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MANUSCRIPT (1989 words)

Title

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

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.

Main Text

There is a new call to extend conservation frontiers as an ultimate attempt to save global biodiversity. Under the slogan 'nature needs half' (http://natureneedshalf.org/) and spearheaded by leading conservation scientists such as Edward O. Wilson (2016), Reed Noss (Noss et al, 2012), George Wuerthner and John Terborgh (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 percent" of remaining biodiversity (Wilson, 2016). We wish to open up debate about this idea. While it might 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. Critical reflection about this proposal is thus important.

The plan proposed is staggering in scale: protected areas, according to the IUCN, currently incorporate around 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 (Wilson, 2016; Noss et al, 2012; Donlan et al, 2005). E. O. Wilson is arguably most explicit in his recent book Half- Earth, 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: 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: 18).

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

First, 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 and McShane 2004; Vandermeer and Perfecto 2005; CBD, 2014). A plan for the future of biodiversity that does nothing to address the over-consumption 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.

Second, 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 (Oldekop et al, 2016; West and Brockington, 2006). 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 (ICCAs). This point is explicitly left open by the Nature Needs Half website (http://natureneedshalf.org/nature-needs-half/what-do-we-mean-by-protected/), which emphasize 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 are off limits to resource extraction and drastic land use change, could even well be progressive. But it is highly doubtful that this is the vision that excites the 'half earth' movement.

The question of who controls protected areas (who creates them and dictates what may be done there) raises a third major concern with the 'half earth' proposal. Where will the new protected areas be located? How will the burden of creating more protected areas be shared globally? Much current conservation efforts focus on the biodiversity-rich tropics, and hence on low-income countries with major problems of poverty, 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 do 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 looking at 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: 133). Studies of forestry management reach 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 with the 'half earth' idea is that it 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 nonhuman nature at all? Will this half be restricted merely to

glimpsing the Earth's saved biodiversity virtually, via hidden micro-cameras, as Wilson (2016: 192) recommends (see 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 not feasible, 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 prospects that are more promising and build on sound research and are already being developed and tested in practice. First, 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, in order to decrease pressure on nature (Wells and McShane 2004; Vandermeer and Perfecto 2005). In, this, 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 Wilson and, curiously, a group of 'Anthropocene conservationists' (see Kareiva et al. 2012) to which 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 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 (see Scott Cate, 2014; Martin et al. 2015).

Second, conservation strategies must support measures that address inequality. Inequality harms the environment as well as health and human wellbeing (Holland et al. 2009; Wilkinson and Pickett, 2010; Hicks et al, 2016). A 'half conserved earth' that leaves the majority of people

in chronic poverty is not only unjust, it also cannot 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, more, 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 earth from humanity (Mikkelson et al. 2007; Holland et al. 2009). Pursuing economic growth alone would undermine this goal and hence accomplishing this would require dramatically redistributing existing wealth (Kallis 2015).

These measures are intended to bring about a radical shift from an economic focus on quantity of growth to the socio-ecological quality of life. They are drastic proposals, with enormous 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 - to people. And to the extent that this programme of radical conservation brings unwelcome change, it should 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 humans 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 humans 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.

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