

11 Biodiversity

Crisis, conflict and justice

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Learning Outcomes

- Consider some of the main direct and underlying causes of biodiversity loss.
- Understand the different ways in which biodiversity loss can lead to environmental injustices.
- Identify some of the different ways in which humans value nature and justify biodiversity conservation.
- Learn to use a justice analysis to evaluate different ways of responding to the biodiversity crisis.

Introduction: from fear of crisis to living with crisis

The term ‘biodiversity’ was coined and promoted mainly by US and British scientists and conservationists in the late 1980s (Redford and Mace, 2019). In its most common definition, it refers to the variation of life on earth at different scales, including genetic diversity, species diversity and ecosystem diversity.

There has been concern about protecting wildlife for many centuries, with areas dedicated for conservation by Indigenous and local people the world over. The spread of formal, legally protected areas took off in the late 19th century with the designation of national parks in the United States. However, concern about loss of biodiversity, as opposed to species and landscapes, is more recent. It is a concern that goes beyond loss of aesthetics or recreation, and beyond duty to other species. It is the realisation that anthropogenic change is causing a mass extinction event that threatens the future viability of human life on earth. The scientific evidence for this biodiversity crisis has been carefully evaluated by scientists worldwide and was published in a major United Nations assessment in 2019. This finds that 25% of species are currently threatened, with a million species facing extinction, many within decades. Furthermore, the drivers of extinction are still growing, and the rate of species loss is accelerating (Díaz et al., 2019). This accelerating loss of biodiversity is undermining the functioning of ecosystems in ways that threaten fundamental requirements of human well-being such as food security.

This rapid diminution of the diversity of life on earth has not yet set off the alarm bells in the way that the climate emergency has; and, similarly, ‘**conservation justice**’ has received only a fraction of the attention from environmental justice movements compared to ‘climate justice’, developed in the next chapter. But loss of biodiversity is a

matter for environmental justice. First, as Bryan Norton (2003) argues, we will not find a more compelling environmental ethic than the obligation for each generation to pass on the ecological conditions that provide the options necessary for future freedom and well-being. This is a primary role of biodiversity in **inter-generational justice**. Second, harms to current people are unequally and unfairly distributed. These harms include cultural loss, whereby nature-based local knowledge and practices cannot be sustained, and economic loss, for example when soils become less productive or crops become more vulnerable to pests, diseases or climate change. Such unequally distributed burdens are central to biodiversity's role in **intra-generational justice**.

There is a tendency to express global environmental challenges as shared problems, for example as threats to 'our common future' that require collective action to fashion a 'safe operating space for humanity'. But, in the short to medium term at least, there is no common future; no shared level of safety for humanity. Those who are currently enjoying the ephemeral pleasures of over-consumption will not be the ones struggling to protect their children from hunger. That fate is already falling to the small farmers and fishers who depend on biodiversity's contribution to ensuring good and reliable harvests on land and at sea. It is also falling to the multitude of Indigenous peoples and local communities whose cultures are defined and reproduced through place-bound relationships with the non-human world, for whom a life worth living is not limited to living 'from' nature, but also to living 'with', 'in' and even 'as' nature (O'Connor and Kenter, 2019).

Whilst previewing the types of harms arising from biodiversity loss, we should remember that costs arise not only from reduced biodiversity but also from efforts to mitigate those losses. A good rule of thumb is that all environmental governance interventions, however benign they may appear at first sight, are likely to create winners and losers and therefore give rise to claims about what is more or less just (Sikor, 2013). For example, **protected areas** have been the flagship of area-based conservation worldwide but have not always been innocent protectors of a common future. From the creation of Yellowstone National Park in 1872 to the Chagos Marine Protected Area in 2010, parks have too often involved the denial of local and Indigenous territories, including evictions and loss of access to resources (Brockington and Igoe, 2006). For smallholders who live around the borders of parks in the tropics, wild animals are a very common threat to human life, crops and livestock. Echoing the earlier point, there is no 'common' experience of biodiversity conservation: wealthier people tend to enjoy the benefits of nature conservation—for example, through the experience of wildlife tourism or nature documentaries—whilst the poor have often had to bear the costs (Adams et al., 2004). As we move towards a greater sense of an extinction crisis, with ever louder calls for emergency responses, it is therefore vital to be attentive to winners and losers, and to conservation justice.

