



Research, part of a Special Feature on [Collaborative Management, Environmental Caretaking, and Sustainable Livelihoods](#)

## Conservation at a crossroads: governing by global targets, innovative financing, and techno-optimism or radical reform?

Catherine Corson<sup>1</sup> and Lisa M. Campbell<sup>2</sup>

**ABSTRACT.** Biodiversity conservation is at a crossroads. A number of trends are converging with the potential to transform our understanding of nature and how we conserve it. First, conservation policy makers are advocating increasingly ambitious global biodiversity targets, such as the agreement to protect 30% of terrestrial, inland water, and of coast and marine areas by 2030 made at the December 2022 Conference of the Parties to the Convention on Biological Diversity. Second, recognizing that governments do not have sufficient resources to reach these ambitious targets, they are turning to private finance and innovative financing mechanisms for help. Third, technological advances are enabling new ways of surveilling people, species, and ecosystems, measuring conservation outcomes, and targeting funding. Finally, long-standing concerns over the alienation of Indigenous Peoples and local communities from land and resources, and the colonial legacy of conservation, have been amplified by widespread contemporary awareness of racism more generally. Nascent critiques of conservation are incorporating but also moving beyond calls for participatory or rights-based approaches to conservation to push for the complete decolonization of conservation, alternatives to capitalist approaches to conservation, and other radical reforms. Collectively, these shifts are both reinforcing traditional conservation practice and power relationships and opening up space to expand understandings of collaborative management, environmental caretaking, and sustainable livelihoods and dramatically reform conservation. In this article, we draw on decades of research studying conservation governance in sites that range from villages to international meetings in order to examine this critical historical moment in conservation politics. We argue that conservation is at an ontological and epistemic moment during which the meaning of biodiversity, how to know it, how to conserve it, and who should conserve it is being fundamentally transformed. As transnational movements seek to transform our political economic system and to decolonize conservation, the consolidation of elite power among actors in finance, technology, governments, and big nongovernmental organizations abstracts conservation from localized contexts, drawing attention away from ensuring effective conservation on the ground and failing to challenge the root causes of biodiversity loss. Thus, continued vigilance is needed to keep equity, rights, justice, and livelihoods at the forefront of conservation.

**Key Words:** *biodiversity conservation; decolonization; innovative financing; targets; technology*

### INTRODUCTION

*The proposed Convention on Biological Diversity has the potential of becoming a genuine instrument for the conservation of the earth's biological wealth and equitable distribution of its benefits between and within nations. But only strong, radical public opinion can ensure this, and halt its conversion into another weapon in the hands of the rich and elite of the world.* (Ashish Kothari, *Politics of Biodiversity Conservation*, 1992)

Conservation is at a crossroads—one that tests not only its ability to succeed in protecting the world's biodiversity but also its ability to transmute to meet the demands of a changing world. As the epigraph indicates, questions of equity have pervaded the United Nations Convention on Biological Diversity (CBD) since its inception in 1992 (Kothari 1992), and protected areas have been central in these debates. Even as many conservationists enthusiastically push traditional conservation via state-led parks and protected areas in order to stem global biodiversity loss, critics continue to condemn fortress conservation for excluding Indigenous Peoples and local communities (IPLCs) and advocate for more inclusive approaches. Their efforts, while effective in spreading models such as community conservation and human-rights based approaches, are also being thwarted by the rising centrality of green capitalism and associated privatization of conservation governance, the scaling up of conservation planning, and, in many places, its militarization. This has reinvigorated concerns about the impacts of conservation on affected peoples' livelihoods and rights, which are further

amplified by contemporary attention to systematic racism more generally as well as the colonial legacy of conservation and its ongoing influence. These tensions pervaded the 15th Conference of the Parties (COP15) to the CBD negotiations, which concluded after two years of delays due to COVID-19 in Montreal, Canada in December 2022

In the lead up to COP15, these struggles were encapsulated by Waldron et al. (2020) who assessed the costs and benefits of adopting a 30% strictly protected area coverage target in the Global Biodiversity Framework (GBF) and an open letter response by Agrawal et al. (2021) that critiqued the paper as “a proposal for a new model of colonialism.” Currently, we see the introduction of radical and radically different proposals in conservation politics. These range from Half Earth, which aims to secure half of the earth in strictly protected areas (Wilson 2016), to new conservation, which is people-oriented and achieved through capitalism (e.g., Kareiva and Marvier 2012, Greenwald et al. 2013), to convivial conservation, which advocates for “conservation outside of the capitalist box” (Büscher and Fletcher 2020:202) to calls by the Our Land, Our Nature Congress to decolonize conservation (Our Land, Our Nature Congress 2021, Survival International 2021). The visibility and intensity of debate has increased due to the impact of the ongoing COVID-19 pandemic and mounting global concern about climate change. It has mobilized calls for biodiversity protection via more and larger protected areas and, alternatively, for reform of global political economy and colonial legacies.

<sup>1</sup>Department of Environmental Studies, Mount Holyoke College, <sup>2</sup>Duke University Marine Laboratory, Nicholas School of the Environment, Duke University

These debates and the tensions at the COP15 negotiations both reflect and engender a number of broad trends in international conservation, including the rise of targets-based governance, the turn to innovative financing mechanisms, new techno optimism, and the growing counter push for radical reforms. In order to reach ambitious global targets for protected areas like those of the CBD, conservation policy makers are increasingly turning to private finance and innovative financing mechanisms to try to attract the billions of dollars needed to fill the financing gap between ambition and available resources. At the same time, technological innovations—such as remote sensing, satellite tracking, drones, and machine-learning artificial intelligence (AI)—offer a constant stream of data and tools to support monitoring and surveillance of not only environments and species but also people and markets. As conservation by global targets, finance, and technology has drawn global attention upward, away from on-the-ground conservation, IPLCs and allies have challenged global targets, calling for a halt to protected areas that exclude IPLCs, reparations for historical expropriations, a commitment to rights-based approaches, and global economic reform.

We have been studying conservation governance for decades, from individual long-term traditional field-based ethnographic research in local research sites in Madagascar and Costa Rica to research on international meetings of the CBD, the International Union for Conservation of Nature (IUCN), and the UN Commission on Sustainable Development. These conferences are field sites where diverse state and non-state actors, normally dispersed, come together to perform, consolidate, and codify agendas that define what conservation is and who is responsible for it. Using collaborative event ethnography (CEE), a methodology innovated to support the study of time condensed mega-events, we have documented the discursive struggles at these events that shift ideas, values, and norms that shape the broader field of conservation governance (MacDonald and Corson 2012, Campbell et al. 2014a, Corson et al. 2019, Gray et al. 2020). In this article, we draw on an extensive body of published empirical analyses and on recent insights from our ongoing study of the World Conservation Congress (WCC) in September 2021 (hybrid, i.e. online/in person) and a series of meetings of the CBD's subsidiary bodies during May–June, August, November 2021 (virtual), and March 2022 (hybrid), as well as the final COP15 in December 2022, to provide a broad overview of trends in conservation governance and their intersections.

