

# Victorians Value Nature

A synthesis of findings from 2017–2019  
research for 'Biodiversity 2037'

F. Hames

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Arthur Rylah Institute for Environmental Research  
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## Acknowledgment

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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**Front cover photo:** ARI's Di Crowther leads a citizen science project on the Dandenong Burrowing Cray (Photo: Andrew Geschke).

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# **Victorians Value Nature**

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'Biodiversity 2037'**

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**Technical Report Series No. 307**

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Department of Environment, Land, Water and Planning  
Heidelberg, Victoria



## Preamble

This report presents a synthesis of findings from Victorians Value Nature research conducted from 2017–2019, to provide guidance towards ‘Protecting Victoria’s Environment—Biodiversity 2037’. The report was prepared with the Victorians Value Nature team, partners, and collaborators (see acknowledgements below) and was compiled in 2019 to synthesise the foundational research base and to identify learnings and recommendations for future research. This report was used by the Victorians Value Nature team and collaborators to inform strategic direction, and research program and practice. The report is being released now in recognition that the contents may have value for a wider audience.

I recognise that a number of significant events have occurred since 2019, and these events may have affected the ways in which Victorians have valued, connected with, and acted for nature. This includes the global COVID-19 pandemic and associated lockdowns, which imposed restrictions on the daily life of Victorians including when, who with, and how often, they could visit nature, and meant that many initiatives, programs, events, and usual practices were no longer taking place. In spite of these changes, this report is now shared in its original authentic form to provide a comprehensive account of the foundational research in the Victorians Value Nature program.

## Acknowledgements

This project was funded with support of the Victorian Government. The work presented reflects the contributions of many teams in delivering the components synthesised here, including those at BehaviourWorks Australia, Monash University for the Victorians Value Nature (VVN) Foundation Survey; RMIT University Interdisciplinary Conservation Science Research Group (ICON Science) for the pro-environmental behaviours project; Department of Environment, Land, Water and Planning (DELWP) staff and the Volunteering sector; the Royal Botanic Gardens Victoria for the ‘Sensemaking’ study; and Roots & Shoots Australia. Many thanks to DELWP staff, especially Adam Muir for leading the early stages of the VVN program, Andrew Geschke for substantial and enthusiastic project support, Vera Lubczenko for Volunteering team leadership, Kate Lee for progressing the initial report through to this published version, and Kim Lowe for persistent efforts to bring the VVN goal to tangible, evidence-based life. Many thanks to all those who have completed surveys, participated in citizen science projects and who act for nature. I acknowledge the core role of nature, and the inspiration, meaning, and well-being benefits gained from nature itself, and the leadership and example of a demonstrated reciprocal relationship with nature, held by First Nations and Aboriginal people.

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## Summary

We are at an historic moment in time, in which nature needs us more than ever, and we need nature more than ever before. The Department of Environment, Land, Water and Planning (DELWP)'s 'Protecting Victoria's Environment – Biodiversity 2037' addresses these dual needs and has a vision in which Victorians Value Nature (VVN). This goal envisages all Victorians being connected with nature, and many acting for nature, in ways which collectively contribute to improved biodiversity condition.

A body of research, commissioned by DELWP's Biodiversity Division, was undertaken from 2017–2019 to provide sound direction for achieving this vision. This report collates and summarises the findings from multiple outputs related to the VVN goal. The evidence includes analyses of the Victorian population and their current connectedness to and actions for nature, options for driving behaviour change, narrative testing and some case studies.

Most Victorians care about nature. Many want more opportunities to enjoy nature and join in activities to protect it. There are already many people acting for nature, but 'Biodiversity 2037' reminds us that we need to increase our combined efforts to meet the increasing need, in the face of ongoing biodiversity decline.

To meet this need, by both people and nature, the research suggests we should deepen and widen people's connections with nature to increase their likelihood of acting for nature. For those who are already acting, we should encourage them to take up additional actions, and increase the frequency of those actions.

The research suggests we should make opportunities more visible and accessible, highlight the meaning and social opportunities of activities, and create opportunities that are more diverse, appeal to young people and men, and more actively include urban communities. The opportunities to connect with and act for nature should be diverse, to mirror the diversity of nature, and the diversity of our communities. We should also celebrate the current leadership role of older women in connecting and acting for nature, and explore mentoring and championing roles for them. People clearly prefer episodic or event-based activities, and we should consider the important motivations and lenses of family, fun, social networking, exploring new technology, and linking through other lenses such as art and recreation. Furthermore, we should build the visibility of stories of positive nature experiences, and tell those stories using multiple formats to help people see that others are connected with nature, and to grow a sense of engaging with nature as a 'social norm'..

Following an analysis of impactful pro-environmental behaviours Victorians can do, behaviours were narrowed down to those most relevant to DELWP's sphere of interest and influence. For actions to have the most impact for biodiversity, we recommend a focus on wildlife gardening, volunteering for nature, citizen science, pet control, spending time in nature, and advocating or sharing positive nature stories.

We recognise the important role of Traditional Owners and Aboriginal Victorians in demonstrating a deep connection with Country, including a cultural dimension, and in building a reciprocal relationship with nature. We recommend the development of opportunities for the wider community to learn from Traditional Owners, on Country, to support important obligations around Aboriginal inclusion and to enable Victorians to gain more meaning from their interactions with nature.

Those already delivering volunteer actions for nature are burdened by a myriad of logistical and administrative demands and we recognise this is a barrier to growing and improving opportunities. We encourage streamlining these demands and collaboration between partners to reduce transaction costs and share lessons and tasks.

The nature and volunteer sectors, and the Victorian community are all changing rapidly. It will be crucial to co-create opportunities for environmental partner organisations to work collaboratively, to meet the diverse needs of the community, build visibility of new opportunities across audiences, and create a social norm of connecting with and acting for nature. It will also be critical to evaluate interventions and research ongoing changes in the Victorian community. To support this, we need common evaluation tools and mechanisms, and shared data repositories to enable sound evaluation of interventions, and sharing of results back to partners and the sector.

DELWP should continue to play a scaffolding, leadership role for the People-Nature Sector, through identifying and addressing key knowledge gaps, connecting the sector, enabling knowledge sharing, supporting sector activity visibility, nourishing and encouraging creative collaboration and co-creation, and co-developing simple and sound common evaluation mechanisms.



# 1 Introduction

Globally, biodiversity is in crisis (Diaz et al. 2019). A raft of enduring threats to threatened species and ecosystems, and the amplifying effects of climate change, are impacting on nature around the world. Alongside this decline, we are witnessing a decline in ordinary people's connection with nature, and their actions to support nature. This loss of connection has impacts on both people, such as through health impacts and loss of identity and wellbeing (Maller et al. 2006; Kingsley et al. 2009; Ngom et al. 2016) and on nature, through damaging actions and inadequate conservation efforts.

In Victoria, the 20-year plan: 'Protecting Victoria's Environment – Biodiversity 2037' (DELWP 2017; often referred to simply as 'Biodiversity 2037') recognises these impacts and has two key goals: that we improve biodiversity condition, and that more Victorians connect with, and act for nature. This latter goal, commonly referred to as 'Victorians Value Nature', or simply VVN, is a distinguishing feature of this plan. It recognises that governments cannot solve the biodiversity crisis alone. It reflects our understanding that we need to grow and synergise the collective effort of organisations, agencies and individuals working to support biodiversity. It also accepts the responsibility of government to analyse, prioritise and identify the most effective paths for this effort, and to share that thinking and those analyses with our partners and the wider community.

'Biodiversity 2037' also reflects the Victorian Government's obligations to protect the natural environment and biodiversity, as Australia is a signatory to the United Nations Convention on Biological Diversity, the United Nations Framework Convention on Climate Change, and the United Nations Universal Declaration of Human Rights obligations. The Victorian Government is also committed to the Sustainable Development Goals; the relevant goals for this work include Goal 3 (Good health and well-being), Goal 7 (Affordable and clean energy), Goal 11 (Sustainable cities and communities), Goal 12 (Responsible consumption and production), Goal 13 (Climate action), Goal 14 (Life below water) and Goal 15 (Life on land). 'Biodiversity 2037' recognises these obligations and demonstrates the Government's commitment to ensuring consistency with Australian and international biodiversity and climate change agreements.

To address these goals, DELWP, through the Victorians Value Nature (VVN) goal, commissioned and collaborated on several projects to support Victorians in connecting with and acting for nature. To synthesise the findings of this work and develop recommendations for future work, this report collates and summarises outputs from several projects commissioned by DELWP and partners, from 2017–2019. The work includes analyses of the Victorian population and their current connectedness to and actions for nature, options for driving behaviour change, narrative testing, and some case studies. This report was intended to share the key messages, lessons, and combined directions from those outputs, to provide guidance, support more effective collective effort, and generate a subsequent improvement in the number of Victorians connected to nature, of those acting for nature in meaningful ways, and an improvement in Victoria's biodiversity.