The starting point of this chapter is therefore that both biodiversity loss and the ways in which we respond to it are matters of social as well as ecological justice. Inter-generational injustice, especially through erosion of biodiversity option value, is a crucial aspect of this sector. But intra-generational injustice is also highly problematic, involving harms across economic and cultural dimensions of human well-being that are disproportionately felt by less powerful social groups. The environmental justice movement has paid particular attention to how the costs of environmental harm fall on certain social groups. This is discrimination—overt or insidious—in that harms to some people are tolerated more than harms to other groups because of arbitrary social characteristics such as class, gender, ethnicity or nationality. It is environmental injustice.

The extinction crisis

According to the *Living Planet Report*, 60% of wild animals have been lost since 1970 (Barrett et al., 2018). Biologists describe the current period as the sixth age of mass extinction, in which rates of species loss exceed even the most dramatic of past mass extinction events. The loss of apex species, such as the decline of African elephants during the 21st century, has gained most media attention. Losses of apex herbivores and carnivores has a cascading effect on ecosystems (Estes et al., 2011)—for example, where loss of elephants disrupts the dispersal of fruit seeds, leading to loss of habitat for frugivores such as primates—with further repercussions through the food web. The term ‘empty forest syndrome’ (Redford, 1992) describes intact forests where species loss has cascaded through trophic levels. More recently, reports of devastating declines in insects have been grabbing headlines. A long study of flying insects in protected areas in Germany found a 76% decline between 1989 and 2016 (Hallmann et al., 2017). A subsequent global review found that such devastating losses of insects is commonplace, occurring across many insect taxa, in both terrestrial and aquatic systems and with rates of decline many times higher than for vertebrates (Sánchez-Bayo and Wyckhuys, 2019). As with the loss of apex mammals, massive loss of insects leads to cascading effects across trophic levels of ecosystems and ultimately reduces both the stability and productivity of the benefits from nature that are relied upon by humans. For example, 23% of terrestrial areas are already categorised as degraded to the point of reduced productivity, whilst annual crop losses from pollinator decline are estimated at between \$235 billion and \$577 billion (Díaz et al., 2019). In the United States, large- and medium-sized beekeepers no longer make most income from selling honey—their biggest revenue stream is now transporting bee colonies around on trucks to rent out their pollination services for almonds and other plantation crops (Ferrier et al., 2018).

Causes

The direct drivers of biodiversity loss are increasingly well known (Sánchez-Bayo and Wyckhuys, 2019, Díaz et al., 2019):

- 1 *Land and sea use change*, the biggest direct driver of biodiversity loss in terrestrial and freshwater ecosystems, including the extension and intensification of arable and livestock farming, urbanisation, mining and infrastructure.
- 2 *Direct resource use*, including fishing (the biggest driver of biodiversity loss in marine ecosystems), hunting, logging and other harvesting.
- 3 *Climate change*, which threatens biodiversity in even the most protected of waterscapes and landscapes.
- 4 *Pollution*, including the massive use of agricultural and other chemicals that directly kill insects (pesticides) and plants (herbicides) and overload water courses with nitrogen and phosphorous (fertilisers).
- 5 *Biological factors*, including invasive and alien species, that lead to loss of native species (such as the introduction of Nile perch and tilapia in Lake Victoria) or degrade habitat diversity and prevent regeneration (such as lantana in India).

These direct drivers of biodiversity loss are themselves shaped by indirect (or underlying) drivers such as major demographic, economic and cultural trends. It may seem obvious that major global trends such as consumption growth are core underlying drivers of biodiversity

loss. However, to be critical of such deeply locked-in measures of societal progress is highly political and has therefore often been avoided; for example in David Attenborough documentaries and some multilateral environmental reports. However, these spaces for more critical questioning have been gradually opened up by political ecologists and environmental justice scholars. The need for transformative societal change that addresses such root causes is now making it into globally agreed reports such as the UN's 2019 Global Sustainable Development Report.

This is not the place to rigorously explore underlying causes, but a brief consideration of consumption provides a useful glimpse into why some injustices are produced with regularity. Global increases in demand for food crops, biofuel crops, fish, water and minerals are not discouraged by states. To the contrary, virtually all current states, regardless of political ideologies, consider economic growth and rising consumption as core measures of societal progress. The appearance of environmental constraints has had no real effect on this view of progress, other than to necessitate the rhetoric that consumption growth can be decoupled from environmental impact through technological innovation and efficiency. In practice, that rhetoric has proved wrong, partly because of the sheer scale of consumption demand in growing economies such as China, India and the United States, and partly due to the 'rebound effect', a phenomenon whereby production efficiencies themselves lead to increased demand, thus reducing expected environmental savings (Vivanco et al., 2016). For example, despite the availability of more energy efficient technologies and renewables, global carbon emissions from the energy sector rose by 2.9% during 2018, the biggest rise in seven years (BP, 2019).

