows constituents (water quality), protection and recharge of significant groundwater systems, sustenance of a diverse range of terrestrial and aquatic landscapes and associated native fauna, significant amelioration (cooling in summer & warming in winter) of micro & macro-climates...¹⁸³

3.128 One submission cautioned the Committee that the evidence base on WSUD is still developing:

The multi-functionality of some Water Sensitive Urban Design (WSUD) elements (e.g., flood mitigation, stormwater management, alternative water source, landscape amenity) can mean there are competing objectives. There are a lack of studies on the performance of WSUD approaches in different development contexts in achieving sustainability design objectives. Increased monitoring and validation of WSUD approaches would help address knowledge gaps.¹⁸⁴

3.129 Another submission highlighted the potential danger for flooding stemming from the use of urban wetlands and called for a cautious approach:

Whilst wetlands have positive and desirable features, they also have a negative characteristic in that they increase the risk of upstream flooding during extreme rainfall events which are predicted to increase with climate change... Careful engineering is required to reduce this risk.¹⁸⁵

3.130 One submitter brought to the Committee’s attention to the lack of vegetation along some parts of the Ginninderra Creek and called for its revegetation. Christopher Watson noted that ‘[b]elow “old McGregor”, Ginninderra Creek becomes an incised eroding “drain”, skirting Dunlop to its west and to the north of “McGregor West”. He pointed out the ‘complete lack of vegetation’ along the lower section of the creek, ‘in stark contrast to upstream suburbs, which

¹⁸² Canberra Urban and Regional Futures, *Submission 6*, attachment, J Alexandra, B Norman, W Steffen and B Maher, *Planning and Implementing Living Infrastructure in the Australian Capital Territory – Final Report*, Canberra Urban and Regional Futures, University of Canberra, Canberra, 2017, p. 47.

¹⁸³ Woodlands and Wetlands Trust, *Submission 18*, p. [4].

¹⁸⁴ CSIRO, *Submission 31*, p. 7.

¹⁸⁵ Friends of Hawker Village, *Submission 33*, p. [4].

have well-vegetated corridors and recreation paths'. He recommended that 'a vegetation plan for its whole length' be adopted by the Government.¹⁸⁶

COMMITTEE COMMENT

3.131 Well-designed and maintained urban wetlands provide a wide range of benefits to the city in its management of stormwater, the promotion of biodiversity and increased amenity. While acknowledging recent efforts by the Government to restore and improve our urban waterways through the ACT Healthy Waterways initiative¹⁸⁷, the Committee recommends that these restoration efforts are given continuing priority within the City in a Landscape Strategy.

Recommendation 15

3.132 The Committee recommends that the ACT Government, preferably as part of the City in a Landscape Strategy, prioritise further restoration of urban waterways.

GREEN SYSTEMS

3.133 Some contributors emphasised the importance of promoting green systems within the urban environment, contrasting this to a focus on individual pieces of green infrastructure, such as green walls or rooftop gardens.

3.134 For the purposes of this section of the report, the Committee recognises 'green systems' to be complex, integrated and interconnected pieces of green and blue infrastructure that together make up a system, as opposed to discrete pieces of such infrastructure.

3.135 Dr Philip Hutchinson, Australian Institute of Landscape Architects, for example, told the Committee:

I am very sceptical about green walls in particular. They are usually expensive systems that need to be maintained. The EU wrote a report at one point saying it was very hard to justify them either environmentally or economically. You are much better off planting a Virginia creeper up your wall. To me, it still comes back to getting sizable trees, mostly deciduous in Canberra's environment, and allowing the space for those. How you manage that becomes the fight, becomes the difficulty. Green roofs probably have a role but they are still an engineering solution to what does not have to be an engineering problem. That is the way I see it.¹⁸⁸

¹⁸⁶ Christopher Watson, *Submission 27*, p. 4.

¹⁸⁷ ACT Government, 'ACT Healthy Waterways', <https://www.environment.act.gov.au/water/act-healthy-waterways>, viewed 10 January 2020.

¹⁸⁸ Dr Philip Hutchinson, ACT Executive, Australian Institute of Landscape Architects, *Transcript of Evidence*, 8 May 2018, p. 151.

3.136 In contrast, Dr Hutchinson suggested ‘a systems-based approach to managing our vegetation that flows right through to the lowest level of administration’.¹⁸⁹

3.137 In an attachment to its submission to the Inquiry, Canberra Urban and Regional Futures discussed the elements of ‘living infrastructure’, such as green walls and rooftop gardens, street trees and urban waterways, and how these are best implemented as an integrated system rather than discrete pieces:

Living infrastructure is best implemented not as...individual elements...but rather as a broad, interconnected green infrastructure network that provides multiple ecosystem services to the urban population. Such networks also help to connect animal and plant populations and their habitats, enhancing biodiversity outcomes which also contribute to ecosystem services.¹⁹⁰

Recommendation 16

3.138 The Committee recommends that the ACT Government, preferably as part of the City in a Landscape Strategy, prioritise green systems rather than discrete pieces of green infrastructure such as individual walls or roofs.

¹⁸⁹ Dr Philip Hutchinson, ACT Executive, Australian Institute of Landscape Architects, *Transcript of Evidence*, 8 May 2018, p. 151.

¹⁹⁰ Canberra Urban and Regional Futures, *Submission 6*, attachment, J Alexandra, B Norman, W Steffen and B Maher, *Planning and Implementing Living Infrastructure in the Australian Capital Territory – Final Report*, Canberra Urban and Regional Futures, University of Canberra, Canberra, 2017, p. 37.

4 IMPLEMENTING THE CITY IN A LANDSCAPE STRATEGY

- 4.1 This chapter examines issues related to the implementation of the City in a Landscape Strategy.

PLANNING CONSIDERATIONS

- 4.2 How Canberra's built form interacts with its surrounding natural environment and how green and blue infrastructure are enhanced within the urban footprint depends, in a large measure, on how planning is regulated within the Territory. From the time of Canberra's inception, the beauty of the city has been underwritten by the integration of the landscape and the urban environment through careful planning. Reflecting this fact, many of the contributors discussed planning matters in the evidence they provided.

LANDSCAPING IN DEVELOPMENTS

- 4.3 A major reason for many contributors' objections to urban infill and higher density was the belief that such developments lead to a reduction in green spaces and permeable surfaces in favour of grey space and hard surfaces. The Inner South Canberra Community Council, for instance, posed the problem in the following way: '[c]urrent planning policy is enabling the construction of many dwellings that take up most of their blocks of land, providing little room for planting areas to enable growth of canopy trees and vegetation to reduce the heat island effect in summer and provide habitat for wildlife'.¹⁹¹ For contributors such as this, much of their concern can be allayed through planning regulation and other measures to encourage developers to undertake more adequate landscaping and incorporation of green spaces into their designs.
- 4.4 The ACT Young Planners Division, Planning Institute of Australia, for example, recommended that 'government explore methods to legislate minimum green infrastructure provision for new, larger developments to ensure that as Canberra densifies, so do our green spaces'. They cited evidence from the city of Toronto that requires developers to provide minimal green coverage in new development to demonstrate how 'the city as a whole benefits from mandating green infrastructure requirements for new, larger developments' and how 'developers are willing to deliver green infrastructure that meets the expectations of

¹⁹¹ Inner South Canberra Community Council, *Submission 35*, p. 4.

government, the market and the community more broadly'. They suggested that 'there is an opportunity for the ACT government to implement a similar policy'.¹⁹²

4.5 Friends of Aranda Bushland made two recommendations concerning landscaping requirements for suburban blocks, aiming to increase vegetation and permeable surfaces:

1. For free-standing houses on suburban blocks, the plot ratio should count all hard surfaces (paths, pools, driveways, terraces) as part of the "built" proportion of the plot. At present it is only the part under the roofline that is included.
2. Each such block should be required to have at least one large shade tree.¹⁹³

4.6 Echoing these points, the Inner South Canberra Community Council recommended:

That the development codes for residential housing be amended so that at least 35-40 per cent of residential lots are covered by permeable surfaces to enable the planting of shade trees and other vegetation and that this Rule [sic] be mandatory.¹⁹⁴

4.7 This view was shared by the Tuggeranong Community Council: 'On any building block, there should be a good plot ratio say 35%, so there is plenty of room put aside for planting'.¹⁹⁵ Friends of Hawker Village, meanwhile, suggested that '[h]ouses should not be allowed to cover almost entire blocks thus limiting green space'.¹⁹⁶

4.8 The Australian Institute of Landscape Architects ACT Chapter pointed out that while individual trees can be protected by TCCS, the spaces these trees occupy are not protected. Once such trees die, or are otherwise removed, the spaces can be built over with hard surfaces. They suggested that there 'is a case to legislate for trees on blocks, but this has to be supported by those who approve development proposals'. They also argued that '[p]lanning priorities and current land planning, management and budgetary practices need to support the maintenance of the urban forest'.¹⁹⁷

4.9 Their submission provided further insight into how planning provisions impede the development of high-quality urban green spaces:

Currently ambiguous development codes and regulations as well as restrictive standards for infrastructure assets compromises good outcomes. For example, while estate development and multi residential codes have sections on the provision of open space and 'deep root landscape zones', a great deal is left to interpretation of what is a

¹⁹² Ms Jennifer Yong, Committee Members, ACT Young Planners Division, Planning Institute of Australian, *Transcript of Evidence*, 8 May 2019, p. 153.

¹⁹³ Friends of Aranda Bushland, *Submission 28*.

¹⁹⁴ Inner South Canberra Community Council, *Submission 35*, p. 5.

¹⁹⁵ Tuggeranong Community Council, *Submission 46*, p. [4].

¹⁹⁶ Friends of Hawker Village, *Submission 33*, p. [5].

¹⁹⁷ Australian Institute of Landscape Architects ACT Chapter, *Submission 60*, p. [9].

deep root zone, in some cases it is argued that is not natural ground. Similarly, the strict enforcement of engineering and landscape standards, especially in regard to the size and species of street trees, understorey planting in parks and verges has limited the opportunities to establish both meaningful public spaces and significant green infrastructure.¹⁹⁸

4.10 In a similar vein, the Environmental Defenders Officer, noted that under the Territory Plan, ‘there are sets of codes that developers need to abide by and make sure they have compliance with when they lodge’. They suggested that ‘[h]aving codes varied to include green infrastructure where it is a new development might be useful’.¹⁹⁹

4.11 Friends of Hawker Village suggested that planning provisions should be changed to ensure that house designs for subdivided blocks retain existing tree: ‘New subdivisions should not be cleared but healthy, established trees should be retained and block subdivision designed around them’.²⁰⁰

4.12 In a related vein, Michael Sim argued that:

Developers should be required to retain areas of habitat rather than clearing all vegetation and soil. Areas of at least a hectare should be retained or redeveloped as native habitat biodiversity associated with similar areas of green space such as playgrounds and with suburban corridors at least 10m wide to provide connectivity.²⁰¹

URBAN DENSIFICATION

4.13 The city is currently going through a process of densification. As discussed in the previous chapter, the Committee heard evidence both in favour and against this trend. Some contributors called for changes to planning regulations to ensure that green space is included in new, higher density, developments.

4.14 Lake Burley Griffin Guardians, for instance, argued that ‘[a]ll open spaces in high rise zones must support wider canopied trees to ameliorate the heat-island effect, an effect whose magnitude either is clearly underestimated or simply ignored’.²⁰² The Australian Institute of Landscape Architects ACT Chapter, submitted:

¹⁹⁸ Australian Institute of Landscape Architects ACT Chapter, *Submission 60*, pp. [9-10].

¹⁹⁹ Ms Stephanie Booker, Chief Executive Officer and Principal Solicitor, Environmental Defenders Office (ACT), *Transcript of Evidence*, 22 May 2019, p. 164.

²⁰⁰ Friends of Hawker Village, *Submission 33*, p. [3].

²⁰¹ Michael Sim, *Submission 24*, p. [3].

²⁰² Lake Burley Griffin Guardians, *Submission 52*, p. 7.

Space for large trees should be a key priority for new and existing suburbs, including rationalising aspects of civil engineering and services, so that street trees can be incorporated.²⁰³

- 4.15 Some contributors called for planning regulation to be altered to make it more difficult to subdivide blocks in established suburbs for higher density dwellings. Friends of Hawker Village, for instance, argued:

The policy of densifying portions of older suburbs that were subdivided initially for single housing, is not as successful as medium-density housing in new areas that are subdivided for that purpose. The Territory Plan provisions for setbacks, plot ratio and maximum number of dwellings, in both RZ1 and RZ2 for both single dwelling blocks and other blocks, necessarily reduce the space available for greenery and, in particular for trees and shrubs large enough to support a range of birds and other species. In this respect, redevelopment produces housing similar to that in other large cities where bird species frequenting the suburbs are restricted to pigeons and sparrows. In this way, the provisions are destroying a unique attraction of Canberra, as well as failing to provide habitat suitable for native species.²⁰⁴

MAINTENANCE PLANS FOR LANDSCAPE IN NEW DEVELOPMENTS

- 4.16 The Committee heard evidence on the importance that developers and government work together to ensure that landscaping in new developments is adequately maintained following the completion of the development.
- 4.17 Professor Barbara Norman, Director, Canberra Urban and Regional Futures, University of Canberra, told the Committee:

I think we also need to be exploring more innovative ways to ensure that there is funding available to maintain that landscape. There is nothing worse than looking at a building which has been landscaped and a year or two later it looks like a dead landscape on a facade. And that looks pretty sad, doesn't it? Somebody needs to be doing that. I suspect that that is a partnership between the occupants of those buildings and the government.²⁰⁵

BUFFER ZONES

- 4.18 As noted in the previous chapter, many contributors pointed to the need to ensure that Canberra's surrounding natural environment is protected from urban encroachment through

²⁰³ Australian Institute of Landscape Architects ACT Chapter, *Submission 60*, p. [3].

²⁰⁴ Friends of Hawker Village, *Submission 33*, pp. [4-5].

²⁰⁵ Professor Barbara Norman, Director, Canberra Urban and Regional Futures, University of Canberra, *Transcript of Evidence*, 1 May 2019, p. 102.

the provision of adequate buffer zones. In particular, it is important to ensure that new developments do not encroach on areas of high-environmental value. Contributors provided a range of observations on the implementation of such buffer zones.

- 4.19 The Woodlands and Wetlands Trust argued that '[c]urrent development is encroaching too closely on the borders of natural areas reducing the importance/effectiveness of areas that can serve as buffer areas'. To address such concerns, they suggested that more adequate buffer zones be embedded in the planning process:

One of the most important elements in protecting the values of nature reserves, green spaces and protected areas within the Canberra urban area is to ensure that adequate and appropriate buffer zones are built into the planning process. Allowing these buffer zones to encroach into the reserve areas is not a satisfactory outcome as it gives rise to the potential for compromise of and adverse outcomes in natural areas.²⁰⁶

- 4.20 Friends of Grasslands highlighted the tensions between management of nature reserves, the need to provide for bushfire asset zones and the desire to maximise profits from land sales in adjacent developments. They suggested that:

...bushfire asset zones must be within each development footprint, not within the adjacent reserve, since in a conflict between bushfire and environmental management of an area it is the environment that usually comes out the loser.²⁰⁷

- 4.21 Addressing the need to protect Canberra Nature Park, Friends of Black Mountain made a similar point by highlighting the need to ensure 'fire management buffer zones are outside the reserve area in order to prevent damage and encroachment'.²⁰⁸

COMMITTEE COMMENT

- 4.22 As noted in the Introduction, the Committee is aware that several of the recommendations in this report relate directly to planning matters, which is usually within the remit of the Standing Committee on Planning and Urban Renewal. While not wishing to encroach on the jurisdiction of that committee, the Committee also recognises that nature in our city is intimately connected to planning and that much of the evidence the Committee received referenced planning matters. For these reasons, the Committee makes the following recommendations that relate to planning in the Territory.

²⁰⁶ Woodlands and Wetlands Trust, *Submission 18*, pp. [8, 9].

²⁰⁷ Friends of Grasslands, *Submission 29*, p. 2. Also see: Ginninderra Falls Association, *Submission 11*, pp. [3, 5].

²⁰⁸ Friends of Black Mountain, *Submission 36*, p. 4.

Recommendation 17

- 4.23 The Committee recommends that the ACT Government implement the City in a Landscape Strategy by embedding the Strategy in current and future planning controls and regulations.**

Recommendation 18

- 4.24 The Committee recommends that the ACT Government consider ways developers can be encouraged to undertake landscaping beyond the minimum requirements.**

Recommendation 19

- 4.25 The Committee recommends that the ACT Government require maintenance plans for new developments to be lodged with the planning approvals to demonstrate viability and transparency of the proposals.**

Recommendation 20

- 4.26 The Committee recommends that the ACT Government progress policy that minimises the encroachment of development on higher-value natural areas.**

RE-WILDING PROJECTS

- 4.27 One method of increasing the quality of nature reserves and green space within the urban footprint is to introduce initiatives at 're-wilding' (or, 'wilding'). As discussed in the previous chapter, re-wilding projects aim to increase biodiversity, reduce maintenance costs, increase amenity, and engage the community in the management of green spaces and nature reserves. Several contributors provided insight into how such projects can be implemented.
- 4.28 The Government noted partnership initiatives between the Government, the ANU and the Woodlands and Wetlands Trust in re-wilding projects:

Mulligans Flat is the classic example. It is a fantastic partnership between the Woodlands and Wetlands Trust, the ANU, and us. It is a good example of re-wilding where we are bringing back species that no longer occur in the ACT and enabling the recovery of those species. It is a fantastic joint partnership that is starting to work. The benefit of partnership is that you start to challenge each other. You start to push each other about which is the best path to go down.²⁰⁹

²⁰⁹ Mr Ian Walker, Executive Group Manager, Environment and Heritage, Environment, Planning and Sustainable Development Directorate, *Transcript of Evidence*, 29 May 2019, p. 206.

4.29 For the urban context, the Fenner School of Environment and Society provided the Committee with recommendations for re-wilding strategies and projects. For one, the School suggested that in the context of increasing urban infill, focus should be placed on raising the quality of compact green zones, as opposed to sprawling green spaces; i.e., quality over quantity. In specific terms, they explained, '[t]his can be achieved by replacing a large proportion of the mown area with landscaping that represents better habitat for Canberra's biodiversity'. Such an approach, they argued, would not only reduce maintenance costs and increase spaces for nature play, but would also motivate residents to be more actively engaged in the development and maintenance of open spaces.²¹⁰

4.30 Expanding on this, they explained:

The area of mown grass in urban open space should be reduced considerably and replaced with alternative forms of landscaping that is more attractive to biodiversity... Replacing a proportion of mown grass in Canberra's urban open space with different forms of ecological restoration will attract greater biodiversity to Canberra's urban open space, considerably reduce maintenance costs and provide a vehicle for greater community engagement in the creation, management and maintenance of Canberra's urban open space. Further, this creates an opportunity to maintain a smaller area of well-maintained grass in a greater number of urban open spaces across Canberra.²¹¹

4.31 This issue is also discussed in Chapter 7.

4.32 In addition, the Fenner School noted the following points related to such re-wilding initiative:

- Landscaping in grassed areas should focus on the habitat elements that occur in adjacent nature reserves, but are absent or occur in low frequency within urban open space;
- Areas within urban open space that are dominated by native grasses or forbs should be formally delineated and managed primarily for conservation;
- All mature eucalypts in urban open spaces should be foci for landscaping to ensure these irreplaceable features are protected in the long-term, discourage pedestrian traffic and allow fallen branches to remain in situ;
- Urban open spaces that contain values for biodiversity should be managed as a network to maximise connectivity between these areas and adjacent nature reserves; and

²¹⁰ Fenner School of Environment and Society, *Submission 12*, p. [2].

²¹¹ Fenner School of Environment and Society, *Submission 12*, p. [4].

- Existing nature reserves and areas of high conservation value should not be targeted for urban infill.²¹²

COMMITTEE COMMENT

4.33 The Committee recognises the wide range of benefits that result from re-wilding initiatives and hopes that the Government will continue to support these efforts in conjunction with relevant stakeholders.

Recommendation 21

4.34 The Committee recommends that the ACT Government continue to support the trial of re-wilding projects in conjuncture with the ANU Fenner School of Environment and Society and other similar stakeholders.

TREES IN THE CITY

4.35 As discussed in the previous chapter, trees are integral to Canberra's identity as a 'garden city'. Several contributors addressed how trees are managed in the city under the *Tree Protection Act 2005* while others highlighted the need for the planting of trees which are capable of withstanding the impacts of climate change.

4.36 Mr Michael Reeves, Director, dsb Landscape Architects, explained the background of the *Tree Protection Act 2005*, and why this was problematic:

The Tree Protection Act, as it is currently worded, is an interim act that was supposed to be in place for a short period of time whilst the city identified all of those trees which were to be registered. That never happened. Consequently, we have an interim act which was designed to stop people removing trees, so that an assessment could be made of those trees that we chose to actually legislatively protect. That has been bastardised and it has morphed into something which does not do what it was intended to do. At the moment it is basically a piece of legislation that regulates tree removal.²¹³

4.37 Mr Reeves explained that the most important issue was that the urban forest be protected:

The urban forest is a continuum. We have trees planted, trees grow up, trees die and trees are removed. But what is important is that the forest continues. The most important thing about the tree protection legislation is that it should protect the

²¹² Fenner School of Environment and Society, *Submission 12*, p. [5].

