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Towards a Consensus on the Intrinsic Value of Biodiversity

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ABSTRACT

This paper addresses the stalemate on the question whether biodiversity has intrinsic value. I distinguish between a "weak" conception and two "strong" conceptions of intrinsic value in the environmental ethics literature. The strong conceptions of intrinsic value are connected, respectively, to moral standing and to a strongly objectivist account of value. Neither of these forms of value likely applies to biodiversity. However, the weak conception of intrinsic value is neutral about both moral standing and the nature of value and plausibly applies to biodiversity. In addition, weak intrinsic value avoids common objections to the claim that biodiversity is intrinsically valuable. I develop a cumulative argument showing that environmentalists should presume that biodiversity has intrinsic value in the weak sense.

Keywords: Biodiversity, Intrinsic Value, Moral Standing, Subjectivism, Moore

1. INTRODUCTION

There is a polarized stalemate in environmental thought about intrinsic value, or roughly the value an entity has "for its own sake." The intrinsic value of biodiversity was a founding assumption of conservation biology as a field, as stated in Michael Soulé's classic paper "What is Conservation Biology?" and in the UN's Convention on Biological Diversity (Soulé 1985; United Nations 1992). There have been arguments by those concerned with conservation that it would be wrong or counterproductive to focus only on nature's uses and services to humans, in contrast to its intrinsic

value (McCauley 2006; Morelli and Møller 2015; Bekessy et al. 2018). Among philosophers, however, intrinsic value has been a highly contentious issue. There have been thoughtfully-reasoned calls to abandon intrinsic value (e.g., Gruen 2002), motivating thoughtful responses that we should not abandon intrinsic value (e.g., McShane 2007). Several philosophers have argued that intrinsic value should not be attributed to biodiversity in particular (e.g., Oksanen 1997; Baard 2020). This raises questions about the founding assumption of conservation biology—have some biologists been mistaken to suppose that biodiversity is intrinsically valuable?

Given that many experts think we are facing a biodiversity crisis, it is concerning that environmentalists cannot agree about what general types of value can be attributed to biodiversity. This lack of common-ground principles is a barrier to communication and productive deliberation about which parts of nature deserve special protection. In addition, it is worrisome that the views of some environmental philosophers and of some practicing conservation biologists are out of sync.

This paper supplies a defense of the foundational yet controversial assumption that biodiversity is intrinsically valuable, by developing a *weak* account of intrinsic value that should be widely acceptable. As a starting point, I take it that many people, including some biologists and presumably many lay persons[1], hold that biodiversity is intrinsically valuable. For these people, my paper takes on the task of supplying the best interpretation of the intrinsic value of biodiversity.

At the same time, there are some environmental thinkers who deny that biodiversity has intrinsic value. For this audience, my paper will present a cumulative argument for accepting the intrinsic value of biodiversity. Environmental philosophers who reject intrinsic value often endorse some objections which will be considered later in the paper. The key strength of weak intrinsic value

[1] This claim is partly based on the author's personal experience, e.g. from discussing environmental ethics with acquaintances and undergraduate students.

is that it avoids common objections. This shifts the balance of arguments: in the absence of the strongest objections, positive considerations for intrinsic value, some of which will be reviewed, shift the presumption in favor of intrinsic value.

So, the main objective of this paper is to show that there is a lightweight sense of intrinsic value that environmentalists should agree applies to biodiversity. Secondarily, I explain the reason for the observed polarization: it results partly from the implicit adoption of distinct conceptions of intrinsic value, some of which are ill-suited to biodiversity. Environmental philosophers may talk past one another when they implicitly make different assumptions about the nature of intrinsic value.

The following section will define terms and do some scene-setting. After that, I will sketch some positive arguments for biodiversity's intrinsic value. The fourth section will further distinguish relevant conceptions of intrinsic value and argue that the weak conception best applies to biodiversity. Section five shows that weak intrinsic value avoids a number of objections to biodiversity's intrinsic value. In the final main section I consider briefly how one might derive normative implications from the intrinsic value of biodiversity.

2. DEFINITIONS

In this paper, I will use "biodiversity" to mean the number and variety of species, or roughly species richness, either globally or at the scale of regions, ecosystems or communities. When people talk about the intrinsic value of biodiversity, the intended implication is usually that the variety of life on earth is good and the increased extinction rate is at least prima facie bad because it is reducing this variety. "Biodiversity" has a variety of more technical interpretations in scientific contexts (Justus 2011), and species richness is in many cases not the best proxy for diversity. Nevertheless,

for simplicity, it is useful to treat species richness as a locus of value in the context of environmental ethics.

Biodiversity is best understood as property-like rather than object-like. "Biodiversity" does not refer to the concrete sum of the individual organisms currently present on earth. Rather, it refers to the variety among species on earth. Our question is whether this property has intrinsic value. This ontological point is relevant because some have claimed that intrinsic value only applies to concrete biological entities. In addition, this clarifies why the question of the value of biodiversity goes beyond the question of the values of individual species.

