

Half-Earth or Whole Earth? Radical ideas for conservation, and their implications

BRAM BÜSCHER, ROBERT FLETCHER, DAN BROCKINGTON, CHRIS SANDBROOK
WILLIAM M. ADAMS, LISA CAMPBELL, CATHERINE CORSON, WOLFRAM DRESSLER
ROSALEEN DUFFY, NOELLA GRAY, GEORGE HOLMES, ALICE KELLY
ELIZABETH LUNSTRUM, MAANO RAMUTSINDELA and KARTIK SHANKER

Abstract We question whether the increasingly popular, radical idea of turning half the Earth into a network of protected areas is either feasible or just. We argue that this Half-Earth plan would have widespread negative consequences for human populations and would not meet its conservation objectives. It offers no agenda for managing biodiversity within a human half of Earth. We call instead for alternative radical action that is both more effective and more equitable, focused directly on the main drivers of biodiversity loss by shifting the global economy from its current foundation in growth while simultaneously redressing inequality.

Keywords Biodiversity, economy, Half-Earth, inequality, protected area

There is a new call to extend conservation frontiers as an ultimate attempt to save global biodiversity. Under the slogan ‘nature needs half’ (Nature Needs Half, 2016) and spearheaded by leading conservation scientists, including Wilson (2016), Noss et al. (2012) and Wuerthner et al. (2015), a vision has been formulated to turn half of the Earth into a series of interconnected protected areas. This radical plan for conservation seeks to expand and strengthen the world’s current network of protected areas to create a patchwork grid of reserves encompassing at least half the world’s surface and hence ‘about 85%’ of remaining biodiversity (Wilson, 2016, p. 186). We wish to open up debate about this idea. While it could be interpreted as simply a rhetorical challenge to provoke greater conservation effort, it is proposed by senior scientific figures and is being widely discussed and supported, including for example at the recent World Conservation Congress, where E.O. Wilson promoted the idea. Critical reflection about this proposal is thus important.

The plan proposed is staggering in scale: protected areas, according to the IUCN, currently incorporate c. 15.4% of the Earth’s terrestrial areas and 3.4% of its oceans. They would thus need to more than triple in extent on land and by more than ten-fold in the oceans. Not only would this include the Earth’s currently still relatively intact ecosystems and natural habitats, it would also necessarily entail an active programme of restoration and rewilding to return larger areas to a more pristine pre-human baseline (Donlan et al., 2005; Noss et al., 2012; Wilson, 2016). E.O. Wilson is arguably most explicit in his recent book *Half-Earth: Our Planet’s Fight for Life*, stating that ‘only by setting aside half the planet in reserve, or more, can we save the living part of the environment and achieve the stabilization required for our own survival’ (Wilson, 2016, p. 3). Other conservationists agree that such a goal is the ‘only defensible target’ from a ‘strictly scientific point of view’ to allow for a sustainable future (Wuerthner et al., 2015, p. 18).

These proposals seem to be driven by the credo desperate times call for desperate measures. We agree with E.O. Wilson and other conservationists that biodiversity is being lost at an unprecedented rate as a result of human

BRAM BÜSCHER*† (Corresponding author) and ROBERT FLETCHER Sociology of Development and Change, Wageningen University, Wageningen, The Netherlands. E-mail bram.buscher@wur.nl

DAN BROCKINGTON Sheffield Institute for International Development, University of Sheffield, UK

CHRIS SANDBROOK‡ and WILLIAM M. ADAMS Department of Geography, University of Cambridge, UK

LISA CAMPBELL Nicholas School of the Environment, Duke University Marine Lab, Beaufort, USA

CATHERINE CORSON Mount Holyoke College, South Hadley, USA

WOLFRAM DRESSLER School of Geography, University of Melbourne, Victoria, Australia

ROSALEEN DUFFY Department of Development Studies, SOAS, University of London, UK

NOELLA GRAY Department of Geography, University of Guelph, Guelph, Canada

GEORGE HOLMES School of Earth and Environment, University of Leeds, Leeds, UK

ALICE KELLY Department of Environmental Science, Policy, and Management, University of California, Berkeley, USA

ELIZABETH LUNSTRUM Department of Geography, York University, Canada

MAANO RAMUTSINDELA Department of Environmental and Geographical Science, University of Cape Town, South Africa

KARTIK SHANKER Ashoka Trust for Research in Ecology and the Environment, Bangalore, India, Dakshin Foundation, Bangalore, India, and Indian Institute of Science, Bangalore, India

*Also at: Department of Geography, Environmental Management & Energy Studies, University of Johannesburg, South Africa

†Also at: Department of Sociology and Social Anthropology, Stellenbosch University, South Africa

‡Also at: United Nations Environment Programme, World Conservation Monitoring Centre, Cambridge, UK

Received 10 June 2016. Revision requested 3 August 2016.

