

'Close the tap': COVID-19 and the need for convivial conservation

Journal of Australian Political Economy

Fletcher, Robert; Büscher, B.E.; Koot, S.P.; Massarella, Kate https://www.ppesydnev.net/content/uploads/2020/06/28 Fletcher-et-al.pdf

This publication is made publicly available in the institutional repository of Wageningen University and Research, under the terms of article 25fa of the Dutch Copyright Act, also known as the Amendment Taverne. This has been done with explicit consent by the author.

Article 25fa states that the author of a short scientific work funded either wholly or partially by Dutch public funds is entitled to make that work publicly available for no consideration following a reasonable period of time after the work was first published, provided that clear reference is made to the source of the first publication of the work.

This publication is distributed under The Association of Universities in the Netherlands (VSNU) 'Article 25fa implementation' project. In this project research outputs of researchers employed by Dutch Universities that comply with the legal requirements of Article 25fa of the Dutch Copyright Act are distributed online and free of cost or other barriers in institutional repositories. Research outputs are distributed six months after their first online publication in the original published version and with proper attribution to the source of the original publication.

You are permitted to download and use the publication for personal purposes. All rights remain with the author(s) and / or copyright owner(s) of this work. Any use of the publication or parts of it other than authorised under article 25fa of the Dutch Copyright act is prohibited. Wageningen University & Research and the author(s) of this publication shall not be held responsible or liable for any damages resulting from your (re)use of this publication.

For questions regarding the public availability of this publication please contact openscience.library@wur.nl

'CLOSE THE TAP!': COVID-19 AND THE NEED FOR CONVIVIAL CONSERVATION

Robert Fletcher, Bram Büscher, Kate Massarella and Stasja Koot

When 2020 was declared a 'super year' for biodiversity conservation, no one suspected that a particular form of this biodiversity would proliferate to such an extent as to bring all of the anticipated activity to a screeching halt. With species and ecosystems in dangerous decline the world over (IPBES 2019), there is growing recognition that previous conservation strategies have been largely inadequate to tackle the challenges they face, and hence that something radically different is needed (Kareiva *et al.* 2012; Wuerthner *et al.* 2015).

A series of global meetings to address this deficiency were scheduled to take place throughout 2020. Most centrally, the IUCN's quadrennial World Conservation Congress, slated for June in France, was intended to feed into the 15th Conference of the Parties to the Convention of Biological Diversity to be held in October in China, during which the global biodiversity targets for the next decade would be established (OECD 2019). Concurrently, the 26th COP of the United Nations Framework Convention on Climate Change would meet in November in Scotland to plan for the future of climate change intervention, upon which biodiversity conservation crucially depends (Harvey 2020).

 $^{{\}small 1\>\> https://www.unenvironment.org/news-and-stories/news/2020-super-year-nature-and-biodiversity}$

² https://www.iucncongress2020.org/

 $^{^3}$ https://www.greengrowthknowledge.org/event/2020-un-biodiversity-conference

 $^{^{4}\} https://unfccc.int/process-and-meetings/conferences/glasgow-climate-change-conference-to-be-postponed$

Enter COVID-19. These global meetings have all now been postponed, cancelled or pared back due to the pandemic. This means that the future of global biodiversity conservation has been left even more uncertain than before. Yet the crisis has also been framed by some conservationists as an opportunity to emphasize the vital importance of their work in the face of zoonotic diseases such as this. Hence, the question that Adams (2020) posed in a previous commentary – 'how should conservation use the growing crisis that is COVID-19?' – has become increasingly important.

In this article, we outline some of the ways that biodiversity conservation is being affected by COVID-19 and how conservationists are responding to these issues. We focus in particular on the challenge the pandemic has posed to a model of conservation finance heavily reliant on revenue from (eco)tourism. We conclude by suggesting that transforming policy and practice in the direction of convivial conservation (Büscher and Fletcher 2020) might offer a hopeful way through and out of the current crisis.

COVID-19 and conservation

Discussions of the relationship between biodiversity conservation and the COVID-19 pandemic have been multi-faceted and multi-directional. Soon after the infection first spread from China to Europe and beyond, some conservationists began to emphasize the virus's origins in humans' increasing encroachment on natural spaces (Carrington 2020).