Any understanding of the biodiversity crisis really must confront the reasons why it is so difficult to challenge consumption growth as a societal goal and ideology. This is important for this chapter in two crucial respects: first, and most straightforwardly, because infinite consumption growth is proving incompatible with biodiversity conservation; second, and more complicatedly, because the prioritisation of consumption growth (rather than e.g. sufficiency and distribution) has been linked to the perpetuation of inequality. In *The Enigma of Capital*, David Harvey (2010) explains that the recent history of capitalism is characterised by its dependence on both economic growth and inequality. In an unequal world, perpetual economic growth is essential because it maintains the perception that everybody is benefiting—i.e. even the poor can consider themselves materially better off when a rising tide lifts all boats, even if wealth gaps are widening. Economic growth therefore helps to maintain good social relations and reduce social conflict.

Just as sustaining **inequality** requires economic growth, so sustaining economic growth requires inequality. One of the inherent contradictions (flaws) of capitalism is that compound growth periodically runs up against the kind of environmental constraints, such as the current biodiversity crisis, that require significant reconfigurations of global production systems. Looked at historically, the responses to these crises have been dependent on inequalities of power. In the 19th century, there was crisis of falling soil fertility in Europe and the United States. The response was to use economic and military power to extract and export the guano deposits of coastal Chile and Peru, with the help of indentured Chinese labourers (Clark and Foster, 2009). The resultant flows of nitrate temporarily fixed the constraint on growth in global superpower states, at the cost of ecological burden and 'guano wars' in the colonies. In the 19th century, the United Kingdom had also depleted its forests to the point that it lacked the timber to build the ships that protected its empire. The solution was to use the forests of India, Burma and elsewhere. The fixing of the energy crisis of the 21st century similarly requires the ability to open up new ecological flows to the centres

of power, through new frontiers of extraction for lithium, biofuels and other ‘green’ energies (Muradian et al., 2012). The case of biodiversity conservation is not exempt from such criticism. We should remind ourselves that protected areas in the tropics have often been deeply unpopular with host communities and thus only possible due to power asymmetries and the framing of morality in terms of ‘common futures’ rather than, for example, current rights or equality.

As stated, the essence of environmental justice analysis is to explore the intersection between social and environmental inequalities. A focus on underlying causes reveals that this intersection is at least partly structured by the prevailing political economic system and the associated distributions of power. Seen through a conservation justice perspective, the current system is not only economically structured to produce material injustices (through the growth and inequality imperatives outlined previously) but also ideologically structured in ways that only recognise and respect some people’s knowledge and values whilst marginalising others. This is sometimes referred to as the use of ‘**discursive power**’, whereby dominant actors determine how problems are framed in public debate, setting the substantive and moral terms of debate and, crucially, placing boundaries on what knowledge and values are deemed salient. As the example of ‘sustainable intensification’ (Box 11.1) shows, the typical effect is to foreground ideas that align with the incumbent regime whilst rendering invisible alternative framings rooted in other knowledge and value systems. For many Indigenous peoples, for example, nature is not separate to society (some do not even have a word for nature) and cannot be conceived as something purely instrumental to human progress—the variety of life on earth cannot be understood and valued in terms of its role in supporting benefits for human well-being. The marginalisation of these alternative ways of knowing and valuing nature is a form of injustice in itself (a failure of recognition), but is also a barrier to sustainability because it ensures that few heads are at the table at a historical moment when we clearly need new ideas and massive support for resolving the crisis.¹

