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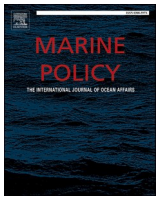

Full length article

Advancing justice in marine biodiversity conservation

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ABSTRACT

Drawing on contemporary political theory, this paper sets out several key normative standards that can be applied to the conservation of marine biodiversity. Such standards ensure that progress in mitigating the biodiversity crisis is achieved fairly and inclusively. The paper suggests that the costs of heading off the marine biodiversity crisis must be allocated in line with contribution to the problem, and ability to pay, and that there can be no justification for leaving the most disadvantaged to bear significant conservation costs. It also clarifies what kinds of activities can count as biodiversity conservation policies, in order to keep the environmental consequences of unsustainable consumption in the global North firmly in view. Finally, it argues that decision-making about marine biodiversity should be opened up much more widely, at all stages of the policy-making process, to ensure that all of those affected by conservation policies have a fair chance to be involved in formulating policies and priorities.

1. Introduction

Responding effectively to the biodiversity crisis – both at sea and elsewhere - will require contributions from a number of academic disciplines. Scientists must enhance our understanding of the nature and drivers of biodiversity loss, and its possible consequences for ecosystems. Economists and sociologists must help analyse its likely impacts on our economies and our societies, as well as the impacts of various policy measures taken in response to the crisis. Political scientists must enhance our understanding of citizens' likely responses to specific conservation policies, and the power dynamics that can lead to more or less effective outcomes. Political theorists, for their part, can help us to understand what is morally at stake in the biodiversity crisis. For instance, by reflecting philosophically on the interests shared by all human beings, they can help us to understand the nature of the threats that marine biodiversity loss poses to us. Consider a parallel. Debates on climate justice have benefited from the work of political theorists, who have clarified which human rights are threatened by climatic change, how it jeopardises values including equality, autonomy, and freedom, and which ethical choices have to be made when policymakers formulate response measures [19]. In a similar way, political theorists can make important contributions to our understanding of the problems posed by the biodiversity crisis [4], including by clarifying which human interests it threatens [38]. At the same time, biodiversity loss has significant implications for non-human animals, which political theorists can also help us to understand. For some marine animals, biodiversity loss might lead to starvation and death, while for others it might lead to difficulty in finding mates, or in feeding offspring. Political theorists can clarify how harms to animals should be considered within our moral and political frameworks, alongside the interests of humans [43].

This paper highlights three specific contributions that political theory can make to discussions of marine conservation. First, political theory can identify and clarify principles of distributive justice, capable of guiding the allocation of conservation burdens. Second, it can contribute to debates on the appropriate site and scale of conservation policy. Finally, it can help us think through who ought to be included in decision-making about marine conservation.

2. Two principles for just burden-sharing

Article 7 of the Agreement on Biodiversity Beyond National Jurisdiction emphasises the importance of fair burden-sharing within marine conservation. Relevant burdens might take a variety of forms. For instance, the activities that generate threats to marine biodiversity might themselves involve outlays of time and money, in order to generate any benefits. But our focus here will be on the burdens associated with conservation activities. Sharing these conservation burdens

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fairly is important in two ways. First, it is instrumentally important: if people believe that conservation burdens are not shared fairly, this might undermine their compliance with conservation policies [16]. Second, it is intrinsically important: it can be unfair to require people to fix problems that others have caused, or which they do not have the capacity to solve. But all of this raises the question: exactly what are the appropriate principles for just burden-sharing? Answering that question requires an account of 'remedial' responsibility, which aims to identify the actors who ought to bear the burden of repairing some harm or damage [35]. Whether such an account is respected in practice or not, it can identify standards by which schemes to conserve marine biodiversity can be morally evaluated [47]. In this section, I will set out two key principles capable of guiding the allocation of conservation burdens in the ocean setting.

