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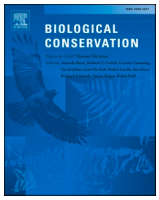

The moral landscape of biological conservation: Understanding conceptual and normative foundations

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ABSTRACT

Biological conservation practices and approaches take many forms. Conservation projects do not only differ in their aims and methods, but also concerning their conceptual and normative background assumptions and their underlying motivations and objectives. We draw on philosophical distinctions from the ethics of conservation to explain variances of different positions on conservation projects along six dimensions: (1) conservation ideals, (2) intervention intuitions, (3) the moral considerability of nonhuman beings, (4) environmental values, (5) views on nature and (6) human roles in nature. The result is a map of the moral landscape of biological conservation, on which these six dimensions are layered. This map functions as a heuristic tool to understand conceptual and normative foundations of specific conservation projects, which we will illustrate with four paradigmatic examples: the Pisavaara Strict Nature Reserve, Predator Free New Zealand, the Oostvaardersplassen Nature Reserve and the Great Green Wall Project. With this map as a heuristic tool, we aim to conceptually illuminate disagreement and clarify misunderstandings between representatives of different environmental protection strategies and to show that the same project can be supported (or criticised) on different grounds.

1. Introduction

Conservation practitioners, scientists, government officials and community members support and implement conservation projects differing not only in their aims and methods, but also concerning their driving (conceptual, normative etc.) assumptions and commitments. An understanding of these differences – which are rarely made explicit – is essential as they can partially explain why certain actors support some conservation projects, while rejecting others. Large predator conservation is a prominent example for such disagreement, as exemplified by the debates surrounding the reintroduction or return of wolves into areas where their populations had disappeared.[1]

In this paper we systematise such reasons through the lens of conservation ethics, drawing on positions developed within environmental philosophy. This analytic discipline can contribute to the conservation discussion by identifying different *conceptual* (e.g., how is 'nature' understood?) and *normative* (e.g., why do different aspects of 'nature' matter morally?) distinctions at the foundation of different positions that are relevant for assessing conservation projects (for concept definitions see the glossary in the supplementary material).[2]

For this purpose, we are mapping the *moral landscape of biological conservation* with the aim to provide a heuristic tool that can help to understand the different background assumptions in debates about which conservation strategy to pursue. With this we aim to provide a coherent map of the multi-layered foundation on which different decision-making frameworks can be built. Revealing these normative and conceptual foundations can improve understanding and can constitute a first step towards compromises in cases of conflict. However, how the different layers are understood, and which are made visible (or invisible) by different frameworks is often simply taken as given. The layered map that we offer thereby serves as a heuristic tool rather than guidance for environmental decision-making (on the latter see Raymond et al., 2023). We are also neither providing a theory of environmental ethics with respect to conservation (such as Taylor, 1986), nor a classification framework (like Mace, 2014 or the recent IPBES values assessment; Anderson et al., 2022).

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[1] For differing positions see, Ripple and Beschta (2012), Palamar (2007), Lute et al. (2018), Martin (2020), Almarcha et al. (2022).

[2] On the methods of environmental ethics see Newman et al. (2017).

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The layers that we will discuss represent the following six dimensions: (1) conservation ideals, (2) intuitions on intervention into 'nature', (3) moral considerability of non-human beings, (4) relevant environmental values, (5) different views on nature and naturalness, and (6) views on the human roles in nature. The first dimension of 'conservation ideals' has been chosen to link the moral philosophical themes of this paper more closely to interdisciplinary conservation debates. The remaining five dimensions are all primary in certain respects (i.e., they do not rely on and cannot be reduced to any of the other layers). With respect to the dimensions discussed, we are setting aside some highly relevant but partially derived normative concepts like justice and sustainability to reduce the overall complexity of the map that we present. Accordingly, further relevant layers could be added to this map representing important additional aspects of the moral landscape of conservation.[3]

The following two specifications lead our analysis. Firstly, we focus on environmental ethics considerations (as opposed to other relevant areas, such as the philosophy of biology), because we are primarily interested in differing assessments of the *moral* desirability of specific conservation projects. Beyond the field of environmental ethics, scholars from other disciplines have also explicitly posed moral questions about conservation, such as prominently on environmental values (e.g., Chan et al., 2018; Latombe et al., 2022) or humans' relationship with 'nature' (e.g., Flint et al., 2013; Mace, 2014). However, a philosophical analysis, which systematically compares different conceptions within the six ethical dimensions, is missing so far.[4]

Secondly, although this paper is written from the perspective of environmental ethics (see Baard and Ahteensuu, 2019) – more specifically the Western analytical literature on environmental moral philosophy – it addresses an interdisciplinary readership. We are writing from this philosophical tradition and thus not covering other philosophical approaches.[5] Yet, our map is meant as a contribution to a broader pluralist analysis of the ethics of conservation.[6] A philosophical analysis of this kind not only helps to identify overlaps and differences in assumptions underlying conservation strategies and policies, but it can also support more precise formulations of such practical approaches.

We use four paradigmatic conservation projects to illustrate and discuss the six distinct dimensions of the map of the moral landscape that we propose. The four examples have been chosen to represent a broad range of conceptual and normative distinctions and to explain how different conservation approaches can be compared along these different dimensions. This diverse landscape not only underlies the opposing assessments of the projects discussed here, but also explains more general disagreement on environmental protection and policy.

We therefore conduct a structured overview and elucidate important dimensions of different normative positions on conservation. Some of these dimensions (such as environmental values) will be more familiar to the readers of this journal, while others have received less attention in conservation debates (such as the intervention intuition or the difference between active and passive 'nature'). This map is intended as a starting point for different actors involved in conservation to critically engage with and thoughtfully explore their own views as well as to better understand others' normative positions.

Fig. 1 provides a representation of the overall moral landscape of biological conservation with its six layers that we will explicate in the following sections. We will begin by introducing four paradigmatic conservation projects and their relationship with different conservation management strategies (section two). Then we will turn to the six layers of the moral landscape and locate the four projects in different places on the map (sections three to eight). And finally, we will provide some conclusions (section nine).

2. Four paradigmatic examples of conservation practice[7]

To make this overview more illustrative for readers from different disciplines, we have chosen four controversial projects to exemplify different arguments. The four examples are: the Pisavaara Strict Nature Reserve (Finland), Predator Free New Zealand (Aotearoa), the Oostvaardersplassen Nature Reserve (the Netherlands), and the Great Green Wall Project (across several African states). As environmental philosophers, we use these projects as aids to illustrate theoretical concepts.[8] With this in mind, we will argue neither in favour nor against any of these projects and take underlying motivations and intentions on good faith. The purpose of these examples is to provide an overview of multidimensional normative positions on nature conservation by showing how these positions are constructed, how they differ and how they converge. The substantial differences amongst the illustrated projects provide a more comprehensive picture of underlying moral and conceptual considerations in environmental management practices than is usually made explicit by practitioners or critics.[9]

2.1. Pisavaara strict nature reserve

Pisavaara resembles as close as possible a forest in its pre-industrial condition in Finland, where commercial forests span over most of the landscape. Pisavaara is also one of the most strict nature reserves. It was founded in 1938 to preserve a part of Southern Lapland's forested hill area (*vaara*) (Juntti et al., 2019). Special permission is required to enter the forest and is only granted for the purposes of research, teaching or reindeer herding. As such, Pisavaara represents the first (strict protection) of the six categories of protected areas as classified by the International Union for Conservation of Nature (Dudley and Stolton, 2008).

[3] That these concepts are 'partially derived' means that concepts such as 'justice', 'sustainability' and normative interpretations of 'biodiversity' partially draw from normative assumption that are situated within one or several of the dimensions introduced in this paper. For example, justice concerns in the context of conservation typical rely on, amongst other aspects, the dimensions of 'moral considerability' and 'environmental values'. For examples of the discussions of these other notions in the context of conservation ethics see: 'sustainability' (e.g., Holland, 1999; Armstrong, 2021), 'biodiversity': (e.g., McShane, 2017; Wienhues and Deplazes-Zemp, 2022) and '(intra-human and interspecies) justice' (e.g., Wienhues, 2020; Coolsaet, 2021).

[4] Our aims also differ from what has been published to date in the philosophical literature, such as analysis of specific conservation management strategies and practices (e.g., Siipi, 2004; Lennon, 2017) or other contributions from ethicists to the conservation debate in this journal (e.g., Miller et al., 2011; Cortés-Capano et al., 2022).

[5] For instance, clearly relevant for analysing the case of the Great Green Wall Project are different African worldviews and philosophical perspectives (see Kelbessa, 2021) and for the case of the Pisavaara Strict Nature Reserve one might want to look at Sami perspectives on nature (see Valkonen et al., 2022).

