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The 'Global Duties – Local Burdens Problem' of Just Biodiversity Conservation: Two Perspectives on Land and Place-Based Values

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ABSTRACT

This paper illustrates a theoretical gap that arises in the relationship between theorizing global justice and local biodiversity conservation practices: the '*global duties – local burdens problem*'. This problem arises if one's account of just-burden sharing (who is attributed the responsibility to carry the burdens of biodiversity protection) and the geographic realities (who would be burdened by conservation measures in practice) do not match up. That involves two difficulties: (1) a *conceptual problem* arising from the incongruity between the currency of justice in the global-abstract and the local-particular; and (2) a *moral concern* about the cultural costs at stake.

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1. Introduction: Biodiversity Conservation as a Matter of Global Justice

The subject of just biodiversity¹ conservation has been a long-standing matter of interdisciplinary analysis, including social scientific literature about the social justice aspects of different local conservation schemes. Such 'empirical' perspectives on justice (Martin, 2017, p. 10) are distinguished from philosophical perspectives that approach justice in the moral theoretical sense. While the environmental political philosophy literature has seen a broad uptake of research questions about climate justice, this has not been true for the topic of just conservation until fairly recently (e.g. Tan, 2021), when political philosophers started to systematically address such questions in terms of justly sharing the costs of conservation (e.g. Armstrong, 2016, 2018), or concerning duties of justice toward wild non-human beings as a matter of distributive interspecies justice (e.g. Baxter, 2005; Wienhues, 2020). More broadly, a range of different approaches to justice are relevant for matters of just conservation, such as distributive justice (e.g. regarding the fair distribution of natural resources, e.g. Armstrong, 2017), recognition justice (e.g. Martin et al., 2016), participatory justice (e.g. Schlosberg, 2007) and deliberative fairness (e.g. Tan, 2021).

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While all global justice issues are related to local concerns in some way, what makes biodiversity conservation a distinctive problem of global justice is its unique dialectic between global and local scales with respect to land use. On the one hand, biodiversity loss, like climate change, constitutes a global environmental problem that requires global theories of environmental and interspecies justice, as well as respective accounts of just burden-sharing. On the other hand, biodiversity conservation always has implications for land use which makes it a matter of local concern, where land *as place* and *as habitat* is at stake. This emphasis on land use in particular places is one of several differences between the ethics of climate change and biodiversity protection. Accordingly, the large literature on burden-sharing in climate justice cannot be simply transferred to the matter of nature conservation, yet climate change mitigation and adaptation measures, such as reforestation, negative emissions technologies etc. certainly also need land. Against the background that biodiversity conservation always has implications for land use, it is necessary to consider the relationship between global and local scales in this context.

This relationship becomes particularly interesting when we reflect on how to justly share the burdens of reducing biodiversity loss; analogous to burden-sharing accounts in the climate mitigation literature.² While it is fairly uncontroversial that wealthy individuals, corporations and/or states which are typically located in the Global North should carry the largest burden in reducing the currently high levels of biodiversity loss if one follows typical global burden-sharing principles, it is less obvious whether these agents can discharge their responsibilities in a way that does not also (unfairly) involve others who are less responsible. Accordingly, the fundamental problem that lies at the center of this paper concerns the circumstance that a *gap* can arise between two levels of analysis. On the first level are accounts of global justice which assign responsibility for the purpose of burden-sharing. On the second level, we find the local realities on the ground, such as the agents that are *de facto* subjected to the potential costs of the duties' implementation. That gap is what I call the '*global duties – local burdens problem*' from now on (in short, the *GD-LB problem*).³

Based on the inherent nature of biodiversity conservation – which always has implications for land use in specific locations – I will illustrate that this theoretical gap between global justice theorizing and local conditions is particularly troubling. In the next section, I will explain what is at stake with the GD-LB problem, and then focus on the implications of that problem for theorizing just burden-sharing in sections three, four and five. These sections are structured into three potential responses to the GD-LB problem which, in turn, aid the illustration of two complications that arise with respect to land and its use.

Firstly, the GD-LB problem involves a *conceptual problem* concerning the currency of justice; the incongruity between the currency of justice at an abstract global level (land as interchangeable abstract units) and at a local and specific level (land as place and habitat). This creates a gap between accounts of fair burden-sharing and the practical necessities of fulfilling the demands of justice in terms of biodiversity and habitat protection. Secondly, a specific *moral concern* arises because this problem leads one to consider different kinds of conservation 'costs', such as monetary, opportunity and cultural costs. Cultural costs – related to place-based environmental values – are at the center of this

problem, which necessitates considering different second-best options for fulfilling the demands of global justice, such as emphasizing habitat restoration.

1.1. Intra-Human and Interspecies Justice

Before moving on, one final explanation is in order. My analysis in this paper is premised on the view that global justice is not only a matter of intra-human justice, but also includes demands of interspecies justice.⁴ Yet, readers skeptical of this non-anthropocentric extension of justice theorizing need not worry. While I will take it as given that extending concerns of justice to nonhuman beings is warranted (i.e. interspecies justice), and that this has consequences for how just conservation is theorized, the GD-LB problem also arises for more conventional anthropocentric justice-based arguments. Thus, for both anthropocentric and non-anthropocentric views on justice theorizing, the worry about the GD-LB problem for just burden-sharing arises.

Yet there are certainly underlying differences concerning how this problem originates in intra-human and interspecies accounts of justice and the extent and form of nature conservation justified by each of these realms, which can consequently conflict in some cases. Regarding its origin; interspecies justice draws on a non-anthropocentric starting point that attributes entitlements of justice to nonhuman beings (e.g. in terms of an adequate amount of habitat to fulfill their needs). In contrast, intra-human accounts of justice rely on the premise that environmental protection measures such as biodiversity conservation are in the interest of most humans (current and future). These two realms of justice also differ in the extent and form of conservation they recommend. While both demand some form of biological conservation, intra-human and interspecies justice do not always recommend the same types of conservation activities. For example, practices protecting biodiversity as variety (what I take to be one plausible demand of intra-human justice to future generations) do not always neatly coincide with not harming nonhuman individual entitlement holders (a typical demand of interspecies justice). Accordingly, the demands of interspecies justice go beyond and differ from what intra-human justice will require in some instances, as human and nonhuman interests do not always align.

Nonetheless, in both cases the GD-LB problem arises from difficulties in realizing the respective theories. In the intra-human environmental justice case, that concerns the just sharing of the burdens that come with the collective goal of protecting biodiversity. In the context of interspecies justice, the problem arises from the question of how to justly share the burden (a matter of intra-human justice) of implementing the demands of global interspecies justice, such as nonhuman entitlements to habitat. Thus, the GD-LB problem is structurally similar for both interspecies and intra-human justice.