The first principle is the *contribution to the problem principle* or CPP. In essence, the principle operates along the lines of 'you broke it, you fix it': it connects burdens, that is, to the moral responsibility that actors bear for bringing certain harms into existence. Article 7 of the BBNJ Agreement suggests that what it calls the 'polluter pays principle' is key – but the wider term 'contribution to the problem principle' is preferable, because pollution is just one of the ways in which humans can damage the natural environment. The principle taps into the idea that humans are moral agents, capable of making choices, and that – at least when certain conditions are in place – it makes moral sense to hold them responsible for those choices [35]. More specifically, it appears to make moral sense to hold people responsible for outcomes *when* they understand (or ought to understand) the possible adverse consequences of their actions, *and* could act otherwise without facing unreasonable costs [9]. Where those conditions are met, there are grounds for placing greater burdens on the shoulders of those who generate threats to marine biodiversity. For instance, if the reason a particularly diverse ocean ecosystem is threatened is that a shipping company has knowingly and avoidably allowed bunker fuel to leak into the water column, the CPP would suggest that this company ought to be held liable for any clean-up costs. If an ecosystem is endangered because of destructive fishing practices, it would suggest that fishing operators should bear the burden of protecting or restoring that ecosystem. The CPP can in principle be applied to a whole variety of actors, from individuals through to corporations and states, provided those actors possess decision-making mechanisms which make it appropriate to treat them as more or less unified moral agents ([49]: 3).

This is not to say, however, that applying the CPP will always be straightforward. Many adverse human impacts on biodiversity are diffuse and long-term. Indeed the majority of marine pollution arises from land-based sources, in ways that may not be easy to track [52]. In many cases there will be a variety of actors who *might* have contributed to harms, but their actual contributions can be epistemically difficult to disentangle. One suggestion here is that we can be considered to act wrongly even when our actions have only a small chance of contributing to serious harms: after all, in such circumstances we *might* end up being the one to make a difference. [7] plausibly suggest that in such opaque cases all actors who behave in the relevant way should bear some responsibility for rectifying the situation, and that the higher the chance any particular actor made a difference, the higher the share of burdens they should accept. Such arguments respond to the fact that it may be difficult to isolate, and then hold us responsible for, the causal contributions we make to negative impacts on biodiversity.

Quite aside from this, there are many kinds of case that the CPP is not equipped to handle at all. First, policymakers will sometimes confront cases where the reason conservation is required has nothing to do with human action. If the cause of some threat to marine biodiversity is not anthropogenic, the CPP can no longer offer guidance. Second, in some cases damage may have been caused by people who are no longer alive. But since they have left the scene, policymakers cannot make them pay the price of putting it right. Third, there will be cases where the people who have caused damage to marine environments are still with us, but nevertheless should not be held responsible for remedying that damage. For instance, it might be that they were excusably ignorant of the likely consequences of their actions. In general, we do not hold people morally responsible for harms they did not know they were causing, unless we are confident that they really *ought* to have known what they were doing. In some cases ignorance is negligent or even wilful, and people can rightly be held to account for it [53]. But in other cases it is innocent, and when this is true it seems wrong to force people to make amends for harms they did not know they were bringing about [36]. Fourth, there will be cases where people have no reasonable alternative to acting in the way they do. People who are dependent for their survival on environmentally destructive activities should not normally be asked to desist from them until alternatives are offered, and they cannot fairly be asked to bear the costs of restoration and repair if doing so would throw them into serious poverty [1]. To the contrary, a concern for conservation will probably be best advanced by providing them with the resources to pursue alternative forms of livelihood as a matter of urgency.

All of this suggests that the CPP is a powerful principle, but one that leaves significant gaps. How should those gaps be filled? In cases where the CPP fails, burdens should be allocated in line with the *ability to pay principle*, or APP. According to this principle, people should bear burdens in line with their capacity to do so, so that the more advantaged bear much greater burdens than the less well off [44]. Plausibly, the APP would incorporate a threshold, so that those in serious poverty would not be asked to bear any burdens at all. That is, it should embrace what Moellendorf [37] calls the anti-poverty principle as a constraint on any just allocation of burdens. Over this poverty threshold, those with higher levels of well-being or resources should be asked to bear greater burdens than those with lower levels. In practice, this will plausibly mean exempting the world's poor from bearing any conservation burdens at all, and it would place much larger burdens on the shoulders of the most advantaged globally.

