Science for Saving Species

Research findings factsheet

Project 6.3.5



National Environmental Science Programme

Identifying and prioritising human behaviours that benefit biodiversity

In brief

Changing human behaviours can deliver considerable conservation benefits. Even small individual changes can yield big impacts when multiplied by populations. But which behavioural changes are likely to deliver the greatest benefits for biodiversity?

We applied a strategic prioritisation approach, with an expert elicitation workshop and follow-up surveys to identify the top 10 behaviours that the typical Victorian citizen can participate in that will have the most impact for biodiversity conversation outcomes. We considered the level of biodiversity benefit, the capacity for change and the existing prevalence of the action.

Although this work was focused on Victoria, the priority behaviours that we identified for biodiversity outcomes are likely representative for much of Australia. Our methodology may also be used elsewhere to determine priority behaviours within any unique context. In Victoria, a subset of the priority behaviours was identified as having good potential for feasible uptake and good alignment with government priorities, and formed the basis of a targeted communications program. See: How Victorians can Act for Nature.

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BehaviourWorks







Background

Human behaviour is a major driver of the threats to nature. This means that how we act can also play an important role in supporting nature.

The conservation profession is increasingly seeking effective ways to reduce societal impact on biodiversity, including through targeted behaviour-change interventions. Multiple conservationdriven behaviour-change programs currently exist, but knowing which behaviours are most strategic to target remains very uncertain. Additionally, although many behaviours and campaigns promote actions like energy saving, reducing water consumption, recycling and so on, few are specifically targeted at protecting biodiversity.

Prioritisation methods have been used successfully over the past two decades to advance conservation planning. Research has shown that prioritisation is a useful tool for systematically evaluating and informing decisions about which conservation-relevant behaviours should be the focus of conservation efforts.

Effective behaviour change programs will often use multiple intervention types and messaging strategically designed at key audiences, taking account of structural, psychological, or other barriers to adopting the target behaviour.

To improve the effectiveness of behavioural prioritisation, we must identify which behaviours have the greatest impacts on biodiversity, and target those for change. For example, we could use behavioural prioritisation to identify feasible targets that:

- direct policy-makers and other decision-makers toward policy choices that have high impacts on biodiversity;
- guide individuals to seek effective ways to reduce their impact on biodiversity; and

• form the basis of behaviourchange interventions and evaluation research.

Because of the complexity of drivers of biodiversity loss, this can be a difficult task. Human behaviours that influence biodiversity outcomes also require different approaches to engagement from the public, private and social spheres.

Research aims

We aimed to identify the actions that people can take in their everyday lives to achieve the greatest biodiversity benefits in the state of Victoria.



BELOW: Responsible cat ownership (behaviour #9) means keeping cats fully contained. Free roaming cats kill millions of animals every year. Image: Tida Nou

What we did

The work was a collaboration between researchers from several Australian universities, government departments and non-government organisations. We undertook the research in Melbourne in 2018–19, focusing on local biodiversity benefits that would contribute to biodiversity in Victoria.

We used a behavioural prioritisation method to identify and rank individual "everyday" behaviours that could be modified to achieve benefits for biodiversity.

The method involved drawing on the expertise of 22 conservation experts with a diversity of expertise and from a range of organisations. The experts who we consulted included ecologists, behaviour change specialists, psychologists, conservation scientists, threatened species specialists, social-ecological systems researchers, and science communication experts.

In a workshop, we identified candidate biodiversity behaviours and then, in a subsequent online survey, we elicited estimates of the impact and potential to change individual behaviours.

We identified behaviours during the workshop that would be accessible for typical Victorians. We identified typical Victorians as individuals who may or may not have pets and may rent or own the dwelling that they reside in.

For the sake of wide applicability, we steered away from behaviours that were, for example, rural landowner–specific, such as riparian fencing or in-perpetuity protections for land. We also did not focus on behaviours that were only influential for biodiversity through their climate-related impacts. Participants broke into subgroups to discuss behaviours that they believed could most effectively reduce biodiversity loss or lead to biodiversity gains. The subgroups were used to reduce bias from a discussion facilitator.

Participants reported their ideas back to the broader group and deliberated on the merits of each behaviour, and the likelihood that they would be undertaken by a typical Victorian. We considered the capacity for a behaviour to be adopted according to potential barriers such as time, cost, habits, and social norms.

The behaviours that we identified as priority behaviours that could be modified for benefits to biodiversity spanned a range of types, including:

- consumption behaviours
- social behaviours
- stewardship behaviours
- advocacy behaviours
- donation behaviours (both time and financial)
- lifestyle behaviours.

We identified 27 separate behaviours that individuals could engage in to either benefit, or reduce negative impacts on, biodiversity. We then used an online questionnaire to survey the same workshop participants. In the questionnaire, which was sent one week after the workshop, participants estimated the impact on biodiversity of each behaviour identified, and the corresponding capacity for behavioural change, on a scale of one to 10. Additionally, we asked experts to identify the top five behaviours that they would personally target for prioritisation.



