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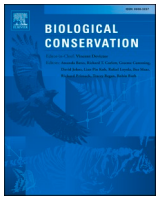

Taking natural harms seriously in compassionate conservation

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ABSTRACT

Compassionate conservation is an ethical framework proposed to instill greater compassion for individual animals in conservation science and practice. In addition to highlighting compassion as a virtue, compassionate conservationists propose four ethical principles (*first do no harm*, *individuals matter*, *inclusivity*, and *peaceful coexistence*) to capture what it means to act compassionately in conservation. In this paper I argue for a revision of this framework. I begin by showing how compassionate conservationists also implicitly promote the virtue of respect, which better accounts for the principles *individuals matter* and *inclusivity*, yet entails a further principle: *respect for autonomy*. I further suggest that, to reflect genuine compassion for wild animals, the principles *first, do no harm* and *peaceful coexistence* should be replaced by *empathy*, *understanding*, and *minimize harm*. In the second half of the paper, I discuss the implications of this revised framework. I argue that, due to the prevalence of suffering even in well-conserved ecosystems, compassion and respect motivate a more active management of natural environments in order to reduce the harms (natural and anthropogenic) that wild animals face. This reveals a greater need for discussions on how to balance the flourishing of wild animals against the preservation of biodiversity, as well as a need to identify new approaches to conservation which better promote both ends.

1. Introduction

In a 2010 paper provocatively titled "Conservation lacks compassion", Mark Bekoff proposed a new ethical framework for conservation, calling it *Compassionate Conservation*. Since that article, a fierce debate has ignited over compassionate conservation, which many see as threatening the achievement of conservation goals (Coghlan and Cardilini, 2020). In this paper I will suggest that, in light of the virtues that compassionate conservationists themselves champion, conservationists[1] ought to do *more* for wild animals than has previously been suggested.

Compassionate conservation can be understood as a new approach seeking to better protect the wellbeing of wild animals (through compassion) and to respect their intrinsic value (Coghlan and Cardilini, 2022; Hunter and Gibbs, 2011). Those following compassionate conservation criticize conventional conservation for prioritizing conservation objectives at the expense of individual animals. Although compassionate conservationists claim to promote solutions that are "mutually beneficial" for conservation objectives and individuals (Wallach et al., 2018), they have received criticism in turn for prioritizing the protection of individual animals at the expense of biodiversity conservation.

While this debate has occurred mostly within conservation science, a similar although markedly different debate has occurred in the field of animal ethics. What distinguishes the debate in animal ethics is that it centers on the *natural* harms wild animals face, rather than those caused by conservationists. These ethicists argue that the prevalence of suffering even in well-conserved nature gives us reason to try to reduce the (natural) suffering of wild animals. Such suggestions directly oppose conservation objectives and reflect a prioritization of compassion over biodiversity conservation (Faria and Paez, 2019). Given that compassionate conservation and (wild) animal ethics both deal with the tension between compassion and conservation, it is surprising that the implications of natural suffering for compassionate conservation have not yet been considered in detail (Coghlan and Cardilini, 2022).[2] While I will

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[1] I use the term *conservationists* to refer to "scientists and practitioners informed by conservation science and biology and the norms enshrined within" (Ferraro et al., 2023). Accordingly, I will refer throughout this paper to both conservation science and conservation practice.

[2] Much of the literature appears to take the stance that natural suffering has little or no bearing on compassionate conservation. For example, in Wallach et al. (2015) a strict dichotomy is drawn between harms caused by humans and indirectly via (introduced) predators. More generally, there is scant mention of natural harms such as starvation, disease, or parasitism throughout the literature. Interestingly, in their critique of compassionate conservation, Hampton et al. (2019) do take natural harms to be morally relevant, but they attribute this to their reliance on consequentialism, rather than to a different understanding of compassion itself.

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remain agnostic about how to make the right tradeoff between compassion and conservation, in this paper I will argue that compassionate conservation ought to also include concern for natural sources of harm.

My argument is structured in two halves. In the first, I argue for a conceptual revision of compassionate conservation. I begin in Section 2 by summarizing the critiques which compassionate conservationists have made against mainstream conservation science and practice. In Section 3 I explain how compassionate conservation seeks to remedy conservation's shortcomings by calling for greater compassion, and detail the framework developed by Wallach et al. (2018) which posits four principles to guide compassionate conservation action. In Section 4 I argue for a revision to this framework, showing that compassionate conservationists also emphasize the virtue of respect for wild animals, and that respect in turn entails an additional principle of *respect for autonomy*. Furthermore, instead of the principles *first, do no harm* and *peaceful coexistence*, I argue that compassion is better captured by *empathy*, *compassion*, and *minimize harm*.

Through Section 5 I consider the implications of natural harms for this new framework. Given the prevalence of harms in nature, I argue that compassion and respect for wild animals entails a more active management of nature where efforts are made to reduce the natural harms wild animals face. This reveals a trade-off between compassion and respect for wild animals on one hand and conservation ideals on the other.

2. Conservation and the neglect of animal welfare

Conservation biology is a science driven by the goal of conserving Earth's biological diversity, understood as the "diversity of organisms, the complexity of ecological systems, and the resilience created by evolutionary processes" (Society for Conservation Biology, 2022). Such features, although often considered to be distinct values, will for the purpose of this paper be referred to collectively with the term *biodiversity*.[3]

Historically, conservation biology was considered distinct from the protection of animal welfare (Soulé, 1985), and this separation led to the use of especially harmful conservation methods. For example, predators and infectious diseases have been introduced to control invasive species (few of which led to extermination, but rather to states of continuous predation and disease); recreational hunting and poisons have been used to control native species that are perceived as overabundant or otherwise problematic; and painful and injury-causing traps and neuromuscular blockers have been used to capture live animals (Hampton and Hyndman, 2018; Ramp et al., 2013). Increasingly, the relevance of animal welfare is being recognized in conservation biology (Dubois et al., 2017). Nevertheless, grave harms to individual animals continue to be justified for the sake of conservation, with wild animals slaughtered in the order of millions each year in some countries (For example, see Warburton et al., 2009). According to critics, this reflects a continuing prioritization of biodiversity over the lives and welfare of individual animals (Wallach et al., 2018; Wallach et al., 2020a).

3. Compassionate conservation

Those critical of the prioritization of biodiversity over individual animals have bannered in recent years around calls for compassionate conservation. As a movement *within* conservation science, compassionate conservationists still accept the goal (and value) of conserving biodiversity. However, in trying to protect ecological values, they call for greater attention to the moral virtue of compassion (Wallach et al., 2018).[4,5] Compassion comes from the Latin *compati*, meaning to "suffer with" others; to take concern for their wellbeing – which requires that we respond to that suffering appropriately (Wallach et al., 2020a). In the context of conservation, this entails "empathy…for nonhuman animals and a drive to alleviate harm and suffering" (Ramp and Bekoff, 2015).

