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# Whose voices count in biodiversity conservation? Ecological democracy in biodiversity offsetting, REDD+, and rewilding

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## ABSTRACT

Ecological democracy seeks environmentally sustainable ends through broad, active democratic participation. What happens when laws fostering participation in environmental decision-making and biodiversity preservation lead to differing results? What is best for biodiversity may not be what for local citizens believe is best. I examine conflicts and congruencies in the context of Biodiversity Offsetting, REDD+ (Reducing Emissions from Deforestation and forest Degradation), and the Rewilding movement. I ask questions that are legal (Who has what legal rights to speak for or against programs that enhance biodiversity?), epistemological (Whose expertise and knowledge matters when scientists and non-scientists don't agree?), axiological (Are some values objectively better, and why?), and normative (Whose opinions about biodiversity *should* count?). Many people have the right to participate in an ecological democracy: But when protecting biodiversity, who does and should have the right to be heard? I problematize the role that 'local' actors play in decision-making and describe the variegated role that experts – particularly biologists – play in ecological democracy when biodiversity preservation matters. To determine whose values and voices should be prioritized, I describe 'deep equity,' an axiological and normative groundwork for determining when biodiversity-promoting policies may be preferable even if affected citizens don't agree.

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## Introduction

The movement towards ecological democracy seeks to achieve ecologically sustainable communities through democratic means (Wong, 2016). As communities implement ecological democracy, whose voices do count and should count when we act to sustain or restore biodiversity?

Biodiversity comprises the splendid array of nonhuman species and populations, and the ecosystems that sustain them and they, in turn, sustain. Unfortunately – for its own sake, and for the human communities that biodiversity sustains – biodiversity is rapidly diminishing across the globe. It is perhaps the single greatest problem our species faces over the long run, and threatens our survival as a species (International Science Council, 2018; Watts, 2018). Humans are destroying biodiversity at rates many times the normal (i.e. without human interference) level (Ceballos et al., 2015; Pappas, 2014). 14% of bird species, 25% of mammal species, and 40% of amphibian species face the threat of extinction (IUCN, 2019). The situation will not improve soon, as human population is projected to grow from 7 to 9 billion by 2050 and to 11 billion by 2100 (Carrington, 2014). During the same period, the average person's buying power will grow 150%, thus consuming and degrading even more biological resources (Miller, Soule, & Terborgh, 2014).

Conservation of nonhuman (and human) life on Earth requires new, innovative mechanisms to keep pace with human needs. Laws in over 50 jurisdictions worldwide promote and regulate 'biodiversity offsetting,'

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where a developer is permitted to destroy parts of the natural world in exchange for preserving biodiversity elsewhere (ten Kate & Crowe, 2014). At least 39 nations are currently implementing biodiversity offsetting, and at least 70 more are formulating plans to do so (ten Kate & Crowe, 2014, p. 1; OECD, 2016, p. 2). Offsetting that follows conservation biology principles may benefit imperiled biodiversity. Investors are pouring billions of dollars into REDD+ (Reducing Emissions from Deforestation and forest Degradation), where parties are paid to preserve forests that would otherwise be felled, or to restore forests where none presently exist. While the program is designed primarily as a cost-effective way to sequester greenhouse gases, when done well, biodiversity benefits greatly from the schemes (Takacs, 2013, 2014). In Europe and in the U.S., a ‘rewilding’ movement seeks to reintroduce species (especially charismatic, apex carnivores) into locales where they have been absent, to ‘help to bring back the Variety of Life, our Biodiversity, so that we can all be able to better enjoy it’ (Rewilding Europe, 2017).

But who are ‘we,’ and what happens if, say, we want to continue to enjoy local biodiversity where it would be destroyed, or don’t want to enjoy it where it would be (re)introduced? While often benefiting the nonhuman world, biodiversity offsetting, REDD+ and rewilding sometimes present challenges for laws promoting participation in environmental decision-making: Who gets to make decisions about what parts of the natural world persist where? What happens when laws that nurture biodiversity clash with laws that guarantee the right to participate in environmental decision making?

This work poses multiple questions that arise where democratic decision-making and biodiversity enhancement meet. As political theorist Robert Goodin writes, ‘[t]o advocate democracy is to advocate procedures, to advocate environmentalism is to advocate substantive outcomes: what guarantee can we have that the former procedures will yield the latter sorts of outcomes?’ (1992, p. 168). In the programs I describe below, some (or most) citizens may not desire the biodiversity-protective outcomes that advocates implement, thus illustrating a tension internal to the movement towards ecological democracy. Fair democratic means may yield biodiversity-destructive (and in the long run human-destructive) ends; benevolent eco-authoritarianism may deliver biodiversity protection in the short run, but at the cost of failing to build democratic institutions and coalitions that will support biodiversity in the long run (Vanderheiden, 2001).

Herein I examine potential conflicts and congruencies between laws and policies that promote biodiversity and those that promote participation in environmental decision-making. Some of the questions I pose below include:

- *Legal*: Who has what legal rights to speak for or against programs that enhance biodiversity?
- *Epistemological*: Whose expertise and knowledge are privileged, and on what grounds is that knowledge or expertise privileged?
- *Axiological*: Where values may clash or be incommensurable, whose are preferable because they are in some way ‘better?’
- *Normative*: Whose opinions about biodiversity schemes *should* count, because the values they promote or the outcomes they seek are in some way preferable?

Answers to these questions are empirical (what *do* biodiversity preservation laws demand with respect to ecological democracy rights, who gets to participate, and whose voices matter?) and normative (how *should* programs of biodiversity offsetting, rewilding, and REDD+ balance and maximize both ecological democracy and biodiversity conservation?). Ideally these streams converge on solutions that abet both healthy human and nonhuman communities; and ideally democratic means should yield ends that preserve biodiversity and the human communities that depend upon it. But sometimes conflicts arise when democracy does not yield outcomes that sustain and promote biodiversity (Wong, 2016). For example, ranchers may fear that reintroduced predators will kill livestock, or citizens fear property restrictions if protected endangered species colonize their land. Whose rights prevail? What legal mechanisms do or should heed the fears of local citizens without giving up dreams of revitalized, wilder, healthily functioning ecosystems?