## 2 Methods

### 2.1 Understanding the VVN pathway

To fully understand the VVN goal and the pathway to impact, a Program Logic exercise was run, with relevant DELWP staff and partners (e.g., Parks Victoria representatives) to explore definitions and assumptions; map existing inputs, outputs, and anticipated outcomes; and identify clear gaps. This included a Bennett's Hierarchy approach, recognising the 'people part' of the pathway, including audience segmentation, participation, activities, knowledge and skills, desired practice change, and impact. A separate Structured Decision Making (SDM) process further analysed the approach to the goal (Regan 2018) and created draft Fuzzy Cognitive Maps that were used to describe and rank the key behaviours impacting on biodiversity and identify key interventions to change these behaviours.

The Program Logic exercise and the SDM analysis revealed some clear assumptions in the imagining of the VVN 'space', and gaps in understanding. These particularly related to the need to understand:

- agreed definitions for the key terms in the VVN context
- the current level of Victorians connected with and acting for nature, including relevant values, motivations, demographics, and barriers
- which 'actions for nature' would deliver the best outcomes
- what language or framing would resonate with Victorian audiences, to generate connection or actions
- appropriate performance metrics that could be used to evaluate the effectiveness of actions.

To address these gaps and guide next steps in a targeted, strategic way, DELWP commissioned a statewide survey (Meis-Harris et al., 2018), a volunteering survey (DELWP, 2019), behaviour prioritisation research (Selinske et al., 2019), and selected, aligned programs as Case Study explorations.

The summary results from the surveys, behaviour research and selected Case Studies are described below.

For the purposes of VVN, the following definitions are used:

#### **Definitions**

##### **Nature:**

Everything that is not made by humans. This includes all the animals, plants, and vegetation in land and water habitats, located in urban and rural areas, and including highly modified landscapes through to less modified natural areas on land and in the water.

##### **Connect:**

Time spent in nature, where the person has some awareness of their surroundings. Time spent in nature could be for recreational, educational, social, health or well-being purposes, for biodiversity conservation or nature appreciation, or for work. Connecting with nature can also refer to personal values, beliefs, and meanings, including identity (cognitive, emotional, and behavioural elements, including protection of nature), experience (a sense of enjoyment, wellbeing, and belonging associated with activities in nature) and philosophy (embodying ideas around humanity's relationship with nature, including a sense of interconnectedness between humans and nature).

##### **Act:**

Acting for nature includes activities that directly or indirectly protect or enhance biodiversity in Victoria. These include activities relevant to where people work (such as corporate volunteering or corporate 'green' purchasing), where and how they live (including planting native gardens or covenanted) and can operate at individual or community scales (including citizen science and advocacy). Acting includes the choices people make and the conversations they have, as well as the activities they do.

## 3 Results

### 3.1 VVN Foundation Survey

The goal of Victorians connecting with and acting for nature is essentially a behaviour change challenge. To address this challenge, we need to build a shared understanding of the problem, an understanding of existing attitudes and behaviours in Victoria, clarity on the behaviours we want to change, and the feasibility of such changes. To gain an understanding of our 'starting point', and the Victorian public's level of connection to nature, awareness of biodiversity and the levels of pro-environmental behaviour, we conducted a statewide survey of 3090 Victorians, selected to be representative of the broader population (Meis-Harris et al. 2019), which became known as the 'VVN Foundation Survey'. The survey also aimed to understand the barriers that people face connecting with nature or acting to protect it, and inform investment priorities for DELWP and partners, including potential behaviour-change programs or awareness raising campaigns for the future. The survey was a collaboration between DELWP and BehaviourWorks Australia, Monash University. A summary of the results of the VVN Foundation Survey is outlined below, with more detail provided in Meis-Harris et al. (2019).

#### 3.1.1 Results

##### ***Connectedness to nature***

Globally, we recognise that people's connectedness to nature (CN) is positively related to pro-environmental outcomes (Restall and Conrad 2015). It is a multidimensional concept with five distinct dimensions: attachment, identity (self), materialism, experience, and spirituality (Ives et al. 2018; Schmitt et al. 2019). The VVN Foundation Survey revealed that Victorians have higher levels of connection when it is expressed as attachment, identity (self), experience, and spirituality, but not when nature is valued for its material benefits (e.g. food). Victorians have a very strong spiritual sense of connectedness to nature. The survey analysis segmented Victorians into three groups based on their connectedness to nature (CN: high, moderate, low) and identified that:

- Victorians with a strong connection to nature (CN high) were more likely to be female, over the age of 60, retired, and work in the environmental sector
- Victorians with a weak connection to nature (CN low) were more likely to be male, unemployed, speak only English at home, and spent at least some of their childhood in Australia
- Victorians' connection to nature is a central part of their environmental psychology, and is related to all other key variables including pro-environmental and pro-social values, environmental awareness, perceived health of the environment, spending time in nature, feeling connected to specific places in nature (e.g., beaches, national parks), and actions to protect nature.

##### ***Environmental values and awareness***

Victorians hold strong pro-environmental and pro-social values (86%), suggesting that Victorians link 'healthy nature and healthy people'. Most Victorians (56%) erroneously rate the health of the environment as good or very good. Almost all Victorians (95%) understand the importance of a healthy environment and some of the key threats to it. There was no difference between Victorians living in metropolitan and regional areas, but there were demographic differences with women, older Victorians, and those who spent more time in nature. Specifically, these Victorians:

- expressed more support for pro-environmental/pro-social values
- felt more strongly connected to nature
- were more aware of Victoria's environmental conditions
- rated the health of the Victorian natural environment as worse.

##### ***Time in nature***

One of our measures of connectedness to nature is simply a physical connection; time spent in nature. There is also evidence that those who spend more time in nature are more likely to act for it. Sixty per cent of Victorians spend time in nature at least once a week (32% every day or every other day). When spending time in nature, Victorians spend most time in their own garden (42%) and least time in places such as a community garden, zoo, or wildlife park. The top three places where Victorians felt strongly connected to nature were national parks, beaches, and their own gardens. Other places where Victorians spend time in nature were green spaces such as parks and courtyards. Most parents (91%) thought it was important that

their children spend time in nature. Women, older Victorians, and those in rural residences spent more time in nature.

### ***Acting for nature***

Victorians engage in a range of physical activities when spending time in nature, with 56% stating that they walked, hiked, cycled, or did other physical activities in nature at least weekly. Across 11 pro-environmental behaviours, Victorians most frequently:

- controlled the movement of their pets to keep them away from wildlife
- reduced energy use
- used public transport.

The least frequent behaviours were collecting information for science ('citizen science') and volunteering time for the environment.

The more strongly Victorians felt connected to nature, the more frequently they:

- cleaned up litter
- donated money to organisations that take care of the environment, or
- chose native plants for their garden.

Thinking about the future, Victorians' likelihood to engage in pro-environmental behaviours over the next 12 months were very similar to existing or past behaviours. Pet owners reported intentions to control the movement of their pets and all Victorians reported it was likely they would reduce energy use and use public transport. People said they were least likely to participate in citizen science, advocate for the environment or donate money for environmental causes.

### ***Barriers to connecting and acting for nature***

Common barriers to spending time in nature were:

- not having enough time (32%)
- having family or friends who do not like to spend time in nature (32%)
- difficulties in accessing nature (19%).

A small number (6%) said they simply don't like spending time in nature. Men, older Victorians, Melbourne residents, and respondents who spent less time in nature were more likely to perceive barriers to spending time in nature.

Key barriers to doing pro-environmental actions included:

- a negative attitude toward the action
- lack of capability (skill, knowledge)
- lack of opportunity (resources, time, access).

### **3.1.2 Future directions**

The results from the VVN Foundation Survey have highlighted several areas which would benefit from an increased focus, especially building awareness of biodiversity and the opportunities to connect and act, particularly leveraging on Victorians' high level of environmental values.

To foster connection to nature, pro-environmental/pro-social values, and provide diverse opportunities for Victorians to act for nature, we believe the following actions would provide the most benefit:

- delivering targeted awareness campaigns and behaviour change interventions to younger Victorians and men
- reinforcing the relationship between spending time in nature and feeling connected to nature, through meaningful interactions
- addressing perceived barriers around lack of time or few activities for families and friends by encouraging spending time in more accessible natural environments (e.g., their own garden, neighbourhood parks)
- encouraging Victorians to spend time in natural environments with which they are less familiar
- showing Victorians how they can volunteer, protect, or take other direct actions to enhance nature
- persuading Victorians of the importance, effectiveness and meaning of some pro-environmental behaviours

- leveraging the association between connection to nature and willingness to act to protect the natural environment as part of a campaign
- leveraging existing pro-environmental behaviours such as reducing energy use and catching public transport to encourage Victorians to take up new pro-biodiversity behaviours, emphasising the link between behaviours.

### **A focus on gardens?**

Victorians identified their own gardens as primary opportunities to spend time in nature. While there are differences in places that Victorians spend time in nature as opposed to places where they feel connected to nature, this overlaps in their own gardens. Policies and campaigns to increase connection to nature and spending time in nature could focus on gardens and strengthen Victorians' identification with nature through their garden. Strengthened connection with nature may lead to subsequent increased actions for nature. Campaigns should be targeted separately for populations with strong and weak connection to nature, and the outcomes clearly evaluated.

