COVID-19 and conservation

The links between infectious diseases and the destruction of nature

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EFN is collaborating to secure a truly sustainable and just world, fit for people and nature. Our mission is to increase financial support for environmental causes and to help environmental philanthropy to be as effective as it can be. Our members are funders, mainly based in the United Kingdom, who pursue these aims at home and overseas. As their network we will work inclusively, efficiently, transparently, accountably, and to high standards of social and environmental responsibility.

EFN does not hold funds, consider or make grants, or advise fundraisers. Please do not send funding requests to EFN as we cannot respond to them. Funders interested in joining EFN or finding out more about the network should contact us at info@greenfunders.org. This report, along with other EFN publications and resources relevant to environmental philanthropy, is available on the Resources page of our website: www.greenfunders.org/resources.

About the Environmental Funders Network (EFN)

About this report

The Environmental Funders Network is grateful to Liz Gadd for writing this and the other philanthropy briefings in the 'COVID-19 and the environment' series while on furlough leave from her role at New Philanthropy Capital (NPC). Liz works within NPC’s Research and Consulting team as a Senior Consultant, and works with charities and funders to improve their effectiveness and efficiency.
Nature conservation is critical to mitigating the risks of future crises like the COVID-19 pandemic. Philanthropists, in partnership with environmental non-governmental organisations (eNGOs), can be a powerful force for change in addressing root causes of the deeply interconnected health and conservation issues faced today and by future generations.

Biodiversity loss and infectious disease

Humans, as all living things, depend upon biodiversity and the delicate balance of ecosystems for our food, shelter, fresh water supplies, clean air, climate regulation, and the control of pests and diseases. For example, over two billion people rely on wood fuel to meet their primary energy needs, and more than 75 per cent of global food crops rely on animal pollination.

Biodiversity protects us from the spread of diseases through the ‘dilution effect’, where infected species are diluted in diverse ecosystems with naturally functioning pest control mechanisms and intact food chains. It is not just how many species, but which species are present in an ecosystem, as each plays a different role and a shift in the balance can have significant and unpredictable impacts on disease. The species most likely to survive alongside humans, for example rats and some bats, are often those most likely to carry diseases. Recent research has identified that the risk is particularly high from species that have become more abundant where they have adapted well to human-dominated landscapes, for example primates and bats, but also where species have become less abundant due to hunting and harvesting for trade. As biodiversity declines and the natural balance of ecosystems is lost, the risk of diseases spreading from animals to humans increases.

Biodiversity also offers genetic resources for the development of many medical treatments and vaccines. Around four billion people rely primarily on natural medicines for their health care, and some 70 per cent of drugs used for cancer are natural or are synthetic products inspired by nature. Other examples include the antimalarial drug Artemisinin (derived from the sweet wormwood plant), digitalis to treat heart disease (derived from the foxglove plant), and most recently the use of llama antibodies to support possible development of a COVID-19 vaccine.

Although the human population – some 7.6 billion people – is estimated to represent just 0.01 per cent of the biomass of all living organisms on Earth, we have already caused an 83 per cent decrease in numbers of wild mammals and a 50 per cent decrease in numbers of wild plants.

Biodiversity loss is now tens to hundreds of times greater than over the last ten million years and continues to accelerate; it is estimated that up to 100,000 species may be going extinct each year, and over one million species are currently threatened with extinction. Without decisive action, these dramatic biodiversity losses mean millions of people face a future with uncertain food supplies as well as greater vulnerability to pests and disease.

“The conservation of species should be elevated to a national and global emergency, equal to climate disruption to which it is linked.’

PAUL EHRLICH, STANFORD UNIVERSITY
Habitat loss and infectious disease

Human actions have significantly altered three-quarters of land and two-thirds of marine environments globally, with over one-third of the world’s land surface and nearly three-quarters of fresh water now devoted to crop or livestock production. These changes in land use - for example for food production, oil extraction or mining - pose risks to air quality, fresh water supplies, food security and the natural regulation of pests and diseases.

