

Victorians value nature statewide survey results

High level summary 2019 - 2021



Arthur Rylah Institute for Environmental Research
Report



Environment,
Land, Water
and Planning

FRONT COVER

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Acknowledgement of Country

We acknowledge and respect Victorian Traditional Owners as the original custodians of Victoria's land and waters, their unique ability to care for Country and deep spiritual connection to it. We honour Elders past and present whose knowledge and wisdom has ensured the continuation of culture and traditional practices.

We are committed to genuinely partner, and meaningfully engage, with Victoria's Traditional Owners and Aboriginal communities to support the protection of Country, the maintenance of spiritual and cultural practices and their broader aspirations in the 21st century and beyond.



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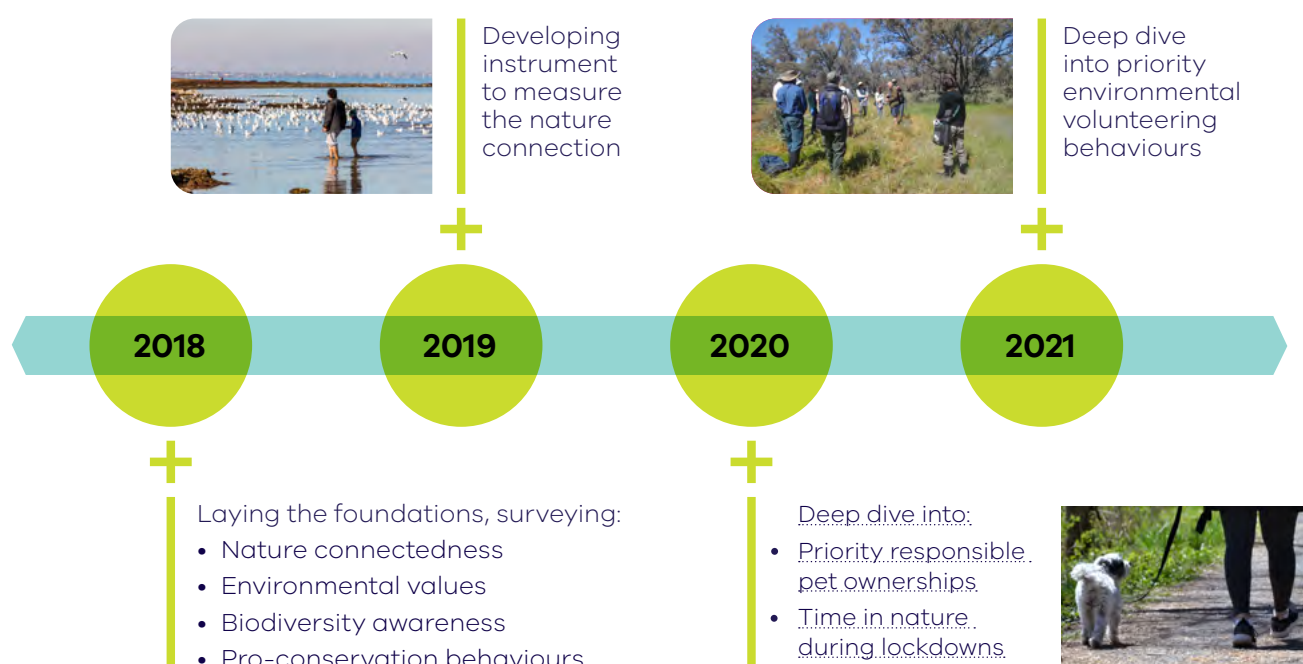
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Victorians Value Nature Statewide Surveys: Overview

We have collected a rich dataset about how the Victorian population connects with and acts for nature (2018-2021). These data help guide programs and across Victoria, making them more impactful and enabling us to measure progress towards the Victorians Value Nature goal of the Biodiversity Strategy 2037¹ and its two targets 'All Victorians are connected with nature' and '5 million Victorians act to protect the natural environment'. Together, these goals support the vision that *Victoria's biodiversity is healthy, valued and actively cared for*. These goals are more important than ever; we need everyone to support our natural environment, grow investment in biodiversity management and support more effective biodiversity action. As more Victorians connect with and act for nature, decision-makers will have greater support to take meaningful steps in stopping biodiversity's decline in Victoria.

Survey foci at a glance:



Clockwise from top: © Andy Geschke, ARI, © Arthur Rylah Institute for Environmental Research and © Jenn Simpson, [Unsplash](#)

Methods

All surveys were distributed online by a market research panel, The Online Research Unit (The ORU). The ORU recruit participants via email to complete surveys in exchange for a small financial reward. The 2018 survey was open to any respondents over 18 years of age and aimed to be representative of the Victorian public with respect to age, gender, and geographical location². The 2019, 2020 and 2021 surveys prioritized resampling a subset of the respondents who completed the first survey. New respondents were also recruited to meet the target sample size, attempting to address gaps in representation of the Victorian population. As part of the question refinement process, statements in the 2020 and 2021 surveys were slightly different than those used in the 2018 and 2019 surveys. The 2020 survey also used a 6-month timeframe, in part to account for the impacts of COVID-19 lockdowns and to determine how lockdowns affected activity. The 2020 dataset also had a slightly different frequency measurement scale.

¹ Protecting Victoria's Environment Biodiversity 2037. Department of Environment, Land, Water and Planning.

² Meis Harris et al., 2019. Victorians Value Nature – Survey Results. Melbourne, Australia: BehaviourWorks Australia, Monash University, March, 2019.

Overview of findings

As part of the Victorians Value Nature goal of the Biodiversity Strategy 2037, we have surveyed Victorians and built a foundational understanding of how they connect with , and act for nature.

66%

of Victorians have a moderate to very high connection to nature score (2021). 31% are in the high to very high categories.



MESSAGING/IMPLICATIONS

There is the opportunity to improve participation using health framing

40%

of Victorians are **unaware** of the mental and physical health benefits of environmental volunteering (2021)



68%

of Victorians agreed that spending time in nature helped them relax during the pandemic (2020).

>80%

of Victorians are concerned about the loss of threatened species and ecosystems but... (2021)

46%

of these people believe they don't have any control over this issue (2021).

People spending time in nature spent most of that time in their own gardens or in urban parks this was consistent across years (2018 – 2021).

On average, 77% spent time in their gardens and 30% spent time in urban parks, at least once a week or more.



Connection with Nature

Background

Spending time in and connecting with nature has underpinned human existence for thousands of years, yet people are increasingly disconnected from the natural environment. Evidence shows that people who connect with nature are more likely to value and act to protect the natural environment^{3,4,5} and that connecting with, and spending quality time in nature, is vital for our health and wellbeing^{6,7}.

We developed a short survey tool, called the CN-12, to measure people's connection to nature. The CN-12 measures this complex relationship across three key dimensions: identity, experiential and philosophical⁸ connection. This survey tool can be found on the [ARI website](#).

Results

- Our surveys show that in 2018, using the CN-12 instrument, 62% of respondents reported an average CN score of 5 (moderate) or above, with 27% scoring 6 (high) or above (see appendix A).
- In comparison in 2021, 66% of Victorians reported a moderate-to-high connection with nature with CN-12 scores of 5 or above, with 31% of respondents reported a high connection with nature with an average CN-12 score of 6 or above.



-
- 3 Barragan-Jason et al., 2021. Human-nature connectedness as a pathway to sustainability: A global meta-analysis. *Conservation Letters*. <https://doi.org/10.1111/conl.12852>
 - 4 Mackay and Schmitt, 2019. Do people who feel connected to nature do more to protect it? A meta-analysis. *Journal of Environmental Psychology*. <https://doi.org/10.1016/j.jenvp.2019.101323>
 - 5 Whitburn et al., 2019. Meta-analysis of human connection to nature and proenvironmental behaviour. *Conservation Biology*. <https://doi.org/10.1111/cobi.13381>
 - 6 Martin et al., 2020. Nature contact, nature connectedness and associations with health, wellbeing and proenvironmental behaviours. *Journal of Environmental Psychology*. <https://doi.org/10.1016/j.jenvp.2020.101389>
 - 7 Van den Bosch and Sang. 2017. Urban natural environments as nature-based solutions for improved public health – A systematic review of reviews. *Environmental Research*. <https://doi.org/10.1016/j.envres.2017.05.040>
 - 8 Hatty et al., 2020. The CN-12: A brief, Multidimensional Connection to Nature Instrument. *Environmental Psychology*. <https://doi.org/10.3389/fpsyg.2020.01566>



66%

of Victorians have a moderate to very high connection to nature score (2021). 31% are in the high to very high categories.



Time Spent in Nature

Background

Spending time in nature is vital for our health and wellbeing⁹. Spending quality time in nature improves people's valuing of, and connection with, nature. In turn, their intention to engage in pro-conservation behaviours also grows¹⁰. See Appendix B for more detailed results.

Results

- When asked how often people spend time in nature, the most common response across all years was 'at least once per week'.
 - On average across all year's, 63% of Victorians reported to have spent time in nature once a fortnight or more.
 - People spent the most amount of time in their own gardens or in urban parks, and this was consistent across years.
 - On average, 77% spent time in their gardens and 30% spent time in urban parks, at least once a week or more.
- In 2020
 - Most respondents reported a change in the amount of time that they spent in nature, because of COVID lockdowns, with 30% reporting more time in nature, and 40% of people reporting they spent less time.
 - The places that people commonly reported to have spent a little or a lot more time during lockdowns were their own gardens (49%) and urban parks (25%). Women, younger people, and those living in rural areas and areas with higher socio-economic status, were likely to report spending more time in nature. 35% of women reported spending a little or a lot more time in nature compared to 26% of men.
 - 68% of Victorians agreed that spending time in nature helped them relax during the pandemic.
 - People who reported to have spent more time in nature because of COVID lockdowns were more likely to report that the change resulted in positive impacts to their wellbeing. People who perceived of positive impacts to their wellbeing were more likely to live in areas with higher cover of native vegetation.



63%

of Victorians spent time in nature at least once a fortnight

9 White et al., 2019. Spending at least 120 minutes a week in nature is associated with good health and wellbeing. Scientific Reports. <https://doi.org/10.1038/s41598-019-44097-3>

10 DeVille et al., 2021. Time Spent in Nature Is Associated with increased proenvironmental attitudes and behaviours. Int. J Environ Res Public Health. doi: 10.3390/ijerph18147498



>76%

of Victorians spent time in their gardens at least once a fortnight

68%

of Victorians agreed that spending time in nature helped them relax during the pandemic



Pro conservation behaviours

Background

From a longer list, we have prioritised a range of pro-conservation behaviours that will be most impactful to biodiversity in Victoria¹¹. These include planting and weeding activities on public land, citizen science, advocating for the environment, wildlife gardening and being a responsible pet owner.