We assert that conservation is at an ontological and epistemic moment during which the meaning of biodiversity, how to know it, how to conserve it, and who should conserve it is being fundamentally transformed. As transnational movements seek to transform our political economic system and to decolonize conservation, the consolidation of elite power among actors in finance, technology, governments, and big nongovernmental organizations (NGOs) impedes their progress. The combined impact of targets, finance, and technology abstracts conservation from localized contexts, drawing attention away from ensuring effective conservation on the ground, and fails to challenge the root causes of biodiversity loss. In addition, the shift to virtual and hybrid negotiations over the CBD's GBF—a result of COVID-19—further limited the ability by countries in the Global South and non-state actors to shape the ways in which these intersections play out. The tensions between the Global North

and Global South that pervaded the GBF negotiations culminated at COP15 with an objection, which was later withdrawn, by the Democratic Republic of the Congo, to the lack of inclusion of a dedicated fund to support developing countries to reach biodiversity targets in final GBF.

Yet not all interactions among trends are conflictual. Proponents of radical reform and IPLC knowledge and rights also mobilize private finance, new technologies, and targets to achieve their goals. Global conservation governance is composed of dynamic and constantly shifting assemblages of logics, practices, networks, and technologies across space and time (Corson et al. 2019, Gray et al. 2020), where opportunities for reworking power dynamics in conservation lie in multiple nodes of coming together that make up these assemblages. Thus, there is always space to expand collaborative management, environmental caretaking, and sustainable livelihoods in ways that can dramatically reform conservation. One example is the hard-fought victory to include recognition of Indigenous and traditional territories in the final protected areas target of the GBF. However, identifying these nodes demands theories and methodologies that can grapple with the ways in which diverse elements are assembled and constantly being reworked as well as a historically grounded understanding of how we got to the current crossroads.

#### **A BRIEF HISTORY OF CONSERVATION: FROM COLONIAL TO NEOLIBERAL CONSERVATION**

International conservation has always been intimately intertwined with global political economy, and we touch briefly on a few aspects of the significant scholarship that documents this. The Yellowstone model of exclusionary protection that dominated conservation for decades stemmed from the idea of protecting a wilderness free of people, which frequently meant a racialized discounting of the land claims of IPLCs or decrying their land use practices as backwards or barbaric (Cronon 1996, Jacoby 2001, Adams 2019a). In the 1980s and 1990s, NGOs helped governments, weakened by structural adjustment policies, to roll out conservation programs. Inspired by the emergence of the field of conservation biology and biodiversity conservation as a political project, they spread community conservation alternatives to exclusionary conservation (Western et al. 1994, Brosius et al. 2005, Corson 2016). By the early 2000s, however, some conservationists had begun arguing that conservation was best accomplished not by isolated parks or community projects but by drawing on the science of island biogeography and relying on geographic information systems via ecoregional and transboundary efforts (Attwell and Cotterill 2000, Margules and Pressey 2000, da Fonseca et al. 2005). Finally, as regulatory approaches to environmental issues declined under neoliberalism, the use of targets to frame, communicate, and guide global environmental governance became a central feature of international environmental agreements (Kanie and Biermann 2017), and pioneering technological innovations helped to achieve and monitor their potential attainment.

Concomitantly, conservationists recognized that conservation would not succeed if perceived to be in opposition to economic growth and embraced development. In 1982, the IUCN's World Conservation Strategy endorsed economic development as a means of achieving conservation, an idea reflected in the Brundtland Commission (1987) and in the United Nations

Conference on Environment and Development's (Rio) concept of sustainable development a decade later. The subsequent effort to recognize and capture the economic value of nature conservation has fueled the growth of market-based approaches such as payments for ecosystem services, biodiversity offsets, and nature derivatives (Sullivan 2013, Dempsey 2016). The Green Economy, introduced for the 2012 Rio+20 conference in the wake of the 2008 global recession, went further to assert that the environment could be the driver for global economic recovery (Barbier 2009).

Concepts like natural capital and ecosystem services help to reframe conservation as an investment and to attract global investors and financial actors to the potential profitability of saving the environment (Wilshusen and MacDonald 2017, Wilshusen 2019). As actors from multinational corporations, the financial sector, technology start-ups, and the entertainment industry become influential players, the governance of conservation is no longer the sole purview of governments and NGOs (Holmes 2011, 2012, MacDonald and Corson 2012, Wilshusen 2019). We are also seeing the rising centrality of conservation in the global political economy, where saving the earth forms the foundation for new forms of capital accumulation (Büscher and Fletcher 2015, 2018).

In this context, practitioners and scholars alike have recognized the limits of community projects for advancing IPLC rights, noting that they can mask continued colonial power relations and patterns of dispossession and even concentrate wealth in the hands of the already wealthy (Dressler and Büscher 2008, Wang and Corson 2015, Fletcher and Büscher 2017). They have pointed to the alienation of communities from land and resource rights, or green grabbing, associated with emergent market-based conservation approaches (Fairhead et al. 2012, Corson et al. 2013). Calls for greater recognition of Indigenous and local knowledge, collaborative management, IPLC Conserved Territories and Areas, and rights-based approaches are gaining strength (Borrini-Feyerabend and Kothari 2008, Doolittle 2010, Stevens 2014, Corson et al. 2020, Rights and Resources Initiative 2020, Tauli-Corpuz et al. 2020). Organizations like the CBD and IUCN are under scrutiny for how they privilege particular ways of knowing, being, and living (Whitt 2009) and how conservation marginalizes IPLCs in terms of land and resource rights, access, and governing authority (Tauli-Corpuz et al. 2020). Even mainstream conservation organizations are starting to acknowledge the colonial legacies of conservation (Conservation International 2021).

However, even as calls for radical reform are strengthening and efforts to incorporate human rights language in international law are succeeding, conservation is also becoming more embedded with targets, innovative financing, and big data, which is consolidating influence by science, technology, and finance actors. And the move of CBD and IUCN negotiations online during the pandemic has both enabled and challenged the push for radical transformation with respect to collaborative management, environmental caretaking, and sustainable livelihoods.

### GLOBAL CONSERVATION TARGETS

Foremost on the agenda of COP15 was securing agreement on the GBF, a strategic plan, and a set of biodiversity targets to guide conservation through the next decade. Proponents of targets-based governance argue that targets facilitate measuring progress,

hold signatories to account, harness political will, and promote communication and development of tools and knowledge (Butchart et al. 2016, Doherty et al. 2018). They attribute failures to meet almost all elements of CBD's 2010 and 2020 targets to their not being SMART (specific, measurable, achievable, realistic, and time-bound) enough and call for more precise and timely indicators, disaggregated data, methods to account for trade-offs among targets, and further quantification to address shortcomings (Perrings et al. 2011, Maxwell et al. 2015). New technological innovations have reinforced enthusiasm for SMART targets, and targets-based governance has spurred further innovation. Targets "create the need for further scientific work to determine baselines, develop indicators, and measure progress" (Campbell et al. 2014b:59).