We then prioritised these behaviours based on averages of the survey responses, which measured the anticipated value to biodiversity, and their capacity for being adopted by the public. (Figure 1)

We then considered the current prevalence of the behaviours within the population, as running a behaviour change campaign for an action which is already widely prevalent is likely to yield less benefit than a campaign for something currently uncommon. Prevalence was defined as the proportion of Victorians currently engaging in the behaviour. This caused actions that are already fairly common to move down the list while less common actions moved up. To assess the prevalence of the identified behaviours in the general population of Victoria, we collated data from previously published reports, market research and peer-reviewed literature.

By integrating the scores of biodiversity impact, plasticity and prevalence, we calculated a final prioritisation score. This resulted in a "top 10" list of priority behaviours that everyday people can adopt to help protect nature.

Key findings

The top ten priority behaviours that we identified for improving biodiversity benefits are listed in Table 1.

These top ten prioritised behaviours for biodiversity are the culmination

of a diverse group of experts' discussion and agreement. We identified the ten behaviours as having a high biodiversity impact for relatively low effort and a high degree of capacity to change (also called behavioural plasticity or likelihood to change). The behaviours have been weighted according to their current prevalence and potential for uptake into society.



Figure 1. Prioritisation matrix for biodiversity behaviours that a typical Victorian could engage in. Biodiversity impact increases moving up, while capacity to change increases moving right. Actions in the top right quadrant have both high biodiversity impact and high capacity to change. Once we considered prevalence, some of the actions in the top right quadrant were demoted from the top 10. This occurred for choose FSC-certified toilet paper (existing prevalence 42% of Victorian households), choose green energy (54%), and forgo pesticide/herbicide use (43%).

Key findings (continued)

Rank	Bahaviour	Justification and considerations
1	Choose marine stewardship council (MSC) certified seafood products	Overfishing impacts sustainability of stocks and other species through by-catch. Sustainable seafood apps specific to Victorian fisheries are available.
2	Responsible dog ownership, i.e., dogs on leashes in natural areas and picking up after your dog	Off-leash dogs disturb and predate native species. Impact may depend on location, if there are alternatives where dog can be off leash, and knowledge of impact to wildlife
3	Reduce beef and lamb consumption	Direct impact on biodiversity in cleared and/or overgrazed rangelands, wetland areas, predator conflict. Nonmeat alternatives are increasingly available, "reduce" is easier than eliminate and swapping meat choices to MSC fish or chicken will also benefit biodiversity.
4	Donate to private land protection organisations	Contributes to on-ground biodiversity management. Effective in protecting land in perpetuity and implementing management on private lands.
5	Choose biodiversity-friendly investments (e.g., sustainable super funds)	Biodiversity-friendly personal investments help support structural change.
6	Donate to organisations that focus on threatened species and ecosystem advocacy	Donate to organizations that run threatened species advocacy campaigns. Organized, effective advocacy creates structural changes that benefit biodiversity.
7	Plant and maintain a wildlife garden	Australian urban environments support threatened species populations. Wildlife gardening helps address impacts of urbanization, by increasing connectivity and providing critical habitat. Ancillary benefits include increasing connection to nature of whole neighbourhoods and potentially increasing time spent outdoors
8	Vote for political candidates based on environmental policies	Electing candidates who support the implementation of pro- environmental policies that benefits the structural changes needed
9	Responsible cat ownership — keep your cat fully contained	Free roaming pet cats kill millions of small mammals, birds and reptiles every year.
10	Advocate publicly for pest animal control, including both native and alien species	Native and alien pest species have high impact on Victorian ecosystems (e.g., feral Horses). Multiple species (e.g., deer, wild horse, and kangaroos) are highly-abundant. Different segments of society will have various attitudes towards its management depending on the species.



Choosing sustainable seafood, such as marine stewardship council (MSC) certified products was the top ranked behaviour to target with behaviour change campaigns to benefit biodiversity. Image: CC0

Implications and recommendations

These behaviours are applicable to and achievable for everybody who wants to act for nature by reducing their impacts on biodiversity. Although the behaviours were generated specifically targeting the Victorian context, they are likely representative of priority behaviours for biodiversity conservation across much of Australia.

Governments, conservation organisations and others with an interest in protecting biodiversity can use this methodology to determine priority behaviours within their own unique context. Governments and conservation organisations should then consider how they can help promote or facilitate the uptake of these behaviours.

Identifying priority behaviours that can help achieve key biodiversity outcomes is only the first step in building an effective behaviour change campaign. The prioritisation reported here provides a foundation on which to further build an exploration of behaviour change interventions. Future prioritisations could consider alternative methods for estimating appropriate parameters for prioritisation. We used expert estimations in this study, but there are multiple ways to measure behavioural impact, capacity to change and prevalence.

Although expert elicitation allowed for a rapid assessment of results for this study, including consultation with the community would allow for the "triangulation" of desired outcomes. This would be essential to ensuring better representation of the public's perception of changing behaviours.

Reducing beef and lamb consumption (behaviour #3) has a direct impact on biodiversity. Given the availability of non-meat alternatives and less impactful options (such as the non-meat burger patty pictured), this behaviour has a high capacity for change. Image: Theo Crazzolara Flickr CC BY 2.0

Further Information

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Cited material

Selinske, M. J., Garrard, G. E., Gregg, E. A., Kusmanoff, A. M., Kidd, L. R., Cullen, M. T., ... & Bekessy, S. A. (2020). Identifying and prioritizing human behaviors that benefit biodiversity. *Conservation Science and Practice*, 2(9), e249.



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