Spend time in nature

People who spend time in nature are more likely to act for nature



Get involved

Volunteer for nature, maybe try some Citizen Science



Be a champion for nature

Inspire family and friends with your great nature experiences



Nurture at home

Plant native plants, or keep a wildlife garden



Be a Responsible pet owner

Keep your cat safe at home and keep your dogs on a leash when visiting natural areas

To improve the outlook for our biodiversity it is vital that more people are engaging in more of these behaviours more often. Our surveys provide us with vital information about the drivers and barriers to participation and information about the Victorian community vital for designing more impactful environmental programs. Overall, most people don't participate in these pro-conservation behaviours. See Appendix C for more detailed results.

- "Planting trees, providing other kinds of habitat....", and "removing litter" were the most frequently engaged in behaviours across years. An average of 7% of Victorians who "Planted trees...." did this often or very often, 13% did this sometimes. There is huge scope to increase participation across all behaviours.
- In 2020, 49% of Victorians donated money to firefighting organisations, and 41% to wildlife or rescue organisations in response to the 2019-2020 bushfires.
- In the 2021 survey:
 - 97% of people said they do not participate in any organised environmental program (such as a "Friends of" group, Nature Stewards, Gardens for Wildlife, Landcare or CoastCare). People who do participate had a higher average level of connection to nature (6.24/7 compared with 5.34/7 of non-participants).
 - Around 40% of Victorians did not think that environmental volunteering could improve their mental and physical health.
 - 70% of people agree that environmental volunteering can have a meaningful impact.
 - People interested in environmental volunteering were most interested in litter clean ups (over 50% of those interested) and physical work such as planting and weeding (over 40% of those interested). Victorians were also interested in a range of commitment types, most popular were 'once off' commitments.

¹¹ Selinske et al., 2020. Identifying and prioritizing human behaviours that benefit biodiversity. Conservation Science and Practise. <https://doi.org/10.1111/csp2.249>



MESSAGING/IMPLICATIONS

Highlighting the benefits to people’s mental and physical health and partnering with health professional to promote this message could be a keyway to encourage more volunteering.

- Developing a typology of the Victorian population (analysis to come) and using information about what people are most interested in will help us target communications to increase our impact.

Key drivers and Barriers to Environmental Volunteering in 2021

| Drivers/motivation | Barriers |
|--|---|
| <ul style="list-style-type: none"> • Supporting local community (54%) • Rewarding and fulfilling (24%) | <ul style="list-style-type: none"> • Physical capability (33%) • Time (29%) • COVID restrictions (20%) • Negative attitudes (10%) • Lack of knowledge about opportunities (6%) |

- Future survey ‘deep dives’ will enable us to continue our understanding of addressing perceived barriers to different types of engagement. There is a lot of scope to increase engagement in many of these activities.



MESSAGING/IMPLICATIONS

Offering a range of activities with different commitment types is important for attracting a range of people to environmental volunteering. To overcome physical capability barriers, we also need to make people aware of other less physical (but equally important) opportunities for volunteering.

70%

of people already agree that environmental volunteering can have a meaningful impact



Wildlife gardening

Background

Among different natural places, Victorians reported to spend the most amount of time in their own gardens. Supporting nature on this private land is a key way we can all support biodiversity (on balconies and beyond) and connect with nature. See Appendix D for more detailed results.

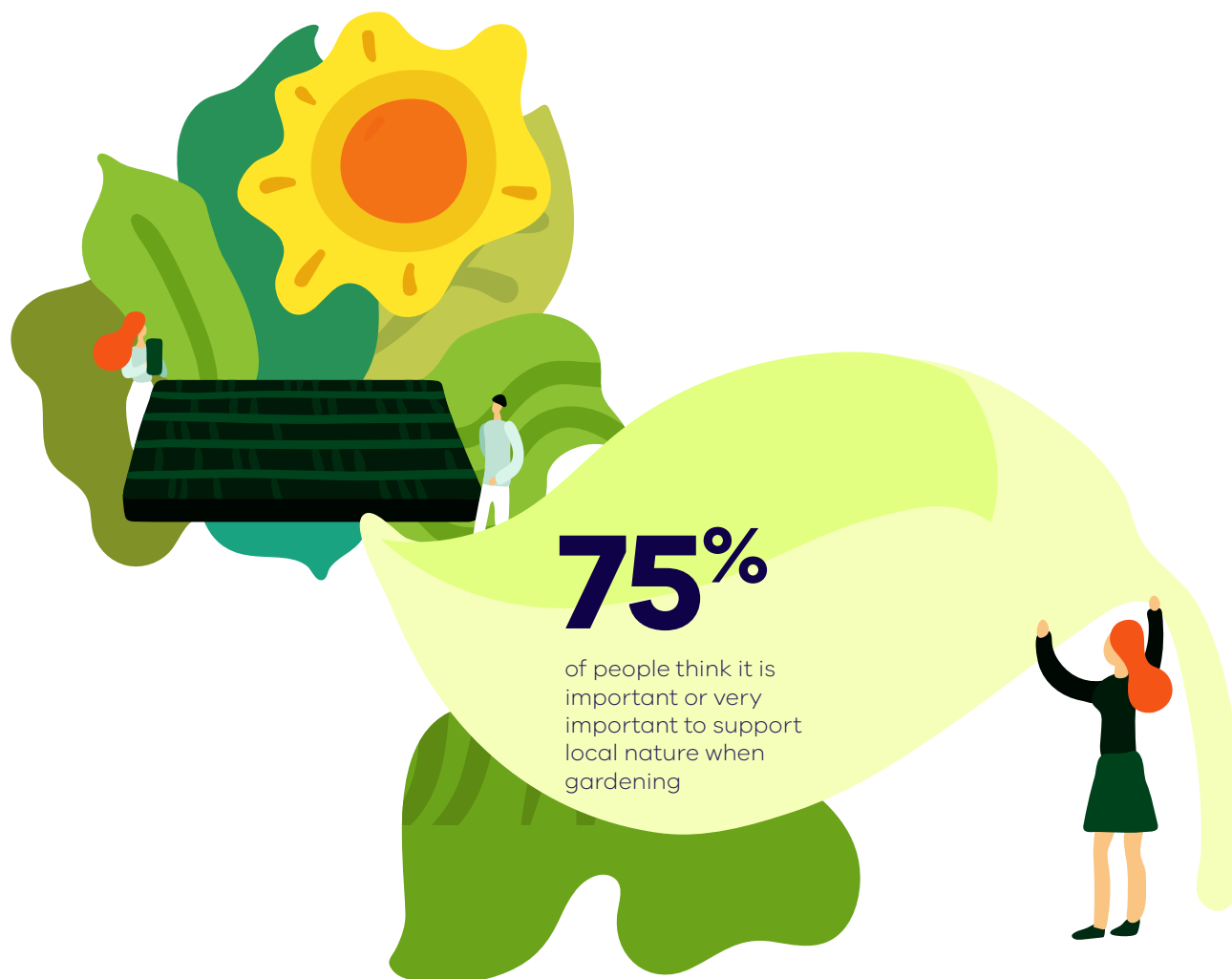
Results

- In 2021
 - Despite 75% of people agreeing that supporting local nature when gardening is important or very important, only 33% of people do this often or very often. This indicates a gap between values and actions for wildlife gardening.
 - 55% of gardeners choose 'plants that are low maintenance'. Preferences for 'tidy' gardens' and 'not leaving fallen logs' were also common.

MESSAGING/IMPLICATIONS



Messaging to promote wildlife gardening can highlight high value native plants that need little or no maintenance and the value to wildlife of leaving fallen logs and not tidying up gardens. Research also suggests social and cultural norms are important for shifting gardening behaviours away from European or British-style gardens that may offer reduced value as habitat¹².



¹² Uren et al., 2015. Exploring social and cultural norms to promote ecologically sensitive residential garden design. Landscape and Urban Planning. <https://doi.org/10.1016/j.landurbplan.2014.12.008>

Responsible Pet Ownership

Cat Containment

Containing pet cats 24 hours a day to their property is a key responsible cat ownership behaviour. It ensures cats live happy and healthy lives and protects our wildlife.

In 2020

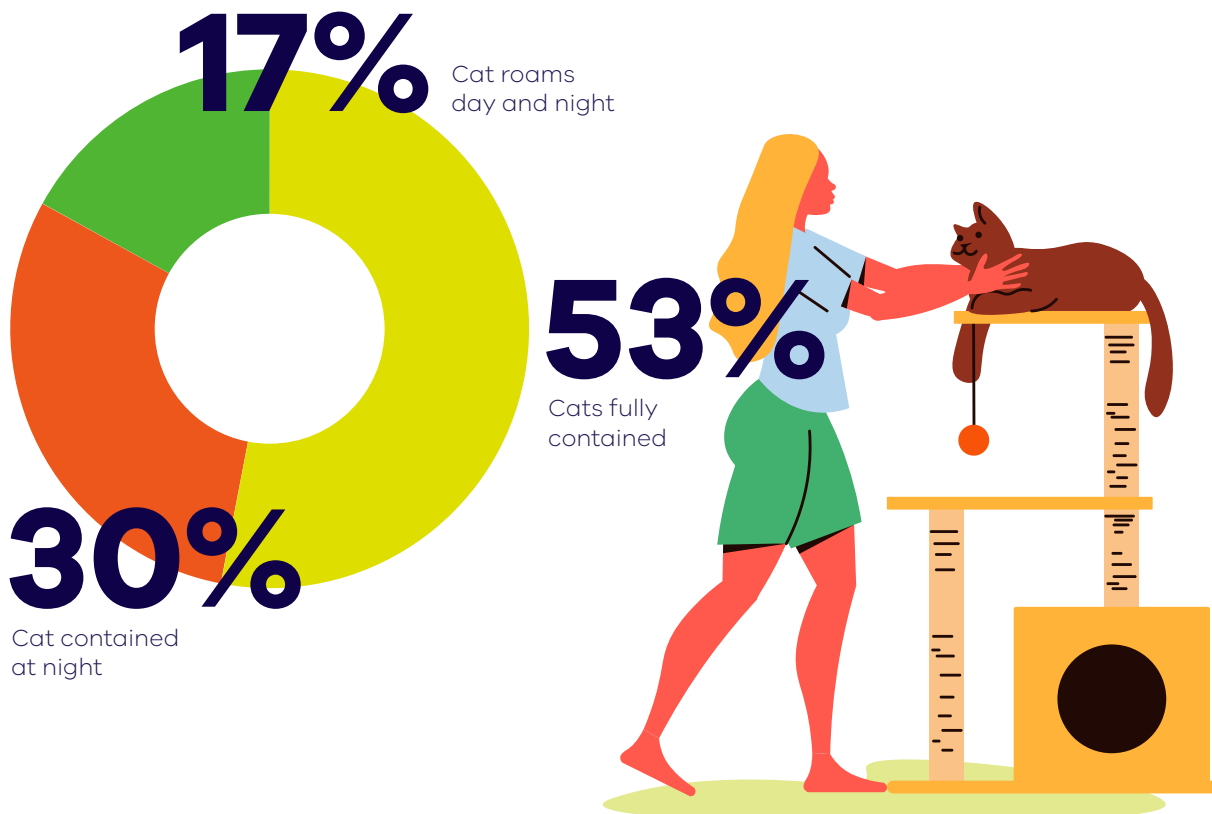
- We found 53% of cat owners kept their cat fully contained (n = 220 cat owners).
- For cat owners, protecting wildlife was not a significant predictor of containment behaviour. Instead, people who keep their cats contained were more likely to be worried that their cat might be lost, stolen, injured, or killed.