In the following, I will refer to both interspecies and intra-human justice when speaking of biodiversity conservation if not specified otherwise, but more needs to be said about how these two realms of justice converge and conflict – both more broadly with respect to conservation, and specifically regarding the GD-LB problem. While I will focus in the remainder of this paper on the GD-LB problem itself and less on how intra-human and interspecies justice bring it about, their differences are relevant nonetheless. For example, if one takes a non-anthropocentric account of interspecies justice as given, then the frequency of GD-LB problem cases in practice increases, compared to looking only at intra-human justice concerns. The reason for

this is simply that interspecies justice tends to demand place-based habitat conservation policies for specific nonhuman beings in their particular habitats, which somewhat differs from aiming to preserve biological variety more broadly on intra-human justice reasoning. Accordingly, while the GD-LB problem is relevant for human and non-human focused global justice theorizing, it is especially important for non-anthropocentric theorists to carefully consider the practical implications of their theoretical proposals.

2. The 'Global Duties – Local Burdens' Problem

Based on many people's intuitions and what many accounts of just burden-sharing conclude, wealthy communities in industrialized states are attributed the largest share of responsibility for realizing a range of important environmental measures such as climate change mitigation and biodiversity protection. While the reasons for why these environmental measures are considered important and necessary are varied, it is usually acknowledged that they come with certain burdens – i.e. costs; financial or otherwise – and that a just burden-sharing of these costs will put the primary responsibility for carrying the burdens on those (e.g. individuals, communities, corporations or states) that fulfill one or several of the following criteria depending on the theory in question. That is, those that:

- (1) *are contributing/have contributed* to the environmental problem at hand by, for example, emitting large amounts of CO₂ that collectively exceed sink capacities of ecosystems ('contribution to the problem' principle, see Shue, 2014);
- (2) *are/have benefiting/benefitted* from practices that contribute to environmental problems, such as economic development which increased societal wealth via the use of non-renewable resources, but which also led to CO₂ emissions ('beneficiary pays principle', see Page, 2012);
- (3) *have the capacity* to pay for these measures ('ability to pay' principle, see Shue, 2014);
- (4) *and/or are benefiting* from the *protection* of common goods, such as from a protected forest's contributions to CO₂ sequestration and/or its provision of resources such as wood etc. (see Armstrong, 2016, 2017, 2018).

In addition, a range of further conditions usually might need to be fulfilled for the listed criteria to be applicable, such as knowledge of the consequences of one's actions (see Caney, 2005). In practice (that is, in many but not all possible scenarios), one can see that the responsibility to bear the costs will primarily fall onto wealthy individuals, communities or states with large ecological footprints on most of these accounts. Primarily burdening the poor would not be a fair burden-sharing arrangement because:

- (1) they have in most cases contributed less to global environmental problems due to smaller ecological footprints (if contribution is understood in terms of the environmental impact of one's consumption as opposed to, for example, being the agent who is directly involved in clearing a forest);

- (2) they are not often – as states – early industrialisers (which is relevant for the historical dimension of the first criterion in terms of environmental degradation as well as the second criterion);
- (3) they lack, in most cases, the ability to pay (if the payment in question is financial).

Furthermore, only the second sense of benefitting (criterion four) is straightforwardly applicable to those with small ecological footprints in low-income states because they also benefit from the protection of important ecosystem functions, like the limiting of global warming and so on. Thus, this latter criterion – and only when taken on its own, which is a position not commonly defended – is the only one which does not correlate with discrepancies in wealth, and consequently with the use of and ability to control environmental resources, ecological system benefits and land. Therefore, combining a global distributive justice approach – one that highlights the use of environmental goods and ecosystem functions – with standard principles of just burden-sharing (without the need to be committed to any one theory of burden-sharing or distributive justice) paints a specific pattern of responsibility for biodiversity conservation.

The problem with this, however, is that standard accounts of just burden-sharing and the practicalities of putting some environmental protection measures in place can come apart. For example; people, communities, and states with small ecological footprints in the Global South are currently often the ones whose lives are directly entangled with different conservation schemes, such as the creation of national parks in biodiversity ‘hotspots’ that can infringe on their cultural and economic practices. The core issue here is that those areas of interest for habitat protection -or what is currently considered to be worthy of protection according to mainstream conservation biology and policy narratives - are not evenly distributed geographically; closer to the lives of some people than to others.

The global duties – local⁵ burdens problem (GD-LB problem): The problem that arises if one’s account of just-burden sharing (that is, who is attributed the responsibility to carry the burdens) and the geographic realities (that is, who would be burdened in practice) do not match up.

What is at stake can be described as a version of the discrepancy that can arise between the need to assign responsibilities to a set of duty-holders *A* and the need to avoid imposing unfair burdens on another set of people *B* by policies that are meant to - either solely or primarily - discharge *A*’s responsibilities.⁶ GD-LB problem cases pose the question about what can remedy this mismatch without fully discounting the goals of intra-human and interspecies justice that required biodiversity protection in the first place.⁷ Consider the following example as an illustration.

Unsustainable pastoralism: A biodiversity hotspot provides the habitat of a large range of different nonhuman beings, many of which cannot live anywhere else in the ‘wild’ due to the destruction of their habitat in other places. Thus, many individual non-human beings that are of interest for biodiversity conservation (an intra-human justice concern) as well as being entitlement holders themselves (under an account of interspecies justice) live in that area. Thus, that provides us with reasons to protect their habitat. Suppose that the area is also the home of a local human community which is comparatively poor. Accordingly, the people who are part of that community do not seem to have any duty on global interspecies and environmental justice grounds to reduce their environmental impact further judged by

most accounts of justice, as they are already fulfilling (or overfulfilling) their duties of justice in terms of their environmental impact. However, imagine that that community largely still practices nomadic 'livestock' herding which used to be ecologically sustainable in the past, but that is less and less the case due to climate change, increasing limits on the land area that they can access due other (unjust) political and economic developments changing the terms of land use, and so on. Accordingly, their interest in continuing a pastoralist way of life is seemingly coming into a land-use conflict with the goal of nonhuman habitat protection, because the farmed nonhuman beings and wild ones increasingly compete for water and food.

Setting complexities aside, the function of this hypothetical case is to pick out *one specific global justice issue*.⁸ The problem here is that this local community is already fulfilling their duties of global interspecies and intra-human justice by having very small ecological footprints, while other people with much larger ecological footprints living in other parts of the world have contributed to this situation – i.e. that we only have comparatively small areas of high biodiversity globally left – in the first place. The people to whom a burden-sharing account might ascribe the responsibility to protect remaining habitats – e.g. due to their occupying large amounts of ecological space – are not necessarily the same people who live within those areas still worth protecting. In this context, an area still worth protecting is either defined as a biodiversity hotspot on intra-human justice grounds and/or as the habitat of many 'wild' nonhuman entitlement holders on inter-species justice grounds.