[6] For a recent argument in favour of pluralism see Cortés-Capano et al. (2022).

[7] Note that we use the terms 'biological conservation' and 'environmental management' in a broad sense, which includes approaches as diverse as preservation, restoration, rewilding or ecosystem engineering. Biological conservation is the umbrella concept that unites our four example projects as they all share the aim of protecting 'nature'.

[8] In contrast to other disciplinary approaches, our aim is not to study stakeholders, communities or the effect and success of the projects. So, we will *not* give an overview of conservationists' views (as e.g., Sandbrook et al., 2019).

[9] We take it for granted that these four examples cannot cover everything of moral relevance pertaining conservation, such as matters of justice regarding human-wildlife conservation conflicts (see Bwalya Umar and Kapembwa, 2020) or conservation's historical entanglement with the displacement of local communities (see Agrawal and Redford, 2009). Nor do they cover all kinds of conservation projects that could be discussed, and which add further challenges, such as the use of biotechnology like genome editing (see Redford et al., 2014; Preston, 2018; IUCN, 2019).

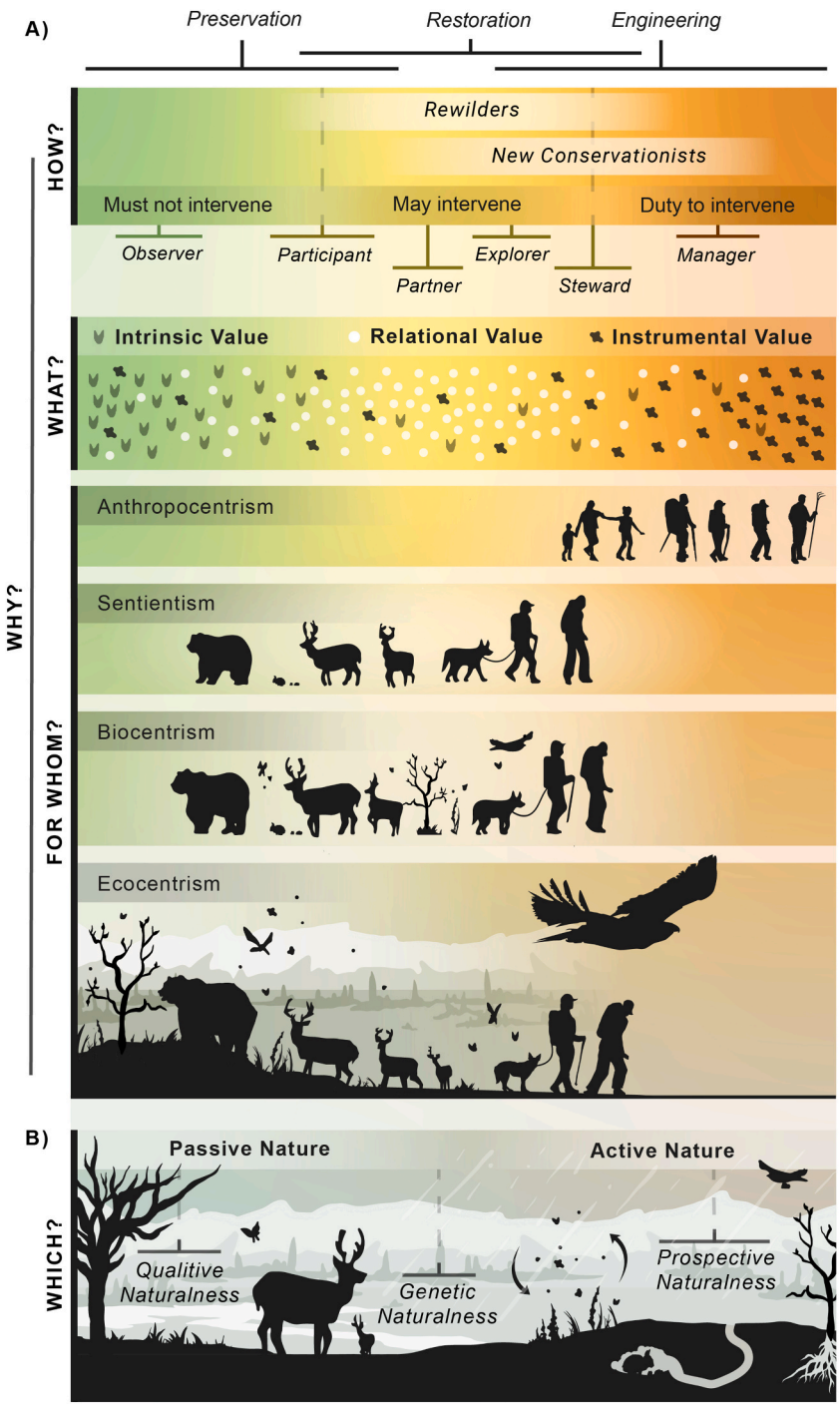

Fig. 1. Overview of the different layers that form the map of the moral landscape of biological conservation. See explainer in text box 1.

2.2. Predator free New Zealand/Aotearoa

New Zealand/Aotearoa is famous for its endemic species such as the kiwi. Some of these species are at the brink of extinction due to – amongst various factors – several small predators, such as rats and possums, originally introduced to the islands by humans.[10] Consequently, in 2016 the government announced its plan to become 'predator free' by 2050. The aim is to eradicate possums, stoats and ship rats (for a more detailed history of the project, see Morris, 2020). This entails practices such as trapping and baiting on a large scale involving professional 'animal predator control specialists' as well as many volunteers (Predator Free NZ, n.d.; Department of Conservation NZ, n.d.).

2.3. Oostvaardersplassen nature reserve

Oostvaardersplassen is a Dutch national park that was established within a polder landscape predominantly shaped by extensive damming and drainage projects. By the mid-1990's a novel management approach – now called 'rewilding' (see Gammon, 2018) – was adopted where the

[10] The very first rat species, the Pacific rat or *kiore* was introduced by the Māori. Later, British settlers intentionally imported a variety of species such as deer, possums and different species of birds, to name a few. They unintentionally introduced the Norwegian rat and the ship rat as well (Kolbert, 2014).

Explainer for Fig. 1

The map in Fig. 1 serves as a heuristic tool to lay out differences and consensus in conservation practice. These layers overlay without any hierarchical structuring. The figure illustrates the six layers (as normative and conceptual dimensions) along with three management strategies (preservation, restoration, engineering). It addresses five central questions on nature conservation strategies. (1) How to conserve? Answered through the dimensions of *conservation ideals* (illustrated by the examples of rewilders and new conservationists), *intervention intuition* (must not intervene in green, may intervene in yellow, duty to intervene in orange) and *human roles in nature* (observer, participant, partner, explorer, steward, manager). (2) Why conservation? Answered through the dimensions of *intervention intuition*, *human roles in nature*, *environmental values* (intrinsic in grey, relational in white, instrumental in black) and *moral considerability* (anthropocentrism, sentientism, biocentrism, ecocentrism). (3) What to conserve? Answered through the dimension of *environmental values*. (4) For whom to conserve? Answered through the dimension of *moral considerability*. Vertical overlaps indicate that the respective categories in different dimensions can often occur together. However, not all possible overlaps can be depicted in a two-dimensional system (e.g., a strategy of preservation in a steward role for anthropocentric reasons is conceivable but not represented in the figure). (5) Which nature/naturalness to conserve? Answered through the dimension of *nature* (passive nature, active nature) and *naturalness* (qualitative, genetic and prospective naturalness). The horizontal line separating the last dimension from the others is to indicate that vertical overlaps are not representative in this case e.g., observers and managers can both focus on active and passive nature.

park was left to 'natural' processes with minimal human intervention. However, the rewilding approach involved far-reaching human intervention in the initial project phase. Three large herbivore species (Heck cattle, Konik horses and red deer) were introduced.[11] The grazers were successful at keeping trees from taking over the land, but the herbivore populations grew rapidly followed by large-scale starvation and death, which led to a change of the management approach towards involving active population control in 2018 (for a more detailed history of the project, see Schwartz, 2019, Theunissen, 2019).

2.4. Great Green Wall Project

The cross-continental Sahel region of Africa – a semi-arid zone located between the Sahara desert in the North and topical regions in the South – is facing a triple threat of environmental degradation, desertification, and drought (FAO, n.d.), while climate change is predicted to make the area's conditions even more challenging (Goffner et al., 2019). To address these challenges, an initiative was launched by the African Union in 2007 from which the Great Green Wall Project emerged. It involves 21 countries, and 232 million people are directly affected by living in its core area. By 2030, the project plans to restore 100 million hectares of land. Initially, the project focused on reforestation, but it has since evolved to prioritise land restoration by restoring a mosaic of trees, shrubs and grasses as well as supporting the livelihoods of local communities by increasing food security and creating employment opportunities (Great Green Wall, n.d.; FAO, 2016).