MESSAGING/IMPLICATIONS



Our study shows cat containment campaigns can be more effective if messaging appeals to owners' concern for their cats' well-being and social norms around this behaviour. These messages could be delivered by trusted people such as vets. Helping owners understand that cats' needs can be met in containment, and giving them the tools to achieve this, may be the best way to protect wildlife. Demonising cats is not the answer. The focus must shift to the benefits of containment for cats' well-being if we hope to achieve a cat-safe and wildlife-safe future^{13 14}. Promoting social norms, such as messages like 'most cat owners fully contain their cats', can also help to encourage containment behaviours.

Who's keeping their cat contained?



¹³ Van Eeden et al., 2021. Putting the cat before the wildlife: Exploring cat owners' beliefs about cat containment as predictors of owner behaviour. *Conservation Science and Practise*. <https://doi.org/10.1111/csp2.502>

¹⁴ <https://www.safecat.org.au/>

Dog leashing

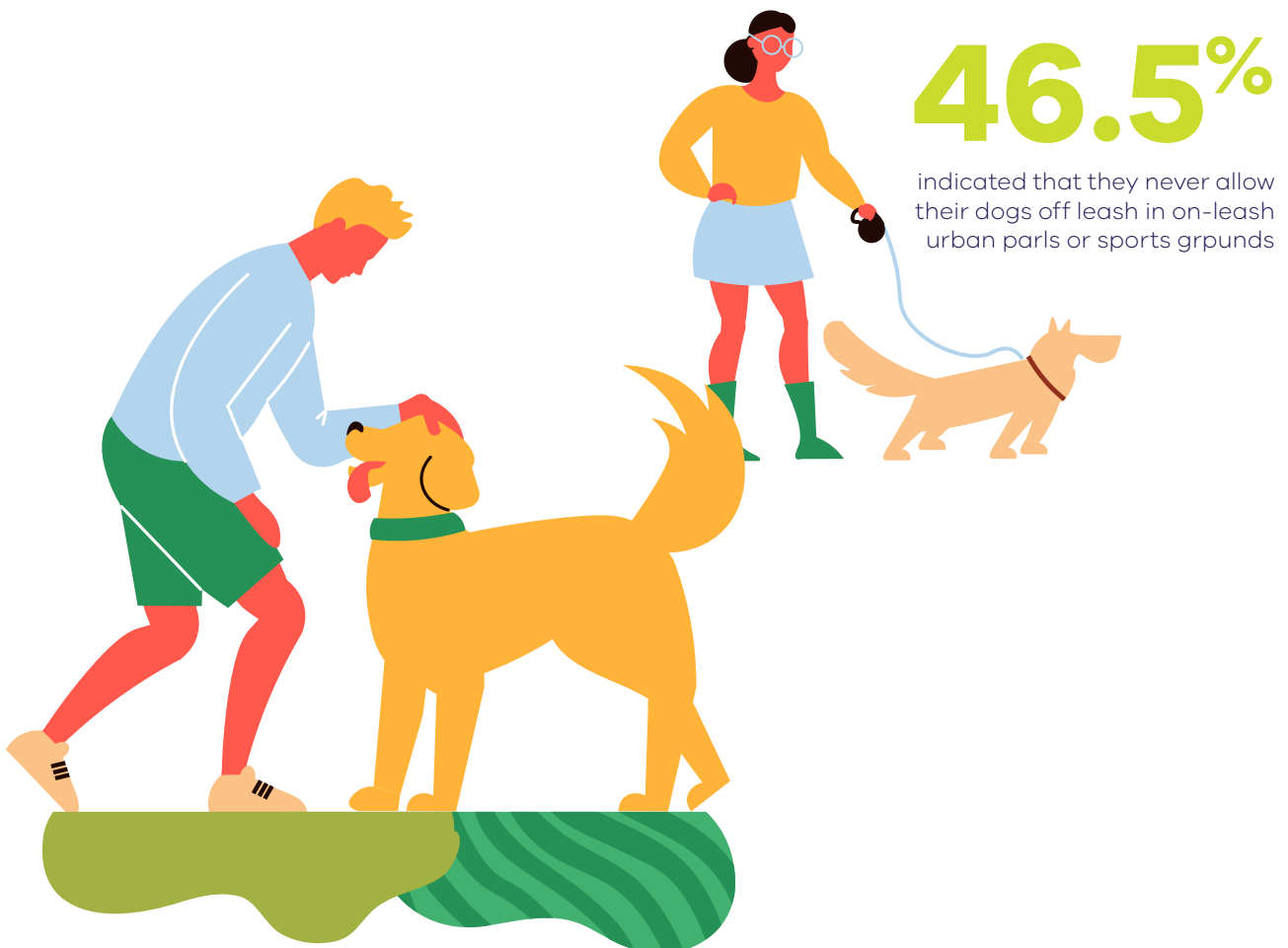
In 2020

- 46.45% of dog owners indicated that they never allow their dogs off leash in on-leash urban parks or sports grounds. This falls to 39.38% at waterbodies including beaches, rivers, and wetlands. This indicates a high level of non-compliance - more than half of respondents who visit these areas allow their dogs off leash at least some of the time, even in natural areas where leashing is required. See Appendix F for more detailed results.
- Social norms supporting leashing behaviour were prevalent among dog owners in general and were predictors of leashing at all location types.

MESSAGING/IMPLICATIONS



Campaign messaging focused on protecting wildlife may be insufficient to change behaviours in isolation because they preach to the converted. Messaging should strengthen social norms, for example, noting that most Victorians (both dog owners and those without dogs) expect dogs to be leashed in natural areas but avoiding noting that compliance is often low. In addressing dog owners' beliefs about the benefits to dogs' health of off-leash roaming in natural areas, managers may highlight that dogs still enjoy benefits of access to natural areas, even when on-leash, and potentially highlight risks in natural areas. Our results also suggest that habits are an important component of leashing behaviour, people who leashed in one area were more likely to leash in another. While changing habits is difficult, interventions could focus on creating new habits at critical times such as when people get a new dog or people who have recently moved house and will be taking their dogs to new parks.



Concern for environmental issues and support for policy

Background

Through these surveys, we are seeking to gain a better understanding of Victorians' perspectives on environmental issues and their support for government action. In 2021, we included some questions that measured concern about a range of environmental issues and people's perspectives about their own agency in addressing these issues. We also asked questions about support for government policy actions and decision-making processes. See Appendix G for more detailed results.

Environmental concern

- Concern about environmental issues was generally high. Over 85% of Victorians are concerned (to some extent) about increasing levels of plastic waste in the environment, over 80% are concerned about the loss of threatened species and ecosystems, and 65% are concerned about the loss of natural places in their local area.
- Many people feel that they don't have any control over these issues. For example, among Victorians indicating concern of these issues, 50% don't think they have any control over loss of native vegetation, 46% don't think they have any control over the loss of threatened species or ecosystems, and 41% don't think they have any control over loss of natural places in their local area.



MESSAGING/IMPLICATIONS

This highlights the need to provide opportunities to support threatened species and natural places and to highlight the impact that individuals' actions (including advocacy) can have.

Policy Support

- 70% of Victorians would support domestic cat containment policies in their local area requiring cats to be contained to owners' properties at night and 61% would support containment policies requiring domestic cats to be contained to owners' properties 24/7.
- There was generally high support for penalties for harming or trafficking wildlife or causing significant harm to wildlife in Victoria: 80% of Victorians supported monetary fines per animal impacted, 78% supported loss of license to keep native wildlife, 76% support mandatory education programs, 75% support community service work, and 62% support imprisonment.
- When asked about the importance of different factors in making decision about managing wildlife, the factors most rated as 'very important' were scientific best practice (53% rated as very important), values of Aboriginal Australian people where the wildlife lives (47%), values of the community living locally to the wildlife (44%), and values of the community most affected by the wildlife (44%). Values of the broader Victorian public (32%) and affected business interests (19%) were least rated as very important.
- The Victorian government is sometimes or always trusted as source of environmental information for 54% of Victorians (among a wider list; for people who say they do get information from this source). Social media is the least trusted, while Zoos Victoria is the most trusted, with 31% and 89% of Victorians, respectively, sometimes or always trusting these sources.

>80%

of Victorians are concerned about the loss of threatened species and ecosystems (2021)



Appendix A: Connection to nature results

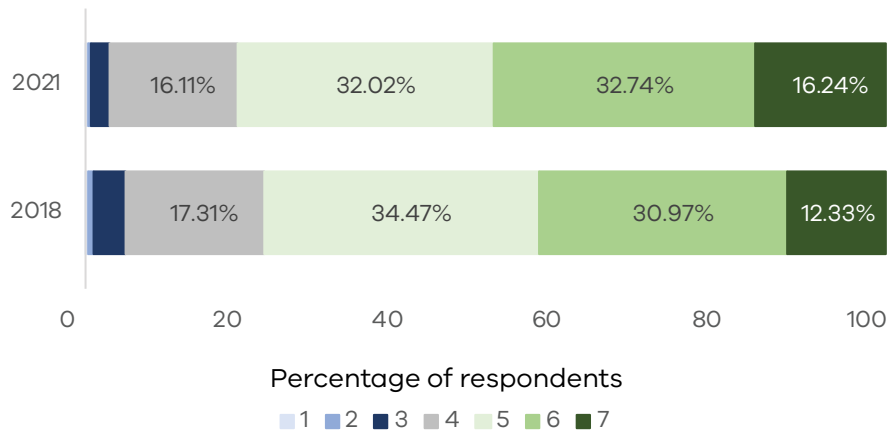


Figure 1. Percentage of Victorians reporting different CN-12 mean scores. 5 indicates a moderate connection to nature score, 6 a high connection to nature score and 7 a very high connection to nature score. *Values in the legend represent the range of mean scores that fall within that integer.