Box 11.1 Food systems, biodiversity and recognition injustices

Underlying systemic barriers to addressing biodiversity decline are well illustrated by challenges of transitioning to more sustainable and biodiverse food systems (e.g. Coolsaet, 2016). Agricultural expansion and intensification is the biggest driver of terrestrial biodiversity decline, directly replacing plant diversity with monoculture, replacing wildlife with livestock, consuming huge quantities of fossil fuels and polluting ecosystems with agro-chemicals. And, yet, efforts to reveal and address the fundamental failings and insecurities of the global food regime are consistently resisted by incumbent regimes of government and corporate actors. Discursive power is exercised to legitimise heavily contested terms such as ‘sustainable intensification’, which has secured its status as a legitimate ‘green’ strategy in the Sustainable Development Goals (Pretty et al., 2018), despite evidence that most existing intensification practices are damaging to biodiversity (Rasmussen et al., 2018). Sustainable intensification is argued to be readily acceptable to the incumbent regime because it aligns with the existing growth agenda and legitimises opportunities for capital investment (Newell and Taylor, 2018). For example, Li (2014) explores how the need to intensify

agriculture for sustainable development has legitimised land acquisitions (or ‘land grabs’, as they are often termed) in the Global South by investors who can promise to enhance yields.² The World Bank is also accused of pursuing this agenda in its 2019 report on *Enabling the Business of Agriculture*, a policy approach that Mousseau (2019) considers to be unequivocally promoting the spread of large-scale industrial agriculture.

The framing of the agenda through discursive power is being used to present processes of land accumulation and intensification as ‘sustainable development’ solutions. Newell and Taylor (2018) identify one specific strategy used by government and corporate actors which is to blur the distinction between sustainable intensification and potentially more challenging alternatives such as ‘climate smart agriculture’ and ‘**agroecology**’. Blurring the distinction serves to co-opt and blunt the power of alternatives and, perhaps, gives the impression that ‘sustainable intensification’ is a more radical agenda than it really is. The dominance of such discourse of intensification, supported by incumbent regimes that include producers of fertilisers and other agricultural inputs (ACBIO, 2014), has facilitated a highly successful evasion of commitment to address the impact of agriculture on biodiversity loss and climate change.

Conceptualising conservation injustices

Justice and injustice are not fixed and universal categories, but are conceived in conjunction with diverse human cultures and values that produce a variety of notions of right and wrong. Western environmentalism has for more than a century debated between two different basic framings of the injustices arising from degradation of biodiversity and ecosystems. First, an anthropocentric framing focuses on nature’s instrumental value to human well-being and on the harms to humans when such use is diminished or inequitably distributed. These are the traditional concerns of social justice and formed the basis for the environmental justice movement that took off in the 1980s. These harms to humans might be economic, arising from the fact that humans live from nature, but can also be cultural, because nature is the arena in which our societies and cultures evolve and play out (O’Neill et al., 2008). Thus, to degrade an ecosystem might reduce the economic basis of livelihoods and/or might remove the ability to live the kind of life that a person or community has reason to value. Second, ecocentric framings focus on the intrinsic value of nature and the harms experienced by nature itself.³ Humans are not viewed as an exceptional species, uniquely deserving of moral concern, but as part of the biotic community. In this framing, the community of justice (those we are morally responsible towards) is extended to include elements of the non-human world, including, for example, sentient animals, or entities such as rivers and mountains. This is the terrain of **ecological justice** and, whilst it has only recently been incorporated into environmental justice thinking, it is highly relevant to biodiversity conservation, which is often motivated by combinations of anthropocentric and ecocentric values. For example, mountain gorillas have economic value as tourism assets, but many think they deserve protection regardless of that.

Anthropocentrism and **ecocentrism** represent polarised worldviews. In the former, what is valued is human well-being, and the protection of nature is instrumental to that; in the latter, nature itself is valued, and its protection is therefore an intrinsic good. The polarisation

of this debate has often overlooked alternative worldviews, especially prevalent among Indigenous peoples, in which value lies not in humans or nature but in balanced relationships and in the virtue of being mindful of these (Whiteman, 2009). For this reason, we refer to three ways of valuing nature: instrumental, intrinsic and relational values (Chan et al., 2016). For example, as I write this chapter, I see a news report of the Lummi people of Washington state symbolically dropping a chinook salmon into the ocean, in response to the food shortage faced by orca whales due to human over-fishing and engineering of rivers. The Lummi are certainly not making this gesture of support to the orca out of any simple instrumental concerns for their own well-being (although their well-being is clearly linked to that of the orca). Nor are they doing this out of concern for an objective, external nature whose value is entirely independent of human preferences. As their chief explains to a journalist, it is hard to explain to others what values compel the Lummi to this act of commitment to the orca, but it can be likened to standing by their relatives in a time of need (Pulkkinen, 2019). Justice in such contexts might be likened to a healing process in which the right thing to do is to restore the balance of relationships (McCaslin, 2005). Whilst such deep relational experiences may be largely confined to Indigenous peoples, many more of us feel reciprocal relationships with pets, and it has been found that the great majority of conservation professionals hold worldviews that appear compatible with relational values: in a recent survey of more than 9,000 conservationists from 149 countries, 92% disagreed with the statement that 'humans are separate not part of' nature (Sandbrook et al., 2019).⁴

