

# Why Do (Or Don't) People Protect Nature? Insights From Conservation Practice and Environmental Psychology to Respond to the Biodiversity Crisis

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## Abstract

Understanding and shaping human action towards nature conservation is critical to reversing the biodiversity crisis. Psychological science provides tools for understanding individual and collective behaviours, but also for understanding how the behaviour of individuals can drive human–environment systems transitions. As researchers and practitioners spanning distinct disciplines, we draw on our collective knowledge in environmental psychology, systems thinking, economics, and conservation biology, along with experience in practice and government, to consider reasons why people do (or don't) protect nature. We outline dimensions important to fostering individual conservation behaviour and systems transformation. Such individual dimensions include values, personality traits, and psychological distancing. Broader system influences include cultural, economic, and environmental factors that shape the way people interact with, and care for, nature. Finally, we describe potential tools that may support increasing conservation actions and systems transformation, including strengthening connection with and access to nature, values-based and solutions-focused framing, collective action, and propagating optimism.



## Keywords

environmental values, individual behaviour change, multilevel systems thinking, nature conservation, psychological distance

### Non-Technical Summary

#### Background

The Earth's biodiversity is being threatened by human actions. This is a complex problem to solve, requiring an understanding of both nature conservation science and the factors that drive human behaviours. The latter should include consideration of both psychology and the economic, cultural, and structural factors that shape the choices and actions people make.

#### Why was this study done?

Responding to this need requires interdisciplinary collaboration. However, opportunities to share insights across disciplines on a topic of interest can be limited. Doing so can support identification of important concepts and future research opportunities for developing new, more effective solutions.

#### What did the researchers do and find?

The authors include experts in nature conservation and environmental psychology, with experience in academia, government, and non-government roles. We came together to discuss our experiences and expertise relevant to conserving nature through human behaviour. We recorded a seminar and panel discussion, and then prepared this manuscript to describe the themes discussed. We focused on aspects of psychology and contextual (systems) influences that shape whether (or not) people protect nature. Based on these, we propose tools to promote action for nature conservation including strengthening public connection with and access to nature, values-based and solutions-focused framing, collective action, and propagating optimism. We highlighted that psychological science is important for exploring how to catalyse major systems transformations that address drivers of the biodiversity crisis.

#### What do these findings mean?

Our discussion demonstrates that bringing together researchers and practitioners from diverse disciplines is a valuable practice for identifying and prioritising research questions and interventions. The themes and tools we discuss provide a platform for future interdisciplinary collaboration with an applied and solution-oriented focus.

## Highlights

- Meaningfully responding to the global biodiversity crisis requires complementary transdisciplinary approaches, including multilevel systems thinking and psychology.
- Individuals are key in implementing transformative systems change, whether through advocating for change externally or through powerful individuals making bold decisions in government or industry.
- Psychological science is important for improving connection with nature and making environmental values salient to support private and public sphere conservation behaviour.

The biodiversity crisis continues to worsen as we witness the Earth's first human-induced mass species extinction (Ceballos et al., 2017; Cowie et al., 2022). In less than 50 years, wildlife populations have decreased by 69% and currently 28% of all assessed species are threatened with extinction (Almond et al., 2022). Over the past half century, natural sciences have tended to form the dominant, if not sole, evidence base informing conservation action, but such evidence alone is insufficient to address the crisis (Bennett et al., 2017). Understanding and influencing human behaviour is increasingly recognised as an important tool to achieve nature conservation objectives (Nilsson et al., 2020; Reddy et al., 2017; Schultz, 2011), with exploration of values and attitudes as predictors of behaviour forming a focus of conservation social science research in recent years (Nilsson et al., 2020; Reddy et al., 2017; Selinske et al., 2018). As reviewed by Bamberg and Möser (2007), existing theoretical models of pro-environmental behaviours, including conservation behaviours, can be grouped into those that view behaviour as primarily motivated by self-interest, e.g., the theory of reasoned action (Ajzen & Fishbein, 1980) and associated theory of planned behaviour (Ajzen, 1991), or those that view behaviour primarily as pro-socially motivated, e.g., the norm activation model (Schwartz, 1977), and the related value-belief-norm theory (Stern, 2000). We support their conclusion that conservation behaviours are influenced by a mixture of self-interest and pro-social motives, as well as by external influences. Indeed, such behaviours are not solely an individual phenomenon, but occur within complex systems of cultural, institutional, and technological influences (Milfont & Markowitz, 2016). Understanding human behaviour is complex and approached by multiple social science disciplines, with no single theory addressing the full range of factors shaping action (Eyster et al., 2022).