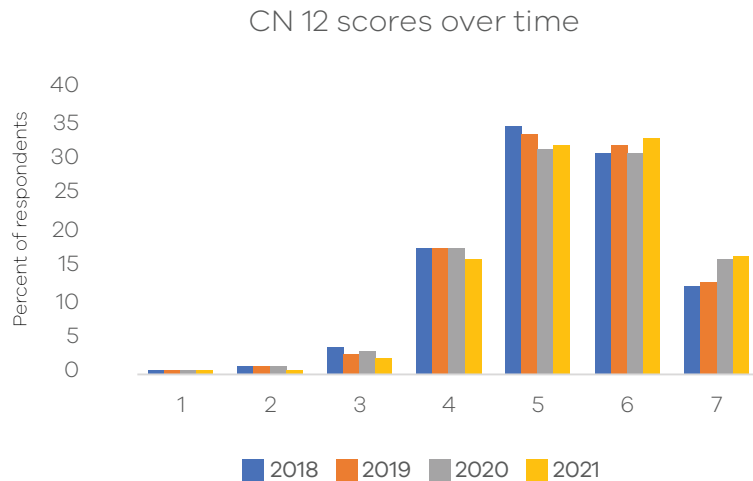


Figure 2. Distribution of CN -12 mean scores over four years of data collection. *x-axis represents the range of mean scores that fall within that integer.



Appendix B: Spending time in nature results

Table 1. Percentage of respondents who reported that they spend time in nature at least once a fortnight.

| Year | 2018 | 2019 | 2020 | 2021 |
|------------------|--------|--------|--------|--------|
| % of respondents | 71.84% | 54.25% | 63.38% | 63.12% |

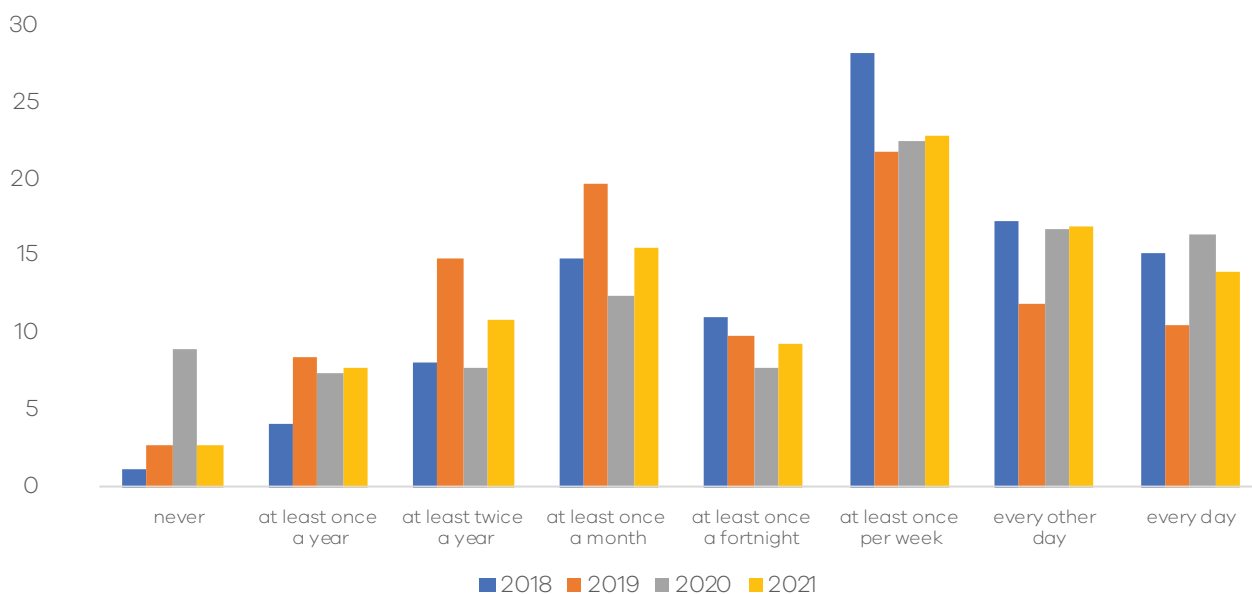


Figure 3. The amount of time people generally spent time in nature over four years of data collection.

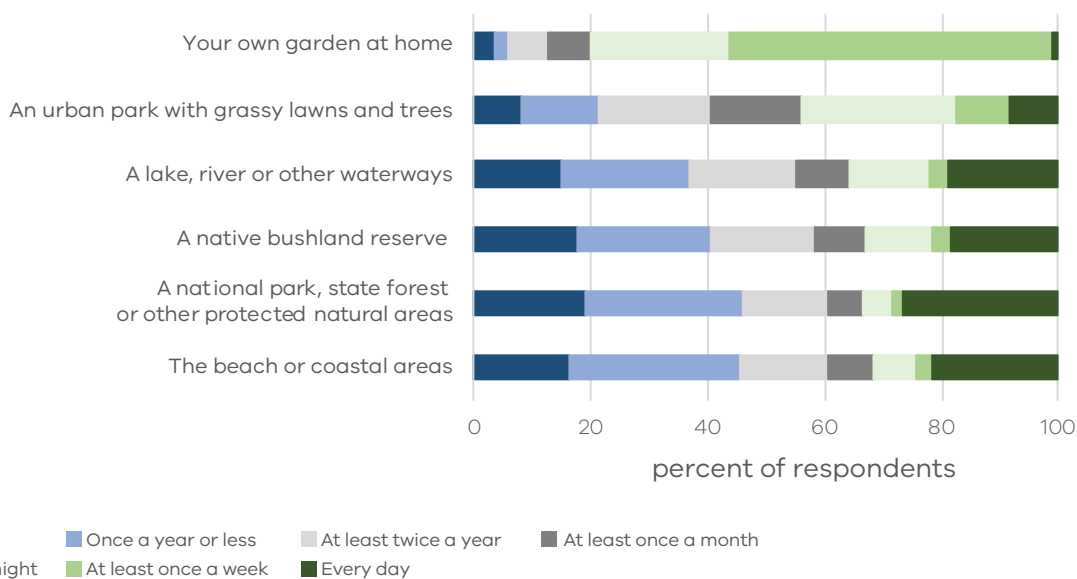


Figure 4. Reported time spent at different locations in the 12 months prior to the 2021 survey.

To what extent do you agree or disagree with the following statements?

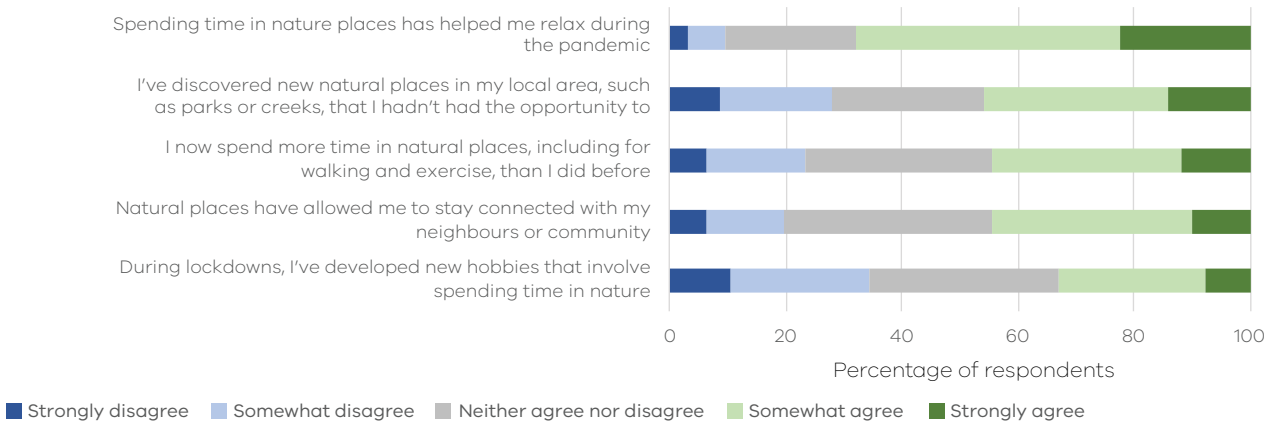


Figure 5. Perspectives on nature engagement and visitation to natural places during the COVID-19 pandemic.

Appendix C: Pro-conservation behaviour results.

*As part of the question refinement process for the act for nature target, statements, and scales in the 2020 and 2021 surveys are slightly different than those used in the 2018 and 2019 surveys.

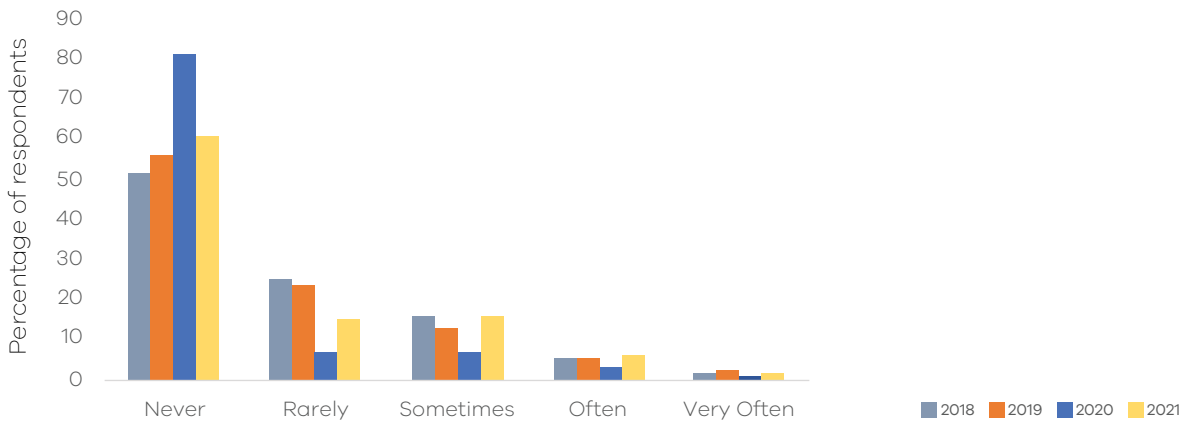


Figure 6. Engagement in environmental volunteering (planting or weeding outside of property), each year during 2018-2021*.