Compassionate conservationists are a diverse group with different ethical commitments and theoretical approaches. What unites them is a shared belief in the moral significance of individual animals, and the belief that such significance requires an attitudinal change within conservation science and practice. Given their focus on compassion, compassionate conservation could easily be understood as an extension of virtue ethics (Wallach et al., 2018). Yet, as Coghlan and Cardilini (2022) point out, "compassionate conservation is logically consistent with diverse moral theories" because virtues also play an important role in ethical traditions such as consequentialism and deontology, despite the fact that they do not take central stage (Nussbaum, 1999).

Without needing to commit to virtue ethics as a theory, then, we can critique compassionate conservation from various angles: is compassion the only virtue that must be fostered in light of the moral significance of wild animals? Does the understanding of compassion within compassionate conservation accurately reflect compassion as a virtue? And finally, what are its practical implications? All of these questions can be addressed *while holding separately* that environmental collectives and non-sentient entities have intrinsic value, or that there are other relevant moral considerations. To answer these questions, I will focus on Wallach et al. (2018)'s framework of compassionate conservation, since it presents an explicit and influential articulation of compassionate conservation. However, the main points I will argue for should be generalizable to all of compassionate conservation.

Wallach et al. (2018)'s framework begins with a call for greater compassion in conservation science, practice, and education, following which they offer four action-guiding principles (adapted from Bekoff, 2013) that help to align the actions of the conservationist with that of an ideal, compassionate agent. In this way the principles can be understood to reinforce, rather than replace, the virtue of compassion.

Those principles are (Wallach et al., 2018):

1. First, do no harm
2. Individuals matter
3. Inclusivity
4. Peaceful coexistence

There is considerable confusion about how these principles should be understood, so some clarification is needed. To begin with, several critics of Wallach et al. have confused these principles with inflexible moral rules (Bobier and Allen, 2022a; Griffin et al., 2020; Hayward et al., 2019). However, Bekoff (2013) describes the principles as ideals that cannot be expected to obtain in all real-world situations. Rather than acting as prohibitions, they require "strong arguments" to be overridden (Ibid). We should understand the principles then as pro tanto rules: ones which we would *ideally* adhere to, but which we may in certain situations be justified in deviating away from.

With this in mind, we should read *first, do no harm* not as requiring us

[3] While conservation practice often combines such ecosystemic values with anthropocentric values, for the purposes of this paper I will focus on more 'pure' conservation which takes the protection of biodiversity (and related values) as its primary goal.

[4] Virtues are understood here as moral character traits, and should not be confused with emotions.

[5] Compassionate conservationists have also concerned themselves with the scientific goal of highlighting the importance of animal individuality for conservation science (Edelblutte et al., 2023; Baker and Winkler, 2020; Baker, 2017). Acknowledging the importance of animal individuality for conservation science can help to bolster arguments for more humane methods, yet conceptually these goals – one scientific and the other purely moral – are distinct. The emphasis in this paper will be on compassionate conservation as an ethical framework.

to refrain from all forms of harm, but as an ideal of avoiding harm, requiring that harmful interventions be "carefully scrutinized and selectively pursued" (Wallach et al., 2018). That this principle comes "first" does not imply a hierarchical relationship (Wallach, personal communication, 2023). Rather, it implies that a precautionary approach should be taken: given that most interventions in the wild involve risk and uncertain benefit, options that involve less risk of harm should be favored.

Individuals matter asks environmental managers to be mindful of the intrinsic value of animals. Nothing mysterious is meant by intrinsic value, but merely the acknowledgment that many wild animals have lives which are valuable and meaningful in themselves. But even with this in mind, in practice it will often be more useful to talk about populations or species than individuals, so this principle too should be understood as a goal rather than a strict rule.[6]

Inclusivity asks that we recognize the intrinsic value of *all* relevant individuals and do not exclude them on the basis of human-defined categories, such as being 'alien' (Wallach et al., 2018). Unfortunately, compassionate conservationists have proposed different understandings of who those individuals are. Wallach et al. (2018) say that "all wildlife individuals" should be included, meaning both sentient and non-sentient individuals; however, four of the five same authors stated in a later paper that compassion applies only to sentient individuals (Wallach et al., 2020a). For the moment, I will follow those later authors in assuming the sentientist position, but will return to this question in Section 4.1.

Finally, *peaceful coexistence* is said to require that conservation managers faced with human-wildlife conflicts modify their own practices or those of other humans first, rather than resorting to violent methods (Wallach et al., 2018).

4. Re-conceptualizing compassionate conservation

On the face of it, there is much to credit compassionate conservation with. By emphasizing the importance of compassion, compassionate conservation places responsibility on conservation scientists and managers to act out of concern for the suffering of wild animals while pursuing conservation objectives. However, the framework developed by Wallach et al. (2018) has caused substantial confusion. I will show in this section that this is in part due to the missing virtue of respect, but also due to a mismatch between principles and virtues. I will then propose a new framework for compassionate conservation which corrects for these shortcomings, and which should more accurately capture the values that compassionate conservationists themselves espouse.

4.1. The virtue of respect

The first issue is that not all four principles follow clearly from the virtue of compassion. Compassion has been defined here as an appropriate response to suffering: one that tries to reduce suffering as far as possible. But *individuals matter* and *inclusivity* do not directly have anything to do with the suffering of others. These principles do, however, capture what it means to act out of respect (Santiago-Ávila and Lynn, 2020). Respect and related concepts are referred to throughout the compassionate conservation literature: for example, in addition to calling for greater concern for the suffering of wild animals, Wallach et al. (2020a) ask us "to recognize [a wild animal] as…an intrinsically and uniquely valuable individual whose interests kindle one's concern and respect". Most notably, when compassionate conservation was first proposed, Bekoff (2010) formulated what would later become *individuals matter* and *inclusivity* as "treat all individuals with *respect* and dignity" and "*respect* all life" (emphasis added).

Respect means to acknowledge others as individuals with a "good worth pursuing" (Hursthouse, 2011), or, in other words, with intrinsic value (Dillon, 2003). This of course raises the question, put aside in Section 3, of *who* has such a good. While it is clear that sentient beings do (given that they *feel* certain states as worth pursuing or avoiding), some have claimed more controversially that nonsentient living beings such as plants should also be understood as having their own good (Taylor, 2011). Addressing such positions fully would require a paper by itself, but there are at least two strong reasons to be skeptical of attributing this type of good to nonsentient beings. Firstly, although it is common in everyday language to talk about certain conditions as being "good for" plants and other nonsentient lifeforms, it turns out to be incredibly difficult to pin down exactly what the basis of that good is, and in a way which aligns with how we think about the moral ends of other sentient beings (McShane, 2021). Secondly, the best attempts to do so problematically appear to include non-living entities, such as crystals, flames, or hurricanes (Holm, 2017). Of course, it is possible that these challenges may still be overcome. But given the huge moral implications of extending respect to non-sentient beings, a greater evidential bar must be met. On the other hand, there is a clear reason for considering sentient beings as having a good worth pursuing: because they themselves *experience* it as such. For these briefly sketched reasons, I will proceed on the assumption that only sentient beings are the appropriate objects of respect.