Targets and associated indicators do more than measure conservation; they define objects of conservation, dictate how conservation should be accomplished, and identify conservation actors and their roles and responsibilities (Campbell et al. 2014b, Hagerman et al. 2021). The GBF includes the CBD's third set of biodiversity targets, and the package of targets reflects the range of debates outlined in the introduction. It includes targets and associated indicators for the expansion of protected areas (Target 3); that reinforce neoliberal logics associated free trade and payments for ecosystem services (Targets 11, 18, and 19); that recognize the knowledge and role of Indigenous peoples and local communities (Targets 1, 5, 9, 13, and 22); and that address the responsibilities of developed nations to support—with financing, technology transfer, and capacity building—conservation in developing countries (Targets 19 and 20; United Nations Convention on Biological Diversity 2022). However, the inclusion of targets reflecting diverse understandings of conservation and who is responsible for it does not imply all targets will be equally prioritized for action, and marquee targets, such as protected areas targets, attract more attention than others, including scientific activity to support them through, for example, development of indicators (Hagerman et al. 2021).

### INNOVATIVE FINANCING

In order to reach these ambitious global targets, conservationists have turned to the private sector to help fill the financing gap—or additional funds needed to supplement state resources in order to reach global conservation targets—estimated at between US\$598 billion and US\$824 billion per year for conservation (Deutz et al. 2020). At COP15, Parties agreed to increase total biodiversity-related international financial resources from developed countries to developing countries to US\$30 billion per year and from all sources, including private sector resources, to at least US\$200 billion per year. Through mechanisms like conservation trust funds, green bonds, biodiversity offsets, and carbon trading, they seek to make conservation attractive to private investors. Here, international conferences become critical sites for building networks that attract private investors. For example, the CBD's June 2021 workshop on the Financial Sector and the Post-2020 Global Biodiversity Framework was convened precisely to "bring the financial sector into the discussions under way on developing and implementing ... the post-2020 global biodiversity framework" so as "to foster strong ownership of the framework to be agreed and strong support for its immediate implementation" (United Nations Convention on Biological Diversity 2021:1).

Resulting initiatives like The Economics of Ecosystem and Biodiversity, the Natural Capital Finance Alliance, and the Business and Biodiversity Offsets Program have not only attracted and brought together potential investors but also institutionalized neoliberal political rationality and apolitical explanations of biodiversity loss within conservation (MacDonald and Corson 2012, Dempsey and Suarez 2016, Wilshusen 2019). Likewise, multinational corporations, private philanthropic organizations, financial technology (fintech), and the entertainment industry are now not just on the boards of the large conservation NGOs but also negotiating targets, fundraising processes, and surveillance practices alongside NGOs, scientists, and governments. They have influence over how funds are invested and for what disbursements are used as well as the capacity to reframe conservation in terms of its return on investment and to redirect investment to places with higher returns (Sullivan 2012, Dempsey and Bigger 2019) and away from nonmarket strategies.

### TECHNOLOGICAL INNOVATION

As they strive to reach global targets and financial goals, conservationists have turned to technologies such as remote sensing, cloud computing, biotelemetry, drones, machine learning, and AI algorithms to make human-environment relations more visible, measurable, and fixable. These technologies can be used to rapidly and continuously gather, analyze, and distribute data about environmental conditions and threats, which can then be utilized to track population dynamics, monitor illegal harvesting, and even estimate carbon sequestration potential. For example, CBD-sponsored research using remote sensing, oceanographic data sensors, and underwater drone imagery has been used to identify Ecologically and Biologically Significant Areas, candidates for enclosure in marine protected areas (Gray 2018). Likewise, blockchain technology is being used to certify ethical supply chains, eliminate intermediaries so as to reduce transaction costs, and create SMART contracts, which execute autonomously between parties once certain conditions are met, allowing individual donors to verify impacts and fund successful projects (Chapron 2017, Sutherland et al. 2017, Adams et al. 2018). These data can then be turned into exchangeable digital assets. For example, the IUCN's Tech4Nature program uses image capture, AI, and distributed ledger technology to gather and process information to verify an area as adequately protected and then creates species-based non-fungible tokens (NFTs) to fundraise for the approved areas (Eyholzer et al. 2017, IUCN News 2020, IUCN 2021a).

As these novel technologies digitize, commoditize, and financialize nature in new ways, they not only create opportunities for virtual engagement with nature and speculative investments but also consolidate conservation design in the hands of technological and financial experts. Critical geographers have questioned many of the assumptions about technological innovations and the "growing global practices of information-gathering, geocoding, and synthesizing via networks of scientific and political actors" driving environmental governance (Boucquoy et al. 2019:484). Seemingly neutral automated environmental governance and conservation by algorithm prioritizes elements that can be captured and tracked quantitatively, elides democratic engagement in the reconciliation of value conflicts, introduces privacy concerns, and privileges those with access to technology and the resulting information,

affecting who governs and how (Dallyn 2017, Bakker and Ritts 2018, Adams 2019b, Hagerman et al. 2021). It renders invisible and precarious the human labor that accompanies, often in a reworked manner, techno-conservation (Lohmann 2020, Neimark et al. 2020, Thakholi 2021). More insidiously, new surveillance technologies can enlist citizen scientists in state security projects (Bakker and Ritts 2018), underwrite increased violence in conservation (Duffy 2014, Kelly and Ybarra 2016, Lunstrum 2014), and lead to surveillance philanthropy (Howson 2021a). Finally, much attention has been paid to the enormous energy used to produce cryptocurrencies like Bitcoin (de Vries 2018) as well as e-waste (Bakker and Ritts 2018). Still, these existing critiques have yet to dampen the general enthusiasm for technological innovation among many conservationists.

### RADICAL REFORM

Calls for radical reform of conservation draw on critiques by academics, NGOs, IPLCs, and the media that argue that colonial science and conservation reproduce practices developed in the Anglo-European Western traditions, which have long disenfranchised and displaced people from their lands and resources (Hendlin 2014, Eichler and Baumeister 2018, Domínguez and Luoma 2020). Critics demand the decolonization of conservation, seeking to transform conservation as a whole (Survival International 2021). The Our Land, Our Nature Congress, which took place the day before the 2021 IUCN WCC, called for a conservation model that fights "overconsumption and exploitation of resources led by the Global North and its corporations" and specifically to "discourage the adoption of the 30x30 target (30% of areas protected by 2030)" and "forward a radical vision and actionable recommendations for protection of Earth's biological and cultural diversity, which has Indigenous peoples and local communities at the centre and which is rooted in rights and social justice" (Our Land, Our Nature Congress 2021). Similar visions seek to transform our political economic system and centralize justice, such as convivial conservation, which calls for "conservation outside of the capitalist box" or a combination of radical equity, structural transformation, and environmental justice (Büscher and Fletcher 2020:202) and, related, Whole Earth, which envisages a harmonious balance between people and nature, with environmental justice at the heart (Büscher et al. 2017a, b). Others, like Radical Ecological Democracy, emphasize direct democracy, community economies, cultural diversity, human well-being, and ecological resilience (Kothari 2014).