Our destruction of forests is a major cause of habitat loss. Around 70 per cent of deforested areas are converted to agricultural land use and, despite intergovernmental commitments to reduce deforestation rates by half between 2014 and 2020, the rate at which we destroy forests had increased by 43 per cent by 2018 and continues to climb. We eliminate an area of tropical rainforest approximately the size of a football pitch every six seconds. We have already removed around half of the world’s original forests and continue to remove them at a rate ten times greater than any possible level of regrowth. As tropical forests contain at least half of the Earth’s species this represents a dramatic loss of biodiversity.

The Convention on Biological Diversity and the World Health Organization (WHO) have identified change in land use as the leading driver of emerging infectious diseases. This and other human-caused changes to natural ecosystems affect patterns of infectious diseases by changing the abundance of organisms, interactions within and between them, and their interactions with other components of the environment such as water and air.

Human destruction of natural habitats increases the risk of zoonotic disease transmission, where pathogens are transferred from animals to humans. Three quarters of infectious diseases come from animals, and zoonotic pathogens are more than twice as likely to be the source of emerging diseases than non-zoonotic pathogens. As we destroy habitats, wild animals enter human-dominated areas in search of new homes and/or food, increasing risks of disease transmission. For example, the emergence of the Nipah virus in Malaysia in 1997 was rooted in deforestation, which drove fruit bats to mango trees on pig farms where, via their droppings and saliva, they infected pigs and in turn farmers with the virus.
In a study of around 9,000 species assessed on the International Union for Conservation of Nature (IUCN) Red List of Threatened Species™, overexploitation (the unsustainable harvest of species from the wild) and our expansion and intensification of agriculture were identified as the most significant global threats to the species included in the study. In the UK we are overexploiting our environment on a significant scale, with only 44 per cent of our woodland and 50 per cent of our fisheries managed sustainably.

As well as being significant direct drivers of biodiversity and habitat loss, agriculture and overexploitation are also directly linked to the emergence of infectious diseases. The most likely animal source of COVID-19 was a bat, but how it reached humans and exactly where is not yet known. Involvement of a wildlife market in China was considered likely— and not unprecedented, as the Severe Acute Respiratory Syndrome (SARS) coronavirus entered the human population via infected civets and/or bats captured and sold as food in the wildlife markets of Guangzhou in China in 2003. However, evidence has emerged that the virus causing COVID-19 was already circulating among humans before it was first confirmed at the market.

Hunting wild animals for meat—as well as medicine and other uses—and their sale in wildlife markets inevitably brings disease transmission opportunities. However, millions of people across the world rely on the consumption of wild animal meat, often referred to as ‘bushmeat’. Bushmeat accounts for 30-80 per cent of protein intake in Central Africa and parts of Latin America, and many people depend on the trade as a source of income. Therefore, when seeking to mitigate risk, a nuanced understanding of the local context is required.

While many zoonotic diseases originate in wildlife, livestock often serve as a bridge between wildlife and human infections. This is particularly the case for intensively-reared livestock as their resilience is hindered by limited genetic diversity in herds bred for food production rather than disease resistance. More than 50 per cent of zoonotic diseases, and more than 25 per cent of all diseases, can be traced back to agricultural drivers. Our use of pesticides in agriculture is also responsible for lowering the disease resistance of farm workers, local populations and wildlife.

“We have brought this on ourselves because of our absolute disrespect for animals and the environment … Our disrespect for wild animals and our disrespect for farmed animals has created this situation where disease can spill over to infect human beings.”

JANE GOODALL, PRIMATOLOGIST AND ANTHROPOLOGIST
COVID-19’s effects on the natural world

Spending more time in nature, and being able to experience nature in urban environments, have been unexpected benefits of the COVID-19 crisis for many people who have spent less and less time in green spaces in recent years. Communities have reported a renewed appreciation for their local natural worlds, such as enjoying bird song undiluted by the ambient noise of road traffic, an appreciation that the Wildlife Trusts’ ‘30 Days Wild’ campaign has previously shown to provide sustained increases in happiness, health and connection to nature. There have also been reports of the natural world benefitting from decreased human activity – with animals roaming free in urban areas and the National Trust reporting that some rare wildlife was thriving.