In this case, a policy to limit herding practices would burden the wrong group of agents and, so it seems, constitute an injustice in itself. In real-world circumstances, alternative – less-restrictive – conservation approaches might often be available, but the problem remains if this is not always the case. Accordingly, it is possible that there are people who do not fulfill the standard criteria for carrying the primary burdens of global biodiversity conservation because their ecological footprints are already small, but they would clearly carry some local burden toward this goal – a burden with very real implications for their cultural practices, economic opportunities and individual life plans – if the goal of biodiversity conservation is simply implemented by restricting human access to (and uses of) certain areas without paying attention to whether responsibilities and burdens coincide.⁹

3. Three Potential Responses to the Problem

On the face of it, there seem to be three potential responses to this problem on offer: (1) the 'goal of biodiversity conservation takes priority' response; (2) the 'avoiding the unfairness takes priority' response; and (3) looking for 'second-best solutions'. In this section I will begin by illustrating and arguing against the first two responses, and then argue in favor of the third response in section five.

3.1. The 'Goal of Biodiversity Conservation Takes Priority' Response

The 'goal of biodiversity conservation takes priority' response is a shorthand for a range of views that would argue that the goal of reducing biodiversity loss is so important that it overrules other morally relevant concerns, such as concerns of fair

burden-sharing in this case. A person taking this stance could, for instance, maintain that this is simply a tragic but ultimately necessary answer to a difficult moral trade-off. Or they could take a 'matter of fact' attitude to the problem and, by focusing on the capacity to pay principle, maintain that capacity needs to be understood not only in financial terms but more broadly, because it is *de facto* only individuals, communities or states with access to areas worth protecting who have the capacity to protect these areas. One might simply say, 'bad luck that you are living close to a biodiversity hotspot but that gives you the ability and, thus, responsibility, to protect this area as opposed to a person living in central Tokyo'. However, in the hypothetical 'unsustainable pastoralism' example it is difficult to see why these people should carry a bigger part of humanity's collective duties of interspecies and intra-human justice than other individuals, communities or states with a much larger environmental impact. At least three reasons speak against this first response.

For one, as we will see in the following, there are alternative partial solutions to the local-global discrepancy on offer that retain a strong commitment to fairness. Secondly, in our current real-world circumstances it is repugnant to conclude that people who tend to already be subject to a range of global injustices (e.g. due to colonial legacies, the global trading regime) are additionally incumbered with burdens resulting from the moral responsibilities of the more privileged. Amongst other things, in non-ideal circumstances that means that the legitimate complaints brought forward against the legacy and current practices of global biodiversity conservation need to be addressed; particularly because global environmentalism has too often ignored and neglected the interests, ethics and ontologies of people living in areas of environmentalists' interest. Thus, while in this regard we have problematic universalizing tendencies within the practices and policies of the global conservation regime that need to be critically addressed, I also maintain that theorizing global justice in itself does not necessarily share these hegemonic propensities. On the contrary, looking at environmental conflicts from a global perspective can also reveal central problematic aspects – such as concerning differing responsibilities and broader structures – that cannot be accounted for by a purely local approach.

It would be problematic if such an approach would end up imposing burdens on non-responsible others while claiming that the importance of the goal simply outweighs the unfairness of the imposed burden. In such a case it seems difficult to see how those burdens can be justified via the global goals of achieving biodiversity protection and implementing interspecies justice, particularly if the hypothetically burdened people also do not share premises that get the theory of justice off the ground (e.g. because they do not share its underlying rights framework). Consequently, the GD-LB problem arises not only as a noteworthy theoretical problem within non-ideal global justice theorizing due to the first aspect (e.g. how do we avoid imposing burdens on others while acting on our own responsibilities?). It also highlights that respect for other worldviews needs to be acknowledged within a theory of inter-human and interspecies global justice to avoid ingraining a form of misrecognition within the theoretical framework and, thus, failing on its own standards to address the second aspect (which, in turn, points toward procedural and deliberative justice aspects). Putting it differently, it amounts to Kok-Chor Tan's (2021) concern for 'deliberative fairness' as a means of decolonizing conservation. That these two aspects - unequal burdens and different worldviews, representing distributive and deliberative justice respectively - are interwoven sits at the core of the GD-LB problem.

In other words, the GD-LB problem is characterized by the interwoven nature of distributive and deliberative justice. Yet that does not mean that these two dimensions of justice are interchangeable. Unequal burdens bring the GD-LB problem about and *then* aspects of deliberative unfairness make it particularly tenacious in practice. Thus, even in a hypothetical scenario in which the demands of justice were fulfilled in all other dimensions *but* distribution, the GD-LB problem would remain. That is because deliberative justice, recognition justice and/or fair procedures cannot circumvent the issue that imposing burdens on non-responsible others remains seemingly unfair. They can make this circumstance seem more morally palatable but cannot eliminate it (I will return to this matter in section five).

A third reason why one might not consider this ‘matter of fact’ view convincing lies in the circumstance that the practical ‘burdens’ of environmental protection are varied (for additional reasons see Armstrong, 2016, 2018). Consider the example of a fragile forest ecosystem.

Strictly protected forest: Suppose it were decided that a fragile forest ecosystem is an important habitat for a variety of nonhuman animals and plants. Hypothetically the only way to protect this fragile habitat would be to turn it into a strict nature reserve that forbade entry to most people (except with a permit).¹⁰ Suppose also that there is a hypothetical community not living in this forest ecosystem but adjacent to it. This community might now complain about the costs of this newly imposed measure. The actual *financial* costs for the upkeep of the nature reserve might be low (or paid by others); the economic *opportunity* costs might also be low because this community does not plan to convert this forest into an area used intensively for forestry or agriculture (and if they were, then these costs might also be compensated by others); but the people of this community might also have been connected to this particular forest in many other meaningful ways – as a place of recreation, spirituality, food provisioning and cultural meaning.

According to this description, the hypothetical forest holds value in a multitude of ways, and some of these are relevant for people’s identities and conceptions of the good life that are linked to place (see O’Neill, 2022). It is not only the trees and shrubs making up the forest that are of value to people, but also the place itself as a particular landscape. By having to refrain from certain activities and practices (in its most extreme form exemplified by the widely criticized ‘fortress conservation’ approach, see Büscher & Fletcher, 2019), this environmental protection measure also carries a *cultural* cost – similar to what Tan (2021) describes in terms of a ‘cultural loss’ as a burden of conservation.¹¹ That might not be a particularly high cost, but it is in some cases – such as arguably in the pastoralism case described earlier.¹²

If these costs turned out to be very high and the local community opposed this environmental protection measure, then it would not necessarily constitute an objectionable form of conservation NIMBYism (Not-In-My-Backyard protests). While it is reasonable to expect people to carry some local costs of important global environmental goals even if these costs are unevenly distributed, it is more problematic in GD-LB problem cases that I have in mind. In such cases such high costs would fall onto people not covered by a convincing account of just burden-sharing. In contrast, the moral issue at stake differs for cases where people largely responsible for implementing biodiversity conservation carry more than their ‘fair share’ of costs.

What counts as a ‘high’ cost - and subsequently a cost that is potentially too high - in this regard, is a challenging matter. There are at least three aspects to this issue, which I must largely set aside. Firstly, which place-based values should be considered, and which can be discounted on moral grounds (e.g. for being unreasonable)? Secondly, how weighty are these values in cases of conflict either with other place-based values or with other morally important goals? Thirdly, distinct but related to the question of how burdens can be reasonably distributed is the question of which burdens are reasonably enforceable. To give an example from a slightly different context with respect to achieving a just energy transition, consider controversies surrounding the building of new wind power plants. While I am not dismissing that cases exist where opposition is indeed reasonable,¹³ there are certainly also cases that do not appear to fulfill the relevant criteria.