There have been important advances in reforming international conservation governance. The 2016 WCC voted to recognize Indigenous Peoples' organizations as a voting membership category, Indigenous Peoples' and community conserved territories and areas (ICCAs) have been increasingly recognized as important conservation measures (Corson et al. 2014, Stevens 2014), the IUCN's Global Programme on Governance and Rights has gained prominence in the last few years, and discussions of GBF draft targets include recognition of IPLCs as important custodians of biodiversity (Plumptre et al. 2021). In 2021, the IUCN's Commission on Environmental, Economic and Social Policy introduced Reimagining Conservation, a new partnership that seeks to support environmental defenders and advance rights-based conservation approaches as well as to make funding more inclusive and accessible for IPLCs, youth, and women. Of

particular note, the final GBF included recognition of the rights, roles, and knowledge of IPLCs in conservation, as well as Indigenous and traditional territories. Although these are important advances, critics have argued that there remains a disconnect between the ambitions of international text and the ongoing alienation on-the-ground of IPLCs from their lands and resources, militarization of conservation, problematic conceptions of community, tokenization of Indigenous knowledge, and appropriation of IPLC agendas (Kashwan 2013, Corson et al. 2020, Rights and Resources Initiative 2020, Kashwan et al. 2021).

### THE CROSSROADS

The assemblage of targets-based governance, financialization, and technological innovation with radical reform could trigger a variety of dramatically divergent conservation outcomes in the future. There are tensions among them in many places, for example, how competing knowledge claims between Western and other knowledge systems and between natural sciences and social sciences are negotiated in assessment efforts like the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES; Masood 2018). Even as the package of CBD targets expands to accommodate multiple visions of conservation, targets that have good data and indicators are more likely to be pursued (Jacob 2017), which reinforces the role of natural science and scientists in determining baselines, developing indicators, and measuring progress (Campbell et al. 2014b, Hagerman et al. 2021). Similarly, some developing countries have resisted innovative private financing initiatives, concerned that they are driven by donor interest to reduce their traditional financial obligations to support the CBD's work and to further neoliberal reform.

Yet not all interactions among trends are conflictual; proponents of reform may also mobilize new technologies to achieve their goals. The explosion of blockchain for good reflects endeavors to seek to decentralize control over key assets and foster community economies (Gardner 2019, Barinaga 2020, Howson 2021b). Blockchain technology “can render information held by communities financially valuable in ways those communities may find useful” (Stuit et al. 2022:1). For example, initiatives like World Wide Fund for Nature's Panda Labs advocate non-fungible tokens as fundraising tools for community conservation (World Wide Fund for Nature 2021).

Overall, however, as conservation becomes more embedded with the financial sector, as well as fintech and big data, we can expect to see a significant transformation in understandings of biodiversity, the social relations that produce it, and the strategies to conserve it. Even as transnational movements to transform our political economic system and to decolonize conservation gain momentum, they are challenged by the consolidation of elite power among actors in finance, technology, governments, and big NGOs. As fintech actors come to the decision-making table, they help to reframe conservation in terms of its return on investment, redirecting investment to projects with higher returns and creating commodities and markets that can increase resource consumption and inequality in name of doing good (Holmes and Cavanagh 2016, Fletcher and Büscher 2017). Armed with the technology to automate conservation monitoring and direct investments to select projects that help to meet global targets, these actors can

determine the purpose of biodiversity conservation, whose knowledge counts, and what constitutes effective conservation. Fintech also makes human-environment relations more visible, measurable, and fixable. It allows the targeting of conservation payments to bypass intermediaries and be directed to so-called successes and brings actors interested primarily in the bottom-line to the decision-making table.

Finally, when the COVID-19 pandemic forced international negotiations online, preparatory CBD meetings were reduced to formal negotiations in plenary and contact groups. Less formal interactions, that take place in side events where nonstate actors present their work and the other informal settings where they seek to influence the agenda, were eliminated. Participants had to overcome practical (e.g., time zones) and technical (e.g., bandwidth) barriers as well as the tight schedules of the online format. For example, due to time zone differences, the CBD limited meetings to three hours per session and two sessions per day. This contrasts to in-person meetings, where contact groups sometimes run through the night and where discussions can overflow into hallways and lunch tables. Collectively, these changes consolidated power in the hands of secretariats, states from the Global North, and transnational private and non-profit actors. The Third World Network writes about the CBD preparatory meetings, “these sessions have seen developing countries hugely disadvantaged for many reasons: technical connectivity issues have resulted in delegates often unable to connect or participate effectively, grueling schedules that disadvantage more developing country regions disproportionately, difficulties with virtual regional coordination, etc.” (Third World Network 2021a, b). Similarly, at the March 2022 meeting of the Open-ended Working Group on the GBF, the International Indigenous Forum on Biodiversity (IIFB)—a group of Indigenous governments, NGOs, scholars, and activists that coordinate strategies at the CBD and other international environmental meetings—lamented language barriers (as all contact group negotiations were held exclusively in English) and the financial strain of participating in multiple intersessional processes (IIFB 2022b).

### REPOLITICIZING CONSERVATION

At the same time, the IIFB also took advantage of virtual meetings during the COVID-19 years to build a powerful campaign, which culminated in the successful inclusion of IPLC language in the final GBF. At the March 2022 CBD preparatory meeting, it orchestrated a focused campaign to ensure specific language in the GBF that recognized traditional governance, restoration, sustainable use, and knowledge as well as protected free and prior informed consent, equitable participation, and benefit sharing (IIFB 2022a). Citing studies that show “deforestation is reduced in Indigenous Lands relative to non-protected areas” (Sze et al. 2022:123), activists asserted that “Indigenous peoples and local communities' ways of life and territories are part of the solution to our global crises” (Human Rights in Biodiversity Working Group 2022:3), and “safeguarding the rights of IPLCs is the most effective—and the most economical—model of protecting the world's nature” (<https://iifb-indigenous.org/2022/03/29/iifb-final-press-release-eng-29-mar-2022-final/>). Thus, the hybrid negotiation provided opportunities to advance the human rights agenda but also limited the ways in which activists could participate.

Overall, the nuanced ways in which targets-based governance, financialization, and technological innovation are assembled with more radical reforms challenge us to not only reflect on what conservation is, who should and is doing it and how, but also point to the need for new theories and methodologies to capture its complexity so as to identify the moments for influence. Researchers and communities now need to become familiar with new technologies, big data, complex financialization, virtual cultures rather than real ones, and programming languages rather than spoken ones. Field-based, multisite, or institutional research is no longer sufficient because ethnographic fields must be defined and connected virtually. The actors we follow might be robots because projects and evaluations once implemented by people are now carried out by automated technology, monitored by remote surveillance technology, and analyzed by algorithms, and the organizations we want to access might even be virtual. Power relations once secured in written correspondence and later found by researchers in historical archives are now secured via blocks in a blockchain that can be unveiled only through the use of a private key or are otherwise lost in the ether.

At the same time, we need to confront the scholarly structures embedded in colonial histories of dispossession, challenge the norms of knowledge production—including academic norms that have dominated critical conservation studies—and attend to the ways in which our scholarship can reinforce or confront power structures (Sundberg 2014, Sultana 2019, Gagnon and Ravindran 2023). As academics, we are implicated in the same trends shifting conservation itself, and we call attention to Tuck and Yang's (2012) warning against the overuse of the language of decolonization to capture various social justice concerns, arguing that “decolonization is not a metaphor” (3) but the “repatriation of Indigenous land and life” (21). To this end, initiatives such as the Our Land, Our Nature Congress (2021), inclusion of language recognizing rights-based approaches in the 2022 GBF, and formal membership in international organizations are critical in advancing Indigenous and local sovereignty and keeping global economic reform, reparations, and IPLC rights on the international agenda. Likewise, academics can continue to center these issues in their studies of conservation; our fascination with the ways in which conservation is increasingly virtualized cannot blind us to the places and peoples impacted by conservation practice. To return to the epigraph, coordinated radical and transnational public engagement across multiple sites and scales is important to keep equity, rights, justice, and livelihoods at the forefront of conservation.