The suggestion, therefore, is that policymakers should first seek to identify whether actors knowingly and avoidably caused damage to marine biodiversity. Where actors can be identified, they ought to bear the burdens of remedying that damage, or mitigating threats to biodiversity. When actors cannot be identified in this way, policymakers should turn to the APP instead. For instance, imagine that a coral reef has been damaged by a series of chemical spills. In some cases, actors will have known the damage they were causing, and will have had other, less environmentally damaging, options available to them. If so, the CPP suggests they should bear any clean-up costs. But there will also be cases where those who caused the pollution had no reasonable alternative to acting how they did – for instance, because all other options would have left their most basic needs unmet. In other cases, the people who have caused pollution may have been genuinely and excusably ignorant of the harm they were doing: they may have been using a chemical product, for instance, whose environmentally harmful consequences were simply not widely understood. In cases along those lines, it would not be fair to apply the CPP; instead the burdens of clean-up should be allocated much more widely, on the basis of ability to pay. Turning to the APP will require policymakers to come up with an appropriate index for levels of well-being or affluence, so that the better-off are asked to bear greater conservation burdens, and the worst off are excused from bearing any. They might turn, for instance, to a concept like the Human Development Index, created by the United Nations Development Program, or if practicable to some more complex measure of human capabilities.

In practice, applying these principles will require contributions from a variety of disciplines. For instance, they require an understanding of the extent of poverty, and of the causal chains that tie different actors to the degradation of biodiversity. But at a time when burden-sharing mechanisms under the BBNJ Agreement are still under discussion, political theorists also have an important contribution to make. The principles outlined in this section suggest that we need to pay much closer attention to causal responsibility for the demands humanity is placing on the natural world, and to the capacity to bear burdens. Taken together,

these principles suggest that requiring the disadvantaged to bear any conservation burdens would in most cases represent a serious injustice.

3. On the site of conservation

Political theory can help open up discussion about *where* conservation policies should best be enacted. Among other contributions, it can clarify, conceptually, the sheer breadth and variety of potential conservation policies. At their broadest, the suite of biodiversity conservation options should include *any* morally permissible measures that have potential to reduce threats to biodiversity, to protect biodiversity from threats, or to restore it when damage does occur [4]. This suggests policymakers should consider options which target consumption, production, public education and awareness, the formation of political agendas, subsidies and fiscal policy, relations of debt and indebtedness, training and employment policy, and much else besides. It also suggests they should consider options at a wide variety of geographical scales. Economic production, for instance, can damage biodiversity locally (as when mangroves are cleared to create shrimp farms), or globally (when it causes greenhouse gas emissions). Production is driven by consumer demand which might be local, but which in a globalized economy may be global and dispersed. When selecting between the huge variety of policy options, policymakers should place significant emphasis on effectiveness, but they should also ask whether the measures under review are likely to load conservation burdens in the right place, morally speaking. This means paying attention to the contribution to the problem and ability to pay principles discussed in the last section.

In practice, conservation policies often aim at preventing the destruction of biodiversity *in situ*, whether this means limiting the harvesting of plants, banning specific techniques for capturing animals, or requiring locals to find somewhere else to live, away from biodiversity 'hotspots' [34]. Such measures are often associated with the Protected Area model, or, in the aquatic space, with the Marine Protected Area [26]. These and other 'area-based' conservation measures focus on reducing local pressures that lead to the degradation of biodiversity [33]. Under the Kunming-Montreal Global Biodiversity Framework of 2023, expanding protected areas is a key obligation for states, and the goal of protecting 30 % of the ocean by 2030 is a key conservation objective [50].