In the conservation context there is a large overlap between compassionate and respectful action, but as character traits they are distinct. For example, respect means that we cannot treat others as mere resources (e.g., units of biodiversity) or as mere problems (such as invasive species). Trophy hunting presents one instance where compassionate and respectful action can be argued to point in different directions. Trophy hunting in less developed countries has been argued to benefit wild animals by generating revenue, which helps to protect animal populations from poachers (Gunn, 2001). In some cases, only older individuals are selected, and the death is relatively swift (Ibid.), so one might argue that the practice is compassionate. Yet trophies (body parts collected for display) are disrespectful because they "invariably convey power, strength, and status" of the hunter over the animal victim (Batavia et al., 2019). Furthermore, as the killing occurs in the context of sport, the animals are relegated "to the sphere of mere things," disregarded as individuals with lives and a good of their own (Ibid.).

The principle *individuals matter* captures the core of respect by asking us to acknowledge animals as individuals with intrinsic value. This means that environmental managers should avoid reducing wild animals "solely to their position as members of collectives," such as species or populations (Wallach et al., 2018). This is first and foremost a call for a particular attitude, one which would give us greater reason to protect individuals against harm, and which produces feelings of loss if killing is indeed necessary. This in turn challenges practices such as the culling of 'surplus' animals in captive breeding programs, or the culling of certain populations to protect smaller numbers of an endangered species (Wallach et al., 2018).

In a similar vein, *inclusivity* functions to protect individuals by asking that we guard against the tendency to disregard certain categories of sentient beings. In the conservation context, *inclusivity* helps to counter the prevalence of nativism (the idea that introduced species are unnatural and harmful) which demonizes non-native species such that their value as individuals is often forgotten (Coghlan and Cardilini, 2022). But it can also be understood as asking conservationists to be more inclusive regarding which species are assumed to be sentient to begin with. Since

[6] Sebo (2024) makes the point that even if we consider individuals to be the only beings with intrinsic value, it may still make sense in some contexts to treat ecological wholes as the units of moral analysis (e.g. by talking about what is good for a species or ecosystem). However, acknowledging that individuals have intrinsic value makes the previous statement conditional on the good of the species or ecosystem aligning with the good of individuals.

the study of animal sentience is still in its early days and quickly progressing, if conservationists were overly strict about what counts as evidence for a species' sentience, they would risk excluding species which might in fact be deserving of respect. Given this risk, a precautionary approach should be taken, whereby evidence of sentience in one species should be considered as sufficient to regard all species in that order as sentient (Birch, 2017; Browning and Birch, 2022).

Respect also entails that we do not put ourselves above others and assume a dominant position, which would entail the vice of arrogance (Hursthouse, 2011). Because their flourishing depends on their own subjective feelings and desires, we ought to respect their choices even if we do not understand them. This can be captured by the principle of *respect for autonomy*. Here autonomy merely entails the capacity to choose according to one's best interests. Of course, in many cases conservationists may have good reason to believe wild animals are not able to choose according to their best interests, either because their options are unduly constrained, or because they lack sufficient understanding.[7] In such cases, respect for autonomy does not rule out paternalistic action. For example, respect for autonomy may still allow us to prevent a wild animal from consuming human food, if this food is known to be unhealthy for the animal. Similarly, we might restrict the movement of wild animals around dangerous areas such as motorways, since wild animals are not generally able to properly assess the risks. Where wild animals' choices are unduly constrained, respect for autonomy can also mean to remove barriers, such as by building wildlife crossings over roads. Although this principle has not been proposed by compassionate conservationists explicitly, issues of autonomy frequently surface in the compassionate conservation literature (e.g. Wallach et al., 2020b).

4.2. The virtue of compassion

The principles *first, do no harm* and *peaceful coexistence* relate more obviously to the virtue of compassion. Nevertheless, these principles capture only a partial and incomplete form of compassion.

The phrasing of *first, do no harm* generates two problems. "First" implies a presumption against causing harm in situations of uncertainty. But many conservation scenarios (most emblematically, the problem of invasive species) present wicked problems in which inaction leads to harm, while the most effective solutions require causing harm directly. Given the prevalence of such cases, Hampton et al. (2019) argue that a presumption against harm is likely to lead to greater suffering for wild animals by allowing ecosystems to be degraded, or for native species to be driven to extinction.

A second and related problem is that the principle of *do no harm* only requires conservationists to be mindful of the harms that they cause directly. This will lead them to ignore harms that arise indirectly or independently of their actions, which might lead them to choose actions which result in greater harm overall. For example, some compassionate conservationists favor introducing predators to control invasive species over direct lethal control, even though the predators cause greater suffering than most forms of direct lethal control (Allen et al., 2019). Callen et al. (2020) believe that focusing only on direct harm could also make it difficult to control populations of overabundant species, allowing populations to expand beyond the environment's carrying capacity and possibly leading to worse welfare outcomes. This was seen most dramatically in the Oostvardersplassen rewilding project, where populations of horse, deer, and cattle faced mass starvation during a harsh winter after having been allowed to reproduce with no restrictions for several years (Theunissen, 2019). Although the Oostvardersplassen is a confined area, the starvation of those animals was at best an intensification of what happens regularly in more natural ecosystems, where animals are more free to move but have to compete with populations living in adjacent areas, or may be restricted by natural or man-made boundaries.

More generally, if compassionate conservationists wish to exemplify compassion, it is not clear why this should be limited only to those instances of suffering that they cause, directly or indirectly; the focus of compassion is on the *other*, not on oneself. For this reason, Bobier and Allen (2022b) suggest that compassion should lead us not to avoid causing harm, but rather to "minimize harm" in general, including those harms that arise independently from human action. Importantly, this entails a holistic view, considering the complex interrelationships in ecosystems, and may sometimes require causing harm to prevent greater harm (Abbate, 2014). Although Coghlan and Cardilini (2022) argue that *first, do no harm* already includes a "broader harm minimization imperative," this is not reflected in the examples of compassionate action which compassionate conservationists provide. A principle of *minimize harm* will therefore do better to capture a general concern for suffering.