In fact, the biodiversity crisis is a wicked problem, requiring interdisciplinary solutions. Individual actions to protect nature might encompass a wide variety of behaviours that have a direct or indirect positive impact on nature. Likewise, abstaining from detrimental behaviours, e.g., habitat destruction, unsustainable wildlife harvesting, is similarly valuable to conservation objectives. In this paper, we consider conservation behaviours to include actions such as environmental volunteering, nature-friendly gardening practices, conservation advocacy, or sustainable consumption that may have a

direct or indirect impact on nature (Selinske et al., 2020). We are particularly interested in behaviours that may be relevant and accessible to the majority populace, as opposed to industry- or other context-specific behaviours that may have a high impact but pertain to a small target audience. A focus on individual behaviours has been criticised as inadequate for addressing societal issues, and yet individual-level research remains crucial to successful systems-thinking approaches to implementing transformative change (Chater & Loewenstein, 2022; Klebl & Jetten, 2023). Understanding individual behaviour is valuable not only because of the impacts that individuals can make through private-sphere conservation behaviours, but also because individuals can initiate structural change, including via advocacy (Stern, 2000). Decisions to implement systems change approaches are implemented by powerful individuals such as those in industry or government, so it is important to understand why those individuals might (or might not) take bold actions for nature conservation. Systems-thinking entails a “big picture”, interdisciplinary approach to explore dynamic relationships between different elements shaping complex conservation issues, as opposed to breaking down issues into discrete elements to be addressed separately (Abson et al., 2017). Systems approaches support identifying barriers and leverage points to promote systems transitions, allowing interventions to have impact beyond individual behaviour change approaches (Abson et al., 2017). As such, understanding how systems transformation can occur to improve conservation outcomes can benefit from both broad systems thinking and individual psychology (Chater & Loewenstein, 2022).

In this paper, we explore the factors influencing whether people want to protect nature by drawing on the experience and knowledge of: (1) an eminent ecologist and conservationist with a wealth of experience in academic research, conservation practice, and policy development (HP), (2) a leading academic environmental psychologist who now applies behavioural insights in government (TM), and (3) a government-based researcher drawing together conservation biology and human behaviour change science to achieve nature conservation objectives (LV) following a seminar and panel discussion between these authors on 11 November 2022 (Psychology of Change, 2023). The seminar was chaired by a leading environmental psychologist (KF) with further contributions from an early career social psychologist (CK). Collaboration between natural and social scientists is critical to inform robust responses to complex interdisciplinary questions underpinning the biodiversity crisis (Martin, 2020). Further, collaboration between academics and practitioners can support applied research and translation into action (Kates et al., 2001; Lang et al., 2012). Together, we have developed a list of key factors shaping conservation behaviours at multiple levels and consider opportunities to address them to meaningfully respond to the biodiversity crisis. All authors currently live and work in Western, majority English-speaking locations. As such, our discussion pertains mostly to similar contexts, although we seek to draw on more diverse, global examples where possible.

## Who Protects Nature, and Why?

Whether innate or learned, humans are fascinated by nature (Simaika & Samways, 2010). The 'biophilia' hypothesis purports that humans have a natural affinity for other living things and that this affinity has had evolutionary benefits (Kellert & Wilson, 1993). Contrasting with 'biophilia' is 'biophobia', defined as our innate fear of aspects of the natural world which may threaten us (Simaika & Samways, 2010). 'Biophobia' reminds us that not all nature experiences are positive; rather some may elicit feelings of fear, disgust, or discomfort (von Döhren & Haase, 2015). From a historical perspective, many highly urbanised societies may have reduced their interactions and connection with nature (Richardson et al., 2022; Soga & Gaston, 2016). This is purported to be linked with cultural views (particularly those cultures rooted in Judeo-Christian religious origins) of humans as separate from nature (Manfredo et al., 2016; Newman & Dale, 2013), and even when people hold affinity for nature, this does not necessarily result in conservation behaviour (Amel et al., 2017; Gifford, 2011). This is coupled with low levels of ecoliteracy. An ability to name species can be regarded as a foundational form of familiarity with one's ecosystem (Mikołajczak et al., 2021) and many people in urban places are unable to identify or perceive common urban wildlife species (e.g., in Chile, China, the Netherlands, and the Scandinavian countries; Celis-Diez et al., 2017; Hooykaas et al., 2019; Kai et al., 2014; Palmberg et al., 2015). This is an issue because learning about nature can promote connection with nature (Ng et al., 2023; Palmberg et al., 2015), and connection with nature is recognised as a predictor of pro-conservation behaviours (Whitburn et al., 2020).

