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FOSSIL FUEL PHASE OUT: A KEY CONTRIBUTION TO HALTING AND REVERSING BIODIVERSITY LOSS

WWF International is sponsoring Motion 042, in partnership with the Fossil Fuel Non-Proliferation Treaty Initiative and co-sponsored by a group of organizations¹.

The rationale behind this motion is the urgent need to address climate change as one of the primary drivers of both direct and indirect impacts on biodiversity. Since the extraction and burning of fossil fuels are the main contributors to climate change, supply-side measures to phase out fossil fuels are essential. This motion advocates for a global transition away from fossil fuels as a critical step to halt and reverse biodiversity loss and for IUCN to consider the relevance of a Fossil Fuel Non-Proliferation Treaty.

1. Introduction: The Science

The evidence is clear: fossil fuels are driving a web of interlinked crises that threaten the stability and diversity of life on Earth. Every stage of the fossil fuel life cycle—from extraction and processing to transport and eventual combustion or conversion into petrochemical products—releases greenhouse gases and harmful pollutants. These activities not only fuel climate change but also contribute to widespread environmental degradation, including air and water pollution, habitat destruction, and direct harm to human health and ecosystems.

In 2023, the IPCC Sixth Assessment Report highlighted that *global net anthropogenic greenhouse gas (GHG) emissions* reached $59 \pm 6.6 \text{ GtCO}_2\text{-eq}$ in 2019—a 12% increase since 2010 and 54% higher than 1990 levels. The largest share and growth in emissions

comes from CO_2 generated by fossil fuel combustion and industrial processes, followed by methane.

The 2019 IPBES Global Assessment Report on Biodiversity and Ecosystems Services emphasized that climate change is a direct driver of biodiversity loss and is increasingly exacerbating other pressures on nature and human well-being. Over the past 50 years, the frequency and intensity of extreme weather events—such as fires, floods, and droughts—have increased. The global average sea level has risen by 16 to 21 cm since 1900, accelerating in the last two decades to more than 3 mm per year. These changes have triggered widespread and accelerating impacts across marine, terrestrial, and freshwater ecosystems, altering species distributions, population

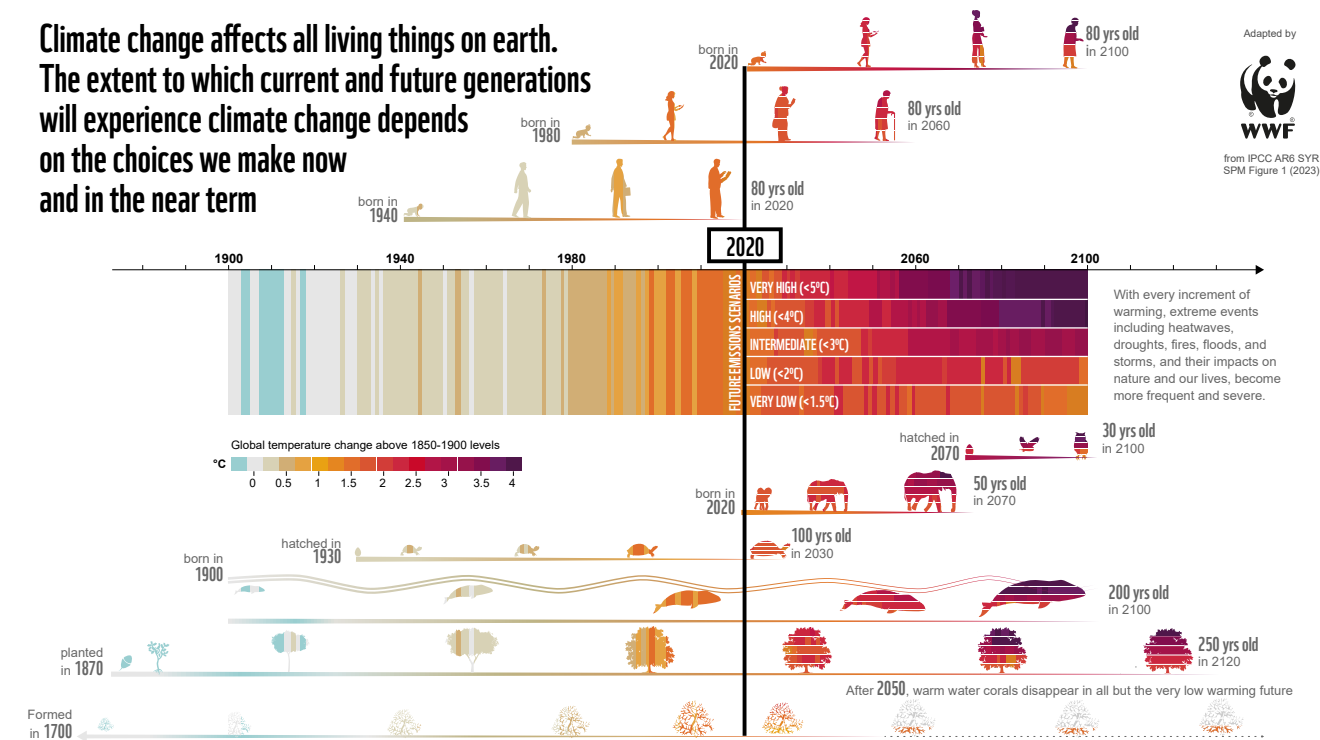
dynamics, ecosystem functions, and negatively affecting agriculture, aquaculture, and fisheries.