The final principle, *peaceful coexistence* – meaning to seek non-violent solutions to human-wildlife conflicts – also fails to focus directly on the harms experienced by wild animals. This is because many conflicts between humans and wild animals arise due to conflicts between wild animals themselves, e.g., because competition for food or habitat forces wild animals into human-occupied areas. Since nature is inherently competitive (Horta, 2015; Ng, 1995), non-violent solutions may only move a conflict from one place to another. For example, compassionate conservationists suggest that farmers whose livestock are threatened by predators should deter them with guardian dogs instead of resorting to lethal control (Wallach et al., 2018), yet the predators need to eat, so deterring them will either lead them to hunt other prey or to starve. If compassionate conservationists are genuinely concerned with the suffering of wild animals, they should not restrict that concern to human-wildlife conflicts. Rather, they should compare various policies (violent and non-violent) and determine which best reduce the suffering of all animals which may be affected. Again, these concerns are better captured by a principle of *minimize harm*.

However, we can also consider another understanding of *peaceful coexistence*: as an end-state in which "the needs of both humans and wildlife are generally met" (Gross et al., 2021). Achieving this state would require two things: firstly, empathy and moral attention for wild animals, meaning to try to put ourselves in their shoes and understand the challenges they face; and secondly, empirical investigation to determine "how best to engage with wildlife in a way that minimizes avoidable suffering" (Sekar and Shiller, 2020). Both have been acknowledged previously as necessary components of compassion (Ramp and Bekoff, 2015). Importantly, the latter requires that compassionate conservationists engage in wild animal welfare science (Soryl et al., 2021; Faria and Horta, 2020; Fraser, 2010).[8] Given these dual tasks, and the problems with *peaceful coexistence* mentioned earlier, we would do better to replace *peaceful coexistence* with two principles: *empathy and understanding*.

4.3. Grounding conservation within virtue ethics

The compassionate conservation framework focuses on the virtues that ground greater moral consideration for individual animals. But we can also use the value of virtue to ground the values biodiversity and

[7] This reflects Beauchamp and Childless' (1991) understanding of autonomy as requiring intentionality, understanding, and noncontrol.

[8] It should be noted that wild animal welfare science is also sometimes referred to as 'welfare biology'.

ecosystem structure, which underpin conservation. Here I want to sketch several options without arguing definitively in favor of any of them.

The simplest way to ground conservation is with the virtue of prudence. Prudence, often referred to as *practical reason*, is the ability to balance moral principles with practical considerations, including considerations about the future. A prudential conservationist would be mindful of how healthy, well-functioning ecosystems are important for human and nonhuman individuals in the future, and would ensure that important ecosystem structures and functions (for humans and other animals) are sustained. Prudence, in other words, helps to link the conservation of biodiversity to the flourishing of individuals.

Many compassionate conservationists will want to value biodiversity and related values not only instrumentally, but also intrinsically. To do so, they could also ground prudence in the virtues of justice, respect or reverence for nature (Coghlan and Cardilini, 2024). Of course, given that species and ecosystems are non-sentient entities, claims that they are the appropriate objects of justice or respect would need to overcome the problems mentioned in Section 4.1.

Those problems aside, this shows how additional virtues are relevant in the conservation context.[9] By emphasizing compassion and respect, compassionate conservationists do not deny these other virtues or values, but rather stress that compassion and respect are especially lacking in current conservation practice. The framework of compassionate conservation can then be understood as a way of making explicit what the moral significance of individual animals entails, thereby enabling practitioners to search for more compassionate and respectful ways of pursuing conservation objectives.

4.4. An updated framework

This establishes a new understanding of compassionate conservation, but one based on the virtues which compassionate conservationists already (implicitly) promote. It calls now for greater attention to the virtues of *compassion* and *respect*, which are supplemented by the following action-guiding principles:

Compassion

1. Empathy
2. Understanding
3. Minimize harm

Respect

4. Individuals matter
5. Inclusivity
6. Respect for autonomy

Bobier and Allen (2022b) point out that *minimize harm* "closely mirrors the decision-making process of dispassionate consequentialists" which, they suggest, is the very kind ethic that compassionate conservationists, through their critique of conventional conservation practices, were trying to avoid. But this is not quite correct – conventional conservation is underpinned by a consequentialism which largely *disregards* the interests of wild animals (Ramp and Bekoff, 2015). It should not be surprising that consequentialism, when taking the interests of wild animals seriously, will point to similar policies. But Bobier and Allen (2022b) rightly acknowledge that for the compassionate conservationist there may be *internally* "a profound difference". This is because, by focusing on the virtues of compassion and respect, compassionate conservationists will strive to keep the suffering of wild animals, and those animals' value as individuals, at the forefront of their minds. They will be reluctant to trade off the lives or wellbeing of some individuals for the sake of others – and if they need to, they will do so only after carefully scrutinizing all options, and with deep regret. This will ensure that they do not forget the individuality of those animals.

It might also be noted that this new framework leans closer to the related approach of Conservation Welfare. Conservation Welfare explicitly adopts a principle of "minimize harm" while acknowledging the intrinsic value of individuals (Beausoleil, 2020). However, the force of respect in Conservation Welfare is more limited, as the discipline accepts that "[wild] animals will continue to be used for human purposes" and is therefore willing to advocate for "moderate positions" that fall short of questioning fundamentally speciesist goals (Ibid). The compassionate conservation advocated for here would require a higher level of respect.

Finally, one could question why the framework should emphasize compassion and respect over other virtues or other moral concepts. Simply put, compassionate conservationists claim that a lack of compassion and respect is the cause of grave harms to wild animals in conservation. And as will become clear in the following section, conservationists are virtually always faced with suffering which we can respond to. But this should not be taken to mean that, e.g., the positive flourishing of wild animals is not also of value.

What I will show in Section 5 is that, in many situations, compassion and respect for wild animals lead to unavoidable conflicts with the goal of conserving biodiversity (as well as anthropocentric values), forcing compassionate conservationists to choose between conservation and promoting the wellbeing (or autonomy) of wild animals.

5. Natural suffering and its implications

Advocates for compassionate conservation have tended to focus on win-win solutions, seeking to protect individual animals while pursuing conservation objectives (e.g. Wallach et al., 2018). With the new framework proposed here, we center less on the harms that conservationists cause and rather on the animals themselves. In doing so, we will find that many of the harms wild animals face occur due to natural ecological processes, rather than human actions, and conservation can preserve, restore, or even exacerbate these processes. This creates a tension between conservation and compassion.