²¹³ Mr Michael Reeves, Director, dsb Landscape Architects, *Transcript of Evidence*, 8 May 2019, p. 134.

continuum, not the individuals. It is about the forest instead of the trees. Each individual tree is important in its contribution to the urban forest. But it is not critical to the continuation of the urban forest because if we plant trees at the same time as we take out trees then there is no loss. There is also net benefit, because as we recycle our urban forest it becomes healthier and healthier.²¹⁴

- 4.38 In their submission, dsb Landscape Architects called for the amendment of the Act to allow for the removal and replacement of trees:

The *Tree Protection Act 2005* requires modification to enable management, removal and replacement of the trees located on leased land within the urban area.

At present, the legislation provides for the removal of trees under strict criteria, which normally does not assist Canberra residents in the management of their trees. No provision is provided within the Act for removal and replacement of a tree.²¹⁵

- 4.39 In a related vein, Georgina Pinkas pointed out the degraded state of much of the city's older urban forest and noted challenges for the city in maintaining the tree canopy within the existing budget allocated to tree maintenance:

Today many of the trees planted in earlier days are dying, poorly maintained and in a state of degradation. Many beautiful streetscapes and parks were planted over 50 years ago and, like people, need special care as they age...

...

Much effort and expenditure on trees in Canberra is focussed on single trees, whereas it is the landscape which is important not the single tree... Urban forest is a forestry exercise. It is far cheaper and more effective to manage an area of trees than address the single tree needs.²¹⁶

- 4.40 Under the current provision of the Tree Protect Act, Ms Pinkas argued, resources are focused on protecting 'often one tree which often does not add significantly to the Urban Forest'. Moreover, such trees 'may be impeding the implementation of Climate Change objectives such as densification. There are countless instances where the preservation of one or more trees has stopped dual occupancies, house extensions, and reduced the number of multi unit development [sic] on an urban block'.²¹⁷

- 4.41 Ms Pinkas suggested that:

A far more effective way of enhancing and conserving our urban forest would be to direct resources from such costly practice to maintaining the public landscape. There

²¹⁴ Mr Michael Reeves, Director, dsb Landscape Architects, *Transcript of Evidence*, 8 May 2019, p. 134.

²¹⁵ dsb Landscape Architects, *Submission 18*, p. 2.

²¹⁶ Georgina Pinkas, *Submission 65*, p. 2.

²¹⁷ Georgina Pinkas, *Submission 65*, p. 3.

are many instances...where the Act has been applied with very little consideration to the contribution of the tree its contribution to the overall urban landscape.²¹⁸

4.42 In conclusion, Ms Pinkas recommended that the Government evaluate:

...the effect of the Act on achieving protection for the urban forest in terms of cost effectiveness, landscape management, climate change and residential densification.

4.43 Meanwhile, the Environmental Defenders Office submitted that:

...with respect to tree protection in the ACT, we reiterate that the legislation (the Tree Protection Act 2005) can be improved to more effectively protect trees in the ACT, by more extensive consideration of conservation issues (such as tree habitat values) when assessing whether or not to remove a protected tree in the ACT. In addition, importance of trees as a carbon sinks should be added as a consideration, particularly given the ACT is the first jurisdiction in Australia to declare a climate energy.²¹⁹

4.44 Griffith/Narrabundah Community Association noted the potential for damage to trees due to the actions of developers and builders and called for increased enforcement of relevant building regulations and the implementation of further measures to protect trees:

Builders in the ACT are required to fence off the verge and street trees while undertaking construction. This requirement is being increasingly ignored. Builders and developers effectively have immunity from requirements that prohibit parking on verges. Heavy machinery and trucks are invariably parked next to street trees particularly where inadequate protection is erected to protect trees. This leads to adverse affects on the growth of street trees through soil compaction by limiting access to water, nutrients and oxygen.²²⁰

4.45 Their submission called for stricter enforcement of parking rules by parking inspectors, increased numbers of rangers with adequate enforcement powers and the introduction of a bond scheme which would make builders 'strictly accountable by government agencies for their building practices, and protection of verges and trees'.²²¹

4.46 The Inner South Canberra Community Council made a similar recommendation:

That developers and builders in Canberra be held accountable by government agencies for the protection of verges and street trees, perhaps through on-the-spot fines by rangers, or bonds that are returned after construction completion if there has been compliance with imposed conditions.²²²

²¹⁸ Georgina Pinkas, *Submission 65*, p. 5.

²¹⁹ Environmental Defender Office, Answer to a Question Taken on Notice, 3 June 2019.

²²⁰ Griffith/Narrabundah Community Association, *Submission 8*, p. 2.

²²¹ Griffith/Narrabundah Community Association, *Submission 8*, pp. 2-3.

²²² Inner South Canberra Community Council, *Submission 35*, p. 5.

- 4.47 As touched on throughout this report, climate change is, and will increasingly be, a significant issue affecting nature in our city. Several contributors noted that thought needs to be given to which tree species are most suitable for Canberra’s urban forest in light of the increasing impact of climate change. Friends of the National Arboretum Canberra, for example, suggested ‘the initiation of the “trial forests” to explore a range of species suitable for the local environment, especially in a climate change world’.²²³
- 4.48 Marianne Albury-Colless suggested that Government must give consideration to the ‘selection of replacement trees based on species survivability in the face of climate change’. She further argued that ‘[e]ven in heritage areas this should be the guiding principle as there is little point in investing in tree species that cannot adapt to the predicted intensity of climate variability’.²²⁴ Ms Pinkas, meanwhile, told the Committee that the important thing in tree selection is ‘what will survive under climate change’.²²⁵ Icon Water, likewise, submitted that ‘[i]mproved coordination in planning streetscapes includes consideration of suitable tree species for the climate...’²²⁶
- 4.49 Friends of Black Mountain suggested that within the context of climate change:
- The choice of trees for urban and residential plantings, whether new or as part of renewal strategies, should prioritise native trees and native vegetation to promote biodiversity and grasp opportunities to enhance natural vegetation and wildlife corridors. Planting of native species provide multiple benefits in terms of resilience to heat and reduced water needs, over and above their advantages for wildlife habitat.²²⁷
- 4.50 Appearing before the Committee, Government representatives acknowledged this issue and noted Government efforts in addressing it:
- As the climate changes, the sorts of trees and plants that are going to be successful in our climate are going to change as well. So there has been quite a bit a work recently in looking at what sorts of vegetation are likely to thrive in a climate in Canberra which is going to be warmer and drier in the future...²²⁸

²²³ Friends of the National Arboretum Canberra, *Submission 14*, p. 5.

²²⁴ Marianne Albury-Colless, *Submission 54*, p. 6.

²²⁵ Ms Georgina Pinkas, *Transcript of Evidence*, 13 March 2019, p. 10.

²²⁶ Icon Water, *Submission 59*, p. 3.

²²⁷ Friends of Black Mountain, *Submission 36*, p. 15.

²²⁸ Mr Gene McGlynn, Executive Group Manager, Climate Change and Sustainability, Environment, Planning and Sustainable Development Directorate, *Transcript of Evidence*, 29 May 2019, p. 202.

COMMITTEE COMMENT

- 4.51 The Committee notes that the ACT Government released a discussion paper to inform a review of the *Tree Protection Act 2005* in October 2019.²²⁹ This discussion paper has direct relevance to the issues discussed in this section of the report. The Committee hopes that through this process, and through the insights provided in the present report, the Government can review the Act to ensure that it aligns with community values and produces optimal outcomes for the health, vitality and continuity of Canberra's iconic tree canopy.
- 4.52 The Committee further notes research commissioned by the ACT Government from the Fenner School of Environment and Society which has examined urban forest tree species selection for the city in view of the current and future implications of climate change. This research reviewed the Transport Canberra and City Services Municipal Infrastructure Standard (MIS) 25 'to determine which tree species are suitable (will survive and thrive) in Canberra's climate change future'.²³⁰ The Committee welcomes this research and hopes that it will inform the Government's selection of the most suitable variety of trees to sustain Canberra's urban forest into the future.

Recommendation 22

- 4.53 The Committee recommends that the ACT Government review the *Tree Protection Act 2005* to ensure best outcomes are being achieved.**

Recommendation 23

- 4.54 The Committee recommends that the ACT Government prioritise the planting of tree species that are as adaptable to a changing climate as possible.**

Recommendation 24

- 4.55 The Committee recommends that the ACT Government review the viability and appropriateness of tree species that are less adaptable to climate change.**

²²⁹ ACT Government, 'Review of the Tree Protection Act 2005', Discussion Paper, October 2019, https://s3.ap-southeast-2.amazonaws.com/hdp.au.prod.app.act-yoursay.files/2815/7173/0627/TCCS_Review_Tree_Protection_Act_Discussion_Paper.pdf, viewed 29 October 2019.

²³⁰ Fenner School of Environment and Society, 'Urban Forest Tree Species Research for the ACT', no date, https://www.environment.act.gov.au/_data/assets/pdf_file/0008/1437047/urban-forest-tree-species-research-for-the-act-consultants-report-2019.pdf, viewed 30 October 2019.

GREEN SPACES FOR HIGHER DENSITY DEVELOPMENTS

- 4.56 As noted throughout this report, the city is going through a process of urban infill and increasing density. More and more Canberrans are residing in apartments, townhouses and duplexes and other medium to high density housing arrangements. These forms of higher density living must also incorporate green spaces into their designs to ensure residents, and the wider city, gains the benefits of such spaces.
- 4.57 The ACT Young Planners Division, Planning Institute of Australia, suggested that rooftop and wall gardens should be encourage as one means of increasing green infrastructure in higher density developments, and cited initiatives in Toronto, Canada, as an example the city could follow:

Learning from other cities around the world, a green roof and wall policy is one solution the government can implement. For example, in 2009 the city of Toronto introduced a by-law requiring all new buildings with a gross floor area greater than 2,000 square metres to incorporate a green roof into their development. The green roof requirements range from 20 to 60 per cent of the building's available roof space, depending on the building size, and must meet the green roof construction standards set by the city. The by-law has been a great success in achieving increased greenery and open space within the city and also in reducing urban heat island effects, enhancing biodiversity and habitats for wildlife and providing opportunities for production and social interaction.²³¹

- 4.58 They further told the Committee that they encourage the ACT Government to work towards educating the public more on the importance of blue and green infrastructure and suggested that planting guides could be part of this approach:

We saw one example in the City of Melbourne. It had a green growing guide. This was specifically for rooftop gardens and also vertical gardens. It was done in partnership with heritage experts...technical experts for maintenance and also ecologists to look at the biodiversity in the City of Melbourne. That is a free resource. You can access it online.²³²

- 4.59 Other contributors pointed to potential problems and limitations to the implementation of rooftop gardens. Michael Sim, for example, submitted:

The idea of green roofs for buildings is very expensive and developers do not seem to be able to construct leakproof buildings anyway. The mass of the plants, soil and

²³¹ Ms Jennifer Yong, Committee Members, ACT Young Planners Division, Planning Institute of Australian, *Transcript of Evidence*, 8 May 2019, p. 153.

²³² Ms Poppy McRae, Committee Chair, ACT Young Planners Division, Planning Institute of Australian, *Transcript of Evidence*, 8 May 2019, p. 153.

moisture require stronger structures. Gardens might slow small amounts of runoff but drainage infrastructure would need to remain the same to cater for larger rainfalls. The roof gardens would have limited biodiversity and would not be public space, but would provide some buffering the effect of climate change by reducing the 'heat island' of built-up areas... It would be preferable to mandate areas of green space around buildings rather than on top: perhaps roof gardens over underground parking would be better. Balcony gardens and plant-walls are also possibilities for developing climate resilience but are highly dependent on regular watering, and might require subsidy.²³³

4.60 Friends of Hawker Village also pointed to potential limitations to rooftop and hanging gardens:

Rooftop and hanging gardens are promoted as a partial solution to the heat island effect but the survival of these in Canberra's climate is dubious, especially with recurrent waterproofing issues. Furthermore, climate change is expected to result in less rainfall overall but more intense, extreme rainfall events which would devastate rooftop and hanging gardens.²³⁴

4.61 They suggested that '[u]ntil building standards and independent building certification are adequately controlled and supervised, there should be no rooftop gardens installed'.²³⁵

COMMITTEE COMMENT

4.62 The Committee believes that it is important that the ACT Government gives greater consideration to how green infrastructure can be implemented in high rise developments and other types of high-density living. The Committee notes that it received mixed evidence on the viability of rooftop gardens and green walls. The Committee wishes to see the Government investigate the current impediments to such types of green infrastructure with the hope that it is possible to further encourage this for residents in and developers of higher density living. The Committee suggests that better education for ACT residents on the most appropriate type of plants for balconies, courtyards and larger-sized gardens would also further increase in green spaces throughout the city.

Recommendation 25

4.63 The Committee recommends that the ACT Government consider how green infrastructure could be implemented in high rise developments.

²³³ Michael Sim, *Submission 24*, p. [4].

²³⁴ Friends of Hawker Village, *Submission 33*, p. [6].

²³⁵ Friends of Hawker Village, *Submission 33*, p. [4].

Recommendation 26

- 4.64 The Committee recommends that the ACT Government consider current impediments to establishing balcony, courtyard or roof gardens.**

Recommendation 27

- 4.65 The Committee recommends that the ACT Government develop, or commission, planting guides for balconies, courtyards and larger-sized yards.**

TRANSPORT CANBERRA AND CITY SERVICES STANDARDS

- 4.66 Several contributors to the Inquiry raised issues with Transport Canberra and City Services standards in inhibiting best outcomes in the design and construction of urban green spaces.

- 4.67 Dr Philip Gibbons, Associate Professor, Fenner School of Environment and Society, informed the Committee that while Transport Canberra and City Services ‘have mountains of standards that they work to. They apply those standards fairly rigidly’. He suggested that ‘there needs to be a bit more flexibility in that approach’.²³⁶

- 4.68 To illustrate his point, he provided the following example to the Committee:

For instance, I am trying to get fairly high-density plantings, because I know they are good for insectivorous birds, which is one group of bio that is really knocked out of our suburbs. TCCS has a standard. If it is too dense then they think there might be people hiding in there who could jump out and scare people, or whatever, whereas you can see around Canberra that in places, informally, that has happened anyway in an unplanned way. So I just feel as though some of those standards are applied too rigidly. That was one of the issues.²³⁷

- 4.69 Riverview Projects expressed similar sentiments in its submission to the Inquiry. While noting that for stage one of the Ginninderry development they ‘have negotiated some variations to the standards that help to improve the streetscape and shade position’, they said that ‘there is ongoing resistance from some seeking to pull back to more conservative “engineering focussed” norms for future stages’.²³⁸

²³⁶ Dr Philip Gibbons, Associate Professor, Fenner School of Environment and Society, *Transcript of Evidence*, 1 May 2019, p. 96.

²³⁷ Dr Philip Gibbons, Associate Professor, Fenner School of Environment and Society, *Transcript of Evidence*, 1 May 2019, p. 97.

²³⁸ Riverview Projects (ACT), *Submission 43*, p. 19.

4.70 Expanding on this, they submitted:

Further advances towards better streets could be made, for instance, if TCCS and the utilities would allow the placement of some services under roads, thus freeing up verge space for larger trees. The space below the actual road (carriageway) surface is regularly used in other jurisdictions, so why not in the ACT? It is acknowledged that under street service may, on occasion, disrupt street use for a short time, and may cost more than digging up a verge, but we submit that such disruption and cost is infrequent and minimal when properly compared with the day to day benefits living streets will provide in perpetuity.²³⁹

4.71 Riverview Projects suggested that optimal outcomes could be achieved through ‘a balanced, whole of government position based upon a “complete streets” philosophy, including the utilities in a collaborative process’.²⁴⁰

COMMITTEE COMMENT

4.72 The Committee believes that achieving best outcomes for the city in the design of its urban green spaces requires an innovative approach that meets world-class standards. While acknowledging that Transport Canberra and City Services standards play important roles in ensuring the quality and functionality of our built environment, the Committee also feels there is scope for the Government to evaluate how these standards are applied to ensure that these standards are not inhibiting best outcomes being achieved.

Recommendation 28

4.73 The Committee recommends that the ACT Government evaluate the application of Transport Canberra and City Services standards to ensure that the best outcomes are being achieved.

IMPLEMENTING WATER SENSITIVE URBAN DESIGN

4.74 The previous chapter pointed out the benefits derived from adopting WSUD principles to the management of the city’s waterways. Evidence noted, however, that further research on WSUD is needed to determine how best to implement and manage these systems.

4.75 The CSIRO pointed out the novel nature of WSUD techniques for the management of urban waterways, compared to conventional approaches. This, they argued, means ‘that in some areas the knowledge required to plan and maintain these natural systems is still developing’.

²³⁹ Riverview Projects (ACT), *Submission 43*, p. 19.

²⁴⁰ Riverview Projects (ACT), *Submission 43*, p. 19.

Additionally, much uncertainty remains concerning the construction and maintenance costs of such systems.²⁴¹

4.76 Citing relevant literature on past WSUD initiatives, the CSIRO noted that:

In many cases, the capital costs of sustainability initiatives, such as WSUD, have been funded under one-off grant opportunities that meant there was still the need to demonstrate a robust business case for WSUD approaches without subsidies. Also, in many cases the ongoing costs of operating and maintaining the WSUD features were not accounted for, which meant some local governments were reluctant to assume maintenance responsibility for WSUD assets due to uncertainties on the cost burden.²⁴²

4.77 The National Parks Association of the ACT also addressed the costs and maintenance of WSUD systems, noting that 'it is likely that costs are balanced by many benefits, many of which are not financial'. It suggested, further, that:

Maintenance requirements can be reduced if members of the public are educated about the benefits of blue-green infrastructure and are encouraged to form groups that care for a local patch of plantings.²⁴³

Recommendation 29

4.78 The Committee recommends that the ACT Government continue to develop urban water sensitive design guidelines through the monitoring and evaluation of past initiatives.

ACT GOVERNMENT COLLABORATION WITH OTHER ASSET MANAGERS IN THE TERRITORY

4.79 The Committee heard evidence that there is scope for the ACT Government to work closely with other asset managers within the Territory, such as Icon Water, to ensure best outcomes for the City in a Landscape Strategy.

4.80 Speaking generally, Icon Water made the following observation on the opportunities for collaboration between the ACT Government and asset managers in the Territory:

²⁴¹ CSIRO, *Submission 31*, p. 7.

²⁴² CSIRO, *Submission 31*, p. 7.

²⁴³ National Parks Association of the ACT, *Submission 34*, p. 6.

There are opportunities to improve coordination of land management activities between a range of landholders and stakeholders across the ACT, to ensure implementation of effective and efficient land and water management practices.²⁴⁴

4.81 Addressing the Committee, Mr Benjamin Bryant, Manager, Environment and Sustainability, Icon Water, noted the possibilities for collaboration with government in the management of green easements and buffer zones for the city’s utility infrastructure. He told the Committee, for example, that in these zones ‘although we cannot have trees growing over our major pipes, we can have shrubs and other grassy vegetation, because we have got asset protection requirements we must consider so that we can keep providing those essential services’. Additionally, he continued, ‘[w]e must have tracks to be able to access out 50-odd reservoirs on those hills and ridges around Canberra. But they also perform as strategic firebreaks for the parks and conservation service’.²⁴⁵

4.82 Mr Bryant also mentioned potentials for Icon Water and other stakeholders to work with government ‘around opportunities for the improvement of our urban forest’. He continued: ‘In terms of consistency and harmonisation of species planting guides in the ACT, you could probably find, if you looked, some different guidance by the National Capital Authority, by Transport Canberra and City Services, by Icon Water and by Evoenergy because the guidance is based around the needs of the person promoting that guidance. There is an opportunity for better harmonisation in that space between entities’.²⁴⁶ He also noted the potential for alignment between the pipe asset replacement program, other major upgrades and the city’s street tree replacement program.²⁴⁷

4.83 On this latter point, Icon Water’s submission suggested that:

There is potential to align the objectives of the ACT Government street tree replacement programs to provide the natural and amenity outcomes while aligning with utility infrastructure protection objectives. Improved coordination in planning streetscapes includes consideration of suitable tree species for the climate, and potential for tree root intrusion of pipes. Icon Water and the Transport Canberra City Services Directorate have held initial discussions to progress mutually beneficial alignment of activities.²⁴⁸

4.84 Mr Bryant also suggested that there were other, yet unforeseen, opportunities for further collaboration:

There might even be more potential for smarter collocation of our assets in the verges, if you will—and things we do not even know yet, potentially—and some innovation

²⁴⁴ Icon Water, *Submission 59*, p. 4.

²⁴⁵ Mr Benjamin Bryant, Manager, Environment and Sustainability, Icon Water, *Transcript of Evidence*, 22 May 2019, p. 188.

²⁴⁶ Mr Benjamin Bryant, Manager, Environment and Sustainability, Icon Water, *Transcript of Evidence*, 22 May 2019, p. 188.

²⁴⁷ Mr Benjamin Bryant, Manager, Environment and Sustainability, Icon Water, *Transcript of Evidence*, 22 May 2019, p. 188.

²⁴⁸ Icon Water, *Submission 59*, p. 3.

and some research thinking that we do not want root intrusion into pipes because that causes blockages and that causes sewer overflow as well. Can we put pipes under footpaths instead that have gravel above them that retards root growth going into them? Can we lay things out smarter in the first place? We do not necessarily know the answer to that. We are just saying there is potential to further look at it.²⁴⁹

Recommendation 30

4.85 The Committee recommends that the ACT Government liaise with asset managers, such as ICON Water, to identify technical requirements for infrastructure and how to best balance these through the implementation of the City in a Landscape Strategy.