While acknowledging that area-based measures have an important role to play, the arguments of the last section suggest increased emphasis on alternative options. Consider an example. It is true that practices such as the destruction of mangroves, and the use of harmful fishing techniques, are carried out *in situ* in some parts of the ocean rather than others. But it is also true that those activities are often linked to resource flows and opportunity structures in the wider global economy. In many cases, mangroves are cleared for the farming of shrimp as an export-oriented cash crop [14]. In fishing, destructive local practices often arise in response to perceived demand in wealthy countries, in a context where there is a large net flow of landed fish from the global South to the global North [46]. Local shifts away from subsistence production and towards export-oriented fishing are often encouraged and supported by state policy [20]. But such policy can be partly explained by a background of ongoing indebtedness, and by processes such as international tax competition and illicit financial flows. It can also arise in response to pressure from international lenders to embrace privatisation and state retreat from some sectors of the economy [6]. Each of these pressures serves to shrink the decision-making space of governments in the South [12]. In this context, to focus on proximate causes of biodiversity loss – and to prioritise responses which penalise local actors who engage in biodiversity destruction – would be both unfair and unhelpful. It would be unfair if it meant that conservation burdens were borne by those who could least afford to carry them, or by people who (on the basis of their lack of alternatives) bore little contribution-based responsibility for threats to biodiversity. It would be unhelpful if it deflected attention from the wider transnational context in which the destruction of biodiversity occurs.

This suggests that identifying alternative policies which do *not* load costs on locals who lack ability to absorb conservation burdens, and who currently have few options but to engage in activities destructive of biodiversity, ought to be a priority. It also suggests that policies that extend the decision-making space of conservation-minded governments in the global South will be important, for instance by increasing their resources, or moderating the pressure of indebtedness. None of this is to say that area-based measures cannot be an important tool in marine conservation efforts. Rather, the point is simply that policymakers would do well to think more widely about the diverse factors that drive biodiversity destruction. This likely means placing greater focus than they have to date on global and systemic pressures towards biodiversity destruction. In many cases it is likely to be more effective, as well as fairer, to focus on actors and incentives higher up 'value chains' in the global economy, far beyond the sites where primary extraction occurs. For instance, policymakers should recognise that reducing harmful fishing subsidies, rolling back investment in destructive fishing practices, reducing indebtedness in the global South, and tackling illicit financial flows, also count as viable conservation policies in their own right [17] - and policies, moreover, that may well be both fair and effective. At the same time, they should take seriously the pro-conservation potential of measures to reduce the agenda-setting power of industries harmful to biodiversity – such as industrial fishing – by pursuing limits on political donations and constraining the power of lobbyists [45].

It should not be assumed that widening the scope of conservation policies in this way will be an easy task. All of the proposals in the last paragraph would involve policymakers confronting entrenched power relations. It is to be expected that vested interests would seek to counter moves to draw wider connections between biodiversity destruction and advantage in the global North. There is evidence in a variety of contexts of resistance to "linkage" between trade policies and wider social and environmental objectives, for instance [42]. It is also likely that powerful actors would resist moves to reduce their influence within decision-making fora [24]. But this only establishes that the task is difficult, and not that it should not be attempted. In the final section, I suggest that a wide variety of actors have a *right* to be engaged in decision-making about marine conservation. This argument from democratic justice further strengthens the case for confronting existing power relations within conservation policymaking.

Political theorists working on global justice will also emphasise the importance of considering measures that directly address global inequality [4]. Through processes of 'environmental load displacement,' the environmental footprint of consumption in the global North has been progressively offloaded to poorer regions of the world [27]. Among other things, this means that the advantaged are often protected from the environmental consequences of their consumption, even while congratulating themselves for 'decoupling' their own economies from environmental destruction. Nevertheless, evidence suggests that inequality is a key driver of biodiversity loss, at both national and global levels [25], and the privileged have an outsized impact on marine biodiversity. Ocean industries themselves are highly oligarchic in character, with each major sector of the ocean economy dominated by no more than ten corporations [41]. One study has found that 47 percent of marine sequences included in gene patents were registered by a single corporation [8]. Another found that 93 percent of cruise tourism revenues are captured by ten companies [51]. Moreover, consumption too is highly inequitable. A concern with global justice suggests that measures aimed at reducing the environmental footprints of the advantaged should be a key part of any transformative conservation politics. That would take us far beyond area-based measures, but additional emphasis on such policies can help ensure that conservation policy is both effective and fair.