5.1. The problem of wild animal suffering

In recent years, there has been a flurry of literature within animal ethics on what has come to be known as the moral problem of wild animal suffering (e.g. Ng, 1995; Horta, 2010a; Tomasik, 2015; Jeff McMahan, 2015; Faria and Paez, 2015; Johannsen, 2020). These authors emphasize that suffering in nature is both common and severe, to the extent that it largely defines the lives of wild animals.[10] In contrast, a more 'romantic' view of nature is common in modern society, whereby wild animals are imagined as free, long-living, and generally happy (Horta, 2010a). The reality is that even in well-conserved ecosystems

[9] Similarly, other virtues relevant to our consideration of individual animals could also be considered, such as beneficence (to highlight the importance of positive welfare or flourishing for wild animals) or justice (to help with assigning blame for past wrongdoings).

[10] While some of the authors cited point to the prevalence of life history strategies whereby species have very large numbers of offspring with very low survival rates, even species which have few offspring and provide greater parental care still often endure severe natural harms (e.g. see Pearce, 2015).

very few animals survive to maturity; for most, survival is a constant struggle (Ng, 1995).[11] Even those who caution against exaggerating the negative aspects of wild animals' lives acknowledge that "there is a large amount of suffering in nature, and this is not something we should just ignore" (Browning and Veit, 2023).

That nature is far from ideal should be unsurprising, given that evolution is a random and morally indifferent force (Rohwer, 2023). Genes are selected not according to any moral principle, but only according to their chance of replicating, leading them to behave "selfishly" and with no regard for the harms that they might cause to individuals (Dawkins, 2008). Competition creates selective forces for organisms to exploit others (such as predation, parasitism, or, in the case of microbes, infection); to exploit members of their own species (intra-specific competition); or even their own wellbeing – for example, evolution will tend to make organisms no more resilient to injury than is necessary for survival (Ibid.).

Some might think that such harms do not warrant our concern due to them being natural. However, this is an appeal to nature: a claim that what is natural is morally acceptable. Appeals to nature are fallacious because nature is not always good: when humans suffer from natural disasters, disease, and so on, we clearly see that it is appropriate to respond with compassion. *Inclusivity* requires us to include nonhuman animals in our moral thinking, and just as compassion for humans is not limited by what is natural, or to those for whom we are responsible, it should not be for nonhuman animals either.

5.2. Compassion for natural suffering

How, then, should one respond with greater compassion to the suffering we observe in nature? What we can clearly rule out is the idea that compassion would simply bolster the case for biodiversity conservation (e.g. see Paquet and Darimont, 2010; Bobier and Allen, 2022b). As long as severe suffering is prevalent in natural ecosystems, conserving such conditions does not reflect compassion (although it may reflect other virtues, such as prudence). Instead, a more compassionate form of environmental management would seek to reduce the harms (natural and unnatural) that wild animals face.

Would respect for wild animals also entail such an approach? Hursthouse (2011) argues that, in spite of the serious harms wild animals face in nature, respect requires "leaving them to live their own form of life". We can understand Hursthouse as saying that respecting the autonomy of wild animals is more important than to intervene compassionately. But for most wild animals, "their own form of life" is a life where they die young, having failed to find enough food, or having failed to evade predators. Constrained by such threats, a natural life is one of greatly restricted autonomy. And the principle of respect for autonomy does not merely entail noninterference with others' choices; it also entails creating the conditions that enable genuinely autonomous choices (Beauchamp and Childress, 2019; Faria, 2022). For this reason, respect points us in the same direction as compassion: towards a type of environmental management that seeks to reduce the threats wild animals face.

Compassion and respect must then be balanced by other relevant virtues, such as respect for nature or prudence. Prudence requires that we assume humility in any attempt to improve the lives of wild animals, keeping in mind our limited knowledge. In practice, this demands a precautionary approach when considering new forms of intervention and management. However, there are already some approaches to conservation that head in a more compassionate direction without imposing great environmental risks or completely undermining a respect for nature itself. In 2020, Denmark announced the establishment of 15 National Nature Parks (DNNPs), involving the rewilding of several populations of previously domesticated ungulates (such as horses and cattle) which function as analogues to the populations that inhabited the area prior to human influence (Gamborg et al., 2022). The parks are fenced to keep the ungulates in, but cattle grids allow non-hoofed animals to move in and out of the parks. What is novel about these parks is that, because the introduced ungulates were once domesticated, they fall under the Danish Animal Welfare Act, which requires monitoring of their welfare and intervention when their welfare falls below a critical level. How exactly the Act will be interpreted in this context is unclear, but it has been suggested that, to avoid cases of extreme suffering, the parks should provide feed in times of food scarcity, and control the populations (via lethal or nonlethal methods) when they outgrow their area (Sandøe et al., 2022).

With these measures, the introduced ungulates appear to be better off than in wild, well-conserved ecosystems. They do not need to fear extreme hunger, and even if the populations are controlled by lethal methods, those methods will harm them less, and enable them to live more autonomously, than with the overpopulation and subsequent starvation which they would otherwise face. Nor does this approach obviously jeopardize other species living in these areas, although such effects should be monitored. The DNNPs therefore offer one example of an approach to conservation that appears more compassionate and respectful than conventional conservation.

Of course, the degree of compassion and respect exercised in the DNNPs is still rather limited; because respect means focusing on individuals, lethal population control methods whereby some are sacrificed for the good of the population are hard to justify, and park managers should instead seek nonviolent forms of population control (such as non-invasive contraceptive technologies) where they prove feasible and involve minimal harms (Hampton et al., 2015). Although some might object that contraception is an infringement on wild animals' autonomy, it is not clear that any wild animals consciously choose to reproduce; the shortages of food and habitat resulting from overpopulation, on the other hand, clearly do limit their autonomy and ability to flourish. To further reduce suffering and promote greater autonomy, predator species could be prevented from entering the parks (Horta, 2010b); the animals could be protected from other harms such as disease (Animal Ethics, 2023); and welfare monitoring and compassionate interventions could be expanded to all sentient animals.

Of course, exactly which policies a more compassionate and respectful approach entails would need to be determined empirically on a case-by case basis. The broader point is that compassionate conservationists should consider a more active approach to wildlife management, one that seeks to promote the wellbeing of wild animals.[12]

[11] High mortality of juveniles is indicative of a high degree of suffering because, for most species, the juvenile stage is when they are most vulnerable to harms, and as such individuals that die young are likely to have experienced a greater proportion of suffering during their lives (Hecht, 2021). If most individuals die young, then the welfare of that population can be assumed in general to be low. In contrast, where juvenile mortality is lower, there will be a higher proportion of individuals enjoying a period during which they have been relatively free from threats. Of course, this is a broad generalization and will vary by species.Secondly, the kinds of threats that wild animals face should not be underappreciated. While some challenges can be rewarding or add meaning to one's life, this is less often true for particularly severe challenges and ones which the individual did not pursue. To illustrate, Zanette et al. (2019) find that the threat of predation in many wild animals causes effects similar to those of PTSD in humans. Other common sources of suffering for wild animals may include disease, parasitism, or starvation.Lastly, none of this should be taken to mean that wild animals do not also flourish at times, as the ecological relationships and dynamics which shape the wellbeing of wild animals are complex and varied. The statements made here are generalizations, but their generalization should not diminish their moral importance.