Fossil fuel production and use are responsible for approximately 75% of the emissions driving climate change. Yet, the world remains on a path to produce more fossil fuels by 2030 than is consistent with the 1.5°C Paris Agreement climate target. Scientific consensus confirms that new oil and gas fields are incompatible with this temperature limit. A just and equitable transition away from fossil fuels demands that:

- Coal be phased out globally by 2030, and by 2040 in developing countries;
- Oil and gas be phased out by 2040 in developed countries, and by 2050 in developing

According to a recent study², climate change is projected to become the leading driver of biodiversity loss by mid-century. However, the researchers emphasize that there is still time to significantly reduce these impacts through urgent climate mitigation and nature conservation efforts.

These findings and data reinforce the urgency and necessity of supply-side measures to phase out fossil fuel production—an approach central to Motion 042, sponsored by WWF International in collaboration with the Fossil Fuel Non-Proliferation Treaty Initiative and supporting organizations. The motion seeks to align global biodiversity goals with climate action by asking IUCN to address the root cause of climate-driven ecosystem collapse: fossil fuel dependency.



2. How Climate Change Drives Biodiversity Loss

A VICIOUS CYCLE

CLIMATE CHANGE → BIODIVERSITY LOSS

The direct impacts of climate change—such as rising temperatures, altered precipitation patterns, extreme weather events, and sea level rise—are already causing widespread species decline and ecosystem degradation. These changes disrupt habitats, shift species distributions, and undermine ecosystem resilience.

BIODIVERSITY LOSS → CLIMATE CHANGE

As biodiversity declines, the planet's natural carbon sinks—including forests, wetlands, peatlands, and oceans—become less effective at absorbing and storing carbon dioxide. This loss of natural carbon regulation amplifies global warming, creating a feedback loop that further accelerates climate change.

2 Pinsky, M.L. et al. Warming and cooling catalyse widespread temporal turnover in biodiversity. *Nature* (2025). doi: [10.1038/s41586-024-08456-z](https://doi.org/10.1038/s41586-024-08456-z)

Direct Impacts:

- Rising Temperatures: As global temperatures increase, many plant and animal species are forced to migrate from their traditional habitats in search of more suitable climatic conditions. This disrupts established ecosystems and can lead to local or global species extinctions.
 - Habitat Disruption: Melting glaciers and polar ice, combined with rising sea levels, are eroding critical coastal and marine habitats such as mangroves and salt marshes. Simultaneously, hotter and drier conditions are increasing the frequency and intensity of wildfires, placing additional stress on vulnerable forest ecosystems.
- Phenological Shifts: Climate change is altering the timing of natural life cycle events—such as leaf budding, insect emergence, and bird nesting. These changes can lead to mismatches between species (e.g., pollinators and flowering plants), disrupting food webs and reducing reproductive success.
 - Altered Ecosystems: Entire ecosystems are being transformed by shifting climate conditions. For example, coral reefs—among the most biodiverse ecosystems on Earth—are under severe threat from rising ocean temperatures and acidification, leading to mass bleaching events and collapse of reef systems.