The aesthetically displeasing wind power plant: Let us assume a hypothetical person who opposes the building of a new wind farm in their region (an agricultural region dotted with small towns and villages) primarily on aesthetic grounds. In their opinion, the cultural landscape is simply more beautiful without it.

Irrespective of whether one would agree with this sentiment, I nevertheless doubt that a new wind farm near one’s home can be aesthetically displeasing enough to justify on its own one’s opposition to it being built (on the substantive just burden-sharing grounds that I am exploring here; there is the additional element of participatory justice which is a frequent reason why conflicts about wind power developments arise in practice). Regarding such a case we are also concerned with a place-based value pertaining to the beauty of a particular landscape, but that might not necessarily be an especially weighty value in this moral decision-making context, relative to the energy transition (that is in turn, arguably, an important aim that would contribute to morally important goals like climate change mitigation and biodiversity conservation). Moreover, such an aesthetic place-based value would also, arguably, not be substantially undermined in this case. After all, the cultural landscape in question would be changed by the introduction of wind power plants, but its aesthetic appeal would not necessarily be significantly diminished. That means that, all in all, in this hypothetical case the new wind farm would not necessarily infringe on people’s identities and conceptions of a good life in any meaningful way. In contrast, being forced out of an entire geographic area – as has often been the case when the establishment of national parks has resulted in the displacement of local communities (Agrawal & Redford, 2009) – or having to refrain from long-held practices such as pastoralism are much more serious infringements on people’s lives. These situations should clearly be avoided, and they seem to constitute overly costly cases in the context of biodiversity conservation – particularly considering the argument that current conservation policies and discourse still retain problematic colonial elements (Agrawal, 1997; Ochoa-Ochoa et al., 2023; Plumwood, 2006).

3.2. The ‘Avoiding the Unfairness Takes Priority’ Response

Based on such reasoning one might favor the second possible response, which claims that avoiding the unfairness of such a burden-sharing arrangement should in those cases take priority over working toward the goal of reducing biodiversity loss in a particular location.

A person taking this view might then reasonably point toward the existing problems of the current biodiversity conservation regime as just illustrated. However, in this case more contextualization is also valuable. While the displacement of local communities and similar examples are serious cases, I also do not want to overstate their frequency. The following two reasons illustrate that this second response seems unsatisfactory as an across-the-board solution to the GD-LB problem, even if one would be willing to discount the justice demand of reducing biodiversity loss in favor of the intra-human fairness considerations raised by the GD-LB problem when land-use conflicts arise. For that, it is valuable to look more closely at the empirically and normatively complex relationship between the goal of reducing biodiversity loss and social justice concerns.

Firstly, different forms of land use are not in principle a zero-sum game in which the protection of nonhuman beings or the interests of future generations would necessarily have negative consequences for particular people in the present, and vice versa. When assessing real-world cases which appear too costly for the local population in practice, it is valuable to ask whether better-suited conservation methods would have been possible in that instance. In some cases, the perceived conflict might be rather a matter of unsatisfactory implementation instead of a more substantial conflict between different moral demands. While what constitutes effective nature conservation is contested, it has often been the case historically that a certain environmental protection measure has put large costs onto a local community without providing any benefits for nonhuman beings that alternative land management systems would not also have achieved. For instance, recognizing the value of traditional land and wildlife management approaches already practiced by local communities and their environmental knowledge (see Ogar et al., 2020) does not only aid deliberative justice, but also defuses the stark opposition between human and nonhuman land use. However, it would also be oversimplified to claim that traditional management approaches are always the best (or even always appropriate) methods of biodiversity conservation under current conditions of environmental change. After all, not all traditional forms of life are necessarily sustainable, and even forms of life that have been historically sustainable might cease to be so under new environmental conditions.

Secondly, in practice, strict nature protection measures – as in the forest example above – are often necessary on neither intra-human nor interspecies justice grounds. For instance, evidence suggests that many indigenous communities manage their lands in a manner not only compatible with but also supportive of biodiversity protection (Schuster et al., 2019), or that landscapes used for food production do not just threaten, but can also create more biodiverse habitats (consider alpine pastures as a case in point; Ingty, 2021). At the same time the restriction of some human land-use practices is also often a promising way to successfully protect biodiversity. For example, certain human land-use practices are clearly implicated in biodiversity loss and, hence, require regulation. Examples of not particularly controversial cases are the deforestation of an entire area to be used for agricultural or industrial purposes or large-scale open-cast mining operations. Against the background that land-use change is considered a large direct driver of environmental change (IPBES, 2019), these examples of human activities reduce the available land relevant for biodiversity conservation in different ways. Yet beyond these more clear-cut cases it is possible to encounter more difficult situations, such as the earlier-introduced pastoralism case, under conditions of environmental change.

Overall, three relevant observations follow. Firstly, actual biodiversity conservation policies that are implemented in specific places should not be conflated with the moral philosophical demands of global interspecies and intra-human justice that ask for habitat and biodiversity protection at a more abstract level. While the practice of biodiversity conservation has clearly fallen short of the moral ideal in many cases, that does not on its own provide a sufficient reason to also discount the moral ideal itself – i.e. the demands of justice of nonhuman beings and future generations. Secondly, not all conservation land-use conflicts are indicators for the existence of an underlying GD-LB problem. I suspect that in many instances it is not the case that a fair burden-sharing arrangement is hindered in its realization by the GD-LB problem. Rather, fairness seems to be often hampered in the implementation stage by poor choices with respect to conservation management approaches and methods. Thirdly, when the GD-LB problem does arise, then its severity in specific instances needs to be judged on a case-by-case basis. The severity of a GD-LB problem case partly depends (although not completely) on the following four types of background assumptions that frame the context in which an account of just burden-sharing would be applied.

- (1) *Level of idealisation*: Against the background of different demands of global distributive justice, it matters for assessing the severity of the GD-LB problem how idealized or non-idealized the other background conditions are. In other words, burden-sharing accounts operate within the remit of non-ideal theory, but within that category there can be more or less idealization. Thus, the severity of the GD-LB problem in a particular case partly depends how much of the overall currency of global justice – i.e. primarily land in this case – falls within its remit, which concerns, amongst other things, which other relevant (political, economic, social etc.) factors in current non-ideal conditions are held constant.¹⁴
- (2) *Epistemic assumptions*: The severity of the GD-LB problem also partly depends on what environmental protection measures are deemed effective, and it is therefore driven by which kinds of knowledge and insights are being considered and which are not (which links back to the aforementioned matter of deliberative fairness).
- (3) *Normative prioritisations*: The severity of the GD-LB problem partly depends on underlying normative choices concerning which parts and/or types of biodiversity should be prioritized. For example, in terms of the intra-human justice goal of biodiversity conservation, it matters substantially how biodiversity is defined and which type of biodiversity is foregrounded (e.g. species richness, phylogenetic diversity etc.), which influences conservation prioritizations.
- (4) *Demandingness of the theories of justice*: Lastly, the severity of the GD-LB problem partly depends on the demandingness of the underlying theories of justice that justify the goals of biodiversity and habitat conservation. For example, in terms of the interspecies justice requirement of habitat protection, the GD-LB problem will be more serious for egalitarian theories making rights claims (e.g. Donaldson & Kymlicka, 2011) than for theories proposing more qualified entitlements (e.g. Wienhues, 2020).

