

1 **Half the earth for people (or more)? Addressing ethical questions in conservation**

2 **Abstract**

3 Preserving global biodiversity depends upon designating many more large terrestrial and marine
4 areas as strictly protected areas. Yet recent calls for addressing biodiversity loss by setting aside
5 more protected areas have been met with hostility from some social scientists and even some
6 conservation biologists. The main objections against the so-called 'nature needs half' movement
7 include the following. First, setting aside protected areas implies that some vulnerable human
8 communities will be displaced to make space for wildlife. Second, separating humans from their
9 environment ignores the fact that humans have always been part of the environments around
10 them, and creates a false dichotomy between nature and culture. Third, conservationists are said
11 to put the blame for biodiversity loss on all humanity, rather than on those who are doing most of
12 the damage. Fourth, many social justice proponents argue that human population growth is not
13 related to biodiversity loss or other sustainability challenges. This article critically addresses
14 these four objections, exposing their robust anthropocentric bias. Protected area critics reliably
15 demand fairness for human beings at the expense of nonhuman beings, who they treat as morally
16 inconsequential. But justice is not only about just us. Conservation properly understood implies a
17 fair division of Earth's resources between human and nonhuman beings. Justice demands setting
18 aside at least half Earth's lands and seas for nature, free from intensive economic activities.

19 **Keywords:** animal rights; anthropocentrism; biodiversity loss; conservation; ecological justice;
20 environmental justice

21

22 **1. Introduction: Ethical debates about conservation**

23 Habitat destruction, invasive species, pollution, population increase and over-harvesting (HIPPO)
24 have all intensified in the past few decades to the point of causing severe biodiversity crisis
25 (CBD). The World Wildlife Fund's Living Planet Report (WWF 2014) testifies to intensifying
26 threats to natural systems based on evidence of mass extinctions in the last few decades. The
27 Living Planet Index (WWF 2014), which measures more than 10,000 representative populations
28 of mammals, birds, reptiles, amphibians and fish, has declined by 52 per cent since 1970. Put

29 another way, in less than two human generations, population sizes of vertebrate species have
30 dropped by half. As Funk (2014) has stated: “In an Anthropocene of radical climate change and
31 accelerating species extinctions, nothing less than a grand vision of what might yet be achieved
32 will bring about the preservation of our remaining unspoiled landscapes”.

33 Edward O. Wilson, a well-known biologist and author, has recently published an opinion blog
34 called Half Earth. This blog calls for allocating “half the world for humanity, half for the rest of
35 life” (Wilson 2016a). This aim follows the moral duty to stop the sixth extinction and the
36 existential threat to the planet that sustains our own species (Wilson 1985; 1993; 2016b).

37 Wilson’s blog reflects the calls of conservationists, biologists and other academics and
38 practitioners supporting the ‘Nature needs at least half’ movement (<http://natureneedshalf.org>),
39 arisen in the early 1990’s out of interrelated scientific and ethical concerns. The idea of ‘half’
40 comes from research of Noss (1992) and Noss and Cooperrider (1994), further developed by
41 Terborgh (1999), Svancara et al (2005) Estes et al (2011) and Funk (2014). This research
42 provides evidence that in most regions 25–75 percent (thus, on average 50 percent) or the
43 estimate that 1/3 to 2/3 of every region would need strict protection to maintain full biodiversity
44 (Noss 1992). The literature on the oceans indicates that 30-40 percent should protect all marine
45 biodiversity by a comfortable margin (e.g. Roberts 2007). While small fragmented habitats can
46 sustain smaller species of plants, animals and other biota (e.g. Turner & Corlett 1996),
47 accommodating larger animals, including apex predators such as tigers or sharks, requires a
48 larger territory (Noss 1992; Soulé & Noss 1998).

49 Rewilding, and strict environmental protection precluding human interference is described as one
50 of the most efficient and effective measures of conservation (e.g. Fraser 2009). The term
51 rewilding was initially popularized by conservationists Michael Soulé and Reed Noss (1998) to
52 describe a strategy of wilderness conservation that can be summarised as cores (healthy
53 ecosystems need large carnivores), corridors and carnivores (large carnivores need connected big
54 road-less areas). The rewilding movement is driven by the realization that biodiversity refers to
55 ecosystems formed through natural, not artificial, processes and seeks to return environment to
56 self-sufficiency characterizing the pre human-impacted state (Foreman 1991; 2011; Wuerthner et
57 al 2014). Rewilding involves the reintroduction of animals, plants, and fungi to environments
58 from which they have been excised in order to rehabilitate ecosystems (e.g. Foreman 1991;

59 2004). The Wildlands Network, for example, calls for a North American system of connected
60 cores that will sustain healthy and ecologically effective populations of all native species and
61 allow for all ecological processes to operate unencumbered.

62 However, rewilding and strict conservation policies have evoked a storm of criticism. The ethical
63 battle that has issued after the publication of Wilson's blog is instructive in underlining the moral
64 concerns of both the proponents and opponents of strict conservation. The most notable rebuttal
65 of Wilson's blog was written by Robert Fletcher and Bram Büscher (2016), both of the
66 University of Wageningen in The Netherlands. Their criticism involves a number of stances
67 discussed in the other published work by the authors (e.g. Büscher 2015; Büscher et al 2012;
68 Fletcher 2009; 2014; Fletcher et al 2014; 2015) and by other critics of conservation. In this
69 article, "conservation critics" will refer to broad groups including some conservationists
70 (particularly eco-modernists and new conservation scientists) as well as social scientists
71 (particularly, political ecologists, social geographers and environmental anthropologists) and
72 social justice activists whose stances will be explicated below.

73 First, Fletcher and Büscher (2016) have stated that "Most existing 'wilderness' parks have
74 required the removal or severe restriction of human beings within their bounds". This statement
75 is based in a wider critique that setting aside protection areas displaces the most vulnerable
76 human communities (e.g. Brockington 2002; Gabon 2008; Corry 2011). Critical scholars
77 advocate the local communities' entitlement to the natural resources and ecosystem services and
78 the right to remain in protected areas retaining traditional practices such as hunting (e.g. Chapin
79 2004; Brockington et al 2008; Holmes 2013; Duffy 2014; Fletcher et al 2015).

80 Second, it is argued that setting humans aside from nature ignores the fact that communities have
81 always been part of and have changed environments around them (Fairhead & Leach 1996; Posey
82 1998). Simultaneously, conservation movement is described as a view that romanticizes the
83 "glorious unbroken landscape of biological diversity" (West & Brockington 2012:2). Supposedly,
84 this romantic view achieves separation between humans and nature "physically, through
85 protected areas... and ideologically, through massive media campaigns that focus on blaming
86 individuals for global environmental destruction" (Ibid). Instead, the critics contend, the real
87 enemy is the romantic ideal of nature itself, as it represents 'capitalist imaginary' (Fletcher et al

88 2015) constructed by neo-colonial, elitist, western conservationists (e.g. Büscher et al 2012;
89 Büscher 2015).

90 Third, ‘fortress conservation’ (Brockington 2002) is said to put the blame for biodiversity loss on
91 all humanity, rather than the most powerful fractions of it that are disproportionately profiting
92 from nature exploitation (Chapin 2004; Holmes 2013; West & Brockington 2012; Fletcher et al
93 2014). Fletcher and Büscher (2016) state, “the world is riven by dramatic inequality, and different
94 segments of humanity have vastly different impacts on the world’s environments. The blame for
95 our ecological problems therefore cannot be spread across some notion of a generalised
96 ‘humanity’”. Critics also maintain that strict anti-poaching measures violate human rights, once
97 again scapegoating vulnerable communities whose ecological impact is negligible (Duffy 2014;
98 Büscher 2015).

99 Fourth, it is argued that when it comes to environmental problems, including biodiversity loss,
100 human population growth has no relevance to ecological sustainability (Fletcher et al 2014).
101 Noting that the remaining high-fertility problem spots are countries with some of the world’s
102 lowest incomes, Fletcher & Büscher (2016) conclude that “paradoxically, then, it is those
103 consuming the least that are considered the greatest problem”. Summing these points, the critics
104 assert that *Half-Earth* would be a “profoundly inhumane” (Fletcher & Büscher 2016).

105 Although all four of these objections may have some validity, as reminders to treat human beings
106 justly, they falter because they neglect the need to treat nonhuman beings justly. Turning the
107 tables, this article asks conservation critics to examine their own notions of justice, equality and
108 equity. The following sections will address each of the four criticisms by invoking principles of
109 ecological justice (see Ehrenfeld 1978 and more recently Baxter 2005 and Higgins 2010) and
110 animal rights (see Singer 1977 and for emergent field of animal law, see Peters 2016). A
111 concluding section will seek points of convergence between proponents of social justice and
112 ecological justice, and outline an integrated vision for a truly just conservation movement.

113

114 **2. Rebuttal of anti-conservation arguments**

115 **2.1. The question of displacement**

116 First, there is a question of displacing vulnerable communities from protected areas, and the
117 accusation that it is particularly poor people and indigenous communities that suffer the
118 consequences of this displacement. In response to this it needs to be noted that certainly not all
119 protected nature areas are found in developing world, but in large countries such as Russia,
120 Greenland and Australia (CBD). The overwhelming majority of the world's poor do not live near
121 wilderness but in degraded agrarian areas or urban slums (UN 2015). In fact, most displacements
122 in recent history were hardly caused by conservation agencies but by large industrial or
123 agricultural projects and the system of 'industrocentrism' (Kidner 2014) which threatens both
124 cultural and biological diversity (Sponsel 2016).