However, very little is known about the impacts of the pandemic on biodiversity at a global scale, which in many parts of the world will not be known until after lockdowns completely lift. There are reports of illegal activities in areas that are not being patrolled or monitored because of reduced staff and/or reduced funds. The Royal Society for the Protection of Birds (RSPB) reported an increase in the illegal killing of birds of prey during the UK lockdown of approximately 600 per cent, which it believed to be ‘orchestrated’ and ‘emboldened’ by the lockdown. Similarly, there are reports of a rise in illegal hunting across South Asia and an increase in deforestation of the Amazon rainforest under the cover of the pandemic, and in some cases as a consequence of the economic hardship resulting from the loss of tourism and associated income. Across the world, plastic pollution has increased as facemasks and other protective wear are discarded on roadsides and beaches, posing a threat to wildlife and threatening to undermine hard-won gains in tackling plastic pollution.

Increases in littering more generally have been reported as people spend more time outdoors. The global economic downturn resulting from the pandemic will also inevitably lead to a significant loss of resources for conservation efforts, and therefore risks further undermining our resilience to future pandemics.
The role of the third sector

Third sector organisations play a critical role in protecting wildlife, their habitats and the wider environment, and in turn protecting our health. The sector holds policymakers to account, gathers and disseminates evidence and mobilises communities. Many third sector bodies are coming together to highlight these issues, including the Build Back Better COVID-19 recovery campaign and via calls to government coordinated by The Climate Coalition and New Economics Foundation.

Environmental organisations have almost universally been affected by the COVID-19 pandemic. With a heavy reliance on traded income, memberships and face-to-face fundraising, the lockdown has not been kind to environmental NGO (eNGO) income streams. The biggest concern for 98 per cent of UK-based eNGOs is the postponement or cancelling of planned events or projects and overall loss of revenue. Over a quarter of those surveyed recently were concerned about their financial viability, with estimated average losses of £4 million per organisation in the coming year. Internationally the situation is similarly stark, with 40 per cent of international development charities reporting that they could fold in the next six months.

Despite the financial challenges, eNGOs have been working non-stop to maintain habitats and keep wildlife safe, burning through cash reserves as they do so. As the environmental sector faces an unprecedented funding crisis, key green targets are at risk of not being met and the impact of the COVID-19 pandemic and drivers of future pandemics exacerbated.

The work of environmental charities and the philanthropists supporting them has therefore never been needed more, and as the world makes decisions regarding the post-pandemic recovery model and prepares for key global policy events in 2021, environmental donations will perhaps have greater impact than ever before.
Further information

**WATCH**
A Life On Our Planet (2020) - A feature-length film by Netflix in collaboration with WWF, in which David Attenborough recounts his life, grieves the loss of wild places and offers a vision for the future.

**WATCH**
Webinar from the European Foundation Centre’s European Environmental Funders Group on Can healthy ecosystems prevent future pandemics?

**READ**
The UN Convention on Biological Diversity’s Questions and Answers on Biodiversity and Infectious Diseases

**READ**
Article published in Nature on Why deforestation and extinctions make pandemics more likely

**READ**
Blog published by ShareAction on Halting biodiversity loss is key to preventing the next pandemic - and investors must play their part

**READ**
How can conservation help prevent future global disasters? by Synchronicity Earth

**INFOGRAPHIC**
The UK National Biodiversity Network’s State of Nature 2019 infographic

**INFOGRAPHIC**
UNEP’s infographic on What factors are increasing emergence of zoonotic diseases

**LOOK OUT FOR**
The TED Countdown Summit in October 2021
Example conservation organisations

There are many impactful conservation organisations operating in the UK and globally as well as many charities focussed on directly relevant social issues – including the issues touched upon in this paper. This list provides examples of conservation-focussed organisations active in the UK and internationally. Please note that no due diligence has been conducted by EFN on the organisations listed below.