[12] For similar suggestions of more compassionate approaches to wildlife management, see: Nussbaum, 2023; Pearce, 2015.

5.3. Trading off compassion for conservation

The DNNPs and the suggestions I have made for making them even more compassionate and respectful represent one particular compromise between compassion and respect for individuals on one hand and biodiversity conservation on the other. While they are intended to improve biodiversity and provide greater ecosystem services, they do not intend to restore the historical integrity and biodiversity of the ecosystems completely; likewise, the Danish Animal Welfare Act requires that some efforts are made to protect the welfare of animals, but other natural factors which impede on the animals' welfare are allowed to continue. The additional policies suggested in Section 5.3 would push the parks toward a more compassionate and respectful approach, but further away from conservation ideals.

Similar meeting points between compassion and conservation can be imagined: Pearce (2015) suggests that, where elephant populations have successfully rebounded, various further interventions could enhance their wellbeing, including: immunocontraceptive population control; neonatal care; veterinary care in case of injuries or disease; measures to ensure the supply of food or water in times of drought; and even psychiatric care. Such measures take elephant populations further away from an idealized 'wild' life, yet most elephant populations frequently interact with, or are controlled by, humanity already, so these interventions need not come with significant ecological risks.

Some conflicts between compassionate and more traditional conservation become less obvious when we also show compassion for natural harms. For example, compassionate conservationists tend to oppose invasive species control, as well as lethal control for overpopulated herbivore populations. When we show compassion also for the natural harms which invasive species impose – or the greater risk of starvation or disease for uncontrolled herbivore populations – a blanket prohibition on lethal methods becomes harder to justify. A compassionate approach does, however, create greater need for research into viable non-lethal forms of population control, such that these conflicts can be avoided altogether.

In other cases, conflicts between compassion and conservation may be harder to avoid. For example, Horta (2010b) argues that reintroductions of predator species into ecosystems which have had time to adjust to their absence should be avoided, due to the harms which predators impose on prey species. Such cases are admittedly challenging, since the impacts of re-introducing a predator species are complex. Yet with a precautionary approach we should err on the side of the status quo, which is now an ecosystem absent the predator: we should be modest in our ability to predict the effects of the reintroduction, and take seriously the risks in terms of welfare and autonomy of the other species effected.

What is clear is that greater discussion about how to balance the flourishing of wild animals (taking natural causes of suffering into account) against biodiversity conservation is needed, especially within compassionate conservation. In reality, the tradeoffs are more complicated still when various human interests are thrown into the mix, whether they be indigenous land use, economic development, recreation, or cultural values. Still, acknowledging that individuals matter requires that their value is taken more seriously in such deliberations. A first small step would be for animal welfare to be included in the mission statements of conservation organizations (Sekar and Shiller, 2020). Neither is it necessary to agree with compassionate conservation to understand that this is needed: the value of individual animals is now broadly recognized across animal and environmental ethics, and supported by a growing wealth of scientific evidence (Ibid; Andrews et al., 2024; Ferraro et al., 2023; Vucetich and Nelson, 2007).

Of course, conservation practice must also be socially accepted. The DNNPs, while receiving a significant amount of social as well as political support in Denmark, were still not without controversy (Gamborg et al., 2022). In other regions (especially areas which have not undergone such intensive human modification), it is likely that a similar approach would be more greatly contested. However, such controversies are in part due to misunderstandings among the general public about the lives of wild animals: that wild animals frequently face extreme hardships due to natural causes is only rarely acknowledged (Horta, 2010a). An important task for compassionate conservationists is therefore to educate policymakers and the public about the harms (natural and anthropogenic) that wild animals face.

Finally, an understandable concern for many currently working in conservation will be the cost of the interventions that a more compassionate and respectful approach entails, when conservation budgets are already stretched. Even extending compassion and respect only to a limited degree and only to certain species, as in the DNNPs, entails new costs: extending compassion and respect to a greater extent or for all species would be far more demanding. Undoubtedly, this is a challenge: but it is not a challenge which should fall only on the shoulders of conservation scientists and managers. Santiago-Ávila and Lynn (2020) argue that we need to institutionalize compassion for wild animals. By creating institutions that fund or conduct research on more compassionate environmental interventions, and support their implementation, the burdens of pursuing more compassionate conservation would be more evenly spread. Compassionate conservation also requires the scrutiny and possible cessation of harmful conservation practices currently in use, which may allow some funding to be diverted towards more compassionate and respectful policies.

6. Conclusion

In this paper I have argued for a new understanding of compassionate conservation. I argued that compassionate conservationists themselves appeal not only to the virtue of compassion, but also (implicitly) to the virtue of respect. Furthermore, I have argued that to properly capture what it means to act from compassion and respect, an update to the four principles is needed. To capture compassion, we need the principles: *empathy*, *understanding*, and *minimize harm*. This extends concern for suffering beyond the limited scope of anthropogenically caused harms to also encompass indirect and natural sources of suffering. The virtue of respect is captured by *individuals matter* and *inclusivity*, but also by *respect for autonomy*.

This new form of compassionate conservation, while seeking to preserve the concern for individual animals that motivated the movement to begin with, nonetheless has starkly different practical implications. It requires that current conservation policies be evaluated not only in terms of the suffering that they cause directly, but also in light of how they promote the flourishing of all affected animals. Given the severity of harms that wild animals face even in well-conserved ecosystems, such evaluations ought to seriously consider the suffering that arises due to natural processes. But it also requires that we investigate new ways to reduce the harms that wild animals face. However, efforts to promote animal flourishing, especially where it concerns natural sources of harm, will often come at a cost for biodiversity conservation. Greater discussion is needed about how to ethically make this trade-off, and greater scientific research is needed to identify solutions that promote animal welfare while also furthering conservation goals.

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References

Abbate, C., 2014. Virtues and animals: a minimally decent ethic for practical living in a non-ideal world. J. Agric. Environ. Ethics. https://doi.org/10.1007/s10806-014-9505-z.

Allen, B.L., Allen, L.R., Ballard, G., Drouilly, M., Fleming, P.J., Hampton, J.O., Hayward, M.W., Kerley, G.I., Meek, P.D., Minnie, L., O'Riain, M.J., Parker, D.M., Somers, M.J., 2019. Animal welfare considerations for using large carnivores and guardian dogs as vertebrate biocontrol tools against other animals. Biol. Conserv. 232, 258–270.

Andrews, K., Birch, J., Sebo, J., Sims, T., 2024. Background to the New York Declaration on Animal Consciousness. nydeclaration.com.