125 Conservationists have pointed out that most of conservation is already targeted toward human
126 welfare, particularly in developing countries, often combined with economic development,
127 explicitly leaning towards enhancing community welfare (e.g. Oates 1999; Kareiva et al 2011). It
128 was noted that in many cases poverty elevation goes hand in hand with environmental restoration
129 (Goodall 2015) as healthy ecosystems are vital to sustainable agriculture, livelihood enhancement
130 and resilience in the face of climate change (Fitzgerald 2015). Indeed, rewilding of formerly
131 developed areas and limiting economic activities within all protected areas is necessary not only
132 to maximize biodiversity conservation (Foreman 2004), but also to benefit environmental
133 restoration to sustain long term survival of all species, including humans (Doak et al 2015).
134 Conservation provides livelihood to millions of people living next to protected areas, either
135 through traditional natural resource use, or through engagement in more capitalist activities such
136 as eco-tourism (Goodall 2015). As noted by Doak et al (2015), consideration of human well-
137 being in conservation decisions does not require a radical departure from current practices, as
138 humans have always and still do widely benefit from nature that is not destroyed, depleted or
139 polluted. Thus,

140 "The Half-Earth solution does not mean dividing the planet into hemispheric halves or
141 any other large pieces the size of continents or nation-states. Nor does it require changing
142 ownership of any of the pieces, but instead only the stipulation that they be allowed to
143 exist unharmed. It does, on the other hand, mean setting aside the largest reserves possible
144 for nature, hence for the millions of other species still alive" (Wilson 2016a).

146 By contrast, some new conservation scientists and political ecologists argue that the moral
147 imperative of conservation should be human welfare, abandoning the pursuit of biodiversity

148 protection based on intrinsic values of nature argument, and seeking to “enhance those natural
149 systems that benefit the widest number of people.” (Kareiva et al 2011). This position “restricts
150 the focus of conservation to the advancement of human well-being, which it frequently conflates
151 with narrow definitions of economic development, and thereby marginalizes efforts to preserve
152 diverse and natural ecosystems or to protect nature for aesthetic or other noneconomic benefits to
153 humans” (Doak et al 2015:30). Indeed, due to the increasing emphasis on poverty alleviation
154 among international donors and aid organizations, any direct confrontation between poverty
155 alleviation and conservation, advocates of poverty alleviation
156 are likely to get greater attention (Agrawal & Redford 2009:10). In this context, displacement of
157 poor communities is seen as morally abhorrent, while the very termination of not only presently
158 lived lives, but future generations of nonhumans are simply ignored. The “elephant in the room”
159 is the dead elephant. It is possible that whole elephant species or subspecies may be exterminated
160 in the wild if every territorial dispute or human-wildlife conflict is resolved in favor of local
161 communities (Kopnina 2016a).

162
163 Wilson (2016a, 2016b) is not calling for the displacement of indigenous communities from the
164 lands to be protected but rather for their recruitment into conservation roles. He agrees that
165 traditional indigenous societies have often been the best custodians of their environments, so such
166 societies would not be excluded from the protected areas. Under specified conditions, other forms
167 of sustainable human activity could also be allowed. The real threat is the rhetoric of industrial
168 sustainable development that turns land into industrial or agricultural production sites, with the
169 cult of economic growth displacing, both physically and spiritually, the very possibility of life in
170 an ecologically sustainable world.

171 As currently conceived, ‘sustained and inclusive economic growth’ (UN 2015) posits itself as a
172 panacea for unsustainability challenges, such as poverty, health, mortality, and climate change
173 (Kopnina 2016b). Yet, as critical scholars have noted, sustained and inclusive economic growth
174 is likely to lead to deeper ecological crisis which will in turn affect the most vulnerable
175 populations (e.g. Daly 1991; Washington 2015). While the evidence of the impact of protected
176 areas on local communities worldwide is highly variable (Wilkie et al 2006), moral denunciations
177 of detrimental effects of protected areas seem to be ideologically motivated judging by the “shrill
178 rhetoric of the fortress critique, along with the intimidating high moral ground of human rights it

179 professes” (Crist 2015:93). Indeed, what is occurring on the large scale is displacement of both
180 human and nonhuman populations in the quest for industrial development. But it is often the
181 vulnerable human communities that get most public sympathy (Agrawal and Redford 2009).

182 While the largest human displacement had occurred due to agricultural and urban expansion, in
183 the case of displacement to create protection areas there remains a crucial query as to whether
184 anyone, advantaged or disadvantaged, has the right to prioritize their own interests to the extent
185 that those of the non-human are deemed expendable (Strang 2016). Can being "indigenous"
186 confer an exclusive moral right to use 'natural resources', even if using these 'resources' leads to
187 the extinction of nonhuman species? The just answer is "no." In prioritizing human welfare in
188 often overt economic terms, it is unclear whose side the critics of the 'elites' are actually on.
189 Conservation, in ideal terms, is not about capital accumulation, but about biodiversity loss.

190 Also, crucially, we need to ponder who is really being displaced. Considering that early human
191 populations have spread from Africa into areas already occupied by a rich biota, it is debatable
192 whether either 'indigenous' or the more recent settlers into the 'new world' have a right to
193 colonize and claim pre-eminence over other species in areas they migrate to. This type of
194 displacement simply eradicates resident communities of wildlife by destroying their habitat
195 (Fitzgerald 2015) – without compensation and without any discussion of animal rights (Peters
196 2016) or 'earth rights' (Higgins 2010). This type of displacement can only be attributed to a
197 “human-nonhuman apartheid regime” that has “legitimated our self-consigned prerogative to
198 occupy, use, displace, and eradicate the natural world at will” (Crist 2015:90). The query “who
199 gains and who loses from compensated displacement from protected areas” (Rantala et al 2013)
200 is not concerned with 'compensation' for non-humans. Instead of realizing this great injustice, the
201 “strictly protected areas are scapegoated, and wild nature, once again, is targeted to take the fall
202 for the purported betterment of people, while domination and exploitation of nature remain
203 unchallenged” (Crist 2015:93).

204

205 **2.2. Separating humans from their environment**

206

207 Second, it is argued that humans have been interacting with natural environments and changing
208 them for many thousands of years and are thus 'part of nature' (Fairhead and Leach 1996;

209 Gorenflo et al 2012; Sponsel 2013). Conservation critics argue that conservationists and
210 environmentalists willfully perpetuate the dichotomy between humans and nature by presenting
211 humans as enemies (e.g. Brockington et al 2008; Büscher et al 2012; Nonini 2013) while
212 ‘romancing the wild’ (Fletcher 2014). The charge of romanticism is levelled against the
213 suggestion that there is a morally correct way for humans to live in and with nature and that
214 indigenous peoples often instantiated this ideal. Indeed, in the past, many indigenous populations
215 have preserved traditional ecological knowledge that allowed them to manage their environments
216 well, at times possibly contributing to forest increase and local biodiversity (e.g. Fairhead &
217 Leach 1996; Posey 1998). As Gorenflo et al. (2012: 8037) state, biological and cultural diversity
218 are closely interlinked: ‘the tendency for both to be high in particular regions suggests that certain
219 cultural systems and practices... tend to be compatible with high biodiversity’. Indeed,
220 ‘[w]ildernesses have often contained sparse populations of people, especially those indigenous
221 for centuries or millennia, without losing their essential character’ (Wilson 2016a). Assuming
222 that the indigenous people are the best guardians of their environment (Sandall 2000), it was
223 argued that protecting indigenous sacred places can ‘simultaneously help protect cultures,
224 religions, and rights as well as the associated biotic species, ecosystems, and ecological
225 processes’ (Sponsel 2016:135).

226
227 Yet, the reification of ‘traditional cultures’ as ‘noble’ (e.g. Koot 2016), and the “romantic
228 insistence on the superiority of the primitive” (Sandall 2000:1) lacks realization that indigenous
229 people are ‘rarely isolated from global market forces’ (Pountney 2012:215), and that the scope of
230 ‘traditional’ activities has greatly expanded due to demographic pressures and technology.
231 Simply, when the number of people increases, this leads to an increased demand for food; “but
232 the wildlife in a set area does not tend to increase, its numbers remain steady and thus so must the
233 harvest if it is to be sustainable’ (Sinclair 2015: 77). Thus, while the critics imply that
234 conservationists perpetuate the ideal of ‘wilderness’, they tend to reify local communities as
235 ‘untouched’ by the logic of capitalist development.

236
237 Ironically, on other occasions the critics fully embrace the capitalist logic that views of nature as
238 a commodity, using the very vocabulary of the power-holders they criticize in speaking of the
239 ‘market value of lost physical assets’ (Rantala et al 2013:99). Simultaneously with idealizing the

240 local communities, the heralding of the Anthropocene has precipitated a new wave of “post-
241 nature” critique that openly or subtly celebrates human dominion, technocratic administration and
242 a managerial approach to domesticating the “global garden” (Wuerthner et al 2014). Fletcher
243 (2009:178-179) reflects: ‘So what we need is to eliminate the distinction between the wild and
244 tame entirely, to realize that the “wild” is a human idea, that it has never truly existed as an
245 objective reality, and that, in the final analysis, it has caused us more harm than good.’ Thus, it is
246 reasoned, ‘...we find ourselves confronted with a counterintuitive truth: As long as we need
247 wilderness we will never be free’ (Fletcher 2009:179). The idea of reconciling the wild and the
248 tame (Fletcher 2014), manifests itself in a “rambunctious garden” metaphor (Marris 2011). This
249 metaphor implies that there is no difference between, for example, the naturally occurring
250 blossoming of cacti in the Arizona desert and the artificially maintained ‘ecosystem’ of imported
251 palm trees and generously watered and cropped lawns that unnaturally freckle Phoenix, the state
252 capital (Shoreman-Ouimet & Kopnina 2016).

