
PLANET | BIODIVERSITY

“Biodiversity is not a luxury, but a fundamental pre-requisite for our well-being...It is the foundation of our food systems and our health. We cannot afford to overlook our dependence on Nature or take her abundance for granted.”

Dr Cristiana Paşca Palmer, Executive Secretary of the Convention on Biological Diversity.
2019 (1)

Sir David Attenborough explores the biodiversity crisis as 1 million plant and animal species face extinction. Click here to view the BBC Extinction The facts.

<https://www.bbc.co.uk/iplayer/episode/m000mn4n/extinction-the-facts>

Introduction to the problem and scale

- Research has established that six of the nine planetary boundaries have now been crossed, which if all nine are crossed could generate irreversible environmental changes and drive the planet into a much less hospitable state. In the case of biodiversity loss, we have not only crossed the boundary but have entered a high-risk zone. (2)
- The Kunming-Montreal Global Biodiversity Framework has outlined 23 goals to be implemented in harmony with the Convention on Biological Diversity and its Protocols in order to halt biodiversity loss (3). These include moving away from intensive farming and reporting their supply chain impact on biodiversity.
- Global populations of mammals, birds, amphibians, reptiles and fish have decreased on average by 69% since 1970. (4)
- Despite broad environmental policy efforts, species extinction rates are increasing. (5) 42% of terrestrial invertebrates, 34% of freshwater invertebrates, and 25% of marine invertebrates are considered at risk of extinction. Around 1 million plant and animal species are now threatened with extinction. (6)
- Continued rates of biodiversity loss may lead to the extinction of 40% of the world's insect species over the next few decades. (7)
- Insects provide pollination, natural pest control, and nutrient recycling and are critical to the functioning and stability of ecosystems. (8)
- More than 75% of global food crops rely on insect/animal pollination. (8)
- Between \$235 billion and \$577 billion in annual global crop output is at risk as a result of pollinator loss. (9)
- 75% of humanities' food is currently generated from only 12 plants and 5 animal species. (8)

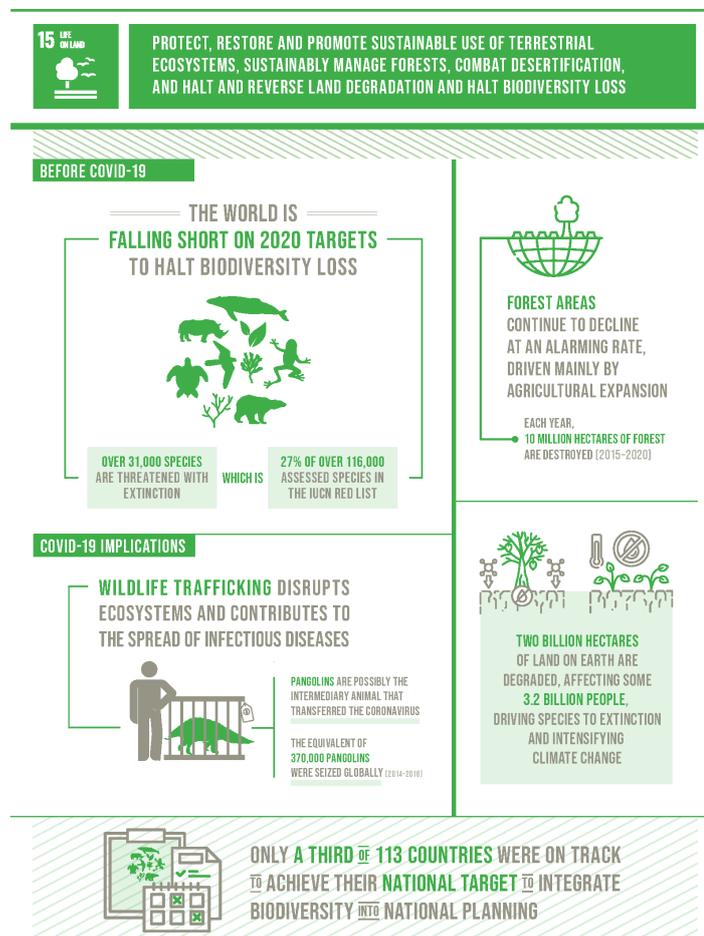
Link to intensive animal farming

- The UN Convention to Combat Desertification (UNCCD) states that livestock production is “perhaps the single largest driver of biodiversity loss.” (10)
- Industrial agriculture’s huge demand for animal feed has fuelled the intensification of crop production, leading to biodiversity loss. (11)