Accordingly, different background assumptions (e.g. how biodiversity is defined) and levels of idealization (i.e. how much of the current unjust and imperfect contexts are

taken as given) frame judgments about just burden-sharing which in turn impact on the overall severity of the GD-LB problem. The GD-LB problem becomes more acute the more the current non-ideal and unjust background conditions are taken as given by an account of just burden-sharing, and vice versa.

Based on these considerations, the ‘avoiding the unfairness takes priority’ response could maintain that the unjust background conditions need to be addressed first before a just burden-sharing arrangement can be established and implemented. While I am sympathetic to this position, accounts of just burden-sharing are already meant to address non-ideal conditions - i.e. the worryingly high levels of biodiversity loss in this case. Thus, the theoretical aim of such accounts of conservation burden-sharing is to provide an account of how to justly address the problem of biodiversity loss. In contrast, the ‘avoiding the unfairness takes priority’ response implies that burden-sharing accounts are not actually able to achieve their own theoretical aims – that is, to merge a global justice goal (reducing biodiversity loss) with a commitment to fairness in its implementation – in the light of the GD-LB problem. Such a conclusion is clearly unsatisfactory not only for proponents of burden-sharing accounts but also for anyone committed to both aims: reducing biodiversity loss and doing so in a fair manner.¹⁵ In other words, one might reasonably worry about how much biodiversity might be left to protect, if the justice goal of reducing biodiversity loss could only be addressed *after* complex unjust background conditions were resolved first in order to maintain one’s commitment to fairness. Before explaining why one can avoid this implication of having to choose between both goals in section five, let me first further illustrate the conceptual difficulty that underlies the GD-LB problem in the context of biodiversity conservation in the next section.

4. Sharing Land as Place and Habitat

For now, it is important that the place-based cultural costs I am concerned with are worrying because of their disruptive nature to people’s place-based identities and the difficulty of compensating for these costs in a way that is meaningful (I will return to the possibility of financial compensation below). Besides monetary costs and opportunity costs able to be translated into monetary terms, the relevant burdens associated with conservation are often more materially place-based which do not necessarily coincide with attributions of responsibility.

To better understand this problem, note that a central assumption for many theories of global distributive justice is their reliance on an abstract currency of justice. For example, consider theories that rely on the currency of ecological space, such as intra-human accounts of the just distribution of ecological space (such as Hayward, 2005, 2006, 2015; Vanderheiden, 2009) and interspecies accounts of distributive justice that additionally attribute ecological space entitlements to wild nonhuman beings (Wienhues, 2020). Ecological space is thereby commonly understood as a basket of important environmental goods, such as the potential benefits provided by the Earth’s life-support systems and physical resources. This includes land, but also includes renewable and non-renewable natural resources. The underlying premise is that there are (empirical and normative) limits that should not be surpassed, which limit available ecological space that can be distributed and, thus, used. Relevantly for biodiversity conservation, ecological space includes finite resources such as land, which in turn can be habitat for nonhuman species,

land used for agriculture, and so on, as well as ecosystem benefits such as the capacity of soils and plants to absorb CO₂. The ecological footprint (Wackernagel & Rees, 1996) is one of several common accounting methods to quantify and compare ecological space use.

Based on this example, principles of justice apply to ecological space understood in this abstract sense because that allows one to treat different units of ecological space as interchangeable with other units and make generalized conclusions about global conditions. That permits, in turn, providing an assessment in terms of global justice (e.g. arguing in favor of egalitarian or sufficientarian principles of justice and comparing their demands to the *status quo*). On this global level of analysis ecological space is understood in the abstract, meaning that all units of ecological space are identical (Hayward, 2005) and consequently exchangeable with each other. This abstract sense of ecological space allows for comparing the ecological space use of different individuals, communities or states by approximating it by different accounting methods, such as the ecological footprint.

However, ecological space also exists in the particular. When one looks at particular types of ecological space in specific places, they sometimes cease to be replaceable because it is a particular ecosystem or a particular place that holds a certain meaning for a person, or constitutes the habitat of a specific nonhuman species. In certain respects, this problem is already visible in Avery Kolers' assessment of Tim Hayward's account of distributive justice that relies on ecological space: 'The challenge is, so to speak, to map eco-space on to geo-space: to attend to the local character of political life and interests, while keeping in focus the global character of our ecological crisis and political economy' (2012, p. 271).

Accordingly, that is one of the ways in which distributive justice theorizing that relies on the currency of ecological space differs from distributive climate justice, which does not involve this internal tension – after all, a ton of carbon emissions is identical to another ton of carbon emissions irrespective of where they have been emitted. The focus on ecological space in the abstract for purposes of global justice theorizing is rather comparable to the standard treatment of the distribution of natural resources in the context of global justice where, for example, iron ore in one place is treated as identical to iron ore in another place. The problem is, of course, that 'natural resources' are not necessarily identical in all respects, which has led theorists of global justice concerning territory and natural resources to argue, for example, that people's attachments to particular 'resources' make a difference to the moral landscape (e.g. Armstrong, 2017; Kolers, 2012).¹⁶

Yet, as pointed out by Lo Coco and Schuppert (2021), it is important that morally relevant attachments to 'resources' do not equate to mere preferences or a simple appreciation of the 'resource' in question. Rather, they point out that 'attachment proper needs to fulfil one of three functions in order to be considered the *source of normatively weighty claims*: it either needs to be identity-defining, purpose- or meaning-giving, or connected to a feeling of belonging and thus life-structuring' (2021, p. 57 my italics; building on Reibold, 2022). The weighty kinds of place-based values that I have described earlier should be understood as falling broadly within this category, despite place-based values in general being a much broader category that can also include the above-mentioned case of opposition against a wind farm on aesthetic grounds. The latter does not appear to fulfill the requirement of undermining an attachment to place that

is identity-defining, purpose- or meaning-giving. Moreover, speaking of such weighty place-based values also picks up on related considerations about the good life and wellbeing, in so far as relationships to place and related practices matter for the latter (O'Neill, 2015, 2022).

This illustrates why cultural costs are of moral concern without having to resort to attributing any value to culture or traditions as such and without taking a romanticizing or stereotyping view on the preservation of indigenous cultures, which is important in so far as indigenous lands are frequently also biodiversity hotspots. Arising from deliberative justice concerns raised in the previous section, cultural costs matter in so far as they embody serious infringements on people's lives from their own partially culture-specific point of view. That neither requires that all people hold the same views on what makes their lives meaningful, nor does it require relativism with respect to global justice theorizing.