The values (if any) of biodiversity should not be conflated with the values (if any) of particular species. The focus of this paper is not to explain why it would be bad to lose particular species. Instead, a motivating question is whether and why it is bad that the variety of life on earth is declining. This is occurring because the extinction rate is presently outstripping the rate of evolution of new species. If the value of life's variety reduced to the values of particular species, then there would be no *special* problem about biodiversity loss.

One reason to think there might be a special problem about biodiversity loss is that this can occur at multiple scales, including the scale of individual communities and the global scale. Extirpation (local removal) of a species from a particular community will reduce biodiversity within that community without necessarily contributing to the global extinction rate. Put differently, biodiversity loss within local communities can happen without any extinction. The disvalue of this occurrence, if any, cannot be explained by appealing to the disvalue of extinction. This is among the reasons why it is important to consider the value of diversity per se, in addition to the value of individual species.

This paper argues for a *weak* conception of intrinsic value. Weak intrinsic value is non-instrumental value, where instrumental value is value that depends on something's uses, services, or

desirable effects. There are no further criteria for weak intrinsic value. This is importantly distinct from two influential conceptions of intrinsic value, the "Kantian" conception and the "Moorean" conception (Bradley 2006). The Kantian conception of intrinsic value holds, generally speaking, that intrinsic value attaches to persons, or to a somewhat larger class of entities such as sentient organisms; that intrinsic value supports moral standing[2]; and that an entity's intrinsic value helps to explain or motivate our moral obligations to it. (This is not meant to be an interpretation of Kant, but I use the label "Kantian" following Bradley for this school of thought about intrinsic value.) The Moorean conception of intrinsic value holds, generally speaking, that intrinsic value attaches to states of affairs; that states are objectively intrinsically valuable solely in virtue of their intrinsic (non-extrinsic) properties; and that because intrinsically valuable states are good, we have reason to promote them.

I will argue that for the purposes of environmental ethics, the intrinsic value of biodiversity should be interpreted primarily in the weak sense. Weak intrinsic value differs from Kantian intrinsic value because it can apply to things that are not person-like, and because it does not generate moral standing or (direct) moral duties. Weak intrinsic value differs from Moorean intrinsic value because it has fewer ontological constraints: it need not arise only from intrinsic properties and it can apply to things other than states of affairs. Weak intrinsic value is the most lightweight of these conceptions of intrinsic value. I will argue that biodiversity plausibly has intrinsic value in the weak sense, although it may not have intrinsic value in the Kantian or Moorean sense. Note that my main objective is not to argue against Kantian or Moorean intrinsic value in general, but rather to motivate weak intrinsic value as the most plausible conception of biodiversity's value.

[2] One equivalently finds the phrases "moral status," or as an adjective, "(directly) morally considerable."

The term "intrinsic value" has been used in a variety of senses other than the ones already discussed. It should be noted that "intrinsic value" as used in this paper is unrelated to the intrinsic-extrinsic property distinction. In contrast with the Moorean conception, I remain neutral about whether non-instrumental value is supported only by an entity's intrinsic properties. See McShane (2017) for a more detailed discussion of the large variety of senses of "intrinsic value."

3. WHY THINK BIODIVERSITY HAS INTRINSIC VALUE?

This section will motivate the concerns over the intrinsic value of biodiversity and develop the positive part of the cumulative case for intrinsic value.

There are two major candidate forms of value which are often thought to apply to biodiversity, instrumental and intrinsic. However, instrumental valuation of biodiversity has proven tricky. Environmentalists disagree about the extent to which empirical evidence supports the view that biodiversity losses will negatively affect humans or ecosystem processes. Many species have no direct instrumental benefits to humans, because they are inedible, remote, very rare, unknown to science, etc. This creates difficulties with justifying the attribution of instrumental value to biodiversity—unless diversity per se is required for the functioning of ecosystems, a common assumption with a contentious relation to empirical evidence.[3]

Note that my claims are about instrumental value to humans. Something may also have instrumental value to nonhumans. However, most discussions of biodiversity conservation are

[3] There is a large ecological research program investigating the extent to which biodiversity drives important ecosystem functions. For critical overviews of this research, see McCann (2000), Jax (2010), deLaplante and Picasso (2011), Newman et al. (2017), and Morrow (2023).

focused on potential values from the human perspective. For reasons of focus, this paper follows suit, so discussions of "instrumental value" should be read as "instrumental value to/for humans."[4]