---

#### Acknowledgments:

*The ideas for this article were informed by multiple conversations with our core CEE collaborators and especially Noella Gray, Shannon Hagerman, and Peter Wilshusen during a writing retreat in 2018. We would also like to thank all of the researchers who have participated in CEEs of the 2008 WCC in Barcelona, Spain; the 2010 Conference of the Parties to the CBD in Nagoya, Japan; the 2012 United Nations Conference on Sustainable Development in Rio de Janeiro, Brazil; the 2014 WPC in Sydney, Australia; the 2016 IUCN-WCC in Honolulu, Hawaii; and the 2020-2022 Conference of the Parties to the CBD preparatory process.*

#### Data Availability:

*Data/code sharing is not applicable to this article because no data/code were analyzed in this study.*

---

#### LITERATURE CITED

- Adams, B. 2019a. Green development: environment and sustainability in a developing world. Routledge, Milton Park, UK. <https://doi.org/10.4324/9780203386033>
- Adams, R., B. Kewell, and G. Parry. 2018. Blockchain for good? Digital ledger technology and sustainable development goals. Pages 127-140 in W. L. Filho, R. W. Marans, and J. Callewaert (editors). Handbook of sustainability and social science. Springer International Publishing, Basel, Switzerland. [https://doi.org/10.1007/978-3-319-67122-2\\_7](https://doi.org/10.1007/978-3-319-67122-2_7)
- Adams, W. M. 2019b. Geographies of conservation II: technology, surveillance and conservation by algorithm. *Progress in Human Geography* 43:337-350. <https://doi.org/10.1177/0309132517740220>
- Agrawal, A., K. Bawa, D. Brockington, M. R. Dove, R. Duffy, A. Kabra, A. Kothari, T. Li, H. Nagendra, C. Noe, E. Nuesiri, M. Nuvunga, M. Ogada, L. Ogden, M. Oommen, N. Rai, M. Ramesh, M. Ramutsindela, G. Shahabuddin, K. Shanker, R. Sukumar, A. Varghese, P. West, and K. Whyte. 2021. An open letter to the lead authors of ‘Protecting 30% of the planet for nature: costs, benefits and implications.’ <https://openlettertowaldronetal.wordpress.com>.
- Attwell, C. A. M., and F. P. D. Cotterill. 2000. Postmodernism and African conservation science. *Biodiversity Conservation* 9 (5):559-577. <https://doi.org/10.1023/A:1008972612012>
- Bakker, K., and M. Ritts. 2018. Smart earth: a meta-review and implications for environmental governance. *Global Environmental Change* 52:201-211. <https://doi.org/10.1016/j.gloenvcha.2018.07.011>
- Barbier, E. B. 2009. Rethinking the economic recovery: a global green new deal. United Nations Environment Programme, Geneva, Switzerland. <https://doi.org/10.1017/CBO9780511844607>
- Barinaga, E. 2020. A route to commons-based democratic monies? Embedding the governance of money in traditional communal institutions. *Frontiers in Blockchain* 3(575851). <https://doi.org/10.3389/fbloc.2020.575851>
- Borrini-Feyerabend, G., and A. Kothari. 2008. Recognising and supporting Indigenous and community conservation: ideas and experiences from the grassroots. IUCN CEESP/WCPA Briefing Note 9. <https://www.iccaconsortium.org/wp-content/uploads/2015/08/publication-ceesp-briefing-note-9-iccaspdf>
- Boucquey, N., K. S. Martin, L. Fairbanks, L. M. Campbell, and S. Wise. 2019. Ocean data portals: performing a new infrastructure for ocean governance. *Environment and Planning D: Society and Space* 37(3):484-503. <https://doi.org/10.1177/0263775818822829>
- Brosius, J. P., A. L. Tsing, and C. Zerner. 2005. Communities and conservation: history and politics of community-based natural resource management. Alta Mira Press, Walnut Creek, California, USA.