The VVN Foundation Survey has provided a useful understanding of the contemporary Victorian community, in terms of people's connection to nature, awareness of the state's biodiversity health, and current and intended actions for nature.

Our targets to meet the vision of 'Biodiversity 2037' are that all Victorians will be connected to nature and five million people will be acting for nature. Progression towards these targets will require escalating our effort in targeted ways and evaluating the outcomes. Repeating the VVN Foundation Survey would be valuable, potentially at five-year intervals, to monitor changes over time, and could highlight the potential effectiveness of any broadscale interventions over the longer-term. To complement this, it is anticipated that reporting mechanisms associated with Victoria's Environmental Volunteering Plan will provide useful measures of the number of people acting for nature.

To provide interim measures on people connecting with nature, Hatty et al. (2019) developed a short form of the relevant questions in the VVN Foundation Survey. The original survey measured five dimensions of connectedness; the short form has condensed these into three dimensions (identity, experience, and philosophy), which enables rigorous and reliable evaluation with just 12 questions. It is hoped that many organisations can integrate these questions into evaluation of their events, activities, and programs, to contribute towards a shared understanding of our progress across the state, over time. Taken together, the answers to these questions provide a 'connectedness to nature score'. Sector-wide adoption of these common questions (known as the CN-12 instrument) could contribute substantially to one of the key pillars of genuine Collective Impact; that of consistent metrics and shared measurement. The questions ask respondents to rate their agreement (from strongly disagree to strongly agree) to the following statements:

1. I think of myself as someone who is very concerned about taking care of nature
2. My relationship to nature is a big part of how I think about myself
3. I feel uneasy if I am away from nature for too long
4. I feel right at home when I am in nature
5. Feeling connected to nature helps me deal with everyday stress
6. I feel a strong emotional connection to nature
7. I enjoy spending time in nature
8. I like to get outdoors whenever I get the chance
9. Being in nature allows me to do the things I like doing most
10. Everything in nature is connected (e.g., animals, plants, humans, water, air, land, fire, etc)
11. Human beings and nature are connected by the same 'energy' or 'life force'
12. Human wellbeing depends upon living in harmony with nature.

## 3.2 Priority behaviours

### Targeting Victoria's highest biodiversity impact behaviours

The next step was to identify those highest impact behaviours to target for change. To do this, DELWP commissioned RMIT's Interdisciplinary Conservation Science Research Group (ICON Science) to explore and identify the key priority (and feasible) behaviours 'average' Victorians could do to have high positive impact for biodiversity. This work included workshops and surveys to identify potential target behaviours for their impact, plasticity (probability of changing the behaviour) and current prevalence of the behaviour in the targeted population. It was part of a broader initiative undertaken by the National Environmental Science Program (NESP) Threatened Species Hub, to identify and prioritise behaviours driving biodiversity decline in Australia. A summary of the results of the priority behaviours work is outlined below, with more detail provided in Bekessy and Garrard (2019) and Selinske et al. (2019).

#### 3.2.1. Results

A Behavioural Prioritisation workshop was co-facilitated by RMIT University and DELWP in November 2018. Participants included ecologists, behavioural change specialists, psychologists, conservation scientists, threatened species specialists, social-ecological systems researchers, and science communication experts. A total of 22 people attended, representing Monash University's BehaviourWorks, DELWP, Birdlife Australia, Deakin University, Outdoors Victoria, RMIT University, State of Victoria Department of Health and Human Services, The Nature Conservancy, Victorian National Parks Association, and Zoos Victoria.

The entire workshop group was provided with information on behaviours that impact biodiversity (IUCN 2019, Stern 2000, Selinske et al. 2019), types of behaviours (Larson et al. 2015) and spheres of influence (Amel et al. 2017). A group discussion defined the scope of which behaviours would be considered for this context. Recognising we were targeting behaviours an 'average' Victorian could do, behaviours such as stock exclusion fencing, which could generally only be done by larger landowners, were excluded. The Nominal Group Technique (NGT; Delbecq et al. 1975), a group consensus method to elicit priorities, was used to identify candidate target behaviours. This list was then prioritised, through solo and group reflections, for perceived behavioural impact on biodiversity and behavioural plasticity. Following the workshop, participants completed an online survey to further assess the expected impact and plasticity of the behaviour. They were also asked to select their 'Top 5' behaviours for impact and plasticity/feasibility.

An additional, adapted survey was deployed to DELWP Arthur Rylah Institute (ARI) staff to validate the workshop and survey findings, from an expert biodiversity perspective. The ARI survey contained four additional behaviours: install solar panels, reduce consumption of single use plastics, reduce stormwater pollution, and abide by quarantine laws. The ARI participants were asked to rate behaviours based on their impact, but were not asked to assess plasticity. They were also asked what they thought were the most important drivers of biodiversity loss in Victoria, and had the opportunity to list three behaviours, related to each driver, that have a positive or negative impact on biodiversity. The ARI respondents were also offered the opportunity to add any further thoughts about impactful behaviours not yet listed, and to suggest a particular threatened species or ecosystem that they felt could be assisted by a behaviour change campaign.

Prevalence levels of the selected behaviours in the Victorian population were also assessed, by collating observed and self-report data from previously published reports, market research and peer-reviewed literature (Selinske et al. 2019).

The assessments resulted in a refined list of 27 unique specific behaviours (Table 1).



**Table 1. Full set of 27 behaviours identified as those ‘average’ Victorians could do to benefit biodiversity conservation (adapted from Selinske et al. (2019)). Behaviours have been listed in order of priority score calculated from expert ratings of impact and plasticity and prevalence in the Victorian population.**

Behaviours
Choose Marine Stewardship Council (MSC) certified seafood products
Responsible dog ownership – dogs on leashes in natural areas and picking up after your dog
Reduce beef and lamb consumption
Donate to private land protection organisations
Choose biodiversity-friendly investments (e.g., sustainable super funds)
Donate to organisations that focus on threatened species and ecosystem advocacy
Plant and maintain a wildlife garden
Vote for political candidates based on environmental policies
Responsible cat ownership – keep cat fully contained
Advocate publicly for pest animal control including both native and alien species
Forgo using chemical herbicides and pesticides in domestic gardens
Choose Forest Stewardship Council (FSC) toilet paper products
Spend regular time in nature
Volunteer for activities that take care of the environment (e.g., participating in a Local Friends Group)
Write to local members of parliament or local government about their environmental policies
Participate in citizen science projects
Advocate for intensification (infill) of urban areas rather than urban fringe expansion
Advocate for 'green' or 'biodiversity-friendly' certification
Actively support those who are making biodiversity-friendly choices
Choose a green energy supplier for home energy needs
Volunteer for a biodiversity conservation organisation
Discuss origin of food consumed within circle of influence
Choose organic fruit, vegetables, and grain products
Tell positive nature stories within circle of influence
Choose local and seasonal produce
Discuss pro-environmental attitudes/behaviours within circle of influence
Run for local government

DEWLP staff further considered and clustered these behaviours, and identified a subset that were recognised as being relevant and within the sphere of influence for DELWP campaigns to promote biodiversity conservation under ‘Biodiversity 2037’. This subset consisted of:

- control the movements of pets to keep them away from native birds and animals
- choose native plant species and create habitat when planting/ gardening
- volunteer time for activities that take care of the environment
- collect information on the natural environment for scientific projects (‘citizen science’)
- advocate for the environment
- spend time in nature

- clean up litter in a public space, park or forest.

These were then subsequently grouped into five key areas to promote: get out there, get involved, be a champion for nature, enjoy nature in your own backyard, and be a responsible pet owner.

### 3.2.2. Future directions

Drawing on the work of Bekessy and Garrard (2019) and Selinske et al. (2019), DELWP has identified the following behaviours as offering good opportunities for targeted campaigns for 'Biodiversity 2037'; They are expected to yield large biodiversity benefits and have a high likely feasibility of stimulating behaviour change in the Victorian community.

#### Priority behaviours for targeted Biodiversity 2037 campaigns

- Control the movements of pets to keep them away from native birds and animals
- Choose native plant species when planting/gardening
- Volunteer time for activities that take care of the environment
- Collect information on the natural environment for scientific projects ('citizen science')
- Advocate for the environment
- Spend time in nature
- Clean up litter in a public space, park, or forest.

In Victoria, some of the prioritised behaviours are already targeted by existing government programs. For example, the Gardens for Wildlife (<https://gardensforwildlifevictoria.com/>) program, primarily funded by local governments, encourages planting and habitat creation in home gardens to benefit wildlife. Momentum in this area is generating direct benefits for biodiversity (Goddard et al. 2010; Shaw et al. 2013; Belaire et al. 2014) and strengthens community engagement and connection to nature (Mumaw and Bekessy 2017). As DELWP's 'Biodiversity 2037' targets include increasing connections to nature and the number of people acting for nature, wildlife gardening could potentially deliver on both targets and encompass multiple prioritised behaviours, i.e., choose native plants, volunteer time for nature, citizen science, spend time in nature and advocate for nature (it should be noted that some local government areas also offer subsidies to wildlife gardeners to assist in cat control). Strengthening people's connection to nature is also likely to increase the possibility of change for other behaviours. Stronger connections to nature will also enhance environmental identity, which is a predictor of multiple different types of conservation behaviours (Kashima et al. 2014; Prévot et al. 2018; Mackay and Schmitt 2019; Whitburn et al. 2019). See section 3.6 for more on Gardens for Wildlife.