4. Democratic inclusion

One criticism that is sometimes made of ocean governance, including conservation governance, is that it is excessively elitist, bureaucratic, and technocratic in nature [10,32]. According to Standing [45], for example, when decisions are made about the use of the ocean, corporate interests often exert an influence which is not adequately checked by wider public scrutiny and debate (see also [30]). If so, this might help explain why the pursuit of economic growth has been improperly prioritised over concerns about poverty, or the inclusion of historically marginalised communities [48]. Whether these claims are fair or not is in large part a social scientific question and I will not seek to resolve it here. My claim is a more fundamental one, which is that it is impossible to evaluate such claims without a normative account of who *ought* to be included in conservation decision-making. Without such an account, we do not know if decision-making is appropriately inclusive or not. This is an area where political theory can once more make an important contribution. Specifically, political theorists can help clarify, at a fundamental moral level, which actors have a moral *right* that their interests are taken into account when decisions are made about how and where to conserve marine biodiversity. Their answers to that question can then inform wider discussions about democratic inclusion within marine conservation policy.

Within the political theory literature, the leading answer to this question comes from the *All Affected Interests principle* (see e.g. [23]), which suggests that actors have a democratic right to an appropriate share of decision-making power whenever a decision, or even potential decision, looks likely to impact on their life-chances in a significant way. The principle resonates with many historical and contemporary struggles for democratic inclusion. For instance, it resonates with the Roman idea (embodied in the Justinian Code) that "what touches all must be approved by all" ([31]: 38). More recently, the disability rights movement has made use of the slogan "nothing about us without us," which suggests that everyone has a right to participate in political decisions that will touch on their interests [13]. The alternative is that power can be wielded by the powerful without any requirement to consult on citizens' preferences – but this would be an insult to our autonomy and to our status as political equals.

The All Affected Interests principle appears to have clear relevance to the governance of marine conservation. Given the centrality of marine biodiversity to all of our futures, citizens ought to be able to participate fully in making decisions about how it is governed and conserved, and in setting the overall goals of conservation policy. The increased salience within the UN system of local and Indigenous participation [16] appears to be in the spirit of this principle. The Kunming-Montreal Global Biodiversity Framework, for instance, suggests that conservation policymakers 'must ensure' that the 'rights, knowledge, including traditional knowledge associated with biodiversity, innovations, worldviews, values and practices of Indigenous peoples and local communities are respected, documented, preserved' within conservation policy, 'including through their full and effective participation in decision-making.'

A key question, though, will be whether Indigenous knowledge and perspectives (and, indeed, the perspectives of all citizens) are taken into account only once policy options have already been formulated by experts, or whether they will turn out to make a genuine difference to the overall direction of, and values embedded in, conservation policy [40]. Political theorists emphasise that the All Affected Interests principle should be applied to *all* stages of the decision-making process: if ordinary citizens should be decision-makers, and not just decision-takers, this means working hard to give them a voice in the formulation of policies, in their implementation and evaluation, but also in the initial setting of policy priorities and goals [39]. From the point of view of the All Affected Interests principle it is not, therefore, enough to give affected communities the right to challenge policies that turn out to set back their interests – that is, to exercise what [15]: 56) calls a *constraining* effect on conservation policy. Affected communities must also be able to exercise a *framing* effect on policy, helping to determine the overall values and priorities that shape biodiversity governance, and hence which possible courses of action will be identified as policy options in the first place. This suggests that policymakers have some way to go to engage ordinary citizens in democratic debate about the ocean's future. Pointing out that citizens can vote out governments that take decisions they do not like is not sufficient.

But the implications of the All Affected Interests principle are even wider than that. This is because many of the people who will be most significantly affected by our decisions are yet to be born (that certainly appears to apply to decision-making about marine biodiversity). The All Affected Interests principle suggests that future people also have a right that their interests are considered in contemporary policymaking [28]. How might that right be protected? Clearly people who have not yet been born cannot participate in political decision-making in the here and now; in that sense future people will inevitably remain one-sidedly vulnerable to the political choices of present generations. It is also clear that there are major epistemic and moral difficulties involved in ascertaining what the views of future people might turn out to be [11]. Nevertheless, there is a rich and vibrant literature in democratic theory which investigates institutional mechanisms for representing future people in contemporary governance, from dedicated representatives for the as-yet-unborn, to watchdogs or ombudsmen for future people [22]. The implications of that literature for ocean governance have scarcely begun to be explored, but this represents a lacuna which must be addressed with urgency.