Recommendation 31

4.86 The Committee recommends that the ACT Government liaise with asset managers, such as ICON Water, to identify any opportunities for combined implementation of the City in a Landscape Strategy.

²⁴⁹ Mr Benjamin Bryant, Manager, Environment and Sustainability, Icon Water, *Transcript of Evidence*, 22 May 2019, pp. 188-189.

5 COMMUNITY STEWARDSHIP

- 5.1 This chapter will discuss community participation in environmental management in ACT. It will first provide an overview of community groups involved before looking at the perspectives of both the community and the ACT Government on community participation. The final part of this chapter will discuss the challenges and opportunities in achieving community stewardship as identified by community groups in their submissions.

OVERVIEW OF COMMUNITY INVOLVEMENT

- 5.2 Individuals and community groups have long played significant roles in the care of the environment in the ACT.
- 5.3 Since its early history, as mentioned in Chapter 2, the region’s Aboriginal community has been caring for nature as an extension of their community. Landcare ACT, the peak body for landcare in the ACT region, noted:

The inherited landscape of today is derived from the millennia of Aboriginal inhabitation, a century of agricultural settlements, and Canberra’s first 100 years.²⁵⁰

- 5.4 Today, there are more than 60 community groups who are actively involved in the care of nature in the ACT.²⁵¹ These groups range from Parkcare groups²⁵², urban, rural, junior and Aboriginal Landcare groups, “Friends-of”, Waterwatch and Frogwatch groups, farmers and traditional Aboriginal custodians.²⁵³
- 5.5 ACT Natural Resource Management (NRM), an Australian Government organisation which works with local communities in managing natural resource in the ACT, classifies landcare groups into six categories: parkcare, recreation, urban landcare, rural and regional landcare, producer and other/issue-based.²⁵⁴
- 5.6 The motivation of these groups varies:

To some it is their living, some their home, and for others it is a focus for voluntary stewardship of the “bush capital” and its surrounds that we all live in.²⁵⁵

²⁵⁰ Landcare ACT, *Submission 55*, p. 5.

²⁵¹ Landcare ACT, ‘Questions and Answers’, <https://landcareact.org.au/questions-answers/>, viewed 15 October 2019.

²⁵² ACT Government in its submission (*Submission 67*, p. 2) reported that ParkCare Hub, a website organised by the ACT Environment, Planning and Sustainable Development Directorate, has over 400 volunteers registered.

²⁵³ Landcare ACT, ‘Questions and Answers’, <https://landcareact.org.au/questions-answers/>, viewed 15 October 2019.

²⁵⁴ EPSDD, ‘ACT NRM’, <https://www.environment.act.gov.au/act-nrm/about-us>, viewed 15 October 2019. ACT NRM is one of 56 regional NRM organisations in Australia under the Australian Government’s regional stream of the National Landcare Program. ACT NRM is hosted in the ACT Government Environment, Planning and Sustainable Development Directorate.

²⁵⁵ Landcare ACT, ‘Questions and Answers’, <https://landcareact.org.au/questions-answers/>, viewed 15 October 2019.

- 5.7 These community groups perform a wide range of activities including revegetation work, weeding, watering, fencing, survey work, digital mapping, visitor assist roles and native animals management and care.²⁵⁶ They also monitor wildlife and water quality, look after tracks, share knowledge and tell stories about the land, as well as improve rural land management and agricultural practices.²⁵⁷ In addition, the groups perform community awareness raising as well as maintenance and restoration of heritage places.²⁵⁸
- 5.8 The Committee also noted the interests and involvement of other types of community groups and non-government organisations. Submissions for this inquiry including from area-based or residents' organisations and activity/interest-based groups. The Committee received more than 30 submissions from such organisations.

COMMUNITY'S VIEWS ON PARTICIPATING IN THE ACT GOVERNMENT PLANNING AND IMPLEMENTATION

- 5.9 The Committee heard from various community organisations advocating for community participation.
- 5.10 Community stewardship is one of the main themes identified in submissions from various community groups. As noted by Landcare ACT:
- Stewardship of our living legacy is our responsibility. Nature in the broad, as well as the detail of its components, needs to be deeply understood to be able to be well managed.²⁵⁹
- 5.11 Riverview Projects (ACT) expressed the following:
- Although there is less research on the topic, there is some emerging thinking that community stewardship and influence on their local environment, provides a sense of empowerment, connection, wellbeing, and enhances property values.²⁶⁰
- 5.12 In its submission to the Committee, Canberra Urban and Regional Futures identified community engagement and involvement in the conceptual and practical aspects of planning

²⁵⁶ ACT Parks and Conservation Service, 'ParkCare', <https://app.betterimpact.com/PublicOrganization/7baf50be-3b65-4dd3-bc53-04307685cfdb/1>, viewed 15 October 2019.

²⁵⁷ Landcare ACT, 'Questions and Answers', <https://landcareact.org.au/questions-answers/>, viewed 15 October 2019.

²⁵⁸ Access Canberra, 'ACT ParkCare', https://www.accesscanberra.act.gov.au/app/answers/detail/a_id/1458/~/act-parkcare, viewed 15 October 2019.

²⁵⁹ Landcare ACT, *Submission 55*, p. 5.

²⁶⁰ Riverview Projects (ACT), *Submission 43*, p. 24.

and managing living infrastructure programs as one of the crucial components to achieve success.²⁶¹ They submitted:

Engaging people broadly in participatory planning generates ideas and builds support for the adoption of living infrastructure programs. Many studies emphasise the critical role of engaging people, ensuring participation and making sure citizens, communities and practitioners are involved.²⁶²

5.13 Landcare ACT noted:

A basic first step is consideration of place and the existing natural elements. Planning processes should include assessment of factors such as landscape features and viewsheds, community views and heritage, and microclimate vulnerabilities, leading to analysis of the 'values' of places and how much of the natural assets that exist can be kept. This is currently not sufficiently considered, as the worth of nature is not recognised in dollar terms.²⁶³

5.14 ACT Young Planners Division, Planning Institute of Australia recommended the ACT Government:

To improve public participation in caring for our natural environment, and to encourage citizen-led 'greening' initiatives in their own communities.²⁶⁴

5.15 Further, Tuggeranong Community Council asked for the ACT Government to consult with the community and 'supports an ongoing strategy to fund the maintenance of Canberra's open spaces and nature reserves'.²⁶⁵

5.16 Similarly, Inner South Canberra Community Council expressed that:

To manage the interface between the natural environment and urban areas, it is also important to engage with local residents near those interfaces, and with the relevant residents' groups and community council. There are many examples of success with this strategy, including with the Red Hill Nature Reserve, Stirling Park and Jerrabomberra Wetlands, all of which have active groups of local and other residents who volunteer for work parties.²⁶⁶

5.17 The Inner South Canberra Community Council, further, made the following recommendations:

²⁶¹ Canberra Urban and Regional Futures, *Submission 6*, attachment, Alexandra J, Norman B, Steffen W and Maher W. *Planning and Implementing Living Infrastructure in the Australian Capital Territory – Final Report*, Canberra Urban and Regional Futures, University of Canberra, Canberra, 2017, pp. 16-17.

²⁶² Canberra Urban and Regional Futures, *Submission 6*, attachment, Alexandra J, Norman B, Steffen W and Maher W. *Planning and Implementing Living Infrastructure in the Australian Capital Territory – Final Report*, Canberra Urban and Regional Futures, University of Canberra, Canberra, 2017, p. 21.

²⁶³ Landcare ACT, *Submission 55*, p. 2.

²⁶⁴ ACT Young Planners Division, Planning Institute of Australia, *Submission 64*, p. [5].

²⁶⁵ Tuggeranong Community Council, *Submission 46*, p. [4].

²⁶⁶ Inner South Community Council, *Submission 35*, p. 4.

That the ACT Government support a long-term strategy, in consultation with the community, for funding the maintenance of Canberra's open spaces and nature reserves.²⁶⁷

That the ACT Government resource community consultation on suburban precinct codes, in particular those suburbs under development pressure.²⁶⁸

5.18 The Tuggeranong Community Council made similar recommendations.²⁶⁹

5.19 An even stronger view was suggested by another submitter:

The Field Naturalists do not welcome proposals for 'infrastructure' and 'development' in the ACT's reserves and Urban Open Space areas unless the changes are based on genuine consultation to enhance access and improve visitors' safety.²⁷⁰

5.20 The organisation further stated that:

Projects that are imposed on communities without relevant consultation breed resentment and destroy trust in the 'public service'.²⁷¹

5.21 The Committee heard about the significant economic contributions that community groups make. According to Landcare ACT, for instance:

Thousands of volunteer hours per year supplement the work of the Parks and Conservation Service and City Services, and many more are devoted to other forms of environmental volunteering such as Frogwatch and Waterwatch. The ACT Commissioner for Sustainability and the Environment calculated the replacement cost in terms of wages for these volunteer hours at \$50.5 million in 2015-16, more than 22% of total ACT Government spending on the environment. Much of that effort is directed to urban reserves, parks and wetlands.²⁷²

5.22 Friends of Grasslands (FOG), one such group, detailed in its submission the organisation's works:

While community involvement in conservation is much applauded it is likely not well understood. FOG is now one of many groups that supports grassy woodlands through community engagement, advocacy, on-ground work, commitment to good science, individual training and an ethic of respect. Nevertheless FOG's example is instructive.²⁷³

²⁶⁷ Inner South Community Council, *Submission 35*, p. 4.

²⁶⁸ Inner South Community Council, *Submission 35*, p. 5.

²⁶⁹ Tuggeranong Community Council, *Submission 46*, p. [4].

²⁷⁰ Field Naturalists Association of Canberra, *Submission 38*, p. 2.

²⁷¹ Field Naturalists Association of Canberra, *Submission 38*, p. 2.

²⁷² Landcare ACT, *Submission 55*, p. 2.

²⁷³ Friends of Grasslands, *Submission 29*, p. 5.

5.23 In observing its volunteers' contributions, FOG stated:

Conservatively measured, FOG volunteers contributed 7,800 hours valued at over \$300,000.²⁷⁴

5.24 Meanwhile, Ginninderra Catchment Group (GCG), submitted:

GCG, together with Southern ACT Catchment Group (SACTCG), has leveraged in-kind contributions from the community valued at \$1.5million per annum. They have also successfully brought into the ACT an average of \$250,000 per year of competitive project funding to facilitate biodiversity conservation outcomes, integrated with community engagement. Hence, Catchment Groups are a low cost, high return investment option for environmental management in the ACT, which require more sustainable funding to continue.²⁷⁵

5.25 The Committee heard community groups expressed the need to continue support and encourage their works.

The key point that we really want to make is that in urbanising Canberra, community engagement about the environment is absolutely critical. It is becoming more and more important. These programs increase the community appreciation for nature as well as for the value for nature. That is the first step to engaging ACT citizens in caring for the public estate. That is really what Landcare is very much about. Coordination and support are critical to coordinate and leverage that community contribution to environmental management.²⁷⁶

5.26 Similarly, a submitter called for support for Landcare groups:

The ACT Government should support local landcare groups to help monitor/maintain urban high value open spaces and reserves. They should provide resources to enable them to assist them to support local landcarers and the general community.²⁷⁷

5.27 The Committee also learnt the groups advocating for Junior Landcare Program. As told by Southern ACT Catchment Group representative:

I would love to see a junior Landcare program. I think that particularly the primary schools are hungry for information about the local natural environment. Some of our groups, like the Farrer Ridge ParkCare Group, run walks and talks. I think we have the Farrer Ridge convenor in the audience. The interest from those schools is fantastic. They take in that information beautifully. It builds an understanding through their lives

²⁷⁴ Friends of Grasslands, *Submission 29*, p. 5.

²⁷⁵ Ginninderra Catchment Group, *Submission 58*, p. [2].

²⁷⁶ Ms Karissa Preuss, Executive Officer, Ginninderra Catchment Group, *Proof Transcript of Evidence*, 27 March 2019, p. 51.

²⁷⁷ Tuggeranong Community Council, *Submission 46*, p. [4].

of the natural environment around them. Absolutely, a junior Landcare program would be of great benefit.²⁷⁸

- 5.28 Community groups put forward further suggestions for opportunities to engage children beyond Junior Landcare. Friends of Pinnacle noted,

There are others. Junior Landcare obviously is something that should be encouraged. But things like scout groups and other youth groups could be other avenues. We have had scout groups come up to the reserves. I suppose another way could be facilitating contact between the catchment groups or having the rangers themselves involved in that sort of work—having them go round to schools or youth organisations to talk about the reserves or about the natural values that the reserves offer.²⁷⁹

- 5.29 Other programs for young people including the Green Army Team. As heard by the Committee:

I suppose the other thing to add is that the Green Army Team was actually quite young. They were an 18 to 25-year-old team. We ran that for two years. There were six teams, the last one being the Aboriginal land management team. That really did link young people with multiple groups in the community. We had over 20 of those ParkCare groups receive support through those. That kind of program is fantastic for getting young people engaged in the nature in our city.²⁸⁰

- 5.30 Further support for activities involving young members of the community were expressed by the Molonglo Conservation Group. The group recommended:

There is also scope for engaging young people in citizen science-type activities. For example, there is a high level of interest in the Waterwatch program by schools et cetera. There has also been a number of young people who have expressed interest in participating in the vegetation surveys. I think that is really beautiful. They are learning not only about the concepts but also applying them to practical situations with beneficial outcomes. That is providing data that can be used for reports and, one always hopes and it very often happens, for good management decisions in relation to environmental aspects.²⁸¹

THE ACT GOVERNMENT'S VIEWS ON COMMUNITY PARTICIPATION IN ACT GOVERNMENT PLANNING AND

²⁷⁸ Ms Martine Franco, Executive Officer, Southern ACT Catchment Group, *Proof Transcript of Evidence*, 27 March 2019, p. 56.

²⁷⁹ Mr John Brannan, Coordinator, Friends of the Pinnacle, *Proof Transcript of Evidence*, 10 April 2019, p. 76.

²⁸⁰ Ms Martine Franco, Executive Officer, Southern ACT Catchment Group, *Proof Transcript of Evidence*, 27 March 2019, p. 56.

²⁸¹ Ms Linda Beveridge, Molonglo Conservation Group, *Proof Transcript of Evidence*, 27 March 2019, p. 56.

IMPLEMENTATION

- 5.31 The Committee noted the ACT Government's views on the centrality of community engagement as reflected in the ACT Government's strategies and reports. The recently updated ACT Government Planning Strategy 2018, for example, according to the ACT Government, was shaped and informed by extensive community consultation.²⁸² The Planning Strategy stated that specifically on the theme of community engagement, community consultation had shown that Canberrans want the ACT Government to:

Work actively to engage with communities. Require developers to involve and act on input from citizens early in the design process.

Continue engaging the public and build on governments' commitment to community involvement, co-design and participative future visioning.²⁸³

- 5.32 The ACT Government agency responsible for managing planning, land and environment policies and program, the Environment, Planning and Sustainable Development Directorate (EPSDD), expressed,

The Environment, Planning and Sustainable Development Directorate (EPSDD) includes community engagement as an integral part of the development of policies, strategies and plans. The directorate engages with a wide demographic to capture as many views as possible, including those of groups that do not usually participate in decision making, such as school students, young people and young families. Community engagement follows the ACT Government's policies and guidelines. In recognising that people like to interact with government in different ways, the directorate uses both face-to-face consultation methods and a range of media.²⁸⁴

- 5.33 In its latest annual report, the EPSDD lists its community engagement activities, including grants and sponsorships, for the first time in a separate section 'Community Engagement and Support'.²⁸⁵ Also included in this section is discussion about ACT Natural Resources Management and its work with a wide range of stakeholders including land managers, the community (including ParkCare, LandCare, Friends of and Catchment Groups) and researchers.²⁸⁶

²⁸² ACT Government, 'ACT Planning and Strategy, FAQs', <https://www.planning.act.gov.au/act-planning-strategy/faqs>, viewed 19 November 2019.

²⁸³ ACT Government, *ACT Planning Strategy*, (Canberra: Environment and Sustainable Development Directorate, 2018), p. 19.

²⁸⁴ CMTEDD, *Annual Report 2017-18 Volume 3: Whole of Government Reporting: Community Engagement and Support*, p. 45, https://www.cmtedd.act.gov.au/data/assets/pdf_file/0004/1262488/CMTEDD-Annual-Report-2017-18-Volume-3.pdf, viewed 19 November 2019. In this whole-of-government report, EPSDD detailed its engagement with individuals and various stakeholders through different means, including via the YourSay website, social media, surveys, submissions, quick polls, and face-to-face meetings (See page 45 of the report).

²⁸⁵ EPSDD, *Annual Report 2018-19*, pp. 102-117.

²⁸⁶ EPSDD, *Annual Report 2018-19*, pp. 110-112.

5.34 ACT Native Woodland Conservation Strategy and Action Plans, produced and newly released by EPSDD in November 2019, confirmed the ACT Government's commitment to engage with the community. The Strategy grouped primary objectives for woodland conservation in the ACT under three main themes, one of which is community collaboration.²⁸⁷ Over eight pages of the Strategy discussed the promotion of community participation in woodland conservation and support sustainable recreational use of woodlands.²⁸⁸

5.35 The theme of community stewardship was prominent in the newly released woodland conservation Strategy's discussion about community engagement. The Strategy stated the ACT Government supports community-led stewardship of woodlands. This support was implemented through 'facilitating education initiatives and fostering relationships with relevant organisations (including Bush on the Boundary community groups) to improve understanding of the value of woodland and threats to its survival'.²⁸⁹

5.36 The ACT Native Woodland Conservation Strategy noted that one of the benefits of community participation in woodland conservation activities is that it might encourage the feelings of stewardship:

Community members who participate in on-ground activities with others who are knowledgeable and passionate about woodland conservation develop emotional connections to woodlands and may develop feelings of stewardship over areas.²⁹⁰

5.37 Further, EPSDD hosts ACT NRM. Part of National Landcare Program, ACT NRM, 'works with local communities to identify and set local priorities for NRM investment and supports community delivery of NRM.'²⁹¹ The organisation listed six roles that it plays:

- Working with and supporting community participation in prioritisation and delivery of natural resource management in the ACT
- Investment Planning: Identify regional investment priorities that align local and regional activities and community knowledge and experience, to national priorities
- Brokering partnerships: Collaborate with community, rural landholders, ATSI community, local and regional organisations to deliver regional NRM projects:
- Linking community to best available science and best practice NRM
- Sharing knowledge: Provide community and land managers with information to help them manage

²⁸⁷ EPSDD, *ACT Native Woodland Conservation Strategy and Action Plans*, November 2019.

²⁸⁸ EPSDD, *ACT Native Woodland Conservation Strategy and Action Plans*, pp. 46 – 53.

²⁸⁹ EPSDD, *ACT Native Woodland Conservation Strategy and Action Plans*, p. 23.

²⁹⁰ EPSDD, *ACT Native Woodland Conservation Strategy and Action Plans*, p. 48.

²⁹¹ EPSDD, 'ACT NRM', <https://www.environment.act.gov.au/act-nrm/about-us>, viewed 15 October 2019.

- Delivering Programs: reporting outcomes to investors and communicating achievements.²⁹²

5.38 ACT NRM attributed its successes to the strong partnerships it has enjoyed for many years with the ACT natural resource management and Landcare communities.²⁹³

CHALLENGES AND OPPORTUNITIES: COMMUNITY EXPERIENCE IN ENGAGING WITH THE ACT GOVERNMENT

5.39 Having identified the perspectives of both community groups and the ACT Government on the centrality of community engagement in environmental management in the ACT, this section will now discuss the experience of community groups in their engagement with the ACT Government. Funding, planning, consultation process, as well as bureaucratic inflexibility for community projects were some of the main issues identified by various organisations. The groups also offered suggestions for improvements.

5.40 Submissions from several residents' associations acknowledged the ACT Government's community engagement focus. They reported that the ACT Government officials held meetings with them and that these associations were pleased and appreciative of the Government's initiative. One group stated:

Hughes Residents' Association was pleased to attend a very positive first meeting with ACT Government officials to begin development of the Integrated Plan for Red Hill Nature Reserve and surrounds on 7 May 2018.

We believe that the Integrated Plan approach may potentially provide a policy model for a collaborative, consultative and community-focused approach to future development and environmental protection in Canberra.²⁹⁴

5.41 However, the Committee also notes that one of the main themes emerging from most of submissions about community engagement is that community groups would like for the ACT Government to do more. For example, Molonglo Catchment Group suggested:

Public support and engagement could be improved through concerted and strategic community engagement and education programs that result in tangible benefits to the environment and community stewardship for Canberra's natural areas.²⁹⁵

²⁹² EPSDD, 'ACT NRM', <https://www.environment.act.gov.au/act-nrm/about-us>, viewed 15 October 2019.

²⁹³ EPSDD, 'ACT NRM', <https://www.environment.act.gov.au/act-nrm/about-us>, viewed 15 October 2019.

²⁹⁴ Hughes Residents' Association, *Submission 10*, p. 3.

²⁹⁵ Molonglo Catchment Group, *Submission 15*, p. 2.

- 5.42 A submitter cautioned that community consultation should be led by the Government instead of by developers.

We strongly believe that, both to protect our natural heritage and to maintain the trust and good faith of ACT residents, the ACT Government must ensure that planning and development is led by the Government in genuine consultation with the community, rather than letting developer-led planning and consultation as at present.