Future research on pro-environmental behaviours could explore detail on how selected behaviours are likely to impact biodiversity, including for priority species or ecosystems, in the Victorian context. To support effective adaptive management, ongoing monitoring of such impacts, as well as monitoring behaviour change among Victorians would be beneficial. Perspectives on, and potential uptake of these behaviours will vary among different sectors of the community, so targeted, segmented intervention campaigns, messaging, and monitoring will be important.

We acknowledge that this project focussed primarily on terrestrial systems and had limited discussion on threats to marine and freshwater environments. Choosing MSC seafood was the only identified behaviour directly related to marine biodiversity. Control of domestic dogs was noted as particularly relevant for protecting nesting shorebirds. Other actions, such as citizen science, other forms of volunteering, litter clean ups, spending time in nature, and advocacy, could also apply to aquatic spaces. We acknowledge other aquatic-focussed behaviours could be considered (e.g., changing recreational fishing behaviours, reducing release of balloons). Other prominent behaviours, such as those relating to the proper disposal of plastic waste, were not discussed during the workshop. Future research could consider these behaviours and the relevant segments of the community.

## 3.3 Environmental volunteering

Volunteers are key contributors to Victorians acting for nature, and ultimately improving our Victorian biodiversity, our communities, and our economy, through their efforts. There is an impressive history in Victoria of people volunteering for nature through organisations such as Landcare, 'Friends of', field naturalist groups and others.

However, the nature of environmental volunteering is changing. Traditional environmental volunteer groups tend to have older members, be regionally-based, offer structured, group opportunities and have limited

cultural and linguistic diversity. Changing demographics, use of technology and the ever-increasing size of the task due to growing populations (especially in cities) are creating new challenges for the whole volunteer sector. There is a need to respond to these trends and identify ways to maintain existing volunteer effort as well as grow the sector in innovative ways. There is also a critical need to co-ordinate and innovate the environmental volunteer support systems to ensure more Victorians are acting for nature.

#### **Definition**

##### **Environmental volunteering:**

Time willingly given for the common good without financial gain. This includes formal volunteering activities via community groups such as Landcare, 'Friends of' groups and Coastcare, non-traditional activities such as advocacy, virtual volunteering and citizen science, and the day-to-day decisions and actions Victorians make to care for and protect the natural environment.

To better understand environmental volunteering in Victoria and generate a revitalisation of the sector, DELWP has:

- consulted and collaborated with Victoria's environmental volunteering groups and peak bodies to align with strategic priorities and better understand the most significant challenges to improving performance
- developed a range of options to address the challenges experienced by the sector and respond to opportunities
- established an Environmental Volunteering Expert Group to provide strategic advice regarding the proposed initiatives
- surveyed existing volunteer groups through Volunteering Naturally
- developed an evidence-based survey instrument to monitor the number and motivations of acts for nature across the Victorian population. This was developed with behavioural science researchers from Monash University (and with RMIT and the University of Tasmania)
- created Victoria's Environmental Volunteering Plan—Victorians Volunteering for Nature (launched October 2018; DELWP 2018).

### **Volunteering Naturally**

To help understand the current level of Victorians' activity in environmental volunteering, DELWP conducted the Volunteering Naturally survey (DELWP 2019). The survey collated data about active environmental volunteer groups in Victoria, including geographic location, numbers of volunteers, and effort. Data were gathered from more than 2100 groups across Victoria.

The survey revealed a very diverse sector, with activities delivered in diverse ways, but some key themes emerged in the motivations or activity types of volunteers. These consisted of:

- caring for landscapes (e.g., physical field work such as revegetation, weed control, nest boxes)
- sustainable living (activities aligned with sustainable living such as clean ups, repairs, waste reduction, community gardens, energy)
- citizen science (monitoring; gathering, transcribing or entering data)
- wildlife rescue and rehabilitation (supporting welfare of native wildlife)
- recreation/nature experiences (supporting education and appreciation of nature)
- advocacy (advocating for improved environmental outcomes)
- other networks where groups had multiple activities.

*Volunteering Naturally* identified more than 134,000 volunteers, in more than 2100 groups, delivering more than 1.5 million hours of effort in 2019, equivalent to \$50.7M of economic contribution (DELWP 2019).

The survey revealed that there is enormous variation in what information is captured about volunteer activities. There are large numbers of groups delivering active, physical effort caring for landscapes, and large numbers of individuals joining events such as Clean Up Australia Day, Beach Patrol and Love Our Street. People are passionate about their actions. Social media (particularly Facebook) is increasingly used as a contact mechanism. High profile issues (such as plastic pollution) can trigger a surge in effort. Individual participation varies over time, and there is a recognised need to engage younger and more diverse demographics. Local governments play a crucial supporting role.

### 3.3.1 Future directions

For the future, the following approaches may be of greatest benefit:

- offering urban opportunities to volunteer for nature
- offering culturally and linguistically diverse opportunities
- offering opportunities appealing to young people
- offering opportunities that are flexible, episodic, or event based, and can be accessed without a regular commitment
- creating easy and common standards and reporting mechanisms for future volunteering data
- capturing volunteering data from independent, individual volunteers
- engaging Traditional Owners and Aboriginal Victorians
- engaging with emerging volunteerism in the recreation sector (e.g., 4WD clubs, recreational fishing)
- engaging with emerging volunteerism in community social enterprises
- increasing the visibility of activities available, so people can more readily identify and join opportunities
- supporting ways for volunteers to easily comply with administrative and legal obligations
- supporting capacity building and collaboration
- actively exploring new technologies (to identify best actions, create tech-based volunteer opportunities, grow citizen science, communicate, capture data, and share stories)
- ensuring meaningful efforts are recognised and celebrated.

## 3.4 Royal Botanic Gardens ‘Sensemaking’

Victoria’s Royal Botanic Gardens (RBGV) led a project to develop a Sensemaking Framework, linking a subset of the VVN Foundation Survey with similar surveys in the United Kingdom to explore audience segmentation from the perspective of the Gardens (Veale et al. 2019).

The project brought together staff from Royal Botanic Gardens Victoria, transdisciplinary subject matter experts, and research and delivery partners to study and articulate the impact and benefits of gardens-based nature experiences for three target audiences. The project aimed to determine the extent to which those experiences can be leveraged to influence, engage and/or stimulate action in support of nature.

The project was funded as part of DELWP’s ‘Biodiversity 2037’, complementing the VVN Foundation Survey, and explored the values-behaviour gap of three audience segments (or user groups) at the Gardens.

In demographic terms, the priority audience segments were:

1. families with children (6–12 years)
2. young adults (16–25 years)
3. older adults (65+ years).

In this context, ‘values’ were nature values and ‘behaviours’ were the actions people take to ‘act for nature’ within every day and urban environments like public gardens. The analysis placed particular emphasis on the power of meaningful experiences in nature (which can change over a lifetime), and the importance of ‘Senses, Emotion, Beauty, Compassion and Knowledge’ in enabling nature connection in special places (which have enduring relevance throughout life) and in ‘everyday’ nature. It highlighted the ways in which experiences in nature can be meaningful, including through citizen science, intentional awareness of how our multiple senses respond to place, or cultural meaning in place (e.g., through the lens of Traditional Owners).

### 3.4.1. Future directions

The project made recommendations to leverage insights through the strategic actions of applying, adopting, developing, contributing, and promoting (Veale et al. 2019, p.3–4):

1. Apply target audience insights to inform engagement and impact related activities.
2. Adopt the...‘Acting for Nature’ (AFN) and ‘Nature Connectedness Activity Level’ (NCAL) frameworks...to unlock a more strategic, common approach to the identification, prioritisation and realisation of meaningful nature experiences.

3. Develop a meaningful nature experiences toolkit to increase nature connectedness, drive related benefits, stimulate action for the environment, and gather evidence in relation to experience of 'special nature places.'
4. Contribute to place-based and everyday nature datasets and behavioural segmentation research as a priority.
5. Promote understanding of the need for investment in more meaningful nature experiences, and disseminate and share social research more widely across agencies and LGAs.

## 3.5 Narrative testing

It is well recognised that it is important how we frame messages to communicate with various audiences within the community. Recent research commissioned by the Victorian government provides useful advice about which environmental messages resonate with the community (QDOS 2019). The research tested responses to various narratives around biodiversity, climate change, water, and waste/recycling. 'Our children's future' emerged as the primary resonating frame, with consistency across cohorts and demographics.

The research also revealed considerable concern for the environment, with most people (81%) wanting to see more done to look after and protect nature. There was also strong agreement (74%) on people wanting to see better facilities to make it easier for people to enjoy nature, and 69% wanted to see more of Victoria's forests and bushland protected as National Parks. In addition, 69% of people wanted to see the government create ways for volunteers to get involved in nature protection, and 81% agreed that individuals, the community, and the government all have a role to play in looking after and protecting nature.