253
254 While conservation critics argue that nature is socially constructed – both in linguistic and
255 practical terms (e.g. Cronon 1996; Fletcher 2009, 2014; West & Brockington 2012), they
256 construct the humans as creators or managers of nature (Ehrenfeld 1988). Yet, nature has not
257 been constructed by humans and has been there much longer than our species (Kidner 2014). The
258 trouble with wilderness is not that it is imagined by elitist environmentalists, as Cronon (1996)
259 and Fletcher & Büscher (2016) would have it, but that it is rapidly being destroyed.

260
261 Thus, the accusation that environmentalists create a human/nature dichotomy is unfair. Within
262 the land ethics or deep ecology perspective there is no place for the dualistic vision of nature and
263 culture (Leopold 1949; Devall & Session 1985; Naess & Rothenberg 1989; Kopnina 2015). In
264 fact, most bioethical theories resituate humankind within a world mutually composed of and by
265 human and non-human agents and agentive processes (Strang 2016). It can be argued, however,
266 that humans have set themselves apart from nature with agricultural and later industrial
267 development, which marked the beginning of conquest and control, of stepping outside of natural
268 environments in order to dominate them (Johnson & Earle 2000; Henley 2011; Kidner 2014).

269

270 Here we enter a dangerous terrain, and the need to recognize the logical consequences of
271 deconstructing dichotomies (Kopnina 2016d). If there were no dichotomy between humans and
272 environment in legal terms, environmental protection would not be controversial but widely
273 accepted as just and fair. Humane treatment and protection from exploitation and abuse of
274 animals (e.g. Singer 1977; Peters 2016) would be respected in the same way as human rights.

275
276 This leads us to one of the salient points regarding dichotomies discussed by Kopnina (2016a)
277 and raised by an anonymous reviewer of this manuscript. Both deep ecology conservationists and
278 eco-modernist conservationists reject human/nature dualism but do so for different reasons,
279 drawing diametrically opposed ethical conclusions from their opposition to it. The reason some
280 conservation critics argue that humans are part of nature is to show that, as products of evolution,
281 whatever we do in and to the biosphere is natural. In other words, the human co-optation of the
282 biosphere then becomes unobjectionable, as any other phase of evolution. If humans disturb
283 ecologies, or introduce new 'artificial' elements into them, including road pavements and vehicles
284 that routinely turn millions of nonhuman 'trespassers' into the neutral category of roadkill, this is
285 just nature 'disturbing' itself. It logically follows that if human beings were part of nature
286 there is no reason to insist upon the detrimental role of human communities. Humans remain
287 'parts of nature' no matter what they do¹.

288
289 By contrast, the deep ecology and land ethics idea of unity with nature requires recognition of
290 integrity of ecosystems and a certain balance of needs (Leopold 1949; Naess 1973), which can be
291 interpreted in terms of interspecies egalitarianism or equity (Baxter 2005). If the questions of
292 interspecies equity were taken seriously, the planet would need to be divided on the basis of
293 species' natural resource requirements (e.g. Noss 1992; Mathews 2016), and not on the basis of

¹ Thus, the claim that "humans are part of nature" shows that this formulation is not sufficiently precise. The term, 'nature', does not adequately designate the intended object of conservation. From the deep ecology perspective, humans are not morally privileged in relation to nature, nor are they morally entitled to co-opt all natural resources for their own use but must share those resources equitably with other species. Reserving some areas exclusively for the use of non-human species is then consistent with the non-dualist stance of deep ecology which privileges integrity of whole ecosystems and not necessarily individual species. In this framing, removal of people from protected areas need not be construed as dualist - it is just the administration of non-dualism in a world already morally skewed in favour of humans. On the other hand, if indigenous communities would prefer to remain in those areas while maintaining traditional livelihoods, and if it can be shown that their presence would indeed not be detrimental to ecological integrity, reconciliation may be possible.

294 what one single species proclaims to be its entitlement. Thus, the issue at stake is not so much
295 whether humans are part of nature or not – of course they are – but whether their influence
296 endangers all other elements of nature. After all, Ebola virus is part of nature as well, yet it is
297 questionable whether the spread of its population and influence should be welcomed by other
298 species.

299

300 **2.3. Who is to blame for the damage?**

301

302 Third, there is the argument that conservationists fail to realize that “different segments of
303 humanity have vastly different impacts on the world’s environments” (Fletcher & Büscher 2016).
304 The concomitant argument is that conservationists should stop blaming humanity as a whole but
305 realize that their own idea of ‘wilderness’ is nothing more than a romantic ideal of dominant
306 elites (Cronon 1996; Fletcher 2009). According to the critics the real perpetrators of injustice are
307 conservation organizations themselves. The critics argue that environmentalism ‘went south’ and
308 established itself in the recently decolonized nations and while there, ‘got snugly in bed with its
309 old enemy, corporate capitalism’ (West & Brockington 2012:2). The critics see large
310 conservation NGO’s as closely aligned with economic development agencies and other power
311 holders that profit from conservation (e.g. Brockington et al 2008; Büscher et al 2012; West &
312 Brockington 2012; Claus & Freeman 2016).

313

314 Most conservationists and environmentalists will not deny the destructive reach of industrial
315 elites. Environmentalists such as Crist (2015) have clearly stated that economic growth is one of
316 the most significant causes of unsustainability and indeed, disappearance of habitats and species.
317 It is a well-known maxim that if all of us lived as Western consumers right now, we will need a
318 few planet earths to satisfy our consumption needs. But while the destructive reach of the affluent
319 is globally profound, that of the poor is more localized, involving deforestation for subsistence
320 agriculture and fuel (e.g. Oates 1999), and overhunting for bushmeat, leading to the ‘empty forest
321 syndrome’ (Redford 1992; Peterson 2013; Crist & Cafaro 2012).²

322

² http://www.cites.org/eng/news/pr/2011/20110610_bushmeat.shtml

323 Fletcher and Büscher (2016) chose to illustrate their opinion piece by an image of an armed white
324 ranger leaning threateningly over the black poacher – an image evoking colonial associations in
325 the ‘war to save biodiversity’ (Duffy 2014; Büscher 2015). They forget to mention the war
326 against the most vulnerable communities – those of non-human species and those that protect
327 them (Shoreman-Ouimet & Kopnina 2015). The argument that anti-poaching measures violate
328 human rights completely excludes the rights of nonhumans, even the most endangered ones.
329 Laying the blame for violations of human or indigenous rights on conservationists tends to
330 depoliticize the need for legal protection not just for nonhumans, but also for their advocates.

331 Grass-roots support for environmental protection and/or animal rights is known worldwide with
332 committed individuals sacrificing their lives to protect habitats and various forms of life they
333 sustain (Kopnina 2015; Shoreman-Ouimet & Kopnina 2016). Among them are Latin American
334 (Fears 2016a), African and Asian environmental activists (Global Witness 2014; Lakhani 2014;
335 Fears 2016b). In fact, Western neoliberal apparatus has no monopoly on either environmental
336 conservation or environmentalism (Sponsel 2016). Environmentalist action by individuals is
337 cross-cultural, despite severe repercussions, demonstrating that commitment to environmental
338 causes is a universal rather than uniquely Western phenomenon (e.g. Foreman 1991; Kellert and
339 Wilson 1995; Wilson 1993 and 2016b; Kopnina 2015).

340 The ‘war’ in conservation is often not between the colonialist elites and impoverished individuals
341 driven to hunt out of despair, but between well-organized and heavily armed poachers, using
342 equipment ranging from helicopters to advanced weaponry and often operating as part of
343 international criminal cartels, and those who are trying to protect nonhumans (Goodall 2015). An
344 alternative image would be a memorial wall portraying environmental activists killed by poachers
345 (<https://vimeo.com/28701717>), from Joy Adamson and Joan Root in Kenya to Berta Cáceres in
346 Honduras, to Jairo Mora Sandoval in Costa Rica, to Chut Wutty in Cambodia. As an American
347 environmental activist William C. Rodgers, convicted for his role in the Earth Liberation Front
348 wrote in his suicide note:

349 To my friends and supporters to help them make sense of all these events that have
350 happened so quickly: Certain human cultures have been waging war against the Earth for
351 millennia. I chose to fight on the side of bears, mountain lions, skunks, bats, saguaros,
352 cliff rose and all things wild. I am just the most recent casualty in that war. But tonight I

353 have made a jail break—I am returning home, to the Earth, to the place of my origins.
354 Bill, 12/21/05 (the winter solstice.)

355 Another image could be a homage to billions of mammals, birds, amphibians, reptiles, plants, and
356 other biota rendered and consumed as ‘resources’. This could be a better illustration of
357 colonialism - a complete subordination of nonhuman species under the banner of justice (Crist
358 2012). Liberation movements of the past have challenged the underlying morality of oppressive
359 regimes both ideologically and materially (Fanon 1963) yet presently fall short of realizing the
360 necessity of liberating the earth (Rodman 1977). The war metaphor employed by Duffy (2014)
361 excludes this battle. The real culprit is the anthropocentrism itself and the people who persecute
362 those that stand up for nature. These persecutors can be capitalist developers but also be
363 conservation critics that fail to realise the victimhood of nonhuman communities.