Accepted 29 September 2016.

activity, and that there is an urgent need for action to address this. Desperate times, however, demand careful decisions. We argue that the Half-Earth idea does not get to the root of the problems it seeks to address, and would have serious negative impacts both on people (particularly poor people) and probably also on biodiversity. If the current environmental crisis calls for radical thinking there are different and, we believe, better possibilities that should be taken seriously by conservationists and others.

Firstly, the most basic problem with the Half-Earth proposal is that it ignores the powerful engines of resource extraction and consumption that are the main drivers of biodiversity loss globally (Wells & McShane, 2004; Vandermeer & Perfecto, 2005; CBD, 2014). A plan for the future of biodiversity that does nothing to address the overconsumption of resources in industrialized and emerging economies makes unrealistic assumptions about the extent to which nature's half can be managed in isolation. Even if one could separate humanity from nature on half of the Earth the activities of the human half (especially fossil fuel use) will need to be addressed fully to ensure the survival of biodiversity. The way the human half is managed will continue to have major consequences not just for biodiversity in nature's half, but across the entire planet.

Secondly, the nature needs half plan would have a significant social impact. What sort of protected area is entailed in this vision? The more restrictive, which place most limits on human activity, have often created significant challenges of physical and economic displacement (West & Brockington, 2006; Oldekop et al., 2016). It is therefore inconceivable that strict protected areas (IUCN Category I or II) could expand to 50% of the Earth without considerable social impacts. Many strict protected areas are already embroiled in myriad social conflicts (Duffy, 2014) and the nature needs half proposal is therefore likely to fuel even more conflict and violence. Perhaps the vision could become more palatable if the half is achieved primarily through the expansion of other kinds of protected area categories that explicitly link with social justice, sustainable use and related concerns, for example through indigenous peoples' and community conserved territories and areas. This point is explicitly left open by Nature Needs Half (2016), which emphasizes the importance of all categories of protected areas, not just strict reserves. An increase of the amount of land in which people can live and work, but which is off limits to resource extraction and drastic land use change, could be progressive. But it is doubtful that this is the vision that excites the Half-Earth movement.

Thirdly, the question of who controls protected areas (who creates them and dictates what may be done there) raises another major concern with the proposal. Where will the new protected areas be located? How will the burden of creating more protected areas be shared globally? Many current conservation efforts focus on the biodiversity-rich

tropics, and hence on low-income countries with major problems of poverty, and a lack of infrastructure, industry and employment. If Half-Earth advocates take the same focus (and as biodiversity scientists it would be strange if they did not), the removal of land from non-conservation use will impact most on those communities that are poorest and least responsible for our current environmental predicament. These problems are predictable, but Half-Earth discussions hardly mention them, nor suggest how they might be addressed.

A fourth problem is that Half-Earth advocacy ignores decades of thinking about building relationships between protected areas and human societies. Since the World Parks Congress in Bali in 1973 it has been shown that protected areas work best if they are supported by local people. A recent study that examined 165 protected areas globally found that protected areas 'that explicitly integrated local people as stakeholders tended to be more effective at achieving joint biological conservation and socioeconomic development outcomes' (Oldekop et al., 2016, p. 133). Studies of forestry management have reached the same conclusions (Persha et al., 2011). Yet advocates of dramatic spatial expansion of protected areas say little about how these areas can be sustained socially and politically (Wuerthner et al., 2015; Wilson, 2016).

A fifth and final problem is that the Half-Earth idea offers no agenda for the biodiversity in a human half of Earth. What will this enclave of industrial and urban humanity be like? Will there be any non-human nature at all? Will this half be restricted merely to glimpsing the Earth's saved biodiversity virtually, via hidden micro-cameras, as Wilson (2016, p. 192) recommends (cf. Adams, 2010)? Will only the managers of nature's half be allowed behind the curtain? This, we fear, would be a recipe for a dystopian world, where the vast majority of humanity is prevented from experiencing the very biodiversity many of them will have been displaced to save.