- Büscher, B., and R. Fletcher. 2018. Under pressure: conceptualising political ecologies of green wars. *Conservation and Society* 16(2):105-113. <https://doi.org/10.4103/cs.cs.18.1>
- Büscher, B., and R. Fletcher. 2020. *The conservation revolution: radical ideas for saving nature beyond the Anthropocene*. Verso Books, London, UK.
- Büscher, B., and R. Fletcher. 2015. Accumulation by conservation. *New Political Economy* 20(2):273-298. <https://doi.org/10.1080/13563467.2014.923824>
- Büscher, B., R. Fletcher, D. Brockington, C. Sandbrook, B. Adams, L. Campbell, C. Corson, W. Dressler, R. Duffy, N. Gray, G. Holmes, A. Kelly, E. Lunstrum, M. Ramutsindela, K. Shanker. 2017a. Doing Whole Earth justice: Reply to Cafaro et al. *Oryx* 51(3):401. <https://doi.org/10.1017/S0030605317000278>
- Büscher, B., R. Fletcher, D. Brockington, C. Sandbrook, B. Adams, L. Campbell, C. Corson, W. Dressler, R. Duffy, N. Gray, G. Holmes, A. Kelly, E. Lunstrum, M. Ramutsindela, K. Shanker. 2017b. Half-Earth or Whole Earth? Radical ideas for conservation and their implications. *Oryx* 51(3):407-410. <https://doi.org/10.1017/S0030605316001228>
- Butchart, S. H. M., M. Di Marco, and J. E. M. Watson. 2016. Formulating smart commitments on biodiversity: lessons from the Aichi targets. *Conservation Letters* 9(6):457-468. <https://doi.org/10.1111/conl.12278>
- Campbell, L. M., C. Corson, N. J. Gray, K. I. MacDonald, and J. P. Brosius. 2014a. Studying global environmental meetings to understand global environmental governance: collaborative event ethnography of the 10th Conference of the Parties to the Convention on Biological Diversity. *Global Environmental Politics* 14(3):1-20. [https://doi.org/10.1162/GLEP\\_e.00236](https://doi.org/10.1162/GLEP_e.00236)
- Campbell, L. M., S. Hagerman, and N. J. Gray. 2014b. Producing targets for conservation: science and politics at the tenth Conference of the Parties to the Convention on Biological Diversity. *Global Environmental Politics* 14(3):41-63. [https://doi.org/10.1162/GLEP\\_a.00238](https://doi.org/10.1162/GLEP_a.00238)
- Chapron, G. 2017. The environment needs cryptogovernance. *Nature* 545(7655):403-405. <https://doi.org/10.1038/545403a>
- Conservation International. 2021. *Respecting human rights*. Conservation International, Arlington, Virginia, USA. <https://www.conservation.org/priorities/human-rights>
- Corson, C. 2016. *Corridors of power: the politics of environmental aid to Madagascar*. Yale University Press, New Haven, Connecticut, USA.
- Corson, C., N. L. Gray, L. M. Campbell, and P. Wilshusen. 2019. Assembling global conservation governance. *Geoforum* 103:56-65. <https://doi.org/10.1016/j.geoforum.2019.03.012>
- Corson, C., R. L. Gruby, R. Witter, S. Hagerman, D. Suarez, S. Greenberg, M. Bourque, N. J. Gray, and L. M. Campbell. 2014. Everyone's solution? Defining and re-defining protected areas in the Convention on Biological Diversity. *Conservation and Society* 12(2):190-202.
- Corson, C., K. I. MacDonald, and B. Neimark. 2013. Grabbing "green:" markets: environmental governance and the materialization of natural capital. *Human Geography* 6(1):1-15. <https://doi.org/10.1177/194277861300600101>
- Corson, C., J. Worcester, S. Rogers, and I. Flores-Ganley. 2020. From paper to practice? Assembling a rights-based conservation approach. *Journal of Political Ecology* 27(1):1128-1147. <https://doi.org/10.2458/v27i1.23621>
- Cronon, W. 1996. The trouble with wilderness; or, getting back to the wrong nature. *Environmental History* 1(1):7-28. <https://doi.org/10.2307/3985059>
- da Fonseca, G. A. B., A. Bruner, R. A. Mittermeier, K. Alger, C. Gascon, and R. E. Rice. 2005. On defying nature's end: the case for landscape-scale conservation. *George Wright Forum* 22(1):46-60. <https://www.jstor.org/stable/43597931>
- Dallyn, S. 2017. Cryptocurrencies as market singularities: the strange case of Bitcoin. *Journal of Cultural Economy* 10(5):462-473. <https://doi.org/10.1080/17530350.2017.1315541>
- de Vries, A. 2018. Bitcoin's growing energy problem. *Joule* 5(2):801-805. <https://doi.org/10.1016/j.joule.2018.04.016>
- Dempsey, J. 2016. *Enterprising nature: economics, markets, and finance in global biodiversity politics*. Wiley Blackwell, Chichester, UK. <https://doi.org/10.1002/9781118640517>
- Dempsey, J., and P. Bigger. 2019. Intimate mediations of for-profit conservation finance: waste, improvement, and accumulation. *Antipode* 51(2):517-538. <https://doi.org/10.1111/anti.12503>
- Dempsey, J., and D. C. Suarez. 2016. Arrested development? The promises and paradoxes of "selling nature to save it." *Annals of the American Association of Geographers* 106(3):653-671. <https://doi.org/10.1080/24694452.2016.1140018>
- Deutz, A., G. M. Heal, R. Niu, E. Swanson, T. Townshend, Z. Li, A. Delmar, A. Meghji, S. A. Sethi, and J. Tobin-de la Puente. 2020. *Financing nature: closing the global biodiversity financing gap*. The Paulson Institute, The Nature Conservancy, and the Cornell Atkinson Center for Sustainability, Chicago, Illinois, USA. [https://www.paulsoninstitute.org/wp-content/uploads/2020/09/FINANCING-NATURE-Full-Report-Final-Version\\_091520.pdf](https://www.paulsoninstitute.org/wp-content/uploads/2020/09/FINANCING-NATURE-Full-Report-Final-Version_091520.pdf)
- Doherty, T. S., L. M. Bland, B. A. Bryan, T. Neale, E. Nicholson, E. G. Ritchie, and D. A. Driscoll. 2018. Expanding the role of targets in conservation policy. *Trends in Ecology and Evolution* 33(11):809-812. <https://doi.org/10.1016/j.tree.2018.08.014>
- Domínguez, L., and C. Luoma. 2020. Decolonising conservation policy: how colonial land and conservation ideologies persist and perpetuate Indigenous injustices at the expense of the environment. *Land* 6(65). <https://doi.org/10.3390/land9030065>
- Doolittle, A. A. 2010. The politics of Indigeneity: Indigenous strategies for inclusion in climate change negotiations. *Conservation and Society* 8(4):286-291. [https://www.jstor.org/stable/26393018#metadata\\_info\\_tab\\_contents](https://www.jstor.org/stable/26393018#metadata_info_tab_contents)
- Dressler, W., and B. Büscher. 2008. Market triumphalism and the CBNRM 'crises' at the South African section of the great Limpopo Transfrontier Park. *Geoforum* 39:452-465. <https://doi.org/10.1016/j.geoforum.2007.09.005>