### Narrative resonating with most Victorians

'Our children's future' is the dominant, compelling frame

People want to see nature protected

People want to have easy ways to enjoy nature and opportunities to help protect nature

### 3.5.1 Future directions

Based on the results of the narrative testing, we recommend (where relevant) framing messages through the lens of families, legacy, and future generations. It is also important to remember that many people think positively about acting for nature, and that there are opportunities to build a social norm narrative around such behaviour, in the community.

## 3.6 Case studies

Over 2018–2019, some projects received government support to conduct activities aligned with 'Biodiversity 2037' (e.g., <https://gardensforwildlifevictoria.com/our-work/>). These projects provided some useful experiences and insights, and we have summarised their shared and varied success factors below.

### 3.6.1 Gardens for Wildlife

'Gardens for Wildlife' encourages people to care for native plants and animals within our communities ('wildlife gardening'). A thriving network has developed in Melbourne and across parts of Victoria, bringing together community groups, residents and local government councils in townships and urban areas. The goals of 'Gardens for Wildlife' are to:

- nurture our flora, fauna, and environment
- build skills, confidence, and ownership in caring for the land and its wildlife
- strengthen connections between residents, their community, nature, and place
- improve health and wellbeing through experiencing and caring for nature
- build a network of environmental stewards and champions
- collect stories and data about the impact of the networks' work.

'Gardens for Wildlife' promotes local partnerships as hubs to develop programs meeting local needs. Those needs encompass collaboration, connections, and wellbeing alongside environmental objectives.

The network is supported by DELWP and the Port Phillip and Westernport Catchment Management Authority, and has grown to hubs in many municipalities. Online resources such as websites and Facebook groups are connecting a growing number of people to the program.

People practicing wildlife gardening remove environmental weeds (Smith et al. 2006), plant and support native species, and integrate habitat features in their gardens (such as shelter or nesting sites) (Goddard et al. 2010). Given the area of land occupied by private gardens, and the number of people caring for their own gardens, there are substantial potential benefits for local biodiversity in wildlife gardening (Goddard et al. 2010).

Motivations for wildlife gardening include attraction to wildlife, aesthetics, functionality, and ease of maintenance (Kendal et al. 2012; Goddard et al. 2013), as well as an appreciation for nature (Clayton 2007). However, a strong connectedness to nature is not necessarily required (Shaw et al. 2013). A study by Mumaw and Bekessy (2017) evaluated the impact of the Knox Gardens for Wildlife program on a subset of participants. This study revealed that people were strongly motivated to join (and remain) in the program through an existing interest in gardening and through interactions with wildlife in their garden. They were committed to supporting biodiversity in the local area, including plants, 'bugs', birds, and butterflies. Key success factors of the program included the face-to-face interactions and advice from Garden Assessors, free plants, and advice hubs (such as at nurseries and online). The importance of experiential learning was evident, and it was clear that participants' wildlife gardening activities reinforced a sense of conservation purpose and value. Mumaw and Bekessy also noted that 'Assessing the ecological impact of their gardening activities remains a challenge, ... However, all interviewees were willing to help by providing feedback on their gardening activities, flora and fauna in a form of citizen science' (Mumaw and Bekessy 2017).

Wildlife gardening offers good opportunities to connect people with local, familiar nature, deliver benefits to wildlife and bring social benefits to participants and the broader community.

#### **Success factors**

- Flexible timing
- Help through face-to-face interactions plus online resource hubs
- Free resources (plants)
- Experiential learning
- Social connectivity
- Suited to people interested in gardens and wildlife

### **3.6.2 Nature Stewards**

Nature Stewards is an environmental education program run over 10 weeks, designed to promote environmental literacy and stewardship of nature. Participants learn about their local environment, studying geology, soils, climate, plants, animals, conservation land management, and environmental interpretation, through western and Aboriginal perspectives.

The Nature Stewards program has clear and strong alignment with the goals of 'Biodiversity 2037' in increasing opportunities for people to act for, and value nature. In 2018–2019, Outdoors Victoria and partners initiated and delivered pilot programs in the City of Melbourne and the City of Melton, supported by DELWP and those local municipalities. Partner organisations included Parks Victoria, the Field Naturalists Club of Victoria and the Victorian National Parks Association.

More than 100 applicants applied for the forty available places, and 35 of the 40 participants completed the program. The participants were diverse, with a gender ratio of 60 women: 40 men, age range from 21 to 69 years, education completion from High School Certificate to post graduate degrees, people with English as a first and second language, Indigenous and non-Indigenous people, Australian citizens and newly-arrived migrants. Most participants had not undertaken previous environmental volunteering activities, but 37.5% had done so.

Participants enjoyed the program (average program satisfaction rating was 100%) and many reported increases in connection to nature (50%) and an intention to act for nature in the future (40%) after completing the program. More than 90% reported an increase in their understanding of local ecology. The program also delivered social benefits, with more than 40% of participants reporting an increased sense of well-being and more than 60% feeling more connected with their local community (Knight 2019).

Multiple testimonials for the program reveal success factors in the delivery, including passionate and knowledgeable presenters, direct nature and volunteer experience, learning about opportunities, and connecting with Aboriginal knowledge, for example:



*'I'm so grateful for having the opportunity to participate in the first Melbourne Nature Stewards program. From start to finish, I really enjoyed every session and excursion. There were so many great aspects of the program that it's hard to pick out my favourites, but some of the highlights include the fantastic guest speakers that shared their passion and knowledge with us, learning about so many organisations doing great work in the area and how to get involved with them, and actually getting out into nature in the field sessions. I particularly enjoyed learning more about the Aboriginal knowledge and history along the Yarra River, and getting to do some revegetation work in Yarra Bend Park. I'm looking forward to getting involved with Westgate Biodiversity, Friends of Bats and Bushcare, and in the multitude of talks, hikes, and activities put on by The Royal Society of Victoria, The Victorian National Parks Association, The Field Naturalist Club of Victoria, and many others. Thank you so much for this fantastic opportunity – I can't wait to see it expand. How wonderful it would be if everyone in Victoria who wanted to learn more about nature could have this opportunity. It's certainly opened my eyes to so many opportunities, and I can't wait to get started!'*

- Sierra Laidman, Melbourne participant

The program aims to expand into further municipalities and tailor programs for particular audiences, including culturally and linguistically diverse communities, younger Victorians, and more 'advanced' training opportunities for program alumni.

#### **Success factors**

- Face-to-face interactions with 'experts'
- Experiential learning and volunteer activity
- Time in nature
- Social connectivity
- Exposure to opportunities
- Connecting with Aboriginal people and knowledge.

### **3.6.3. Roots & Shoots**

Founded in 1991 in Tanzania by Dr. Jane Goodall, Roots & Shoots is a youth environmental and humanitarian program. The program's mission is to foster respect and compassion for all living things, promote understanding of all cultures and beliefs, and inspire each individual to take action to make the world a better place for people, other animals, and the environment. Roots & Shoots (R&S) has become a global network, currently operating in over 50 countries.

Australia's first Roots & Shoots group; Murrindindi R&S, began in 2004 in rural Victoria. R&S is now an expanding Australian network, aiming to empower young Australians and equip them with the tools, motivation and support they need to address the problems that matter most to them.

In 2019, a project in Melbourne demonstrated the potential of R&S activities. The aim of the project was to engage R&S members and young people in the local community to help revegetate and increase biodiversity within the Annulus Billabong, Yarra Flats Park, Eaglemont. The R&S team recruited 20 La Trobe University students to supervise smaller planting groups of school students. Over three planting events, 200 participants, aged 6–24, planted hundreds of trees, shrubs and sedges (seven species). Ongoing maintenance days, including weeding and watering, are planned at the billabong.

Dr Jane Goodall joined one of the events, generating substantial promotion, celebration, and visibility of the activity.



**Figure 1. Dr Jane Goodall and local Roots & Shoots members plant trees and shrubs at Yarra Flats Park, Eaglemont.**

#### **Success factors**

- Face-to-face interactions with ‘experts’ and passionate people
- Meaningful activity
- Experiential learning and volunteer activity
- Time in nature
- Social connectivity
- Exposure to opportunities
- Connecting with Aboriginal people and knowledge
- Sense of ‘greater whole’ (global network).

### **3.7 Citizen science**

Citizen science involves volunteers, in partnership with scientists, participating in scientific projects. Citizen science is growing rapidly around the world, including in Australia and Victoria. This expansion is partly due to the revolution in information and digital technology, as smart phones, in particular, present effective ways to reach potential participants, collect verifiable data, upload and manage data, and provide feedback and updates. Citizen science is a powerful way for people to connect with nature, help protect nature, learn new things, and improve diverse skills. Such activities can ‘democratise science’ and enable participation in processes which can increase our understanding of the world around us, and potentially influence decisions on how we interact and manage our environment. Citizen science can also have social benefits, including connecting with other like-minded people, fun, making meaning out of places and activities, and bringing well-being benefits from being in nature. Citizen science takes many forms. Projects can be initiated and planned by scientists, by citizens, or both, in a co-created or co-designed approach. Current Victorian projects cover a wide range of activities, including training and support, and happen in terrestrial, freshwater, and marine environments.