Biodiversity preservation raises distinctive questions for ecological democracy. In this paper, I examine three strategic sites where synergy or clashes between ecological democracy and biodiversity preservation occur:

Biodiversity offsetting, Rewilding, and REDD+. I explore situations where the questions I pose above arise, and explore some possible answers to those questions from biodiversity preservation programs. I discuss the particular role of biologists in laws or controversial programs that purport to enhance or support biodiversity, and examine the legal, epistemological, and axiological bases for privileging biological scientists' voices in biodiversity preservation.

Many people have the right to participate in an ecological democracy: But when protecting biodiversity, who does have, and should have, the right to be heard? I am posing questions here, but the answers about what theories of ecological democracy could best accommodate the conflicts remain for a larger project. However, I hold it axiomatic that ecological democracy should include a search for win-win solutions to potential conflicts between the participation rights of citizens and sustainability rights for human and non-human communities. As part of a foundation upon which to build an ecological democracy, I describe 'deep equity,' i.e. maximizing and synergizing individual, community, and nonhuman health and potential. Using deep equity helps choose whose voices should weigh more heavily in making decisions about preserving biodiversity, as the norms animate a fundamentally ecological, interconnected approach to democratic decision-making. Deep equity poses a normative lodestar, guiding the way for determining which biodiversity-promoting policies to choose to foment a genuine ecological democracy.

### When ecological democracy and biodiversity preservation collide

When making decisions about the fate of essential environmental resources, local people—who may possess intimate knowledge of surrounding land and resources, and have the most to lose or gain from the outcomes of these decisions—should be full and active partners. That assertion underlies the legal norms that comprise *environmental* democratic norms. *Environmental* democracy norms are the procedural norms that buttress *ecological* democracy. The literature sometimes promotes these norms as serving to maintain (and thus not challenge) a path dependent, dysfunctional, neoliberal (and thus, inevitably, socially and ecologically destructive) form of neoliberal democracy (see the editorial in this issue for an overview of these critiques). Yet that need not be how these norms are employed; rather, these could also comprise fundamental rights for deliberations when making difficult decisions in a transformed, dynamic, ecological democracy according to the guidelines I introduce below.

The 2018 'Framework Principles on Human Rights and the Environment' specify: 'States should provide for and facilitate public participation in decision-making related to the environment and take the view of the public into account in the decision-making process' (Knox, 2018, p. 14) Specified in Principle 10 of the 1992 Rio Conference on Environment and Development (UNCED, 1992), environmental democracy guarantees the right to participate in environmental decision-making; the right to access to information about environmental decisions; and the right to redress and remedy when environmental rights are violated. In addition, environmental democracy norms encompass the right to Free Prior and Informed Consent (FPIC) (for Indigenous peoples and sometimes beyond) on decisions that will affect vital lands and resources (Kravchenko, 2007; Savaresi, 2018; UN-REDD Programme, 2012; UNCED, 1992; UNGA, 2007). When those who develop or implement environmental conservation programs fail to respect environmental democracy rights, they may violate domestic or international law, condemn a project to failure, or worse, violate the human rights and even ruin the lives of local citizens (Takacs, 2014).

Environmental democracy includes procedural justice as a fundamental environmental human right (see e.g. Kravchenko, 2010; Shelton, 2015). National accession to the Aarhus Convention gives citizens in 45 European and (formerly Soviet bloc) Asian nations well-honed ecological democracy rights (UNECE, 1998). Latin American and Caribbean nations have completed their own regional agreement on ecological democracy rights (UNECLAC, 2016a, 2016b, 2018). In the United States, the National Environmental Policy Act (42 U.S.C. §§ 4332-35), a groundbreaking model for the requirement for Environmental Impact Assessments worldwide, requires the federal government to initiate a public comment and participation period whenever it takes an action that could potentially jeopardize survival of a formally listed species (Shrouds, 2002). In REDD+, stakeholder engagement guidelines require locally affected people to participate and offer free, informed consent to

projects. The REDD+ Climate, Community and Biodiversity (CCBA) Standards are the most widely used certification standards (REDD+ SES, 2012), and require effective consultation, access to information, and a grievance process. Projects bearing the CCBA imprimatur must ‘engage broadly with all community groups and other stakeholders using socially and culturally appropriate methods.’ Local stakeholders must be allowed to provide input on project design and the project sponsors must explain how they incorporate this feedback. Consultation must continue throughout the life of the project (CCBA, 2008, pp. 16–17).

A subset of environmental conservation programs claims to sustain or restore biodiversity, and (implicitly or explicitly) the human communities that biodiversity supports. Humans are causing species extinction at rates between 1000 and 10,000 times the ‘normal’ (i.e. without human interference) background level (IUCN, 2019). But what’s best for biodiversity (or for developers that degrade it, or the public officials who manage it) may not be what local citizens believe is best for themselves: In contentious situations, who has what rights to speak for or against biodiversity? How do we manage tensions between economic development, biology-based biodiversity conservation measures, and laws guaranteeing democracy rights? In biodiversity offsetting, if local people object either to biodiversity destruction or enhancement, are they legally entitled to political voice or veto power? In Europe, how does the growing rewilding movement work alongside the Aarhus Convention? In REDD+, where business entities seeking cheaper carbon offsets unite with social justice and biodiversity advocates in a powerful alliance, how can local people participate as equal, informed partners?

Certain distinctive voices are heard (often loudly) when officials implement laws promoting biodiversity conservation. But in these cases, proximity may matter less, and scientific expertise, however geographically distant, may matter more. Biologists’ expertise extends far beyond the controversial sites as they project what kinds of interventions would guarantee successful perpetuation of the desired ecological entity. Biologists identify and classify species, devise techniques for sampling populations, calculate the amount of genetic diversity needed to assure continuation of a species, and thus can offer probabilistic models (but never certainty) about which biodiversity intervention has what estimated chance of being successful, where success is measured as a thriving, self-sustaining population.