Given that the virus was initially believed to have moved from animals to humans in a 'wet market' in Wuhan, conservationists argued that this demonstrated the dangers of trade in wildlife more generally (Wittemyer 2020). After China consequently instituted a temporary ban on this trade, conservationists called for this to become both permanent and global (Bwambale 2020).

Yet others have insisted that such a blanket ban would be devastating for the hundreds of millions of people worldwide who depend on wildlife for survival, and that driving the wildlife trade underground could have additional negative consequences (Challender *et al.* 2020).

Still others have highlighted the links between COVID-19 and the spread of industrial agriculture, deforestation, mining, bioprospecting and other extractive enterprises more generally, pointing out similarities between the current crisis and previous viral outbreaks (*e.g.* Safina 2020).

All of this, various conservationists have warned, signal that 'nature is sending us a message' to reign in our reckless destruction of nonhuman species and spaces (Carrington 2020). This echoes longstanding assertions by deep ecologists that nature is a coherent entity possessing will and intention – as illustrated by the popular 'Gaia hypothesis' championed by James Lovelock (e.g. 2000). In some variants of this stance, extreme environmentalists have even labelled humans a 'virus' infecting the rest of the planet (see Brown 2020). Some have indeed warned – even hoped – that nature would eventually 'fight back' against the 'human infection' (e.g. Foreman 2014). Such scenarios include predictions that the spread of a zoonotic virus would wipe out humans completely or reduce their numbers to a level capable of re-establishing balance with the rest of the planet's inhabitants (see Bailey 2006).

In terms of material practice, one of COVID-19's main impacts has been to alter humans' physical interaction with wildlife and natural spaces on a massive scale. The enforced or voluntary lockdowns introduced in many societies have led to mass withdrawal from many spaces, including both biodiverse and non-biodiverse areas that have now largely been left to nonhuman species. The result has been a widely documented proliferation of wildlife in rural as well as urban areas. 6

Considering this, one might argue that COVID-19 has forced the world into something akin to the 'half earth' scenario championed by celebrity biologist E.O. Wilson (2016) and others (see *e.g.* Wuerthner *et al.* 2015). These conservationists assert that at least half the planet must be reserved for protected areas occupied primarily by 'self-willed nature'. Most humans should then be consolidated within the other half, from which they can witness wildlife through web cams⁷ and other remote technologies. This has indeed now been actively promoted by the tourism industry under COVID-19, along with other creative innovations including online safaris⁸ and virtual bushwalks. ⁹ In a certain sense, then, this half earth imaginary

⁵ https://dailyhive.com/mapped/yosemite-national-park-animals-video

⁶ http://www.rfi.fr/en/international/20200330-wild-animals-wander-through-deserted-cities-under-COVID-19-lockdown-ducks-paris-puma-santiago-civet-kerala

 $^{^{7}\} https://explore.org/livecams/african-wildlife/tembe-elephant-park$

⁸ https://vimeo.com/404591533/457d79b64f

⁹ https://vimeo.com/410654608/c90b7283aa

comes close to how large portions of the world have been *de facto* reorganized under the global lockdown.

On the other hand, in some places with less stringent restrictions, people have been flocking to conservation areas, as well as to nearby rural communities, as a potential refuge from the virus and to escape the drudgery of home-bound lockdowns (McGivney 2020; Petersen 2020). In a variant of this trend, some indigenous groups, in Brazil, Canada and elsewhere, are also retreating to remote areas to protect themselves from infection and access alternate food supplies (Fellet 2020; Morin 2020). And for the very wealthy, there are now even 'corona-virus free private safaris' in East Africa¹⁰ – demonstrating the fact that far from being an 'equalizer' signalling that 'we are all in this together', COVID-19 has had highly uneven impacts that build on long-standing patterns of injustice within the global economic order (Timothy 2020; Carr 2020).