A common viewpoint that I frequently encounter in conversation is that ecosystems are like delicate webs that rely on each of their components for stability. If this is correct, then biodiversity has instrumental value: it is needed to protect ecosystem stability, which in turn is good for humans who rely on ecosystem services. However, the "balance of nature" viewpoint presupposed by this argument was challenged by 20th-century ecological research and has been replaced by far more complex views about how communities are assembled and regulated (Egerton 1973; Cooper 2001). We now understand, for example, that many species are functionally redundant, and therefore interchangeable within an ecosystem. Further, ecosystems do not necessarily have fixed developmental endpoints; they can take multiple pathways of succession depending upon factors such as colonization patterns, external perturbations, species' plasticity, and stochasticity (Cattelino et al. 1979; Norden et al. 2015). Ecosystems may also shift to a new *regime* (e.g., from a prairie to a forest) rather than collapsing entirely when key species are removed (Beisner et al. 2003; Folke et al. 2004). From the philosophical side, there are also good reasons to believe that species do not have normative or proper functions within ecosystems; ecosystems are disanalogous to organisms in this respect (Lean 2020). These phenomena call into question the popular assumption that ecosystems are delicately-balanced, stable entities that "need" a precise biodiversity composition to continue functioning.

In short, although there are many instrumentally important species, it is difficult to justify the assertion that earth's species richness is important for either human wellbeing or ecosystem functioning. Other works have made this argument in more detail (Newman et al. 2017; Morrow

[4] But note that intrinsic value contrasts with all forms of instrumental value, including instrumental values to nonhumans.

2023). Still, many environmentalists do think that biodiversity has significant instrumental value (see Howard et al. 2018). Even those who are more optimistic about instrumental value face a problem. It is an empirical question whether biodiversity is causally relevant to important ecosystem processes or services. Since ecological research about the relationships between biodiversity and ecosystem functions is ongoing, relevant findings are subject to change in the future, either for the better or for the worse. It is risky to stake the entire value of biodiversity on unknown future findings of ecological science.

If biodiversity is not instrumentally valuable to humans, then anyone who does not endorse its intrinsic value seems forced to conclude that biodiversity has no value at all (at least for humans), and therefore likely should not be a target of conservation efforts. This will be a startling conclusion for many. This paper shows that we should not hastily abandon the idea that biodiversity is valuable, since it is plausibly intrinsically valuable, regardless of its instrumental value.

In what follows I will sketch some positive considerations in favor of recognizing the intrinsic value of biodiversity. Recall that this paper gives a cumulative case for intrinsic value. So, I will sketch some positive reasons, both "direct" and "indirect," for endorsing intrinsic value. Then I will show that a reasonable interpretation of intrinsic value avoids common objections. None of the arguments discussed here can be considered individually conclusive. However, taken together, they shift the burden of proof onto philosophers who would deny biodiversity's intrinsic value.

First, we can make out a number of properties that seem to be related to intrinsic value and may "directly" indicate that biodiversity is (or should be considered) intrinsically valuable. These include aesthetic value, uniqueness, intellectual interest, complexity, irreplaceability, and connection to cultural heritage. It is clear that biodiversity has most or all of these properties. Also important is the fact that declines in the variety of species on earth may be difficult to counteract on timescales relevant to human interests. The variety of life on earth seems to many people inspiring, complex,

interesting, and perspective-inducing, regardless of its usefulness. This suggests that intrinsic value should be attributed to biodiversity.

Second, we may argue "indirectly" for the intrinsic value of biodiversity as follows.

1. Many people, including lay persons and conservation biologists, sincerely believe that biodiversity has intrinsic value.[5]
2. When many people sincerely believe that something has intrinsic value, by Principle X, we should collectively conclude (or act as if) that thing has intrinsic value.
3. So, we should collectively conclude (or act as if) biodiversity has intrinsic value.

Principle X will appeal to considerations for thinking that the intrinsic valuation of something is reasonable—in order to rule out cases of perverse valuation. Some candidates will be developed just below.

The force of this argument might initially seem to vary depending on your views about the nature of value, including how objectivist you lean (on the objectivism-subjectivism distinction: Hargrove 1992; Newman et al. 2017, chap. 1; Batavia and Nelson 2017). If you endorse a strong form of subjectivism, on which something has value just when it is valued (e.g., Callicott 2017), the argument might initially seem to go through straightforwardly. However, the argument advises us to collectively act on biodiversity's intrinsic value. I take it for granted that some people's held values are not worth acting on, so we still need to know why this particular value is suitable for collective action. On more objectivist views about the nature of value, people may be mistaken to suppose that biodiversity is intrinsically valuable. From this perspective, the fact that people believe something has value is merely a hint that it might have such value. Recall that the function of this argument is

[55] Support for this premise comes from the author's personal experience; from survey data on conservation biologists (Linquist, n.d.); and from the inclusion of intrinsic value in major international reports and statements on biodiversity (e.g., United Nations 1992; Díaz et al. 2019).

to shift the burden of proof as part of a cumulative case for intrinsic value. If many reasonable people hold the view that biodiversity is intrinsically valuable, and if this view is not demonstrably harmful or inappropriate, then I argue on grounds of moral risk and procedural justice that the burden of proof is on those who think the view should be rejected.