364

365 **2.4. Population growth and biodiversity loss.**

366 Fourth, the argument that "It is not the number of people on the planet that is the issue – but the
367 number of consumers and the scale and nature of their consumption" (Satterthwaite quoted in
368 Cumming 2016) is well-established, among others by Fletcher et al (2014). What complicates the
369 matter is that population question is inextricably intertwined with a number of very sensitive
370 political, ethical and ideological concerns that precludes discussing it as a sustainability challenge
371 (Wijkman & Rockström 2012). The recent online comments in reaction to Fletcher & Büscher
372 (2016) are revealing:

373 **WB**

374 Do you believe that infinite population growth is possible? Forget the talk about
375 inequality, who's going to pay for what and how it might be achieved. If infinite growth is
376 not possible then there must be a point where it stops. What is that end point?...Your
377 article only asserts that Wilson is dangerously wrong. So what's your solution? Altruistic
378 sharing, then more "equitable" growth to the point of what -- infinity?!

379

380 **Büscher**

381 The point is that the problem of conservation has nothing at all to do with population
382 growth in and of itself, so the question whether infinite population growth is possible is a
383 moot one. The core of the conservation problem has to do with the type of political
384 economy we live in (namely a neoliberal capitalist political economy), that believes that
385 the economy can grow forever. This is the type of ‘infinite growth’ we should really be
386 talking about. And what this type of economic growth does is to create an elite upper
387 class with an insane impact on our natural world - more than the poorest half of the planet

388 combined, the half that Wilson arguably wants to get rid off. So the solution is pretty
389 straightforward: start degrowing our economies, start sharing the global resources far
390 more equitably (And get rid of the elite upper class altogether)...

391
392 **Fletcher**
393 The point is that the main threat to conservation nearly everywhere in the world is not the
394 physical encroachment of breeding bodies onto protected areas, it is the spread of
395 extractives (i.e oil) and other forms of industry (i.e palm oil) into these area. And this is
396 mostly being done for profit-driven consumption in a few wealthy societies. So if we
397 want to tackle the problem most effectively where should we start: with the breeding
398 bodies or with the economic logic driving this consumption and production?

399
400 **PO**
401 ...Population pressure in our lifetime has made things dramatically worse. When I was
402 born (1942) we only had 2-1/2 billion people on the planet, and now it's three times that
403 number. Plus, most people are a lot richer, consuming huge amounts of everything every
404 year. The planet is paying the price for our biological success. The fact that the world will
405 be losing all its wild places is a foregone conclusion...

406 **Büscher**
407 Thanks for your thoughts. So let me get this straight: you are saying that Wilson's plan to
408 displace millions of ('fertile') people and his unfettered, ungrounded believe in the
409 ideology of the free market, together with all the crazy contradictions in his text is
410 'objective science'? And let me also ask whether you might volunteer to give up your
411 house and the city or place you live in ... to be 'rewilded' and given back to the 'half
412 earth' of parks that Wilson is advocating for?

413
414 **NP**
415 And let me ask whether you might volunteer to give up your house and the city or place
416 you live in.... to the poor, discriminated, downtrodden people that you are advocating for
417 (given your high moral ground)?

418
419
420 Büscher's comment that Wilson wants to get rid of the poor half of the world is not just untrue
421 but perverse. Wilson suggests no such thing. In contemplating Fletcher and Büscher's (2016)
422 moral crusade for equity and equality, one may question how they actually propose to "get rid of
423 the elite upper class altogether" without coercion or worse. Such an enterprise seems naïve at
424 best, and more likely dangerous, as illustrated by the lessons of the Russian revolution that has
425 destroyed the old and produced the new elites (Kopnina 2016c). While corporate capitalism may
426 be the greatest force for environmental destruction at present, the solution of overthrowing the
427 elites is not available to conservationists, so other solutions need to be advanced, with in-built
428 compensation to any human groups who are disadvantaged by those solutions.

429 Another question is how making capitalism go away will result in a better relationship with
430 nature – other than by substituting capitalist by a socialist system which in practice equally relies
431 on environmentally devastating systems of industrial production. The insistence that social
432 inequality is the root cause of unsustainability ignores the long pre-capitalist history of hierarchy,
433 exploitation and nature destruction that lies at the basis of the Western dominant paradigm,
434 positing that resources are infinite or infinitely substitutable (Dunlap & Van Liere 1978). As
435 unsustainable production and consumption in developed countries is far from abating and
436 developing countries are eager to imitate this ‘progress’ stimulating the ‘catch-up’ with the rich
437 countries, the noble aim of equitable redistribution does not bode well for the planet (Hansen &
438 Wethal 2014). The sheer scale of human influence on the environment today is unprecedented in
439 evolutionary history. From a biological point of view, having seven and a half billion apex
440 predators who are high in the food chain, either the ‘innocent’ poor or the ‘guilty’ rich, implies
441 increased demand of food, be it factory produced, hunted, or scavenged.

442 Due to the twin forces of industrial development and population pressure, the situation that used
443 to characterise presumably sustainable societies is very different today (Sponsel 2013; Wilson
444 2016b) and traditional activities are rarely sustainable (Pountney 2012). For example, in the
445 recent article published in this journal, Cronin and colleagues (2016) indicate that while hunting
446 has been a traditional activity for generations on Bioko Island in Guinea, present use of modern
447 weapons is driving Bioko's most threatened primates towards extinction. Not only massive
448 industrial-scale farming tends to deplete natural environments, but also the traditional farming
449 (e.g. slash and burn agriculture) applied by an increasing number of people reveals the
450 fundamental incompatibility of large-scale agriculture with nature conservation (Henley 2011).
451 The Neolithic transition, and later agricultural development and pastoralism have fundamentally
452 transformed the human-nonhuman relationship by setting in motion the cycle of intensification
453 driven by population pressure, thus scaling up all activities that might have been benevolent in
454 earlier settings (e.g. Johnson & Earle 2000). Meanwhile, contemporary capitalism typically
455 includes a commitment to rapid population growth, as a means to increase corporate profits
456 (Kopnina & Blewitt 2014).

457 Denying that population growth in developing world is one of the drivers of unsustainability can
458 only be true if one expects that the poor will never escape poverty, nor ever migrate to the more

459 economically developed countries (Kopnina & Washington 2016). This is obviously not the ideal
460 of equality and freedom that social justice advocates would embrace. Since it is assumed that all
461 human beings have a right to a decent living, and since no sustainable system of production has
462 yet been devised, population pressure is not going to help long term welfare of future generations
463 (Wijkman & Rockström 2012). Growing population does, however, serve short term economic
464 interests– the greater population, the bigger the expansion of market away from the already
465 saturated ‘rich’ countries, and the bigger, once again, economic growth (Kopnina & Blewitt
466 2014).

467 This alignment of demographic expansion and capitalist interests seems to escape conservation
468 critics’ attention. Nor do they seem to be aware of robust literature that supports sustainability in
469 the context of ecological integrity. Instead of perpetuating the economic rationale for continuous
470 growth, which Fletcher and Büscher (2016) rightly criticize, the core of transformative
471 sustainability thinking has been a call for transition to the steady state economy (e.g. Daly 1991;
472 Washington 2015), Cradle to Cradle (e.g. Braungart & McDonough 2002; Kopnina & Blewitt
473 2014), degrowth (e.g. Victor 2010; O’Neill 2012), and circular economy (e.g. Lieder and Rashid
474 2015) models. Yet leaving population growth out of the sustainability equation tends to
475 exacerbate challenges of economic transition (Daly 1991; Washington 2015). Support of
476 alternative economies based on degrowth in rich countries *and* the promotion of non-coercive
477 measures to address population growth globally is both needed (e.g. Washington 2015).

478
479 Last but not least, there is a question of population ethics. Noss (1992) has argued persuasively
480 that the ecosystems and the collective needs of non-human species should take precedence over
481 the needs and desires of humans, because people are both more resilient to environmental change
482 and more destructive than any other species. Putting the needs of one species above those of all
483 other species combined, as exemplified by the sustainable development rhetoric (UN 2015), is
484 one of the most pernicious trends in modern conservation (Noss 1992). The preservation of large
485 areas of tropical rain forest can safeguard the complete biota, and prevent large vertebrates
486 suffering from habitat fragmentation (e.g. Turner & Corlett 1996). As it was recently noted in this
487 journal, the scale mismatch between necessary breeding territory for large predators and the
488 actual territory free of human settlement adds to the vulnerability of existing small populations of
489 tigers (Chundawat et al 2016).

490 Combining deep ecology and animal rights ethics, ecocide, defined as killing of living beings,
491 either directly through consumption, medical experimentation, and hunting, or indirectly through
492 habitat destruction, can be framed a legal crime (Higgins 2010; Peters 2016). Higgins (2010)
493 refers to ecocide as “the extensive destruction, damage to or loss of ecosystem(s) of a given
494 territory, whether by human agency or by other causes, to such an extent that peaceful enjoyment
495 by the inhabitants of that territory has been severely diminished” (Higgins 2010). Sociologist
496 Eileen Crist (2012:147) equates ecocide to genocide: “the mass violence against and
497 extermination of nonhuman nations, negating not only their own existence but also their roles in
498 Life’s interconnected nexus and their future evolutionary unfolding”. Underlining the exceptional
499 ethical stakes involved in species extinction, Soulé and Wilcox (1980:8) comment: “Death is one
500 thing; an end to birth is something else”. This is not comparable to displacement of communities
501 as nonhumans are not only displaced but erased, eliminated, exterminated *forever*. From this
502 perspective, the consideration of justice in the context of demographic imbalances needs to
503 include consideration of populations of *billions* of the earth’s nonhuman citizens and their
504 entitlements (Cafaro 2015). Asserting that people need the whole planet at the expense of non-
505 human inhabitants testifies to human chauvinism and the worst kind of anthropocentrism –
506 human supremacy (Crist 2012). Mathews (2016) argues that just speaking of other species’
507 viability leaving out the question of population and proportional distribution of resources
508 between species is an implicit concession to human hegemony, revealing the underlying
509 anthropocentrism of ‘biodiversity for the sake of people’ only perspectives.