Ecotourism under global lockdown

Among the pandemic's most significant effects has been its impact on the global tourism industry – an important source of conservation financing in many places. In some situations, this is affecting wildlife directly. For instance, animals inhabiting conservation areas who have come to depend on tourists for food have been threatened by the sudden withdrawal of this sustenance (Roth 2020). Fears that endangered mountain gorillas might contract the virus from human visitors, meanwhile, has resulted in a suspension of highly lucrative tourism activities in Sub-Saharan Africa. ¹¹

Yet, the main consequence of COVID-19's tourism impacts concerns the conservation activities to which tourism is connected. The United Nations World Tourism Organization (UNWTO) estimates that global visitations in 2020 may drop 60-80% due to the crisis, resulting in losses of hundreds of billions of euros to tourism operators and workers worldwide. This has provoked widespread concern that loss of revenue from tourist visitation may endanger conservation programming in many places, as

¹⁰ https://greatmigrationcamps.com/coronavirus-free-safari/

 $^{11\} https://www.unenvironment.org/news-and-stories/story/virus-which-causes-COVID-19-threatens-great-ape-conservation$

¹² https://www.unwto.org/news/COVID-19-international-tourist-numbers-could-fall-60-80-in-2020

over the past decade ecotourism has become one of the main sources of revenue for conservation as well as one of the main strategies to enrol local people within it.

This latter dynamic is based on what Martha Honey (2008: 14) calls the 'stakeholder theory', asserting that 'people will protect what they receive value from'. This is one manifestation of an increasingly popular strategy for championing conservation more generally, consistent with paradigmatically neoliberal understandings of human reasoning and motivation, which aims to offer economic incentives sufficient to make conservation more lucrative than other more destructive land use options (Fletcher 2010).

This stakeholder strategy has always been a dangerous gamble, since basing conservation support on such 'extrinsic' motivation (rather than an 'intrinsic' sense of care for biodiversity) could obviate this support were the revenue fuelling this motivation to disappear (Serhadli 2020). And, considering the instability of the tourism industry due to its dependence on an inherently volatile global economy, it was never really a question *if* this would happen, but *when*. As Dickson Kaelo, CEO of the Kenya Wildlife Conservancies Association, thus worries:

Members of these communities may lose faith in wildlife conservation if there is no money forthcoming. In addition, people who live around these wildlife havens and looked forward to selling artefacts to tourists may resort to other income-generating activities such as farming, fuelling the never-ending human-wildlife conflicts as animals invade and destroy their new farms (cited in Greenfield 2020).

This is precisely what seems to be occurring right now, with instances of poaching and encroachment on the rise within many conservation spaces worldwide (Greenfield 2020).

Yet is this ostensive connection really so clear-cut? Some question the assertion that conservation depends so heavily on tourism revenue, pointing out that implicit in this stance is the assumption that (usually foreign) tourists and conservationists are the main actors valuing and nurturing biodiversity. Kenyan conservationist Mordecai Ogada thus asserts, 'Let's not pretend at any point that tourists are the ones that look

after our wildlife. Our wildlife is looked after by our people, our wildlife rangers, and those mandated by government to care for them.'13

What next?

Given all of this, what is likely to happen now? There is much uncertainty at the moment and different possibilities exist. In the short term, it is probable that forms of coercive conservation enforcement will intensify – as they already have in certain places – as 'softer' options dry up. Yet others assert that the precarity of ecotourism finance exposed by the COVID-19 crisis signals the need for a deeper rethinking of how conservation is funded more generally (Greenfield 2020; Robinson 2020). This is compounded by acknowledgment that even before the current crisis global conservation efforts already experienced a substantial financial shortfall estimated at 200-300 billion euros per annum (Credit Suisse and McKinsey 2016).

Thus Johan Robinson, Chief of the Global Environment Facility (GEF) Biodiversity and Land Degradation Unit at the UN Environment Programme (UNEP), contends, 'If the international community is serious about conserving biodiversity as part of a just and sustainable world, we must get serious about funding conservation' (Robinson 2020). To achieve this, Robinson calls for development of 'a new class of financial asset, ripe for sustainable investment. Success would depend on investments that simultaneously reinforce the impact of conservation; providing capital preservation and/or returns on investments and generating cashflows through sustainable use of nature by local communities.'