As many conservationists will attest, formative experiences and connection with nature during childhood can be a pathway towards conservation action in adulthood (Chawla, 1999, 2020; Pinder et al., 2020; Soga & Gaston, 2023). There is also evidence indicating that connection with nature is strong in childhood but reduces during adolescence (Keith et al., 2021) and then is typically highest late in life (Dean et al., 2018). Creators of children's entertainment tap into our early fascination with nature, although portrayal of nature in children's books may be decreasing over time (Babb et al., 2018). Some scholars attribute disconnection from nature to an 'extinction of experience', a perceived phenomenon whereby humans have reduced their direct interactions with nature due to declining opportunities for experiential nature connection as a result of increasing urbanisation (e.g., Colléony et al., 2020; Gaston & Soga, 2020; Pyle, 2003). However, the existence of this 'extinction of experience' is debated. Highly urbanised populations do have opportunity to experience nature in cities, albeit different (perhaps less immersive, rich, and diverse) experiences compared to those in more remote areas (Newman & Dale, 2013). Evidence suggests that urbanites have not lost their emotional connection with nature (Oh et al., 2020) and that pro-conservation attitudes are predicted by family biospheric values and environmental volunteering rather than experiences in nature (Pinder et al., 2020). This implies that conservation behaviour is influenced by

socialisation and shared values, but the role of direct nature interaction in predicting conservation behaviour remains contested. If our relationships with local, urban nature shape our concern and action for nature more broadly, including voting, advocacy, donations, and consumption choices, then urban nature relationships may shape the fate of nature globally (Dunn et al., 2006).

Lifestyle and demographic factors can also be important in shaping nature connection and action. Women are more likely to associate with nature conservation than men (Zelezny et al., 2000). Stronger connection with nature late in life (Dean et al., 2018) might suggest that slowing down or having the freedom from work (e.g., retiring) could facilitate nature connection. Yet, people who engage in naturalist activities such as bird watching, citizen science, or wildlife tourism can be diverse in their motivations for engagement, level of commitment to the activity, and demographics (Steven et al., 2021). There has not yet been a global profile review of hobby naturalists, but a general trend appears to encompass higher levels of education and wealth, and contributors to citizen science are predominantly male and/or white (Blake et al., 2020; Cong et al., 2017; Cooper et al., 2021; Pateman et al., 2021). While naturalist activities have previously tended towards older people (Connell, 2009; Green & Jones, 2010), new technology and approaches, such as app-based citizen science and gamification, seek to make natural history learning more appealing and accessible to young people (Herodotou et al., 2023; Newman et al., 2012).

Wealth seems to be a predictor of pro-conservation behaviour at a population and individual level (Milfont & Markowitz, 2016). In urban centres, wealthier areas typically have more urban green space (e.g., in Australia, China, the United States; Astell-Burt et al., 2014; Schell et al., 2020; Shanahan et al., 2014; Wolch et al., 2014), meaning disadvantaged urban communities have less access to nature. Adding to this disparity is evidence indicating that spending time in nature can have mental and physical health benefits (Martin et al., 2020). Links between nature connection, socio-economic status, and wellbeing may suggest that efforts to engage urban communities in nature could result in multiple 'wins', benefiting social and health objectives, while also fostering connection with nature and potentially greater adoption of conservation behaviours.

A range of individual characteristics can predict engagement (or lack of) in conservation, and these may be acquired or inherited (Milfont, 2021). Important characteristics include (1) personality traits, such as agreeableness, and honesty or humility (Soutter et al., 2020); (2) future orientation, i.e., those who think about the future consequences of their current actions (such as associated with having children, Milfont et al., 2012; Shrum et al., 2023); (3) conservative system-justifying ideologies, such as political conservatism, social dominance orientation, and right-wing authoritarianism that oppose increased environmental action (Stanley et al., 2019); and (4) basic values, particularly high levels of self-transcendence and openness to change (Milfont, 2021).

