

THE CHALLENGE OF BIODIVERSITY LOSS

ANGLICANS WORKING FOR JOINT ACTION ON NATURE LOSS

Anglicans at COP16 (UN Convention of Biological Diversity)

Nature embodies different concepts for different people, including biodiversity, ecosystems, Mother Earth, systems of life and other analogous concepts. Nature and its contributions to people are vital for human existence and a good quality of life - living in harmony with nature. While more food, energy and materials than ever before are now being supplied to people in most places, this is increasingly at the expense of nature's ability to provide such contributions in the future and frequently undermines nature's many other contributions, which range from water quality regulation to sense of place. Biodiversity – the diversity within species, between species and of ecosystems – is declining faster than at any time in human history.

In its first **global assessment report on biodiversity and ecosystem services**, the Intergovernmental Science-Policy Platform for Biodiversity and Ecosystem Services (IPBES) documented the state of biodiversity and ecosystem services, revealing the worrying trends of nature and biodiversity loss. The report states that the rate of global change in nature during the past 50 years is unprecedented in human history. It identified the direct drivers of the change in nature with the largest global impact to be: changes in land and sea use; direct exploitation of organisms; climate change; pollution; and invasion of alien species. Those five direct drivers result from an array of underlying causes – the indirect drivers of change – which are in turn underpinned by societal values and behaviours that include production and consumption patterns, human population dynamics and trends, trade, technological innovations and governance. The rate of change in the direct and indirect drivers differs among regions and countries.

Nature across most of the globe has been significantly altered by multiple human drivers, with ecosystems and biodiversity showing rapid decline. Seventy-five per cent (75%) of the land surface is significantly altered. The ocean area is experiencing increasing cumulative impacts, and over 85 per cent (85%) of wetlands (area) have been lost. While the rate of forest loss has slowed globally since 2000, this is distributed unequally. Across much of the highly biodiverse tropics, 32 million hectares of primary or recovering forest were lost between 2010 and 2015. The extent of tropical and subtropical forests is increasing within some countries, and the global extent of temperate and boreal forests is increasing. Approximately half the live coral cover on coral reefs has been lost since the 1870s, with accelerating losses in recent decades due to climate change exacerbating other drivers.

The average abundance of native species in most major terrestrial biomes has fallen by at least 20 per cent (20%), potentially affecting ecosystem processes; this decline has mostly taken place since 1900 and may be accelerating. In areas of high endemism, native biodiversity has been severely impacted by invasive alien species. Population sizes of wild vertebrate species have tended to decline over the last 50 years on land, in freshwater and the sea. Global trends in insect populations are not known but rapid declines have been well documented in some places.

Human actions threaten more species with global extinction now than ever before. An average of around 25 per cent (25%) of species in assessed animal and plant groups are threatened, suggesting that around 1 million species already face extinction, many within decades, unless action is taken to reduce the intensity of drivers of biodiversity loss. Without such action, there will be a further acceleration in the global rate of species extinction, which is already at least tens to hundreds of times higher than it has averaged over the past 10 million years.

Globally, local varieties and breeds of domesticated plants and animals are disappearing. This loss of diversity, including genetic diversity, poses a serious risk to global food security by undermining the resilience of many agricultural systems to threats such as pests, pathogens and climate change. Fewer varieties and breeds of plants and animals are being cultivated, raised, traded and maintained around the world, despite many local efforts, mostly by indigenous peoples and local communities. By 2016, 559 of the 6,190 domesticated breeds of mammals used for food and agriculture (over 9 per cent) had become extinct and at least 1,000 more are threatened. In addition, many crops' wild relatives that are important for long-term food security lack effective protection, and the conservation status of wild relatives of domesticated mammals and birds is worsening. Reductions in the diversity of cultivated crops, crop wild relatives and domesticated breeds mean that agroecosystems are less resilient against future climate change, pests and pathogens.

For terrestrial and freshwater ecosystems, land-use change has had the largest relative negative impact on nature since 1970, followed by the direct exploitation, in particular overexploitation, of animals, plants and other organisms, mainly via harvesting, logging, hunting and fishing. In marine ecosystems, direct exploitation of organisms (mainly fishing) has had the largest relative impact, followed by land-/sea-use change. Agricultural

expansion is the most widespread form of land-use change, with over one-third of the terrestrial land surface being used for cropping or animal husbandry. This expansion, alongside a doubling of the urban area since 1992 and an unprecedented expansion of infrastructure linked to growing population and consumption, has come mostly at the expense of forests (largely old-growth tropical forests), wetlands and grasslands. In freshwater ecosystems, a series of threats, including water extraction, exploitation, pollution, climate change and invasive species, are prevalent.

Climate change is a direct driver that is increasingly exacerbating the impact of other drivers on nature and human well-being. The frequency and intensity of extreme weather events, and the fires, floods and droughts that they bring, have increased in the past 50 years, while the global average sea level has risen by between 16 and 21 cm since 1900, and at a rate of more than 3 mm per year over the past two decades. These changes have contributed to widespread impacts on many aspects of biodiversity, including species distribution, phenology, population dynamics, community structure and ecosystem function.

Many types of pollution and invasive alien species are increasing, with negative impacts for nature. Although global trends are mixed, air, water and soil pollution have continued to increase in some areas. Marine plastic pollution in particular has increased tenfold since 1980, affecting at least 267 species, including 86 per cent (86%) of marine turtles, 44 per cent (44%) of seabirds and 43 per cent (43%) of marine mammals. This affects humans through food chains. Greenhouse gas emissions, untreated urban and rural waste, pollutants from industrial, mining and agricultural activities, oil spills and toxic dumping have had strong negative effects on soil, freshwater and marine water quality and the global atmosphere. Cumulative records of alien species have increased by 40 per cent (40%) since 1980, associated

with increased trade and human population dynamics and trends. Nearly one-fifth of the Earth's surface is at risk of plant and animal invasions, impacting native species, ecosystem functions and nature's contributions to people, as well as economies and human health. The rate of introduction of new invasive alien species seems higher than ever before and shows no signs of slowing.

Nature managed by indigenous peoples and local communities is under increasing pressure. Nature is generally declining less rapidly in indigenous peoples' land than in other lands, but is nevertheless declining, as is the knowledge of how to manage it. At least a quarter of the global land area is traditionally owned, managed, used or occupied by indigenous peoples. These areas include approximately 35 per cent (35%) of the formally protected area and approximately 35 per cent (35%) of all remaining terrestrial areas with very low human intervention.

The areas managed (under various types of tenure and access regimes) by Indigenous peoples and local communities are facing growing resource extraction, commodity production, mining and transport and energy infrastructure, with various consequences for local livelihoods and health. Some climate change mitigation programmes have had negative impacts on indigenous peoples and local communities. The negative impacts of all these pressures include continued loss of subsistence and traditional livelihoods resulting from ongoing deforestation, loss of wetlands, mining, the spread of unsustainable agriculture, forestry and fishing practices and impacts on health and well-being from pollution and water insecurity. These impacts also challenge traditional management, the transmission of Indigenous and local knowledge, the potential for sharing of benefits arising from the use of, and the ability of Indigenous peoples and local communities to conserve and sustainably manage, wild and domesticated biodiversity relevant to broader society.



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