Citizens exercising their legal rights to participate in a local environmental decision may clash with scientific testimony on behalf of affected biodiversity. Sometimes local people don’t understand, or don’t care about, scientists’ justifications for biodiversity preservation. Sometimes local citizens’ pressing immediate needs will outweigh considerations of long term sustainability, as when people need food for their family, and thus will hunt individuals of an endangered species, or clear forests for farming or timber to build a home or to sell for cash. Furthermore, adequate information may prove impossible for laypersons to understand, particularly when some biodiversity schemes require complex calculations, e.g. about minimum viable population size of an endangered species, or carbon content of old growth forests (Takacs, 2014).

To ensure resilience to sustain human and nonhuman communities, political theorist John Dryzek (2014) promotes ‘ecological reflexivity,’ i.e. developing new institutions that can anticipate serious ecological shifts and respond accordingly by nimbly adapting new values, goals, and practices. Such serious ecological shifts – an increasingly chaotic climate, a cataclysmic loss of biodiversity – have, indeed, developed. Fulfilling norms of environmental democracy while maintaining the ability to respond adaptively and reflexively means some voices will and should be heard as conduits for what the natural world is telling us. But whose voices? The questions I pose here are not simply empirical, as in whose voices *do* count? The dilemma is also normative: Whose opinions *should* count? Is it those in a community who might both be affected by a certain environmental decision and also have unique insights into the impacts of those decisions? Or is it biologists, who may be self-appointed guardians of biodiversity and who carry the imprimatur of expertise, and thus carry greater weight when speaking about the impacts of a decision on biodiversity sustenance?

### **Biodiversity offsets: with so many potential ‘local’ stakeholders, whose voices are heard?**

As environmental law scholar Douglas Kysar notes, ‘[l]aw contains its own geography.’ Perhaps unfortunately, the boundaries of *environmental* law are dictated by present-day political jurisdictions and not human and non-human ecological requirements (2011, p. 123). Who is ‘affected’ by a biodiversity protection law include,

potentially, everyone worldwide, whether or not we live in the town or state or nation the law controls. Species and ecosystems whose protections are subjects of such laws do not recognize those political boundaries. A subtext of biodiversity laws connotes that we should leave a sustainable planet with a healthy complement of non-human species and functioning ecosystems to fulfill the needs of future generations; and the ‘needs’ of present generations (of humans and of nonhumans) may differ from what future generations require (Kysar, 2011; Takacs, 2010; Weiss, 1992). *Ecological democracy*, in ideal form, ought to recognize such interwoven complexities in deciding whose voices count, and ought to expand our notions of what ‘democracy’ means in the first place.

In any democracy, some voices are privileged by law or by raw exercise of power. ‘Ecological democracy’ does not mean ‘majority rule’: democracy is always weighted. The contours of whose voices count and how much vary by legal requirement, and by ecological, political and cultural context. In biodiversity offsetting, citizens’ voices matter: But which citizens, located where, and weighted how?

In a biodiversity offset, a developer (and perhaps her biodiversity broker) or a government agency will propose an offset that allows degradation of nature in one place in favor of preservation or restoration somewhere else, focusing on some specific species or ecosystem type. The proposed offset must meet the requirements of a biodiversity preservation law or institutional policy<sup>1</sup> (or else the proposed action wouldn’t require offset for damage in the first place). Some flexibility mechanisms in biodiversity-protective laws decrease public participation and result in closed door deals between regulators and developer (Vanderheiden, 2001); the offset should not merely be a sop to developers, a means of circumventing a biodiversity protection law. Instead, if done well, biodiversity offsetting should result in net benefits for the imperiled species or ecosystem, i.e. the threatened species or ecosystem type should be better off as a result of the offset, even if the individual entities at the site to be degraded are not.

Whose voices matter when biodiversity offsets are evaluated? While the democratic process resulted in laws that require or permit an offset to mitigate environmental damage, it does not mean that everyone thereafter gets to weigh in equally on the laws’ impacts on the nonhuman world. Certainly the direct proponents of the offset matter: Without some kind of preexisting economic and/or political clout, their voice would not be heard in the first place. A businessperson standing to make profit or a government office attempting to carry out a project will often have disproportionate access to (or actually be the) powerful decision makers aiming to rearrange biodiversity to accommodate other goals (BBOP, 2009a). Depending on locale and ideological slant and political savvy, any number of the other voices may also matter. Citizens who will profit from the development will advocate that the offset should be approved. Locals who enjoy or depend upon whatever nature is to be degraded will oppose it. At the offset site – either an area to be preserved, or one to be restored – those who might wish to develop a piece of land in the future, or, say, to keep a parcel of land in agricultural production (and in the tax base) may oppose the offset. Others who wish to preserve or restore a piece of land (including, possibly, a biodiversity broker whose business is providing offsets) will speak on its behalf. Those who may have already invested labor in transforming or restoring land may oppose its destruction or advocate for its preservation via offset funding.

Democracies should (and often do) also protect the interests of the underserved or vulnerable. In biodiversity offsetting (as well as in rewilding and REDD+), this means someone speaks for marginalized human communities who depend upon environmental services and products, and who often have less clout to speak on behalf of the resources they require to survive and thrive. They also are likely to possess place-rooted information about the biological resources to be offset. These may be pre-existing local groups, and/or NGOs representing the interests of local people (BBOP, 2009a; Savaresi, 2018; Takacs, 2014). Ecological democracy should also carve out a niche for locals who simply love wild places and creatures and whose lives would be diminished or enriched by a biodiversity offset.

Furthermore, it means someone acts as guardian *ad litem* or ‘nature advocate’ (Eckersly, 2011, p. 236) to protect the interests of those who can’t speak for themselves in court.<sup>2</sup> In this case, depending on the law that is facilitating or allowing the offset, biologists may speak for nonhuman entities – individual creatures, populations, species, ecosystems – who, obviously, require surrogates when offsets are being debated. Any offset worth pursuing will require biologists’ input, as they are the ones who can suggest whether a requirement

for ‘no net loss’ or required ‘net gain’ are likely to be met by the proposed offset. They are the ones who will assess the ongoing threat to the species or ecosystem type, the quality (relative to what is being degraded) of the offset, and whether the offset is a good deal for the species or habitat at risk.