There is a vast literature on environmental values that describe how and why one might (or might not) appreciate attributes of nature. Value frameworks help us to understand differences in the beliefs, attitudes, and actions people have or make towards nature, although any one person may hold a diversity of values relevant to nature conservation that become variably salient in different contexts. Some of the overarching themes include utilitarian or instrumental values (nature is valuable for humans to extract from), intrinsic values (nature is valuable in its own right, even if humans don't benefit from it), and relational values (nature is valuable because of the relationships it helps me to have with others, the cultural identity or sense of place it provides me, or the feelings of stewardship I enjoy from caring for it) (Chan et al., 2016). Additionally, altruistic and biospheric values may promote conservation behaviours, whereas egoistic values may be more commonly associated with anti-conservation behaviours (de Groot & Steg, 2008; Schultz & Zelezny, 1998). The Wildlife Value Orientations framework proposes that people will support or engage in extractive wildlife behaviours (fishing, hunting) or culling (which may or may not be beneficial to conservation depending on context) if they hold stronger utilitarian values as opposed to mutualistic values, which emphasise coexistence with wildlife and prioritise prevention of cruelty to animals (Fulton et al., 1996). Conversely, utilitarian and egoistic behaviours may also be conducive to conservation behaviours if one perceives that a healthy environment provides material or economic value or will support good quality of life (Díaz et al., 2015; Pascual et al., 2017). Good quality of life is not solely tied to economic or material benefit, and people may perceive of intrinsic value and relational values in their relationships with nature that motivate them to act in pro-nature ways (Díaz et al., 2015).

Entailed in our relationships with nature are affective dimensions that shape behaviours, and pleasant feelings of awe and fascination can promote pro-conservation and pro-social behaviour (Ibanez et al., 2017; Song et al., 2023; Yang et al., 2018). Values can also influence such affective dimensions, shaping perceptions of risk associated with nature (Landon et al., 2020) and empathy towards non-human animals, which may shape behaviour (Manfredo et al., 2020; Wang et al., 2023). In describing "biophilia", Kellert and Wilson (1993) proposed that some people (e.g., ecologists) hold ecologicistic-scientific values, receiving fulfilment from documenting and understanding nature and the relationships between organisms.

Conservation issues also vary in their psychological salience in different contexts and for different individuals, e.g., depending on factors such as diverse levels of media coverage, whether a given issue was recently or commonly encountered, or the perception of risk to an individual or group (Clayton & Myers, 2009). Such factors, e.g., media coverage and social discussion, may mean that climate change has become the focus of much of the conversation about environmental issues, sidelining biodiversity conservation (Boscarino, 2015; Veríssimo et al., 2014). While climate change and the biodiversity crisis may be linked, they are not the same thing and climate change is not currently the

primary threat to species and ecosystems (rather, land use change is, Caro et al., 2022). This means that actions to address these two crises may not be the same. Those actions that benefit biodiversity but are of low priority for climate change mitigation may be devalued by target audiences and institutions seeking to change behaviour.

Psychological distance describes how people perceive that something is close or far from them (Trope et al., 2007; Trope & Liberman, 2010). It can manifest in four related dimensions: perceptions that environmental problems are too uncertain (hypotheticality dimension); they will occur at a distant time in the future (temporal dimension); they will occur far away geographically (spatial dimension); and they will affect someone other than myself (social dimension) (Milfont, 2010). These perceptions are forms of self-serving bias as people seek to protect their perception of their valued place(s) by underestimating environmental risks and degradation, and it is related to people's perception to view themselves as possessing more positive qualities than average (Schultz et al., 2014). The spatial dimension is sometimes referred to as "environmental hyperopia" or "spatial optimism" (Gifford et al., 2009; Uzzell, 2000) and describes how people perceive global environmental problems to be worse than local environmental problems (Milfont & Thomson, 2020; Schultz et al., 2014). Conversely, personal experiences of local weather anomalies appear to promote perception of climate change as a risk, motivating political engagement (Egan & Mullin, 2012; Myers et al., 2013). Related to the temporal dimension is the concept of "shifting baselines", whereby individuals set their perceptions from their own experience, failing to pass on this experience to future generations, and current generations fail to appreciate the experiences of previous generations (Moore et al., 2019; Papworth et al., 2009; Soga & Gaston, 2018). As each generation inherits new norms about the natural environment, their acceptable thresholds for environmental conditions are continually lowered and they may fail to recognise that degradation is occurring (Moore et al., 2019; Soga & Gaston, 2018).