So, regardless of the nature of value, the above argument hinges on whether attributing intrinsic value to biodiversity is harmful, inappropriate or morally objectionable. If the intrinsic valuation of biodiversity is objectionable, then we should not collectively act on it or we should presume such valuation is mistaken. Is the intrinsic valuation of biodiversity objectionable? Attributing value to life's variety evidences care for nature, compassion, concern for our environment, interest in biology, and (I would claim) good aesthetic taste. For a person to hold such values seems praiseworthy rather than blameworthy. And if some values held by many people are praiseworthy, then (*ceteris paribus*) we should collectively adopt and act on those values. This is one potential Principle X.

A second reason is supplied by consideration of moral risk. If an entity is of value and we treat it as if it is not, we risk falling into serious moral error. In contrast, if an entity is not of value and we treat it as if it is, we may face practical hardships, but this may not constitute a moral error. In truly ambiguous cases, it is less morally risky to ascribe something value than not to. To illustrate, assuming that potentially sentient nonhumans have Kantian intrinsic value is less morally risky than assuming that they do not, because regarding nonhumans "too kindly" is not a moral error, while devaluing entities with moral standing is a serious moral error. The relevant principle would advise us to err on the side of overvaluation rather than undervaluation when the latter has the greater potential for moral error. This consideration of moral caution supplies another potential Principle X for the above argument summary.

Granted, overvaluation gives rise to other risks, such as the risk of unneeded financial and practical hardships. Thus, if biodiversity should not be considered valuable but we act as if it is, we will suffer the financial costs of unneeded biodiversity conservation efforts. It may seem that we have to choose between moral risk and financial risk. There are a couple things to note in response.

First, this perspective regards valued parts of nature as imposing costly obligations on humans. But this is not the only way to view our relationship to nature. To illustrate, virtue ethical perspectives may see certain attitudes of humans towards nature as partly constitutive of human flourishing. On this type of view, protecting nature arises from environmental pro-attitudes that partly constitute our own wellbeing. Having a protective stance towards nature may be inherently beneficial, even if there are still concerns about which protective actions to prioritize. In short, there are substantive open questions about how to frame and assess "costs" of protecting nature.

Second, intrinsically valuing biodiversity is not inconsistent with considering practical and financial costs of conservation efforts. Decision-making about conservation should consider both the value(s) of parts of nature and the positive and negative effects on human communities of specific proposals. Thus, endorsing intrinsic value does not result in sidelining practical concerns, though we do accept the possibility that sometimes practical losses will be accepted in exchange for the benefit of saving a highly valued part of nature. In contrast, if we reject intrinsic value then we are unable to consider biodiversity directly in decision-making, since we are limited to considering it only insofar as it affects practical concerns of humans. In this respect the positions about intrinsic value are not symmetric, since only one asks us to exclude a potential value from consideration. This observation supplies an additional argument for a presumption in favor of intrinsic value.

In environmental decision-making, it is standard to include consideration of the views of many stakeholders whose held values are disputed or at least not universally shared. This includes, for instance, values arising from traditional beliefs of indigenous communities, values arising from

Western academic moral philosophy, the symbolic significance of natural entities for particular nations, financial interests of individuals, corporations and nations, and so forth. There are complex issues about whose interests to include and prioritize in decision-making, particularly when for instance some value systems contribute to human social injustice. Prima facie, though, if many people intrinsically value biodiversity, it would be procedurally unjust to exclude this value from decision-making conversations—while continuing to include many other values of the kinds just listed—in the absence of a strong moral objection to valuing biodiversity. Put differently, there needs to be a strong moral argument for singling out particular held values for elimination from consideration in collective decision-making. This procedural consideration is another Principle X candidate.

In Section 5, I consider various objections to the claim that biodiversity is intrinsically valuable. I argue that these objections either are not convincing or do not apply to weak intrinsic value. In view of the procedural consideration just discussed, the burden of proof falls on those who think we should reject intrinsic value to show why the attribution of intrinsic value to biodiversity is objectionable. Moreover, the attribution of intrinsic value to biodiversity should be shown to be more objectionable, or more clearly objectionable, than other contestable values that are often considered in the course of environmental decision-making. Otherwise, we risk holding different stakeholders' held values to different standards of acceptability.

In contrast to my view, a number of authors in environmental philosophy have expressed serious reservations about the concept of intrinsic value or about its application to biodiversity (Norton 1984; Oksanen 1997; Odenbaugh 2003; Maguire and Justus 2008; Justus et al. 2009; Baard 2020; Linquist et al. 2020), with a few of these even arguing that intrinsic value has no place in conservation decision-making. Those who reject intrinsic value have raised a variety of objections. Section 5 will argue that these objections either fail, or fail to make contact with weak intrinsic value.

So, there are a variety of available arguments for treating biodiversity as if it is intrinsically valuable, and the major objections are not successful. This constitutes the cumulative argument for at least presumptively accepting biodiversity's intrinsic value.