The Half-Earth proposal, in short, is infeasible, and will have dangerous and counter-effective consequences if implemented. The only logical conclusion of the Half-Earth proposal would be injustice on a large scale without effectively addressing the actual roots of the ecological crisis.

We can do better than this. If we have license to think freely and radically about stopping biodiversity loss, there are other more promising prospects that build on sound research and are already being developed and tested. Firstly, conservation strategies need to focus directly on drivers of biodiversity loss by addressing how the global economy works, especially with respect to resource extraction and consumption, to decrease pressure on nature (Wells & McShane, 2004; Vandermeer & Perfecto, 2005). We need to recognize that it is ultimately economic growth itself that is the root cause of biodiversity loss (Fletcher, 2012), and hence to take the possibilities of degrowth economics

seriously (D'Alisa et al., 2010; Kallis, 2015). Consequently, we cannot rely on free markets, economic valuation, and corporate social responsibility to fund our goals, as advocated both by E.O. Wilson and, curiously, a group of so-called Anthropocene conservationists (Kareiva et al., 2012) to which E.O. Wilson otherwise sees his proposal as starkly opposed. Instead, we must promote concerted and widespread programmes of regulation and redistribution to equalize use and control of our remaining natural resources. This proposal is sometimes mistaken for a return to failed socialist and communist experiments, with coercive resource allocation determined by experts and bureaucrats. But this is not the case. Expert and bureaucratic resource allocation is more characteristic of the Half-Earth vision. Our suggestion is that natural resources and ecosystems become global public goods that are at the same time governed in local or bioregional economies focused on socio-ecological justice (Scott Cato, 2013; Martin et al., 2015).

Secondly, conservation strategies must support measures that address inequality. Inequality harms the environment as well as health and human well-being (Holland et al., 2009; Wilkinson & Pickett, 2010; Hicks et al., 2016). A half-conserved Earth that leaves the majority of people in chronic poverty would not only be unjust, it also could not be sustained. Whereas Half-Earth proponents focus mostly on the effects of aggregate population increases in poor areas, we believe that a focus on the effects of the relative impacts of consumption and resource use is not only more realistic, it is also more just. It means focusing on those segments of the global population that consume the most, and who encourage rather than prevent further aggregate consumption and resource use. This latter focus is crucial: instead of encouraging further aggregate consumption and resource use, longer-term equality can only be achieved within a broader political-economic framework focused on ensuring that all human beings can live prosperous lives within local and global ecological boundaries. In short, cutting inequality in half would do more for conservation than attempting to protect half of the Earth from humanity (Mikkelsen et al., 2007; Holland et al., 2009). Pursuing economic growth alone would undermine this goal and hence accomplishing effective conservation would require dramatically redistributing existing wealth (Kallis, 2015).

These measures are intended to bring about a radical shift from an economic focus on the magnitude of growth to the socio-ecological quality of life. They are drastic proposals, with far-reaching consequences. But that is precisely why we propose them. They are, we argue, a far more realistic and fair way of sustaining biodiversity and people than the idea of a Half-Earth. They focus on tackling the root causes of environmental degradation and will be far less harmful—even beneficial—for people. To the extent that such a programme of radical conservation would bring unwelcome change, it would be to those who have historically

contributed and continue to contribute most to the ecological crisis.

It is crucial, therefore, to turn away from attempts to increase polarization between people and nature, and to rethink and nurture already existing and freshly emerging alternative conservation movements that are more democratic, equitable and humane. These movements see people as part of nature rather than separate from it, and seek healthy environments across the whole Earth. They are not content to leave half the Earth behind.

Author contributions

BB and RF initially prepared this paper. It was further developed with DB, CS and WMA. The remaining authors subsequently provided comments and helped hone the text over multiple further iterations. The final revised text was prepared by BB, RF, DB, CS and WMA, with suggestions and input from the other authors.