This three-way typology of how humans value nature—instrumental, intrinsic and relational—is useful for thinking about the justices and injustices of the biodiversity emergency. First, it helps to identify the range of subjects that are deserving of moral concern and commitment (the community of justice). Second, it helps to analyse the kind of harms arising from loss of biodiversity. In terms of the subjects of justice, instrumental framings point to harms to well-being of current and future human individuals and groups. Intrinsic framings expand the range of moral subjects to non-human nature. For example, in 2018, rights equivalent to personhood were granted to the Yamuna and Ganges rivers in India, the Whanganui River in New Zealand and the Atrato in Colombia. Relational framings do not so much point to new subjects of justice, but do introduce more holistic ways of understanding value and justice, as balance within assemblages of subjects. Equally importantly, recent moves to recognise relational framings of nature alert us to the plurality of ways in which people value nature and experience harms from loss and degradation. Indeed, one of the fundamental injustices experienced by those with different ways of knowing nature is that their values are ignored; that is that the kind of harm they experience—when orca whales, for example, are dying—is not recognised or factored into decision-making. Such recognition injustice is a major cause of conservation conflicts: situations where those with greater power assert particular, often singular, ways of valuing nature whilst dismissing values that arise from, for instance, relational perspectives. Such a failure to accept and account for multiple ways of valuing nature is increasingly considered to be a major obstacle, not only to effectively responding to the biodiversity emergency (Díaz et al., 2018, Pascual et al., 2017), but also to conservation justice (Martin, 2017).

This discussion resonates with the well-established typology of injustices explored in the first part of this book. Widely expressed in terms of three dimensions of injustice, it is related to: the unequal **distribution** of environmental goods and harms, the lack of inclusiveness of different groups in environmental decision-making **procedure**, and the systemic lack of **recognition** for some identities and associated ways of knowing and valuing nature.⁵ These are different forms of harm that matter differently to different groups, at different times. The

conservation profession typically ‘sees’ harms based on distribution and participation, and has therefore developed technical responses to these; for example, concerns about unfair distribution of the costs and benefits of protected areas has been a reason for introducing a number of mechanisms such as:

- *Alternative livelihood programmes*: where local people are no longer allowed to farm or harvest in the park, alternative ways of making a living are supported, such as beekeeping (see e.g. Roe et al., 2015);
- *Compensation schemes*: where monetary payments cover the costs of wildlife damage, including loss of crops, livestock and even human life (see e.g. Ravenelle and Nyhus, 2017);
- *Benefit-sharing schemes*: where a proportion of revenues from tourism and entry fees are shared with local communities, normally as provision of goods such as wells or health clinics (Cundill et al., 2017);
- *Payments for ecosystem services*: where local people are paid for their contribution to conservation, for example to cover the income they forego by not harvesting in the park.

Communities are often supportive of such distribution-oriented schemes, but they don’t always hit the mark, notably when they don’t align with the kind of harms people are experiencing. For example, the expansion of populations of large predators throughout much of Europe has increased conflicts with livestock farmers. This is often viewed as a distributional problem, leading to solutions that involve some form of financial compensation. But this type of compensation will not resolve feelings of injustice that arise primarily from relational values, such as a shepherd’s sense of a duty of care towards her flock. In France, for example, wolves killed an estimated 10,000 sheep in 2016. Farmers received 3.2 million euros in compensation, but money itself will not remove their sense of injustice.

Protected-area conservation

Protected areas are clearly defined terrestrial or marine spaces that are dedicated to the long-term conservation of nature and associated cultural values (Dudley, 2008). Protecting biodiversity is in principle a universal good that will benefit all humanity, including rural smallholders whose livelihoods are most directly dependent on ecosystem services and who often have much to gain from defending their locales from mining, infrastructure or conversion to plantation crops. However, this potential alliance between rural communities and conservation in the Global South has been blemished by a long history of inequality in which the benefits are mainly enjoyed by wealthier groups whilst the costs are borne locally (Adams et al., 2004). The phrase ‘**fortress conservation**’ became associated with the common practice of protected-area formation in which existing land users were evicted or excluded and then kept out by armed park staff (Brockington, 2002). In the United States, for example, early national parks such as Yellowstone failed to honour territorial claims of native peoples. In East Africa, wildlife had predominantly been a local asset until the 1880s but, following European colonisation, this changed quickly. In Kenya, the North and South game reserves were established in 1896, whilst Africa’s first ‘national park’, the Albert National Park (now Virunga) was created in Belgian Congo in 1925. The expansion of park networks accelerated after the 1950s and the World Database on Protected Areas now includes more than 200,000 protected areas covering about 15% of terrestrial and inland water areas and 4% of marine areas (UNEP-WCMC, 2016).