4. KINDS OF INTRINSIC VALUE

In this section, I distinguish between stronger and weak forms of intrinsic value. I argue that only weak intrinsic value clearly applies to biodiversity.

Recall that something has Kantian intrinsic value just when it has moral standing, i.e., when it is the sort of thing we have duties towards, or whose interests we must consider. Something has Moorean intrinsic value just when that value is objective and stems from its intrinsic (non-extrinsic) properties. Weak intrinsic value is the value something has when it is valuable or valued for non-instrumental reasons, regardless of moral standing.[6] These types of intrinsic value, along with instrumental value, are not mutually exclusive and multiple forms of value may apply to a given entity (Table 1).

Importantly, moral standing and intrinsic value (including in the Kantian sense) are not equivalent, and it is an error to treat them as equivalent (Samuelsson 2010). To have moral standing is roughly to have duty-generating interests, while to have intrinsic value is roughly to have value for one's own sake. However, it is a coherent position that moral standing is a necessary and sufficient condition for having intrinsic value. Equivalently, this is the position that Kantian intrinsic value is the only kind of intrinsic value. Some philosophers have explicitly treated intrinsic value as coextensive with moral standing (e.g., Vucetich et al. 2015; Garcia and Newman 2016). When

[6] I hedge between "valuable or valued" in order to remain neutral between views on which value is more objective or subjective. I often speak of biodiversity as "having" intrinsic value for convenience, but my wording is not meant to privilege an objectivist interpretation.

authors have not clearly distinguished the concepts of intrinsic value and moral standing (e.g., Justus et al. 2009; Newman et al. 2017, 205ff), I interpret them as endorsing the latter position.

Table 1. Examples of items that may have three types of value discussed in this paper. Moorean intrinsic value is omitted because it applies only to states of affairs.

Intrinsic Value		Instrumental Value (To Humans)
Kantian Intrinsic Value	Weak Intrinsic Value	
Humans	Humans	Humans[b]
Other Sentient Animals	Other Sentient Animals	Other Sentient Animals (Some)
Ecosystems[a]	Ecosystems	Ecosystems
	Biodiversity	*Biodiversity*[a]
	Artworks	Ballpoint Pens

[a]*Contested*: These entities are sometimes thought to have this type of value, but this paper argues otherwise.
[b]For example, a cashier has instrumental value to me when they help me check out my groceries. However, it would be inappropriate to think of a human's value as only or primarily instrumental.

Consider now whether biodiversity has Kantian intrinsic value. This is the conception of intrinsic value considered by e.g. Newman et al. (2017, chap. 9) and Baard (2020), who argue that intrinsic value fails to apply to ecological wholes.

Few philosophers have argued in favor of attributing moral standing to biodiversity, but I will briefly review the reasons that make this implausible. Since biodiversity is most commonly thought of as a property of ecosystems,[7] consider the view that ecosystems have moral standing (i.e., ecoholism), and what implications this would have for biodiversity. To illustrate, a recent argument for ecoholism is provided by Roberta Millstein in her reconstruction of Aldo Leopold's land ethic (Millstein 2020). Briefly, she argues that if we intrinsically value (have duties towards) human

[7] Though biological diversity exists at many scales, from genetic diversity to landscape diversity.

communities, then consistency demands that we also intrinsically value land communities.[8] On the Leopold-Millstein view, we share similar relationships of duty-generating interdependency with members of our land community as we do with members of a human community. So, on this view, land communities are also intrinsically valuable in the Kantian sense.

I don't accept Leopoldian ecoholism[9], but let us assume this position for the sake of discussion. Does Leopoldian ecoholism support the idea that biodiversity has moral standing? A problem arises here from the ontological difference between communities and biodiversity. Ecological communities are collections of concrete objects—you can often draw approximate boundaries around their parts in the world. In contrast, "biodiversity" refers to the variety of life in an area, so it is better understood as a property, or multiple related properties. Biodiversity is not analogous to a human community; rather, it is ontologically similar to a complex property of a human community, such as its ethnic diversity or age structure. Even if we accept that one has moral duties towards a community, it does not follow that one has moral duties towards a property of a community.

If you are a Leopoldian ecoholist, then you might still think that we have a defeasible duty to protect the diversity within an ecosystem for the sake of the ecosystem or its health. Unfortunately, this position only goes so far in justifying biodiversity conservation. As argued previously, one issue is that many ecosystem components are functionally redundant. As a result, ecosystems can survive the removal or replacement of many of their components. Thus, a duty to protect ecosystems cannot generate an obligation to protect global biodiversity levels.

[8] "Land community" is Leopold's term for something in between the contemporary concept of a community and a token ecosystem. See Millstein (2018).

[9] See Shrader-Frechette (1996) for some representative criticisms of ecoholism.

A further issue is whether ecoholism gets off the ground at all. A common view, which I tentatively endorse, is that entities must be sentient to have moral standing (e.g., Singer 1974).[10] On this view, ecosystems do not have moral standing (contrary to the Leopold-Millstein view) and are not intrinsically valuable in the Kantian sense, let alone biodiversity. In sum, it is very implausible that biodiversity has Kantian intrinsic value.