Policy settings need to reflect what is important to and valued by Canberra residents, and the regulatory framework for environmental protection, sustainability and development needs to be overhauled to put the initiative and responsibility for planning and consultation back onto the shoulders of the Government.

The onus of proof of environmental impact, sustainability and other impacts of development needs to be squarely in the court of developers, rather than forcing poorly resourced individuals and community organisations to prove environmental detriment, as currently.²⁹⁶

- 5.43 There are concerns also about the timing and the depth of community consultation especially for large projects which take many years to complete. The long period that exists between the early stage of project planning and implementation means that the initial consultation results at the planning stage could become outdated and inadequate at the end of the project. As expressed by Lake Burley Griffin Guardians in its submission:

The justification for developments that were conceived even one decade earlier and are being challenged today loses traction on a number of counts. So it is somewhat disingenuous to use the number of consultations from so long ago to persist with projects heavily challenged today.²⁹⁷ Further, the technology has failed to improve the reach into the community nor the depth of consultation. Box ticking and ‘yes’ or ‘no’/‘thumbs-up’ or ‘thumbs-down’ are entirely inappropriate, even frivolous, for far reaching matters; it only swells the number of respondents. Information on the big ticket projects is not trivial and engaging the minds of the uninformed and disinterested to inform and interest them has not been very successfully mastered. Citizens juries are not empaneled to re-visit major decisions that were made long ago on inadequate consultation. The Guardians are anxious for this to be seriously addressed and rectified.²⁹⁸

- 5.44 ACT Equestrian Association (ACTEA) even expressed frustration that involvement in consultation process did not yield any result. They stated,

In 2016 ACTEA put some effort into participating in discussions about a new Canberra Nature Park Management Plan with a view to gaining increased access to a handful of

²⁹⁶ Hughes Residents’ Association, *Submission 10*, pp. 4-5.

²⁹⁷ Lake Burley Griffin Guardians, *Submission 52*, p. 5.

²⁹⁸ Lake Burley Griffin Guardians, *Submission 52*, p. 5.

reserves which are on or near to existing equestrian routes. The 2016 draft CNP Management Plan seems to have disappeared without trace.²⁹⁹

- 5.45 Further issue that the community groups identified as one of their main challenges was regarding funding.
- 5.46 Landcare ACT pointed out that the lack of certainty and continuity of government funding, as a result of changes in national Landcare funding, presented 'substantial challenges' to landcare groups in ACT.

Although national funding arrangements are currently the subject of consideration across the nation, the unfortunate reality is that there is no current certainty for funding from the Australian government for our catchment groups, Landcare in the ACT.

It is appreciated very much that the ACT government provided funding for this financial year for the catchment groups. This funding covered some policy work. What we think is urgently needed is funding for ACT catchment groups for 2019-2020 for the on-the-ground practical community-based Landcare activities so that they can continue to be run by the community, for the community, in the community, with the community, and in partnership with a whole range of other bodies. They are core; they are out there; they are part of that community, both environmentally and socially.

Continuity in Landcare is important to maintain and build on achievements otherwise, we are likely to go backwards environmentally. We think that will have adverse impacts on nature in the city. It is appreciated that the ACT government officers are currently engaging in conversation with us regarding ongoing funding. But there are no commitments for 2019-20 for our catchment groups. It is also noted that there have been discussions in the media about using the water abstraction charge to fund community-based Landcare activities.³⁰⁰

- 5.47 The Committee also heard how crucial funding is to build community stewardship.

We have had groups stewarding for 30 years in the ACT area. It is a successful model. Without the catchment groups it will fall over and the question you asked will be irrelevant because there will not be a building of new groups.

I have set up three or four new groups in the past two years. The way to build stewardship is to give it to the community to do. People trust the community groups. People walk in our doors every single day all the time. The community has contact with us and has built relationships with us, and that is the way we get stewardship groups going.

²⁹⁹ ACT Equestrian Association, *Submission 23*, p. 4. For an example of a more critical view of the ACT Government's planning consultation process, see P Costigan, *Good governance lost to condescending spin*, September 11 2019, CityNews <https://citynews.com.au/2019/good-governance-lost-to-condescending-spin/>, viewed 18 November 2019.

³⁰⁰ Dr Maxine Cooper, Chair, Landcare ACT, *Transcript of Evidence*, 27 March 2019, p. 50.

I think that there is capacity within government to try to build stewardship groups, but they generally do not have that sense of connection as easily as they do with community-based not-for-profit charities. To me, devolving it—using the principle of subsidiarity and devolving that responsibility out into the community—is the best way you can do that.³⁰¹

- 5.48 A similar view confirming the concern over the impact of the lack of funding to community stewardship was offered by another organisation:

And fostering that community stewardship has been the core business of the catchment group since our inception. We are at a point where there is a real danger that that could be lost. Even though our organisations have been operating now for 20-plus years we are in a position where, as Maxine said, we do not have any secure funding. That stewardship has been built up over 25 years, so to have that lost just because of a lack of funding is a real concern. We are at that point where there is a danger of that happening.³⁰²

- 5.49 Further areas affected by funding included education campaign. Molonglo Catchment Group noted that currently there is lack of funding for education campaign community grants provided by the ACT Government.

Education campaigns such as the former Floriade Bush Friendly Garden and ‘Weed-Swap’ events have seemingly been abandoned by the ACT Government. There are insufficient funds in community grants to run these events without government support. Nor should the onus be placed entirely on volunteer community groups to undertake education required to protect the biodiversity within Government managed land.³⁰³

- 5.50 Friends of Black Mountain highlighted the need for adequate funding to ensure compliance actions:

Funding for park management needs to be adequate to include compliance actions.³⁰⁴

- 5.51 In addition to the issue of funding, some community groups identified complex and rigid government bureaucracy processes as obstacles that greatly hinder their works.³⁰⁵ Based on its experience working with the ACT Government, a community group critically stated:

Community connection resilience, engagement and stewardship of the environment is not a priority to the government.³⁰⁶

³⁰¹ Ms Martine Franco, Executive Officer, Southern ACT Catchment Group, *Proof Transcript of Evidence*, 27 March 2019, pp. 59-60.

³⁰² Ms Karissa Preuss, Executive Officer, Ginninderra Catchment Group, *Proof Transcript of Evidence*, 27 March 2019, p. 60.

³⁰³ Molonglo Catchment Group, *Submission 15*, p. [4].

³⁰⁴ Friends of Black Mountain, *Submission 36*, p. 20.

³⁰⁵ The Lyneham Commons, *Submission 47*; SEE-Change, *Submission 50*.

³⁰⁶ The Lyneham Commons, *Submission 47*, p. 13.

5.52 SEE-Change shared their experience in dealing with government bureaucracy:

The delays, maintenance requirements and lack of a streamlined process were becoming increasingly frustrating. Not only were the SEE-Change Executive Officer and the Project Officer spending far more time to liaise with TCCS on the project than had been allowed for (grants only allow 10% of the total project costs for administration which includes grant reporting and grant acquittal) to ostensibly plant 2800 native plants for birds and bugs, our partner organisations, Greening Australia and Conservation Volunteers Australia have needed to change their work programs multiple times and chase us up.³⁰⁷

5.53 The organisation further expressed:

What started as an exciting project has become a bureaucratic headache. It illustrates why most people couldn't be bothered to approach the ACT Government with a special project that has multiple benefits for nature and the community. We understand why people take part in guerrilla gardening or become apathetic.³⁰⁸

5.54 The Committee noted community groups' call for the ACT Government to create a simpler, more streamlined mechanism for its engagement with community groups. As stated by the Lyneham Commons:

We would like the ACT Government review their policies with the goal of developing a comprehensive strategy to work in partnership with community groups who are interested in projects that increase natural habitat, low risk nature play spaces outside conventional playgrounds and open access food growing spaces within urban areas.³⁰⁹ To do this the ACT Government will need to address the myriad ways in which current departmental mindsets, policy guidelines and processes create very frustrating and sometimes overwhelming barriers for community organisations wishing to develop their site.³¹⁰

5.55 Similarly, SEE-Change suggested:

If we want to improve community involvement we need to trust community groups to do the right thing. If we want to make our city more liveable and resilient to climate change we need to set up more equitable and efficient processes for community groups to play a role in greening our city.³¹¹

5.56 The Lyneham Commons also proposed other ideas that would support community engagement. The initiatives included the creation of 'a small funding stream for community

³⁰⁷ SEE-Change, *Submission 50*, p. [6].

³⁰⁸ SEE-Change, *Submission 50*, p. [7].

³⁰⁹ The Lyneham Commons, *Submission 47*, p. 1.

³¹⁰ The Lyneham Commons, *Submission 47*, p. 1.

³¹¹ SEE-Change, *Submission 50*, p. [7].

initiated asset enhancements that communities could match through in-kind contributions.³¹² In addition, the organisation suggested:

The ACT Government could consider setting up a process to review policies and guidelines and their fit-for-purpose to the encouragement of communities to implement low risk locally based pro nature projects in partnership with Government.³¹³

5.57 Moreover, SEE-Change suggested for the ACT Government to have a designated staff to support the community.

I think it is great that the government has the environment grants, as well as the community garden grants. That is a great starting point. It would be really great to have better representatives or advocacy within government to support the community: one person you can go to in one directorate who will actually support you. As I mentioned earlier, I think it is really important that if we are going to set up a more streamlined process we need an independent facilitator to help us negotiate that. I do not want to speak for Lyneham Commons but I know it took them two years to get the ability to use their space.³¹⁴

COMMITTEE COMMENT

5.58 The Committee acknowledges the ACT Government's commitment to engage with the community as reflected in various policies, strategies and programs. However, as discussion in this chapter has shown, there appears to be no specific strategy on community stewardship of the environment within the ACT. For example, the community engagement strategy in the ACT Native Woodland Conservation Strategy 2019, as the title suggests, is only applicable to activities related to native woodland conservation. A specific strategy on community stewardship of the environment is needed. This strategy should also discuss funding continuity for community groups.

5.59 The Committee, in particular, acknowledges the crucial role played by various landcare groups throughout the Territory. The Committee believes that the ACT Government must invest further in the Landcare and Parkcare programs to ensure their ongoing viability and effectiveness. The Committee also see further opportunities for partnerships between the ACT Government and these groups and hopes that the Government pursue these opportunities. Additionally, the Committee believes that there exist important opportunities for collaboration between the ACT Government and Landcare and similar groups for the implementation of Junior Landcare and Junior Parkcare initiatives.

³¹² The Lyneham Commons, *Submission 47*, p. 1.

³¹³ The Lyneham Commons, *Submission 47*, p. 3.

³¹⁴ Ms Edwina Robinson, Executive Officer, SEE-Change, *Transcript of Evidence*, 10 April 2019, pp. 83-84.

5.60 The Committee agrees that the complex bureaucratic processes that community organisations must go through for project approvals is a concern. A review of the current mechanism for community project approval needs to occur. A simpler, fit-for-purpose, streamlined process is needed.

Recommendation 32

5.61 The Committee recommends that the ACT Government develop and implement a strategy that is co-designed with, and supports, volunteer environmentalists to guide and sustain community stewardship of the environment within the ACT.

Recommendation 33

5.62 The Committee recommends that the ACT Government continue to invest in the Landcare and Parkcare programs and give consideration to longer-term funding for these.

Recommendation 34

5.63 The Committee recommends that the ACT Government, in conjunction with Landcare and similar groups, consider further partnership opportunities.

Recommendation 35

5.64 The Committee recommends that the ACT Government, in conjunction with Landcare and similar groups, identify and implement further opportunities for Junior Landcare and Junior Parkcare.

Recommendation 36

5.65 The Committee recommends that the ACT Government consider if there are opportunities for streamlined community project approvals that make it easier and less burdensome for community groups.

Recommendation 37

5.66 The Committee recommends that the ACT Government introduce a pilot scheme to enable local communities to lead, or be involved in, the design and implementation of low-cost alternative urban spaces in their neighbourhood (including ecological restoration, natural play spaces, informal pathways/cycleways, smaller areas of well-maintained dryland grass and community-based maintenance).

6 RESEARCH AND KNOWLEDGE

- 6.1 The complexity and the intricacy of nature, as discussions in previous chapters demonstrated, put into prominence the need to improve knowledge in environmental management.
- 6.2 This chapter will look at ways to strengthen knowledge and expertise in environmental practice in the ACT as identified in the submissions. It will discuss issues including environmental education and awareness raising, the concept of a biophilic city and research partnerships.

ENVIRONMENTAL EDUCATION AND PUBLIC AWARENESS RAISING

- 6.3 The Committee received a range of submissions calling for environmental education and awareness raising in the community, especially for students and young people.
- 6.4 According to Friends of Black Mountain:

The government could be more pro-active in engaging with the high level of expertise and interest in nature conservation within the Canberra community and do more to encourage young people to participate in nature conservation activities.³¹⁵
- 6.5 The Ginninderra Falls Association suggested:

New ways to educate residents and visitors about Canberra's nature reserves are needed. More visitor interpretation facilities would help but a Nature Park App might appeal more to the younger generation.³¹⁶
- 6.6 The Committee also heard a request to investigate an education program for the ACT Community specifically about an invasive species, African lovegrass, as it is currently undermanaged and out of control.³¹⁷ Control of African lovegrass and other weeds is discussed in further detail in Chapter 7.
- 6.7 The Committee inquired about environmental education strategies and heard support for partnerships and educational programs with schools. Schools involvement appear to be at the centre of environmental programs. The Committee was told that:

I think that is where you have to start. At the Pinnacle we have had contact with local primary schools and with Belconnen High School and we have taken groups of students

³¹⁵ Friends of Black Mountain, *Submission 36*, p. 18.

³¹⁶ Ginninderra Falls Association, *Submission 11*, p. [3].

³¹⁷ Ms Georgina Pinkas, *Transcript of Evidence*, 13 March 2019, p. 6.

up there. The high school had a class that was involved in ecological studies, and we assisted them with that. Getting small groups of kids up into the reserve is a bit more problematic. It is labour intensive, I suppose, from the schools' point of view. Having a program that would facilitate schools getting kids up into the reserves and using them as an educational resource was, I think, in my submission. I think the reserves are under-utilised in that way. That is a fairly non-invasive way of getting kids involved and spreading the word to the community more broadly, because kids go home and talk to their parents, so the word gets out that way. That would be one. I do not know if you would have to include that in the curriculum or just encourage teachers to get involved, because it always has to be through the teachers that we work.³¹⁸

6.8 As also discussed in Chapter 3, submissions encouraged the idea of incorporating nature into school programs and play. For example, Michael Sim recommended to 'embed nature play opportunities and structured outdoor learning opportunities for all school students in Canberra'.³¹⁹ While Rosemary Blemings strongly supported the movement towards 'natural playgrounds' as 'everyday outdoor classrooms' and listed the benefits of outdoor experiences in the nature for both students and teachers.³²⁰

6.9 In its submission, ACT Chapter of Australian Association of Environmental Education (ACT AAEE) argued of the importance of 'being in nature' – a term the organisation uses to describe an element of its environmental and sustainability practice that is basically about learning in nature.³²¹ ACT AAEE stated four points behind the promotion of 'being in nature':

- Being in Nature builds future receptivity to educational messages related to environment
- Linking schools play spaces with high quality conserved and restored habitat can sustain visits by wildlife and also promote a caring mindset.
- Being in Nature can be promoted by a combination of wildlife corridors, vegie gardens and native gardens. Gardens and corridors go together, but they are not only good for plants, animals, and pollinators - they are also good for people and the young in particular.
- It has been demonstrated that mental and physical health and wellbeing are increased with easy access to good quality green and blue spaces. The trend in urban environments among young people is one of declining time outside - particularly if the parents come from a highly urban background themselves.

³¹⁸ Mr John Brannan, Coordinator, Friends of the Pinnacle, *Proof Transcript of Evidence*, 10 April 2019, pp. 75-76.

³¹⁹ Michael Sim, *Submission 24*, p. [6].

³²⁰ Rosemary Blemings, *Submission 30*, pp. [4-5].

³²¹ Australian Association for Environmental Education, *Submission 57*, p. [3].

Attractive safe local natural environments and play spaces can reverse this trend.³²²

- 6.10 Further, the Committee heard support for the use of ACT's wildlife corridors for education. As argued by ACT AAEE,

Spaces that preserve and restore biodiversity and habitat for wildlife provide both essential education and conservation opportunities in an increasingly urbanised city. These areas should be promoted, maintained and enhanced in our city for the educational, physical, mental and social wellbeing they provide especially to our young citizens, however it is clear that green and blue spaces are vital to the wellbeing of all ACT residents.

The concept of the bush capital has been of great value in maintaining plant communities and associated food and habitat for native species. However many native species have and are being heavily impacted by urbanisation pressures. This has resulted in a loss of diversity and quality of habitat, making it harder for wildlife to be raised their young protected against predators and to access year round food sources.

However, this loss can be reversed, and further harm prevented, while integrating nature with the ELfS [Education and Learning for Sustainability] needs of schools.³²³

- 6.11 The Committee was told about challenges in expanding environmental education programs at schools. According to Friends of Grassland:

There are a number of restrictions in schools because of OH&S. A lot of impediments are put in the way, and education areas in government should pay more attention to having access to these areas. There are only so many things a group like ours can do. I was at a school earlier this week talking about snakes, for example. All those things are important and this is why we need to have more imagination and more vision. This committee can make some pretty good recommendations about some of these things.³²⁴

- 6.12 In addition, a suggestion was put forward to harness the expertise of the ACT Scientific Committee. Marianne Albury-Colless argued that the ACT Scientific Committee is well placed to 'engage effectively with the community and develop appropriate education programs' and therefore 'resourcing should be made available to enable the Committee to undertake these activities.'³²⁵

³²² Australian Association for Environmental Education, *Submission 57*, p. [3].

³²³ Australian Association for Environmental Education, *Submission 57*, p. [2].

³²⁴ Mr Geoffrey Robertson, President, Friends of Grassland, *Transcript of Evidence*, 10 April 2019, p. 71.

³²⁵ Marianne Albury-Colless, *Submission 54*, p. 6.

COMMITTEE COMMENT

- 6.13 The Committee acknowledges evidence received for this inquiry on the importance of research and community education in ensuring that environmental practices in the Territory are world-class. The Committee sees a need for the ACT Government to partner with research and education institutions to develop expertise in managing the Territory's environment into the future.

Recommendation 38

- 6.14 The Committee recommends that the ACT Government continue to partner with research and education institutions, including primary and secondary schools, to develop and share the knowledge and expertise of environmental practice in the ACT.**

CANBERRA AS A BIOPHILIC CITY

- 6.15 The Committee was informed about the concept of 'biophilia' by various groups. The groups also talked about biophilic cities network and encouraged Canberra to consider joining the network.
- 6.16 Lake Burley Griffin Guardians discussed the importance of adopting biophilia. The organisation argued,

American Edward O. Wilson developed the hypothesis of biophilia, that humans have an innate tendency to seek connection to nature, for its calming effects. People living in urban areas that feature more trees have better mental and physical health. In other words, parks and nature are good for your brain and there is a growing body of evidence for this 30+ year old hypothesis to evolve into fact. Each year, one in five Australians experiences a mental disorder developed later in life, most commonly anxiety disorders, such as panic attacks or obsessive-compulsive disorder. This City is not without problems in the health sector. It is ideally placed to relieve its load some by adopting better-planned approaches to generous, adequate and strategically distributed green open spaces for the promotion of improved health and wellbeing. We strongly urge both governments to so do as a high priority.³²⁶

- 6.17 See-Change in its submission discussed biophilic cities and cited a definition provided by biophilic cities network. It states:

Biophilic cities are cities of abundant nature in close proximity to large numbers of urbanites. Biophilic cities value residents innate connection and access to nature

³²⁶ Lake Burley Griffin Guardians, *Submission 52*, p. 6.

through abundant opportunities to be outside and to enjoy the multisensory aspects of nature by protecting and promoting nature within the city.³²⁷

- 6.18 When the Committee inquired further about the biophilic cities network, it was told that the biophilic cities network was set up in 2013.³²⁸ The Committee learnt about the value behind the network:

The principle is that access to nature promotes health benefits and benefits to our biodiversity and also sustains our economy. This network of cities is about empowering citizens to access nature through an integrated approach to having green in the city.³²⁹

- 6.19 SEE-Change put forward a recommendation for the ACT to become a partner city of the Biophilic Cities Program. In its submission, the group elaborated,

SEE-Change advocates that the ACT becomes a partner city with the Biophilic Cities Program. At present there are 15 partner cities worldwide including Fremantle, Portland and Wellington. This platform allows cities to showcase innovations and learnings and can ensure Canberra is a liveable city in a warming climate.

Setting a target to becoming a biophilic city would spur a new way of thinking about urban development by design professionals and students, developers, builders, ACT government and the community.³³⁰

COMMITTEE COMMENT

- 6.20 Evidence received for this inquiry clearly indicates that Canberrans widely share a sense of biophilia. The Committee see value in the idea of Canberra joining the Biophilic Cities Network and recommends that the ACT Government gives consideration to this idea.

Recommendation 39

- 6.21 The Committee recommends that the ACT Government consider joining the Biophilic Cities Network.**

RESEARCH PARTNERSHIPS

- 6.22 One of the benefits of Canberra being the nation's capital city is that is home to world-leading research institutions that undertake a wide array of nature-related research. These research

³²⁷ SEE-Change, *Submission 50*, p. [3]. See: BiophilicCities, <http://biophiliccities.org/>, viewed 11 February 2020.