DELWP’s Arthur Rylah Institute has been involved in citizen science for many years (e.g., Lyon et al. 2014) and is now researching citizen science itself, in terms of the contribution of data and the experience of participants, through several projects. A citizen science scoping paper (Platt and Hames 2017) and summary brochure provide guidance for the citizen science sector on delivering effective citizen science programs. Citizen science provides benefits for both people and science:

For people, citizen science means:

- widening friendships and social networks and having fun
- doing something meaningful and worthwhile

- gaining new skills and knowledge (or getting great satisfaction using existing skills)
- feeling the health and wellbeing benefits of nature
- forming a deep connection with nature and natural places
- a great sense of achievement
- gaining a greater understanding of how research contributes to government decisions and actions.

For science, getting more people involved in research means:

- more data, from more people, over a wider area (and potentially including private land)
- linking with highly skilled people in the community
- increased community 'scientific literacy'
- increased awareness or visibility of biodiversity issues or projects
- hearing more about different perspectives, thinking, values and priorities from a wide range of people
- potentially learning more about nature on private land
- a wider, shared approach for the important work of protecting our environment.

Citizen science can contribute directly to DELWP's objectives in 'Biodiversity 2037', particularly those aiming to connect Victorians with nature and protect biodiversity. Citizen science can also increase the collection of targeted data for evidence-based decision-making, raise awareness of the importance of the natural environment and develop a shared approach to supporting biodiversity. Nature is good for people, and more people understanding and supporting our environment is good for nature. Through citizen science, we can build new relationships between people, science, governments, and nature.

A DELWP citizen science program requires careful planning to help ensure projects are effective, robust, and meaningful to the department's priorities.

An effective citizen science **program** (which could incorporate multiple projects) should:

- appoint a co-ordinator(s) with appropriate skills, experience, and enthusiasm
- prioritise knowledge gaps and filter them for citizen science project suitability
- design a diverse suite of projects, attractive to volunteers
- provide support and advice to volunteers wanting to design and conduct their own citizen science projects
- collaborate with behaviour change scientists and partners in the citizen science sector to increase participation
- evaluate the program experimentally to determine the value of the collected data, extent of people acting for nature, and ways to improve future activities
- create a 'resources hub' containing support documents, links, and ideas.

Specific citizen science **projects** within a broader program work best when they:

- are a good 'fit' for the scientific task
- are meaningful and scientifically rigorous
- are equitable, with benefits for both scientists and volunteers
- involve strong, genuine, and diverse partnerships
- are open, accessible, fun, and safely achievable
- are communicative and involve frequent feedback
- are adequately resourced
- have clear tasks, with appropriate training
- are transparent and ethical
- are thoughtfully evaluated
- are visible, shared and celebrated.

The wide variety of projects that could involve citizen science for Victoria's biodiversity include those that:

- collect data to improve our knowledge of the distribution of species, and the models derived from this information
- evaluate the effectiveness of habitat improvement works experimentally
- collect data on plants to inform models of ecosystem function in relation to disturbance (e.g., fire)
- monitor sites, over long-time frames, to track changes in species abundance
- involve anglers and others in collecting data on fish populations, fish movement and catch success

- record the occupancy, effectiveness, and maintenance standard of nest boxes
- undertake social surveys on connections (values and actions) between Victorians and nature
- engage people currently disconnected with nature, especially in cities, to collect data such as sound (bioacoustic) data or to record flowering
- establish remote cameras and screen/ filter/ identify images for key information (e.g., for pest animals at high biodiversity value sites)
- transcribe high value data from a range of sources, such as naturalists' notebooks, into information systems.

There are many efforts happening across Victoria, and these are making a tremendous difference, but much more needs to be done if we are to effectively engage more citizens and manage our complex Victorian ecosystems with confidence.

#### **Success factors**

- Face-to-face interactions with 'experts' and passionate people
- Meaningful activity
- Experiential learning and volunteer activity, clarity of task
- Time in nature
- Social connectivity, fun
- Exposure to opportunities
- Feedback, recognition.

### **3.7.1. Future directions for success**

Summarising the success factors and key learnings from these case studies, we can see that the following elements contribute to successful projects and programs:

- visibility of opportunities
- direct experiences in nature
- meaningful activities
- face-to-face interactions with 'experts'
- connecting with others, including peers, local communities, and Aboriginal people
- feedback, recognition.

## 4 Discussion

The above analyses of the Victorian community, of the most feasible, impactful pro-environmental behaviours, resonant narratives, and lessons from several pilot programs or case studies, have provided valuable information to guide our next steps in VVN.

The Victorian community cares about, and is connected with, nature, and many people are acting for nature in a variety of ways. To gain and grow the collective impact from peoples' actions for nature, VVN will need to increase the number and frequency of efforts on the most effective actions. It is also evident that many people do not know about nature opportunities or have the confidence or time to explore them. The results from different outputs have many overlapping, reinforcing themes, including messages around building visibility, providing diversity, creating meaning, connecting with 'experts', integrating culture, being in familiar and special places, enabling flexibility, co-creation and partnerships, and following through on evaluation<sup>1</sup>. These messages have been collated into diagrams to help make sense of their connections. Different outputs have informed various lenses, or perspectives, of VVN, including the who (the Victorian community), the what (the most effective actions for nature), and the where (the places where people connect and act for nature).

Figure 2 describes these lenses in a series of tiers, informed by a base of policies and drivers, and delivering a goal of improved biodiversity. Figure 3 describes strategy pathways for DELWP in terms of operational excellence, community experience and innovation. Figure 4 describes a strategic pathway through the lens of roles and relationships; for within DELWP, with our delivery partners and with the community.

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<sup>1</sup> Several significant events have occurred since 2019 when this report was written, including the global COVID-19 pandemic and associated lockdowns that imposed restrictions on the daily life of Victorians. While these events may have affected the ways in which Victorians have valued, connected with, and acted for nature, which should be taken into account for future programs, the central results of this work are still relevant and prescient.



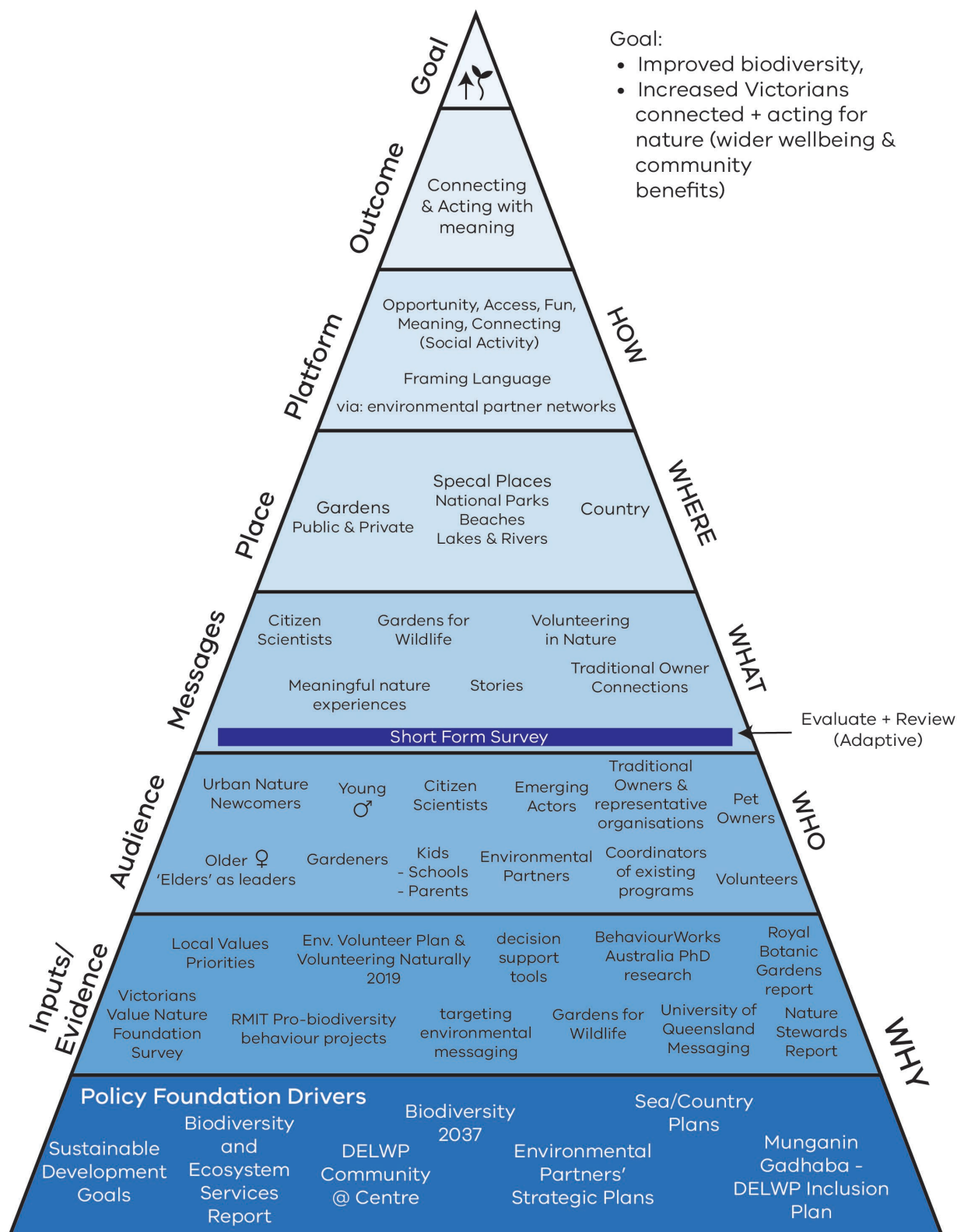


Figure 2. Victorians Value Nature pyramid.