2.5. Different management strategies and practices

These four projects differ in important respects such as regarding their conservation goals, current state, involved stakeholders, kind of intervention into 'nature' and so on. To illustrate this, let us begin by addressing the underlying management strategies, which constitute basic assumptions of how nature should be protected. Helena Siipi (2004) distinguishes between three different conservation *management strategies* – ecosystem preservation, restoration and engineering – which can differentiate our four projects.

Preservation refers to the idea 'to save the ecosystem – not necessarily in its current state, but as a dynamic evolving entity' (Siipi, 2004:460). This can involve different *management practices* such as an attempt to 'protect' an area from anthropogenic influences or a prohibition of the change of current human land-use practices.

The Pisavaara example is a case of *preservation* in the first sense as 'protection' from human influence, because it highly restricts human presence, evaluated against a pre-industrialisation historical baseline. The ecosystem is preserved in that sense as a dynamic entity, not in a static condition that prevents 'natural' change.

In contrast, according to Siipi, *restoration* 'aims at making certain changes to the current state of the managed ecosystem or site' with the goal of bringing it 'back to earlier conditions' (Siipi, 2004:460). That can involve many practices, such as reintroducing locally extinct species or the eradication of so-called 'invasive' species such as in New Zealand, which aims to restore its pre-European settlement species assemblage. Accordingly, the historical baseline indicating the desired condition of the ecosystem is set further in the past compared to the preservation case.

Ecosystem *engineering* also 'involves the active and intentional human modification of a managed area', but with the important difference that these ecosystems are not engineered to be similar to ecosystems that existed before (Siipi, 2004:461). Therefore, engineered ecosystems differ from both preserved and restored ecosystems in the sense that their features are not determined with respect to their past. The Great Green Wall Project is an example of a project engineered without aiming at any historical baseline but instead aiming for sustainability and resilience. Nevertheless, attention is given to planting primarily native trees, shrubs and grasses, which retains a degree of historical fidelity and – arguably – also restoration.

The distinction between three management strategies is idealised in the sense that real-world examples rarely fit perfectly into either category. For example, the Oostvaardersplassen rewilding project can – depending on the perspective taken – be interpreted as a restoration or as an engineering project. It can be understood as *restoration* because it aims to recreate a historical ecosystem through the 'reintroduction' of extinct species, with the end of the Pleistocene era as the historical baseline. That is, 'reintroducing' similar species to the ones that are thought to have lived in the area during that time (on Pleistocene rewilding see Donlan et al., 2005). The project can also be understood as a form of ecosystem *engineering*; an open-ended experiment that aims for a novel resilient ecosystem on human-created land. While management *strategy* categorisations can be ambiguous for a project, it must be remembered that these can be combined with different management *practices*. In the case of Oostvaardersplassen the passive management practice of 'letting nature take its course' after the introduction of the herbivore species, is a practice usually associated with a preservation management strategy but here employed for different aims.

The debate about biological conservation and its related

[11] In contrast to the mainstream view that Western Europe used to be dominated by closed-canopy forests at the end of the Pleistocene (see Lorimer and Driessen, 2014), ecologist Frans Vera (2000) believed that the postglacial Netherlands contained savannah-like landscapes which large herbivores helped to keep partially unforested through grazing.

management strategies is considerably more complex and disputed than Siipi's categorisation suggests. In the following sections, we introduce our six dimensions of the moral landscape of biological conservation to better understand the reasoning underlying these projects and management strategies.

3. First dimension – conservation ideals

Biological conservation involves a range of different *conservation 'camps'* – in essence, different *conservation ideals*. Unlike the subsequently introduced moral philosophical dimensions that each focus on one specific normative dimension, the conservation ideals combine several positions along each of these dimensions, together with other epistemic, ontological and political commitments. As a result, such conservation ideals each constitute unique epistemic-political-normative hybrids that provide further orientation points for why and how 'nature' should be protected by constituting unique viewpoints on the moral landscape of conservation. Thus, they are not purely descriptive but inherently normative, which influences which management strategies and related management practices are deemed morally acceptable or even desirable.

There are many different – controversially debated – conservation approaches to choose from that qualify as what we term conservation ideals. Two examples that are currently getting a lot of attention are firstly Büscher and Fletcher's (2019) 'convivial conservation', which they distinguish from what they call 'mainstream conservation', 'neo-protectionism' (which refers to 'Half-Earth' land-sparing approaches e.g., Wilson, 2016) and 'new conservation'; the latter three also qualify as conservation ideals. The second example is 'compassionate conservation' (Wallach et al., 2020) that emphasises the wellbeing (or 'personhood') of sentient nonhuman beings. Additionally (but not exhaustively) further positions found in the literature like 'wilderness preservation' and 'rewilding' could be understood as conservation ideals according to our definition. Debates surrounding such broader conservation ideals, in turn, consider a range of issues. Two specific dimensions of normative relevance along which such ideals can be distinguished stand out.

Firstly, the above-mentioned *baselines* of what is 'desirable nature' are the subject of debate. In addition to more 'conventional' forms of conservation, Jozef Keulartz (2016) distinguishes in this regard between 'new conservationists' and 'rewilders'. The former argue against the need of historical baselines in conservation and focus on 'forward-looking' forms of conservation practice – sometimes termed 'intervention ecology' (the Great Green Wall Project could arguably be understood as such). In contrast, 'rewilders' move beyond 'conventional' baselines towards baselines set further in the past (e.g., the Pleistocene era in the case of Oostvaardersplassen, or the mid-Holocene) – sometimes also termed 'resurrection ecology'. Different positions on the appropriateness of historical baselines can be *partly* explained by different background understandings of nature and naturalness that we will turn to in section seven (dimension five).

Secondly, another debate centres on the *overarching purpose* of conservation, which concerns the *global normative challenge* that the respective conservation project should address (which is distinct from but related to the question of moral considerability discussed as dimension three). Here, a simplified distinction can be made between conservationists who see biological conservation's purpose in the protection of 'nature' for nature's sake (e.g., due to the intrinsic value of nature, biodiversity etc.) and others that see its purpose in the protection of 'nature' for human wellbeing, for instance, due to concerns of environmental justice. Miller et al. (2011) speak in this context about 'nature protectionists' versus 'social conservationists', whereas Sandbrook et al.' (2019) survey of the global conservation movement distinguishes between 'science-led ecocentrism' and 'people-centred conservation' (which both are distinct from 'conservation through capitalism').

The conservation literature sometimes gives the impression that one needs to choose between these two aims (often presented as mutually exclusive)[12] and their usually associated normative positions of ecocentrism versus anthropocentrism (see dimension three). However, we will show that there is much more complexity and variety in views on and expectations of conservation, and that the discussion needs more nuance concerning conceptual and normative questions. Besides matters of moral considerability, one's position on the next dimension pertaining one's intervention intuition (dimension two) can also influence what one thinks about the overarching purpose of conservation and what specific strategies – as exemplified by our four example projects – are appropriate to reach that goal.

4. Second dimension – intervention intuition

An important dimension is one's intuition[13] about *interventions into 'nature'* in the sense of the extent one considers it to be justified (or not) to intervene in 'natural' processes for different conservation purposes. Accordingly, we can find a spectrum of views ranging from arguing that one should always take a hands-off approach towards 'nature' to views that consider it unproblematic or even demanded to intervene in and alter 'natural' processes. In the following we take animal ethics as an example, because in that literature we can observe a broad variety of views on this matter, while they all share the position that sentient animals are morally considerable (sentientism, see dimension three).

For instance, one might have the intuition that people ought not harm 'wild' animals (negative duty), but that one has no duty to aid these animals in their wild habitat. Maybe one even thinks that people should not interfere with their lives at all. In contrast, one might argue that people have such a positive duty to aid their pets. To philosophically explain and support such different intuitions towards 'wild' and 'domesticated' animals, Clare Palmer (2010) has developed an animal ethics account that categorises different intuitions of this kind about the possibility of intervening in 'nature' to assist 'wild' non-human animals (discussed in Hedberg, 2016, Hettinger, 2018). While such reasoning is applicable to cases such as the encounter with an injured animal when hiking through a forest, Palmer's approach can be extended to cover other circumstances such as different conservation projects. More specifically, Palmer distinguishes between three different forms of the so-called '*laissez-faire intuition*', which is the intuition that we should take a hands-off approach towards 'nature': (1) *strong*: 'one should not interfere with them [wild animals] at all'; (2) *weak*: 'there is no presumptive duty to assist them – but it may be [...] permissible to assist'; and (3) *no-contact*: similar to the weak laissez-faire intuition with the addition that 'positive duties to assist may be generated in some circumstances' (Palmer, 2010:68).