Creation of a financial asset class for conservation been a widespread aspiration of many for some time now. Several years ago, for instance, Credit Suisse and McKinsey (2016) advanced a similar call in a widely circulated report entitled Conservation Finance From Niche to Mainstream: The Building of an Institutional Asset Class. This report asserted that:

few conservation projects today are big enough to be structured as marketable standalone investment products. Thus, aggregating distinct but complementary projects with potentially different structures is

¹³ https://www.theelephant.info/videos/2020/04/20/dr-mordecai-ogada-conservation-inthe-age-of-coronavirus/#.Xp29Aznzfw0.facebook

required. These aggregators need to be able to bundle a diverse set of cash flows...and mold them into a single investment product (Credit Suisse and McKinsey 2016: 13).

Subsequently, this report helped to inspire creation of a Coalition for Private Investment in Conservation, organized by IUCN and including Credit Suisse as well as bankers JP Morgan Chase along with UNEP, GEF, Conservation International and the World Bank, among many others, to put this plan into action. ¹⁴

Yet realization of this ambitious vision has remained elusive. Dempsey and Suarez (2016: 654) demonstrate that efforts to tap economic markets for conservation finance globally to date have fallen far short of intended aims, producing only 'slivers of slivers of slivers' of envisioned funding. Meanwhile, global programmes like payment for ecosystem services (PES) and the reduced emissions from avoided deforestation and forest degradation (REDD+) mechanism have largely morphed from their original design as 'market-based instruments' (MBIs) for conservation finance into dependence on state-based taxation and other forms of redistributive funding (Fletcher *et al.* 2016; Fletcher and Büscher 2017).

There is little to suggest that this situation will reverse in the future. On the contrary, there are serious questions whether it is possible for MBIs to ever achieve their aim to reconcile conservation and sustainable local livelihoods with profitable return on investment at significant scale (Fletcher *et al.* 2016). Indeed, it is apparent that most MBIs paradoxically depend on expansion of destructive extractive industries and financial institutions as the basis of their economic model (Fletcher *et al.* 2016).

Rather than presenting opportunities for increased conservation finance through market expansion, the current crisis will likely intensify pressures on already vulnerable conservation areas as governments and capitalists look to previously restricted natural resources as new sources of accumulation. The global economy is already in deep recession and will likely sink further in the months to come (Elliot 2020). After the 2008 recession, capitalists turned to intensified resource extraction to recapture lost growth (Arsel *et al.* 2016), at great expense to ongoing conservation efforts. It is likely that this same pattern will be repeated now too. At the same time, the growing recession will certainly further impoverish countless residents of rural communities close to biodiversity hotspots

¹⁴ http://cpicfinance.com/

(Elliot 2020) who may be forced to turn to exploitation of conserved resources if other survival options dry up.

Closing the tap: Towards convivial conservation

All of this suggests the need for a more profound rethinking of conservation finance than Robinson and others propose. As Serhadli (2020) asserts:

If we promote conditions where local people are completely dependent on external market forces, and the motivation behind conservation is money-based, then conservation will always be dependent on a stable global economy, which is highly uncertain as we are witnessing right now. ¹⁵

Rather than doubling down on efforts to fund conservation through financial markets that have proven quite miserly thus far, we may instead need to double-step in the opposite direction. That is, we may need to 'begin taking the market out of conservation altogether' and 'instead experiment with providing subsidies (state supported or otherwise) to resource-dependent communities based on direct taxation of extractive activities of the type that are already in some cases covertly supplied through MBIs' (Fletcher *et al.* 2016: 675).

But even this is merely a first step towards the much more radical change that is ultimately needed. Conservation will always be a rear-guard battle if done within a fundamentally unsustainable global economy. Bluntly stated, it is like frantically mopping the floor with the taps wide open. The real solution is simple: to close the tap.

A different economic system is needed to facilitate another form of conservation. One that allows humans and nonhumans to live side-by-side in meaningful coexistence rather than shallow commodified encounter. One that does not aim to control nature, but that lets natures (human as well as nonhuman) thrive, while recognising and celebrating the biophysical limits that necessarily both constrain and enable this (Kallis 2019). And one that supports and subsidizes the livelihoods of people living intimately with wildlife beyond providing precarious tourism

¹⁵ https://news.mongabay.com/2020/05/market-based-solutions-cannot-solely-fund-community-level-conservation-commentary/

employment – for instance, through redistributive mechanisms like a conservation basic income (Fletcher and Büscher 2020).