510
511 As Crist (2012:149) has stated, the question we should be asking is: “How many people, and at
512 what level of consumption, can live on the Earth without turning the Earth into a human colony
513 founded on the genocide of its nonhuman indigenes? The latter is rarely posed because the
514 genocide of nonhumans is something about which the mainstream culture, including the political
515 left, observes silence”. Perhaps it is time to break this silence.

516

517 **3. Discussion**

518 **3.1. The question of justice**

519 As discussed above, historically, most protected areas and national parks have been established
520 *for* the people, everywhere in the world, and not just in postcolonial nations (e.g. Doak et al
521 2015). What Wilson (2016a; 2016b) proposes is that these parks need to be created *for*
522 *nonhumans* as well, evoking ecological justice. While the term 'environmental justice' often refers
523 to (un)equal distribution of environmental burdens and benefits across human populations (e.g.
524 Low and Gleeson 1998), the term 'ecological justice' (or biospheric egalitarianism), refers to
525 justice between species (Wissenburg 1993; Baxter 2005; Schlosberg 2007; Cafaro & Primack
526 2014; Kopnina 2014; Cafaro 2015).

527 Anthropologist Veronica Strang (2016) discusses relational 'justice' referring to recognising,
528 appreciating and upholding value in other communities and individuals. Similar to Baxter's
529 (2005) support for the right of (at least some) non-human species to distributive justice, Strang
530 recognizes that this right is founded in inclusive definition of equity, which requires that all life
531 forms have access to the resources that they need to flourish. This implies, according to Mathews
532 (2016), an ethic of *bio-proportionality* which moves beyond mere viability of species but requires
533 optimization of populations of all species, including territory proportional to species
534 requirements. In order to guarantee this justice, though, human representatives need to stand in
535 democratic assemblies for other species or even ecosystems. Examples of such representatives
536 are Polly Higgins, the lead advocate for Ecocide law (<http://pollyhiggins.com/>) and Steve Wise, a
537 founder of Nonhuman Rights Project (<http://www.nonhumanrightsproject.org/steve-wise/>).

538 It is significant to note that the critics make an assumption that humans are more important than
539 all other species but never take the time to explain why humans are more important, and why
540 their intra-species struggles should take priority over all other species. The arrogance of
541 humanism (Ehrenfeld 1978), and the arrogance of resourcism (Foreman 1991; 2011) explain this
542 anthropocentrism, but the only logical justification of it seems "might makes right" utilitarianism
543 – as noted by a number of scholars (Rodman 1977; Dunlap & Van Liere 1978; Ehrenfeld 1978;
544 Noss 1992; Soulé & Noss 1998; Foreman 1991; Crist 2012; Wuerthner et al 2014; Shoreman-
545 Ouimet & Kopnina 2016). The position that conservation is hurting most vulnerable communities
546 and thus should be abandoned unless it benefits these communities seems morally defensible
547 because nonhuman communities are simply left out of consideration. Simply put, human
548 inequality and injustice toward one another have been around for millennia. We should continue

549 to work for their just resolution—but not to the neglect of the global crisis of biodiversity loss,
550 which is a matter of interspecies justice. To paraphrase George Orwell, exclusive focus on
551 interhuman injustice implies that human beings are infinitely more ‘equal’ than all other living
552 beings. That position is itself unjust.

553

554 **3.2. Points of convergence between social and ecological justice**

555 Sometimes, mixed methods, in which “conservation should give up its infatuation with parks and
556 focus on ‘mixing’ people and nature in mutually conducive ways” (Fletcher & Büscher 2016) can
557 offer positive results— but only in cases where human-wildlife conflict and the possibility of over-
558 use can be avoided. Successful example of conservation that combines social and ecological
559 objectives includes the Roots & Shoots program, founded by Jane Goodall. This program aims to
560 help young people to play an active role in addressing ecological and social challenges including
561 poverty alleviation (Goodall 2015). Goodall (2015:23-24) reports on some of the activities of the
562 program, which started with selecting a team of local Tanzanians who gained the cooperation of
563 the villagers by respecting and addressing their needs and priorities. These were needs were
564 outlined as increased food production (accomplished through restoration of fertility to the
565 overused farmland—without the use of chemical fertilizers); improved health facilities; and better
566 education. The program has encouraged the establishment of wood lots close to the villages,
567 introduced fuel-efficient stoves and hygienic latrines. The program started micro-credit programs
568 (especially for women) for environmentally sustainable projects of their choice, including tree
569 nurseries (Ibid). The program also provided scholarships for girls to stay in school and have
570 trained volunteers who provide family planning information and thus helped to reduce unwanted
571 pregnancies. These initiatives led to positive community responses and action:

572 And, because of the good relations we had built up with the villagers, they agreed to set
573 aside, for forest regeneration, a buffer zone surrounding Gombe National Park. Within
574 this buffer zone—a designated village forest reserve—there can be no hunting or tree
575 felling, although limited access does allow for foraging for medicinal plants and
576 mushrooms, beekeeping, and gathering dead wood... This buffer zone also protects the
577 watershed and thus the water supply to the villages. Over the past ten years new trees
578 have grown from seeds and from the stumps left in the ground, and many of these have
579 reached heights of over 20 feet so that the chimpanzees of Gombe can, once again, move
580 out of the park when certain fruits ripen in the buffer zone (Goodall 2015:23).

581 While the long term consequences of the program yet need to be investigated, according to the
582 evaluative reports, according to evaluations (e.g. Czaplinski-Mirek et al 2007; Murphy 2014), the
583 program succeeds in successfully tying in social in helping poor people live better lives, as well
584 as ecological justice indirectly by curbing population growth through family planning
585 information campaigns, and directly by setting aside more habitats for other animals. As of 2016,
586 the Roots & Shoots program has expanded to more than 130 countries, illustrating the possibility
587 of combining ecological and social objectives on large scale.

588 Another point of convergence is the general agreement between critics and supporters of strict
589 conservation measures is that one of the core problems “has to do with the type of political
590 economy we live in (namely a neoliberal capitalist political economy), that believes that the
591 economy can grow forever” (Fletcher, blog comment response). It is not the fusing of wild and
592 domesticated nature that is needed, but a common realization that the current industrialist system
593 not only devastates and commodifies nature, but also colonise human beings and enlisting us as
594 agents of industrialism (Kidner 2014).

595 Converging critique is also that of culture-nature dichotomy, and the need to see human interests
596 congruent with that of environment and its elements. Yet, this convergence is only possible if the
597 idea of being ‘part of nature’ does not overshadow the recognition of the necessity to guarantee
598 integrity of the ecosystem as a whole. Wilson (2016a) reflects that allocating half of the earth to
599 nature simultaneously aims to address our own survival as a species:

600 The beautiful world our species inherited took the biosphere 3.8 billion years to build.
601 The intricacy of its species we know only in part, and the way they work together to
602 create a sustainable balance we have only recently begun to grasp. Like it or not, and
603 prepared or not, we are the mind and stewards of the living world. Our own ultimate
604 future depends upon that understanding.

605 If anthropocentrism is to be countered, the issue of justice should be addressed from all possible
606 angles – sustainability, including the questions of consumption and distribution of power, and
607 more efficient conservation strategies, including the questions of trade-offs involved in sharing of
608 our beautiful planet. The simple biological fact is that nature does not need humans, but humans
609 need nature (Wilson 2016b).

610

611 Many interdisciplinary scholars already make valuable contributions to the development of non-
612 anthropocentric values in their disciplines. Environmental philosophers (e.g. Leopold 1949;
613 Devall & Session 1985; Naess & Rothenberg 1989), environmental sociologists (e.g. Dunlap &
614 Van Liere 1978; Crist 2012) have all exposed anthropocentrism as one of the main drivers of the
615 current ecological crisis. The conservation psychology studies of environmental values have
616 indicated that people with ecocentric orientation are more likely to act upon their values in order
617 to protect the environment than those with anthropocentric orientations (e.g. Thompson and
618 Barton 1994; Stern and Dietz 1994; Stern 2000). These studies also offer a number of pragmatic
619 and strategic recommendations in the quest for environmental sustainability.

620
621 Sponsel (2016) has proposed that anthropologists are especially well situated to serve as
622 mediators among individuals from different interest groups like environmental, conservation,
623 government, community, and religious organizations “through basic and applied research as well
624 as through advocacy” (Ibid P. 134). Political scientists have discussed ways in which ecological
625 justice can be incorporated into existing political systems (e.g. Eckersley 2004; Baxter 2005).
626 Scholars working within the animal law field have discussed ways in which animal rights can be
627 integrated in legal systems (e.g. Peters 2016).