References

- ADAMS, W.M. (2010) Conservation plc. *Oryx*, 44, 482–484.
- CBD (CONVENTION ON BIOLOGICAL DIVERSITY) (2014) *Global Biodiversity Outlook 2014*. Convention on Biological Diversity, Montreal, Canada.
- D'ALISA, G., DEMARIA, F. & KALLIS, G. (eds) (2010) *Degrowth. A Vocabulary for a New Era*. Routledge, London, UK.
- DONLAN, J., GREENE, H.W., BERGER, J., BOCK, C.E., BOCK, J.H., BURNEY, D.A. et al. (2005) Re-wilding North America. *Nature*, 436, 913–914.
- DUFFY, R. (2014) Waging a war to save biodiversity: the rise of militarized conservation. *International Affairs*, 90, 819–834.
- FLETCHER, R. (2012) Using the master's tools? Neoliberal conservation and the evasion of inequality. *Development and Change*, 43, 295–317.
- HICKS, C.C., LEVINE, A., AGRAWAL, A., BASURTO, X., BRESLOW, S.J., CAROTHERS, C. et al. (2016) Engage key social concepts for sustainability. *Science*, 352, 38–40.
- HOLLAND, T.G., PETERSON, G.D. & GONZALEZ, A. (2009) A cross-national analysis of how economic inequality predicts biodiversity loss. *Conservation Biology*, 23, 1304–1313.
- KALLIS, G. (2015) The Left should embrace degrowth. *New Internationalist*. <https://newint.org/features/web-exclusive/2015/11/05/left-degrowth> [accessed 19 October 2016].
- KAREIVA, P., MARVIER, M. & LALASZ, R. (2012) Conservation in the Anthropocene: beyond solitude and fragility. *The Breakthrough*. <http://thebreakthrough.org/index.php/journal/past-issues/issue-2/conservation-in-the-anthropocene> [accessed 19 October 2016].
- MARTIN, A., AKOL, A. & GROSS-CAMP, N. (2015) Towards an explicit justice framing of the social impacts of conservation. *Conservation and Society*, 13, 166–178.
- MIKKELSON, G.M., GONZALEZ, A. & PETERSON, G.D. (2007) Economic inequality predicts biodiversity loss. *PLoS ONE*, 2(5), e444.
- NATURE NEEDS HALF (2016) <http://natureneedshalf.org> [accessed 12 October 2016].
- NOSS, R.F., DOBSON, A.P., BALDWIN, R., BEIER, P., DAVIS, C.R., DELLASALA, D.A. et al. (2012) Bolder thinking for conservation. *Conservation Biology*, 26, 1–4.

- OLDEKOP, J.A., HOLMES, G., HARRIS, W.E. & EVANS, K.L. (2016) A global assessment of the social and conservation outcomes of protected areas. *Conservation Biology*, 30, 133–141.
- PERSHA, L., AGRAWAL, A. & CHHATRE, A. (2011) Social and ecological synergy: local rulemaking, forest livelihoods, and biodiversity conservation. *Science*, 331, 1606–1608.
- SCOTT CATO, M. (2013) *The Bioregional Economy: Land, Liberty and the Pursuit of Happiness*. Routledge, London, UK.
- VANDERMEER, J. & PERFECTO, I. (2005) *Breakfast of Biodiversity: The Political Ecology of Rainforest Destruction*, 2nd edition. Food First Books, Oakland, USA.
- WELLS, M.P. & MCSHANE, T.O. (2004) Integrating protected area management with local needs and aspirations. *Ambio*, 33, 513–519.
- WEST, P. & BROCKINGTON, D. (2006) An anthropological perspective on some unexpected consequences of protected areas. *Conservation Biology*, 20, 609–616.
- WILKINSON, R. & PICKETT, K. (2010) *The Spirit Level: Why More Equal Societies Almost Always Do Better*. Penguin Books, London, UK.
- WILSON, E.O. (2016) *Half-Earth: Our Planet's Fight for Life*. Liveright Publishing, London, UK.
- WUERTHNER, G., CRIST, E. & BUTLER, T. (eds) (2015) *Protecting the Wild: Parks and Wilderness, The Foundation for Conservation*. Island Press, London, UK.

Biographical sketches

Conservation can only succeed if it is analysed, understood and implemented in its multiple social, political–economic, cultural, historical and environmental contexts. The authors have, in different ways and in a variety of outlets, investigated and analysed the complex power relations and politics in conservation in these contexts. They have each, in their own way, based on different fieldwork experiences from around the world, and coming from different disciplinary traditions across the social and natural sciences, argued for conservation to be re-directed towards serving the goals of social and ecological justice. From this perspective, and given the high potential for social and ecological injustices in the Half-Earth proposal, the authors felt compelled both to formulate a critique of this proposal and to provide several thoughts on potential alternative directions for conservation.