The Business and Biodiversity Offsets Program (BBOP)<sup>3</sup> – a coalition of public and private entities advocating for biodiversity offsetting and formulating best practices for its success – has put forth guidelines for stakeholder participation in biodiversity offsetting (BBOP, 2009a, 2009b). BBOP has a set of respected recommendations for ‘participant engagement’ in biodiversity offsetting, particularly for projects in developing nations (BBOP, 2009a, 2009b). Some of it is legally based (e.g. human rights law provisions, particularly about FPIC for indigenous peoples), and some of it is just practical (e.g. if you do not engage local stakeholders, your project will fail).

BBOP recommends a capacious group that should comprise participating ‘stakeholders’:

persons or groups who are directly or indirectly affected by a project and/or offset, as well as those who are interested in a project and/or offset and/or have the ability to influence its outcome, either positively or negatively. Stakeholders will also include persons or groups with use rights and/or tenure over land and resources. (BBOP, 2009b, p. 8)

Thus it’s not just the neighbors (and their ‘traditional knowledge’) who count: ‘Western science, may well be relevant to the design and implementation of a biodiversity offset’ (BBOP, 2009b, p. 12). Of course it is: without it, how would you ever know whether an offset is likely to sustain the nonhuman entity it is designed to sustain?

The BBOP guidelines propose models of good practice, but only begin to explore the difficulties when practice meets reality (see e.g. BBOP, 2009a, pp. 43–47).<sup>4</sup> Stakeholders should participate in ‘evaluation, selection, design, implementation and monitoring’ of offsets; risks, rewards, rights and responsibilities should be shared ‘in a fair and balanced way’; the process should be conducted ‘in a transparent and timely manner’ (BBOP, 2009a, 2009b, p. 10). The BBOP formulators recognize that ‘[w]ell-designed and implemented biodiversity offsets will ensure that communities are no worse off, and preferably better off than they were before the project took place, in regard to their use and enjoyment of biodiversity’ and that ‘[m]eaningful participation helps to increase the acceptance, ‘buy-in’ and thus sustainability of a project by building on local peoples’ creativity and enthusiasm and supporting their preferred activities’ (BBOP, 2009b, p. 10; see also Pickering, Bäckstrand, & Schlosberg, 2018, p. 6). This is not only because ecological democracy and other human rights principles increasingly demand fair and equitable participation, and not only because projects will be better if local people inform their design and execution, but because of the common sense reality that ‘[i]f biodiversity offsets are poorly conceived and implemented, and especially if participation is inadequate, the offsets are likely to fail to deliver results for stakeholders’ (BBOP, 2009b, pp. 13–14). That is to say, unhappy local people at the impact and the offset sites can delay, subvert, and sink the process.

None of these guidelines helps decision makers adjudicate what should transpire when a natural place that is much beloved or useful to local people – but nonetheless of low value to a legally protected species or ecosystem – is to be bulldozed in favor of an offset that may not benefit local people, but will likely improve the longterm outlook for the imperiled ecological entity (Reid & Nsoh, 2016, pp. 148–149). Below I will describe ‘deep equity,’ a vision with implicit guidelines for deciding when to approve a biodiversity offset, deciding who should participate in that decision, and searching for synergistic win-win resolutions that simultaneously improve human and nonhuman health and potential. For now, I merely highlight that proclaiming that diverse stakeholders should comment on (or be able to approve or scuttle) biodiversity offsetting plans does not begin to delineate the boundaries of who, precisely, should participate and what relative weight their opinions should be given.<sup>5</sup>

### **Rewilding: biologists’ epistemological and axiological primacy when ecological democracy meets biodiversity restoration**

In rewilding, officials may allow (i.e. not prevent) formerly extirpated species (e.g. wolves in Wyoming or, remarkably, the Netherlands (Conniff, 2014) to return. Or, more aggressively, citizen-advocates and/or government officials may reintroduce<sup>6</sup> species (often predators) from where they had once been, but now are absent (e.g. Bears in the French and Spanish Pyrenees) (Cracknell, 2016; Wilson, 2014).

Whose voices count in rewilding depends in part on whom the biodiversity preservation law privileges to speak. Citizen biodiversity lovers may speak in favor of such endeavors;<sup>7</sup> other landowners, fearful of, say, predation on livestock or new restrictions on development, may oppose such moves. Whose voices count will also depend on the strength of private property laws, the relative clout of conservationists, farmers, ranchers, and developers, the degree to which a community believes ecotourism will be enhanced. In other words, it will depend on who exerts legal and political sway in a given locale.

Biologists matter here, too, particularly for interventionist rewilding efforts (i.e. not just passively allowing individuals of a species to recolonize where conspecifics have been extirpated, but actively breeding and releasing or trapping and relocating). And, again, biologists may seek (or may be privileged by law) to provide their expertise on the wisdom of such moves. For example, the U.S. Endangered Species Act (ESA) requires officials to employ the best available science when listing species to be protected, designating critical habitat for those species, and ensuring that government agency actions do not jeopardize listed species (16 U.S.C. §§ 1531-43).<sup>8</sup> The ESA, and its mandate to secure healthy futures for formally listed species (and to privilege the voices of biologists in so doing), has driven rewilding efforts on behalf of wolves and grizzly bears in the U.S., particularly in the West, much to the consternation of local ranchers and property rights advocates (16 U.S.C. § 1539(j), 1982, p. 2834; Boltes, 2015; e.g. Jones, 2016; Stohr, 2012; Fitzgerald, 2014; Robbins, 2018).<sup>9</sup> When formally listing species or drawing up recovery plans for those species, the ESA directs the U.S. Fish and Wildlife Service to notify potentially affected citizens and hold public hearings if members of the public so request. But there are no directives for what the Service should or must do with public input, and the underlying mandate is that science drives the listing process, which initiates the Act's powerful protective mandates (16 U.S.C. §1533(b)(5), § 1533 (f)(4); Doremus, 1997).

In their explication of 'rewilding,' Soulé and Noss (1998, p. 2, 6, 7), two of conservation biology's founding fathers, describe rewilding as 'repairing all past insults' committed by humans against functioning ecosystems. They emphasize 'restoration and protection of big wilderness, and wide-ranging, large animals – particularly carnivores' so that these ecosystems become self-sustaining. Large carnivores are keystone species and reintroducing them is a keystone technique in rewilding, as predators 'are often instrumental in maintaining the integrity of ecosystems. In turn, the predators require extensive space and connectivity' between habitats (Soulé & Noss, 1998, p. 5). Species' needs implicate local participation rights over large swaths of territory.