Such calls for radical or 'transformational' change have been gaining momentum over the last decade (*e.g.* IPBES 2019; Adams 2017; Lorimer 2015) and the COVID-19 crisis has added urgency to these calls. If transformational change is indeed most likely to happen at 'times of crisis, when enough stakeholders agree that the current system is dysfunctional' (Olsson *et al.* 2010: 280), then the current conjuncture may present an opportunity to find a new way forward that may not have seemed possible before.

Closing the tap on aggregate economic growth opens positive new possibilities. It renders possible a more equitable world and a form of convivial conservation that celebrates and enables living together (Büscher and Fletcher 2020). This post-capitalist proposal is currently being debated and tested in a number of places by various actors. Aspects of it are already being practiced in many indigenous and community conservation projects worldwide. ¹⁶ Moving further towards convivial conservation, we suggest, may help turn an aborted 'super year' for biodiversity into a 'super future' for human and nonhuman natures alike.

Robert Fletcher is Associate Professor in the Sociology of Development and Change group at Wageningen University.

robert.fletcher@wur.nl

Bram Büscher is Professor and Chair in the Sociology of Development and Change group at Wageningen University.

Bram.buscher@wur.nl

Kate Massarella is a postdoctoral researcher in the Sociology of Development and Change group at Wageningen University.

kate.massarella@wurl.nl

Stasja Kootis is Assistant Professor in the Sociology of Development and Change group at Wageningen University.

stasja.koot@wur.nl

¹⁶ https://www.iccaconsortium.org/

References

Adams, W. M. (2017), 'Conservation from above: globalising care for nature'. In Brightman, M. and Lewis, J. (eds.) The Anthropology of Sustainability: beyond development and progress. New York: Springer.

Adams, W.M. (2020), 'COVID-19 and Conservation.' Thinking like a Human, 16 March. https://thinkinglikeahuman.com/2020/03/16/covid-19-and-conservation/.

Arsel, M., Hogenboom, B. and Pellegrini, L. (2016), 'The extractive imperative in Latin America'. The extractive industries and society, 3(4): 880-7.

Bailey, R. (2006), 'To Save the Planet, Kill 90 Percent of People Off, Says UT Ecologist'. Reason, 3 April. https://reason.com/2006/04/03/to-save-the-planet-kill-90-per/.

Brown, S.J. (2020), 'Humans are not the virus—don't be an eco-fascist'. Wear Your Voice, 27 March. https://wearyourvoicemag.com/humans-are-not-the-virus-eco-fascist/

Büscher, B. and Fletcher, R. (2020), The Conservation Revolution: Radical Ideas for Saving Nature Beyond the Anthropocene. London: Verso.

Bwambale, T. (2020), 'COVID-19: Activists want total ban on wildlife trade', New Vision. 25 March. https://www.newvision.co.ug/new_vision/news/1517025/covid-19-activists-totalban-wildlife-trade.

Carr, P.R. (2020), 'Returning to "normal" post-coronavirus would be inhumane'. The Conversation. 14 May, https://theconversation.com/returning-to-normal-post-coronaviruswould-be-inhumane-136558.

Carrington, D. (2020), 'Coronavirus: "Nature is sending us a message", says UN environment chief'. The Guardian, 25 March.