The dominance of a fortress conservation model of protected areas has been supported by cultural, scientific and moral thinking. Culturally, Western environmentalism has been strongly influenced by belief in the value of pristine wilderness relative to human-shaped landscapes. Scientifically, this valuation of a 'pristine' nature was bolstered by early 20th-century **ecological climax theory**, according to which ecosystems could only achieve their ultimate, climax assemblage of fauna and flora in the absence of human co-habitation. Morally, this case for segregation was sealed through appeal to utilitarian ethics in which the benefit of wilderness for the many justified the imposition of costs on the few who faced exclusion from their territories. This model of conservation has proved remarkably resilient despite challenges to all three of its supporting pillars. Alternative models involving forms of co-existence between humans and wildlife employ alternative cultural traditions (e.g. relational values), alternative science (e.g. social-ecological systems thinking) and alternative moralities (e.g. rights-based ethics).

Despite the resilience of the colonial 'fortress' model, protected-area conservation practices have evolved. One key driver of change has been global agreement on prioritising poverty alleviation, linked to a narrative of '**sustainable development**'. The latter, popularised by the 1987 Brundtland report (WCED, 1987) was a game-changer inasmuch as it altered the terms of debate, away from the view that conservation would inevitably pit global needs against local ones towards a more optimistic view that conservation and local development could be pursued in tandem. The World Parks Congress and other conservation policy forums began to focus on more people-friendly approaches to conservation (Roe, 2008). Greater participation through forms of community conservation became increasingly popular, as did more 'alternative livelihoods'-oriented interventions, known as integrated conservation and development projects (ICDPs). By the late 1990s, it was reported that nearly all donor funding for conservation in Indonesia was for ICDPs (Wells et al., 1999) and this shift in funding priorities became worldwide (Miller et al., 2013). In the early 2000s, market-based (green economy) approaches to integrating conservation and development gained rapid popularity, especially in Latin America. These approaches include payments for ecosystem services schemes, certification and labelling schemes, and biodiversity and carbon offsetting (see e.g. Martin, 2017).

From an environmental justice perspective, the shift from fortress conservation to stronger emphasis on development and poverty alleviation is to be welcomed. But there are some limitations. First, implementation has been patchy, such that exclusionary practices are still commonplace. Second, implementation is often not well done. For example, in the Western Ghats of India, up to 25–30 deaths from elephants occurred annually, and 64% of households near protected areas have reported crop losses (Bal et al., 2011). There is a compensation scheme, but villagers report that it is difficult to access. According to an expert panel report, poor implementation could undermine conservation because the sense of injustice is eroding the long-standing cultural relationship between humans and elephants (Force, 2012). Third, as has been argued in this chapter, these approaches tend to address more 'superficial' issues of economic distribution, without addressing more fundamental concerns related to recognition of alternative ways of knowing and living with nature (another way of putting this is to say that these approaches do little to 'decolonise' conservation practices). Despite the limited scope for delivering conservation justice, economic interventions may still be important in some contexts. For example, during earlier work on mountain gorilla conservation, I found that focusing on economic inequities (through e.g. benefit-sharing schemes) was a necessary condition for tackling more fundamental issues. Addressing economic concerns, such as loss of crops and reduced access to forest resources, helped to

develop goodwill and trust that was a first step towards deeper forms of collaboration among stakeholders (Martin et al., 2011).

Towards just conservation

Whilst there have been significant conservation successes, the overall picture is bleak. Reporting in July 2019, the Red List of over 100,000 species compiled by the International Union for Conservation of Nature (IUCN) did not record an improved status for a single species. Current rates of biodiversity loss represent an injustice to future generations and to those current people whose well-being is already harmed by failing productive systems and loss of opportunity to follow culturally significant practices. Furthermore, currently dominant models of conservation too often perpetuate failures of recognition; for example by seeking to resolve conflicts in ways that require assimilation to instrumental ways of valuing nature. In this final section, I consider this current predicament and the growing call for ‘transformative’ change to conservation. Reformist changes are those that primarily operate within existing framings and therefore do not challenge underlying drivers of injustice in political economies and incumbent conservation regimes. Nor do they seek to decolonise conservation, recognise relational value, reject the growth imperative or challenge the dominant segregationist model for protected areas. By contrast, I refer to transformative changes as those that challenge incumbent framings and regimes and seek to redistribute power in ways that serve environmental justice and sustainability.