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Focus areas</th>
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<tbody>
<tr>
<td><strong>Action for Conservation</strong></td>
<td>UK charity using pioneering approaches to inspire and empower young people from diverse backgrounds to become the next generation of nature conservationists</td>
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<td><strong>Campaign to Protect Rural England</strong></td>
<td>England-focused charity working toward a countryside that’s rich in nature, accessible to everyone and plays a crucial role in responding to the climate emergency</td>
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<td><strong>National Trust</strong></td>
<td>Charity that looks after the coastline, historic sites, countryside and green spaces of England, Wales and Northern Ireland</td>
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<td><strong>National Trust for Scotland</strong></td>
<td>Scottish charity championing Scotland’s natural, built and cultural heritage</td>
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<tr>
<td><strong>Rewilding Britain</strong></td>
<td>Charity that champions rewilding in Britain – acting as a catalyst for debate and action, and demonstrating the power of working with nature to tackle the climate emergency and the extinction crisis</td>
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<tr>
<td><strong>The Royal Society for the Protection of Birds (RSPB)</strong></td>
<td>UK charity with offices and nature conservation projects in all four nations of the UK as well as internationally, particularly in the UK’s overseas territories</td>
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<tr>
<td><strong>Sustain</strong></td>
<td>UK charity representing around 100 national public interest organisations working at international, national, regional and local levels to advocate for food and agriculture policies and practices that enhance the health and welfare of people and animals, improve the working and living environment, promote equity, and enrich society and culture</td>
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<tr>
<td><strong>Trees for Life</strong></td>
<td>Scottish charity dedicated to rewilding the Scottish Highlands</td>
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<td><strong>The Wildlife Trusts</strong></td>
<td>Independent charities active in all four nations of the UK working to save wildlife and wild places, increase people’s awareness and understanding of the natural world, and deepen people’s relationship with it</td>
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<td><strong>Woodland Trust</strong></td>
<td>UK charity concerned with the creation, protection and restoration of native woodland heritage</td>
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<td>Organisation</td>
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<td><strong>BirdLife International</strong></td>
<td>A global partnership of over 100 conservation organisations that strives to conserve birds, their habitats and global biodiversity, working with people towards sustainability in the use of natural resources</td>
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<td><strong>Conservation International</strong></td>
<td>US-based non-profit organisation empowering people to protect the nature that we rely on for food, fresh water and livelihoods</td>
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<td><strong>Fauna and Flora International</strong></td>
<td>UK-based charity operating internationally which aims to conserve threatened species and ecosystems worldwide</td>
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<td><strong>Gaia Foundation</strong></td>
<td>UK-based charity working with partners, communities and movements in Africa, South America, Asia and Europe to revive bio-cultural diversity, regenerate healthy ecosystems and strengthen community self-governance for climate change resilience</td>
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<tr>
<td><strong>Global Greengrants Fund</strong></td>
<td>A charitable foundation making small grants to grassroots environmental causes worldwide, supporting community-based groups advocating for issues of environmental justice, sustainability and conservation</td>
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<tr>
<td><strong>International Union for Conservation of Nature (IUCN)</strong></td>
<td>A membership union comprising both government and civil society organisations working to conserve nature and accelerate the transition to sustainable development</td>
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<tr>
<td><strong>Synchronicity Earth</strong></td>
<td>UK-based charity operating internationally which acts to address overlooked and underfunded conservation challenges for globally threatened species and ecosystems</td>
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<td><strong>The Nature Conservancy</strong></td>
<td>A non-profit environmental organisation working to create a world where people and nature can thrive, founded in the US and now operating in 79 countries and territories</td>
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<tr>
<td><strong>Wildlife Conservation Society</strong></td>
<td>A non-profit conservation organisation that saves wildlife and wild places worldwide through science, conservation action, education, and inspiring people to value nature</td>
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<tr>
<td><strong>World Wildlife Fund (WWF)</strong></td>
<td>An independent global conservation organisation with a mission to create a world where people and wildlife can thrive together</td>
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References

2. https://www.cbdd.int/health/infectiousdiseases
7. https://www.theguardian.com/environment/2018/may/21/human-race-just-0.001-of-all-life-but-has-destroyed-over-80-of-wild-mammals
11. https://www.cbdd.int/health/infectiousdiseases
18. https://www.buildbackbetteruk.org/