Biologist advocates emphasize cornerstone principles of conservation biology that point to the need for rewilding and furnish the underlying principles for its successful execution. Take, for example, the explication of the ecological phenomenon of 'trophic cascades' (Monbiot, 2014, pp. 84–89; Soulé & Noss, 1998, p. 5). As George Monbiot (2014, p. 9) describes it,

[p]redators and large herbivores can transform the places in which they live. In some cases they have changed not only the ecosystem but also the nature of the soil, the behavior of rivers, the chemistry of the oceans and even the composition of the atmosphere ...

In a charming video he narrates, proclaiming 'one of the most exciting scientific discoveries of the past half century,' Monbiot (2014, pp. 84–89) explains that after reintroducing wolves (after 70 years' disappearance) to Yellowstone National Park, deer abandoned valleys and gorges, allowing trees to regenerate, enticing migrating birds and beavers, with cascading effects for a diversity of species. And 'where it gets really interesting,' the rivers changed morphology due to revitalized forests stabilizing banks and reducing erosion, creating new niches for even a greater diversity of species (Brown, 2018; Milman, 2015; Monbiot, 2014, pp. 84–89).<sup>10</sup>

Thus, despite the uncertainties associated with predicting what a species or ecosystem will do in response to any intervention (e.g. Biber, 2012; Doremus & Tarlock, 2005; see Yearley, 1991),<sup>11</sup> biologists claim to – and often really do – know more than the layperson on how to fulfill the goals of a given biodiversity preservation law. James Wong (2016) describes 'eco-filtering' as prioritizing whose voices should be privileged in implementing environmental laws. He asserts that some human voices should be heard more loudly because they speak for other, non-human voices who themselves are moral beings whose interests must be considered. Biologists, however, may not be speaking on behalf of the nonhuman entities because those entities have moral standing;



instead, biologists may have expertise on the natural world whose sustenance we all require if we and our descendants are to survive.

In my book *The Idea of Biodiversity*, I examine how conservation biologists wield their knowledge to promote themselves not only as experts on the science of conservation, but also as experts on conservation value preferences (Takacs, 1996). The question is: Does epistemological privilege that they derive from their knowledge and professional identities as scientists mean they know more than local citizens about what is best for nearby human (or nonhuman) communities?<sup>12</sup> Monbiot (2014) asserts that they do; and we must heed biologists not only because all human communities depend upon flourishing nonhuman ecosystems<sup>13</sup> (sometimes in unexpected ways, e.g. when vultures declined in India, carrion they used to eat instead was consumed by rabid dogs, spreading rabies, as well as anthrax, brucellosis, and tuberculosis) but because human communities can learn to live exciting, fulfilled lives by interacting with more diverse ecosystems. As Monbiot (2014, p. 89) expresses it: ‘We live in a shadowland, a dim flattened relic of what there once was, of what there could be again.’ Furthermore, conservation biologists’ knowledge not only comes from their current research; they also can reconstruct how ecosystems once looked and could look again. The idea of ‘shifting baseline theory’ – we mistakenly think the ecosystems we live in are in their normal, ahistorical state (Monbiot, 2014, p. 89) – constrains the vision of local communities. By this view, the ‘knowledge’ that informs non-scientist contributions to ecological democracy is a temporally constrained, myopic knowledge, and biologists have deeper knowledge of how an ecological assemblage used to be and how it could be again.

Rewilding advocates differ on the need for consensus, on whose knowledge must ultimately prevail. Monbiot (2014, p. 208), for example, writes that ‘Rewilding must not be an imposition. If it happens, it should be done with the consent and active engagement of the people who live on and benefit from the land.’ Soulé and Noss (1998, p. 8), however, warn that

some activists are excessively anxious about the attitudes of certain stakeholders, particularly those with negative perceptions of wolves and other carnivores. There is a danger in granting too much weight during the design phase and letting politics interfere prematurely with reserve planning. A conservation plan cannot give equal weight to biocentric and socioeconomic goals, or the former will never be realized. Biology has to be the ‘bottom line’. (Soulé & Noss, 1998, p. 8)

That is because ‘rewilding is simply scientific realism’ whose ‘goal is to insure the long-term integrity of the land community’ (Soulé & Noss, 1998, p. 9). They claim to know what is best for all of us: our long-term survival, which depends upon fully functioning ecosystems, which depends on a robust complement of species, which may include rewilding top predators and other ‘missing’ species.

The law explains who is formally entitled to speak for or against a particular biodiversity conservation endeavor. Epistemology and axiology ask: Whose voices should be privileged? Conservation biologists may speak to both: Science has a privileged voice in answering what interventions will promote the goals of a biodiversity preservation law, but scientists will often assert that they should have a privileged voice in democratic normative discourse due to their expertise about the natural world. They position themselves to fulfill a role that Robyn Eckersley (2011) calls ‘nature advocates,’ speaking for the needs of nonhuman entities from a diverse set of wisdoms. The rationales biologists assert for their voices speaking loudest (or at least being preferentially heard) are legal (the law requires ‘best available science’ or something similar), epistemological (their knowledge and way of acquiring that knowledge is the most objective, data driven, and credible) and axiological (the values they endorse and promote are, in some way, preferable).

Decision-making in a genuine ecological democracy will likely still be weighted towards biologists’ expertise, in part because biologists lobby that it be so.<sup>14</sup> I have written about the complex, boundary-shifting roles conservation biologists play when studying and advising about biodiversity interventions. Conservation biology is ‘mission oriented,’ where the mission is to preserve and sustain the objects of study. Its practitioners attempt to transcend the boundaries between the legal, epistemological, and axiological (Takacs, 1996). That is to say, conservation biologists promote themselves as experts not only on the empirical bases of biodiversity preservation, but also on the normative bases and resulting policy prescriptions of how, when, and why we should prioritize biodiversity’s needs. They seek legal authority to speak on behalf of biodiversity, not only because the methodologies of science give them legitimacy, but because the values they speak for are, they claim, *better* values: What

conservation biologists care about is, they claim, essential in an *ecological* democracy: Essential for human survival, essential for fulfilling our biophilic need to be close to nature, essential for human happiness and for rewilding our own static lives (see e.g. Takacs, 1996).