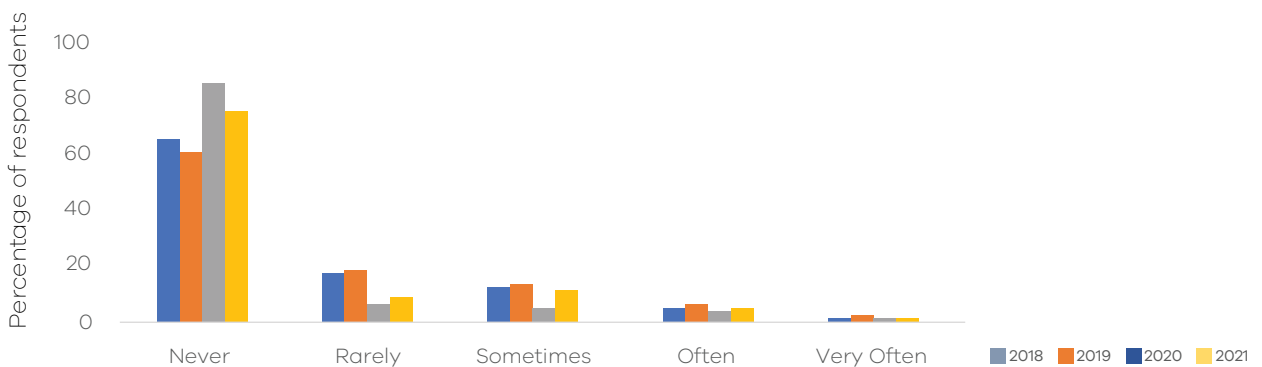


Figure 7. Engagement in citizen science each year during 2018-2021*.

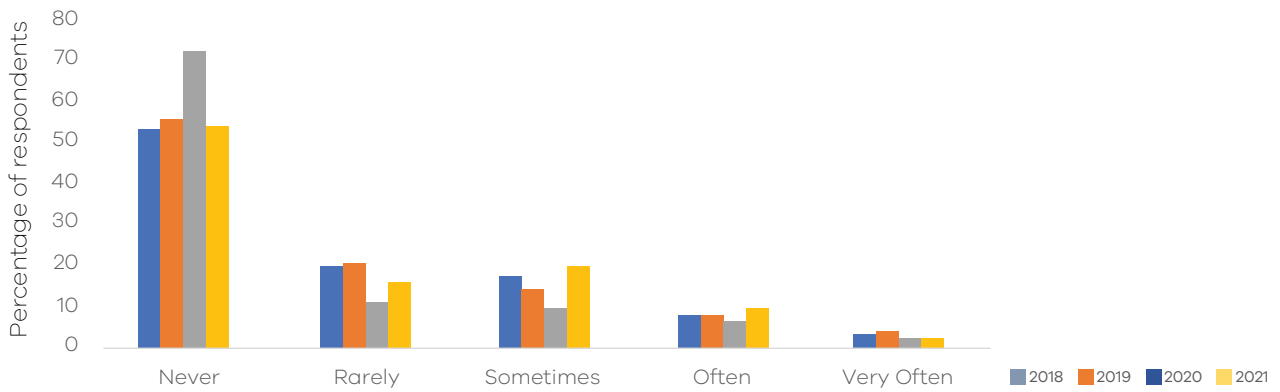


Figure 8. Advocating for the environment each year during 2018-2021*

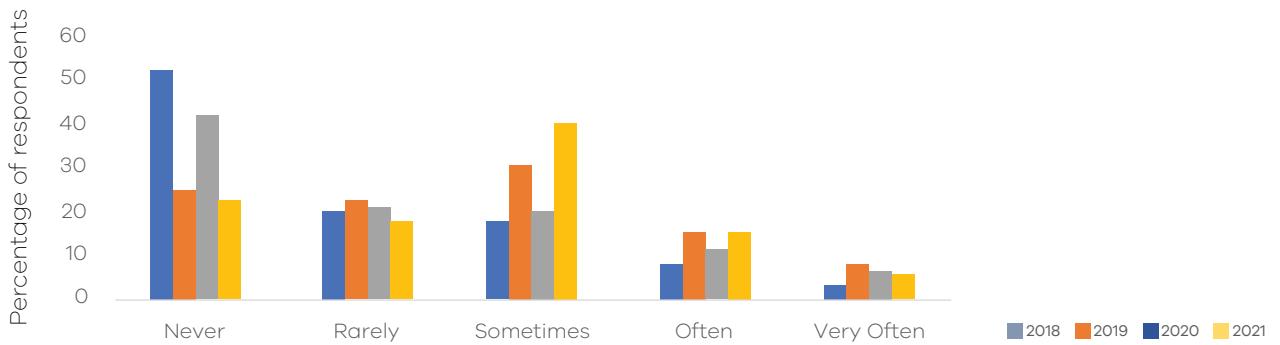


Figure 9. Picking up litter each year during 2018-2021*

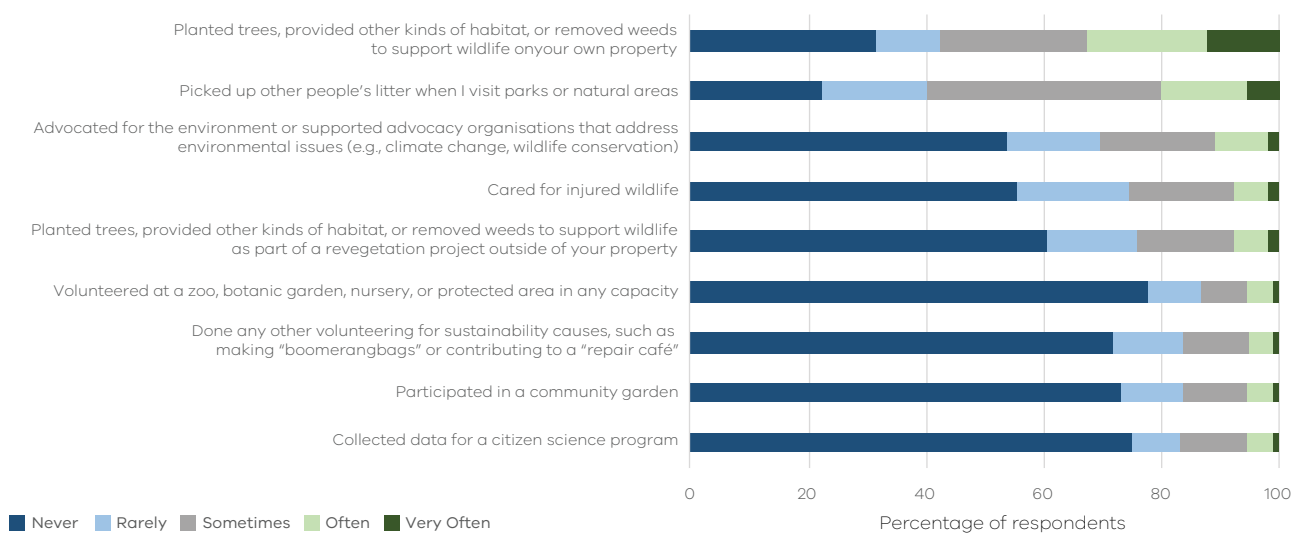


Figure 10. Frequency of engagement in environmental volunteering in the 12 months prior to the 2021 survey.

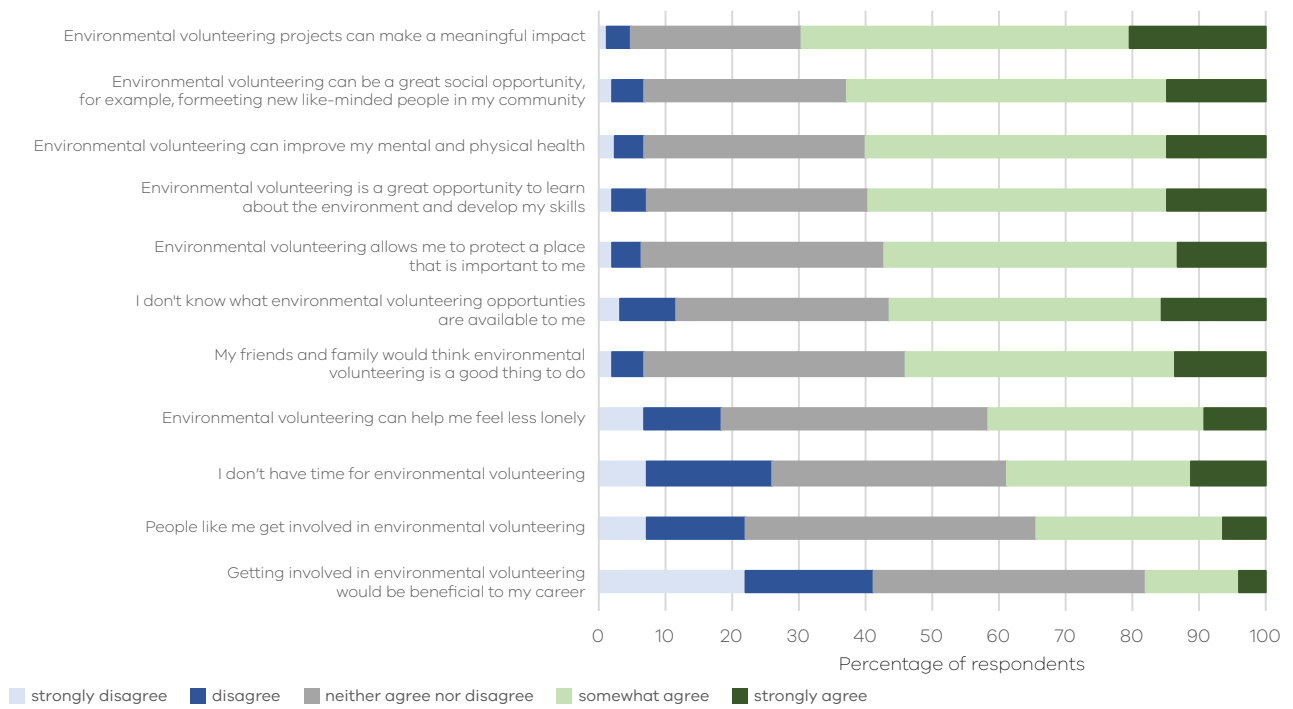


Figure 11. Perspectives on environmental volunteering in 2021.