³²⁸ Ms Poppy McRae, Committee Chair, ACT Young Planners Division, Planning Institute of Australia, *Transcript of Evidence*, 8 May 2019, p. 158.

³²⁹ Ms Poppy McRae, Committee Chair, ACT Young Planners Division, Planning Institute of Australia, *Transcript of Evidence*, 8 May 2019, p. 158.

³³⁰ SEE-Change, *Submission 50*, p. [3].

institutes include the ANU's Fenner School of Environment and Society, the University of Canberra and CSIRO.

- 6.23 Nevertheless, the Committee heard calls for more research to improve environmental management in the ACT.
- 6.24 Different areas of research were suggested by individuals and organisations. Canberra Ornithologists Group, for example, stated the need for 'comprehensive, scientific evidence' to underpin the ACT Government's planning and environmental conservation policies.³³¹ Ginninderra Falls Association argued for continuing research on ecology of local wildlife, especially endangered and vulnerable species.³³² CSIRO identified the need for more collaboration between ecologists and health scientists to disentangle the causal mechanisms involved in the health-benefits of nature and achieve real progress in designing health-promoting green infrastructure.³³³ Other suggestions included for the ACT Government to commission the CSIRO to map Canberra's native and migratory, in addition to feral, animal species and use the map as 'basis for effecting connectivity across Canberra and the ACT as well as reducing the impact of feral species.'³³⁴
- 6.25 The Committee also heard suggestions for the ACT Government to enhance research partnerships as a strategy to strengthen environmental management and practice in the ACT.
- 6.26 Partnerships between governments and research institutions through innovative platforms, as the Committee was told, can fill in the gaps that exist between research and public policy.³³⁵ Professor Norman (University of Canberra) mentioned CURF as one example of such partnerships and elaborated,
- Investing more in those innovative platforms that provide a bridge between that research and public policy is quite cutting edge to do that globally now, and they are doing it in the cities. The City of Melbourne has a really good partnership with RMIT and with Melbourne university on this sort of thing. You will find the same in Sydney. We would like to see more of that here in Canberra. We have this fantastic opportunity in Canberra with local universities, and we need to make that bridge stronger and invest in those platforms. That is a very self-serving comment, but that would be good to see with a lot of benefits to be gained.³³⁶

³³¹ Canberra Ornithologists Group, *Submission 25*, p. 1.

³³² Ginninderra Falls Association, *Submission 11*, p. [3].

³³³ CSIRO, *Submission 31*, p. 5.

³³⁴ Marianne Albury-Colless, *Submission 54*, p. 5.

³³⁵ Professor Barbara Norman, Chair, Urban and Regional Planning, and Director, Canberra Urban and Regional Futures, University of Canberra, *Transcript of Evidence*, 5 May 2019, pp. 107-108.

³³⁶ Professor Barbara Norman, Chair, Urban and Regional Planning, and Director, Canberra Urban and Regional Futures, University of Canberra, *Transcript of Evidence*, 5 May 2019, pp. 107-108.

- 6.27 The Committee was informed about the ACT Scientific Committee and its strategic role it plays. Marianne Albury-Colless argued:

It would be advisable to strengthen the position and powers of the ACT Scientific Committee particularly in view of the issue that NCA board is comprised of business leaders. A healthy natural urban environment can only be achieved if the surrounding environment is conserved and protected. What seems to be lacking is a plan that integrates these actions across the Territory and that includes urban areas within its remit. The ACT Scientific Committee appears well positioned to coordinate such a comprehensive plan, to commission relevant research, to engage effectively with the community and develop appropriate education programs. Resourcing should be made available to enable the Committee to undertake these activities. Further, the Committee should have the necessary influence in land planning and management decisions and strong powers to veto commercial & residential activities that have undue impact on connectivity, threatened species and ecological communities in the ACT.³³⁷

- 6.28 When the Committee inquired about further opportunities for collaboration between research bodies and government, the Committee was told by a representative from EPSDD about existing partnerships between the ACT Government and research institutions. These partnerships include Mulligan Flat partnerships between Woodlands and Wetlands Trust, the ANU and the ACT Government (EPSDD); a partnership between different agencies of the ACT Government (EPSDD and TCSS) and University of Canberra; and an initiative to develop and implement a science plan which has commenced through the work of conservation research groups and will end with collaborations between the ANU and University of Canberra.³³⁸

- 6.29 The Committee was also informed of the benefits of working in partnerships. According to an EPSDD representative:

In other jurisdictions the return on investment ranges from \$1 investment to \$7 return, so there is a very good value proposition around working with partners. As I said, there are a whole range of additional benefits, including staff exchanges and new staff coming in with particular ecological or conservation-based skills.³³⁹

- 6.30 Other ideas that the Committee heard including a recommendation to work with Greening Australia for city enhancement and conservation in reserves.³⁴⁰

³³⁷ Marianne Albury-Colless, *Submission 54*, p. 6.

³³⁸ Mr Ian Walker, Executive Group Manager, Environment and Heritage, EPSDD, *Proof Transcript of Evidence*, 29 May 2019, pp. 205-206.

³³⁹ Mr Ian Walker, Executive Group Manager, Environment and Heritage, EPSDD, *Proof Transcript of Evidence*, 29 May 2019, pp. 205-206.

³⁴⁰ Michael Sim, *Submission 24*, pp. 4-5.

COMMITTEE COMMENT

6.31 The Committee is encourages to learn about opportunities available in the ACT for further collaboration between government and research and education institutions. The ACT Government should consider these opportunities.

Recommendation 40

6.32 The Committee recommends that the ACT Government further strengthen the relationship and knowledge exchange between it and local universities and research institutions through increased research partnerships.

7 FLORA AND FAUNA

- 7.1 This chapter explores the effects of urbanisation on flora and fauna within the natural environment of Canberra.

FLORA IN THE TERRITORY

GRASSLANDS

- 7.2 The 2009 *Report on ACT Lowland Native Grassland Investigation* commented on the ACT's strong position to advance the protection of lowland native grassland, with reference in particular to the Natural Temperate Grassland communities and the species they support. This was largely due to protection offered by Urban Parks and Recreation zones under the *Territory Plan 2008*. At this time of writing, approximately 835 hectares of lowland native grasslands were located in a reserve, equating to just under 40% of the total amount.³⁴¹
- 7.3 Despite this, the 2009 report also found that the location of grassland presented land management challenges due to the limited connectivity between sites. The development of land presented further challenges as much of Canberra's development occurred on lands that were previously lowland native grassland.³⁴²
- 7.4 These findings are further supported by the evidence received by the Committee during this inquiry over ten years later. A submission made by the Friends of Grasslands (FOG) stated that 'it is an ongoing battle to protect these areas from future development and have available resources to maintain and improve their condition'.³⁴³
- 7.5 Many submissions highlighted concerns regarding the need for better management of the interface between the natural environment and urban areas³⁴⁴, with some referencing inadequate edge buffers.³⁴⁵ This issue was discussed in Chapter 3.
- 7.6 In their submission to the Committee, the National Parks Association of the ACT (NPA ACT) stated that the ACT is home to 'the best grassy woodlands surviving in south-eastern Australia', but 'the majority are threatened by the effects of existing suburbs and the

³⁴¹ M Cooper, *Report on the ACT Lowland Native Grassland Investigation*, 12 March 2009, p. v.

³⁴² M Cooper, *Report on the ACT Lowland Native Grassland Investigation*, 12 March 2009, p. v.

³⁴³ Friends of Grasslands, *Submission 29*, p. 1.

³⁴⁴ Molonglo Catchment Group, *Submission 15*, p. 3.

³⁴⁵ Canberra Ornithologists Group, *Submission 25*, p. 2.

encroachment of new suburbs'.³⁴⁶ The NPA ACT provided examples of this, such as the new suburbs bordering on the Molonglo river corridor and the Ginninderry development.³⁴⁷

7.7 Similarly, in their submission to the Committee, the Ginninderra Catchment Group (GCG) stated that '[g]rassland restoration is another key area requiring further work, as natural temperate grasslands are the most endangered ecological community in Australia'.³⁴⁸ The GCG are currently leading grassland restoration programs in off-reserve areas of the ACT.

7.8 The role of community engagement was also prevalent within submissions and was discussed in Chapter 5. The GCG described how engagement with community organisations would provide the most cost-effective methods to improve and maintain natural areas.³⁴⁹ This was supported by FOG, who stated that community involvement is applauded, though not well understood.³⁵⁰ In 2017, the group contributed 7,800 hours of voluntary service, valued at over \$300,000.³⁵¹ Their submission lists community engagement as central to retaining and improving the value of the natural environment in urban ACT.³⁵²

NORTH MITCHELL GRASSLANDS

7.9 The North Mitchell Grasslands are located in Franklin, ACT. The grasslands are a Natural Temperate Grassland, home to a number of threatened species such as the golden sun moth and the striped legless lizard. The grasslands are also listed within the ACT Grassland Strategy.³⁵³

7.10 The need for increased community engagement for effective conservation was a prevalent theme across much of the evidence.³⁵⁴ In relation to the North Mitchell Grasslands specifically, this theme was echoed by the Friends of Grasslands. In their written submission to the Committee, FOG stated that:

In recent years much has been learnt about grassland and woodland conservation and restoration and community engagement in same.

FOG has taken this on board by working with Ginninderra Catchment Group and others to devise a strategy that would facilitate the realignment of the North Mitchell

³⁴⁶ National Parks Association of the ACT, *Submission 34*, p. 3.

³⁴⁷ National Parks Association of the ACT, *Submission 34*, p. 3.

³⁴⁸ Ginninderra Catchment Group, *Submission 58*, p. [3].

³⁴⁹ Ginninderra Catchment Group, *Submission 58*, p. [3].

³⁵⁰ Friends of Grasslands, *Submission 29*, p. 5.

³⁵¹ Friends of Grasslands, *Submission 29*, p. 5.

³⁵² Friends of Grasslands, *Submission 29*, p. 2.

³⁵³ ACT Government, *Native Grassland Conservation Strategy and Action Plans*, 2007, p. 19.

³⁵⁴ The Lyneham Commons, *Submission 47*, p. 2.; Canberra Urban and Regional Futures, *Submission 6*, p. 2.; Fenner School of Environment and Society, *Submission 12*; Woodlands and Wetlands Trust, *Submission 18*; Field Naturalists Association of Canberra, *Submission 38*, p. 2.; Tuggeranong Community Council, *Submission 46*, p. [5].

Grassland Reserve as a place for conservation, education and recreation, and one that incorporates recognition of our Indigenous people.³⁵⁵

- 7.11 In response to a question from the Committee regarding how the North Mitchell Grassland reserve serves as a good example of environment protection in urban areas, and how this could be better realised and made accessible to the community, Mr Robertson, President of FOG, stated that:

Longer term we would propose some sort of design of the whole thing, with marked pathways. Initially you would not get huge numbers, but in time if you did you might have to upgrade some of those sorts of things.

...we have got lots of different ideas for increasing the biodiversity— getting more insect activity, small bird activity into there—but you can also have some passive play equipment for children, possibly barbecues, demonstration gardens about traditional plants that were used by Aboriginal people and things we call seed orchards, all with the aim of educating people about our biodiversity.³⁵⁶

- 7.12 The Committee inquired as to what could be introduced into the North Mitchell Grassland reserves to increase activity, for example, by introducing more species. Mr Robertson stated that:

...we would have to proceed with some care...you would want to make sure that you did not destroy any plant communities or threatened species of animals.

...we could introduce a lot more plants. I have got some radical ideas about throwing kangaroo carcasses in there, for example, to encourage birds and the breakdown of those animals, which will include a lot more biota, maybe introducing some soils with a rich mix of biota. There are a whole lot of ideas, all of which have been tried elsewhere.

³⁵⁷

COMMITTEE COMMENT

- 7.13 The Committee values the work of volunteers in the ACT and supports their implementation of grassland restoration programs.
- 7.14 The Committee recognises that to increase biodiversity in grassland areas, more work will need to be done to educate the wider community to improve areas of natural value, whilst also ensuring that grasslands are easily accessible, such as the North Mitchell Grassland reserve.

³⁵⁵ Friends of Grasslands, *Submission 29*, p. 6.

³⁵⁶ Mr Geoffrey Robertson, President, Friends of Grasslands, *Transcript of Evidence*, 10 April 2019, p. 68.

³⁵⁷ Mr Geoffrey Robertson, President, Friends of Grasslands, *Transcript of Evidence*, 10 April 2019, p. 68.

Recommendation 41

- 7.15 The Committee recommends that the ACT Government work with Friends of Grassland and other interested stakeholders to realise the potential of the North Mitchell Grasslands.**

Recommendation 42

- 7.16 The Committee recommends that the ACT Government more broadly consider the opportunities for improving, rather than maintaining, areas of natural value.**

MANAGEMENT OF WEEDS

- 7.17 Common weeds found across many nature reserves and areas of open space in Canberra include plants such as African lovegrass and Chilean needlegrass, which are dominant in parts of open urban spaces due to the mowing of grass.³⁵⁸ Submissions reflected wider concerns that weed management in the ACT is under resourced and often reliant on the support of voluntary work,³⁵⁹ or listed the role of economic development as an enhancement of weed propagation.³⁶⁰ Many contributors echoed the need for a greater resource allocation to prevent the spreading of weeds,³⁶¹ citing both financial resources and personnel.
- 7.18 Michael Sim, in his submission to the Committee, described how circuits of the lake are spoiled by new infrastructure, whilst some areas are overrun by blackberries, grasses and weeds. He concluded that ‘the amenity and enjoyment would be improved by increasing maintenance’³⁶² and recommended to the Committee to increase resources for weed management.³⁶³
- 7.19 Helen Oakey, Executive Director of the Conservation Council, informed the Committee about the link between mowing and the spreading of weeds:

Where we see the opportunity is where there are green spaces that are literally just being mown and nothing else is being done with them...Interestingly, mowing is expensive but mowing also can spread weeds. It does not necessarily get used for anything. The ground can get very hard so that the surfaces are not permeable to water, so we get those run-off issues. If we have a more natural environment in some of those spaces, we are building biodiversity, offering a different kind of experience and probably improving the water permeability of some of the soil under the trees and under the vegetation.³⁶⁴

³⁵⁸ Fenner School of Environment and Society, *Submission 12*, p. [3].

³⁵⁹ Molonglo Catchment Group, *Submission 15*, p. 3.

³⁶⁰ Geoff Pryor, *Submission 20*, p.5.

³⁶¹ Canberra Ornithologists Group, *Submission 25*, p.2.

³⁶² Michael Sim, *Submission 24*, p. 2.

³⁶³ Michael Sim, *Submission 24*, p. 8.

³⁶⁴ Ms Helen Oakey, Executive Director, Conservation Council (ACT Region), *Transcript of Evidence*, 22 May 2019, p. 182.

7.20 In their submission to the Committee, the Fenner School of Environment and Society identified several indicators that Canberra’s urban open space is currently not managed sustainably. They stated that:

Mowing alone is approximately \$9 million per annum and yet the mowing regime in urban open space promotes African lovegrass (a Weed of National Significance) and Chilean needlegrass (a Declared Pest).³⁶⁵

7.21 Reiterating the issues relating to African lovegrass, the Ginninderra Falls Association stated in their submission to the Committee that adequate funding in the past may have helped to maintain nature parks and control weeds such as the African lovegrass.

Control of weeds and nature park maintenance should be adequately funded. African Lovegrass might have been controlled before it became established. Now, it will be difficult to stop it from invading the nature parks.³⁶⁶

7.22 The issues of funding and education are emphasised by the Molonglo Catchment Group as important for managing the interface between the natural environment and urban areas, particularly in regard to conserved environmental areas. The Group stated that:

MCG member groups advocate strongly for improved education of ACT residents with regard to weeds. Suburban gardens are a source of weeds which encroach on nearby urban reserves. Education campaigns such as the former Floriade Bush Friendly Garden and ‘Weed-Swap’ events have seemingly been abandoned by the ACT Government. There are insufficient funds in community grants to run these events without government support. Nor should the onus be placed entirely on volunteer community groups to undertake education required to protect the biodiversity within Government managed land.³⁶⁷

7.23 In their submission to the Committee, the Woodlands and Wetlands Trust emphasised the benefits of their current practices for the protection, management and enhancement of existing natural resources, which includes the substantial removal and ongoing management of weeds across the Jerrabomberra Wetlands component of the Trust’s Reserves.³⁶⁸

7.24 When asked by the Committee about specific initiatives that should be implemented to preserve native species and manage weeds better, Mrs Robyn Coghlan, Secretary of Friends of Hawker Village, stated that:

³⁶⁵ Fenner School of Environment and Society, *Submission 12*, p. [3].

³⁶⁶ Ginninderra Falls Association, *Submission 11*, p. [4].

³⁶⁷ Molonglo Catchment Group, *Submission 15*, pp. 3-4.

³⁶⁸ Woodlands and Wetlands Trust, *Submission 18*, p. [5].

...there is the education of the community. And providing the space to have the suitable species is the important thing. Also these days the cost of water is a major inhibitor in terms of people even considering grass, for instance.³⁶⁹

- 7.25 In their submission to the Committee, the Ginninderra Falls Association also provided suggestions to improve weed management in the community, citing education and funding as key factors for improvement:

Residents should be discouraged from growing plants which are a known weed problem and encouraged to remove them.

New ways to educate residents and visitors about Canberra's nature reserves are needed. More visitor interpretation facilities would help but a Nature Park App might appeal more to the younger generation.

Continuing research on ecology of local wildlife, especially endangered and vulnerable species needs to be funded. This is needed to ensure that developments can be planned to minimize impacts on these species. Current developments may adversely affect the Little Eagle, Scarlet Robin, and Rosenberg's Monitor, for example, but not enough is known of their ecology to ensure their survival.³⁷⁰

- 7.26 In their submission to the Committee, the Southern ACT Catchment Group emphasised the importance of managing the interface between the natural environment and urban areas, particularly in regard to conserved environmental areas. They stated that:

The urban edge is the primary source of weed incursions that can compete with native species and reduce the value of conservation areas. They are also very costly to control, and this adds to the already unmanageable cost of control by the ACT Government. New developments can bring in new neighbours who do not always hold good environmental literacy. The planning and funding of environmental education for residents near natural areas is essential to limit impact on the natural environment near urbanised areas. If growing the ACT is inevitable, it has to be partnered with funding organisations such as community based Catchment Groups to provide this ongoing education and community building activities. Currently Canberra has a high level of environmental literacy compared to many centres, and this is well worth maintaining.³⁷¹

- 7.27 Tuggeranong Community Council expressed the importance of improved education of residents to reduce the spread of weeds. They stated that:

...with the increasing demand on our urban spaces and the constant battle to reduce the spread of weeds (which reduces the value of conservation areas), the ACT

³⁶⁹ Mrs Robyn Coghlan, President, Ginninderra Falls Association, *Transcript of Evidence*, 27 March 2019, p. 40.

³⁷⁰ Ginninderra Falls Association, *Submission 11*, p. [3].

³⁷¹ Southern ACT Catchment Group, *Submission 62*, p. [4].

government needs to employ sufficient Rangers as well as support local Catchment Groups to support local land care volunteers who work to maintain and enhance the environment. There is also a need to improve environmental education for residents, particularly those who live near natural areas, to ensure they don't impact negatively on their local environment. Local residents need to be engaged and supported and amenities well looked after.³⁷²

7.28 In their written submission to the Committee, the National Parks Association of the ACT recommended that the threats of weeds and feral animals:

...require long term management and both have suffered from budget uncertainty and variations. The NPA ACT strongly urges all political parties to support the adoption of budget baselines for the control of weeds and feral animals. These baselines should be of a quantum that allows for long term sustained management of these threats. This will provide certainty to land managers and facilitate the implementation of the relevant action plans. Contingency funds should be on hand to rapidly meet the emergence of any new weed or feral animal threats.³⁷³

7.29 In his submission to the Committee, Geoff Pryor stated that:

When one looks more clearly at the results the issue of 'nature' (eg the mountains, views of the ranges, local fauna) and 'natural environment' (eg greenery, trees in the suburb, shrubbery, weeds) may not be clear in people's minds but whatever further education may be required to help people understand this difference, it is clear nature and the environment are rated very highly.³⁷⁴

7.30 When asked by the Committee to comment on the interface between Canberra Nature Park and the reserves area, and the more urban environment, John Brannan, Coordinator, Friends of the Pinnacle, stated that:

The thing that dismays me most...is the advance of African lovegrass through just about every bit of open grassland in the ACT. Particularly where what is called TCCS land or TCCS territory adjoins a reserve, particularly anything that has any real ecological value, the current management regime is not working. The mowers come in and they just spread the African lovegrass seed around.³⁷⁵

7.31 When asked by the Committee about the practice of mowing, and how this leads to the advancement of weed spreading, Mr Brannan emphasised the importance of vehicle hygiene, as well as mowers, which move between infected and uninfected areas. He emphasised how

³⁷² Tuggeranong Community Council, *Submission 46*, p. [4].

³⁷³ National Parks Association of the ACT, *Submission 34*, p. 9.

³⁷⁴ Geoff Pryor, *Submission 20*, p. 3.