Box 11.2 Debates about the future of conservation

Recent debates about future directions for biodiversity conservation highlight two competing perspectives: ‘new conservation’ and ‘traditional protectionism’ (Sandbrook et al., 2019; Büscher et al., 2019). These are largely reincarnations of old debates between anthropocentric and ecocentric.

In the last twenty years, there has been a major scientific effort to quantify the benefits that humans derive from biodiversity and ecosystem services, including the influential report on *The Economics of Ecosystems and Biodiversity* (TEEB, 2010). The ‘new conservation’ position springs from this enhanced knowledge of the instrumental values of nature for human well-being. It argues that conservation should be presented in anthropocentric ways because this is the only realistic way to get enough people to support it. New conservation therefore calls for biodiversity to be aligned with prevailing societal goals such as economic growth and poverty elimination. It calls for conservation to be pursued through partnerships with businesses and by getting the financial incentives right—for the many, not just the few (see e.g. Kareiva and Marvier, 2012).

By contrast, advocates of protectionism argue that an ecocentric ethic (based on intrinsic values of nature) is the only credible basis for sustained care for nature. They argue that market-based values are fickle and favour those species and habitats that are currently most valued by humans. Whilst they see poverty elimination as a worthy objective, they suggest it is better to pursue this separately to biodiversity conservation rather than confusing the two. An example of a protectionist position is the

'Half-Earth' call for a massive expansion of protected areas (Wilson, 2016). From a social justice perspective, this mentality is alarming. The idea that half the world should be for humans and half for nature seeks to impose a predominantly Western, segregationist worldview of human relationships with nature onto the rest of the world. Furthermore, the best available evidence to date suggests that extending protected areas without addressing underlying drivers of biodiversity loss would be ineffective (Geldmann et al., 2019).

Box 11.2 summarises two contrasting schools of thinking about the future direction conservation should take. Bram Büscher and Rob Fletcher (2019) succinctly capture why neither of these views represents a sound vision for a transformative and just future for conservation. The 'new conservation' camp has the advantage of rejecting segregationist and elitist approaches, but it fails to challenge the inequalities or unsustainability of current economic systems and priorities. The 'protectionist' camp does challenge current economic systems, but it is essentially an upscaling of a segregationist model of protected-area conservation that is unlikely to be effective and would fail to recognise other ways of knowing and living with nature. I finish this chapter by suggesting two future directions that I think could help a transformation to a more just conservation. The first is, admittedly, more reformist initially but includes practical steps that I think can build towards more transformative change. The second is a brief attempt to exemplify a more radical alternative that has already gained some traction.

Towards justice in protected and conserved areas

The IUCN now refers to 'protected and conserved areas', a phrase that incorporates areas that are conserved by local and Indigenous peoples outside of legally designated protected areas. Such areas, sometimes termed other effective area-based conservation measures (OECMs), provide diverse alternatives to mainstream conservation, incorporating more plural values of nature and often involving co-existence of people and nature rather than segregation. This recognition of alternative conservation practices (and alternative world-views) is crucial for a more just conservation, and it does not involve any necessary trade-off between social justice and conservation effectiveness: there is growing evidence that such alternatives, including the empowerment of local communities and the granting of territorial rights to Indigenous peoples, is not only ethical but may also be more effective than traditional protected areas (Schleicher et al., 2017).

In addition to diversifying the models of area-based conservation, there are potentially significant plans to incorporate the assessment of social equity into performance monitoring and planning processes. A collaborative process led by the International Institute for Environment and Development has employed the environmental justice typology of distribution, procedure and recognition to develop an equity framework for assessment in protected and conserved areas (Schreckenberget al., 2016; Franks et al., 2018). Use of this framework has now been adopted as voluntary guidance by the Convention on Biological Diversity and is being promoted by IUCN.