To be clear, this is not a reason to reject Kantian intrinsic value in general. However, the paper has previously described a cumulative case for a presumption of biodiversity's intrinsic value. This is likely best captured by a distinct conception of intrinsic value.

Some environmental authors only consider moral standing and conclude that intrinsic value defenses of biodiversity are no good, but this overlooks weak intrinsic value. Other philosophers have treated intrinsic value as the value something has when it is valuable or valued for its own sake (e.g., McShane 2007; Callicott 2017; Samuelsson 2022). Sometimes intrinsic value of this sort is referred to as "end value," which emphasizes its contrast with use or instrumental value (Persson 2016; McShane 2017). This conception does not appeal to moral standing at all. Thus, on this weak conception of intrinsic value, it makes sense to attribute intrinsic value not just to sentient individuals but also to certain non-sentient individuals, works of art, ecological wholes, and even properties such as beauty and variety (*pace* Faith 2016). I have previously sketched some reasons for thinking that intrinsic value of this sort applies to biodiversity.

Briefly consider Moorean intrinsic value now. Recall that Moorean intrinsic value is value that is objective and pertains to the goodness of a state of affairs (speaking generally; I have not attempted an interpretation of Moore's exact views). One might fruitfully apply Moorean thought

[10] We'll want to complicate this criterion in order to include various problem cases such as human infants or temporarily unconscious persons. I'm assuming that the relevant amendments will not result in ecosystems gaining moral standing.

experiments to generate additional arguments for biodiversity's intrinsic value—all else being equal, would a planet with more biodiversity be better than a planet with much less biodiversity? Moorean intrinsic value does not apply to biodiversity as such, since diversity is not a state of affairs. However, one might try to capture the value of biodiversity in terms of the value of (more) biodiverse states of affairs. This has not been a common move in the literature, however, perhaps because some philosophers have reservations about completely objectivist conceptions of intrinsic value or other features of Moorean metaphysics. A major advantage of weak intrinsic value is that it is metaphysically neutral—attributing non-instrumental value to something is consistent with a range of views about the nature and subject-dependence of values. As a result, weak intrinsic value is able to capture the intrinsic value attributed to biodiversity by individuals who are subjectivists or who are undecided about the nature of value. In addition, while my paper only argues for the position that biodiversity has weak intrinsic value, this position does not exclude the possibility that its value can also be captured in a Moorean way or in additional ways.

Part of the reason for the persistent disagreements about intrinsic value is a failure to recognize the difference between the various conceptions of intrinsic value. As noted, objections to intrinsic value—including the problems I have just rehearsed—often target features of Kantian or Moorean intrinsic value. However, some philosophers who favor intrinsic value only have a weak sense in mind. In addition, lay persons may not have any particular philosophical theory of intrinsic value in mind when they ascribe intrinsic value to biodiversity. My weak sense of intrinsic value is beneficial because it does not attribute any substantive metaphysical positions to people whose exact views are unknown (e.g., it applies equally to objectivists, subjectivists, and those who have no stance on this issue).

5. OBJECTIONS TO INTRINSIC VALUE

I have argued that biodiversity has weak intrinsic value, though likely not Kantian or Moorean intrinsic value (although these conceptions of intrinsic value need not be mutually exclusive). I also suggested that weak intrinsic value avoids many of the existing objections, which sometimes target specific strong forms of intrinsic value. So, the next step is to summarize and respond to these objections. Some of them are objections to specific features of either Moorean or Kantian intrinsic value, and therefore fail to rule out that biodiversity has intrinsic value in a weak sense. Other objections fail for different reasons.

Again, this section contributes to my cumulative case for intrinsic value in the following way. I previously argued that the burden of proof is on those who reject intrinsic value. If major objections to the intrinsic value of biodiversity fail, then any plausible positive reasons in favor of intrinsic value, including those sketched previously, should sway our view in that direction.

Objection Cluster 1: Intrinsic value does not apply to biodiversity

Some authors have argued that biodiversity cannot be intrinsically valuable (e.g., Oksanen 1997) or that the concept of intrinsic value as applied to nature in general is problematic (e.g., Norton 1984). These worries often result from assumptions about the nature of intrinsic value, e.g. that it must be objective value, that it relies upon moral standing, or that it is a fundamentally unclear concept. At the end of this subsection I will also consider an argument derived from a subjectivist view of value. Alternatively, this type of concern may arise from worries about the biodiversity concept—e.g., perhaps "biodiversity" is too unclear to be a major locus of biological value (Santana 2014).

First, as stated previously, for the purpose of this project we may take "biodiversity" to mean roughly earth's species richness. There are various problems about how to individuate and quantify

the number of species in a given place, but I take it this concept is at least qualitatively clear enough that we can investigate whether some form of value applies to it. Moreover, attributing intrinsic value to biodiversity does not imply that biodiversity is the most important target of conservation efforts, only that it should be a consideration. This paper has also given a definition of weak intrinsic value, which should preclude the suggestion that it is a completely nebulous concept (more on this below).