When these arguments are taken seriously, that gives biologists powerful clout to speak and be heard in an ecological democracy. As Dryzek (2014) describes resilience theory, some core values must remain inviolable when designing and implementing new institutions – with human survival being the most core value. And if biologists are correct, and we need a healthy complement of nonhuman organisms to ensure that survival, then some degree of healthy biodiversity and the ecosystem functions that biodiversity reciprocally sustains must be a similar, non-negotiable core value. Ecological democracy laws often *do* privilege biologists' voices when biodiversity survival (and thus, implicitly, human survival) is at issue. But Vanderheiden (2001, p. 215) warns that often in species preservation efforts, 'scientific management, not environmental aims, is what is antithetical to democracy.' As Robyn Eckersly (2011, p. 253) asks, 'who guards the ecological guardians?' Scientific understanding ought not run roughshod over the particular, place-based wisdom of local people who know, love and care for biodiversity: Science ought to be democratized in a deliberative democracy, with different forms and fora to make it so (Berg & Lidskog, 2018). So the democratic process requires that someone speak for biodiversity, but that doesn't make precise who that someone should be. Where the boundaries of biologists' privilege *should* begin and end (in rewilding or in any other biodiversity preservation scheme) and when they arrogate power in a democracy, will depend on geographic, ecological, and political context and will continue to evolve in the climate change-addled world of the Anthropocene.

### **REDD+: even with the best intentions, genuine ecological democracy is difficult to get right**

In previous work, I examined environmental democracy provisions in REDD+, drawing illustrations from fieldwork in Vietnam and Cambodia (Takacs, 2014). The safeguards that promote and protect environmental democracy in international environmental law are most extensively developed and employed in public and private REDD+ projects. Furthermore, while billions of dollars have already been spent on REDD+, many more billions are pledged in the pipeline (Norman, Caravani, & Nakhooda, 2014; Wolosin, Breitfeller, & Schaap, 2016): It's our most important existing and future laboratory for figuring out what ecological democracy means and how to do it right. But while REDD+ stakeholders are making progress towards genuine ecological democracy, they have far to go to fulfill their legal obligations towards communities in which REDD+ is launching, and this may redound to the detriment of all actors, including local people and the ecosystems that sustain them.

The 2010 United Nations Framework Convention on Climate Change Cancún Agreements committed the international community to furthering REDD+ mitigation activities, specifying that 'safeguards' must be developed, 'ensuring the full and effective participation of relevant stakeholders, inter alia indigenous peoples and local communities' (UNFCCC, 2010). Yet despite the enthusiasm for REDD+ in international climate change negotiations (see Voigt & Ferreira, 2015; World Bank, 2015b; Zwick, 2015), including the 2015 Paris Agreement, no overarching REDD+ legal framework for environmental participation rights (or any social and environmental safeguards) has resulted.

In that absence, voluntary market certification schemes have set the norms for REDD+, including requirements for local citizen participation. The Climate, Community, & Biodiversity Alliance (CCBA) Standards are the most widely respected and used. The CCBA has developed complex guidelines for projects and they have developed a set of comprehensive REDD+ Social and Environmental Standards (SES) for national or subnational REDD+, which 17 nations or subnational jurisdictions have employed, with progress in many jurisdictions to achieving participation goals (Durbin, Lhumeau, & Franks, 2016).

Stakeholder participation requirements described in the REDD+ SES include: Adequate information about REDD+ must be publicly available; benefits, costs, and risks are assessed for all relevant stakeholders; and processes must include Free, Prior and Informed Consent for indigenous peoples and local communities for any activities affecting their rights to land, territories, and resources. Furthermore, all relevant rights holders must be enabled to participate fully and effectively, including procedures to: ensure that all pertinent information is

provided to allow full and effective participation in program design and implementation; identify pertinent rights holders; ensure their full and effective participation; build capacity for effective participation; engage in socially and culturally appropriate approaches; ensure self-directed representation; respect and build on relevant local knowledge; and resolve grievances (REDD+ SES, 2012).

How do these stakeholder environmental democracy protections stack up in real life? In a report on field work from model projects in Vietnam and Cambodia, I conclude: effectively deploying these safeguards is complicated, expensive, difficult, and may be ultimately unsuccessful, even when social justice NGOs engage in sincere, state of the art attempts to protect and fully include local citizens (Takacs, 2014).

Rendering decision-making in REDD+ genuinely democratic, in culturally and linguistically appropriate ways, takes time, care, and patience. Determining carbon property rights combines Western property law and the specifics of each nation's legal system, often in places where land tenure is uncertain (see generally, Takacs, 2009b). Verification of carbon stocks and maximizing biodiversity co-benefits employs complex mathematical formulas, difficult technical terminology, professional verification services located far from the forests, and complicated financial transactions (see generally, Takacs, 2009a). To do all of this well costs a lot (in a system designed to offer relatively inexpensive carbon offsets), and local people living next to forests to be conserved lack the technological and financial means of the distant actors prizing those forests (Anderson, 2011; Jeffrey, 2002; Takacs, 2014).

We may recognize that people living in or around a proposed REDD+ forest have distinctive knowledge of forest biodiversity and history, and will be on the front line of noticing changes in forest ecology and of being affected by those changes: Their participation is essential both to ensure that their livelihoods are not destroyed, and to inform design and implementation of any REDD+ project.<sup>15</sup> But is difficult to determine who is legally entitled to participate, or to whom and when, exactly, FPIC applies (Takacs, 2014).

REDD+ projects develop top-down, and it is difficult if not impossible for local people to participate from the project's conception, or to stop a project once it has advanced: So many disparate, powerful interests have united to make REDD+ happen, and some of these goals may work against the interest of local citizens (Anderson, 2011; Foti & de Silva, 2010; O'Faircheallaigh, 2010; Takacs, 2014; UN-REDD Programme, 2012). REDD+ - aiming to sequester greenhouse gases while revitalizing local human and ecological communities and recognizing the complex webs that tie distant human and nonhuman ecosystems together - should be a showcase for environmental democracy as an underpinning of *ecological* democracy. Yet even its best intentioned, well developed stakeholder protection mandates fail to guarantee effective, informed public participation in long term decisions over resources that are vital to affected communities.