- Duffy, R. 2014. Waging a war to save biodiversity: the rise of militarized conservation. *International Affairs* 90(4):819-824. <https://doi.org/10.1111/1468-2346.12142>
- Eichler, L., and D. Baumeister. 2018. Hunting for justice: an Indigenous critique of the North American model of wildlife conservation. *Environment and Society* 9(1):75-90. <https://doi.org/10.2307/j.ctv2vr8tm0.8>
- Eyholzer, R., T. Caradonna, E. Hynes, S. Fischer, J. Hardcastle, P. Salm, N. J. Shah, and S. Valenzuela de Narvaez. 2017. Fair finances for effective conservation: a global green list of fairly and effectively managed protected areas successfully conserving nature. IUCN Green List Standard Token (GLS) Whitepaper. [https://neironix.io/documents/whitepaper/1488/whitepaper\\_v1.1.2.pdf](https://neironix.io/documents/whitepaper/1488/whitepaper_v1.1.2.pdf)
- Fairhead, J., M. Leach, and I. Scoones. 2012. Green grabbing: a new appropriation of nature? *Journal of Peasant Studies* 39 (2):237-261.
- Fletcher, R., and B. Büscher. 2017. The PES conceit: revisiting the relationship between payments for environmental services and neoliberal conservation. *Ecological Economics* 132:224-231. <https://doi.org/10.1016/j.ecolecon.2016.11.002>
- Gagnon, V., and E. Ravindran. 2023. Restoring human and more-than-human relations in toxic riskscape: 'in perpetuity' within Lake Superior's Keweenaw Bay Indian Community, Sand Point. *Ecology and Society* 28(1):2. <https://doi.org/10.5751/ES-13655-280102>
- Gardner, J. E. 2019. Peer-to-peer energy trading and blockchain: the future of distributed energy resources. *Natural Resources & Environment* 33(4):8-11. <https://www.jstor.org/stable/27010523>
- Gray, N. J. 2018. Charted waters? Tracking the production of conservation territories on the high seas. *International Social Science Journal* 68:257-272. <https://doi.org/10.1111/issj.12158>
- Gray, N. J., C. Corson, L. M. Campbell, P. R. Wilshusen, R. L. Gruby, and S. Hagerman. 2020. Doing strong collaborative fieldwork in human geography. *Geographical Review* 110:117-132. <https://doi.org/10.1111/gere.12352>
- Greenwald, N., D. A. Dellasala, and J. W. Terborgh. 2013. Nothing new in Kareiva and Marvier. *Bioscience* 63(4):241. <https://doi.org/10.1525/bio.2013.63.4.18>
- Hagerman, S. M., L. M. Campbell, N. J. Gray, and R. Pelai. 2021. Knowledge production for target-based biodiversity governance. *Biological Conservation* 255:108980. <https://doi.org/10.1016/j.biocon.2021.108980>
- Hendlin, Y. H. 2014. From terra nullius to terra communis: reconsidering wild land in an era of conservation and Indigenous rights. *Environmental Philosophy* 11(2):141-174. <https://doi.org/10.5840/envirophil20143205>
- Holmes, G. 2011. Conservation's friends in high places: neoliberalism, networks, and the transnational conservation elite. *Global Environmental Politics* 11:1-21. [https://doi.org/10.1162/GLEP\\_a\\_00081](https://doi.org/10.1162/GLEP_a_00081)
- Holmes, G. 2012. Biodiversity for billionaires: capitalism, conservation and the role of philanthropy in saving/selling nature. *Development and Change* 43(1):185-203. <https://doi.org/10.1111/j.1467-7660.2011.01749.x>
- Holmes, G., and C. J. Cavanagh. 2016. A review of the social impacts of neoliberal conservation: formations, inequalities, contestations. *Geoforum* 75:199-209. <https://doi.org/10.1016/j.geoforum.2016.07.014>
- Howson, P. 2021a. Crypto-giving and surveillance philanthropy: exploring the trade-offs in blockchain innovation for nonprofits. *Nonprofit Management and Leadership* 31:805-820. <https://doi.org/10.1002/nml.21452>
- Howson, P. 2021b. Distributed degrowth technology: challenges for blockchain beyond the green economy. *Ecological Economics* 184:107020. <https://doi.org/10.1016/j.ecolecon.2021.107020>
- Human Rights in Biodiversity Working Group. 2022. Implementing a human rights-based approach: what is urgently needed to effectively adopt a human rights-based approach across the implementation, monitoring and reporting of the post-2020 global biodiversity framework. Human Rights in Biodiversity Working Group, Paper 3. <https://www.iccaconsortium.org/wp-content/uploads/2022/03/human-rights-gbf-brief-3-eng.pdf>
- International Indigenous Forum on Biodiversity (IIFB). 2022a. IIFB participation at the resumed sessions of SBSTTA 24, SBI 3 and WG-2020-3, Geneva Switzerland, 13-29 March 2022. <https://iifb-indigenous.org/geneva/>
- International Indigenous Forum on Biodiversity (IIFB). 2022b. Closing statement on behalf of the international Indigenous forum on biodiversity. Resumed sessions of SBSTTA 24, SBI 3 and WG2020-3, Geneva, Switzerland, 14-29 March 2022, Agenda item. WG2020-3 Item 8. <https://iifb-indigenous.org/2022/03/29/iifb-closing-statements/>
- International Union for Conservation of Nature (IUCN). 2021. Welcome to the IUCN Green List marketplace. IUCN, Gland, Switzerland. <https://exchange.iucngreenlist.org/marketplace/>
- The International Union for Conservation of Nature (IUCN) News. 2020. Tech4nature: supporting better conservation outcomes in protected and conserved areas. IUCN, Gland, Switzerland. <https://www.iucn.org/news/protected-areas/202012/tech4nature-supporting-better-conservation-outcomes-protected-and-conserved-areas>
- Jacob, A. 2017. Mind the gap: analyzing the impact of data gap in Millennium Development Goals' (MDGs) indicators on the progress toward MDGs. *World Development* 93:260-278. <https://doi.org/10.1016/j.worlddev.2016.12.016>
- Jacoby, K. 2001. Crimes against nature: squatters, poachers, thieves and the hidden history of American conservation. University of California Press, Berkeley, California, USA. <https://doi.org/10.1525/9780520957930>
- Kanie, N., and F. Biermann (editors). 2017. Governing through goals: sustainable development goals as governance innovation. Edited by Earth Systems Governance. MIT Press, Cambridge, Massachusetts, USA. <https://direct.mit.edu/books/book/3444/Governing-through-GoalsSustainable-Development> <https://doi.org/10.7551/mitpress/10894.001.0001>



- Kareiva, P., and M. Marvier. 2012. What is conservation science? *BioScience* 62(11):962-969. <https://doi.org/10.1525/bio.2012.62.11.5>
- Kashwan, P. 2013. The politics of rights-based approaches in conservation. *Land Use Policy* 31:613-626. <https://doi.org/10.1016/j.landusepol.2012.09.009>
- Kashwan, P., R. V. Duffy, F. Massé, A. P. Asiyambi, and E. Marijnen. 2021. From racialized neocolonial global conservation to an inclusive and regenerative conservation. *Environment: Science and Policy for Sustainable Development* 63:4-19. <https://doi.org/10.1080/00139157.2021.1924574>
- Kelly, A., and M. Ybarra. 2016. Introduction to themed issue: green security in protected areas. *Geoforum* 69:171-175. <https://doi.org/10.1016/j.geoforum.2015.09.013>
- Kothari, A. 1992. Politics of biodiversity conservation. *Economic and Political Weekly* 27:749-755. <http://www.jstor.org/stable/25733576>
- Kothari, A. 2014. Radical ecological democracy: a path forward for India and beyond. *Development* 57:36-45. <https://doi.org/10.1057/dev.2014.43>
- Lohmann, L. 2020. Interpretation machines: contradictions of 'artificial intelligence' in 21st-century capitalism. Pages 50-77 in L. Panitch and G. Albo (editors). *Beyond digital capitalism. New ways of living: socialist register*. NYU Press, New York, New York, USA.
- Lunstrum, E. 2014. Green militarization: anti-poaching efforts and the spatial contours of Kruger National Park. *Annals of the Association of American Geographers* 104:816-832. <https://doi.org/10.1080/00045608.2014.912545>
- MacDonald, K. I., and C. Corson. 2012. 'TEEB begins now': a virtual moment in the production of natural capital. *Development and Change* 43(1):159-184. <https://doi.org/10.1111/j.1467-7660.2012.01753.x>
- Margules, C. R., and R. L. Pressey. 2000. Systematic conservation planning. *Nature* 405:243-253. <https://doi.org/10.1038/35012251>
- Masood, E. 2018. The battle for the soul of biodiversity. *Nature* 560:423-425. <https://doi.org/10.1038/d41586-018-05984-3>
- Maxwell, S. L., E. J. Milner-Gulland, J. P. G. Jones, A. T. Knight, N. Bunnefeld, A. Nuno, P. Bal, S. Earle, J. E. M. Watson, and J. R. Rhodes. 2015. Being smart about SMART environmental targets. *Science* 347(6226):1075-1076. <https://doi.org/10.1126/science.aaa1451>
- Neimark, B., S. Mahanty, W. Dressler, and C. Hicks. 2020. Not just participation: the rise of the eco-preariat in the green economy. *Antipode* 52(2):496-521. <https://doi.org/10.1111/anti.12593>
- Our Land, Our Nature Congress 2021. <https://www.ourlandournature.org/>
- Perrings, C., S. Naeem, F. S. Ahrestani, D. E. Bunker, P. Burkill, G. Canziani, T. Elmqvist, J. A. Fuhrman, F. M. Jaksic, Z. Kawabata, A. Kinzig, G. M. Mace, H. Mooney, A.-H. Prieur-Richard, J. Tschirhart, and W. Weisser. 2011. Ecosystem services, targets, and indicators for the conservation and sustainable use of biodiversity. *Frontiers in Ecology and the Environment* 9(9):512-520. <https://doi.org/10.1890/100212>
- Plumptre, A., Stu Butchart, Graeme Buchanan, Georgina Chandler, Wendy Elliott, Miguel Fernandez, Melanie Heath, Kate Jennings, Penny Langhammer, Sue Lieberman, D. Marnewick, Wes Sechrest, and A. Upgren. 2021. We need to protect and conserve 30% of the planet: but it has to be the right 30%. *Crossroads Blog: Open Letters to IUCN Members*. <https://www.iucn.org/crossroads-blog/202108/we-need-protect-and-conserve-30-planet-it-has-be-right-30>
- Rights and Resources Initiative. 2020. Rights-based conservation: the path to preserving earth's biological and cultural diversity? Rights and Resources Initiative, Technical Report, Washington, D.C., USA. [https://rightsandresources.org/wp-content/uploads/Final\\_Rights\\_Conervation\\_RRI\\_07-21-2021.pdf](https://rightsandresources.org/wp-content/uploads/Final_Rights_Conervation_RRI_07-21-2021.pdf)
- Stevens, S. 2014. A new protected area paradigm. Pages 47-83 in S. Stevens (editor). *Indigenous peoples, national parks, and protected areas: a new paradigm linking conservation, culture, and rights*. University of Arizona Press, Tucson, Arizona, USA.
- Stuit, A., D. Brockington, and E. Corbera. 2022. Smart, commodified and encoded: blockchain technology for environmental sustainability and nature conservation. *Conservation & Society* 20:12-23. [https://doi.org/10.4103/cs.cs\\_41\\_21](https://doi.org/10.4103/cs.cs_41_21)
- Sullivan, S. 2012. Financialisation, biodiversity conservation, and equity: some currents and concerns. *Third World Network*, Penang, Malaysia.
- Sullivan, S. 2013. Banking nature? The spectacular financialisation of environmental conservation. *Antipode* 45(1):198-217. <https://doi.org/10.1111/j.1467-8330.2012.00989.x>
- Sultana, F. 2019. Decolonizing development education and the pursuit of social justice. *Human Geography* 12(3):31-46. <https://doi.org/10.1177/194277861901200305>
- Sundberg, J. 2014. Decolonizing posthumanist geographies. *Cultural Geographies* 21(1):33-47. <https://doi.org/10.1177/1474-474013486067>
- Survival International. 2021. Decolonize conservation: Indigenous people are the best conservationists. Survival International, London, UK. <https://www.survivalinternational.org/conservation>
- Sutherland, W. J., P. Barnard, S. Broad, M. Clout, B. Connor, I. M. Côté, L. V. Dicks, H. Doran, A. C. Entwistle, E. Fleishman, M. Fox, K. J. Gaston, D. W. Gibbons, Z. Jiang, B. Keim, F. A. Lickorish, P. Markillie, K. A. Monk, J. W. Pearce-Higgins, L. S. Peck, J. Pretty, M. D. Spalding, F. H. Tonneijck, B. C. Wintle, and N. Ockendon. 2017. A 2017 horizon scan of emerging issues for global conservation and biological diversity. *Trends in Ecology & Evolution* 32(1):31-40. <https://doi.org/10.1016/j.tree.2016.11.005>
- Sze, J. S., L. R. Carrasco, D. Childs, and D. P. Edwards. 2022. Reduced deforestation and degradation in Indigenous lands pan-tropically. *Nature Sustainability* 5:123-130. <https://doi.org/10.1038/s41893-021-00815-2>
- Tauli-Corpuz, V., J. Alcorn, A. Molnar, C. Healy, and E. Barrow. 2020. Cornered by PAs: adopting rights-based approaches to