Whether one supports different conservation practices depends

[12] As shown by Sandbrook et al., this narrative does not reflect the believes of the conservation movement at large. As their findings suggest, '[…] the great majority of respondents were in favour of both people-centred conservation and science-led ecocentrism, to a greater or lesser extent, despite the fact that these perspectives are often treated as mutually exclusive' (2019:318).

[13] Moral intuitions are important aspects of moral philosophical analysis, which depends on perpetual critical debate aiming for coherent moral theories. Moral intuitions come into play, for example, in the method of a 'reflective equilibrium' (as proposed by John Rawls) where we aim for a coherent theory that combines our intuitive moral judgements with argumentatively justified moral principles.

considerably, firstly, on whether one shares the 'laissez-faire intuition' and, secondly, which version of this intuition one finds convincing. Under its strongest possible interpretation (going beyond arguments found in animal ethics), a person might think that it is even morally wrong to 'help' wild animals *in all cases* (even when their suffering is due to human actions) and that we should let 'natural' processes simply take their course. In contrast, on the other – *interventionist* – end of the spectrum people might argue that we have a positive duty to alleviate all suffering in the wild as far as that is possible independently of its source – that is, even if humans were not involved in causing it. Because some authors writing on animal ethics claim that all animal suffering is of moral concern, the non-anthropogenic suffering of 'wild' animals is also a problem which provides a significant reason for intervention into 'nature' in their accounts (e.g., McMahan, 2016; Horta, 2017; Duclos, 2022). That can then include a range of demands about feeding 'wild' animals in the winter, providing contraception for population control, vaccination programs, interfering with prey-predator relationships and so on. Going beyond rather small-scale interventions (e.g., localised feeding practices), some animal ethicists argue that it is even permissible to go as far as 'paradise engineering' – if possible – in the form of fully redesigning nature to alleviate animal suffering (see Nussbaum, 2006; Kianpour and Paez, 2022).[14]

As an interim summary, different animal ethics positions disagree on whether such interventions into 'nature' are desirable. Moving beyond the example of animal ethics, we can also find different positions on this matter in the environmental ethics literature at large. Because different conservation projects intervene in 'nature' to different degrees and in different ways, different positions on the intervention intuition can explain why some might support some projects while seeing other projects critically. That is not only the case concerning our relationships to other animals as just discussed, but also to 'nature' more broadly (e.g., in terms of 'naturalness value', see Hettinger, 2018). For instance, 'naturalness value' is often considered highly sensitive to human intervention and some authors argue that it can even influence the overall appropriateness of interventions such as restoration or rewilding (see Katz, 1991).

Generally, intervention intuitions of different kinds are closely linked (but not identical) to one's position on the human roles in nature (see dimension six). Further relevant is also one's answer to the question about moral considerability (dimension three), because that determines on whose behalf an intervention can be justified as well as which reasons might speak for or against an intervention. Most accounts are neither fully in favour of intervention nor against intervening in all cases, but fall somewhere on the spectrum between those two extremes.

To illustrate these rather abstract considerations on different intervention intuitions, the Oostvaardersplassen project is a good example. For that purpose, we first contrast the two ends of the interventionist spectrum (interventionist and non-interventionist positions) and then illustrate how their evaluation of this project differs at different project stages.

Oostvaardersplassen, understood as an experimental approach, involved significant human engagement at first by reclaiming the land from the sea and by introducing several species. In this respect, an *interventionist* position linked with a particular emphasis on the interests of humans (e.g., anthropocentric, see dimension three) may support the experimental nature of this rewilding project, particularly if it is combined with a position on the human-nature relationship (e.g., managership or exploration, see dimension six) that is open to human-designed and controlled environments. In contrast, a *non-interventionist* position would be rather critical of this experimental approach, because the project intervenes in 'nature' to generate a new type of ecosystem. So, particularly non-interventionist positions of different varieties can provide argumentative grounds against conducting the Oostvaardersplassen experiment in the first place.

After the establishment of Oostvaardersplassen, the original plan was to keep further human intervention to a minimum and let ecological processes develop, which is in line with some versions of a *non-interventionist* intuition, particularly when an emphasis on 'active' nature is made (see dimension five).[15] However, later the situation of the herbivores gradually led to the abandonment of 'non-intervention'-style management practices in Oostvaardersplassen. Yet, human interventions with the purpose to alleviate animal suffering are again compatible with diverse reasonings. For example, an *interventionist* animal ethics position (e.g., a position that problematises all 'wild' animal suffering irrespective of its source) would argue in favour of alleviating animal suffering by a range of measures such as feeding during the winter. Interestingly, a broadly *non-interventionist* animal ethics position might also argue in favour of population-control measures and feeding because the introduced species fall within the realm of human responsibility due to being introduced and living in a confined area under human control. Thus, both interventionist and non-interventionist positions can provide reasons for intervening with the purpose to alleviate animal suffering in the Oostvaardersplassen case.

5. Third dimension – moral considerability in nature

While we emphasise the variety of normative aspects motivating biological conservation, historically, ethics and policy discourses tended to focus on the 'inclusion question' that asks which non-human beings and entities are morally considerable[16] – i.e., to what degree should we ascribe them moral relevance as entities that matter in themselves.[17] Often this moral considerability is understood as attributing (a particular kind of) intrinsic value to non-human entities themselves or their valuable properties (see dimension four).[18]

Positions on moral considerability are commonly distinguished between *anthropocentrism* (only humans are morally considerable; see Passmore, 1974), *sentientism/pathocentrism* (all sentient animals are morally considerable; see Singer, 1975, Regan, 1984, Palmer, 2010), *biocentrism* (all living beings are morally considerable; see Taylor, 1986, Attfield, 1995) and *ecocentrism* (species, ecosystems etc. are also included in addition to individuals in the realm of moral considerability; see Rolston III, 2012, Callicott, 2013). While there are lot of nuances between different accounts, within each of these broader positions

[14] Particularly Martha Nussbaum's version of this position – by famously proposing 'the gradual supplanting of the natural by the just' (2006:400) – has been met with criticism (see Wissenburg, 2011; Wienhues, 2020; Vincelette, 2022).

[15] Related but distinct to one's intervention intuition is the potential moral relevance of temporality.

[16] Another term commonly used is 'moral patients' for morally considerable beings. Importantly, to say that a being is a moral patient does not imply that it is a 'moral agent', who can reflect on morality and be held morally responsible for decisions and actions.

[17] Another classical type of disagreement concerns the *ethical theory* that provides the backbone of the argumentative framework. While deontological accounts (e.g., Taylor, 1986) focus on the identification of moral duties to justify right/wrong actions, consequentialist accounts rather focus on the actions' consequences (e.g., Attfield, 1995) and virtue ethics accounts put an emphasis on the agent's moral character (e.g., Sandler, 2007). For example, the Great Green Wall Project could be justified on consequentialist grounds due to positive effects on human wellbeing, or on deontological grounds based on the project being supportive of our duty to safeguard human rights.

[18] While many authors understand moral considerability as a type of intrinsic value, their accounts differ in how it should be understood. For example, deontological accounts tend to attribute this value to the individual entities themselves (their inherent worth, dignity etc.), whereas consequentialist accounts tend to see the moral considerability of individuals as derivative of their valuable functionings (e.g., because they have the capacity for wellbeing, flourishing, pleasure etc.). For more explanation see Deplazes-Zemp (2023).

accounts also differ concerning the relative worth (moral significance; see Goodpaster, 1978) of the morally considerable entities.[19]

Yet, a simplified *dichotomy* between, for instance, an *anthropocentric* and an *ecocentric assessment* of a specific conservation project (recall section three) would be an oversimplification. On the one hand, *anthropocentrism* can still acknowledge that non-human nature is valuable for various reasons (see dimension four) and therefore support a broad range of different conservation projects, including those that aim for a historical baseline, such as Pisavaara. In turn, *ecocentrism* – by definition – is also concerned with the wellbeing of humans. Therefore, ecocentric positions – as well as *sentientist* and *biocentric* positions – can in principle also support conservation projects that specifically aim to increase human welfare – such as in the case of the Great Green Wall Project – that are entirely forward-looking in their design.