Psychological distance and other such biases could result in lower propensity to engage in conservation behaviours that might otherwise be motivated by environmental concern. However, whether higher psychological distance relating to climate change can be linked with lower propensity to engage in mitigating or adaptive behaviours, is context-specific, in part because psychological distance is multi-faceted and may be mediated or moderated by a range of other factors (see Keller et al., 2022 for a review). Nature connection literature proposes that increased contact with local nature is conducive to acting in conservation ways, but we are not aware of any studies specifically exploring the relationship between the psychological distance of nature degradation and propensity to engage in conservation behaviours.



## Informing Tools to Promote Action for Nature

In our view, to have meaningful impact on nature conservation, human-centred strategies need to incorporate both psychological science and systems-focused approaches drawing on multiple disciplines. We advocate seeking to foster societies' connection with nature by increasing and improving equality of access to nature, providing people with opportunities to engage in easy and non-threatening activities (e.g., bird watching, walking in local nature areas). As scholars continue to explore relationships between direct nature interaction, urbanisation, and conservation behaviour (e.g., Martin et al., 2020; Richardson et al., 2020), systems-level approaches should be implemented seeking to improve connection with and access to nature, while also supporting conservation outcomes. Nature-based urban design can support increasing biodiversity in cities while also increasing positive human-nature interactions (Garrard et al., 2018). Nature-based prescribing to address non-communicable health problems can also have social benefit and build public recognition of the value of healthy natural environments (Robinson & Breed, 2019). Integrating nature literacy and interaction in school curricula can foster nature connection (Harvey et al., 2020). These support conservation behaviour and support for conservation action through increasing nature connection (Richardson et al., 2020), and by making pro-environmental values salient and increasing positive attitudes towards the value of healthy environments (Homer & Kahle, 1988; Milfont et al., 2010). All these approaches would benefit from collaboration between conservation experts and other disciplines and practices (e.g., urban planning, health, education) (Butt & Dimitrijević, 2022; Keitsch & Vermeulen, 2021; Klein, 2020).

Leveraging values provides an opportunity to improve implementation of behaviour change campaigns or raise support for conservation action. While societal values may be very slow to change, communication can be made more effective by framing around salient values, beliefs, and attitudes relevant to the target audience and behaviour (Kidd, Garrard et al., 2019; Manfredi et al., 2017; Schultz & Zelezny, 2003). In targeting people who typically oppose or are disengaged from conservation action, practitioners should frame their conservation message based on values that are important to the particular group (Wolsko et al., 2016; but see Kim et al., 2023). For example, messages that frame conservation action as beneficial to values associated with conservatism such as family, tradition, patriotism, and individual rights may increase support among conservative target audiences (Schultz & Zelezny, 2003; Wolsko et al., 2016). Moreover, framing about species extinctions targeting those holding utilitarian or self-serving values might highlight that we depend on such species for our survival.

Behaviour change campaigns employing messaging can leverage social identity. The social identity approach proposes that individuals ascribe to groups to bolster self-identity, providing social meaning and reducing uncertainty about appropriate attitudes, norms, and behaviours (Hogg, 2000; Hornsey, 2008; Tajfel, 1982). Individuals form stereotypes of the 'ideal' members of groups that they identify with and use this stereotype

as a model for how they should think and act (Tajfel, 1978). Individuals also form stereotypes of 'out-group' members, which typically form opposing or otherwise conflicting values with their 'in-group'. People are more likely to be persuaded by information presented to them by in-group messengers than by people they perceive to be in their 'out-group' (e.g., climate change messaging, Fielding et al., 2020). Messages from in-group messengers can benefit from employing 'social proof', emphasising in-group social norms by highlighting that other group members are engaging in the target behaviour (Bollinger et al., 2023; Cialdini, 2006). National identity that incorporates conservation norms can also mobilise action (Milfont et al., 2020).