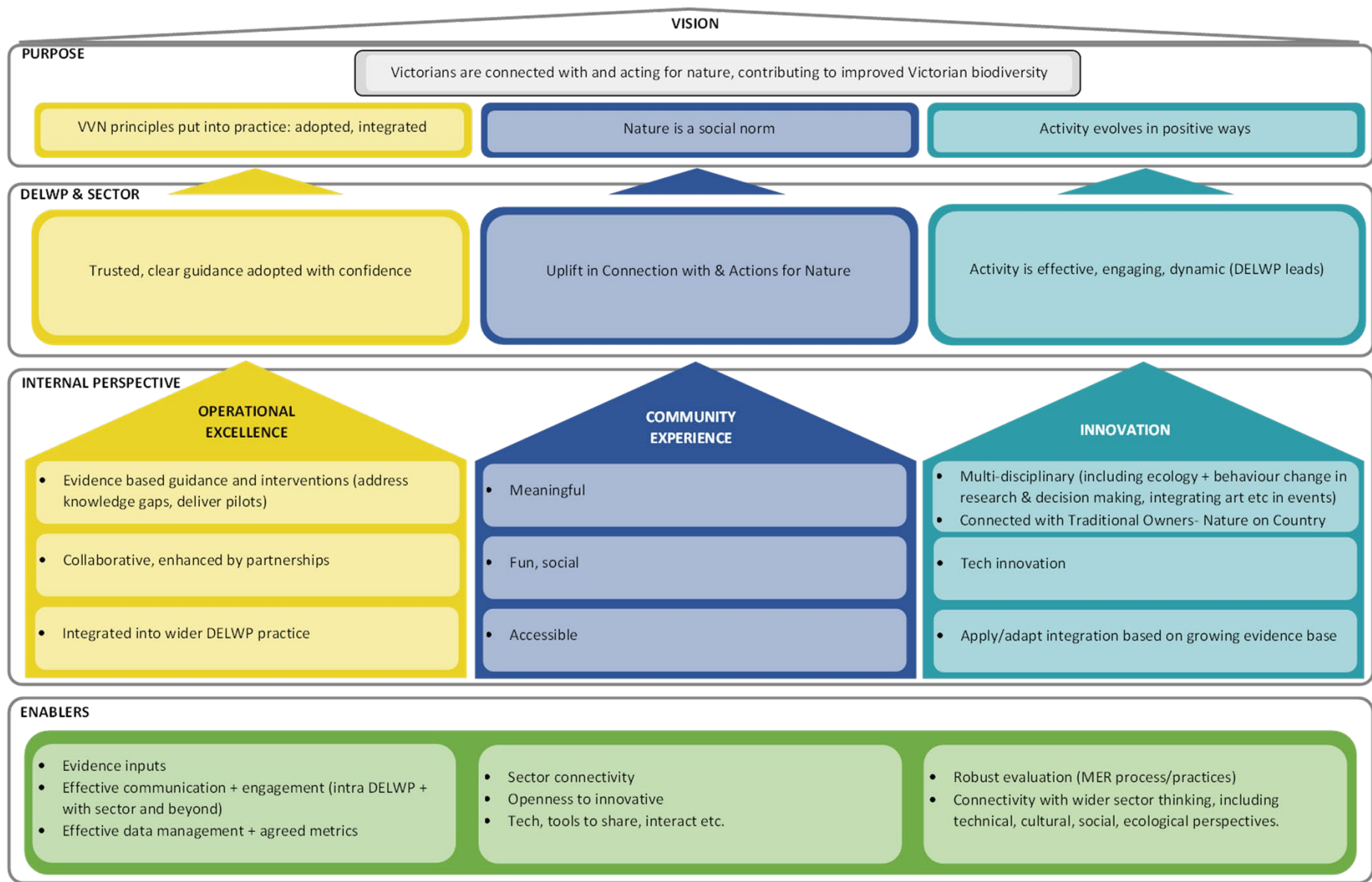


Figure 3. Victorians Value Nature (VNN) strategy map for DELWP delivery.

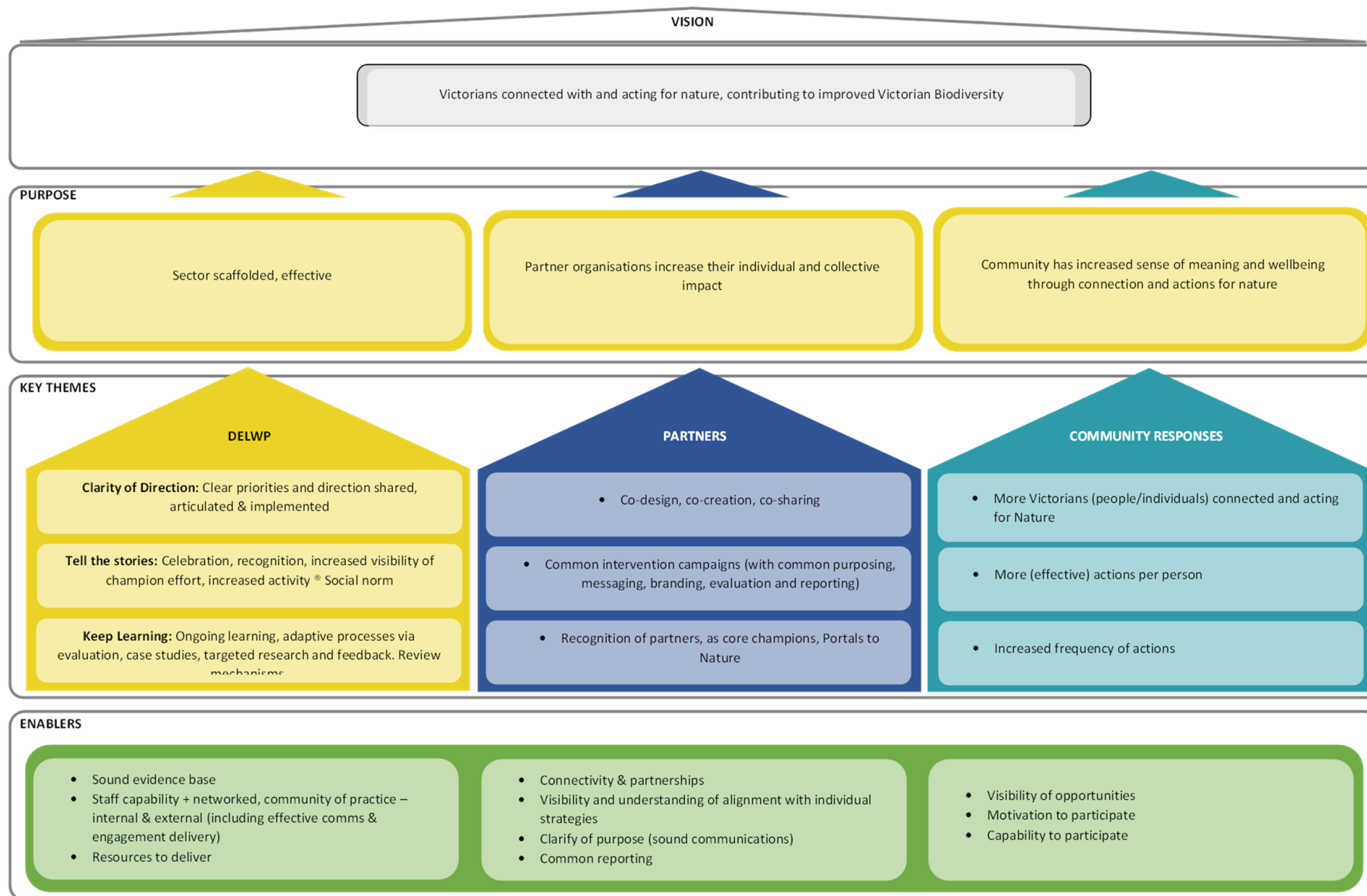


Figure 4. Victorians Value Nature (VVN) strategy map for roles and relationships; within DELWP, with partners and community.

## 5 Conclusion

This collection of work, over 2017–2019, has yielded some valuable information to guide directions, activities, programs, interventions, and messaging to help Victorians connect with and act for nature.

Most Victorians care about nature. Many want more opportunities to enjoy nature and join in activities to protect it (VVN Foundation Survey, QDOS narrative testing). As well as the research described in this report, the ABC's National 'Australia Talks' survey (research conducted by ABC in partnership with Vox Pop Labs; Banks et al. (2019)), has also identified that 'Spending time in nature is the single most popular thing Aussies feel would make them happier, across all demographics': 77% replied 'Agree' or 'Strongly agree' to the statement: 'I think I would be happier if I spent more time in nature'. So, people care about nature and would like more opportunities to connect with, and act for nature. There are already many people acting for nature, but 'Biodiversity 2037' reminds us that we need to increase our combined efforts and impact, to meet the increasing need, in the face of ongoing biodiversity decline.