628

629 **4. Conclusion: Ethical and practical considerations**

630 Continuing expansion of human population and commercial activities are rarely compatible with
631 ecosystem flourishing, and strict protection has been most effective in addressing biodiversity
632 loss (CBD). We, academics, could play a part in promoting public awareness and political
633 decision-making to seriously engage with the question of setting nature aside for protection. To
634 achieve this, the starting point is a truly balanced moral discussion about exclusive justice that
635 extends beyond Homo sapiens – which is, supposedly, a unique species capable of rationality,
636 compassion, and a sense of right and wrong (Wilson 1985). As Locke (2015) has noted, at the
637 World Wilderness Congress in which ‘Nature needs half’ proposal has been discussed, some
638 delegates have reflected “We must be realistic about what is politically achievable and that is
639 not” (Locke 2015: 12). However, this rationale does should not apply to nongovernmental
640 organizations (NGO’s) “whose role in civil society is to say the things that governments ought to

641 do and to help find ways to bring that about” (Locke 2015:13). This is often not happening
642 because of NGO’s fear losing donor sponsorship, and attracting a storm of critique in case their
643 cause is not seen as benefitting humans. The basic problem with this type of self-censorship is
644 that it “focuses on the actors not the outcome, which is the conservation of biodiversity (Ibid).
645 Basically, sharing the planet among all species will be better for humans, too, as it will prevent
646 turning the land and seas too exclusively toward economic activities, preventing an eventual
647 collapse of a sick and unsafe world—as well as locking in the injustice of mass extinction. The
648 living forms marked in WWF’s Living Planet Index (WWF 2014) constitute the very fabric of
649 the ecosystems which sustain life on Earth - and the barometer of what we are doing to our own
650 planet, our only home.

651 In arguing that Wilson’s suggestion to allocate half of the earth to nonhumans is unjust, Fletcher
652 & Büscher (2016) deny justice to the most vulnerable communities – those of nonhumans.
653 Rights-based conservation strategies challenge organizations to determine just who is benefiting,
654 whose voices are being left behind, and how to close the gaps. Creating such strategies will
655 involve closer community and stakeholder engagement to give voice to the marginalized. This
656 article supports this call, but only if the label of ‘marginalised’ is expanded to a global
657 community of all living beings. Nature and humans can co-exist, but careful weighing of mutual
658 benefits, in which human interests do not outweigh those of other species, is needed (Strang
659 2016). Overall, As Johns (2009) has argued, a broader conservation politic that motivates people
660 to care for nature and motivates action of nature’s behalf is needed.

661 I propose that rather than making excuses for conservationists and asserting that they do serve
662 humans after all (as they certainly do), the environmental cause is better served by a rebuttal
663 question: what justifies rampant anthropocentrism that condemns species and individuals within
664 species to use, abuse, displacement and in some cases even extinction? The correct answer to
665 critics of conservation should not be defensive or apologetic, but similar to what the leaders of
666 earlier human liberation movements have done: a frontal confrontation with the underlying
667 morality of oppressive regimes.

668

669 **Bibliography**

670 Agrawal, A. and Redford, K. 2009. Conservation and displacement: an overview. *Conservation*
671 *and Society*, 7 (29): 4:12.

672
673 Baxter, B. H. 2005. *A Theory of Ecological Justice*. London, New York: Routledge.

674
675 Braungart, M. and McDonough, W. 2002. *Cradle to Cradle: Remaking the way we make things*,
676 London: Vintage Books.

677
678 Büscher, B., S. Sullivan, K. Neves, J. Igoe, and Brockington, D. 2012. Towards a Synthesized
679 Critique of Neoliberal Biodiversity Conservation. *Capitalism Nature Socialism*, 23 (2): 4–30.

680
681 Büscher, B. 2015. “Rhino poaching is out of control!” Violence, Heroes and the Politics of
682 Hysteria in online Conservation. Paper presented at the British International Studies Association.
683 16-19 June, London, UK.

684
685 Brockington, D. 2002. *Fortress conservation: The preservation of the Mkomazi Game Reserve*,
686 Tanzania. Bloomington, IN: Indiana University Press.

687
688 Brockington, D., R. Duffy, and Igoe, J. 2008. *Nature Unbound: Conservation, Capitalism and*
689 *the Future of Protected Areas*. London: Earthscan.

690
691 Cafaro, P. 2015. Three ways to think about the sixth mass extinction. *Biological Conservation*,
692 192: 387-393.

693
694 Cafaro, P. and Primack, R. 2014. Species extinction is a great moral wrong. *Biological*
695 *Conservation*, 170: 1–2.

696
697 CBD (The Convention on Biological Diversity). <https://www.cbd.int/> Accessed June 21, 2016.

698
699 Chapin, M. 2004. A challenge to conservationists. *World Watch* November/ December. Pp. 17-
700 31.

701 Chundawat, R. S., Sharma, K., Gogate, N., Malik, P. K., & Vanak, A. T. 2016. Size matters:
702 Scale mismatch between space use patterns of tigers and protected area size in a Tropical Dry
703 Forest. *Biological Conservation*, 197: 146-153.
704

705 Claus, A. and Freeman, S. 2016. Panel ‘‘Global Elisions: Silence and Circumvention in
706 Conservation and Development’. American Anthropological Association annual meeting, in
707 November 2016 in Minneapolis USA.
708

709 Corry, S. 2011. *Tribal Peoples for Tomorrow's World*. London, UK: Survival International.
710

711 Crist, E. 2012. Abundant Earth and Population. In P. Cafaro and E. Crist (Eds). In *Life on the*
712 *Brink: Environmentalists confront Overpopulation*. P. Cafaro and E. Crist (Eds). Athens:
713 University of Georgia Press. Pp. 141-153.
714

715 Crist, E. and Cafaro, P. eds 2012. Human Population Growth as If the Rest of Life Mattered. In
716 *Life on the Brink: Environmentalists confront Overpopulation*. P. Cafaro and E. Crist (Eds).
717 Athens: University of Georgia Press. Pp. 3-15.
718

719 Crist, E. 2015. I Walk in the World to Love It. In *Protecting the Wild: Parks and Wilderness*, The
720 Foundation for Conservation. Edited by G. Wuerthner, E. Crist and T. Butler. Washington,
721 London: The Island Press. Pp. 82-95.
722

723 Cronin, D. T., Riaco, C., Linder, J. M., Bergl, R. A., Gonder, M. K., O'Connor, M. P., & Hearn,
724 G. W. 2016. Impact of gun-hunting on monkey species and implications for primate conservation
725 on Bioko Island, Equatorial Guinea. *Biological Conservation*, 197: 180-189.
726

727 Cronon, W. 1996. ‘‘The Trouble with Wilderness, or, Getting Back to the Wrong Nature.’’ In
728 *Uncommon Ground: Rethinking the Human Place in Nature*, edited by W. Cronon, New York:
729 W.W. Norton & Co. Pp. 69-90.
730

731 Cumming, V. 2016. How Many People Can Our Planet Really Support? BBC. March 14.
732 <http://www.bbc.com/earth/story/20160311-how-many-people-can-our-planet-really-support>

733
734 Czaplinski-Mirek, A., S. H. Jeong, M. Kamiloglu, T. Oshino, S. Park, L. Sophonpanich, H.
735 Zhuang. 2007. Evaluation of the Jane Goodall Institute: China's Roots & Shoots Environmental
736 Education Program in Beijing. School of International and Public Affairs. Columbia University.
737 https://sipa.columbia.edu/sites/default/files/R%26S-China%20Evaluation_0.pdf
738
739 Daly, H. 1991. *Steady State Economics*. Washington, London: The Island Press.
740
741 Devall, B. and Sessions, G.1985. *Deep Ecology: Living as If Nature Mattered*, Salt Lake City:
742 Peregrine Smith Books.
743
744 Doak, D.F., Bakker, V.J., Goldstein, B.E. and Hale, B. 2015. What Is the Future of
745 Conservation? In G. Wuerthner, E. Crist and T. Butler (eds), *Protecting the Wild: Parks and*
746 *Wilderness, The Foundation for Conservation*, Washington, London: The Island Press. Pp. 27–
747 35.
748
749 Duffy, R. 2014. Waging a War to Save Biodiversity: The Rise of Militarised Conservation.
750 *International Affairs*, 90(4): 819–834.
751
752 Dunlap, R. E. and Van Liere, K. D. 1978. The New Environmental Paradigm: A Proposed
753 Measuring Instrument and preliminary results. *The Journal of Environmental Education*, 9(4):10-
754 19.
755
756 Eckersley, R. 2004. *The Green State: Rethinking Democracy and Sovereignty*. MIT Press:
757 London.
758
759 Ehrenfeld, D. 1978. *The Arrogance of Humanism*. New York: Oxford University Press.
760
761 Ehrenfeld, D. 1988. Why Put a Value on Biodiversity? In Wilson, E.O. ed. *Biodiversity*.
762 Washington, DC, National Academy Press. Pp. 212-216.
763

764 Estes, J.A., Terborgh, J., Brashares, J.S., Power, M.E., Berger, J., Bond, W.J., Carpenter, S.R.,
765 Essington, T.E., Holt, R.D., Jackson, J.B.C., Marquis, R.J., Oksanen, L., Oksanen, T., Paine,
766 R.T., Pickett, E.K., Ripple, W.J., Sandin, S.A., Scheffer, M., Shoener, T.W., Shurin, J.B.,
767 Sinclair, A.R.E., Soulé, M.E., Vrtanen, R. and Wardle, D.A. 2011. Trophic Downgrading of
768 Planet Earth. *Science* 333: 301–306.
769