While this might be reminiscent of Bryan Norton's (1991) convergence thesis to some readers, what we argue here does *not* amount to Norton's thesis that policies supporting human interests will also be supportive overall of 'nature's' interests. Based on our analysis such convergence may or may not occur. Here we are arguing instead that simplified distinctions between 'anthropocentric' and 'ecocentric' positions gloss over important nuances *within* these positions that can explain one's support or critique of *particular* conservation projects. Ultimately, our point is that neither must one be an ecocentrist to support the Pisavaara nature reserve nor must one be an anthropocentrist to support the Great Green Wall Project. Differences on one's preferred position on moral considerability alone are not enough to explain one's ethical assessment of these projects.

In some cases, there is strong disagreement between different non-anthropocentric positions in the assessments of conservation projects – for instance, between ecocentrism and sentientism in the case of Oostvaardersplassen. The starvation and eventual culling of numerous herbivores in this reserve troubled many people. While *ecocentric* perspectives with their typical emphasis on the integrity of the ecosystem, usually argue that the starvation of the animals during harsh winters is part of natural fluctuations of population numbers and might also apply this reasoning to this particular human-created ecosystem, *sentientist* perspectives tend to find the suffering and painful death (and subsequent killing by humans as an answer to death by starvation) of these sentient animals highly problematic.

Similarly, in New Zealand one might support the conservation example on *ecocentric* grounds because one puts an emphasis on the value of the endemic species (which might even be heightened due to its rarity), or because the 'native'/introduced distinction is based on a particular idea of naturalness and its normative relevance (see dimension five). But framing this perspective to be in perfect opposition to a sentientist positions would again be overly simplified. Although individualist positions such as *sentientism* will in many cases be very critical of such a conservation project, due to the killing and suffering of individuals, one could also argue based on a sentientist position that there is a duty to protect the individuals belonging to the endemic species from suffering resulting from predation by human-introduced species. For such a position, the anthropogenic origin of the threat is then a relevant additional factor to consider; maybe as a human duty to rectify a previous wrong (the anthropogenic introduction of a species and the resulting harm). Accordingly, also a sentientist can consider the anthropogenic introduction of a species to be problematic, but they will most likely propose *different measures* which address the problem without killing individuals (e.g., contraceptives). Likewise, *ecocentrists* might also be concerned about the fate of the individual living beings that are the subject of different conservation practices even if they judge the protection of endemic species as a priority for conservation. Ecocentrists might, for instance, also propose alternative means to culling, such as habitat restoration in this case (see Linklater and Steer, 2018).

6. Fourth dimension – environmental values

Environmental values, as the *moral values* that we ascribe to nature and natural entities, also play an essential role in motivating and justifying conservation strategies.[20] That is an additional dimension of what makes up different normative positions on nature conservation. Different stakeholders may value different aspects of a conservation project, such as its aim to protect a particular valued species, an area's cultural significance or its contribution to the tourism industry. In some cases, these different perspectives on what is valuable can lead to complementary support for a project; in others, the different perspectives explain disagreement.

We distinguish between three types of moral environmental values: intrinsic, instrumental and relational values (see respectively McShane, 2007, Baard, 2019, Neuteleers, 2020, Deplazes-Zemp and Chapman, 2021). All these values play a role in ethical reflections on how one *should* behave in and towards our natural environment and the entities therein. We speak of '*intrinsic value*' if an entity (e.g., an animal, plant, ecosystem or nature as such) is, and should be valued, for its own sake based on certain properties of this entity (e.g., sentience, life, or emergent properties of an ecosystem, naturalness).[21] We use the term '*instrumental value*' when an entity is and should be valued for its utility i.e., when it is used to achieve another purpose or goal (e.g. fishery, timber, ecosystem services). Finally, '*relational value*' involves moral consideration as part of a particular relationship. Relational values are (and should be) assigned to natural entities due to the specific – and often very personal – meaning and significance that they can have for us (e.g., the bird that regularly visits my bird house, the tree that was planted in the year I was born, the cultural significance of a mountain).

Environmental conflicts usually include value conflicts, because *which* aspect of nature is to be protected, and specifically *how* it should be protected also depends on what values motivate protection. Even if one type of value is often more salient in defining a conservation strategy, usually other types can be invoked too. For instance, the importance of instrumental value as 'ecosystem services' is often mentioned to justify conservation projects, even if instrumental values were not the reason that motivated the project.

A forest such as Pisavaara doubtlessly has *instrumental* value thanks to the various 'ecosystem services' it provides. However, these services could also be provided by a less isolated ecosystem. The conservation strategy of this project is more likely to be motivated by an emphasis on *intrinsic* values; either of active and passive nature (see dimension five), of the forest ecosystem, of the species encompassed within the forest or even its individual living beings such as single trees or bears. *Relational* values are also interesting in this case; since the forest cannot be accessed by most people, they cannot enter a direct relationship with its place or entities (see dimension six). However, relational values must not always be based on a physical interaction; the forest may still have a personal meaning for people because it represents a particular type of 'wilderness' or may be an important reference point for local identity. One trait that differentiates relational values from instrumental values is the non-substitutability of their objects. This implies in the case of Pisavaara that this forest cannot be substituted with any other forest. For

[19] The choice is usually between egalitarian accounts (all morally considerable entities matter to the same degree; e.g., Taylor, 1986), hierarchical accounts (some entities matter more than others; e.g., Kagan, 2019) and non-hierarchical accounts (the moral worth of different entities is incommensurable; e.g., Wienhues, 2022).

[20] *Moral* values imply a normative demand for a certain response. In environmental ethics this means that entities with moral value in that sense *should* be considered.

[21] In this sense, one kind of such intrinsic value can be understood as a reason to assign moral considerability leading to the positions of anthropocentrism etc. (dimension three).

instance, if the Pisavaara forest is protected as a place that contributes to local identity, it cannot be replaced by protecting another forest elsewhere.

The Great Green Wall project could be explained as being motivated by *instrumental* values in 'nature'. The project has been designed to combat poverty and the negative consequences of environmental change and thus to satisfy human needs. However, people often also care about animals, plants, landscapes and places independently of what they gain from them. Insofar as this project can be understood as restoration – as opposed to a straightforward engineering project – *relational* values can also be supported by this project by helping to reinvigorate a landscape and specifically the soil of an area, which is meaningful for many people that live in the area where the project is conducted.

7. Fifth dimension – nature and naturalness concepts

Besides the already introduced dimensions, another source of disagreement concerning appropriate conservation strategies lies in different interpretations of the basic concepts of 'nature' and 'naturalness'. 'Nature' itself is sometimes understood as a ground for value,[22] but our focus in this section lies not on the question of *why* nature should be valued but rather on *what* we should protect when we have decided to protect nature and naturalness.

'Nature' is a notoriously contested concept (e.g., Mill, 1996; Escobar, 1999; Vogel, 2015). A main point of contention, which is highly relevant for conservation, concerns the questions of whether humans are part of nature. On one side, as a science-based endeavour, biological conservation is based on the view that humans, like any other living organisms, are products of evolution, so it would be somewhat pre-Darwinian to separate humans from nature. On the other side, conservation strategies are often based on the assumption that human actions pose a threat to the rest of nature and that humans can decide about the future of nature at large. In that sense humans are thus clearly separated from 'nature'.[23] Whereas several authors have tried to connect these apparently contradicting views on nature (Kaebnick, 2013; Moriarty, 2007), in conservation practice this contradiction is usually not addressed.

The previously discussed intervention intuitions (dimension two) are related to two views on whether humans are part of nature or not. For *non-interventionists*, protecting specific parts of nature implies that humans do not actively intervene into the object of protection. While it is common, in practice, to combine such a position with the view that understands humans as separate from 'nature', non-interventionists can also generally see humans as part of nature but simply highlight that they do not need to be present in every ecosystem. This indicates that intervention intuitions are not identical with views on 'nature'. Nevertheless, *interventionists* usually highlight that humans are part of nature and, thus, can also leave their trace via conservation projects.

The question of what we mean by 'nature' is relevant in the context of biological conservation, even if it is rarely explicitly discussed. We can distinguish between the protection of 'nature' as passive (*natura naturata*) or as active (*natura naturans*) (Merchant, 2016; Deplazes-Zemp, 2022). A focus on *passive nature* implies the perception of nature as an inventory of non-artificial organisms, species, ecosystems, landscapes and so on. In contrast, the protection of *active nature* emphasises natural processes, events and developments to the extent that they take place without human direction and control. In practice, the active and passive aspects of nature cannot be separated from each other, but conservation strategies differ in what aspect of nature they emphasise and support.