³⁷⁵ Mr John Brannan, Coordinator, Friends of the Pinnacle, *Transcript of Evidence*, 10 April 2019, p. 77.

significant resources are required to manage the issues at hand, and that it requires a 'determined strategy' to aid weed management and vehicle hygiene.³⁷⁶

COMMITTEE COMMENT

7.32 The Committee recognises that weeds present a significant problem for the health of the city's natural environment and biodiversity. The Committee is aware that practices such as mowing help to spread weeds. The Committee agrees that further education within the community about the impacts of mowing, as well as other methods to identify weeds, will reduce their spread. The Committee believes that the ACT Government should provide information and identify opportunities to reduce the spread of weeds.

Recommendation 43

7.33 The Committee recommends that the ACT Government prioritise the continued effort to remove weeds from impacted areas within the ACT.

Recommendation 44

7.34 The Committee recommends that the ACT Government provide information to the community on how to identify and respond to (known) problem weeds.

Recommendation 45

7.35 The Committee recommends that the ACT Government identify opportunities to reduce the spread of weeds as a result of current practices within the mowing regime.

FAUNA IN THE TERRITORY

CARE OF THE TERRITORY'S WILDLIFE

7.36 The care of wildlife within the ACT was raised as an important issue throughout this inquiry.

7.37 Ms Martine Franco, Executive Officer at the Southern ACT Catchment Group, described to the Committee how 'an environmentally aware and connected community reduces pressure on these natural areas and builds resilience in the landscapes around us in the city'.³⁷⁷ Ms Franco argued that 'links between the city and the bush...are really vital for wildlife'.³⁷⁸

³⁷⁶ Mr John Brannan, Coordinator, Friends of the Pinnacle, *Transcript of Evidence*, 10 April 2019, pp. 77-78.

³⁷⁷ Ms Martine Franco, Executive Officer, Southern ACT Catchment Group, *Transcript of Evidence*, 27 March 2019, p. 53.

³⁷⁸ Ms Martine Franco, Executive Officer, Southern ACT Catchment Group, *Transcript of Evidence*, 27 March 2019, p. 53.

- 7.38 The challenges posed to wildlife as a result of this link between the urban and natural environment were highlighted by Ms Lindy Butcher, a volunteer at ACT Wildlife Incorporated, who argued that native animals come into care ‘almost exclusively as a direct result of the intersection of their natural environment and our urban environment’.³⁷⁹
- 7.39 Ms Butcher raised two important issues to the Committee. The first was the need to reduce injury and damage to wildlife as a result of human and urban impact. The second issue related to the pressure that volunteers are under to maintain their current level of service to preserve and maintain wildlife.³⁸⁰
- 7.40 ACT Wildlife representatives explained how there are 40 volunteers in a 200-member base active in the organisation. In 2018, they received 9,500 calls, an increase of approximately 30 per cent on the past year. In addition to this, ACT Wildlife also accepted 1,600 animals into care, of which around half were released into the wild.³⁸¹
- 7.41 During the Committee hearing, Ms Barbara Mabbott, a volunteer on the ACT Wildlife hotline, stated that she was concerned that:
- ...the wildlife are being marginalised, affected very badly by disease, and there are not enough volunteer hours to address this problem or the landcare problem, which is also by volunteers, which degrades their habitat. We have some very serious issues there.³⁸²
- 7.42 Whilst giving evidence to the Committee, Ms Mabbott outlined why the ACT Government’s decision to not issue licenses to rehabilitate kangaroos who are injured is problematic. She described how kangaroos hit by cars ‘often stagger into the bushland carrying their injuries’ until eventually they receive a call on the helpline and ‘a ranger is sent out to shoot them...once they are hit [by a vehicle], it is a death sentence’. She also emphasised the ‘demoralising’ impact this has on volunteers at the other end of the helpline, who know that ‘a minor injury is a death sentence to a kangaroo’.³⁸³
- 7.43 It is evidential that volunteers are highly regarded by the ACT community. In their submission to the Committee, the Southern ACT Catchment Group described them as ‘an unquantified benefit to the city’ whilst also being financially beneficial to the ACT Government. The Group stated how being amongst nature and making a difference to your neighbourhood ‘is part of the ‘bush capital’ experience’.³⁸⁴

³⁷⁹ Ms Lindy Butcher, Volunteer, ACT Wildlife Incorporated, *Transcript of Evidence*, 22 May 2019, p. 168.

³⁸⁰ Ms Lindy Butcher, Volunteer, ACT Wildlife Incorporated, *Transcript of Evidence*, 22 May 2019, p. 169.

³⁸¹ Ms Lindy Butcher, Volunteer, ACT Wildlife Incorporated, *Transcript of Evidence*, 22 May 2019, p. 168.

³⁸² Ms Barbara Mabbott, Volunteer, ACT Wildlife Incorporated, *Transcript of Evidence*, 13 March 2019, p.3.

³⁸³ Ms Barbara Mabbott, Volunteer, ACT Wildlife Incorporated, *Transcript of Evidence*, 13 March 2019, p. 12.

³⁸⁴ Southern ACT Catchment Group, *Submission 62*, p. [4].

- 7.44 The Committee inquired about the types of government measures that could be introduced to help reduce the numbers or declining or threatened species. Mr John Brannon, coordinator at Friends of the Pinnacle, argued for better resourcing of ACT Government Parks and Conservation Service rangers. Mr Brannon emphasised the benefit of ‘a group or arm of government set up specifically to deal with wildlife management’.³⁸⁵
- 7.45 As well as the role of volunteers, attention was also drawn by witnesses to the reliance on local vets, who are not paid for their services to wildlife. Ms Lindy Butcher stated that they are ‘so generous with their time and their expertise and they do not charge us’.³⁸⁶ To ease the burden on local vets, she argued that access to a funded wildlife veterinary centre would be beneficial.³⁸⁷
- 7.46 Ms Barbara Mabbott discussed this topic further and highlighted that due to the ‘very specialised’ nature of this work, volunteers may be better informed about wildlife care than vets.³⁸⁸ She stated that whilst ‘there are some fantastic vets’ there are also ‘vets who are running a business...wildlife comes in and it gets relegated to low priority’ and may be euthanised.³⁸⁹
- 7.47 On the topic of euthanasia, Mr Martin Lind argued that vets ‘have to, under the Animal Welfare Act, relieve pain and suffering’. He stated that this is often the ‘most cost-effective and effective method of relieving the pain and suffering’.³⁹⁰
- 7.48 Mr Lind described additional causes of animals coming into care:
- In 2018 we had the worst incidence of vehicle versus wildlife accidents in Australia. The other things that we see that are as a direct result of urban-nature interface, interactions, are poisoning events in animals, in particular possums. There is the use of poisons. It is usually rat bait. The worst ones are the long-acting rat baits. They can not only kill rats but can also make their way up through the food chain because they hang around in animals for longer.³⁹¹
- 7.49 Mr Lind also discussed the issue of habitat loss, as when ‘new suburbs are being developed the removal of old growth eucalypts, yellow box/red gum woodland, generally means that things come into care through being orphaned. When large trees are being removed from suburban infill and developments, as that habitat is removed around the region, orphaned animals, birds and possums in particular, come into care’.³⁹²

³⁸⁵ Mr John Brannon, Coordinator, Friends of the Pinnacle, *Transcript of Evidence*, 10 April 2019, p. 75.

³⁸⁶ Ms Lindy Butcher, Volunteer, ACT Wildlife Incorporated, *Transcript of Evidence*, 22 May 2019, p. 174.

³⁸⁷ Ms Lindy Butcher, Volunteer, ACT Wildlife Incorporated, *Transcript of Evidence*, 22 May 2019, p. 174.

³⁸⁸ Ms Barbara Mabbott, Volunteer, ACT Wildlife Incorporated, *Transcript of Evidence*, 22 May 2019, p. 175.

³⁸⁹ Ms Barbara Mabbott, Volunteer, ACT Wildlife Incorporated, *Transcript of Evidence*, 22 May 2019, p. 174.

³⁹⁰ Mr Martin Lind, Vice-President, ACT Wildlife Incorporated, *Transcript of Evidence*, 22 May 2019, p. 175.

³⁹¹ Mr Martin Lind, Vice-President, ACT Wildlife Incorporated, *Transcript of Evidence*, 22 May 2019, p. 172.

³⁹² Mr Martin Lind, Vice-President, ACT Wildlife Incorporated, *Transcript of Evidence*, 22 May 2019, p. 172.

NETTING

7.50 The use of poor quality fine-grade fruit tree netting has been noted as a significant threat to bats in the ACT, such as the free grey-headed flying fox bat, a vulnerable species with declining numbers. Netting is used to protect fruit on trees, but it can be dangerous to bats and other wildlife who get caught in the netting. Currently the ACT government has no regulations on tree netting.³⁹³

7.51 During the Committee hearing, Ms Barbara Mabbott, ACT resident and ACT Wildlife volunteer, explained her concerns for the use of cheap ill-fitting netting and the damage this can do to wildlife, volunteers and rangers alike. She stated:

I have become very concerned about the suffering of our local animals, also of the volunteers and probably of the rangers. Probably some of them are suffering from PTSD...

We get calls every day to the hotline, and lots of them. Examples of what we get calls about are bats being caught in the cheap fruit tree netting, which is simply moving the problem along to vets and local carers who work for free to rehabilitate them if they survive or to euthanise them if they are too wounded. They get holes in their wings from struggling with the netting. It does not take very long at all. These nets cost \$10, instead of what it costs to net a tree properly, which is about \$100. Bunnings sell it; it is just too easy. It is too tempting. But the costs to society are huge—losing the pollinators.³⁹⁴

7.52 The Committee enquired about the use of such netting, and how to better educate others in the correct type of netting. In response, Ms Mabbott argued that:

The biggest problem is that most people shop at Bunnings and Bunnings supply the loose netting at a cheap price. Really it is getting to people like Bunnings and getting them to pull them off the shelves and put something that I think is \$30 there, versus \$10. It is availability. People are time starved... Beyond education, it is what happens when you go into the store to buy it and you are pressed for time and you have only got that one choice, which is the \$10 net. If you can put a finger through it, it is no good.³⁹⁵

7.53 In support of these comments, Ms Heather Peachey, also an ACT resident and ACT Wildlife volunteer, told the Committee:

³⁹³ C Morgan, "Pure Torture": Tree netting hurts our most vulnerable animals', *Canberra Times*, 7 March 2019. <https://www.canberratimes.com.au/story/5993586/pure-torture-tree-netting-hurts-our-most-vulnerable-animals/>, viewed 11 February 2020.

³⁹⁴ Ms Barbara Mabbott, *Transcript of Evidence*, 13 March 2019, p. 12.

³⁹⁵ Ms Barbara Mabbott, Volunteer, ACT Wildlife Incorporated, *Transcript of Evidence*, 22 May 2019, p. 174.

I have spoken to the Belconnen Bunnings store, in light of the bat nets, and they have to go to head office to make any of those changes. But if we had backing from you, that would certainly help. This particular store is willing to help us to purchase these through them wholesale and then sell it via us, which we can do via our Facebook page, where we can educate people through that means.³⁹⁶

WOMBAT MANGE

7.54 This issue of wombat mange was prevalent in much of the evidence received by the Committee. The ACT Wildlife website provides information about mange, a skin infection caused by parasitic mites that burrow into the skin. In humans, it is known as scabies. Mange can result in hair loss, skin scratching, skin crusting and thickening, weight loss, skin discolouration, open wounds, and death in extreme cases. Mange is mainly found in wombats, but it can also spread to other native animals.³⁹⁷

7.55 The Committee asked about wombat mange, which was described by a volunteer at ACT Wildlife Incorporated, Ms Lindy Butcher:

Mange is a huge problem in the wombat population all around the country. It is a parasite...It is an appalling disease and it is almost always fatal, assuming the animal is not hit by a car, because it is weak, before it dies of mange. It is a huge source of suffering. There is no animal with mange that is not suffering, no matter how mild the mange is.³⁹⁸

7.56 In a submission to an ongoing Senate inquiry into Australia's faunal extinction crisis, Wombat Rescue Tasmania attached the 2018 *National Report: Australia's Response to Sarcoptic Mange in Wombats*.³⁹⁹ That report included the following quote from the EPSDD on wombat mange in the Territory:

EPSDD considers mange in wombats to be an animal welfare issue. It is also a potential conservation issue given that mange is known to have caused localised declines in other jurisdictions, but there is currently no evidence or perception of a threat to population levels in the ACT. Whether mange is a long-term threat to the species is unknown without data.⁴⁰⁰

³⁹⁶ Ms Heather Peachey, Volunteer, ACT Wildlife Incorporated, *Transcript of Evidence*, 22 May 2019, p. 174.

³⁹⁷ ACT Wildlife, 'Wombat Mange Program', accessed 23 January 2020. <<http://actwildlife.net/wombat-mange-information.html>>

³⁹⁸ Ms Lindy Butcher, Volunteer, ACT Wildlife Incorporated, *Transcript of Evidence*, 22 May 2019, p. 175.

³⁹⁹ See: Senate Standing Committee on Environment and Communications, 'Inquiry into Australia's faunal extinction crisis', https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Environment_and_Communications/Faunalexinction, viewed 31 January 2020.

⁴⁰⁰ Senate Standing Committee on Environment and Communications, 'Inquiry into Australia's faunal extinction crisis', Wombat Rescue Tasmania, *Submission 413*, attachment 2, *National Report: Australia's Response to Sarcoptic Mange in Wombats*, p. 6. Available at: https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Environment_and_Communications/Faunalexinction/Submissions, viewed 31 January 2020.

7.57 Within this report, the common wombat is listed as a protected species in the ACT, but not endangered.⁴⁰¹

7.58 The lack of historical data and current resources to monitor the number of wombats infected with mange are reflected in Ms Barbara Mabbott's submission to the Committee. As an ACT resident and volunteer with ACT Wildlife (ACTW) on the Wombat Mange program and Phone Hotline, Ms Mabbott described the problem as 'an epidemic'.⁴⁰²

The mange mite is infecting populations of stressed wombats across south including the ACT...

...ACT rangers reported euthanizing only 17 wombats last year...the ACTW logs show 20 manged wombats reported to the Hotline in the last 2 months. *Sleepy Burrows Wombat Sanctuary*...reported putting down 25, across all ages, in just one week.⁴⁰³

7.59 The Committee inquired about the extent of the mange situation in the ACT. Ms Butcher stated that an audit would be required to fully gauge 'how big the problem is'.⁴⁰⁴

7.60 This sentiment is echoed in Ms Mabbott's submission to the Committee regarding the declining numbers of the wombat population:

It's an epidemic. The University of Tasmania reports a 94% decrease in wombat populations in one national park over a 7 year period. And we can assume there, habitats are quite good. We may be experiencing similar declines in the ACT- but who's counting?⁴⁰⁵

7.61 Ongoing funding was raised as an essential factor in containing the spread of mange in the wombat population. Ms Mabbott stated in her submission that:

Last year, the ACT Government contributed \$20,000 dollars to our first wombat mange trial in this state. The treatment is a dose of sheep dip, re-dispensed over a few months.

The volunteer mange treatment program is now over and was deemed to work – short term. Wombats will simply re-infect each other, unless funding is allocated for on-going and widespread programs.⁴⁰⁶

7.62 During the Committee hearing, Ms Butcher stated that:

⁴⁰¹ Senate Standing Committee on Environment and Communications, 'Inquiry into Australia's faunal extinction crisis', Wombat Rescue Tasmania, *Submission 413*, attachment 2, *National Report: Australia's Response to Sarcoptic Mange in Wombats*, p. 5. Available at: https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Environment_and_Communications/Faunalextingtion/Submissions, viewed 31 January 2020.

⁴⁰² Ms Barbara Mabbott, *Submission 69*, pp. 3-4.

⁴⁰³ Ms Barbara Mabbott, *Submission 69*, pp. 3-4.

⁴⁰⁴ Ms Lindy Butcher, Volunteer, ACT Wildlife Incorporated, *Transcript of Evidence*, 22 May 2019, p. 168.

⁴⁰⁵ Ms Barbara Mabbott, *Submission 69*, pp. 3-4.

⁴⁰⁶ Ms Barbara Mabbott, *Submission 69*, pp. 3-4.

We are really appreciative of the financial support we already receive from the ACT government, including grants to test the suitability of Cydectin as a treatment for mange in wombats; money to cover the short-term employment of an administrative assistant; a building at Jerrabomberra Wetlands free of charge; and a small amount of annual funding to offset the cost of running a 24-hour wildlife phone service.⁴⁰⁷

CAT CONTAINMENT

7.63 The EPSDD website reports that in May 2011 the ACT Government collaborated with Invasive Animals Cooperative Research Centre, the Australian National University and RSPCA, to develop a survey to seek views on cat containment. 1277 ACT residents, including 506 cat owners were questioned. The survey found strong support for government measures to introduce cat containment in the ACT.⁴⁰⁸ The ACT Government, has since, introduced cat containment to newer suburbs throughout the city with a review to expand this in the future.⁴⁰⁹

7.64 Written and verbal evidence from the inquiry illustrates that there is still support for the continuation and expansion of cat containment in the Territory. In her opening statement to the Committee, Ms Helen Oakey, Executive Director of the Conservation Council (ACT Region), supported the idea of cat containment areas. She stated that:

I would specifically like to mention the issue of cats and cat containment, something that we have been working on for many years. As you are probably aware, the government has released its cat plan, which is out for consultation. We are very much hoping that this will deliver a strong policy outcome, making the whole of Canberra a cat containment area by 2025. In terms of policy, plan first for the environment. We need to think about funding for the environment and continuing with community engagement and education.⁴¹⁰

7.65 In his submission to the Committee, Canberran resident Kevin McCue described his support for the policy:

We shouldn't allow people to keep destructive feral pets such as cats that kill or maim thousands of native animals, skinks, birds, butterflies and other insects. All suburbs should be declared cat containment only, all cats should be registered and desexed.⁴¹¹

⁴⁰⁷ Ms Lindy Butcher, Volunteer, ACT Wildlife Incorporated, *Transcript of Evidence*, 22 May 2019, p. 12.

⁴⁰⁸ ACT Government, Environment, Planning and Sustainable Development Directorate - Environment https://www.environment.act.gov.au/cpr/conservation-research/cat_containment

⁴⁰⁹ TCCS, 'Cat Containment', <https://www.cityservices.act.gov.au/pets-and-wildlife/domestic-animals/cats/cat-containment>, viewed 31 January 2020.

⁴¹⁰ Ms Helen Oakey, Executive Director, Conservation Council (ACT Region), *Transcript of Evidence*, 22 May 2019, pp. 180-181.

⁴¹¹ Kevin McCue, *Submission 5*.

7.66 The concern for wildlife was also presented in the written submission from the Fenner School of Environment and Society, who noted that:

Domestic cats contribute to the loss of urban fauna (domestic cats kill 167,000 birds per day in Australia).⁴¹²

7.67 Similarly, in their submission to the Committee, Friends of Aranda Bushland recommended that cat-free suburbs should be the norm in new developments. In older suburbs, a cat containment policy should be phased in.⁴¹³

7.68 Two members of the ACT Wildlife Incorporated, Ms Butcher (volunteer) and Mr Lind (Vice-President) discussed the consequences of uncontained cats.

Ms Butcher: The birds that come into care, predominantly birds but also possums and lizards, have obviously met the cat outside. Having cats that are inside or in caged areas or runs and things like that would prevent that happening. It is the biggest cause of injuries, and the animals frequently do not survive the injuries because of the bacteria in cats and dogs now. Cats in particular are hardwired to catch things that move. We need to have more advice about that for people who own cats, to keep them contained where they cannot get out and in with the wildlife.

Mr Lind: About 30 per cent of birds coming into care are as a direct result of an attack by a domestic animal. We have not separated cats from dogs in those statistics, but it is 30 per cent. As Lindy has alluded to, cat attack is particularly nasty because if it is not treated very, very quickly death is almost certain.⁴¹⁴

7.69 In her opening statement to the Committee, Ms Oakley discussed the benefits of cat containment in new greenfield developments adjacent to nature reserves:

There are the urban edge impacts, people, domestic animals, bushfire mitigation and planning for bushfire, things like that...We know that cats go, for example, up to a kilometre into nature reserves if they are not contained. Putting those cat containment zones in those new areas has been great and a real improvement.⁴¹⁵

7.70 In their submission to the Committee, the Canberra Ornithologists Group emphasised the measures they would like to see as part of a holistic approach to maximise biodiversity outcomes, emphasising how they would like to see:

...cat containment extended more broadly across Canberra in a phased manner, more resources allocated to domestic animals monitoring and enforcement in reserve areas

⁴¹² Fenner School of Environment and Society, *Submission 12*, p. [4].

⁴¹³ Friends of Aranda Bushland, *Submission 28*.

⁴¹⁴ Ms Lindy Butcher, Volunteer, ACT Wildlife Incorporated and Mr Martin Lind, Vice-President, ACT Wildlife Incorporated, *Transcript of Evidence*, 22 May 2019, p. 174.