Even if we take this view on the weighty kinds of place-based values as given, a tension between ecological space in the global-abstract and in the local-particular remains. That can be illustrated by adapting Kolers' theory of resources for my purposes. The non-replaceability of ecological space in the particular implies that it ceases to be a 'resource' at all, by not constituting a 'fungible means' any more (Kolers, 2012, p. 278). Yet that replaceability was what made ecological space in the abstract a workable currency of distributive justice in the first place. Land or fresh water can be fairly distributed in the abstract, but they become homeland, habitat and a river with a unique ecosystem in the particular. So, where does that leave us?

Two observations will be helpful in this regard. For one, ecological space in my understanding differs from what Kolers would understand as a 'resource' in his intentional account in several respects. Importantly, not everything that I define as ecological space in the abstract is also always a 'resource' for all people (e.g. in terms of cultural practices and norms) all the time (e.g. in terms of available technology). Some ecological space might only ever have use value for nonhuman life and, thus, be relevant for interspecies justice, and vice versa. Thus, ecological space as a currency of distributive global justice goes beyond accounts of global resource justice. The idea is to provide a representation of the Earth's overall ecological capacity – what can be used in contrast to what is used and valued. Thus, not all ecological space can be understood as a 'resource' per Kolers' definition.

Secondly, due to people's different relationships with the natural environment, different natural entities and places can take on different meanings to different people, but that does not imply that we cannot simultaneously appreciate – and use – them as means to fulfill our ends. Therefore, ecological space in the abstract and in the particular do not exclude each other, but they are layered. For example, a certain area of land can be my home while also being soil for my agriculture.

This layering concerns the GD-LB problem when we ask what options are open to remedy any potential mismatch between an account of distributive justice (applied to ecological space in the abstract) and the geographic realities (representing ecological space in the particular). That is the reason why implementing biodiversity conservation while not worsening intra-human injustices becomes a problem, because there is no good reason to assume that responsibilities and just burden-sharing theorized in the global-abstract just happen to coincide in a convenient way with the respective burdens in the

local-particular. Accordingly, the conceptual dimension of the problem concerns the discrepancy between ecological space in the abstract versus ecological space in the particular.¹⁷

That is of relevance for the moral concern, in turn, because place-based values can attach to ecological space in so far as one might have a particular attachment to a specific landscape or ecosystem, but it makes less sense to be particularly attached to a specific ecosystem benefit such as CO₂ sequestration in one place as opposed to valuing it in all places equally. The earlier-introduced cultural costs pick up on these place-based values. Therefore, within ecological space the category of land is a special central category that features primarily in the GD-LB problem when it comes to the burdens of conservation. We can think about land use in the abstract by categorizing it according to different purposes – agricultural, urban, forestry, infrastructure, biodiversity protection etc. – and measuring consumption in terms of land use (e.g. by the ecological footprint). But it is land in the particular that matters to people, which introduces cultural costs as the respective moral concern involved in the GD-LB problem.

As an interim summary, and moving away from the ecological space example, the GD-LB problem involves a *conceptual problem* concerning the currency of justice: the incongruity between the currency of justice in the global-abstract (land as interchangeable abstract units) and in the local-particular (place and habitat). This creates a gap between accounts of fair burden-sharing and the practical necessities of fulfilling the demands of justice in terms of biodiversity and habitat protection. That, in turn, relates to a specific *moral concern* about the involved ‘costs’ of conservation. Cultural costs – related to place-based environmental values – are at the center of the GD-LB problem. The combination of these two issues simultaneously generates the need for – but also enables the possibility to consider – different second-best options. In contrast to the two earlier-discussed responses, these second-best solutions are my preferred response to this problem because they simultaneously retain a commitment to both: the importance of reducing biodiversity loss and of avoiding unfairness in its implementation.

5. Second-Best Solutions

While first- and second-best solutions are not necessarily mutually exclusive but rather context dependent, we might have to look for second best solutions in some cases. Accordingly, if one’s account for just global burden-sharing and the local geographic realities do not always match-up such as in the pastoralism case, then what options are open to remedy this mismatch without recurring to the earlier-discussed first or second responses? In other words, what options are open if we want to resist the conclusion that duties of environmental and interspecies justice are partially outweighed (as in the second response) while at the same time also wanting to refrain from unfairly burdening people who are less responsible for mitigating biodiversity loss (as in the first response)?¹⁸ There are three apparent but certainly not exhaustive alternatives on offer in this case.

Firstly, the option of financial compensation could be considered. While that does not track the relevant cultural costs appropriately, it might be the second-best option under the non-ideal circumstances described here. After all, economic benefits are one of the main reasons cited by people involved in wildlife management.¹⁹ Yet that conclusion

does not hold so easily. What seemed initially repugnant about the global-local discrepancy is not the lack of financial compensation for the potential burdens on people who do not share much of the responsibility to act on biodiversity conservation, but rather the assumption that they must bear this burden in the first place. It is precisely this premise that needs to be examined, which involves at least the following three concerns.

Firstly, one cannot start by simply assuming that global environmental goals like biodiversity protection are so important that they overrule any kind of interests of local communities, or vice versa. For example, concerning theories of interspecies justice only an implausible and misanthropic ‘nature first’ view would be able to make such a claim. That is why I emphasized the cultural costs at stake. Secondly, one also cannot simply jump to conclusions about enforceability, even if one would reach the conclusion that such cultural costs are outweighed by the importance of these global goals in some cases. For example, while I maintain that one has good reasons to accept that one is subject to duties of interspecies justice, this does not in itself justify it being legitimately enforced onto other people – particularly if they do not share its underlying ethical and ontological premises. Thus, while I cannot rule out the possibility of legitimate financial compensation so that the cultural burdens remain distributed as they are, this route would only be open if a procedurally and deliberatively just decision-making system was in place.²⁰

Thirdly, the relevant cultural costs – in the form of normatively weighty claims as I have described them earlier – do not attach to all kinds of place-based values, but only particular values of importance for individuals’ lives. If people were willing to be financially compensated for certain cultural costs; and if worries about coercion, adaptive preferences etc. were addressed, then that is an indication that the costs in question do not refer to values that are normatively weighty to the right degree. In such a case, financial compensation is less problematic. In the case of the weighty place-based values that I am concerned with here, people can be expected to be unwilling to be financially compensated. As John O’Neill puts it when discussing a community’s resistance against economically developing and thus changing a landscape,

[i]t is their relationship to that particular place that matters. Their loss does not have a substitute by another object which offers the same “provisioning services”. What is articulated in response to the development is precisely the way that the relationships to the place matter as part of the lives of members of that community’ (2022, p. 352).