Currently, a tool for implementing equity assessments is being field-tested with the hope that it can be widely used as a means of enhancing the justness of areas-based conservation. Whilst the application of an equity assessment tool is reformist in some respects, because it seeks to tweak the existing system rather than change it, one rationale is that the cumulative educational effect of analysing justice might contribute to transformational change; for example, by mainstreaming multi-stakeholder discussion about recognition into governance processes.

Towards alternative worldviews: towards interconnected social and ecological justice

what happens when human exceptionalism and the utilitarian individualism of classical political economics become unthinkable. . . ? Seriously unthinkable: not available to think with.
Donna Haraway (2016, p. 57)

Biocultural diversity is one alternative framing of diversity that deliberately integrates human and biological values into a holistic expression of diversity. It reconceives conservation as co-inhabitation or co-existence of humans and non-humans, with the value of diversity in the balance of relationships (Rozzi, 2018). In some ways, it is an antithesis of the ‘Half-Earth’ way of thinking because it promotes diversity everywhere. For Ricardo Rozzi, there are two key conditions for making progress towards such an alternative way of thinking about and practising conservation. First, we need to break free from some of the mental dispositions that we are currently conditioned to think with. First and foremost, this means ceasing to think with the dominant economic ideology that makes a goal of economic growth, consumerism and individualism. It is this way of thinking that now threatens the destruction of humans and the rest of nature. Second, we need to understand and embrace the many past and current cultures “that promote harmonious forms of co-inhabitation among communities of diverse human and other-than-human beings” (Rozzi, 2018, p. 304).

I am using ‘biocultural diversity’ here as an umbrella term to try to capture old and new ways of thinking about conservation based around co-habitation and that cut across instrumental, intrinsic and relational ways of valuing nature (I would include e.g. ‘*Buen Vivir*’, ‘earth stewardship’ and ‘conviviality’ under this umbrella). The idea of biocultural diversity has become important to Indigenous peoples as a reframing of conservation that distils diverse wisdoms about living well and living with nature. As an example, Rozzi looks at the 2009 constitution of the plurinational state of Bolivia, including the phrase ‘*Suma Qamaña*’. This translates as ‘living well together’. In the Aymara language, it means to inhabit, in the sense of both living in and living with, and it emphasises the relational value of co-habitation. *Suma* means beautiful, but in the sense of perfect and fully formed. It conceives ‘well’ as an achieved and sufficient state. This Indigenous worldview of living well together provides an alternative to the individualism of neoliberalism, to ideas of living well that rely on never-ending progress and to non-relational ways of knowing and valuing nonhuman nature.⁶

Conclusion

This chapter has shown that biodiversity loss is a matter for justice, but so too is the way in which society chooses to respond to this loss. Both a lack of response and the wrong response

can produce and reproduce injustices. These injustices tend to follow existing social chasms and discriminations such that already marginalised groups suffer disproportionately. This includes, for example, poor subsistence farmers who are already bearing the burden of the conjoined biodiversity and climate-change crisis, and it includes Indigenous peoples and local communities worldwide who are politically marginalised and whose cultures and wisdom are too often sidelined.

Understanding and valuing alternative worldviews is in itself an essential basis for environmental justice. It is a question of recognition and fulfils what is increasingly viewed as an obligation to decolonise conservation. One useful exercise is to think about the kind of framing or worldview that is evident in particular notions about biodiversity and conservation. For example, is it mainly based on instrumental, intrinsic or relational values of nature? Is it coming from a framing of living *from* nature, living *with* nature, or perhaps living *in* nature or *as* nature? Perhaps, above all, is it confronting the underlying ideologies and practices that are currently driving us to the brink of ecological disaster?

Follow-up questions

- Do you think that transformational change can be achieved without changes to the current economic system?
- In order to progress towards a more just conservation, how important is it to recognise and promote worldviews and values that are currently marginalised?
- What are the strengths and weaknesses of current models of biodiversity conservation, including the ‘new conservation’ and ‘protectionist’ models?

Notes

- 1 On epistemic justice, see Chapter 7 of this volume; on recognition, see Chapter 5 of this volume; on Indigenous environmental justice, see Chapter 20 of this volume.
- 2 On environmental justice issues related to food and agriculture, see also Chapter 14 of this volume.
- 3 On ecocentrism, see also Chapter 21 of this volume.
- 4 On relational values, see also Chapter 20 of this volume.
- 5 On distribution, procedure and recognition, see Chapters 3, 4 and 5 of this volume, respectively.
- 6 On the concept of *Buen Vivir* in Latin America, see Chapter 7 of this volume.

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