770 Fairhead, J. and Leach, M. 1996. *Misreading the African Landscape: Society and Ecology in a*
771 *Forest-Savanna Mosaic*. Cambridge: Cambridge University Press.
772

773 Fanon, F. 1963. *The Wretched of the Earth*. Grove Press.
774

775 Fears, D. 2016a (March 25) For Latin American environmentalists, death is a constant
776 companion, *The Washington Post*. [https://www.washingtonpost.com/national/health-science/for-](https://www.washingtonpost.com/national/health-science/for-latin-american-environmentalists-death-is-a-constant-companion/2016/03/25/85920f96-ec69-11e5-bc08-3e03a5b41910_story.html)
777 [latin-american-environmentalists-death-is-a-constant-companion/2016/03/25/85920f96-ec69-](https://www.washingtonpost.com/national/health-science/for-latin-american-environmentalists-death-is-a-constant-companion/2016/03/25/85920f96-ec69-11e5-bc08-3e03a5b41910_story.html)
778 [11e5-bc08-3e03a5b41910_story.html](https://www.washingtonpost.com/national/health-science/for-latin-american-environmentalists-death-is-a-constant-companion/2016/03/25/85920f96-ec69-11e5-bc08-3e03a5b41910_story.html)
779

780 Fears, D. 2016b (June 20) Last year was the deadliest ever for the world’s environmental
781 activists, *The Washington Post*. [https://www.washingtonpost.com/news/energy-](https://www.washingtonpost.com/news/energy-environment/wp/2016/06/20/last-year-was-the-deadliest-ever-for-the-worlds-environmental-activists/)
782 [environment/wp/2016/06/20/last-year-was-the-deadliest-ever-for-the-worlds-environmental-](https://www.washingtonpost.com/news/energy-environment/wp/2016/06/20/last-year-was-the-deadliest-ever-for-the-worlds-environmental-activists/)
783 [activists/](https://www.washingtonpost.com/news/energy-environment/wp/2016/06/20/last-year-was-the-deadliest-ever-for-the-worlds-environmental-activists/)
784

785 Fitzgerald, K. H. 2015. The Silent Killer: Habitat Loss and the Role of African Protected Areas to
786 Conserve Biodiversity. In G. Wuerthner, E. Crist and T. Butler (eds), *Protecting the Wild: Parks*
787 *and Wilderness, The Foundation for Conservation*. Washington, London: The Island Press, Pp.
788 170–188.

789 Fletcher, R. 2009. Against Wilderness. *Green Theory & Praxis: The Journal of Ecopedagogy*
790 5(1):169–179.
791

792 Fletcher, R. 2014. *Romancing the Wild: Cultural Dimensions of Ecotourism*, Durham, NC: Duke
793 University.

794 Fletcher, R., Breitlin, J. and Puleo, V. 2014. Barbarian Hordes: The Overpopulation Scapegoat in
795 International Development Discourse. *Third World Quarterly*, 35(7):1195– 1215.

796 Fletcher, R., Dressler, W. and B. Büscher, B. 2015. Nature™ Inc: Nature as capitalist Imaginary.
797 In: R. Bryant (ed.). *Handbook of Political Ecology*. Cheltenham, UK: Edward Elgar. Pp. 359-
798 372.

799

800 Fletcher, R. and Büscher, B. 2016. Why E. O. Wilson is wrong about how to save the Earth.
801 <https://aeon.co/opinions/why-e-o-wilson-is-wrong-about-how-to-save-the-earth>

802

803 Foreman, D. 1991. *Confessions of an eco-warrior*, New York, Harmony.

804

805 Foreman, D. 2004. *Rewilding North America: A Vision for Conservation in the 21st Century*.
806 Washington, London: The Island Press.

807 Foreman, D. 2011. The Arrogance of Resourcism. In *Conservation vs. Conservation*. Durango,
808 CO: The Rewilding Institute and Raven's Eye Press.

809 Fraser, C. 2009. *Rewilding the World: Dispatches from the Conservation Revolution*, New York:
810 Metropolitan Books.

811

812 Funk, W. H. 2014. Nature Needs Half. *Earth Island Journal*.
813 http://www.earthisland.org/journal/index.php/elist/eListRead/nature_needs_half/

814

815 Gabon, E. 2008. The Elephant in the Room: Confronting the Colonial Character of Wildlife
816 Conservation in Africa. *African Studies Review* 51(3): 51–74.

817

818 Global Witness. 2014. Deadly Environment.
819 <https://www.globalwitness.org/en/campaigns/environmental-activists/deadly-environment/>

820

821 Goodall, J. 2015. Caring for People and Valuing Forests in Africa. In G. Wuerthner, E. Crist and
822 T. Butler (eds), *Protecting the Wild: Parks and Wilderness, The Foundation for Conservation*.
823 Washington, London: The Island Press, Pp. 21–26.

824
825 Gorenflo, L.J., Romaine, S., Mittermeier, R.A. and Walker-Painemilla, K. 2012. Co-occurrence
826 of linguistic and biological diversity in biodiversity hotspots and high biodiversity wilderness
827 areas. *Proceedings of the National Academy of Sciences*, 109(21): 8032–8037.
828
829 Hansen, A. and Wethal, U. (eds.) 2014. *Emerging Economies and Challenges to Sustainability:*
830 *Theories, strategies, local realities*. New York: Routledge.
831
832 Henley, D. 2011. Swidden Farming as an Agent of Environmental Change: Ecological Myth and
833 Historical Reality in Indonesia. *Environment and History*, 17: 525-554.
834
835 Higgins, P. 2010. Eradicating Ecocide: Laws and Governance to Prevent the Destruction of Our
836 Planet. *Shepherd Walwyn Publishers Ltd*. 62-63.
837
838 Holmes, G. 2013. Exploring the Relationship between Local Support and the Success of
839 Protected Areas, *Conservation and Society*, 11: 72-82.
840
841 Johns, D. 2009. *A new conservation politics: power, organization building, and effectiveness*.
842 Oxford: Wiley Blackwell.
843
844 Johnson, A.W. and Earle, T.K. 2000. *The evolution of human societies: from foraging group to*
845 *agrarian state*. Redwood City: Stanford University Press.
846
847 Kareiva, P., Lalasz, R. and Marvier, M. 2011. Conservation in the Anthropocene: Beyond
848 Solitude and Fragility. *Breakthrough Journal*. Fall, P. 29-27.
849
850 Kellert, S. R., & Wilson, E. O. 1995. *The Biophilia Hypothesis*. Washington, London: The Island
851 Press.
852
853 Kidner, D. 2014. Why “anthropocentrism” is not anthropocentric. *Dialectical Anthropology*,
854 38:465-480.

855
856 Koot, S. 2016. Cultural ecotourism as an indigenous modernity: Namibian Bushmen and two
857 contradictions of capitalism. In *Routledge Handbook of Environmental Anthropology*, H.
858 Kopnina and E. Shoreman-Ouimet (eds). New York: Routledge. Pp. 315-326.

859 Kopnina, H. 2016a. Wild Animals and Justice: The Case of the Dead Elephant in the Room.
860 *Journal of International Wildlife Law & Policy*, 19(3):219-235.

861 Kopnina, H. 2016b. The victims of unsustainability: A challenge to Sustainable Development
862 Goals. *International Journal of Sustainable Development & World Ecology*, 23(2):113-121.
863

864 Kopnina, H. 2016c. Of Big Hegemonies and Little Tigers: Ecocentrism and Environmental
865 Justice. Special Issue “On the politics of policy-making for education for sustainable
866 development”. *The Journal of Environmental Education*, 47(2):132-150.
867

868 Kopnina, H. 2016d. Nobody Likes Dichotomies (but sometimes you need them). *Anthropological*
869 *Forum*. In print.

870

871 Kopnina, H. 2015. Revisiting the Lorax complex: Deep ecology and biophilia in cross-cultural
872 perspective. *Environmental Sociology*, 43(4): 315-324.
873

874 Kopnina, H. 2014. Environmental justice and biospheric egalitarianism: reflecting on a
875 normative-philosophical view of human-nature relationship. *Earth Perspectives*, 1:8.
876

877 Kopnina, H. and Blewitt, J. 2014. *Sustainable Business: Key issues*. New York: Routledge.
878

879 Kopnina, H. and Washington, H. 2016. Discussing why population growth is still ignored or
880 denied. *Chinese Journal of Population, Resources and Environment*, 14(2): 133-143.