Psychology is also a critical part of systems transformation (Chater & Loewenstein, 2022). Behaviour change interventions targeting individuals can have outsized effects, for example, through developing social proof and changing social norms, as described above. Such interventions can engage with transforming components of systems, such as promoting advocacy for, or at least being supportive of, change in government or industry. Furthermore, shifting systems to change can involve influencing powerful individuals, such as decision makers in government, industry, or non-government organisations. Among other influences, including system attributes, the decisions and actions made by those individuals are shaped by socio-psychological factors such as values and beliefs (e.g., Ajzen, 1991; Ajzen & Fishbein, 1980; Stern, 2000). Indeed, personality traits have been identified as important predictors of whether public servants make change in their organisation (Bolton, 2022), and, like any members of society, both public servants and elected representatives vary in the extent that they are interested in and will advocate for pro-nature change. Leaders in government choose who they employ, so hiring staff who can act as effective internal advocates can be an important part of making change in the organisation. Many governments are now creating behavioural insights units (OECD, 2017) to target both public behaviour and the behaviour of their own staff. Nonetheless, progress in government is often slow given political and economic constraints, so conservation advocates recognise that the urgent change needed must happen elsewhere; for example, they might implement public land management activities without permission (Hung, 2017) or directly target industry through consumer pressure rather than waiting for government to develop a regulatory mechanism to reduce impacts to biodiversity (not without controversy, see Aldashev et al., 2015).

While individuals can influence and shape systems transformation, there are strong opposing forces impeding systems-level change (Chater & Loewenstein, 2022). There are many examples of governments failing to adequately act on or prioritise conservation issues; for example, the new Swedish government disbanded its environment ministry (Dougall, 2022) and the outgoing Brazilian government has dismantled its capacity to limit deforestation of the Amazon (Fonseca et al., 2022). In a 'post-truth' world, misinformation and distrust in science clouds decisions and understanding among the public, which can result in suboptimal decision making (Ecker et al., 2022; Lewandowsky et

al., 2012). Industries engage in ‘greenwashing’ to continue encouraging consumption and to avoid making major changes to their practices that might affect their profits, and individuals who uphold more defensive forms of national identity (i.e., entailing narcissistic belief in superiority of one’s nation over others) are more likely to accept and support greenwashing tactics (Cichocka & Cislak, 2020; Cislak et al., 2021; Cislak et al., 2023). Pushing non-transformative solutions like greenwashing is an example of a discourse of delay that stalls or weakens action (Lamb et al., 2020).

For all these reasons, countering these narratives may be an important tool to promote action. For example, optimistic messaging may be effective in countering doomism and an emphasis on the downside of action over its benefits (Figueres & Rivett-Carnac, 2021). As it became recognised as a field, conservation biology was labelled a crisis discipline (Soulé, 1985), and negative messages tend to dominate the narrative (Kidd, Bekessy, & Garrard, 2019). However, such messages, which may incite fear or pessimism, can cause people to disengage or feel powerless to act. We can foster and benefit from “conservation optimism” by focusing on success stories and being solution-oriented (e.g., [conservationoptimism.org](https://www.conservationoptimism.org); McAfee et al., 2019). Optimism can support feelings of efficacy, which can result in increased conservation action (Bandura, 2000). Individuals uniting with like-minded groups such as grassroots advocacy or environmental volunteering groups can support perceptions of collective effectiveness and identity as part of a group (Fielding et al., 2008; Tajfel & Turner, 1979) as well as offering the emotional support and resources advocates needed to maintain optimism and push for change that can take a long time. Getting people to connect with their local natural environments may support positive human-nature interactions that foster optimism and stewardship, improve ecoliteracy, and act as a catalyst to engaging in conservation behaviours (Richardson & Sheffield, 2017).

This manuscript results from dialogue between individuals who sit at the academic–government interface, with expertise in conservation and psychology. We recognise that we largely represent Western scientific understanding of nature and nature relationships, and that our epistemologies and concepts may have limited meaning for culturally and linguistically diverse communities (Majid et al., 2018; Sedawi et al., 2021; Taylor, 2018). For example, we have limited understanding of how concepts of nature connectedness may or may not be relevant to how Indigenous communities view their relationship with nature (Cowie et al., 2016; Sangha et al., 2019; Stoeckl et al., 2021). As conservation advocates seek to restore natural environments and societies’ relationships with them, the research and practice informing this work must be informed by interdisciplinary, inclusive collaboration that recognises such knowledge gaps. We hope this manuscript supports establishing effective partnerships to change the way conservation advocates think about solutions to the biodiversity crisis, including tackling individual behaviour within complex systems.

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## Openness and Transparency Statements

The present article has been checked by its handling editor(s) for compliance with the journal's open science and transparency policies. The completed *Transparency Checklist* is publicly available at:

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### Author Contributions.

LILY M. VAN EEDEN: Conceptualization. Project administration. Writing – original draft. Writing – review & editing.

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