https://www.theguardian.com/world/2020/mar/25/coronavirus-nature-is-sending-us-a-thtps://www.theguardian.com/world/2020/mar/25/coronavirus-nature-is-sending-us-a-thtps://www.theguardian.com/world/2020/mar/25/coronavirus-nature-is-sending-us-a-thtps://www.theguardian.com/world/2020/mar/25/coronavirus-nature-is-sending-us-a-thtps://www.theguardian.com/world/2020/mar/25/coronavirus-nature-is-sending-us-a-thtps://www.theguardian.com/world/2020/mar/25/coronavirus-nature-is-sending-us-a-thtps://www.theguardian.com/world/2020/mar/25/coronavirus-nature-is-sending-us-a-thtps://www.theguardian.com/world/2020/mar/25/coronavirus-nature-is-sending-us-a-thtps://www.theguardian.com/world/2020/mar/25/coronavirus-nature-is-sending-us-a-thtps://www.theguardian.com/world/2020/mar/25/coronavirus-nature-is-sending-us-a-thtps://www.theguardian.com/world/2020/mar/25/coronavirus-nature-is-sending-us-a-thtps://www.theguardian.com/world/2020/mar/25/coronavirus-nature-is-sending-us-a-thtps://www.theguardian.com/world/2020/mar/25/coronavirus-nature-is-sending-us-a-thtps://www.theguardian.com/world/2020/mar/25/coronavirus-nature-is-sending-us-a-thtps://www.theguardian.com/world/2020/mar/25/coronavirus-nature-is-sending-us-a-thtps://www.theguardian.com/world/2020/mar/25/coronavirus-nature-is-sending-us-a-thtps://www.theguardian.com/world/2020/mar/25/coronavirus-nature-is-sending-us-a-thtps://www.theguardian.com/world/2020/mar/25/coronavirus-nature-is-sending-us-a-thtps://www.theguardian.com/world/2020/mar/25/coronavirus-nature-is-sending-us-a-thtps://www.theguardian.com/world/2020/mar/25/coronavirus-nature-is-sending-us-a-thtps://www.theguardian.com/world/2020/mar/25/coronavirus-nature-is-sending-us-a-thtps://www.theguardian.com/world/2020/mar/25/coronavirus-nature-is-sending-us-a-thtps://www.theguardian.com/world/2020/mar/25/coronavirus-nature-is-sending-us-a-thtps://www.theguardian.com/world/2020/world/2020/world/2020/world/2020/world/2020/world/2020/world/2020/world/2020/world/2020/world/2020/world/2020/world/2020/world/2020/world/2020message-says-un-environment-chief.

Challender, D., Hinsley, A., Veríssimo, D. and t' Sas-Rolfes, M. (2020), 'Coronavirus: why a blanket ban on wildlife trade would not be the right response'. The Conservation, 8 April. https://theconversation.com/coronavirus-why-a-blanket-ban-on-wildlife-trade-would-notbe-the-right-response-135746.

Credit Suisse and McKinsey (2016), Conservation Finance. From Niche to Mainstream: The Building of an Institutional Asset Class.

Dempsey, J. and Suarez, D.C. (2016), 'Arrested development? The promises and paradoxes of "selling nature to save it". Annals of the American Association of Geographers, 106(3):

Elliot, L. (2020), 'Coronavirus could push half a billion people into poverty, Oxfam warns'. The Guardian, 9 April. https://www.theguardian.com/world/2020/apr/09/coronaviruscould-push-half-a-billion-people-into-poverty-oxfam-warns?.

Fellet, J. (2020), 'Coronavirus "could wipe out Brazil's indigenous people". BBC News, 6 April. https://www.bbc.com/news/world-latin-america-52139875.

Fletcher, R. (2010), 'Neoliberal environmentality: towards a poststructuralist political ecology of the conservation debate'. Conservation and society, 8(3): 171-81.

Fletcher, R., Dressler, W., Büscher, B. and Anderson, Z.R. (2016), 'Questioning REDD+ and the future of market-based conservation'. Conservation Biology, 30(3): 673-5.

Fletcher, R. and Büscher, B. (2017), 'The PES conceit: Revisiting the relationship between payments for environmental services and neoliberal conservation'. *Ecological Economics*, 132: 224-31.

Fletcher, R. and Büscher, B. (2020), 'Conservation basic income: A non-market mechanism to support convivial conservation'. *Biological Conservation*, 244: 108520.

Foreman, D. (2014), *Man swarm: How overpopulation is killing the wild world.* New York: Live True Books.

Greenfield, P. (2020), 'Conservation in crisis: ecotourism collapse threatens communities and wildlife'. *The Guardian*, 5 May.

https://www.theguardian.com/environment/2020/may/05/conservation-in-crisis-covid-19-coronavirus-ecotourism-collapse-threatens-communities-and-wildlife-aoe.