881 Lakhani, N. 2014. Surge in deaths of environmental activists over past decade, report finds
882 [http://www.theguardian.com/environment/2014/apr/15/surge-deaths-environmental-activists-](http://www.theguardian.com/environment/2014/apr/15/surge-deaths-environmental-activists-global-witness-report)
883 [global-witness-report](http://www.theguardian.com/environment/2014/apr/15/surge-deaths-environmental-activists-global-witness-report)
884

885 Leopold, A. 1949. *A Sand County Almanac and Sketches Here and There*. New York: Oxford
886 University Press.
887

888 Lieder, M., & Rashid, A. 2015. Towards circular economy implementation: a comprehensive
889 review in context of manufacturing industry. *Journal of Cleaner Production*.
890 <http://www.sciencedirect.com/science/article/pii/S0959652615018661>
891

892 Locke, H. 2015. Nature Needs (at least) Half: A Necessary New Agenda for Protected Areas. In
893 G. Wuerthner, E. Crist and T. Butler (eds), *Protecting the Wild: Parks and Wilderness, The*
894 *Foundation for Conservation*, Washington, London: The Island Press, pp. 3–16.
895

896 Low, N. and Gleeson, B. 1998. *Justice, Society and Nature*. New York: Routledge.
897

898 Marris, E. 2011. *Rambunctious Garden: Saving Nature in a Post-Wild World*. New York:
899 Bloomsbury Publishing.
900

901 Mathews, F. 2016. From biodiversity-based conservation to an ethic of bio-proportionality.
902 *Biological Conservation*, 200:140-148.
903

904 Murphy, S. 2014. Jane Goodall’s Roots & Shoots: Measuring Compassion and Altruism
905 [http://theimprovementgroup.com/blog/2014-09/jane-goodall%E2%80%99s-roots-shoots-measuring-](http://theimprovementgroup.com/blog/2014-09/jane-goodall%E2%80%99s-roots-shoots-measuring-compassion-and-altruism-susan-murphy)
906 [compassion-and-altruism-susan-murphy](http://theimprovementgroup.com/blog/2014-09/jane-goodall%E2%80%99s-roots-shoots-measuring-compassion-and-altruism-susan-murphy) Accessed August 29, 2016.
907

908 Naess, A. and Rothenberg, D. 1989. *Ecology, Community and Lifestyle: Outline of an Ecosophy*.
909 Cambridge, NY: Cambridge University Press.
910

911 Naess, A. 1973. The shallow and the deep: long-range ecology movement. A summary, *Inquiry*,
912 16:95–99.
913
914

915 Nonini, D. 2013. Plenary debate ‘Justice for people should come before justice for environment.
916 World Anthropology Congress. ASA-IUAES conference, Manchester, 5-10TH August 2013.
917 <http://www.youtube.com/watch?v=oldnYTYMx-k> Accessed August 29, 2016.
918

919 Noss, R. F. 1992. The Wildlands Project Land Conservation Strategy. *Wild Earth* (1): 9-25.
920

921 Noss, R. F. and Cooperrider, A. Y. 1994. *Saving Nature’s Legacy: Protecting and Restoring*
922 *Biodiversity*. Washington, London: The Island Press.
923

924 Oates, J. F. 1999. *Myth and Reality in the Rain Forest. How Conservation Strategies Are Failing*
925 *in West Africa*. London: University of California Press.
926

927 O'Neill, D. W. 2012. Measuring progress in the degrowth transition to a steady state economy.
928 *Ecological Economics*, 84: 221-231.
929

930 Peters, A. 2016. Global Animal Law: What It Is and Why We Need It. *Transnational*
931 *Environmental Law*, 5: 9-23.

932 Peterson, D. 2013. Talking about Bushmeat. In *Ignoring Nature No More: The Case for*
933 *Compassionate Conservation*, ed. M. Bekoff. Chicago: Chicago University Press. Pp. 64-76.

934 Posey, D. A. 1998. ed., *Cultural and Spiritual Values of Biodiversity*. Leiden: Leiden University
935 Press, Intermediate Technology Publications, and United Nations Environmental Programme
936 (UNEP).
937

938 Pountney, J. 2012. Book Review: Kalland, Unveiling the whale. *Anthropology Journal*, 18(1):
939 215–217.
940

941 Rantala, S., Vihemäki, H. Swallow, B. M. Jambiya, G. 2013. Who gains and who loses from
942 compensated displacement from Protected Areas? The Case of Derema Corridor, Tanzania.
943 *Conservation and Society*, 11 (2)97:111.
944

945 Redford, K. H. 1992. The empty forest. *Bioscience*, 42:412-422.
946
947 Roberts, C. 2007. *The Unnatural History of the Sea*. Washington, London: The Island Press.
948
949 Rodman, J. 1977. The liberation of nature? *Inquiry*, 20(1-4):83-131.
950
951 Sandall, R. 2000. *The Culture Cult: Designer Tribalism and Other Essays*. Boulder, Colorado:
952 Westview Press.
953
954 Schlosberg, D. 2007. *Defining Environmental Justice: Theories, Movements, and Nature*.
955 Oxford: Oxford University Press.
956
957 Shoreman-Ouimet, E. and Kopnina, H. 2015. Reconciling Social and Ecological Justice for the
958 Sake of Conservation. *Biological Conservation*, 184:320–326.
959
960 Shoreman-Ouimet, E. and Kopnina, H. 2016. *Culture and conservation: Beyond*
961 *Athropocentrism*. New York: Routledge.
962
963 Sinclair, A. R. E. 2015. Protected Areas Are Necessary for Conservation. In G.Wuerthner, E.
964 Crist and T. Butler (eds), *Protecting the Wild: Parks and Wilderness, The Foundation for*
965 *Conservation*. Washington, London: The Island Press, Pp. 72–81.
966
967 Singer, P. 1977. *Animal Liberation: A New Ethics for our Treatment of Animals*. New York:
968 Random House.
969
970 Soulé, M. and Noss, R. 1998. Rewilding and Biodiversity: Complementary Goals for Continental
971 Conservation. *Wild Earth* 8:19–28.
972
973 Soulé, M. and B.A. Wilcox, eds. 1980. *Conservation Biology: An Evolutionary- Ecological*
974 *Perspective*. Sunderland, MA: Sinauer Associates.
975

976 Sponsel, L. 2013. Human Impact on Biodiversity: Overview. In S.A. Levin (ed.), *Encyclopedia*
977 *of Biodiversity*, Waltham, NY: Academic Press, Pp. 137–152.

978

979 Sponsel, L. 2016. Spiritual Ecology, Sacred Places, and Biodiversity Conservation. H. Kopnina
980 & E. Shoreman-Ouimet (eds) *Routledge Handbook of Environmental Anthropology*. New York:
981 Routledge, Pp. 132-144.

982

983 Stern, P. C. 2000. Toward a coherent theory of environmentally significant behaviour. *Journal of*
984 *Social Issues*, 36, 407-424.

985

986 Stern, P. C. and Dietz, T. 1994. The value basis of environmental concern. *Journal of Social*
987 *Issues*, 50, 65-84.

988

989 Strang, V. 2016. Justice for All: Inconvenient truths and reconciliation in human-non-human
990 relations. H. Kopnina & E. Shoreman-Ouimet (eds) *Routledge Handbook of Environmental*
991 *Anthropology*. New York: Routledge, Pp. 263-278.

992

993 Svancara, L. K. et al. 2005. Policy-driven versus Evidence-based Conservation: A Review of
994 Political Targets and Biological Needs, *BioScience* 55 (11): 989–95.

995

996 Terborgh, J. 1999. *Requiem for Nature*, Washington, London: The Island Press.

997

998 Turner, I. M. and Corlett, R. T. 1996. The conservation value of small, isolated fragments of
999 lowland tropical rain forest. *Trends in Ecology & Evolution*, 11(8): 330-333.

1000

1001 Thompson, G. S. C. and Barton, M. A. 1994. Ecocentric and anthropocentric attitudes toward the
1002 environment. *Journal of Environmental Psychology*, 14:149-157.

1003

1004 UN (United Nations) 2015. *Transforming our world: the 2030 Agenda for Sustainable*
1005 *Development*. <https://sustainabledevelopment.un.org/post2015/transformingourworld>

1006

1007 Victor, P. 2010. Questioning economic growth. *Nature*, 468:370-371.
1008
1009 Washington, H. 2015. *Demystifying Sustainability: Towards Real Solutions*. London: Routledge.
1010
1011 West, P. and Brockington, D. 2012. Introduction: Capitalism and the Environment. *Environment*
1012 *and Society: Advances in Research*, 3 (1):1-3.
1013
1014 Wijkman A. and Rockström J. 2012. *Bankrupting Nature: Denying Our Planetary Boundaries*.
1015 New York: Routledge.
1016
1017 Wilkie, D. et al. 2006. Parks and People: Assessing the Human Welfare Effects of Establishing
1018 Protected Areas for Biodiversity Conservation, *Conservation Biology* 20 (1): 247–49.
1019
1020 Wissenburg, M. 1993. “The Idea of Nature and the Nature of Distributive Justice”, in A. Dobson
1021 and P. Lucardie (eds.) *The Politics of Nature: Explorations in Green Political Theory*. London:
1022 Routledge.
1023
1024 Wilson, E. O. 1985. The biological diversity crisis. *BioScience*, 35(11): 700-706.
1025
1026 Wilson, E. O. 1993. Biophilia and the conservation ethic. In S.R. Kellert and E.O. Wilson (eds.)
1027 *The Biophilia Hypothesis*. Washington, London: The Island Press. Pp. 31-41.
1028
1029 Wilson, E. O. 2016a. Half earth. [https://aeon.co/essays/half-of-the-earth-must-be-preserved-for-](https://aeon.co/essays/half-of-the-earth-must-be-preserved-for-nature-conservation)
1030 [nature-conservation](https://aeon.co/essays/half-of-the-earth-must-be-preserved-for-nature-conservation)
1031
1032 Wilson, E. O. 2016b. *Half Earth*. New York: Liveright.
1033
1034 Wuerthner, G., Crist, E. & Butler, T. (eds). 2014. *Keeping the Wild: Against the Domestication of*
1035 *Earth*. Washington, London: The Island Press.
1036

- 1037 WWF (World Wildlife Fund) 2014. Living Planet Report 2014. Available from:
1038 <http://www.worldwildlife.org/pages/living-planet-report-2014> Accessed August 29, 2016.