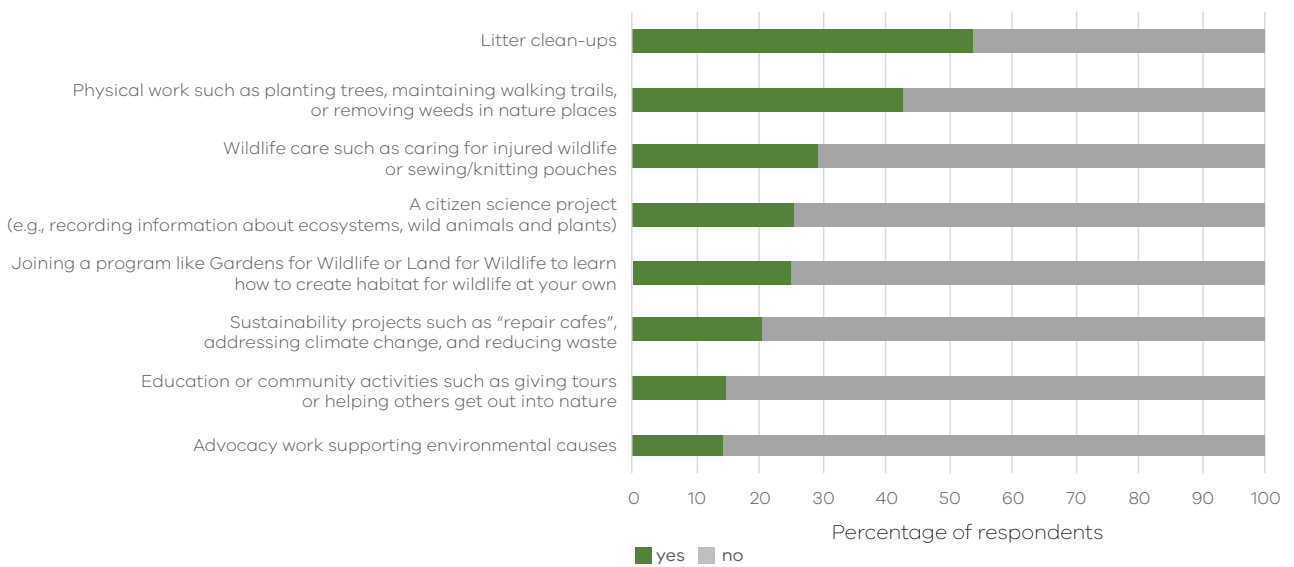


Figure 12. Interest in different types of environmental volunteering in 2021 (n=915).

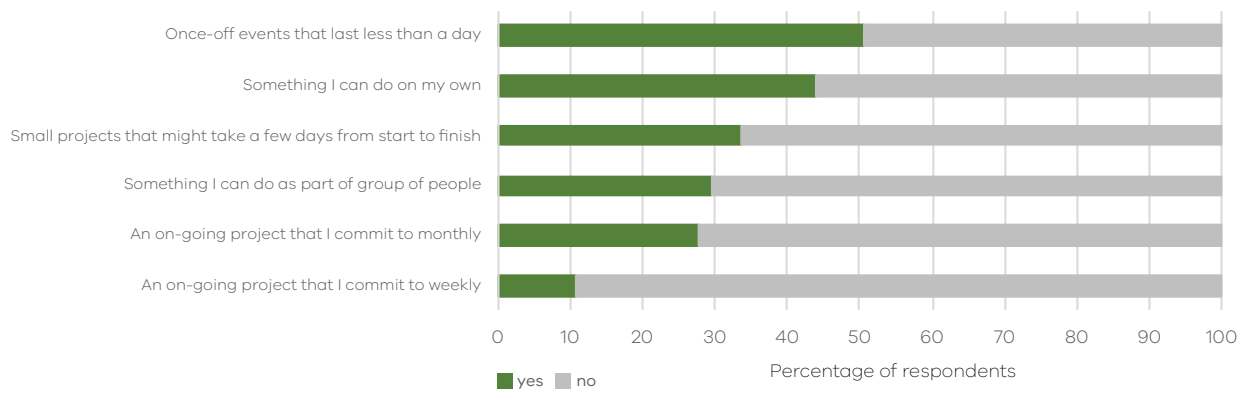


Figure 13. Among those interested in environmental volunteering, the kind of participation they were interested in, in 2021 (n=773).

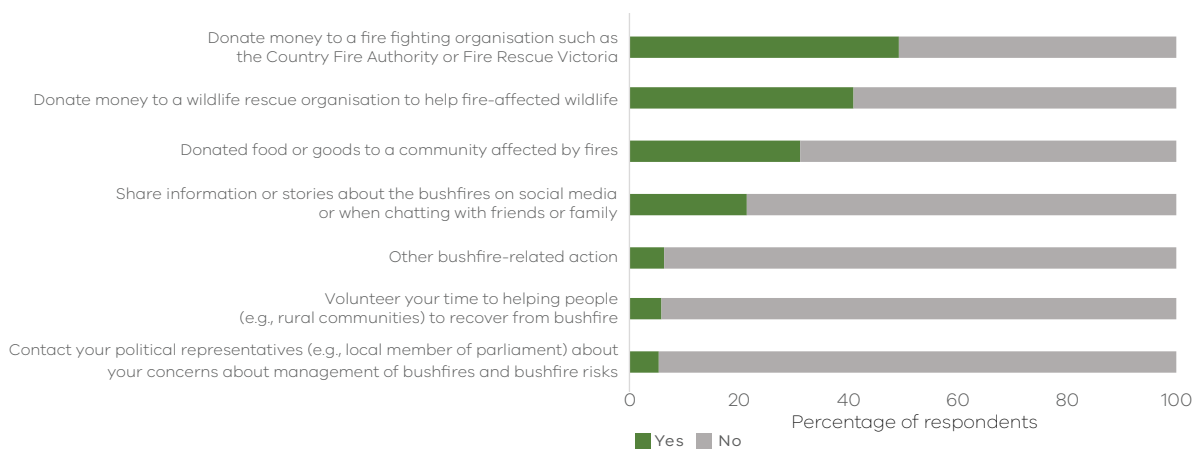


Figure 14. Actions respondents engaged in, in different actions in response to the 2019-2020 bushfires.

Appendix D: Wildlife gardening behaviour results.

Which of the following is important to you when managing your garden or property?

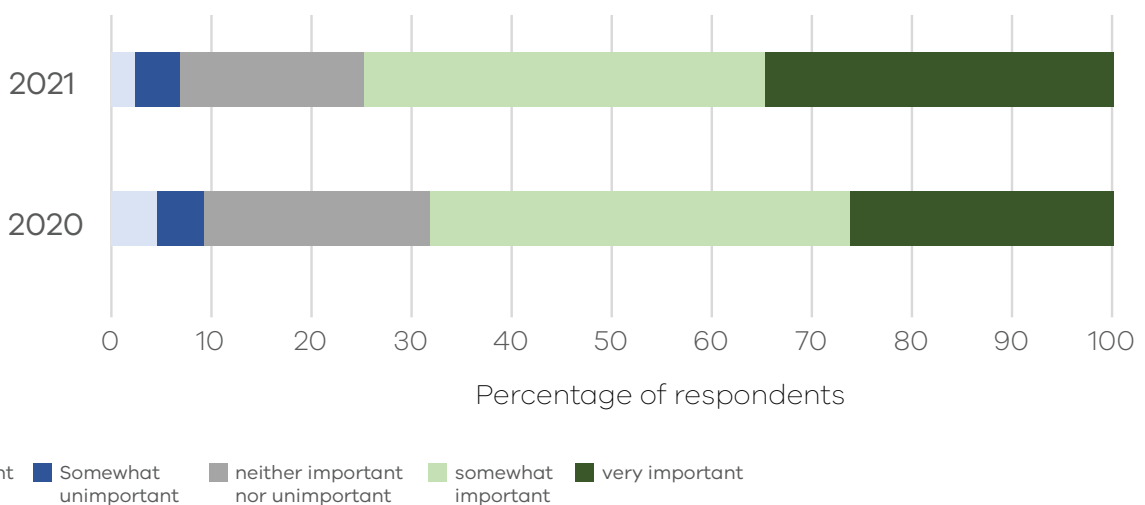


Figure 15. Prioritising supporting local nature when gardening.

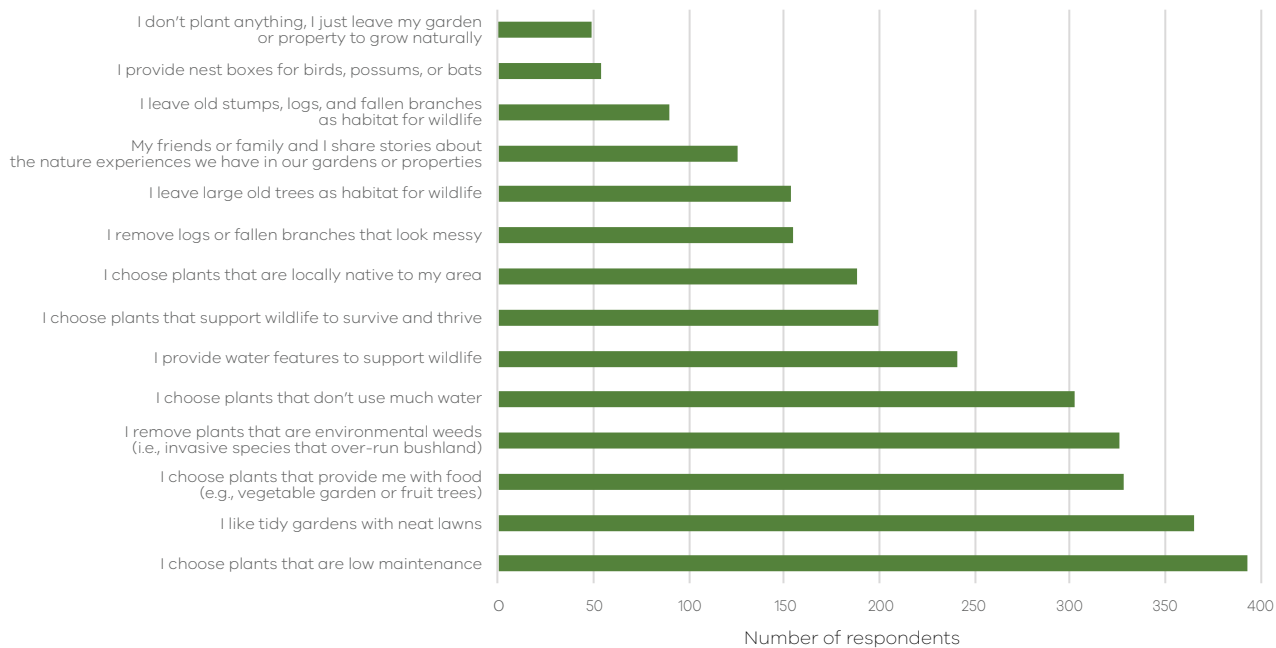


Figure 16. Ranked list of items important to gardeners when managing their gardens/properties.
*X-axis represents the number of respondents.