Besides future people, policymakers must also recognise that many of the actors whose interests will be most significantly affected by marine conservation policies are non-human animals (including those yet to be born). The ocean is, among other things, a hugely complex ecosystem which is inhabited by trillions of animals. Marine animals figure in the United Nations Convention on the Law of the Sea, however, primarily as resources to be used, rather than as moral agents who might have their own ineradicable stake in the governance of the ocean [2]. The same can be said, four decades on, of the new BBNJ Agreement [3]. Nowhere in the Law of the Sea to date do we find explicit recognition of the possibility that the organisms that actually live in the ocean might have a right to formal political representation when decisions about the future of the ocean are made. Rather strikingly, for instance, the Law of the Sea presents (parts of) the ocean as the Common Heritage of Humankind, but not of the trillions of marine animals that actually inhabit its depths [5].

This is also a state of affairs which is hard to justify if we take the All Affected Interests principle seriously. The principle suggests that if animals do have interests, and if those interests are advanced or set back when marine conservation policies are determined, then those interests *also* ought to be taken into account in decision-making processes. The question of what precise interests marine animals might turn out to have is, of course, the topic of some debate. But even accepting that animals have an interest in avoiding pain and suffering would be enough to ground a right to representation under the All Affected Interests principle [29]. It is harder to see what *participation* in decision-making might look like, although notably some recent accounts of animal ethics have insisted that this is not a possibility we should foreclose [18]. As with future people, the possibility of representing animals is one which must be taken seriously [21]. One option which has been suggested recently is the creation and selection of dedicated animal representatives [15]. In another interesting move, the Scottish Association for Marine Science, a charity promoting knowledge about the marine environment, has "appointed" the ocean to its Board of Directors. Its next step will be to elect a specific trustee to represent the ocean in all decision-making (https://www.sams.ac.uk/news/sams-news-ocean-on-the-board.html). One key step here would be to attempt to represent the interests of marine animals.

In this section I have argued that a just and democratic ocean politics

would open up decision-making to all of those whose significant interests are affected by decisions about its future. This demands that ocean governance is opened up more consistently and systematically to voices from below. It also demands that serious attention is given to how the interests of those who *cannot* participate in contemporary decision-making about the ocean might nevertheless be represented in decision-making processes. Although recent attention given to the importance of integrating the knowledge and values of local and Indigenous people in decision-making about the shape of ocean conservation policies is vitally important, this should be seen as just one step in a broader democratisation of decision-making in the marine space.

5. Conclusions

This paper has set out some of the normative standards that can be applied to the conservation of marine biodiversity. If taken seriously, they can help ensure that progress in mitigating the biodiversity crisis is achieved fairly and inclusively. The paper has suggested that the costs of heading off the marine biodiversity crisis must be allocated in line with contribution to the problem, and ability to pay, and that there can be no justification for leaving the most disadvantaged to bear significant conservation costs. It has argued that we must open up discussions about what would count as biodiversity conservation policies, in order to keep the environmental consequences of unsustainable consumption in the global North firmly in view. Finally, it has argued that conservation policies at sea should be opened up much more widely, at all stages of the policy-making process, to ensure that all of those affected by conservation policies have a fair chance of formulating policies and priorities. More broadly, this demands not just a democratisation of marine governance, but serious efforts to represent the interests of future people and non-human animals. Though ambitious, these proposals point the way forward to a just and democratic transition beyond the marine biodiversity crisis that threatens all of us.

Author statement

Marine Policy author statement – Advancing Justice in Marine Biodiversity Conservation

I confirm I, Chris Armstrong, am the sole author of this piece. I have not used AI in any part of the process. I do not have any funding to declare.

CRediT authorship contribution statement

Chris Armstrong: Writing – review & editing, Writing – original draft, Conceptualization.

Data availability

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

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