A similar case can be imagined with respect to resisting the introduction of new biodiversity conservation measures. Financial compensation would simply be in a wrong category (e.g. due to incommensurable values)²¹ – especially if it does not take the form of a backward-looking apology once a previously unacknowledged loss is recognized (which is a different subject), but it is part of the forward-looking planning process of a particular environmental measure. Accordingly, financial compensation, which at first view might be an obvious option to address the GD-LB problem, does not track a predominant kind of burden in the form of significant cultural costs. In contrast, opportunity costs or cultural costs that are not the source of normatively weighty claims are a different matter. So at least in this regard, it remains plausible to consider whether compensatory payments to affected communities would be possible and appropriate. Whether that is an option partly depends on whether these payments are possible without constituting coercion (see Schroeder, 2008) which should be kept separate

from considering financial compensation as a means of reparations for previous wrongly imposed conservation burdens.

Either in conjunction with the first option or on its own, the second candidate for a second-best solution would envision a procedurally and deliberatively just decision-making system for conservation projects. For these, one might want to look, in turn, at the broad variety of the aforementioned accounts of just conservation. More specifically relevant is the plurality of different approaches to just and context-sensitive decision-making about and participation in conservation policymaking and projects.²² Yet, as illustrated earlier, even in a hypothetical scenario in which justice was practiced in all other dimensions *but* distribution, the GD-LB problem would remain. Deliberative and participatory justice can only make this circumstance seem more morally palatable but cannot eliminate it. Therefore, in GD-LB problem cases such participatory approaches (with or without additional financial compensation) remain second-best solutions because they cannot address the underlying distribution of burdens, which is its core concern. Yet, as just illustrated, this underlying distributional question is more severe with respect to morally significant cultural burdens than with respect to opportunity costs or cultural costs that are not the source of normatively weighty claims. Thus, regarding the latter two types of costs, participatory approaches seem more apt, but once again, this solution does not appear to get us very far with respect to the underlying nature of the GD-LB problem.

That brings me to a final second-best option (again, either in conjunction with the first and second options, or on its own). This final alternative appears more promising than the first two options for addressing the underlying unequal distribution of burdens and, thus, it can provide a partial answer to the problem of significant cultural costs. This option suggests considering the possibility of restoring land (and ecological space more generally) as far as that is possible by restoring ecosystem functions, reinvigorating soil health etc. in the Global North.²³ The aim of such restoration is to address the imbalance of burdens put on human duty holders – consequently constituting an intra-human injustice – in the implementation of the demands of interspecies justice and intra-human justice. That involves the restoration of habitats in places geographically closer to people, communities or states which are also attributed a larger responsibility to address current biodiversity loss.²⁴

This solution remains, however, a second-best option because such restoration of land addresses this imbalance at the global-abstract but not at the particular level. That is, overall global ecological space might be stabilized or even augmented, by for instance restoring habitats in the Global North. However, that does not change the situation on the ground where nonhuman habitats that should be protected lie in particular places (which are not always, but often, in the Global South).²⁵ Globally a standardized unit of land might be replaceable with another unit of land (such as by restoration), but locally it is place in the particular and, thus, cannot be replaced.

Particular places not only matter to people as illustrated earlier, but the same also partially applies to nonhuman beings. They require a particular habitat that suits their needs. Nevertheless, depending on the living being in question, attachment claims like in the human case are usually not applicable and, thus, we retain a degree of replaceability. While one type of habitat cannot be replaced with any other type of habitat (e.g. replacing a tundra biome with a tropical rainforest) it can still potentially be replaced with a similar

type of habitat, which is what controversial conservation proposals like ‘assisted migration’ in light of climate change ultimately rely on.²⁶

Additionally, there are feasibility-related constraints on where it is even possible to restore landscapes and ecosystems, just as there are such constraints regarding their conservation as well. These might take different forms. For example, political constraints might be overcome in some cases (e.g. zoning regulations, other priorities for land use etc.), but the restoration of land might also not be ecologically possible in all places and might be very costly. Again, that costliness can constitute financial costs, but like trade-off considerations in the Global South, restoration of ecological space in the Global North might also factor into local trade-offs with global goals (e.g. food-security, climate change mitigation via negative emissions technologies) or other important values (e.g. place-based values). However, note that regarding the latter – place-based values – the situation is now different to the GD-LB problem case. While the place-based values of people in the Global North certainly matter, it is also true – generally speaking – that these communities and states are also attributed the main responsibility to carry the burdens of conservation, as seen in section two - subject to just burden-sharing considerations *within* states. Thus, the complaint that reducing the loss of biodiversity is burdensome does not have the same quality in this case. Despite these final caveats, restoration of land can potentially be a way to address the intra-human just implementation question in a way that acknowledges interspecies and intra-human justice demands, but by only acting on these demands indirectly to mitigate the GD-LB problem. Thus, this last second-best solution - in combination with the other two options when appropriate - can provide a partial response to the GD-LB problem, when it occurs.

6. Conclusion

In practice, considerations of just burden-sharing, even if purely on anthropocentric grounds, should be included at the forefront of the international conservation regime – as already mentioned in the Convention on Biological Diversity (UN CBD, 1992) with regards to the financial means for conservation. That might also require significantly more ambitious ecological restoration policies in other parts of the world, as I have suggested, to soften the GD-LB problem by reducing the distance between the holders of biodiversity protection responsibilities on intra-human and interspecies justice grounds and the actual burdens of their implementation.

Moreover, my proposal also takes up other current developments in the international conservation regime that try – for better or worse – to address historical blind spots within the conservation regime, such as the emphasis on relational values in IPBES (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services; see Anderson et al., 2022). Such relational values – as they are described in policy documents and that are widely discussed in a growing body of literature in the environmental social sciences and philosophy – in turn overlap with the place-based values that I have illustrated in this paper.²⁷

Bringing these two themes together, I have presented some initial thoughts on the GD-LB problem that arises when theorizing the just sharing of the burdens of biodiversity conservation on intra-human and interspecies justice grounds. This problem highlights (1) the difference between the currency of justice in the global-abstract (land as interchangeable units) and in the local-particular (land as place and habitat), which is of relevance for

accounts of just burden-sharing in so far as they rely on broader theories of distributive global justice; and (2) the centrality of cultural costs associated with conservation policies for theorizing the burdens of conservation.