Appendix E: Advocacy behaviour results

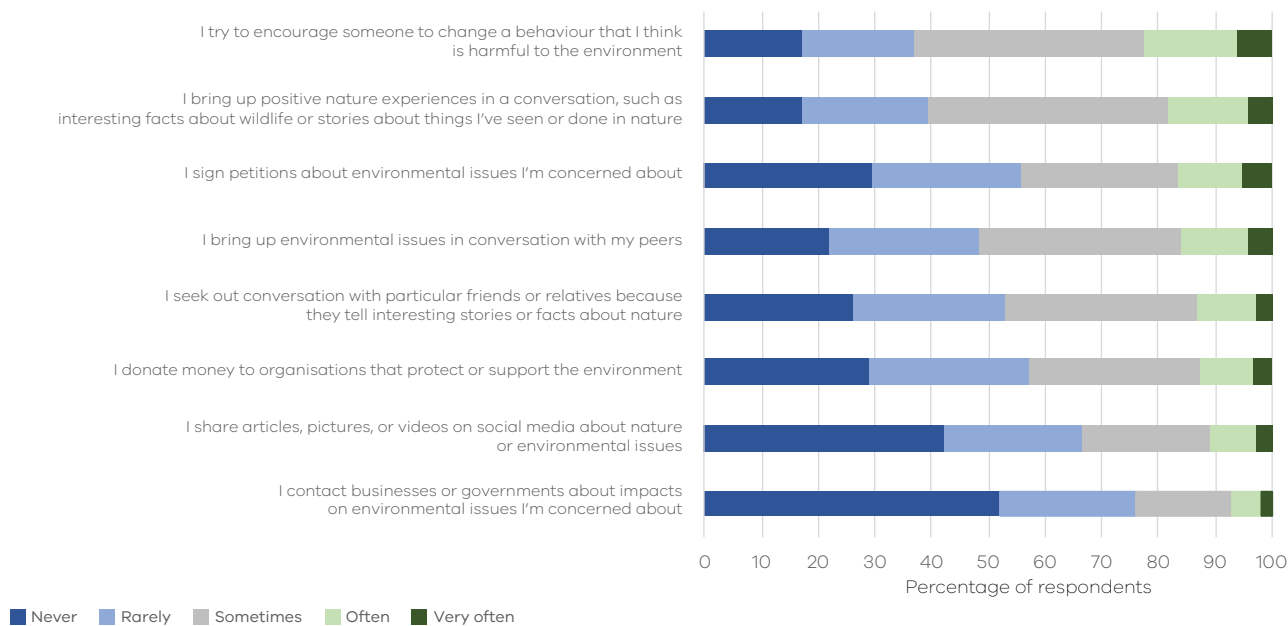


Figure 17. Frequency of engagement in advocacy behaviours in 2021.

Appendix F: Responsible pet ownership

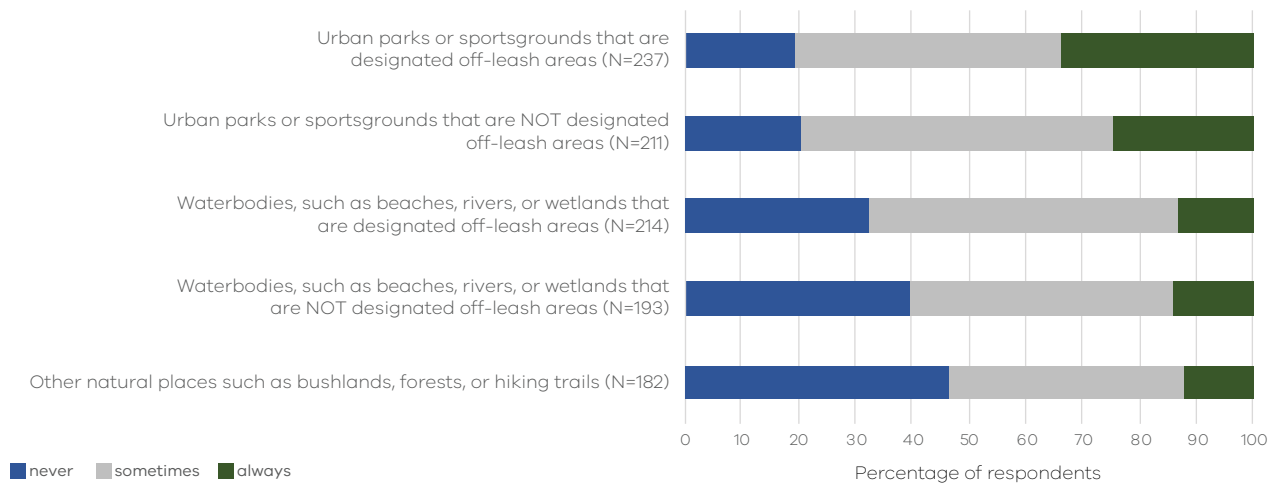


Figure 18. Dog owners' leashing behaviour in different location types.

Appendix G: Concern for environmental issues and support for policy.

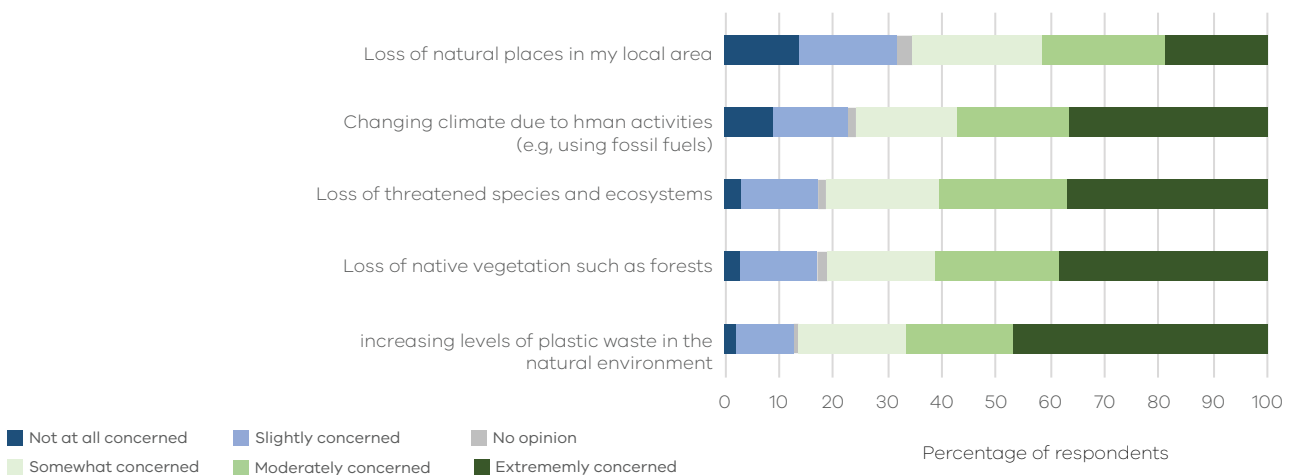


Figure 19. Concern about environmental issues in 2021.

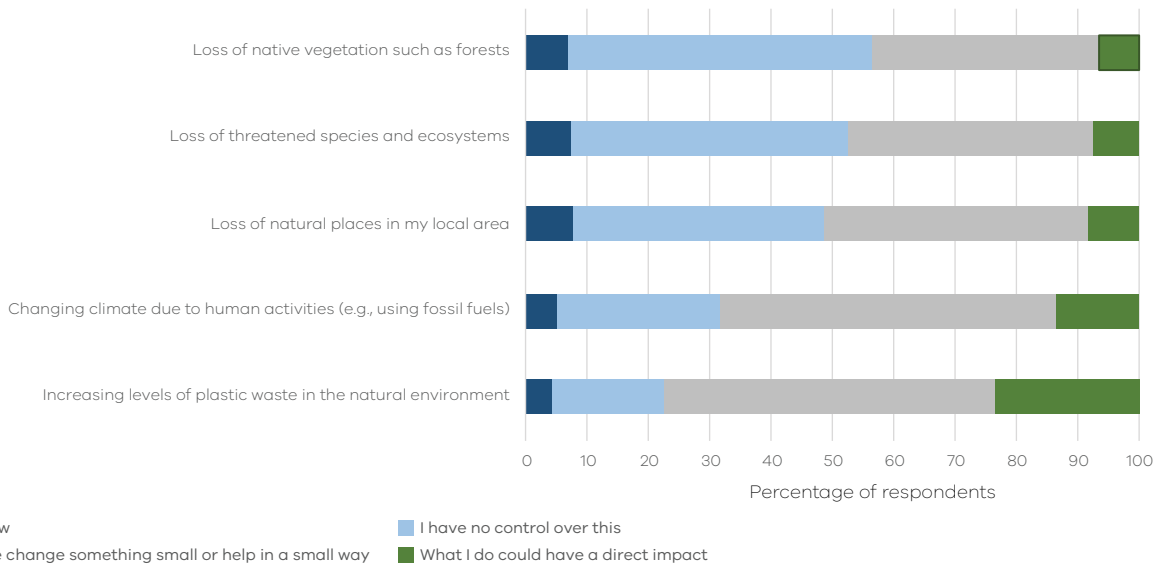


Figure 20. Perceived control over these environmental issues in 2021.