The attribute 'naturalness' is interpreted in different ways too. According to the most frequent understanding, the term refers to the origin of an entity, which then is natural to the degree that it developed naturally and artificial to the extent that it has been designed and shaped by humans. Dieter Birnbacher calls this dimension of naturalness '*genetic* naturalness'. However, many of us consider a garden, even when the plants are regularly cut back and may not be 'native', to be more natural than a shelf full of tins in a grocery shop. Birnbacher calls this naturalness of the managed garden '*qualitative* naturalness', a phenomenological rather than a historical dimension that focuses on the appearance and composition in the present (Birnbacher, 2014). Finally, it can be argued that also the intended future of an entity is relevant for its naturalness and that there is a third type of naturalness, called '*prospective* naturalness'. An artificial pond in a park, designed such that it needs to be regularly emptied and refreshed, is less natural in that respect than a pond that is intended to be left to natural forces in the future (Deplazes-Zemp, 2022).

The active/passive distinction and different mentions of naturalness can be illustrated by comparing Predator Free New Zealand with the Oostvaardersplassen case. To the extent that the conservation project in New Zealand sets the primary aim on the protection of species and biodiversity, its focus lies on *passive* nature (in the sense of an inventory) and *qualitative naturalness*. In contrast, Oostvaardersplassen as a human designed novel ecosystem is not only largely *unnatural* in the *genetic* sense but also to some degree in the *qualitative* sense. Since the area has been designed to be like a Pleistocene landscape, a historical type of qualitative naturalness was approximated. But it could be argued that the focus of this project rather lies on *prospective naturalness*, because the aim is to allow for natural development starting from a Pleistocene-like ecological situation. These aims exemplify a strong focus on *active* nature.

8. Sixth dimension – human roles in nature

In the recent environmental discourse, a growing number of authors have criticised adherence to rigid positions on moral considerability (dimension three) and a focus on passive nature. Instead, they offer suggestions for context-sensitive approaches and a focus on active nature. This tendency has led to, amongst other developments, the introduction of 'relational value' as a third value category (dimension four), and to a call for a relational turn in 'sustainability research' (West et al., 2020), which implies for example a focus on natural processes (i.e., active nature; dimension five) and on human-nature interactions.

Various qualitative and quantitative studies in the social sciences distinguish between different views on human-nature relationships (summarised in Flint et al., 2013). These relationships, in turn, are associated with different morally charged roles of people in nature. These lead to conflicting ideas about the appropriate human role in a conservation project, which can be another source of disagreement about what constitutes an appropriate conservation measure. Drawing on these studies and philosophical work, we suggest six normative roles and associated human-nature relationships that we consider to be relevant for motivating support or criticism of our biological conservation examples: managership,[24] stewardship, exploration, partnership,

[22] The question of the normative relevance of the nature concept is widely debated. For example, one might think that nature is morally relevant because it is 'autonomous' and must be respected as an autonomous entity that must not be dominated (see Heyd, 2005). Alternatively, it has been suggested that nature is morally relevant due to its 'otherness' (Hailwood, 2000).

[23] As indicated, the conservation discourse is based on the juxtaposition of the natural world with the artificial (unnatural world). This juxtaposition can be understood as either a dichotomous divide or as a gradual transition (Birnbacher, 2014). The latter is the more common position held in environmental philosophy.

[24] The category we have termed 'manager' is often called 'mastery', but we employ the less negatively charged version (de Groot, 1992).

participation and observation.[25]

The first role understands people as managers over nature to the extent that they focus on human interests in the interaction with nature.[26] Stewardship is the second role that is also based on a hierarchical view of the human-nature interaction, but the steward 'manages' with an attitude of responsibility, care and empathy for nature and natural entities. In contrast to partnership and participation, stewardship can also – but does not have to – be related to an anthropocentric perspective (see dimension three).

Exploration is another role associated with a hierarchical relationship that is compatible with – albeit not based on – anthropocentrism. Like stewardship it is orientated towards nature. But exploration is based on wonder, curiosity and interest rather than care and responsibility. Explorers take it for granted that they can and must intrude into 'nature' and perform experiments. However, the aim is not to use or exploit 'nature', but to increase our understanding of it.

The next two roles, partnership and participation, are non-hierarchical. Partnership is understood as an interaction or collaboration between humans and nature. In the associated relationship both are separate, but equally important, and benefits for both parties must be considered. Wouter de Groot (1992) highlights, that both partners remain largely autonomous. Participation is usually understood to be more inclusive than partnership. Wim Zweers describes a participant as: 'someone who takes part in an occurrence that surrounds him, that exceeds him, that is bigger than him […]' (Zweers, 2000:50). While Zweers' description concerns a more abstract attitude towards nature, it can be transferred to concrete human-nature relationships as manifested in conservation strategies. Accordingly, people need to fit into nature, adapt to it and follow it to some degree. In empirical studies, this relationship is usually described with reference to an emotional bond that people have with nature, that they feel as part of nature (de Groot et al., 2011; Braito et al., 2017).

Finally, observation is based on the idea of minimising direct human-nature interactions. Like management, stewardship, exploration and partnership, observation often involves a separation of humans from the rest of nature. However, unlike the first three categories, it does not rely on a hierarchy that places humans above nature. Instead, observation is compatible with – but does not necessarily depend on – the view that 'nature' is ranked higher than humans. The main characteristic of this role is that humans feel that they have no right to interfere with nature. In some cases, it may be associated with devotion or worshiping of nature.

The question of which role is morally justified in which situation depends on various normative premises including some of the other dimensions of moral considerability or moral values. How can these roles and relationships be linked to different conservation projects?[27] They must be understood as idealised descriptions of human normative 'roles' in nature, that can motivate conservation projects, but can also be a source of disagreement. Often more than one of these roles can be recognised in a conservation project.

For instance, support for the Predator Free NZ project could be motivated by the understanding of humans as *stewards* who see their role in caring for the threatened species or ecosystems, or as *managers* who need to safeguard 'ecosystem services'. In contrast, support for the Oostvaardersplassen project could be initially interpreted as being motivated by an understanding of humans as *explorers* driven by scientific curiosity and wonder, or as *managers* designing a Pleistocene-like ecosystem. However, once the national park was in place, the *observation* relationship could also be linked to the project, as it has been emphasised that the human intervention in the further development of the ecosystem must be minimised. Similarly, our other project examples can also be linked to different ideas of the appropriate human-nature relationship, depending on which aspect of the project is most characteristic.

9. Synthesis and conclusion

Why and how do people pursue biological conservation projects? Why do they disagree on the appropriate conservation strategy, even if they share central ideals and views in reference to the same facts? Why do individuals with different ideals and views sometimes agree on pursing a conservation approach? These questions cannot be answered by simply stating that some people are anthropocentrists and others ecocentrists. Instead, with the layered map of the moral landscape of biological conservation as a heuristic tool we can analyse the conceptual and normative foundations of different views and illustrate the multidimensionality of normative positions on conservation (see figure one). Our analysis involved six such dimensions: (1) conservation ideals, (2) intervention intuitions, (3) moral considerability, (4) environmental values, (5) views on 'nature' and naturalness, and (6) the human roles in nature. Moreover, we demonstrated a rich variety of distinctions *within* these dimensions. Both – the distinctions between and within dimensions – underly and shape different worldviews.

The map presented here is evidently not a complete description of the diversity of background assumptions that are at play in different conservation projects. Even within environmental philosophy additional dimensions, such as views on justice and sustainability, or the ontology of the human-nature relationship, could be discussed. In addition, other disciplines such as conservation social sciences or environmental psychology could also add more layers. Ultimately, our six dimensions along with any additional layers, underly and characterise different multidimensional normative positions on nature conservation which lead to (and go along with) different environmental management strategies and practices.

Although these dimensions are situated on different levels of analysis, they relate to each other in different ways as we elaborated in previous sections. Yet they are not reducible to each other.[28] For instance, there are different *normative* aspects involved. Discussions about moral considerability, for example, are situated on the anthropocentric-ecocentric spectrum which concerns a particular kind of environmental (intrinsic) value. But many environmental values that people hold – such as instrumental and relational values – do not directly fall onto this spectrum. Accordingly, considering normative disagreements about conservation projects only on the anthropocentrism-ecocentrism scale misses important potential areas of value agreement or disagreement. Similarly, one's moral intuitions about intervening into 'nature', and what would constitute an appropriate human role in nature are also interrelated, as different views on the human-nature relationship motivate different degrees and kinds of interactions with nature. Yet, they are not identical. For example, a stewardship perspective on the human-nature relationship is logically open to both

[25] Our analysis of human-nature relationships does not depend on a relational ontology according to which relationships precede and thus define subjects and objects. Our discussion is compatible with either such an ontology, or one that focuses on subjects and objects that stand in relationships with each other.

[26] This view has often been criticised as the classical anthropocentric model based on the idea of dominating nature (Routley and Routley, 1995; Warren, 1990).