Second, I have shown that my interpretation of weak intrinsic value presupposes no position about the nature of value, does not require that its bearers have any particular ontological nature, and does not require that its bearers have moral standing.

Some authors—both supporters and detractors of intrinsic value—explicitly take intrinsic value to mean objective intrinsic value (e.g., Rolston 1982; Maclaurin and Sterelny 2008, 150; Justus et al. 2009). This position leaves intrinsic value open to objections from those who reject objectivism. For example, authors have worried about our epistemic access to mind-independent facts about the values of nature (Batavia and Nelson 2017). This helps to explain the polarization, since those who reject objective values must immediately reject objective intrinsic value. While the cited authors may not adopt Moore's exact view of intrinsic value, they clearly are making a Moorean assumption that intrinsic value is objective in roughly the sense of subject-independence. I have argued that weak intrinsic value is neutral about objectivism. Therefore, it is not subject to this line of objection.

An additional issue is whether intrinsic value can apply to biodiversity *qua* property. Here is a particularly clear statement of this objection: "intrinsic value typically is assigned to individual objects or elements of biodiversity, but appears not to be a value attributable to "variety" per se" (Faith 2016, 70; for a similar assessment see Maier 2012, 28). I agree with the cited authors that intrinsic value in the Kantian sense does not apply to biodiversity. However, this shouldn't be taken

to show that biodiversity lacks intrinsic value. I previously argued that weak intrinsic value can apply to properties, and that it does apply to biodiversity per se.

Finally, Donald Maier supplies a distinct argument against biodiversity's value that comes from a strong subjectivist position about value, on which things have value just when actual humans value them (Maier 2012, 329). The argument observes that biodiversity loss is thought to be problematic in part due to its effect on future generations of humans. But Maier argues that human values are shaped by the conditions we experience during childhood. If future generations of humans grow up in a world with much less biodiversity, Maier argues that they will develop values accordingly.

> Suppose that the behavior of currently respiring humans is part of the causal explanation for diminishing biodiversity – whether that diminishing effect is unintentional or understood as collateral damage of otherwise valuable projects. Then the values embodied in pursuing those projects – as well as the goods that they produce – are likely to be transmitted into the future together with the altered state of biodiversity. Inheriting those values and lacking direct contact with a world that is different either in its state of biodiversity or in human regard for biodiversity, future persons will lack the basis, which some of us now alive still take for granted, for developing different values with respect to biodiversity or nature generally. (Maier 2012, 330)

Maier gives some developmental reasons supporting this argument, reasoning that might be responded to directly. One issue is to what extent humans do accept the environments that they grow up in. Another issue is that if values are subjective in the described manner, then the potential values of future humans do not exist, so it is unclear how they can factor into our present decision-

making. I will focus on a structural problem with this argument: it can support any conclusion with respect to biodiversity's value. If current and future generations prioritize protecting nature and biodiversity, perhaps at the expense of other projects, and if future humans inherit a world with a lot of biodiversity, then based on Maier's reasoning they would come to value such a biodiversity-rich world. So, this argument cannot tell us whether future humans will value biodiversity. The argument at best shows that future humans will come to accept whatever choices we make now about environmental management. So, while a lot more could be said about the issue of future humans, this argument does not work as an objection to the intrinsic valuation of biodiversity by presently alive humans.

Objection Cluster 2: Arguments from intrinsic value are ineffective

Another type of objection is that, regardless whether biodiversity has intrinsic value, it would be imprudent or ineffective for experts to endorse this claim. Some illustrative concerns are that scientists could lose credibility with the public if they endorse intrinsic value (Odenbaugh 2003); that we lack a single clear definition of intrinsic value as applied to nature (Justus et al. 2009); and that intrinsic value is difficult to quantify and weigh against instrumental forms of value (Justus et al. 2009).

These concerns have reasonable motivations but are not convincing. For one thing, some members of the general public do believe that nature has intrinsic value. There is also a danger of lost credibility, not to mention procedural injustice, if scholars neglect to consider the public's full range of values.

Philosophers have indeed proposed divergent accounts of intrinsic value, and it is true that some works utilizing this concept do not supply a clear definition. This paper offers a solution to this issue. Works on biodiversity which apply the concept of intrinsic value (including, e.g.,

surveys of the public's values, economic models, summary documents produced by governing bodies, and works in environmental ethics) should adopt a minimal definition similar to the one utilized in this paper—i.e., intrinsic value is non-instrumental value, or direct valuation of an entity independent of its instrumental uses or effects. This is a clear and not overly demanding definition of the concept that requires no controversial metaethical commitments and will capture a range of perspectives falling under the umbrella of intrinsic valuation.