Local impacts	Onshore	Offshore
Exploration	- Land degradation, - Water contamination, - Noise and light pollution - Damage from equipment and infrastructure - Damage from drill cuttings and drilling mud - Water usage	- Seismic impacts - Disruption and species migration - Oil dispersion in case of blowout
Production	- Air Quality - Volatile Organic Compounds VOCs - Water Quality- contamination of fresh water. - Toxicity of hydraulic additives - Habitat loss (deforestation and conversion of ecosystems) - Infrastructure impacts: noise, light pollution	- Damage from oil spills and drill cuttings - Socioecological impacts on fisheries/ fish population - Toxicity of surfactants on corals
Cumulative impacts	- Changes in population due to job availability - Impacts from infrastructure expansion - Impacts on Indigenous Peoples and local communities, often not consulted.	- Loss of ecosystem services - Irreversible habitat changes - Social impacts (fishing activities)

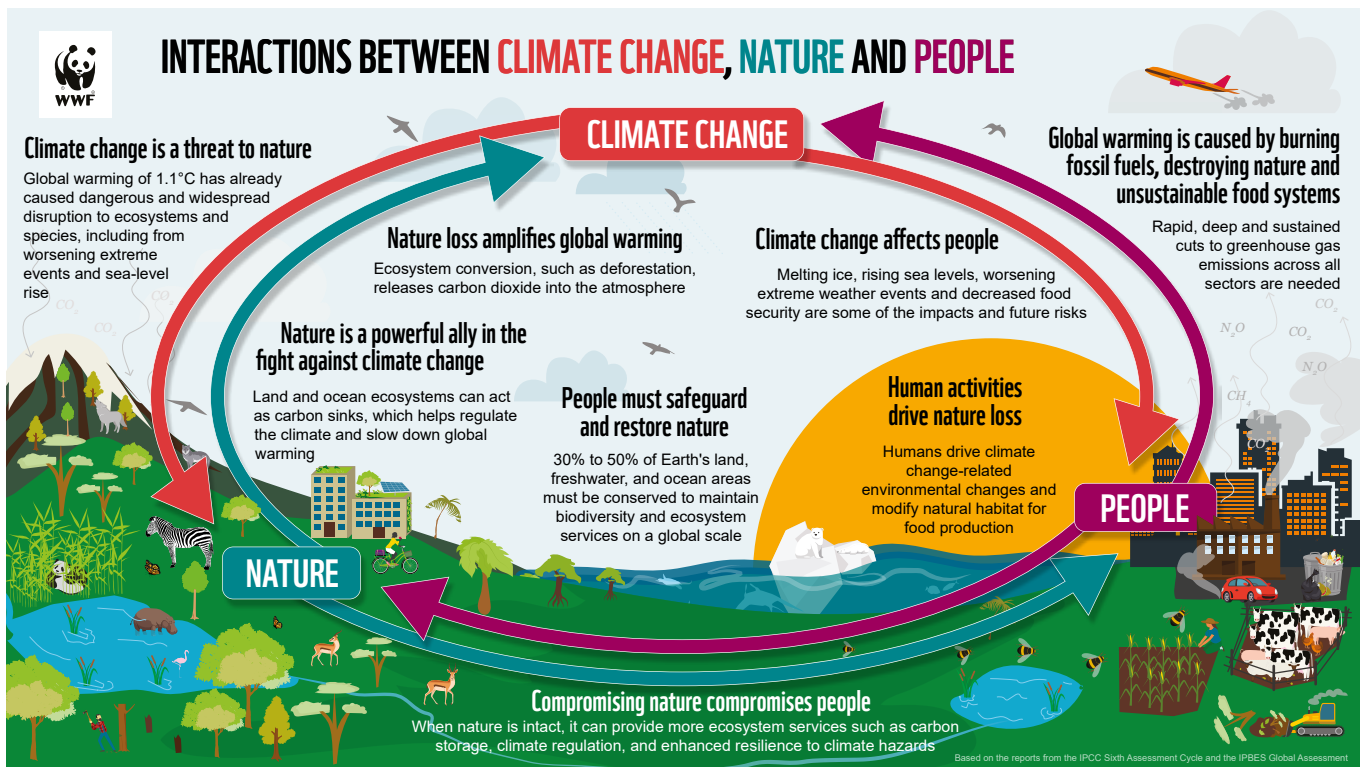
Source: WWF, 2025

Indirect impacts

As stated above, climate change is the third most significant driver of biodiversity loss, but its role extends beyond this ranking. It interacts with and amplifies other major drivers, creating complex and compounding effects. Rising atmospheric greenhouse gas (GHG) concentrations result in global warming, altered precipitation patterns, more frequent and intense extreme weather events, and the acidification

and deoxygenation of aquatic environments, which harm biodiversity.

Conversely, changes in biodiversity, particularly those affecting key species and ecosystems, impact the climate system by disrupting critical processes such as the carbon, nitrogen, and water cycles, The loss of biodiversity undermines the ability of ecosystems—and the human societies that depend on them—to adapt to a changing climate.



Source: WWF, 2022

Impacts on key habitats: some examples

The Mediterranean: Climate change is significantly impacting the Mediterranean, which is warming 20% faster than the global average, leading to increased heat waves, droughts, floods, and sea-level rise. These changes threaten vulnerable coastal zones, disrupt marine ecosystems with increased jellyfish blooms and species shifts, exacerbate water scarcity by reducing river flows, and increase the risk of wildfires and agricultural challenges. The impacts also affect economies and societies, particularly through rising sea temperatures, impacting tourism, fisheries, and human health (UNEP, 2020).