[27] Georgina Mace (2014) distinguishes between four 'framings of conservation', which characterise changing ideals behind conservation over the past 50 years. While her categories are broader (in the sense of worldviews) than our human-nature relationships, they seem to be associated with similar ideas. 'Nature for itself' could, for instance, be related to the role of observer; 'nature for people' to the role of manager; and 'people and nature' to the role of partner.

[28] While not all combinations of positions along the different dimensions are compatible with each other (e.g., combining anthropocentrism with a human 'observation' role in nature that considers nature hierarchically above humanity), more combinations are possible than many readers might think.

interventionist and non-interventionist approaches that can provide different interpretations of what it means to care for and take responsibility for nature.

Different normative positions on nature conservation can also involve a variety of different *conceptual* commitments, as we have aimed to illustrate with the example of different views on 'nature'. For instance, all the four project examples that we introduced involve the protection of nature in some sense, but they differ in terms of what aspect of nature they highlight, such as active or passive nature. Such conceptual distinctions between active and passive nature are again independent of other dimensions such as moral considerability (as a classification involving ecocentrism, biocentrism and so on).

With our analysis we want to show that further theoretical and empirical analysis of these different dimensions would be a promising approach towards a more informative and constructive discourse about the future of biological conservation. Increased awareness, transparency and argumentative clarity on these conceptual and normative aspects will be helpful (1) to make conservation strategies comprehensible for others to allow for convergences and compromises, (2) to understand conflict and disagreement concerning what people consider to be an appropriate approach and (3) to develop and manage conservation projects that are best adapted to the respective conservation aims.

Declaration of competing interest

There are no competing interests.

Data availability

No data was used for the research described in the article.

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Appendix A. Supplementary data

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References

Agrawal, A., Redford, K., 2009. Conservation and displacement: an overview. Conserv. Soc. 7 (1), 1.
Almarcha, F., Ferrández, T., López-Bao, J.V., 2022. Symbols, wolves and conflicts. Biol. Conserv. 275, 109756.
Anderson, C.B., Athayde, S., Raymond, C.M., Vatn, A., Arias-Arévalo, P., Gould, R.K., Kenter, J., et al., 2022. Chapter 2. Conceptualizing the diverse values of nature and their contributions to people. In: IPBES Methodological Assessment of the Diverse Values and Valuation of Nature. Zenodo.
Armstrong, C., 2021. Natural resources, sustainability, and intergenerational ethics. In: Gardiner, S.M. (Ed.), The Oxford Handbook of Intergenerational Ethics (Online Edition). Oxford University Press.
Attfield, R., 1995. Value, Obligation and Metaethics. Ropoi, Amsterdam.
Baard, P., 2019. The goodness of means: instrumental and relational values, causation, and environmental policies. J. Agric. Environ. Ethics 32 (1), 183–199.
Baard, P., Ahteensuu, M., 2019. Ethics in conservation. J. Nat. Conserv. 52, 125737.
Birnbacher, D., 2014. Naturalness, Is the "Natural" Preferable to the "Artificial"? University Press of America.
Braito, M.T., Böck, K., Flint, C., Muhar, A., Muhar, S., Penker, M., 2017. Human-nature relationships and linkages to environmental behaviour. Environ. Values 26 (3), 365–389.
Büscher, B., Fletcher, R., 2019. Towards convivial conservation. Conserv. Soc. 17 (3), 283–296.
Bwalya Umar, B., Kapembwa, J., 2020. Economic benefits, local participation, and conservation ethic in a game management area: evidence from Mambwe, Zambia. Trop. Conserv. Sci. 13 (January), 194008292097175.
Callicott, J.B., 2013. Thinking Like a Planet: The Land Ethic and the Earth Ethic. Oxford University Press, Oxford.
Chan, Kai M.A., Gould, Rachelle K., Pascual, Unai, 2018. Editorial overview: relational values: what are they, and what's the fuss about?. In: Sustainability Challenges: Relational Values, 35, pp. A1–A7.
Coolsaet, B. (Ed.), 2021. Environmental Justice: Key Issues. Earthscan (Routledge), Abingdon, Oxon.
Cortés-Capano, G., Hausmann, A., Di Minin, E., Kortetmäki, T., 2022. Ethics in biodiversity conservation: the meaning and importance of pluralism. Biol. Conserv. 275 (November), 109759.
Department of Conservation, Te Papa Atawhai; New Zealand Government. (n.d.). 'Goal, Tactics and New Technology for Predator Free 2050' Available at: https://www.doc.govt.nz/nature/pests-and-threats/predator-free-2050/goal-tactics-and-new-technology/ (accessed 27.07.2022).
Deplazes-Zemp, A., 2022. Are people part of nature? Yes and no: a perspectival account of the concept of 'nature. Environ. Ethics 44 (2), 99–199.
Deplazes-Zemp, A., 2023. Beyond intrinsic and instrumental: third-category value in environmental ethics and environmental policy. Ethics Policy Environ. 1–23.
Deplazes-Zemp, A., Chapman, M., 2021. The ABCs of relational values: environmental values that include aspects of both intrinsic and instrumental valuing. Environ. Values 30 (6), 669–693.
Donlan, J., Greene, H.W., Berger, J., Bock, C.E., Bock, J.H., Burney, D.A., 2005. Re-wilding North America. Nature 436, 913–914.
Duclos, J.S., 2022. Wilderness, Morality, and Value. Lexington Books, Lanham MD.
Dudley, N., Stolton, S. (Eds.), 2008. Defining Protected Areas: An International Conference in Almeria, Spain. International Union for Conservation of Nature and Natural Resources, Gland, Switzerland.
Escobar, A., 1999. After nature. Curr. Anthropol. 40 (1), 1–30.
Flint, C.G., Kunze, I., Muhar, A., Yoshida, Y., Penker, M., 2013. Exploring empirical typologies of human-nature relationships and linkages to the ecosystem services concept. Landsc. Urban Plan. 120, 208–217.
Food and Agriculture Organization of the United Nations (FAO), 2016. Building Africa's Great Green Wall: Restoring Degraded Drylands for Stronger and more Resilient Communities. Rome.
Food and Agriculture Organization of the United Nations (FAO) (n.d.) 'Great Green Wall for the Sahara and the Sahel Initiative: The African Wall' [Online]. Available at: http://www.fao.org/docrep/016/ap603e/ap603e.pdf (Accessed 29.03.2021).
Gammon, A., 2018. The many meanings of rewilding: an introduction and the case for a broad conceptualisation. Environ. Values 27, 331–350.
Goffner, D., Sinare, H., Gordon, L.J., 2019. The Great Green Wall for the Sahara and the Sahel initiative as an opportunity to enhance resilience in Sahelian landscapes and livelihoods. Reg. Environ. Chang. 19 (5), 1417–1428.
Goodpaster, K.E., 1978. On being morally considerable. J. Philos. 75 (6), 308–325.
Great Green Wall (n.d.). 'The Great Green Wall' [Online]. Available at: https://www.greatgreenwall.org/about-great-green-wall (Accessed 10.03.2021).
de Groot, W.T., 1992. Environmental Science Theory: Concepts and Methods in a One-World, Problem-Oriented Paradigm. Elsevier, Amsterdam.
de Groot, M., Drenthen, M., de Groot, W.T., 2011. Public visions of the human/nature relationship and their implications for environmental ethics. Environ. Ethics 33 (1), 25–44.
Hailwood, S., 2000. The value of nature's otherness. Environ. Values 9 (3), 353–372.
Hedberg, T., 2016. Animals, relations, and the laissez-faire intuition. Environ. Values 25 (4), 427–442.
Hettinger, N., 2018. Naturalness, wild-animal suffering, and palmer on laissez-faire. Les Ateliers de l'éthique 13 (1), 65–84.
Heyd, T., 2005. Recognizing the Autonomy of Nature, Theory and Practice. Columbia University Press.
Holland, A., 1999. Sustainability: Should we start from Here? In: Dobson, A. (Ed.), Fairness and Futurity: Essays on Environmental Sustainability and Social Justice. Oxford University Press, Oxford.
Horta, O., 2017. Animal suffering in nature: the case for intervention. Environ. Ethics 39 (3), 261–279.
IUCN, 2019. Genetic Frontiers for Conservation: An Assessment of Synthetic Biology and Biodiversity Conservation. Available at: https://portals.iucn.org/library/efiles/documents/2019-012-En.pdf (Accessed 20.06.2022).
Juntti, P., Ruohonen, A., Räinä, J., Jokiranta, A., 2019. Metsä meidän jälkeemme. Like, Helsinki.
Kaebnick, G.E., 2013. Humans in Nature: The World as we Find it and the World as we Create it. Oxford University Press.
Kagan, S., 2019. How to Count Animals, More or Less. Oxford University Press, Oxford.
Katz, E., 1991. Restoration and redesign: the ethical significance of human intervention in nature. Restor. Manag. Notes 9 (2), 90–96.
Kelbessa, W., 2021. 'African Worldviews, Biodiversity Conservation and Sustainable Development'. Environmental Values (online first).
Keulartz, J., 2016. Future directions for conservation. Environ. Values 25 (4), 385–407.
Kianpour, C.K., Paez, E., 2022. Red in tooth and claw no more: animal rights and the permissibility to redesign nature. Environ. Values 31 (2), 211–231.