Regarding the final concern cited above, I grant that it might be complex to integrate intrinsic value into decision-making frameworks. I have no general solutions for environmental decision-making procedures, but eliminating values for the purpose of simplifying decision-making seems to me like eliminating voters for the purpose of simplifying vote counting. Both actions run counter to the spirit of the activity.

6. HOW FAR DO INTRINSIC VALUE DEFENSES GET US?

A remaining question is, if we accept intrinsic value, to what extent does this justify biodiversity protection? Put differently, what are the normative implications of accepting biodiversity's intrinsic value?

The connection between values and reasons for acting is a general problem in moral philosophy that cannot be resolved here. Addressing this problem may require taking a stance about the nature of value, which would be in tension with this paper's aim to provide a neutral account of intrinsic value. However, I will include (but not necessarily endorse) two suggestions that may be helpful to some readers. One possibility is to adopt a reason-implying (Samuelsson 2010) or buck-passing (Stabell 2022) account of value. The conventional view about value is that if an entity has value, that value then gives us reason to have pro-attitudes towards it. In contrast, a buck-passing view says that value arises from whatever features of an entity give us reason to have pro-attitudes

(Scanlon 1998; Suikkanen 2009). In short, buck-passing accounts reverse the explanatory direction, such that reasons give rise to values. A view of this type about biodiversity might say that its intrinsic value arises from its other features which already give us reason to protect it. On this view if biodiversity has intrinsic value, we are already committed to reasons to protect it. Buck-passing may not be compatible with all interpretations of value, but may be a useful option for some environmental theorists.

Alternatively, there is a plausible principle along the following lines: *Ceteris paribus*, we should try to protect things that are intrinsically valued. Put differently, if enough people have a strong preference for protecting something, then we should treat it as a candidate for protection on that basis (Stabell 2019 provides an extended argument for this conditional). So, *ceteris paribus*, we should try to protect biodiversity given that it is intrinsically valued by many people.

The sticking point is whether we can justify drastic and costly measures to protect biodiversity, rather than other potential uses of resources. The intrinsic valuation of something does not justify expending arbitrarily large amounts of resources to save it, nor does it mean that the thing's value is arbitrarily or infinitely high (*pace* McCauley 2006). Contrary to what is sometimes suggested (e.g., Santana 2017), it is not only possible but also vital to recognize differing degrees of value among intrinsically valued things. To illustrate, if an art museum catches fire, we should save the humans inside before trying to save the art. We can also distinguish between more and less valuable pieces of art based on considerations including their rarity, cultural importance, expert evaluations of the skill of the artist, etc. So, just because something is weakly intrinsically valuable does not mean that we must try to save it at any cost, or that it must be valued equally to everything else with intrinsic value.

Intrinsic value does not provide (or result from) a reason to save biodiversity at any cost. In my view this is a feature rather than a bug, since we should not take saving biodiversity to be an

overriding goal. It is instead one goal among many—protecting the climate, protecting human quality of life, protecting particular ecosystems, protecting local economies, not placing undue burdens on countries and individuals with fewer resources—and hard decisions have to be made about how to set priorities where these goals conflict. A similar point has been made about aesthetic value.[11] For example, Elliott Sober writes: "it is the material comforts of civilization that make possible a serious concern for both aesthetic and environmental values…. Such values are not frivolous, but they can become important to us only after certain fundamental human needs are satisfied" (Sober 1986, 191). The weak conception of intrinsic value does not attribute infinite value to its bearers, so it allows that important material human needs can take priority over saving intrinsically valued entities.

A final point is that while intrinsic valuation presumably helps to motivate conservation efforts for some people, intrinsic value ought not to be the sole or primary basis for setting management priorities or for designing specific interventions. For instance, intrinsic valuation might serve to motivate concern about biodiversity loss. But decisions about reserve design should also consider instrumental values of particular ecosystems. Expecting intrinsic valuation to do all of our conservation decision-making for us is asking too much of it. No one expects the mere attribution of intrinsic value to humans to solve most dilemmas in interpersonal ethics; similarly, the attribution of intrinsic value to biodiversity cannot be expected to resolve our environmental dilemmas. Nevertheless, appeals to a consensus that biodiversity is intrinsically valuable might go a long way towards justifying the view that we ought to devote some serious effort to reducing the elevated extinction rate.

[11] Incidentally, aesthetic value may count as a form of weak intrinsic value on my view.

7. CONCLUSION

Weak intrinsic value is an undemanding and philosophically unobjectionable concept. This is advantageous since resolving problems about whether biodiversity ought to be conserved is more urgent than resolving the nature of value. Weak intrinsic value also occupies a happy medium between empirically problematic views on which biodiversity is valuable only to the extent that it supports ecosystem services, and morally problematic views on which biodiversity has moral standing that can override important human interests. Environmental philosophers can stop worrying that talk of intrinsic value involves "questionable ontological commitments" (Norton 1984, 148). Instead, we can present a united view that biodiversity is among the intrinsically valued features of nature.

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