Notes

1. In this paper I define ‘biodiversity conservation’ loosely so that it can be understood synonymously with ‘biological conservation’ and ‘nature conservation’ notwithstanding that biodiversity and nature, for instance, are two distinct concepts, and neither map perfectly onto a theory of interspecies justice that I take as given in the following. For example, consider tensions between a focus on individuals and a focus on biodiversity as variety. With this term I broadly indicate the practices of area-based environmental protection as opposed to, for example, increasing biodiversity with biotechnological means. Moreover, justice concerns are only a sub-set of morally relevant considerations that a broader theory of conservation ethics must address. Thus, ‘just conservation’ cannot be used synonymously with the ethics of conservation but constitutes one of the latter’s components.
2. The burdens discussed in this paper do not exhaust all relevant burden-sharing questions in the context of just conservation. For example, burdens in terms of ‘personal risks’ (Tan, 2021) resulting from encounters with wild nonhuman beings such as elephants and large predators that accompany certain conservation projects are set aside.
3. The GD-LB problem has been largely overlooked in the political philosophy literature on conservation (such as in Armstrong, 2018; Mancilla, 2021).
4. With the term ‘interspecies justice’ I refer here to a broad variety of different accounts of non-anthropocentric justice (other terms used in the literature are ecological justice, animal justice and multispecies justice). Here I employ the term interspecies justice in this general sense because my argumentation about the GD-LB problem is relevant to a broad variety of different forms of non-anthropocentric justice theorizing, irrespective of which particular account each reader might find most plausible.
5. Burdens can certainly also be ‘global’, but those are not at the center of concern of here. Similarly, there are also global and local benefits to conservation, which I also will largely set aside.
6. For an exploration of this issue in the climate justice context see Caney (2016).
7. Although I agree with Chris Armstrong that ‘decoupling the duty to conserve from the duty to bear the costs of conservation must be a priority’ (2017, p. 244), my point is that such a decoupling is not fully possible which leads to my starting problem.
8. *Real-world cases* usually demonstrate a broad variety of justice considerations involved in biodiversity conservation – many of which are contested and dynamic. They can involve political conflicts on different scales and different people’s ability to participate in decision-making; disagreements about in how far different traditional practices are beneficial or harmful to biodiversity conservation and what counts as ‘expertise’ in this regard – linking to issues of power and to different ontologies; different economic pressures, incentives and opportunities; changing cultural values and different individual attitudes toward those values; environmental changes in a landscape and so on. For example, consider the complexities involved in different land-use concerns pertaining to East African pastoralist societies in the context of environmental change and colonial legacies within the land-use regime. In practice the relationship between pastoralism and biodiversity conservation is complex and can be mutually supporting in contrast to the above example, see Notenbaert et al. (2012).
9. Similar questions pertaining to the relationship between global and local scales arise in related contexts, such as with respect to biodiversity offsetting schemes or in the context of just sustainability transitions (e.g. by decarbonizing the economy). Yet, because the moral issues at stake somewhat differ in these contexts in comparison to what I am discussing here, and because the relationship between sustainability and biodiversity conservation is

complex, I am setting these broader concerns aside. Consider for example the controversies about the environmental impacts of lithium mining needed for the lithium batteries central to new energy technologies, such as in the Atacama salt flats in Chile. In contrast to the cases that I consider here, in such a setting the interests of the local community *align with* local biodiversity protection measures against the global requirements of the sustainability transition (which in turn are a matter of contestation) and ultimately feed back into long-term global biodiversity protection.

10. Once again, this is not a real-world case but neither is it fully unrealistic. An example of a forest with this level of protection would be the Pisavaara Nature Reserve in Finland. Of course, Finland is a wealthy European society and, thus, in such a circumstance the state and its citizens could certainly be considered responsible for biodiversity protection *which differs* from the GD-LB problem case that I discuss here. A related question concerns just burden-sharing *within* states (generally, but particularly also in societies with settler-colonialist histories that involve their own conservation-related injustices like the US; see Eichler & Baumeister, 2021).
11. What I term a 'cultural cost' is not identical with what Clare Heyward (2014) describes as a 'cultural injustice' by putting cultural identity at risk in the context of climate change, which is similarly unevenly patterned. Moreover, while I am concerned with place-based values and respective cultural costs in the context of conservation, not all cultural costs of environmental protection measures more broadly are necessarily place-based, such as changes in consumption and mobility practices.
12. Cultural costs have so far received less attention than other kinds of conservation costs in the literature on just burden-sharing. On monetary and opportunity costs see Armstrong (2016, 2018, 2021).
13. For example, consider the violent conflict about the expansion of wind energy in Mexico's Isthmus of Tehuantepec, regarding which its critics condemn the disregard for the rights of local indigenous communities in its planning and implementation (Zárate-Toledo et al., 2019).
14. Moreover, it matters for an all-things-considered assessment that there are distinctive types of contextual factors that differ, in turn, in their moral status and their feasibility to be changed.
15. Considering this problem, non-ideal theorizing of just conservation – such as in the form of conservation burden-sharing accounts – needs to say more on the relationship between different non-ideal circumstances as well as on the relevant levels of analysis to avoid falling short of its own theoretical aims.
16. Such theories consider attachments to be relevant for giving certain people claims to resources that others do not have, which differs from my concern with how such attachment features in theories of burden-sharing and how burdens should ultimately be theorized.
17. A further dimension to the GD-LB problem concerns the issue that different conditions of scarcity *globally* might not resemble different conditions of scarcity *locally*. Thus, *within* ecological space in the abstract there is also the potential for a local-global discrepancy.
18. If the first and second response map very roughly onto what Sandbrook et al. (2019) call 'science-led ecocentrism' and 'people-centred conservation' in their survey of the global conservation movement, then their findings also suggest that many people surveyed *might* also consider my preferred third response most plausible, as this third response is strongly committed to both goals – biodiversity conservation and fairness. In their words, '[...] 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' (Sandbrook et al., 2019, p. 318).
19. Such as in the case of the interviewed residents in the Mambwe district, Eastern Zambia (Bwalya Umar & Kapembwa, 2020).
20. At this point the relationship between different kinds of conservation burdens and conservation benefits would come into play. For example, different communities might plausibly judge the relationship and trade-offs between different *local benefits* (e.g. local new

economic opportunities created by certain conservation schemes, local ecological benefits) and its *local (cultural) costs* differently.

21. 'The existence of plural and incommensurable values entails that a rational choice can involve losses for which no compensation is possible' (O'Neill, 2022, p. 343). That is not necessarily problematic as there can be cases in which these losses are all-things-considered justified. Yet, in the case of the GD-LB problem the bar for such a justification is higher due to the gap between the responsibility holders and the recipients of the loss/burden.
22. For example, for a multi-dimensional approach in conflict cases see Raymond et al. (2023); on a critical engagement with the notion of 'Free Prior and Informed Consent' with respect to REDD+ projects see Raftopoulos & Short (2019).
23. While that is also relevant for the intra-human justice goal of biodiversity protection, it is of particular interest for the interspecies justice aspect involved in the GD-LB problem. Yet, such restoration should not be understood as a form of restorative or reparative interspecies justice. The theoretical possibility of *repairing* for previous interspecies injustice is a different subject, which is distinct from standard understandings of ecological restoration (see Wienhues & Donoso, 2024).
24. Although for different reasons, Armstrong (2021) proposes a similar solution – he speaks of 'rewilding' – to the problem that areas of interest for protection are often in the Global South.
25. The sketched North-South imbalance is not as clear cut as presented such as regarding all types of ecological space (e.g. on 'ecosystem services' see Davidson, 2017).
26. For an overview of assisted migration, see Palmer (2021). Also consider the possibility that ecological restoration disadvantages or harms particular nonhuman beings in the short-term (e.g. imagine the case of certain grasses flourishing in a degraded habitat which is then transformed by reforestation). This leads to yet another set of further-reaching questions about *just transition within an account of interspecies justice*.
27. For an overview and explanation of relational values as a type of moral value see Deplazes-Zemp (2023). For my argument in this paper it does not matter how one prefers to conceptualize the place-based values that I described. My argument is compatible with a range of different views on what type(s) of moral value best describes place-based values.

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