### **Deep equity**

When we examine the law and implementation of REDD+, biodiversity offsetting, and rewilding, we see that ecological democracy becomes complicated to practice *in situ*. When citizens weigh in on environmental decisions, their opinions may not dovetail with the goals of biodiversity preservation. How, then, to turn disputes into synergies?

'Deep equity' describes my normative vision to guide formulation and implementation of any environmental law, and provides one guidepost for deciding whose voices to heed in an ecological democracy. 'Deep equity' means laws, policies, or actions are 'right' or 'good' if they simultaneously and synergistically maximize the health and potential of human and non-human individuals and communities (Takacs, 2010). Equity is deep when values become rooted within each individual, when we fundamentally reimagine our community and government structures and responsibilities, and when these values and responsibilities become entrenched and encoded in our legal systems. In turn, our laws would then support policies, actions, and values promoting even deeper equity. In an ecological democracy, when we must choose whose voices to heed more closely in biodiversity conservation, those espousing or likely to result in deeply equitable outcomes should be heard loudest.

We can interpret the 'ecological' in 'ecological democracy' in various ways. 'Ecological' recognizes that the non-human must count in any democratic decision-making, and connotes the interconnected, synergistic web that ties together each individual human, her community and the nonhuman world that sustains her. To focus ecologically

means including the interests of the nonhuman when making decisions about societal priorities. It means considering what ecosystems and the species that comprise them require, as well as considering the web of interrelationships between human communities and the nonhuman communities that sustain them. Colloquially – ‘ecological’ in the more generic sense – means examining the web of interactions that make up a democracy, the push and pull/give and take of who speaks and who is heard, and by whom. It means instituting dynamic governance mechanisms that are not path dependent on ossified, historical conditions, and were formulated during eras when ecological baselines were relatively stable (if they ever really were). Rather, a genuine ecological democracy’s institutions respond reflexively and rapidly to changing socioecological demands (Dryzek, 2014) with underlying norms that reflect the intertwined needs of individuals, communities, and nonhuman entities.

Decision-making guided by the goals of deep equity respects the various connotations of ecological democracy. Biologists, particularly conservation biologists, do possess privileged expertise about the ecological strands that tie together human and nonhuman communities and promote the flourishing of both; law does, in fact, sometimes privilege that expertise in implementing biodiversity offsetting, rewilding, and REDD+. Axiologically, deep equity posits a move away from value relativism, because values prioritizing interlocking human and nonhuman individual and community health are prioritized. Normatively, in an ecological democracy, some voices *should* be heard louder, and those are the voices whose prescriptions promote individual, community, and nonhuman health and potential. And when their expertise is put in service of sustaining life on Earth, biologists’ expertise *should* be preferentially employed in a deeply equitable ecological democracy. But, of course, sometimes biologists deploy their expertise beyond where it should go, proffering law and policy prescriptions with implications beyond their epistemological, axiological, or normative ambit.<sup>16</sup>

How to strike the appropriate balance between sometimes competing interests with competing epistemological and axiological claims to power will always remain. The notion of deep equity is a guidepost, and not a panacea, for deciding whose voices should be heard, and when. As described above, Wong’s (2016) notion of eco-filtering prioritizes voices who speak for the nonhuman, because they are intrinsically valuable, and marginalizes those voices who do not speak for the nonhuman. Deep equity doesn’t require a position on whether nonhuman entities have intrinsic value or solely instrumental value: It does, however, suggest that human individuals and communities are interdependent and nonhuman individuals species, and processes, and thus any voices who filter *out* the nonhuman should have weaker voices in an ecological democracy. This does not mean that *only* non-human needs matters. The more deeply equitable our decision-making is, the more likely the Earth’s life-support systems will be sustained at some healthy baseline for present and future generations, which must be a goal of any governance structure. For without functioning ecosystems to support human societies, there can be no democracy (or any other form of government) at all.

To achieve this, in a genuine ecological democracy, biologists must share the decision-making realm with other affected citizens. In many instances, local citizens will have distinctive, place-based knowledge of biodiversity, and may have immediate, urgent needs that must be considered. Concerned citizens may range from individuals of indigenous communities whose entire existences are synergistically intertwined with the local ecosystem and whose livelihoods may be curtailed (or lives destroyed) or sustained by a biodiversity project (Savaresi, 2018), to the suburban amateur wildlife enthusiast whose daily explorations make them experts on local biodiversity and whose aesthetic fulfillment depends upon daily, intimate interactions with the natural world. It may well mean that those who have invested in a landscape through human labor may not wish to see it destroyed in exchange for an offset elsewhere, or may wish to use funds from an offset to preserve what they have managed or restored.

In their review of current debates in this field, Pickering et al. (2018) distinguish between a more anthropocentric, *environmental* democracy (prioritizing enhanced and diverse participation in existing governance forms) and a more ecocentric *ecological* democracy (visualizing a radical break with existing governance forms). Deep equity provides a normative guidepost whether we are advocating reform of, or a break from, existing institutions and that simultaneously erases the zero sum framing of ‘people vs. nature.’ In prioritizing health and potential of both human and nonhuman communities, it also elides anthropocentric and ecocentric orientations. It does not require that we grant moral standing to nonhuman entities or processes as a precondition for taking their needs into our decision-making (Eckersly, 2011). That is because, in a genuinely *ecological*

democracy, their needs are, ineluctably and inextricably, our needs. Deep equity suggests that anthropocentric-based governance that overlooks the ecological matrix that undergirds human civilization will ultimately be the undoing of that civilization (Pickering, 2019). It also dovetails with Dryzek's notion of ecological reflexivity: By giving greater weight to the voices of nonhuman world (and those who speak on its behalf), we can more rapidly and cogently shift our democratic decision making to those ends that support human communities. Of course, ecocentric-based governance that overlooks the very real needs of present and future human generations cannot practically succeed: Without buy-in from affected communities, biodiversity preservation (or any other ecological intervention) will eventually be undermined. A genuine *ecological* worldview means seeing that all of these needs are inextricable and requires governance that understands these deep interconnections, and is nimble enough to evolve reflexively as human and nonhuman needs evolve.