- Intensive crop production uses large amounts of pesticides, decimating the insects on which farmland birds depend for food. The use of insecticides and herbicides has also played a major role in the decline in pollinators, such as bees. (12) (13)
- Intensive farming and its monocultures, lead to the loss of abundance and diversity of the wildflowers on which pollinators feed.
- Plant and animal species are also negatively impacted by the loss of hedgerows due in part to changes in farming practices. (14)
- Thousands of plant and animal species are threatened within the Amazon and Cerrado as the agricultural industry expands for beef and soy production.
- Approximately 420 million hectares of forest have been lost due to change in land use since 1990. With the rate of deforestation estimated at around 10 million hectares per year. (15)
- Over 90% of the world's fish stocks are either overfished (33.1%) or fished to maximum sustainable levels (59.9%). (16)
- Almost 70% of landed forage fish are processed into fish meal and fish oil (FMFO) representing 20% of the world's total catch of wild fish (16) which in turn is used to feed cattle, pigs, and farmed fish such as salmon, trout and bass.
- Hypoxic zones ("dead zones") in oceans refers to a state of reduced oxygen in the water. These can occur naturally, but scientists are concerned with their increased size caused by human activity. The primary cause is nutrient pollution which is threatening marine life. (17)
- Since the 1960's, low oxygen areas in the open ocean has increased by 4.5 million km² with over 500 additional sites located in other water bodies. (18)
- Reducing meat and dairy consumption would enable cropland to be farmed less intensively and halt the expansion of farmland into wildlife habitats, allowing biodiversity to be restored.

Link to the relevant SDG's

- **SDG 15:** Life on Land: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss. (19)



<https://unstats.un.org/sdgs/report/2020/>

References

1. **United Nations Decade on Biodiversity.** *Slow Food. Press Release.* s.l. : Convention of Biological Diversity, 2019.
2. **Resilience, Stockholm.** All planetary boundaries mapped out for the first time, six of nine crossed. [Online] [Cited: October 18, 2023.] <https://www.stockholmresilience.org/5.3d04209a18a2642b2fc162a3.html>.
3. **Convention on Biological Diversity.** KUNMING-MONTREAL GLOBAL BIODIVERSITY FRAMEWORK - 2030 Targets (with Guidance Notes). [Online] September 21, 2023. [Cited: October 18, 2023.] <https://www.cbd.int/gbf/targets/>.
4. **WWF.** *Living Planet Report 2022.* 2022.

5. **The United Nations Environment Programme (UNEP).** Global Environment Outlook 6. [Online] [Cited: October 18, 2023.]
6. *Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services.* E. S. Brondizio, J. Settele, S. Díaz, and H. T. Ngo. Bonn, Germany : IPBES, 2019.
7. *Worldwide decline of the entomofauna: A review of its drivers.* K, Sanchez-Bayo F and Wyckhuys. 8-27, s.l. : Biological Conservation, 2019, Vol. 232.
8. S. Díaz, J. Settele, E. S. Brondizio E.S., H. T. Ngo, M. Guèze, J. Agard, A. Arneth, P. Balvanera, K. A. Brauman, S. H. M. Butchart, K. M. A. Chan, L. A. Garibaldi, K. Ichii, J. Liu, S. M. Subramanian, G. F. Midgley, P. Miloslavich, Z. Molnár, D. Obura, A. *Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services.* Bonn, Germany : IPBES, 2019.
9. **IPBES.** *Report of the Plenary of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services on the work of its seventh session Addendum Summary for policymakers of the global assessment report on biodiversity and ecosystem services of th.* s.l. : IPBES, 2019.
10. **UN Convention to Combat Desertification.** *Global Land Outlook - First Edition.* s.l. : UN Convention to Combat Desertification, 2017.
11. **World Health Organisation and Secretariat of the Convention on Biological Diversity.** *Connecting Global Priorities: Biodiversity and Human Health - A State of Knowledge Review.* s.l. : World Health Organisation and Secretariat of the Convention on Biological Diversity, 2015.
12. **UNEP.** *Global honey-bee colony disorders and other threats to insect pollinators.* 2010.
13. **Reversing insect pollinator decline.** [Online] September 12, 2013. [Cited: October 18, 2023.] <http://www.parliament.uk/business/publications/research/briefingpapers/POST-PN-442/reversing-insect-pollinator-decline>.
14. **PTES.** Threats to our hedgerows. [Online] February 14, 2023. [Cited: October 18, 2023.] <https://ptes.org/hedgerow/threats-to-hedgerows/>.
15. **FAO and UNEP.** *The State of the World's Forests 2020. Forests, biodiversity and people.* 2020.
16. **CIWF,** Changing Markets, Rethink Fish. *Until the Seas Run Dry. How Industrial aquaculture is plundering the oceans.* Changing Markets Foundation. s.l. : Changing Markets, 2019.
17. **Service, National Ocean.** What is a dead zone? [Online] [Cited: October 18, 2023.] <https://oceanservice.noaa.gov/facts/deadzone.html#:~:text=%22Dead%20zone%22%20is%20a%20more,of%20oxygen%20in%20the%20water.&text=Less%20oxygen%20dissolved%20in%20the,as%20fish%2C%20leave%20the%20area>.
18. **Intergovernmental Oceanographic Commission.** *The Ocean is losing its breath: declining oxygen in the world's ocean and coastal waters; summary for policy makers.* s.l. : UNESCO, 2018.
19. **United Nations Department of Economic Social Affairs Sustainable Development.** Biodiversity. [Online] [Cited: October 18, 2023.] <https://www.un.org/sustainabledevelopment/biodiversity/>.