The Arctic region is experiencing temperature increases four times the global average, causing the melting of sea ice and opening new marine areas for industrial activities, including oil and gas development and new shipping routes. Arctic drilling poses a high risk of oil spills and, given the lack of proven technology to contain or clean up in the Arctic marine environment, these developments could have devastating impacts on pristine Arctic ecosystems and species, including on marine mammals, as well as on Indigenous and coastal communities whose livelihoods depend on healthy oceans. Spilled oil can pool under ice and stay there until ice melts in spring. Extreme weather conditions, the long winter season of darkness and freezing temperatures, and the lack of coastal infrastructure for emergency preparedness and response make clean-up operations very difficult and delayed in time. Also, commonly accepted response methods to oil spills used elsewhere lose their effectiveness in very cold Arctic water. In addition to oil spills, marine mammals would be exposed to underwater noise from seismic surveys, construction of facilities, chemical pollution, and increased vessel traffic (WWF Arctic Program, 2025).

In Brazil, rising temperatures lead to the loss of coastal areas due to sea level rise, extreme weather events, changes in rainfall patterns, heatwaves, wildfires, biodiversity loss, acid rain, increased frequency of droughts, and consequently, water crises. Being heavily dependent on hydroelectric power (accounting for 73.6% of all energy generated last year), during periods of severe drought when reservoir levels become critically low, thermoelectric power plants are activated to replace or supplement the energy demand. This, in turn, causes further impacts due to increased burning of fossil fuels. A large number of offshore blocks are under permanent offer along the coast of Brazil, including in highly sensitive areas that could affect the Amazon coastal region and one of the largest mangrove ecosystems in the world. In addition, numerous ultra-deepwater projects are already underway in the southeast, near important reef formations. Brazil is currently one of the world's largest investors in oil and gas expansion.

In the Southwest Indian Ocean (SWIO), nearly the entire Mozambique Channel (MC) has been divided into oil and gas exploration blocks, with 58,900 km² (about 8.5% of the MC) under active contracts (WWF, 2018). Major natural gas reserves have been discovered off northern Mozambique (Cabo Delgado) and southern Tanzania (Mtwara), with ongoing exploration near Madagascar, the Comoros, and French territories (Obura et al., 2018). The combined gas reserves from the Rovuma and Mafia River basins total 150 trillion cubic feet (tcf), making it the third largest in Africa (Hanner, 2014), compared to 215 tcf in the UAE. However, oil and gas activities increasingly overlap with protected areas, wildlife corridors, tourism zones, and critical breeding and nursery grounds for fish and prawns, raising concerns about environmental and socio-economic impacts (Obura et al., 2018).



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