⁴¹⁵ Ms Helen Oakey, Executive Director, Conservation Council (ACT Region), *Transcript of Evidence*, 22 May 2019, p. 183.

and suburbs abutting reserves (e.g. dogs) ...These measures... are likely to provide more enduring benefits for biodiversity across the city.⁴¹⁶

- 7.71 The requirement to effectively manage the interface between urban and natural environment with cat containment areas to increase biodiversity is further supported by Friends of Hawker Village. They stated in their submission to the Committee that:

The Kama Nature Reserve is separated from the Canberra Nature Park by William Hovell Drive, a major road of two carriageways. On its east, however, residential development is proposed. It is imperative that adequate controls be put in place to manage the interface between the urban area and the reserve, such as an adequate buffer zone, pet containment and education about undesirable plant species.⁴¹⁷

- 7.72 Similarly, the National Parks Association of the ACT stated in their written submission to the Committee that:

Unrestricted outside access for cats has the potential for significant impact on small animals and invertebrates. The NPA ACT strongly supports the introduction of cat containment throughout the ACT's suburbs. Cat containment has been shown to have a benefit for the natural environment and for the cats themselves, with contained cats tending to live longer and healthier lives.⁴¹⁸

COMMITTEE COMMENT

- 7.73 Wildlife rescuers are integral to the survival of many animals in the ACT. They donate their time, knowledge, and experience to care for injured animals. It is imperative that the ACT Government taps into this knowledge and harnesses it to help reduce the numbers of injured animals.
- 7.74 The Committee acknowledges that poor-quality fruit tree netting damages biodiversity and causes significant harm to bats. The Committee agrees that the ACT Government should address this issue by introducing netting standards and supporting volunteer led education programs that address this issue.
- 7.75 The Committee recognises that with regards to wombat mange, there are currently no mechanisms to monitor the severity of the disease. The Committee sees the value of the ACT Government exercising judgement in how to effectively and continually monitor cases of wombat mange in the ACT to bring about improvements. Such information could prove valuable for reducing the number of infected animals in the future.

⁴¹⁶ Canberra Ornithologists Group, *Submission 25*, p. 2.

⁴¹⁷ Friends of Hawker Village, *Submission 33*, p. [5].

⁴¹⁸ National Parks Association of the ACT, *Submission 34*, p. 8.

7.76 The Committee recognises the benefit of the cat containment policy, which has aided the preservation of wildlife and encouraged biodiversity. There is strong community support for this policy, and it should continue.

Recommendation 46

7.77 The Committee recommends that the ACT Government work with wildlife rescuers and carers to reduce the number of injured animals needing care as well as support those animals that do need care.

Recommendation 47

7.78 The Committee recommends that the ACT Government improve the use of fine-grade fruit tree netting in the ACT.

Recommendation 48

7.79 The Committee recommends that the ACT Government consider undertaking further programs aimed at combatting wombat mange.

Recommendation 49

7.80 The Committee recommends that the ACT Government continue to implement cat containment across the ACT.

BEES

7.81 Submissions from relevant witnesses emphasised the problems concerning the use of neonicotinoids in the ACT, which can be damaging to the bee population.⁴¹⁹ ACT for Bees has called on the ACT Government within their written and oral submissions to create Australia's first 'bee friendly' State/Territory, taking action to protect bees from threats such as pesticides to deliver economic, social and ecological benefits to the ACT.⁴²⁰

7.82 In their submission to the Committee, the ACT for Bees recommended that:

Firstly, the Government needs to take steps to protect bees by reducing exposure to pesticides and herbicides that are toxic to bees...

⁴¹⁹ ACT for Bees, *Submission 56*, p. 3.

⁴²⁰ ACT for Bees, *Submission 56*, p. 3.

Secondly, Government action is required to foster the survival of bees by ensuring action is taken to facilitate adequate sources of food are available to bees through all seasons.⁴²¹

7.83 In their submission to the Committee, the ACT for Bees listed a number of threats to bees in the ACT, 'varying from a reduction in forage plants in new land releases due to recent smaller block size trends to the proliferation of European wasps in the ACT region (which predate on bees and their larvae).'⁴²² They also called on the ACT Government to reduce or eliminate the 'use of neonicotinoids in the ACT, in line with recent actions taken in Europe and Canada.'⁴²³

7.84 ACT for Bees also recommended in their submission that:

The Chief Minister writes to the Australian Pesticides and Veterinary Medicines Authority (APVMA) requesting a review of pesticides containing neonicotinoids in light of the outcomes of the recent US Federal Court case and findings of Canada's Pest Management Regulatory Agency as well as the latest studies on the ecological impacts of neonicotinoid containing pesticides and the actions taken by Canada and the EU to prohibit their external use.⁴²⁴

7.85 The Committee inquired about pesticides and chemicals used within the ACT. Ms Julie Armstrong, Founder of ACT for Bees, stated the importance of educating people about the impact of pesticides:

...the ACT government a number of years ago took out the treatment of most of the ovals in Canberra that were treated with neonicotinoid pesticides and replaced them with a pesticide that was an alternative and less toxic.

... Bunnings are going to take neonics out of their plants by 2020. But many of the nurseries still do not know what we are talking about. The education is so crucial, and minute amounts of these pesticides really affect not only bees but also the water, the soil and other wildlife.⁴²⁵

7.86 When asked by the Committee whether any further pesticides should be considered for removal, Ms Armstrong agreed:

...there is one that is particularly toxic and it is not seen as a neonicotinoid. With the neonicotinoids, there is imidacloprid, acetamiprid—there are about seven different names. Basically, they are a class of pesticides that have been completely banned in France. Four out of seven have been banned in the European Union.⁴²⁶

⁴²¹ ACT for Bees, *Submission 56*, p. 3.

⁴²² ACT for Bees, *Submission 56*, p. 6.

⁴²³ ACT for Bees, *Submission 56*, p. 3.

⁴²⁴ ACT for Bees, *Submission 56*, p. 10.

⁴²⁵ Ms Julie Armstrong, Founder, ACT for Bees, *Transcript of Evidence*, 10 April 2019, p. 63.

⁴²⁶ Ms Julie Armstrong, Founder, ACT for Bees, *Transcript of Evidence*, 10 April 2019, p. 64.

- 7.87 With regards to the removal of pesticides, in his submission to the Committee Mr Matthew Armstrong, an ACT resident, emphasised the value of playgrounds and parks to the ACT community. Mr Armstrong recommended that the ACT Government reviewed the use of pesticides in public parks and playgrounds by trialling the use of non-toxic alternatives. He also recommended that the Government create pesticide-free parks which could be supported by an online program to locate them.⁴²⁷
- 7.88 In their submission to the Committee, ACT for Bees argued for the need to counteract threats against bees by promoting an increase of bee friendly plants strategically to create pollination corridors. They maintained that there were low cost options available to the Government to assist with the implementation of pollination corridors, including the Plant Issue Scheme which entitles purchases of new residential blocks to an allocation of up to \$220 worth of free plants per block from Yarralumla Nursery. They suggested that information could be made available to Scheme recipients to allow them to purchase bee friendly plants, making an informed decision and enabling them to contribute to making urban areas more bee friendly.⁴²⁸

COMMITTEE COMMENT

- 7.89 The Committee acknowledges that there is a requirement to protect bees in the ACT and ensure they thrive, and the concept of a bee friendly city is a positive one. The Committee supports any future notion to involve and educate the wider community in promoting a 'bee friendly' environment, for example, through mixed planting to support the different types of bee population. For example, a gardener's guide to bees would be highly beneficial.
- 7.90 The Committee sees value in educational opportunities for community members, as well as government and non-government bodies, about how pesticides are used in the ACT, to encourage the use of alternatives.

Recommendation 50

- 7.91 The Committee recommends that the ACT Government commit to being a bee friendly city.**

Recommendation 51

- 7.92 The Committee recommends that the ACT Government develop a guide for gardeners to support the bee friendly city, in particular, looking at pollination corridors.**

⁴²⁷ Matthew Armstrong, *Submission 53*, p. [7].

⁴²⁸ ACT for Bees, *Submission 56*, p. 6.

Recommendation 52

- 7.93 The Committee recommends that the ACT Government phase out the use of harmful pesticides and chemicals distributed or used within the ACT by government and non-government bodies as well as members of the public.**

OTHER MATTERS

FUNDING

- 7.94 The continuity of funding to preserve flora and fauna is a central issue to the conservation of the natural environment. The ACT population has continued to rise and is predicted to continue to do so. The urban landscape will undoubtedly evolve and grow as a result, with consequences affecting the flora and fauna of the natural landscape.
- 7.95 The lack of funding available was echoed by numerous contributors to the inquiry. For example, in her opening statement to the Committee, Mrs Robyn Coghlan, Secretary of Friends of Hawker Village, stated the following recommendation to the Committee:

The ACT is blessed with nature reserves around and throughout the built-up area, but these are fragmented and need connection for worthwhile preservation of the wildlife. Unfortunately, there is a lack of adequate funding for maintenance of nature parks and local parks, so that they are becoming weed infested and eroded along walking tracks.⁴²⁹

- 7.96 Similarly, when questioned by the Committee, Dr Christopher Watson stated that:

One of the problems...with the increase in population is that we are trying to keep up basic infrastructure but the funding is not there for the parks and conservation service...This is a bit of a tragedy.⁴³⁰

- 7.97 In an opening statement to the Committee, Ms Marea Fatseas, Chair of the Inner South Canberra Community Council, provided the following recommendation to the Committee:

That the ACT Government support a long-term strategy, in consultation with the community, for funding the maintenance of Canberra's open spaces and nature reserves.⁴³¹

⁴²⁹ Mrs Robyn Coghlan, Secretary, Friends of Hawker Village, *Transcript of Evidence*, 13 March 2019, p. 22.

⁴³⁰ Dr Christopher Watson, *Transcript of Evidence*, 13 March 2019, p.5.

⁴³¹ Ms Marea Fatseas, Chair, Inner South Canberra Community Council, *Transcript of Evidence*, 13 March 2019, p.18.

7.98 In response to a question from the Committee regarding what additional government resources are required for greater conservation and biodiversity, Ms Rosemary Blemings, President of the Field Naturalists Association of Canberra, argued for:

A great deal more consistent, long-term funding for the nature reserves and for the upkeep of urban open spaces, all the green areas and even natural areas. The funding seems to be rather hit and miss and a lot of it is subject to grants, which is very inefficient. People with ecological training seem to spend a lot of time pen-pushing rather than actually being out helping people in the reserves, the volunteers and so on.⁴³²

7.99 In response to a question from the Committee regarding urban green space, Dr Gibbons, Associate Professor at Fenner School of Environment and Society, the Australian National University, stated that:

I think there is a lack of investment. We have heard that urban green space is important for health, climate and energy, and it increases your property values and biodiversity. Yet the funding does not come from those sources. Does the health budget include money for urban green space? I mean, it should. Also, in respect of biodiversity offsets, I am not aware of any that have gone into urban open space. Residents adjacent to green space, if they are getting material benefit, should they actually pay a little bit for that? I certainly would. I know that that would not be the answer for everyone.⁴³³

7.100 Within the submission from Fenner School of Environment and Society, the School recommended that the ACT Government explore alternative funding models for revitalising urban green space. The School stated the following considerations:

1. Crowd-sourcing from local communities or ongoing opportunities for residents (or the private sector) to co-invest in their local open space.
2. A levy on land taxes/rates managed as a Trust (this has been proposed by Ginninderry).
3. Reallocation of recurrent funds through savings that accrue from low-maintenance design principles (e.g., reduction in mown area), use of natural materials as play spaces (e.g., logs) and community involvement in maintenance.⁴³⁴

⁴³² Ms Rosemary Blemings, President, Field Naturalists Association of Canberra, *Transcript of Evidence*, 10 April 2019, p. 72.

⁴³³ Dr Philip Gibbons, Associate Professor, Fenner School of Environment and Society, Australian National University, *Transcript of Evidence*, 1 May 2019, pp. 97-98.

⁴³⁴ Fenner School of Environment and Society, *Submission 12*, p. [7].

7.101 In his submission to the Committee, Michael Sims recommended the Government ensure ongoing funding for wetlands and lakes. He also recommended to increase funding for volunteer activities.⁴³⁵

7.102 The Lyneham Commons emphasised the requirement for funding within their submission to the Committee. They suggested that a 'helpful initiative' for the ACT Government 'would be creating a small funding stream for community initiated asset enhancements that communities could match through in-kind contributions'.⁴³⁶

7.103 Ms Russell-French recommended to the Committee during a hearing that:

[A]n environmental levy could be considered to meet the challenges currently confronting natural areas and green space management. This would give us greater protection and resilience to restore areas in poor condition. Levies tend to get a very negative approach first off but they are actually very beneficial in the sense of looking at a long-term investment.⁴³⁷

7.104 The Committee inquired further into this recommendation, and asked firstly, what an environmental levy might look like, and secondly, whether there was a suggestion that there is not enough already available to preserve green areas. In response, Dr Cummings stated that 'there is never enough money for conservation. We can always do more.'⁴³⁸

7.105 Regarding the suggestion of a levy, Dr Cummings stated that:

The levy is not a new idea. Jurisdictions around Australia use environmental or NRM levies... It is not a contentious mechanism elsewhere in Australia. It is used in most jurisdictions but not the ACT. For us it seems like an obvious opportunity for policy change to generate more revenue for conservation.⁴³⁹

7.106 In addition to this, Ms Russell-French specified that:

...more focus could be placed on developers, in the sense of a levy that would balance what could be lost through development and put into management of areas of significance. One of the things about Ginninderry that is so attractive is that each block will have a one per cent levy on it that will go into the trust they are going to put up to manage the river corridor and the conservation areas.⁴⁴⁰

⁴³⁵ Michael Sim, *Submission 24*, p. 8.

⁴³⁶ The Lyneham Commons, *Submission 47*, p. 1.

⁴³⁷ Ms Alison Russell-French, President and Chair, Woodlands and Wetlands Trust, *Transcript of Evidence*, 1 May 2019, p. 111.

⁴³⁸ Dr Jason Cummings, Chief Executive Officer, Woodlands and Wetlands Trust, *Transcript of Evidence*, 1 May 2019, p. 117.

⁴³⁹ Dr Jason Cummings, Chief Executive Officer, Woodlands and Wetlands Trust, *Transcript of Evidence*, 1 May 2019, pp. 117 - 118.

⁴⁴⁰ Ms Alison Russell-French, President and Chair, Woodlands and Wetlands Trust, *Transcript of Evidence*, 1 May 2019, p. 118.

7.107 Dr Cummings further outlined the benefits of a levy, which he argued did not need to be tailored to where residents lived as the community because they ‘recognise that we live in the bush capital. It has these values that we cherish and we would all be willing to pay a hundred bucks a year, if it is income tested so that there are fewer socio-economic problems’.⁴⁴¹

WATER RETENTION SCHEME

7.108 Canberra’s climate is increasingly becoming more unpredictable. The ACT Climate Change Strategy 2019 – 2025 stated that ‘maximum, minimum and average temperatures are already increasing and are projected to continue to rise.’⁴⁴² The report illustrates how regional climate modelling has identified the four most significant impacts on the ACT, which includes more frequent bushfires, hotter heatwaves, more frequent droughts and more frequent storms over the summer period.⁴⁴³ Within this climate, water retention is essential to preserve the natural environment, and the importance of water retention was emphasised to the Committee in submissions and public hearings.

7.109 In their submission to the Committee, Canberra Urban and Regional Futures, stated the importance of water sensitive urban design (WSUD):

Canberra faces the challenges of adapting to changing rainfall patterns that are predicted to bring more intense rainfall events, with increased risk of flooding, as well as longer and more intense droughts...

Expanding urban stormwater storages and flood retention wetlands can assist in reducing risks and increase urban water reuse.⁴⁴⁴

7.110 They expanded on how water can be better managed in the city through the application of WSUD principles:

This refers to the management of all components of the hydrological cycle in urban settings in ways that deliver multiple benefits. More specific approaches include retention of natural streams and waterways and their riparian zones, recycling water (e.g., “grey” water), more efficient water use, stormwater recycling via swales and

⁴⁴¹ Dr Jason Cummings, Chief Executive Officer, Woodlands and Wetlands Trust, *Transcript of Evidence*, 1 May 2019, pp. 118 - 119.

⁴⁴² ACT Government, *ACT Climate Change Strategy 2019 – 2025*, p. 30, https://www.environment.act.gov.au/_data/assets/pdf_file/0003/1414641/ACT-Climate-Change-Strategy-2019-2025.pdf / recache, viewed 24 January 2019.

⁴⁴³ ACT Government, *ACT Climate Change Strategy 2019 – 2025*, p. 30, https://www.environment.act.gov.au/_data/assets/pdf_file/0003/1414641/ACT-Climate-Change-Strategy-2019-2025.pdf / recache, viewed 24 January 2019.

⁴⁴⁴ Canberra Urban and Regional Futures, *Submission 6*, attachment, J Alexandra, B Norman, W Steffen and B Maher, *Planning and Implementing Living Infrastructure in the Australian Capital Territory – Final Report*, Canberra Urban and Regional Futures, University of Canberra, Canberra, 2017, p. 50.

artificial wetlands, and various types of flood mitigation. This is a large and important component of living infrastructure.⁴⁴⁵

7.111 The wide-ranging benefits of WSUD were discussed in Chapter 3, while issues related to the implementation of WSUD were discussed in Chapter 4.

7.112 On the subject of weather conditions, the Ginninderra Falls Association also stated in their submission to the Committee that:

Since Canberra is an inland city, in the Murray-Darling Basin, and subject to droughts of up to 15 years duration and a drying climate, efficient use of water and effective treatment of wastewater is extremely important.⁴⁴⁶

7.113 The Association recommended that urban developments should be kept away from major rivers to protect water quality.⁴⁴⁷

7.114 In his submission to the Committee, Michael Sim stated the benefits of multi-layer planting, asserting that they 'will aid in retaining native diversity as well as increasing the ability of the landscape to absorb water and reduce urban temperatures in extreme weather events.'⁴⁴⁸

7.115 Canberra Urban and Regional Futures provided information about technologies and infrastructure for water in their report 'Planting and implementing living infrastructure in the Australian Capital Territory' (May 2017). In relation to Canberra specifically, the report stated that:

Expanding urban stormwater storages and flood retention wetlands can assist in reducing risks and increase urban water reuse. Good practice design aims at minimising the risks associated with changing rainfall regimes whilst generating a range of complementary outcomes or co-benefits, like habitat provision and urban cooling.⁴⁴⁹

7.116 During the public hearing, the Committee inquired further about this information in the CURE submission regarding WSUD strategies. Professor Barbara Norman, Chair of Canberra Urban and Regional Futures, stated that:

We have been doing some terrific work here in the ACT... I walked down Lonsdale Street in January. It was pretty hot and the landscape was suffering. If you have good water sensitive urban design—quite a lot of cities do this—you then start to integrate things like pocket parks and you recycle water systems through those. You start to

⁴⁴⁵ Canberra Urban and Regional Futures, *Submission 6*, attachment, J Alexandra, B Norman, W Steffen and B Maher, *Planning and Implementing Living Infrastructure in the Australian Capital Territory – Final Report*, Canberra Urban and Regional Futures, University of Canberra, Canberra, 2017, p. 35.

⁴⁴⁶ Ginninderra Falls Association, *Submission No. 11*, p. [4].

⁴⁴⁷ Ginninderra Falls Association, *Submission No. 11*, p. [6].

⁴⁴⁸ Michael Sim, *Submission 24*, p. 5.

⁴⁴⁹ Canberra Urban and Regional Futures, *Submission 6*, attachment, J Alexandra, B Norman, W Steffen and B Maher, *Planning and Implementing Living Infrastructure in the Australian Capital Territory – Final Report*, Canberra Urban and Regional Futures, University of Canberra, Canberra, 2017, p. 50.

green that space through recycled water systems, and that is a very positive thing to be doing.

...Capturing the water better and having more permeable surfaces to capture that water so when we get the sudden downpours it does not just end up in the lake causing problems. We could retain that water in that area through a series of pocket parks coming down Lonsdale Street. Less concrete, more open space, more green, more puncturing of holes along that landscape. Again, there are benefits everywhere there: you retain the water, you use the water better, you get a greener environment, and people appreciate that.⁴⁵⁰

COMMITTEE COMMENT

7.117 Given the value placed upon the fauna and flora of the natural environment in the ACT, it is evident that more could be done to support volunteer and community groups to achieve improvement. The Committee hopes that the ACT Government will consider additional funding to support groups and maintain landscaped and natural environment areas.

7.118 Climate change is having a significant impact on the ACT, leading to changing weather conditions, hotter temperatures and longer periods of drought. The importance of retaining water to maintain green spaces is becoming greater and needs to be addressed. The ACT Government should continue to evaluate methods for recycling water and introduce a water retention scheme to maintain local green spaces.

Recommendation 53

7.119 The Committee recommends that the ACT Government consider additional funding for maintenance of landscaped and natural environment areas, including funding to support the various fauna and flora groups in the Territory.

Recommendation 54

7.120 The Committee recommends that the ACT Government introduce a water retention scheme for recycled water to be used to maintain local green spaces.

⁴⁵⁰ Professor Barbara Norman, Director, Canberra Urban and Regional Futures, University of Canberra, *Transcript of Evidence*, 1 May 2019, p. 107.

8 OTHER CONSIDERATIONS

8.1 This chapter addresses matters raised in evidence which are not covered in the preceding chapters.

CLIMATE CHANGE AND DEVELOPMENT PROPOSALS

8.2 Much of this report has emphasised the importance of the city's green and blue infrastructure and Canberra's surrounding nature reserves for the roles they play in mitigating the impacts of climate change. Some contributors called for consideration of climate change to be better incorporated into planning processes and decisions.