To meet this need, by both people and nature, the research suggests we should **deepen and widen people's connections with nature**, to increase their likelihood of acting for nature. For those who are already acting, we should encourage them to take up **additional actions, and increase the frequency** of those actions. To do this and progress VVN in Victoria:

**DELWP** should:

- scaffold the sector with direction, connectivity, and dynamic vision
- advise on priorities and provide clarity of directions for the sector
- assist in telling the stories, give visibility to opportunities and champions, and assist in building a social norm
- demonstrate application of the principles identified in this research, in place-based activities, through campaigns and other regional programs
- continue learning; evaluate, research, and apply adaptive management mechanisms
- share new evidence.

**Sector partners** should:

- apply the principles identified through this research in their practice
- actively connect, co-design and collaborate on common campaigns
- share results and stories.

The research has surfaced many recommendations about who we should target in campaigns, how activities should be shared and delivered, and the role of innovation. We have summarised the recommendations into those categories (Table 2).

**Table 2. Proposed Victorians Value Nature (VVN future directions, synthesising the lessons learned from the 2017-2019 research presented in this report. These directions provide guidance for DELWP and sector partners in their future work.**



## AUDIENCES

Target young people and men, increase visibility of young men acting for nature

Recognise older women as leaders, champions, and potential mentors in acting for nature

Strengthen partnerships between community, sector representatives and Traditional Owners and Aboriginal people

Frame messages around future generations

Encourage people to act as 'buddies' to 'introduce' others to nature



## ACTIVITIES

Improve visibility of existing and new opportunities

Improve accessibility of existing and new opportunities

Co-design and co-create activities with Traditional Owners and Aboriginal Victorians

Deepen connections through building more meaningful experiences

Encourage those familiar with local places to widen their experiences spatially to less-familiar places, such as more distant National Parks

Focus interventions on priority behaviours: wildlife gardening, volunteering for nature, citizen science, pet control, spending time in nature, sharing positive nature stories, and collecting litter

Recognise the important recreation portals such as 4WD driving, fishing, surfing and snorkelling for young men in particular

Create accessible opportunities to connect with nature for diverse communities, including those which are culturally and linguistically diverse

Create urban opportunities, where most Victorians live and where there are high visibility opportunities

Create opportunities which are episodic, or event-based, and do not require long term or repeated investment of time

Create opportunities which provide a fun, social experience, and consider other 'portals' such as visual art or music



## INNOVATION

Effectively and creatively engage new technologies (e.g., VR experiences, or smart technology for citizen science)

Tell the positive stories of nature in new, multiple and compelling ways

Streamline logistical and administrative demands on volunteer program coordinators

Develop and evaluate new interventions to guide our efforts

Extend our understanding of priority behaviours to include marine and freshwater environments

Co-create collaborative opportunities amongst environmental partner organisations and stretch to new audiences

Co-develop and share common evaluation tools and mechanisms, and create shared data repositories to enable sound evaluation of interventions, and share results back to partners and the sector

Research ongoing changes in the Victorian community, as it evolves and grows.

## Campaigns

Campaigns provide an opportunity to build increased visibility of nature opportunities, reach wider audiences, strengthen relationships within the sector and integrate new approaches. For maximum impact, they should address the priority behaviours and target audiences. They should also integrate the principles identified within Table 2 above, i.e., those of:

- connectivity
- co-design and co-creation
- diversity, visibility, and accessibility (including flexible or episodic timing) of opportunities
- meaningful connections and actions
- recognising diverse portals to nature
- resonant framing
- robust and consistent evaluation
- continued learning
- feedback and refinement.

We suggest three potential campaigns, outlined in Table 3. The Victoria Nature Festival also provides an excellent opportunity for a campaign approach, bringing together multiple sector partners for collective impact, through shared messaging, linked events and common evaluation.

**Table 3. Proposed campaigns to support Victorians in connecting with and acting for nature.**

Campaign	Partners	Target audience	Target behaviours
1. My Nature, My Country	DELWP	Existing volunteers, Traditional Owners	Volunteering for nature, telling positive stories about nature (including via Its in our Nature, Vic Environments Forum members' sites and Remember The Wild).
2. BioLab	DELWP, Parks Victoria and Zoos Victoria	Young people and men	Volunteering for nature through citizen science
3. Getting into Wildlife Gardening	DELWP and Victorian Environments Forum partners	Urban and culturally and linguistically diverse communities	Wildlife gardening, citizen science, spending time in nature and telling positive nature stories

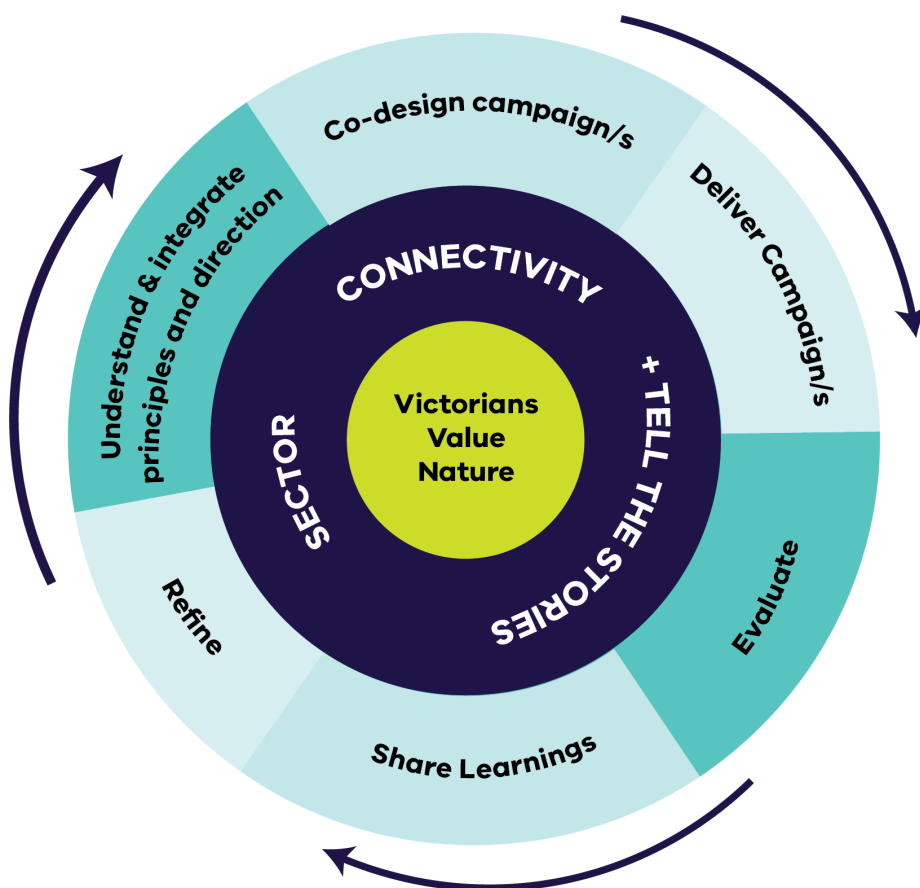
## Next steps

This synthesis presents useful information drawn from the foundational projects informing the VVN. This work supports DELWP and our sector partners to progress in building Victorians' connections with nature and effective actions for nature. The VVN team has also made significant progress in building greater connectivity through the sector, particularly through forums such as DELWP departmental committees, the Vic Environments Forum, and the People and Nature Alliance (PANA).

We recommend that DELWP and sector partners:

- share and discuss the principles and directions identified from this body of research
- identify opportunities to apply these in ongoing practice
- maintain and build connectivity amongst the sector, and seek collaborative opportunities
- co-design a set of campaigns
- evaluate the outcomes of those campaigns in simple and consistent ways
- share results and refine future activities and campaigns
- maintain high visibility of positive nature stories, across the sector.

These recommendations are highlighted in Figure 5.



**Figure 5. Recommendations for DELWP and sector partners for progressing the Victorians Value Nature program.**

We recommend that DELWP should continue to play a scaffolding and leadership role for the Nature Sector, through identifying and addressing key knowledge gaps, providing advice on priorities and effective actions and directions, connecting the sector, enabling knowledge sharing, nourishing and encouraging creative collaboration and co-creation, supporting sector activity visibility, and co-developing simple and sound common evaluation mechanisms.

#### **DELWP's role**

- 'Scaffold' the sector
- Identify and help address key knowledge gaps
- Provide advice on Victorian community segmentation and levels of connection with and actions for nature
- Provide advice on most effective pro-environmental behaviours and actions
- Provide advice on effective framing
- Enable knowledge sharing and support sector connectivity
- In selected, priority areas, form partnerships and co-create activities or interventions to drive innovations and improve our knowledge
- Co-develop evaluation tools and reporting mechanisms
- Build visibility on Victorians connecting with and acting for nature, and the opportunities available.



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