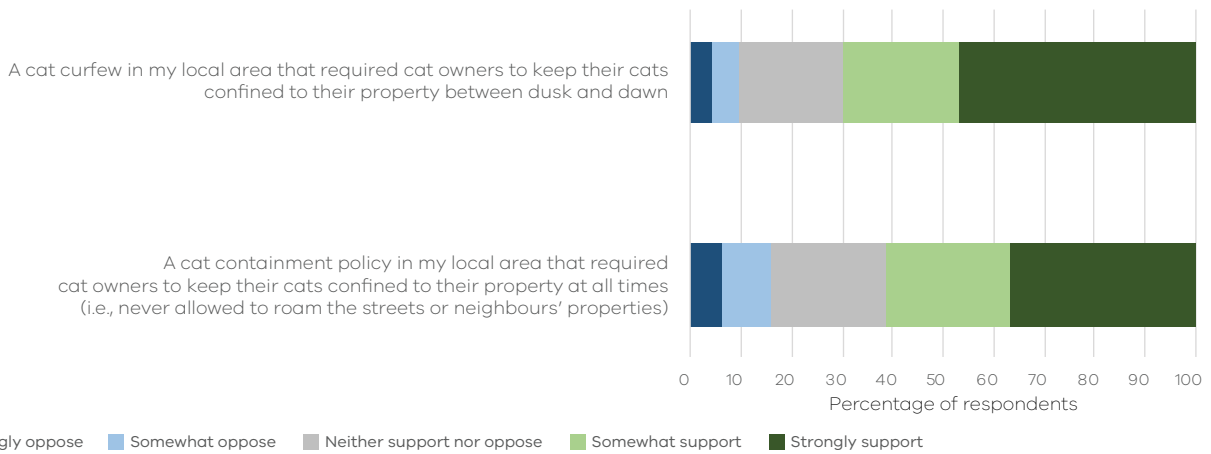


Figure 21. Support for different cat containment by-law options

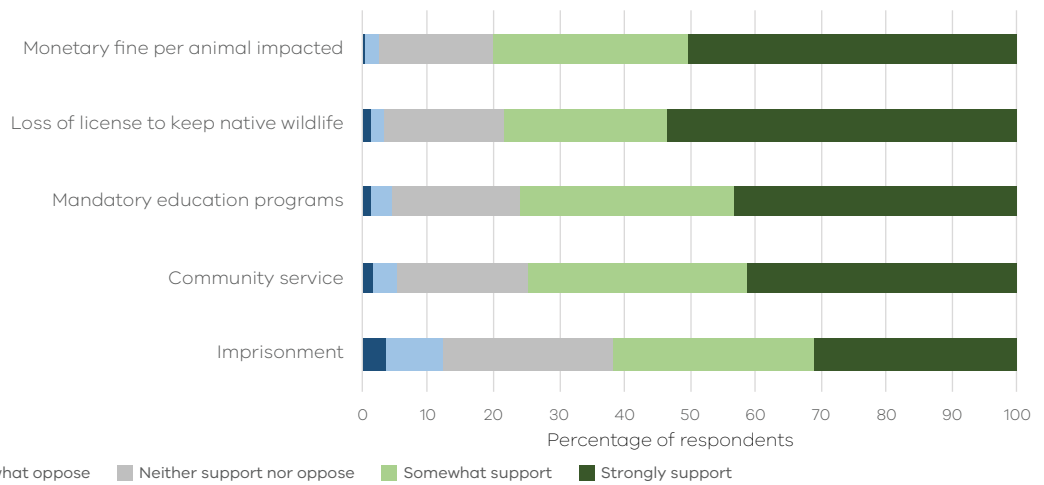


Figure 22. Support for different kinds of penalties for harming or trafficking wildlife or causing significant harm to wildlife in Victoria.

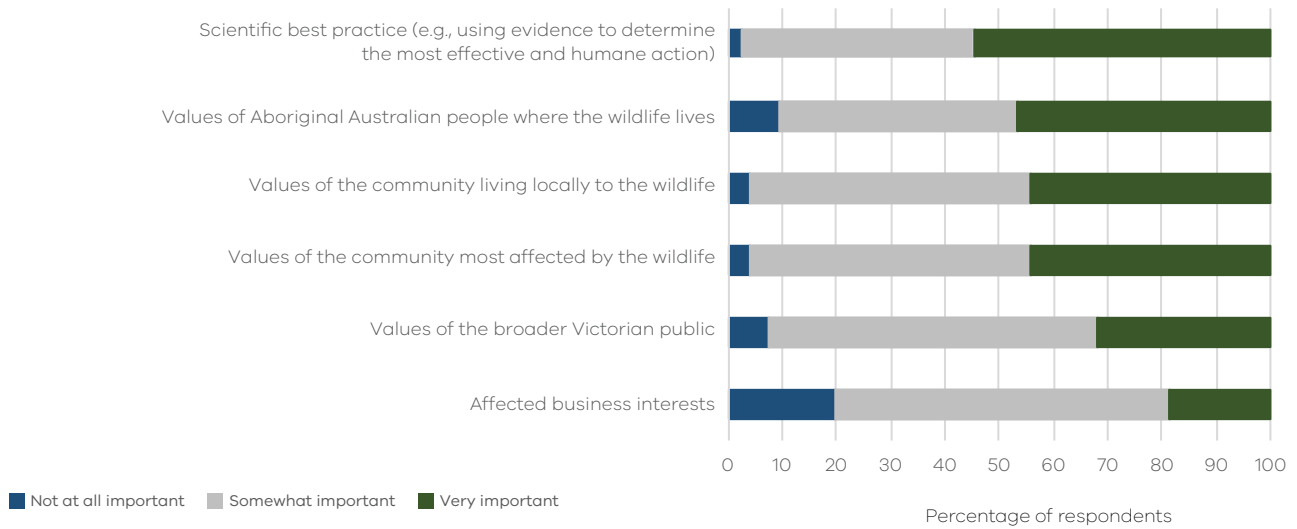


Figure 23. Perspectives on the importance of different factors in making decisions about managing wildlife.

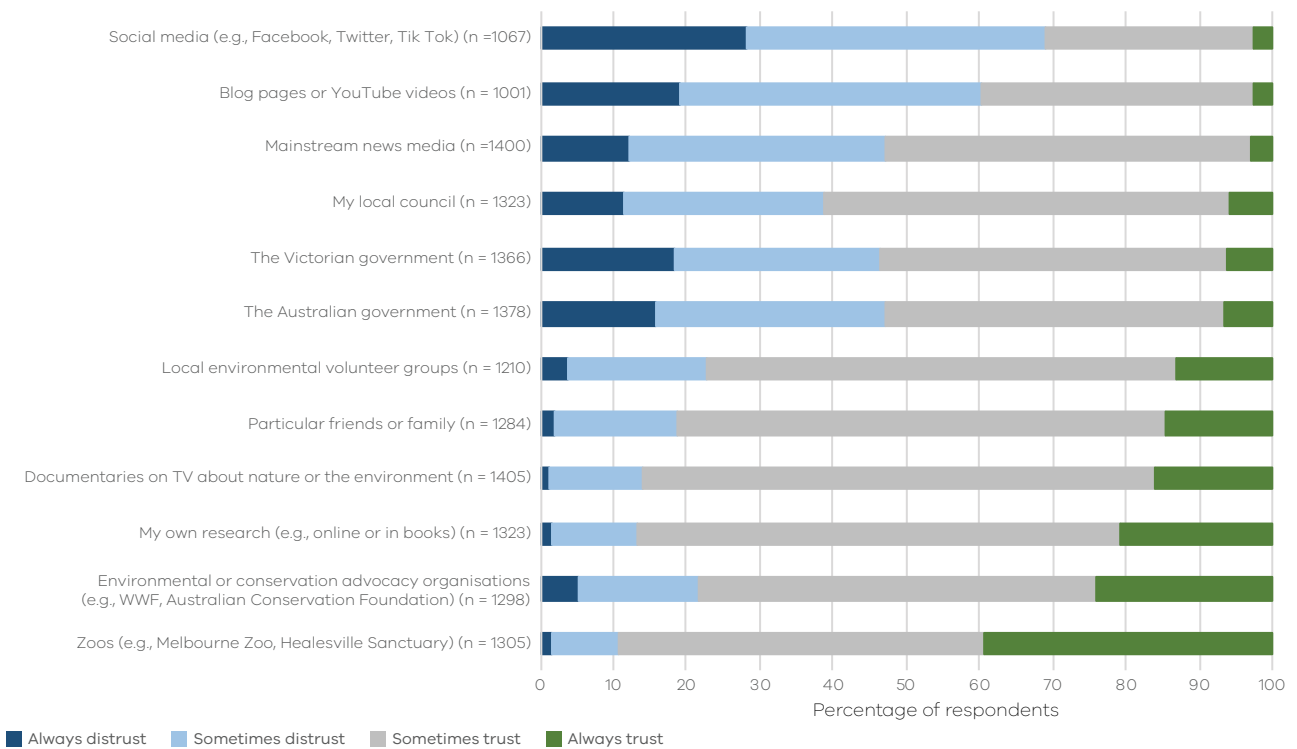


Figure 24. Sources of information on environmental issues (N in parentheses) and the percentage of these respondents who trust these sources.

Appendix H.

| Survey name | Year | Sample size (n) | Focus | Outputs |
|------------------------|------|--|---|--|
| VVN Foundations Survey | 2018 | 3090 | <p>Baseline data collection on 5 main themes:</p> <p><i>Theme 1</i> Nature connection</p> <p><i>Theme 2</i> Environmental values</p> <p><i>Theme 3</i> Engagement behaviours</p> <p><i>Theme 4</i> Biodiversity knowledge</p> <p><i>Theme 5</i> Pro-conservation behaviours</p> | <ul style="list-style-type: none"> Full report: VVN Foundations Survey Final Report March 2019 Summary Report: VVN SurveySummary_Final 2019.pdf |
| VVN State-wide Survey | 2019 | 1141 <small>(1141 repeat responders from the previous year)</small> | To verify the CN-12 – a shorter multidimensional instrument to measure connection to nature. | <ul style="list-style-type: none"> Melissa Hatty's PhD Thesis (Encouraging Victorians to <u>connect</u> with, and to protect, the natural environment) and associated publications. <ol style="list-style-type: none"> Hatty, M. A., Smith, L. D. G., Goodwin, D., & Mavondo, F. T. (2020). The CN-12: A brief, multidimensional connection with nature instrument. <i>Frontiers in Psychology</i>, 11(1566), 1– 14. https://doi.org/10.3389/fpsyg.2020.01566 Hatty, M., D. Goodwin, L. Smith, and F. Mavondo. 2022. Speaking of nature: Relationships between how people think about, connect with, and act to protect nature. <i>Ecology and Society</i> 27(3):17. https://doi.org/10.5751/ES-13369-270317. Hatty, M. A., Mavondo, F. T., Goodwin, D., & Smith, L. D. G. (2022). Nurturing connection with nature: the role of spending time in different types of nature, <i>Ecosystems and People</i>, 18(1), 630-642. https://doi.org/10.1080/26395916.2022.2143570 |

| Survey name | Year | Sample size (n) | Focus | Outputs |
|-----------------------|------|---------------------------------|--|--|
| VVN State-wide Survey | 2020 | 1024 (701 repeat responders) | Core components including key pro-conservation behaviours and CN12 plus additional focus on impacts of covid, bushfires, motivations and barriers for responsible pet ownership. | <ul style="list-style-type: none"> Reporting on VVN Targets. <ol style="list-style-type: none"> Van Eeden et al., (2021) Putting the cat before the wildlife: Exploring cat owners' beliefs about cat containment as predictors of owner behavior. Conservation Science and Practise. https://doi.org/10.1111/csp2.502 Van Eeden et al., (2021) Research reveals why pet owners keep their cats indoors – and it's not to protect wildlife. The Conversation. Van Eeden et al., (2022) The leashing behavior of dog owners in different natural areas. Human Dimensions of Wildlife. https://doi.org/10.1080/10871209.2022.2077482 Van Eeden et al., (in progress) The impacts of COVID lockdowns on access to nature and wellbeing. |
| VVN State-wide Survey | 2021 | 1521 (487 repeat samples) | Core components including key pro-conservation behaviours and CN12 plus additional focus on environmental volunteering, wildlife gardening and revision of the Victorian typology. | <ul style="list-style-type: none"> Reporting on VVN Targets <ol style="list-style-type: none"> Squires et al., (in progress) Understanding the motivations and barriers to environmental volunteering in Victoria |