8.3 Lake Burley Griffin Guardians, for example, submitted that 'Canberrans should demand that in all planning decisions serious consideration must be given to accommodating the effects of climate change'.⁴⁵¹ Marianne Albury Colless, meanwhile, suggested some 'practical considerations' for factoring climate change into development proposals:

- Implementation of wide verges wherever possible and certainly in new 'developments';
- Succession planning for ageing trees;
- Selection of replacement trees based on species survivability in the face of climate change;
- Expansion of green spaces; and
- Cooling of built-up areas with wide canopied trees.⁴⁵²

8.4 The Environmental Defenders Office (ACT) called for climate change to be considered in planning decisions resulting in a change to the Territory Plan:

We note that any rezoning of these areas for development must consider the benefits that they provide to nature in our city, through processing in the impact track, so that environmental impacts are assessed. To clarify, when considering variations to the Territory Plan which ultimately rezone land for future development, which irreversibly impacts on the environment, there is no legislative responsibility for decision-makers

⁴⁵¹ Lake Burley Griffin Guardians, *Submission 52*, p. 5.

⁴⁵² Marianne Albury Colless, *Submission 54*, pp. 5-6.

to take into account climate change mitigation and adaptation for such spaces. These need to be considered.⁴⁵³

COMMITTEE COMMENT

- 8.5 The Committee notes that on 16 May 2019, the Legislative Assembly for the ACT passed a motion stating that ‘globally, nationally and locally, human induced climate change is contributing to record breaking temperatures, extreme weather events, and a range of negative social, environmental and economic outcomes’ and acknowledging ‘that we are in a state of climate emergency that requires urgent actions across all levels of Government’.⁴⁵⁴
- 8.6 Given that we are currently in a climate emergency, the Committee believes climate change impact analysis should play a prominent role in the assessment of development proposals.

Recommendation 55

- 8.7 The Committee recommends that the ACT Government consider including independent climate change impact analysis in the assessment of development proposals.**

ECOTOURISM

- 8.8 As emphasised throughout this report and by contributors to the Inquiry, the ACT is blessed with abundant nature, much of which is protected in reserves and the national park. Contributors pointed to the potential for the Territory to capitalise on its natural setting through the promotion of ecotourism.
- 8.9 The ACT Government highlighted these potentials:
- Nature-based tourism ranks among top travel motivators for international visitors to the country. The ACT is taking advantage of this significant market to provide world-class nature-based tourism experiences close to a capital city and international airport.⁴⁵⁵
- 8.10 The National Arboretum Canberra (NAC) was raised as a successful example of ecotourism that could be further developed and promoted:
- The NAC has become a widely discussed destination venue around Australia, and internationally among those people interested in parks and gardens. The NAC has

⁴⁵³ Ms Stephanie Booker, Chief Executive Officer and Principal Solicitor, Environmental Defenders Office (ACT), *Transcript of Evidence*, 22 May 2019, p. 161.

⁴⁵⁴ Legislative Assembly for the Australian Capital Territory, *Minutes of Proceedings*, No. 98, 16 May 2019, p. 1471. Available at: https://www.parliament.act.gov.au/_data/assets/pdf_file/0011/1363925/MoP098F.pdf, viewed 11 February 2020.

⁴⁵⁵ ACT Government, *Submission 67*, p. 6.

recently ventured into the bonsai and penjing national and international locations for events with specialised interest groups. Further developments are limited by the onsite infrastructure constraints, but clearly point to unmet potential for further developments. While these might appear of only esoteric interest, garden tourism is now developing into an important part of the matrix of tourism attractions as evidenced by the hugely expanding range of specialised touring companies and groups in this sector. This applies to both domestic and the growing field of international tourism. Countries like Singapore are very actively tapping into this field through heavy investment in not only new spectacular gardens but also major international garden shows. For all these events, diverse display and meeting spaces are needed.⁴⁵⁶

8.11 The ACT Government also noted the success of the Arboretum in attracting tourists to the city: ‘The National Arboretum, home to 44,000 trees, continues to be one of our major attractions welcoming more than a million visitors since it opened in 2013’.⁴⁵⁷

8.12 Other contributors pointed to the ecotourism opportunities in the Territory’s grasslands and woodlands:

More emphasis in tourist promotion should be given to Canberra nature reserves and open spaces. Many who live elsewhere and who understand the importance of our grasslands and woodlands are envious of Canberra’s management of its grasslands and woodlands. With little and inexpensive effort, people with a mix of tourism promotion skills, ecologists, and informed community conservationists could come up with a strategy to promote Canberra, as the “Grassland and Bush (or Woodland) Capital”.⁴⁵⁸

8.13 Friends of Black Mountain suggested that more could be done to promote the various nature trails and walking tracks throughout Canberra Nature Park:

Greater focus could be directed towards promoting the various trails and walks available on Black Mountain and within Canberra Nature Park to visitors for the enjoyment of nature and appreciation of its biodiversity as a tourism activity, which is implemented consistent with the priority for conservation. This would require feasibility and environment impact assessments. For example, the existing walking trail on the southern side of Black Mountain linking it to the Australian National Botanic Gardens and the National Arboretum could be promoted as a way to experience three of the city’s natural treasures in a low impact activity. This trail would need to be a board walk for the entire path to protect the plants and prevent erosion.⁴⁵⁹

⁴⁵⁶ Friends of the National Arboretum Canberra, *Submission 14*, p 3.

⁴⁵⁷ ACT Government, *Submission 67*, p. 6.

⁴⁵⁸ Friends of Grasslands, *Submission 29*, p. 4.

⁴⁵⁹ Friends of Black Mountain, *Submission 36*, p. 3.

COMMITTEE COMMENT

- 8.14 The Committee sees many opportunities for the Territory to utilise its natural environment for ecotourism. The Committee believes that in order for the ACT to maximise its ecotourism potentials, the ACT Government should devise an ecotourism strategy.

Recommendation 56

- 8.15 The Committee recommends that the ACT Government develop an ecotourism strategy which articulates how tourists can be attracted to engage with our natural environment.**

SIGNAGE IN NATURE RESERVES

- 8.16 The promotion of Canberra's nature reserves and the national park for ecotourism opportunities would necessarily result in an increase in the number of people using these areas. To ensure that the environmental value of these areas is preserved, even with increased usage, it is imperative that people are made aware of the rules for using these areas of nature.

- 8.17 Friends of Black Mountain raised this issue in evidence:

Another challenge is to provide and maintain adequate and appropriate signage at the entrance to the nature reserve and to signpost walking trails. We welcome the new signs at major entrances to the BMNR, with the range of information including the Conservator's Activities Declaration about Restricted and Prohibited activities. Signage needs to be specific and clear throughout the Reserve about activities that are restricted or prohibited within the Reserve, and the sanctions for those people who engage in them. The signage should also avoid ambiguity (for example to educate cyclists not to use narrow single use walking trails and stick to the formed vehicle trails).⁴⁶⁰

- 8.18 They provided the following advice concerning adequate signage:

Consistent and highly visible signage needs to be placed at all access points to BMNR to ensure that it is very clear to people what they can and cannot do in the Reserve, including penalties for non-compliance. In particular, keeping dogs out of the reserve, bike riding only on formed roads and management trails and walking on designated paths and trails. The new major signs are welcoming as well as stating the restrictions and prohibitions and that penalties do apply. It would be worth placing similar signs at key points of trails in other parts of the Reserve. Signage needs to be regularly checked

⁴⁶⁰ Friends of Black Mountain, *Submission 36*, pp. 11-12.

for damage and maintained in good condition, and there should be a ten-year rolling program for signage.⁴⁶¹

COMMITTEE COMMENT

- 8.19 While most of the evidence the Committee received on environmental signage for nature reserves concerned Black Mountain, the issues discussed relate directly to all other nature reserve areas across the Territory. Adequate environmental signage is one way to protect our nature reserves from misuse.

Recommendation 57

- 8.20 The Committee recommends that the ACT Government invest in more environmental signage at nature reserves in the Territory to better inform visitors of safe bush etiquette.**

‘NATURE PRESCRIPTIONS’

- 8.21 The positive benefits nature has on human mental and physical health and well-being have been noted throughout this report. A number of contributors pointed out the possibilities for ‘nature prescriptions’ in promoting the health of Canberrans. The Ginninderra Catchment Group, for example, submitted that: ‘[t]here is increasing recognition of the health benefits of human connection with nature, particularly mental health benefits... In some places of the world doctors are “prescribing” connection with nature to address health issues.’⁴⁶²
- 8.22 Specifically related to the mental health benefits of nature, the CSIRO informed the Committee that:

Research has demonstrated that people who made long visits to green spaces had lower rates of depression and reduced blood pressure, and those who visited more frequently had greater social cohesion. Higher levels of physical activity were linked to both duration and frequency of green space visits. A dose-response analysis for depression and high blood pressure suggests that visits to outdoor green spaces of 30 minutes or more during the course of a week could reduce the population prevalence of these illnesses by up to 7% and 9% respectively. Given that the societal costs of depression alone in Australia are estimated at AUD\$12.6 billion per annum, savings to public health budgets across all health outcomes could be immense.⁴⁶³

⁴⁶¹ Friends of Black Mountain, *Submission 36*, p. 17.

⁴⁶² Ginninderra Catchment Group, *Submission 58*, p. 3.

⁴⁶³ CSIRO, *Submission 31*, p. 5.

8.23 The Minister for the Environment and Heritage, Mr Mick Gentleman, informed the Committee that Government is aware of the potentials for 'nature prescriptions' and is working on implementing them in the Territory. He said: 'EPSDD is...working with Health to establish nature prescriptions and initiate encouraging maybe health providers to prescribe a walk in the park with health rangers. We know from other jurisdictions that this has been incredibly successful.'⁴⁶⁴

8.24 Mr Ian Walker provided detailed information on 'nature prescriptions':

Nature prescriptions is effectively a partnership between health providers and environmental professionals where health providers prescribe, encourage, promote activity in nature. Research globally highlights that getting people into nature—and the minister has highlighted the benefits of that—and being active in nature is better for them than being in a gym or in other physical activities because there are a range of other benefits that come from that. Obviously fresh air and green space promote a sense of wellbeing. From both a physical and mental perspective, the evidence nationally and internationally is overwhelming that getting people active in nature, and also in groups to break down social isolation, is extremely powerful.

Nature prescriptions are being modelled off programs that occur in the US. They have a program called park prescriptions which is based out of San Francisco, and it has demonstrated over time substantial improvements in human health and benefits in connecting people with nature.⁴⁶⁵

8.25 He continued:

We get a double-edged benefit here. We get a benefit from health perspectives. Every person that we do not put into hospital means that we ultimately save money and we ensure that people are healthy, and every time we connect with people in the natural environment we get them to care about the natural environment. You get two benefits from running the program: (1) you get a health benefit, both physical and mental; and (2) you also get an environmental benefit because what people care about they look after.

Our function within the directorate is very much about connecting people with nature and getting more people more active, more involved in the natural environment. And that means supporting groups like catchment groups, ParkCare groups and other volunteer-based organisations to assist with the management of land. Also, importantly, it brings groups together for their social wellbeing, their physical and mental wellbeing.⁴⁶⁶

⁴⁶⁴ Mr Mick Gentleman MLA, Minister for the Environment and Heritage, *Transcript of Evidence*, 29 May 2019, p. 199.

⁴⁶⁵ Mr Ian Walker, Executive Group Manager, Environment and Heritage, Environment, Planning and Sustainable Development Directorate, *Transcript of Evidence*, 29 May 2019, pp. 199-200.

⁴⁶⁶ Mr Ian Walker, Executive Group Manager, Environment and Heritage, Environment, Planning and Sustainable Development Directorate, *Transcript of Evidence*, 29 May 2019, p. 200.

8.26 The CSIRO pointed out, however, that the ‘is a lack of clear evidence about which elements of nature deliver which health outcomes’ and suggested that ‘[a] better understanding of the links between urban environmental areas and health outcomes would help guide effective investment in green space provision and ecological enhancement’.⁴⁶⁷

COMMITTEE COMMENT

8.27 It is clear from the evidence received by the Committee that nature provides a range of physical and mental health benefits to humans. Given that Canberra abounds in nature, the Committee believes that there is scope to better utilise this nature in promoting the health of Canberra residents.

Recommendation 58

8.28 The Committee recommends that the ACT Government continue to investigate and promote ‘Nature Prescriptions’ in the ACT.

⁴⁶⁷ CSIRO, *Submission 31*, p. 5.

9 CONCLUSION

- 9.1 The Committee once again wishes to thank all contributors to the Inquiry.
- 9.2 This report makes 58 recommendations. Centrally, the Committee recommends that the ACT Government re-commit to the concept of the City in a Landscape. This will require the development of a comprehensive City in a Landscape Strategy and the implementation of a wide array of supporting policies.

Tara Cheyne MLA

Chair

10 February 2020

APPENDIX A - WITNESSES

13 MARCH 2019

- Geoff Pryor
- Georgina Pinkas
- Barbara Mabbott
- Christopher Watson
- Glen Smith
- Marianne Albury-Colless
- Matthew Armstrong
- Michael Sim
- Mike Lewis, Yarralumla Residents Association
- Robyn Coghlan, Friends of Hawker Village
- Christine Gingell, Friends of Hawker Village
- Marea Fatseas, Inner South Canberra Community Council
- David Denham, Griffith Narrabundah Community Association
- Jack Fogerty, Hughes Residents Association
- Glenys Patulny, Tuggeranong Community Council
- George Wilson, Deakin Residents Association
- Ken Taylor

27 MARCH 2019

- Sue Byrne, Australian Garden History Society, ACT Monaro Riverina Branch
- Anne Claoue-Long, Australian Garden History Society, ACT Monaro Riverina Branch
- Robyn Coghlan, President, Ginninderra Falls Association
- David Mackenzie, Lake Burley Griffin Guardians
- Rod Griffiths, National Parks Association of the ACT
- Chris Emery, National Parks Association of the ACT
- Maxine Cooper, Chair, Landcare ACT
- Karissa Preuss, Executive Officer, Ginninderra Catchment Group
- Martine Franco, Executive Officer, Southern ACT Catchment Group
- Linda Beveridge, Molonglo Conservation Group

- Wally Bell, Member, Ginninderra Catchment Group and Ngunawal Elder

10 APRIL 2019

- Julie Hazel Armstrong, Founder, ACT for Bees
- Geoffrey John Robertson, President, Friends of Grasslands
- Rosemary Blemings, President, Field Naturalists Association of Canberra
- John Bernard Brannan, Coordinator, Friends of the Pinnacle
- Edwina Robinson, Executive Officer, SEE-Change
- Roger Hnatiuk, Friends of the National Arboretum Canberra
- Max Bourke, Friends of the National Arboretum Canberra

1 MAY 2019

- Philip Gibbons, Associate Professor, Fenner School of Environment and Society, Australian National University
- Cris Brack, Associate Professor, Fenner School of Environment and Society, Australian National University
- Barbara Norman, Chair, Urban and Regional Planning, and Director, Canberra Urban and Regional Futures, University of Canberra
- Alison Russell-French, President and Chair, Woodlands and Wetlands Trust
- Jason Cummings, Chief Executive Officer, Woodlands and Wetlands Trust
- Jane Coram, Director, Land and Water, Commonwealth Scientific and Industrial Research Organisation
- Guy Barnett, Principal Research Consultant, Land and Water, Commonwealth Scientific and Industrial Research Organisation
- Sorada Tapsuwan, Senior Research Scientist, Land and Water, Commonwealth Scientific and Industrial Research Organisation

8 MAY 2019

- Michael Reeves, Director, dsb Landscape Architects
- David Shorthouse, Peer Reviewer (Environment), Ginninderry Project, Riverview Projects (ACT)
- Jason Cummings, Adviser, Ginninderry Project, Riverview Projects (ACT)
- Tony Adams, Planning Consultant, Ginninderry Project, Riverview Projects (ACT)
- Gay Williamson, ACT Chapter President, Australian Institute of Landscape Architects
- Philip Hutchinson, ACT Executive, Australian Institute of Landscape Architects

- Poppy McRae, Committee Chair, ACT Young Planners Division, Planning Institute of Australia
- Claire Adams, Committee Member, ACT Young Planners Division, Planning Institute of Australia
- Jennifer Yong, Committee Member, ACT Young Planners Division, Planning Institute of Australia
- Skylar Chan, Committee Member, ACT Young Planners Division, Planning Institute of Australia

22 MAY 2019

- Stephanie Booker, Chief Executive Officer and Principal Solicitor, Environmental Defenders Office (ACT)
- Nicola Silbert, Policy Lawyer, Environmental Defenders Office (ACT)
- Barbara Mabbott, Volunteer, ACT Wildlife Incorporated
- Lindy Butcher, Volunteer, ACT Wildlife Incorporated
- Martin Lind, Vice-President, ACT Wildlife Incorporated
- Heather Peachey, Volunteer, ACT Wildlife Incorporated
- Helen Oakey, Executive Director, Conservation Council (ACT Region)
- Jane Breden, General Manager, Business Services, Icon Water
- Benjamin Bryant, Manager, Environment and Sustainability, Icon Water

29 MAY 2019

- Mick Gentleman MLA, Minister for the Environment and Heritage, Minister for Planning and Land Management, Minister for Police and Emergency Services and Minister assisting the Chief Minister on Advanced Technology and Space Industries
- Erin Brady, Deputy Director-General, Land Strategy and Environment, Environment, Planning and Sustainable Development Directorate
- Ian Walker, Executive Group Manager, Environment and Heritage, Environment, Planning and Sustainable Development Directorate
- Kathy Cusack, Executive Group Manager, Planning and Building Policy, Environment, Planning and Sustainable Development Directorate
- Gene McGlynn, Executive Group Manager, Climate Change and Sustainability, Environment, Planning and Sustainable Development Directorate
- Chris Glennon, Manager, Catchment Management, Environment, Planning and Sustainable Development Directorate

- Mikaela Jade, Manager, Community and Visitor Programs, Environment, Planning and Sustainable Development Directorate

APPENDIX B – SUBMISSIONS

Submission Number	Submitter	Received
1	ACT Monaro Riverina Branch of the Australian Garden History Society	24 May 2018
2	Sue McIntyre	31 May 2018
3	Douglas Finlayson	2 Jun 2018
4	Esther Gallant	3 Jun 2018
5	Kevin McCue	3 Jun 2018
6	Canberra Urban and Regional Futures	1 Jun 2018
7	Jack Kershaw	4 Jun 2018
8	Griffith Narrabundah Community Association	4 Jun 2018
9	Jenny Goldie	5 Jun 2018
10	Hughes Residents' Association	5 Jun 2018
11	Ginninderra Falls Association	29 Jun 2018
12	Fenner School of Environment and Society	6 Jun 2018
13	Glenn Smith	7 Jun 2018
14	Friends of the National Arboretum Canberra	7 Jun 2018
15	Molonglo Catchment Group	7 Jun 2018
16	Canberra Bushwalking Club	7 Jun 2018
17	National Trust of Australia (ACT)	7 Jun 2018
18	Woodlands and Wetlands trust	7 Jun 2018
19	dsb Landscape Architects	8 Jun 2018
20	Geoff Pryor	8 Jun 2018

Submission Number	Submitter	Received
21	Yarralumla Residents Association	8 Jun 2018
22	PR Temple & Advisers	8 Jun 2018
23	ACT Equestrian Association	8 Jun 2018
24	Michael Sim	29 Jun 2018
25	Canberra Ornithologists Group	11 Jun 2018
26	Peter Cranston	12 Jun 2018
27	Christopher Watson	8 Jun 2018
28	Friends of Aranda Bushland	14 Jun 2018
29	Friends of Grasslands	15 Jun 2018
30	Rosemary Blemings	18 Jun 2018
31	CSIRO	18 Jun 2018
32	Commissioner for Sustainability and the Environment	19 Jun 2018
33	Friends of Hawker Village	19 Jun 2018
34	National Parks Association of the ACT	21 Jun 2018
35	Inner South Canberra Community Council	22 Jun 2018
36	Friends of Black Mountain	25 Jun 2018
37	Linda Beveridge	25 Jun 2018
38	Field Naturalists Association of Canberra	27 Jun 2018
39	Libby Viccars	26 Jun 2018
40	Cathy Ikin and Chris Ikin	26 Jun 2018
41	Julie Hotchin	27 Jun 2018
42	Bradley Moggridge	27 Jun 2018

Submission Number	Submitter	Received
43	Riverview Projects (ACT)	27 Jun 2018
44	Jane Aitken	27 Jun 2018
45	Taryn Langdon	29 Jun 2018
46	Tuggeranong Community Council	29 Jun 2018
47	The Lyneham Commons	29 Jun 2018
48	Deakin Residents Association	29 Jun 2018
49	Friends of the Pinnacle	29 Jun 2018
50	SEE-Change	29 Jun 2018
51	Ken Taylor	29 Jun 2018
52	Lake Burley Griffin Guardians	29 Jun 2018
53	Matthew Armstrong	29 Jun 2018
54	Marianne Albury-Colless	29 Jun 2018
55	Landcare ACT	29 Jun 2018
56	ACT for Bees	29 Jun 2018
57	Australian Association for Environmental Education	29 Jun 2018
58	Ginninderra Catchment Group	29 Jun 2018
59	Icon Water	29 Jun 2018
60	Australian Institute of Landscape Architects	29 Jun 2018
61	Sarah Nolan	29 Jun 2018
62	Southern ACT Catchment Group	29 Jun 2018
63	Elaine Hooke	29 Jun 2018

Submission Number	Submitter	Received
64	ACT Young Planners Division, Planning Institute of Australia	29 Jun 2018
65	Georgina Pinkas	4 Jul 2018
66	ACT Conservation Council	29 Jun 2018
67	ACT Government	12 Jul 2018
68	Animal Justice Party	23 Jul 2018
69	Barbara Mabbott	29 Jul 2018
70	Environmental Defenders Office	29 Nov 2018
71	Name withheld	20 Feb 2019