Kolbert, E., 2014. 'The big kill: New Zealand's crusade to rid itself of mammals' [online]. The New Yorker, 14 December 2014. Available at: https://www.newyorker.com/magazine/2014/12/22/big-kill.
Latombe, G., Lenzner, B., Schertler, A., Dullinger, S., Glaser, M., Jarić, I., Pauchard, A., Wilson, J.R.U., Essl, F., 2022. What is valued in conservation? A framework to compare ethical perspectives. NeoBiota 72 (March), 45–80.
Lennon, M., 2017. Moral-material ontologies of nature conservation: exploring the discord between ecological restoration and novel ecosystems. Environ. Values 26 (1), 5–29.
Linklater, W., Steer, J., 2018. Predator Free 2050: A flawed conservation policy displaces higher priorities and better, evidence-based alternatives. Conserv. Lett. 11 (6).
Lorimer, J., Driessen, C., 2014. Wild experiments at the Oostvaardersplassen: rethinking environmentalism in the Anthropocene. Trans. Inst. Br. Geogr. 39, 169–181.
Lute, M.L., Carter, N.H., López-Bao, J.V., Linnell, J.D.C., 2018. Conservation professionals agree on challenges to coexisting with large carnivores but not on solutions. Biol. Conserv. 218, 223–232.
Mace, G.M., 2014. Whose conservation? Science 345 (6204), 1558–1560.
Martin, J.V., 2020. In the Shadow of the Wolf: Wildlife Conflict and Land Use Politics in the New West. PhD Thesis. University of California, Berkeley, California.
McMahan, J., 2016. The moral problem of predation. In: Chignell, A., Cuneo, T., Halteman, M.C. (Eds.), Philosophy Comes to Dinner. Routledge, New York and London, pp. 268–294.
McShane, K., 2007. Why environmental ethics Shouldn't give up on intrinsic value. Environ. Ethics 29 (1), 43–61.
McShane, K., 2017. Is biodiversity intrinsically valuable? (and what might that mean?). In: Garson, J., Plutynski, A., Sarkar, S. (Eds.), The Routledge Handbook of Philosophy of Biodiversity. Routledge, Milton Park, Abingdon, Oxon, pp. 155–167.
Merchant, C., 2016. Autonomous Nature, Problems of Prediction and Control from Ancient Times to the Scientific Revolution. Routledge.
Mill, J. S. (1996 (1874)). On Nature. Available at: http://www.lancs.ac.uk/users/philosophy/texts/mill_on.htm.
Miller, T.R., Minteer, B.A., Malan, L.-C., 2011. The new conservation debate: the view from practical ethics. Biol. Conserv. 144 (3), 948–957.
Moriarty, P.V., 2007. Nature naturalized: A Darwinian defense of the nature/culture distinction. Environ. Ethics 29 (3), 227–246.
Morris, M.C., 2020. Predator Free New Zealand and the "war" on pests: is it a just war? J. Agric. Environ. Ethics 33 (1), 93–110.
Neuteleers, S., 2020. A fresh look at 'relational' values in nature: distinctions derived from the debate on meaningfulness in life. Environ. Values 29 (4), 461–479.
Newman, J.A., Varner, G., Linquist, S., 2017. Defending Biodiversity: Environmental Science and Ethics. Cambridge University Press, Cambridge.
Norton, B.G., 1991. Toward Unity among Environmentalists. Oxford University Press, New York.
Nussbaum, M.C., 2006. Frontiers of Justice: Disability, Nationality, Species Membership. Belknap Press, Cambridge, Mass. and London.
Palamar, C.R., 2007. Wild, women, and wolves: an ecological feminist examination of wolf introduction. Environ. Ethics 29 (1), 63–75.
Palmer, C., 2010. Animal Ethics in Context. Columbia University Press, New York.
Passmore, J., 1974 (1980). Man's Responsibility for Nature. Duckworth, London.
Predator Free NZ (n.d.). 'Our Programmes'. [online] Available at: https://predatorfreenz.org/about-us/our-programmes/ (Accessed: 24 January 2022).
Preston, C.J., 2018. The Synthetic Age: Outdesigning Evolution, Resurrecting Species, and Reengineering our World. MIT Press, Cambridge, Mass.
Raymond, C.M., Hirsch, P., Norton, B., Scott, A., Reed, M.S., 2023. Rethinking appropriateness of actions in environmental decisions: connecting interest and identity negotiation with plural valuation. Environ. Values (online first) 1–26.
Redford, K.H., Adams, W., Carlson, R., Mace, G.M., Ceccarelli, B., 2014. Synthetic biology and the conservation of biodiversity. Oryx 48 (3), 330–336.
Regan, T., 1984. The Case for Animal Rights. Routledge, London.
Ripple, William J., Beschta, Robert L., 2012. Trophic cascades in Yellowstone: the first 15 years after wolf reintroduction. Biol. Conserv. 145 (1), 205–213.
Rolston III, H., 2012. A New Environmental Ethics: The Next Millennium for Life on Earth. Routledge, New York and London.
Routley, R., Routley, V., 1995. Against the inevitability of human chauvinism. In: Elliot, R. (Ed.), Environmental Ethics. Oxford University Press, pp. 104–128, 1979.
Sandbrook, C., Fischer, J.A., Holmes, G., Luque-Lora, R., Keane, A., 2019. The global conservation movement is diverse but not divided. Nat. Sustain. 2 (4), 316–323.
Sandler, R.L., 2007. Character and Environment: A Virtue-Oriented Approach to Environmental Ethics. Columbia University Press, New York.
Schwartz, D., 2019. European Experiments in Rewilding: Oostvaardersplassen. Rewilding Earth (blog). 22 August 2019 https://rewilding.org/european-experiments-in-rewilding-oostvaardersplassen/ (accessed 27.07.2022).
Siipi, H., 2004. Naturalness in biological conservation. J. Agric. Environ. Ethics 17 (6), 457–477.
Singer, P., 1975. Animal Liberation, 2nd edition. Thorsons, London.
Taylor, P., 1986. Respect for Nature: A Theory of Environmental Ethics (25th Anniversary Edition (2011)). Princeton University Press, Princeton.
Theunissen, L., 2019. The Oostvaardersplassen Fiasco. Isis 110 (2), 341–345.
Valkonen A., Aikio, Alakorva, S., Magga, S.-M., 2022. The Sámi World. Routledge, Oxon.
Vera, F., 2000. Grazing Ecology and Forest History. CABI, Wallingford.
Vincelette, A., 2022. In defense of tigers and wolves: a critique of McMahan, Nussbaum, and Johannsen on the elimination of predators from the wild. Ethics Environ. 27 (1), 17–38.
Vogel, S., 2015. Thinking like a Mall: Environmental Philosophy after the End of Nature. MIT Press.
Wallach, A.D., Batavia, C., Bekoff, M., et al., 2020. Recognizing animal personhood in compassionate conservation. Conserv. Biol. 34 (5), 1097–1106.
Warren, K.J., 1990. The power and the promise of ecological feminism. Environ. Ethics 12 (2), 125–146.
West, S., Haider, L.J., Stalhammar, S., et al., 2020. A relational turn for sustainability science? Relational thinking, leverage points and transformations. Ecosyst. People 16 (1), 304–325.
Wienhues, A., 2020. Ecological Justice and the Extinction Crisis: Giving Living Beings their Due. Bristol University Press, Bristol.
Wienhues, A., 2022. Respecting the nonhuman other: individual natural otherness and the case for incommensurability of moral standing. Environ. Values 31 (6), 637–656.
Wienhues, A., Deplazes-Zemp, A., 2022. Otherness-based reasons for the protection of (bio)diversity. Environ. Ethics 44 (2), 161–184.
Wilson, E.O., 2016. Half-Earth: Our Planet's Fight for Life. Livelight Publishing Corporation, New York.
Wissenburg, M., 2011. The lion and the lamb: ecological implications of Martha Nussbaum's animal ethics. Environ. Politics 20 (3), 391–409.
Zweers, W., 2000. Participating with Nature: Outline for an Ecologization of our World View. International Books.