Animal Ethics, 2023. Vaccinating and healing sick animals, Animal Ethics. https://www.animal-ethics.org/vaccinating-healing-sick-injured-animals/.

Baker, L., 2017 Aug 31. Translocation biology and the clear case for compassionate conservation. Isr. J. Ecol. Evol. 63 (3-4), 52–60.

Baker, L., Winkler, R., 2020. Asian elephant rescue, rehabilitation and rewilding. Animal Sentience 28 (1). https://doi.org/10.51291/2377-7478.1506.

Batavia, C., Nelson, M.P., Darimont, C.T., Paquet, P.C., Ripple, W.J., Wallach, A.D., 2019. The elephant (head) in the room: a critical look at trophy hunting. Conserv. Lett. 12 (1), e12565.

Beauchamp, T.L., Childless, J.F., 1991. Principles of biomedical ethics. Int. Clin. Psychopharmacol. 6 (2), 129.

Beauchamp, T.L., Childress, J.F., 2019. Principles of Biomedical Ethics. Oxford University Press, Oxford.

Beausoleil, N.J., 2020. I am a compassionate conservation welfare scientist: considering the theoretical and practical differences between compassionate conservation and conservation welfare. Animals 10 (2). https://doi.org/10.3390/ani10020257.

Bekoff, M., 2010. Conservation lacks compassion. New Sci. 207 (2775), 24–25.

Bekoff, M. (Ed.), 2013. Ignoring Nature no More. University of Chicago Press. https://doi.org/10.7208/chicago/9780226925363.001.0001.

Birch, J., 2017. Animal sentience and the precautionary principle. Anim. Sentience 2 (16). https://doi.org/10.51291/2377-7478.1200.

Bobier, C., Allen, B.L., 2022a. The virtue of compassion in compassionate conservation. Conserv. Biol. 36, e13776.

Bobier, C.A., Allen, B.L., 2022b. Compassionate conservation is indistinguishable from traditional forms of conservation in practice. Front. Psychol. 13, 750313.

Browning, H., Birch, J., 2022. Animal sentience. Philos Compass e12822.

Browning, H., Veit, W., 2023. Positive wild animal welfare. Biol. Philos. https://doi.org/10.1007/s10539-023-09901-5.

Callen, A., Hayward, M.W., Klop-Toker, K., Allen, B.L., Ballard, G., Beranek, C.T., Broekhuis, F., Bugir, C.K., Clarke, R.H., Clulow, J., Clulow, S., Daltry, J.C., Davies-Mostert, H.T., Di Blanco, Y.E., Dixon, V., Fleming, P.J., Howell, L.G., Kerley, G.I., Legge, S.M., Wüster, W., 2020. Envisioning the future with 'compassionate conservation': an ominous projection for native wildlife and biodiversity. Biol. Conserv. 241, 108365.

Coghlan, S., Cardilini, A.P., 2020. Compassionate conservation deserves a morally serious rather than dismissive response - Reply to Callen et al. 2020. Biol. Conserv. 242, 108434.

Coghlan, S., Cardilini, A.P., 2022. A critical review of the compassionate conservation debate. Conserv. Biol. 36 (1), e13760.

Coghlan, S., Cardilini, A.P., 2024. The use and abuse of moral theories in conservation debate about killing animals. Conserv. Biol. https://doi.org/10.1111/cobi.14280.

Dawkins, R., 2008. River out of Eden: A Darwinian View of Life. Basic Books.

Dillon, R.S., 2003. Respect. In: Zalta, E.N., Nodelman, U. (Eds.), The Stanford Encyclopedia of Philosophy (Fall 2022 Edition). https://plato.stanford.edu/archives/fall2022/entries/respect.

Dubois, S., Fenwick, N., Ryan, E.A., Baker, L., Baker, S.E., Beausoleil, N.J., Carter, S., Cartwright, B., Costa, F., Draper, C., Griffin, J., Grogan, A., Howald, G., Jones, B., Littin, K.E., Lombard, A.T., Mellor, D.J., Ramp, D., Schuppli, C.A., Fraser, D., 2017. International consensus principles for ethical wildlife control. Conserv. Biol. 31 (4), 753–760.

Edelblutte, É., Krithivasan, R., Hayek, M.N., 2023. Animal agency in wildlife conservation and management. Conserv. Biol. https://doi.org/10.1111/cobi.13853.

Faria, C., 2022. Animal Ethics in the Wild: Wild Animal Suffering and Intervention in Nature. Cambridge University Press.

Faria, C., Horta, O., 2020. Welfare biology. In: Fischer, B. (Ed.), The Routledge Handbook of Animal Ethics, Routledge Handbooks in Applied Ethics. Routledge, New York, NY, pp. 455–466.

Faria, C., Paez, E., 2015. Animals in need: the problem of wild animal suffering and intervention in nature. Relations 3 (1).

Faria, C., Paez, E., 2019. It's Splitsville: why animal ethics and environmental ethics are incompatible. Am. Behav. Sci. 63 (8), 1047–1060.

Ferraro, K.M., Ferraro, A.L., Arietta, A.Z.A., Sommer, N.R., 2023. Revisiting two dogmas of conservation science. Conserv. Biol. 37 (4), e14101.

Fraser, D., 2010. Toward a synthesis of conservation and animal welfare science. Anim. Welf. https://doi.org/10.1017/s0962728600001378.

Gamborg, C., Jensen, F.S., Sandøe, P., 2022. Using domesticated animals in rewilding projects: what does the public think?. In: Transforming Food Systems: Ethics, Innovation and Responsibility. Wageningen Academic Publishers. https://doi.org/10.3920/978-90-8686-939-8_16.

Griffin, A.S., Callen, A., Klop-Toker, K., Scanlon, R.J., Hayward, M.W., 2020. Compassionate conservation clashes with conservation biology: should empathy, compassion, and deontological moral principles drive conservation practice? Front. Psychol. 11, 1139.

Gross, E., Jayasinghe, N., Brooks, A., Polet, G., Wadhwa, R., Hilderink-Koopmans, F., 2021. A Future for all: The Need for Human-Wildlife Coexistence. Gland, Switzerland.

Gunn, A.S., 2001. Environmental ethics and trophy hunting. Ethics Environ. 6 (1), 68–95.

Hampton, J.O., Hyndman, T.H., 2018. Underaddressed animal-welfare issues in conservation. Conserv. Biol. 33 (4), 803–811.

Hampton, J.O., Hyndman, T.H., Barnes, A., Collins, T., 2015. Is wildlife fertility control always humane? Animals 5 (4), 1047–1071.

Hampton, J.O., Warburton, B., Sandøe, P., 2019. Compassionate versus consequentialist conservation. Conserv. Biol. 33 (4), 751–759.

