



Five drivers of the nature crisis

Humans have introduced more than 37,000 invasive species, many harmful, into biomes around the world, threatening a range of plants and animals, finds a new study from the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES). Invasive alien species (IAS) are one of the five major drivers of biodiversity loss and the framework aims to “eliminate (or) reduce” their impact on the environment. Here’s a closer look at IAS as well as the other top causes of nature loss identified by IPBES, an independent body that aims to help states sustainably manage biodiversity.

1. INVASIVE SPECIES

IAS are animals, plants, fungi and microorganisms that have entered and established themselves in the environment outside their natural habitat. IAS have devastating impacts on native plant and animal life, causing the decline or even extinction of native species and negatively affecting ecosystems.

The IAS Report, produced by experts from 49 countries, says these intruders have been a major factor in 60 percent of all extinctions and that they cost the global economy more than US\$ 423 billion annually. The Report called invasive alien species a threat to sustainable development and human well-being. It comes with more than 1 million plants, animals and other living things facing the threat of extinction. The publication arrives as countries are working to speed up the implementation of the Kunming - Montreal Global Biodiversity Framework, a landmark agreement to halt and reverse nature loss by 2030.

The global economy, with increased transport of goods and travel, has facilitated the introduction of alien species over long distances and beyond natural boundaries. The negative effects of these species on biodiversity can be intensified by climate change, habitat destruction and pollution.

IAS have contributed to nearly 40 percent of all animal extinctions since the 17th Century, where the cause is known. Meanwhile, environmental losses from introduced pests in Australia, Brazil, India, South Africa, United Kingdom and the United States are estimated to reach over US\$ 100 billion per year.

IAS is a global issue that requires international cooperation and action. Preventing the international movement of these species and rapid detection at borders is less costly than control and eradication.

2. CHANGES IN LAND AND SEA USE

The biggest driver of biodiversity loss is how people use the land and sea. This includes the conversion of land covers such as forests, wetlands and other natural habitats for agricultural and urban uses.

Since 1990, around 420 million hectares of forest have been lost through conversion to other land uses. Agricultural expansion continues to be the main driver of deforestation, forest degradation and forest biodiversity loss. The global food system is the primary driver of biodiversity loss, with agriculture alone being the identified threat of more than 85 percent of the 28,000 species at risk of extinction.

Harvesting materials such as minerals from the ocean floor and the building of towns and cities also impact the natural environment and biodiversity. Reconsidering the way people grow and consume food is one way of reducing the pressure on ecosystems. Degraded and disused farmland can be ideal for restoration, which can support protecting and restoring critical ecosystems such as forests, peatlands and wetlands.

3. CLIMATE CHANGE

Since 1980, greenhouse gas emissions have doubled, raising average global temperatures by at least 0.7 degrees Celsius. Global warming is already affecting species and ecosystems around the world, particularly the most vulnerable ecosystems such as coral reefs, mountains and polar ecosystems. There are indications that climate change-induced temperature increases may threaten as many as one in six species at the global level.

Ecosystems such as forests, peatlands and wetlands represent globally significant carbon stores. Their conservation, restoration and sustainability are critical to achieving the targets of the Paris Agreement. By working with nature, emissions can be reduced by up to 11.7 gigatons of carbon dioxide equivalent per year by 2030, over 40 percent of what is needed to limit global warming.



▲ *Forests are cut down and converted to other uses, mainly agricultural*

4. POLLUTION

Pollution, including from chemicals and waste, is a major driver of biodiversity and ecosystem change with especially devastating direct effects on freshwater and marine habitats. Plant and insect populations are dwindling as a result of the persistent usage of highly dangerous, non-selective insecticides.

Marine plastic pollution has increased tenfold since 1980, affecting at least 267 animal species, including 86 percent of marine turtles, 44 percent of seabirds and 43 percent of marine mammals. Air and soil pollution are also on the rise.

Globally, nitrogen deposition in the atmosphere is one of the most serious threats to the integrity of global biodiversity. When nitrogen is deposited on terrestrial ecosystems, a cascade of effects can occur, often resulting in overall biodiversity declines.

Reducing air and water pollution and safely managing chemicals and waste is crucial to address the nature crisis.

5. DIRECT EXPLOITATION OF NATURAL RESOURCES

The recent IPBES report on the sustainable use of wild species reveals that the unsustainable use of plants and animals is not just threatening the survival of one million species around the world but the livelihoods of billions of people who rely on wild species for food, fuel and income.

According to scientists, halting and reversing the degradation of lands and oceans can prevent the loss of one million endangered species. In addition, restoring only 15 percent of ecosystems in priority areas will improve habitats, thus cutting extinctions by 60 per cent by improving habitats.

Negotiations at COP15 are expected to focus on protecting plants, animals and microbes whose genetic material is the foundation for life-saving medicines and other products. This issue is known as access and benefits sharing governed by an international accord - the Nagoya Protocol.

Delegates at COP15 will be looking at how marginalized communities, including Indigenous Peoples, can benefit from a subsistence economy - a system based on provisioning and regulating services of ecosystems for basic needs. Through their spiritual connection to the land, Indigenous Peoples play a vital protection role as guardians of biodiversity ■

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