In other words: democracy is messy. Ecological democracy, at least, acknowledges the web of ecological connections between humans and between humans and the nonhuman world. Biodiversity offsetting, Rewilding, and REDD+ are laboratories to examine whose voices do and should count, and to promote a deeply equitable concept of ecological democracy.

## Conclusion

I introduced this paper with four questions. I have addressed these questions briefly, while recognizing that answering them requires a more sustained analysis, which I plan to provide in a forthcoming article. Legally, environmental democracy participation rights are encoded in international treaties (e.g. the Aarhus Convention) and in domestic legislation (e.g. the U.S. National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4332-35, 1970) and may or may not be specified or required in treaties, domestic laws, or program certification safeguards that promote biodiversity preservation. They may comprise legal rights in any formulation of ecological democracy. Epistemologically, local people may have privileged knowledge of local biological and social communities, and their voices will have varying legal and epistemological authority in saying what will be gained or lost from a given biodiversity preservation scheme. Epistemological currency may also dovetail with legal currency, as in requirements for Free Prior and Informed Consent for indigenous people or NEPA's requirement that local people be informed about and allowed to participate in environmental decision making. Biologists, in particular, may be given legal preference to speak for biodiversity, because of epistemological claims that they have credible unique knowledge of the natural world's needs. In some cases, those biologists will also assert that they should have normative or axiological privilege to speak for biodiversity, as they are best poised to appreciate its true value more than others. And, at times, biologists' voices should be heard loudly or loudest, provided the results lead to a more deeply equitable world where individual, community, and nonhuman health and potential is maximized and synergized.

What this says about ecological democracy is that, while it is always tricky to implement in practice, it's especially complicated when the right to participate in decision-making is implicated in schemes that advance biodiversity protection. Resilience for nonhuman and human communities requires that we be able to respond quickly and effectively if major, threatening ecological shifts are occurring – as they are clearly doing now. The ecological world that sustains us cannot speak for itself. Or, rather, by sending clear signals of its degradation, it *is* speaking, but we are not listening hard enough, 'as the non-human world becomes impossible to ignore as a central player in human history' (Dryzek, 2014, p. 953). Yet to speak for biodiversity is to be the spokesperson for nature – a powerful, protean constituency to claim to represent in a democracy (Takacs, 1996). To make a deeply equitable world, a genuine ecological democracy should heed voices whose law and policy prescriptions maximize and synergize individual, community, and ecological health and potential. The challenge is how we know and promote these voices when we hear them.

## Notes

1. For example, the World Bank's Environmental and Social Sustainability Performance Standard 6 'recognizes that protecting and conserving biodiversity, maintaining ecosystem services, and sustainably managing living natural resources are

fundamental to sustainable development.’ and allows biodiversity offsets with ‘like-for-like or better’ results when project developers cannot avoid or minimize damage at the project site (see International Finance Corporation, 2012, p. 40, 42). In both these and an updated second draft of the standards, ‘qualified experts with knowledge in offset design and implementation will be involved’ (see also World Bank, 2015a, p. 4).

2. The suggestion for guardians ad litem comes from Justice Douglas’ dissenting opinion in *Sierra Club v. Morton* (1972, fn. 8). Justice Douglas wrote:

The critical question of ‘standing’<sup>1</sup> would be simplified and also put neatly in focus if we fashioned a federal rule that allowed environmental issues to be litigated before federal agencies or federal courts in the name of the inanimate object about to be despoiled, defaced, or invaded by roads and bulldozers and where injury is the subject of public outrage.

3. Forest Trends Association: <http://bbop.forest-trends.org> (accessed 6 November 2017).
4. See, e.g. the chart ‘Advantages and Disadvantages of different roles for stakeholders’, BBOP, 2009a, pp. 43–47.
5. It’s beyond the word limit of this article to analyze particular domestic statutes that may delineate the parameters of who must, should, and can participate in environmental decision making.
6. (Or introduce a species for the first time in places it has not been found historically).
7. Citizens are also the primary proponents of getting species listed – and thus protected by the ESA’s other strictures -- in the first place (see Brosi & Biber, 2012).
8. See ‘Science Mandates’ at 16 U.S.C. §1533(b)(1) §1533(b)(2) §1536(a)(2).
9. This is sometimes done under the guise of the ESA’s support for ‘experimental populations,’ which have their own special rules designed, in part, to ward against public opposition, including killing those animals that have been reintroduced. (16 U.S.C. § 1539(j). 1982 U.S. Code Cong. and Admin. News, at 2834; Boltes, 2015). Non-predators also succumb to unhappy local residents in rewilding programs (e.g. Jones, 2016; Stohr, 2012). For a review of attempts to ‘delist’ wolf species in the U.S., see Fitzgerald (2014).
10. How Wolves Change Rivers, *The Sustainable Man*, <https://www.youtube.com/watch?v=ysa5OBhXz-Q>. For a proposal to allow dingoes to repopulate eastern Australia and thus revitalize threadbare ecosystems, see Milman (2015).
11. The literature on how nature underdetermines scientific (and particularly ecological) knowledge is extensive (See, e.g. discussion and references in Biber, 2012; Doremus & Tarlock, 2005). I analyze this throughout my book (Takacs, 1996). For an early, good overview of how Science and Technology Studies scholars see the uncertainties of ecologists’ knowledge, see Yearley (1991).
12. For a history of science mandates in biodiversity protection statutes in the U.S., including the ambivalence of the public towards that expertise and the difficulties confronting managers seeking to use science to justify essentially normative decisions, see Doremus (1997).
13. Constanza et al. (2014) estimate that ecosystem services provide humans with \$125 trillion USD worth of benefit annually.
14. This is a thesis of my book *The Idea of Biodiversity* (1996).
15. ‘Incorporating indigenous knowledge into climate change policies can lead to the development of effective adaptation strategies that are cost-effective, participatory and sustainable’ (Secretariat of the UNPFII, 2007, p. 11; Fincke, 2010).
16. I explore this tension in detail in my book *The Idea of Biodiversity* (1996).

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