Harvey, F. (2020), "Wildlife destruction "not a slippery slope but a series of cliff edges". Guardian, 8 April. https://www.theguardian.com/environment/2020/apr/08/wildlife-destruction-not-a-slippery-slope-but-a-series-of-cliff-edges.

Honey, M. (2008), Ecotourism and sustainable development: Who owns paradise? 2^{nd} ed. New York: Island Press.

IPBES (2019), Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. IPBES secretariat, Bonn, Germany.

Kallis, G. (2019), Limits: why Malthus was wrong and why environmentalists should care. Stanford, CA: Stanford University Press.

Lovelock, J. E. (2000), Gaia: A new look at life on earth. London: Oxford Paperbacks.

Lorimer, J. (2015), Wildlife in the Anthropocene: conservation after nature, University of Minnesota Press.

McGivney, A. (2020), 'US national parks cause public health concern as visitors flood in'. *The Guardian*, 17 March. *https://www.theguardian.com/environment/2020/mar/17/national-parks-cause-public-health-concern-visitors-flood-in*.

Morin, B. (2020), 'Indigenous in Canada turn to the land to survive coronavirus'. *Aljazeera*, 4 April. *https://www.aljazeera.com/indepth/features/indigenous-canada-turn-land-survive-coronavirus-200401073446077.html*.

OECD (2019), 'The Post-2020 Biodiversity Framework: Targets, indicators and measurability implications at global and national level'. OECD Headquarters: Paris, France. http://www.oecd.org/environment/resources/biodiversity/Summary-Record-OECD-workshop-The-Post-2020-Biodiversity-Framework-targets-indicators-and-measurability-implications.pdf.

Olsson, P., Bodin, Ö. and Folke, C. (2010), 'Building transformative capacity for ecosystem stewardship in social–ecological systems'. In D. Armitage and R. Plummer (eds) *Adaptive capacity and environmental governance*. Springer, Berlin, Heidelberg.

Petersen, A.H. (2020), 'This Pandemic Is Not Your Vacation'. Buzzfeed, 31 March. https://www.buzzfeednews.com/article/annehelenpetersen/coronavirus-covid-cities-second-homes-rural-small-towns

Robinson, J. (2020), 'As wildlife tourism grounds to a halt, who will pay for the conservation of nature?'. Mongabay, 23 April. https://news.mongabay.com/2020/04/as-wildlife-tourism $grounds\hbox{-}to\hbox{-}a\hbox{-}halt\hbox{-}who\hbox{-}will\hbox{-}pay\hbox{-}for\hbox{-}the\hbox{-}conservation\hbox{-}of\hbox{-}nature/.$

Roth, A. (2020), 'Brawling Monkeys. Wandering Deer. Blame Coronavirus'. New York Times, 16 March.

Safina, C. (2020), 'How Wildlife Markets and Factory Farms Guarantee Frequent New Deadly Diseases'. Medium, 15 March. https://medium.com/tenderlymag/covid-19-is-a-wakeup-call-dont-hit-snooze-9aa7de13aa9a.

Serhadli, S. (2020), 'Market-based solutions cannot solely fund community-level conservation'. Mongabay, 11 May. https://news.mongabay.com/2020/05/market-based $solutions \hbox{-} cannot \hbox{-} solely \hbox{-} fund \hbox{-} community \hbox{-} level \hbox{-} conservation \hbox{-} commentary/.$

Timothy, R.K. (2020), 'Coronavirus is not the great equalizer — race matters'. The Conversation, 6 April. https://theconversation.com/coronavirus-is-not-the-great-equalizerrace-matters-133867.

Wilson, E.O. (2016), Half-earth: our planet's fight for life. New York: WW Norton & Company.

Wittemyer, G. (2020), 'The new coronavirus emerged from the global wildlife trade - and may be devastating enough to end it', The Conversation, 31 March. ${\it https://the conversation.com/the-new-coronavirus-emerged-from-the-global-wildlife-trade-interval of the properties of the properties$ and-may-be-devastating-enough-to-end-it-133333.

Wuerthner, G., Crist, E. and Butler, T. (eds.). (2015), Protecting the wild: Parks and wilderness, the foundation for conservation. New York: Island Press.