enable cost-effective conservation and climate action. *World Development* 130:104923. <https://doi.org/10.1016/j.worlddev.2020.104923>

Thakholi, L. 2021. Conserving inequality: subjugating black labour by accumulating and defending property in South Africa's private nature reserves. Dissertation, Wageningen University, Wageningen, Netherlands.

Third World Network. 2021a. Africa calls out inequitable virtual negotiations on biodiversity. Third World Network, Penang, Malaysia. <https://www.twn.my/title2/biotk/2021/btk210601.htm>

Third World Network. 2021b. Virtual negotiations at the CBD pose challenges and widens inequities. Third World Network, Penang, Malaysia. <https://www.twn.my/title2/biotk/2021/btk210602.htm>

Tuck, E., and K. W. Yang. 2012. Decolonization is not a metaphor. *Decolonization: indigeneity, education and society* 1(1):1-40. <https://doi.org/10.25058/20112742.n38.04>

United Nations Convention on Biological Diversity. 2021. Synthesis of the workshop on the financial sector and the post-2020 global biodiversity framework, 17-18 June 2021. Note by the executive secretary. UN Environment Programme, Nairobi, Kenya. <https://static1.squarespace.com/static/57e1f17b37c58156a98f1ee4/t/61013c3bf4d09d4ead182b07/1627470922225/post2020-om-2021-04-01-en.pdf>

United Nations Convention on Biological Diversity. 2022. CBD/COP/DEC/15/4. Kunming-Montreal Global Biodiversity Framework. United Nations Environment Programme, Geneva, Switzerland. <https://www.cbd.int/doc/decisions/cop-15/cop-15-dec-04-en.pdf>

Waldron, A., V. Adams, J. Allan, A. Arnell, G. Asner, S. Atkinson, A. Baccini, J. E. M. Baillie, A. Balmford, J. A. Beau, et al. 2020. Protecting 30% of the planet for nature: costs, benefits and economic implications. Campaign for Nature Working Paper, Washington, D.C. USA. [https://www.conservation.cam.ac.uk/files/waldron\\_report\\_30\\_by\\_30\\_publish.pdf](https://www.conservation.cam.ac.uk/files/waldron_report_30_by_30_publish.pdf)

Wang, Y., and C. Corson. 2015. The making of a 'charismatic' carbon credit: clean cookstoves and 'uncooperative' women in Western Kenya. *Environment and Planning A: Economy and Space* 47(10):2064-2079. <https://doi.org/10.1068/a130233p>

Western, D., R. M. Wright, and S. C. Strum. 1994. *Natural connections: perspectives in community-based conservation*. Island Press, Covelo, California, USA.

Whitt, L. 2009. *Science, colonialism, and Indigenous peoples: the cultural politics of law and knowledge*. Cambridge University Press, New York, New York, USA. <https://doi.org/10.1017/CBO9780511760068>

Wilshusen, P. R., and K. I. MacDonald. 2017. Fields of green: corporate sustainability and the production of economic environmental governance. *Environment and Planning A: Economy and Space* 49:1824-1845. <https://doi.org/10.1177/0308518X17705657>

Wilshusen, P. R. 2019. Environmental governance in motion: practices of assemblage and the political performativity of economic conservation. *World Development* 124:104626. <https://doi.org/10.1016/j.worlddev.2019.104626>

Wilson, E. O. 2016. *Half-earth: our planet's fight for life*. Liveright Publishing Corporation, New York, New York, USA.

World Wide Fund for Nature. 2021. Testing 'digital collectibles' to incentivise community-led conservation in the Carpathians. World Wide Fund for Nature, Gland, Switzerland. <https://www.panda.org/?2033466/Testing-digital-collectibles-to-incentivise-community-led-conservation-in-the-Carpathians>