Hayward, M.W., Callen, A., Allen, B.L., Ballard, G., Broekhuis, F., Bugir, C., Clarke, R.H., Clulow, J., Clulow, S., Daltry, J.C., Davies-Mostert, H.T., Fleming, P.J.S., Griffin, A.S., Howell, L.G., Kerley, G.I.H., Klop-Toker, K., Legge, S., Major, T., Meyer, N., Wüster, W., 2019. Deconstructing compassionate conservation. Conserv. Biol. 33 (4), 760–768.

Hecht, L., 2021. The importance of considering age when quantifying wild animals' welfare. Biol. Rev. https://doi.org/10.1111/brv.12769.

Holm, S., 2017. Teleology and biocentrism. Synthese 194 (4), 1075–1087.

Horta, O., 2010a. Debunking the idyllic view of natural processes. Rev. Iberoamericana Estud. Util. 17 (1), 73–88.

Horta, O., 2010b. The ethics of the ecology of fear against the nonspeciesist paradigm: a shift in the aims of intervention in nature. Between Spec. 13 (10) https://doi.org/10.15368/bts.2010v13n10.10.

Horta, O., 2015. The problem of evil in nature: evolutionary bases of the prevalence of disvalue. Relations (3.1), 17–32 (Article 1).

Hunter, M.L., Gibbs, J.P., 2011. Fundamentals of Conservation Biology, 3. ed. [Nachdr.]. Blackwell Publ http://site.ebrary.com/lib/alltitles/Doc?id=10298104.

Hursthouse, R., 2011. Virtue ethics and the treatment of animals. In: Beauchamp, Tom L., Frey, R.G. (Eds.), The Oxford Handbook of Animals. Oxford University Press. https://doi.org/10.1093/oxfordhb/9780195371963.013.0005.

Johannsen, K., 2020. Wild Animal Ethics. Routledge.

McMahan, J., 2015. The moral problem of predation. In: Philosophy Comes to Dinner. Routledge, pp. 278–304. https://doi.org/10.4324/9780203154410-23.

McShane, K., 2021. Against etiological function accounts of interests. Synthese 198 (4), 3499–3517.

Ng, Y.-K., 1995. Towards welfare biology: evolutionary economics of animal consciousness and suffering. Biol. Philos. 10 (3), 255–285.

Nussbaum, M.C., 1999. Virtue ethics: a misleading category? J. Ethics. https://doi.org/10.1023/A:1009877217694.

Nussbaum, M.C., 2023. Justice for Animals: Our Collective Responsibility. Simon & Schuster.

Paquet, P.C., Darimont, C.T., 2010. Wildlife conservation and animal welfare: two sides of the same coin? Anim. Welf. 19 (2), 177–190.

Pearce, D., 2015. A welfare state for elephants. Relations 3 (2), 153–164.

Ramp, D., Bekoff, M., 2015. Compassion as a practical and evolved ethic for conservation. BioScience 65 (3), 323–327.

Ramp, D., Ben-Ami, D., Boom, K., Croft, B.D., 2013. Compassionate conservation: a paradigm shift for wildlife management in Australasia. In: Bekoff, M. (Ed.), Ignoring Nature no More. University of Chicago Press, Chicago, p. 295.

Rohwer, Y., 2023. Evolution is not good. Environ. Ethics 45 (3), 209–221.

Sandøe, P., Gamborg, C., Palmer, C., 2022. Will the use of domesticated animals in rewilding projects compromise animal welfare?. In: Transforming Food Systems: Ethics, Innovation and Responsibility https://doi.org/10.3920/978-90-8686-939-8_23.

Santiago-Ávila, F.J., Lynn, W.S., 2020. Bridging compassion and justice in conservation ethics. Biol. Conserv. https://doi.org/10.1016/j.biocon.2020.108648.

Sebo, J., 2024. Are Individuals or Ecological Wholes What Matter? Yes. Oxford Public Philosophy.
Sekar, N., Shiller, D., 2020. Engage with animal welfare in conservation. Science (New York, N.Y.). https://doi.org/10.1126/science.aba7271.
Society for Conservation Biology, 2022. Who we are: a globalized approach. https://conbio.org/about-scb/who-we-are.
Soryl, A.A., Moore, A.J., Seddon, P.J., King, M.R., 2021. The case for welfare biology. J. Agric. Environ. Ethics. https://doi.org/10.1007/s10806-021-09855-2.
Soulé, M.E., 1985. What is conservation biology? BioScience 35 (11), 727–734.
Taylor, P.W., 2011. *Respect for Nature: A Theory of Environmental Ethics (25th Anniversary Edition)* (Studies in Moral, Political, and Legal Philosophy). Princeton University Press, Princeton.
Theunissen, B., 2019. The oostvaardersplassen fiasco. Isis 110 (2), 341–345.
Tomasik, B., 2015. The importance of wild-animal suffering. Relations 3 (2), 133–152.
Vucetich, J.A., Nelson, M.P., 2007. What are 60 warblers worth? Killing in the name of conservation. Oikos 116 (8), 1267–1278.
Wallach, A.D., Bekoff, M., Nelson, M.P., Ramp, D., 2015. Promoting predators and compassionate conservation. Conserv. Biol. https://doi.org/10.1111/cobi.12525.
Wallach, A.D., Bekoff, M., Batavia, C., Nelson, M.P., Ramp, D., 2018. Summoning compassion to address the challenges of conservation. Conserv. Biol. 32 (6), 1255–1265.
Wallach, A.D., Batavia, C., Bekoff, M., Alexander, S., Baker, L., Ben-Ami, D., Boronyak, L., Cardilin, A.P.A., Carmel, Y., Celermajer, D., Coghlan, S., Dahdal, Y., Gomez, J.J., Kaplan, G., Keynan, O., Khalilieh, A., Kopnina, H., Lynn, W.S., Narayanan, Y., Ramp, D., 2020a. Recognizing animal personhood in compassionate conservation. Conserv. Biol. 34 (5), 1097–1106.
Wallach, A.D., Jasinghe, S., Fernando, S., Rizzolo, J.B., 2020b. Compassionate conservation and elephant personhood. Anim. Sentience. https://doi.org/10.51291/2377-7478.1576.
Warburton, B., Cowen, P., Shepherd, J., 2009. How many possums are now in New Zealand following control and how many would there be without it: landcare research contract report LC0910/060. https://envirolink.govt.nz/assets/Envirolink/720-NLRC104-Possum-numbers-inNZ.pdf.
Zanette, L.Y., Hobbs, E.C., Witterick, L.E., MacDougall-Shackleton, S.A., Clinchy, M., 2019. Predator-induced fear causes PTSD-like changes in the brains and behaviour of wild animals. Sci. Rep. https://doi.org/10.1038/s41598-019-47684-6.