CLIMATE

CHANGE

By

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Climate change

In common usage, **climate change** describes **global warming**—the ongoing increase in global average temperature—and its effects on Earth's [climate system](https://en.wikipedia.org/wiki/Climate_system). [Climate change in a broader sense](https://en.wikipedia.org/wiki/Climate_variability_and_change) also includes previous long-term changes to Earth's climate. The [current rise in global average temperature](https://en.wikipedia.org/wiki/Instrumental_temperature_record) is more rapid than previous changes, and is [primarily caused by humans](https://en.wikipedia.org/wiki/Scientific_consensus_on_climate_change) burning [fossil fuels](https://en.wikipedia.org/wiki/Fossil_fuel).[[2]](https://en.wikipedia.org/wiki/Climate_change#cite_note-2)[[3]](https://en.wikipedia.org/wiki/Climate_change#cite_note-Lynas_2021-3) Fossil fuel use, [deforestation](https://en.wikipedia.org/wiki/Deforestation), and some [agricultural](https://en.wikipedia.org/wiki/Greenhouse_gas_emissions_from_agriculture) and [industrial](https://en.wikipedia.org/wiki/Environmental_impact_of_concrete) practices [increase](https://en.wikipedia.org/wiki/Greenhouse_gas_emissions) [greenhouse gases](https://en.wikipedia.org/wiki/Greenhouse_gas), notably [carbon dioxide](https://en.wikipedia.org/wiki/Carbon_dioxide) and [methane](https://en.wikipedia.org/wiki/Methane_emissions).[[4]](https://en.wikipedia.org/wiki/Climate_change#cite_note-auto2-4) Greenhouse gases [absorb some of the heat](https://en.wikipedia.org/wiki/Greenhouse_effect) that the Earth radiates after it warms from sunlight. Larger amounts of these gases [trap more heat](https://en.wikipedia.org/wiki/Earth%27s_Energy_Imbalance) in Earth's lower atmosphere, causing global warming.

Due to climate change, [deserts are expanding](https://en.wikipedia.org/wiki/Desertification), while [heat waves](https://en.wikipedia.org/wiki/Heat_wave) and [wildfires](https://en.wikipedia.org/wiki/Wildfire) are becoming more common.[[5]](https://en.wikipedia.org/wiki/Climate_change#cite_note-5) [Increased warming in the Arctic](https://en.wikipedia.org/wiki/Polar_amplification) has contributed to melting [permafrost](https://en.wikipedia.org/wiki/Permafrost), [glacial retreat](https://en.wikipedia.org/wiki/Retreat_of_glaciers_since_1850) and sea ice loss.[[6]](https://en.wikipedia.org/wiki/Climate_change#cite_note-6) Higher temperatures are also causing [more intense storms](https://en.wikipedia.org/wiki/Tropical_cyclones_and_climate_change), droughts, and other [weather extremes](https://en.wikipedia.org/wiki/Extreme_weather).[[7]](https://en.wikipedia.org/wiki/Climate_change#cite_note-7) Rapid environmental change in [mountains](https://en.wikipedia.org/wiki/Montane_ecosystems), [coral reefs](https://en.wikipedia.org/wiki/Coral_reef), and [the Arctic](https://en.wikipedia.org/wiki/Climate_change_in_the_Arctic) is forcing many species to relocate or [become extinct](https://en.wikipedia.org/wiki/Extinction_risk_from_climate_change).[[8]](https://en.wikipedia.org/wiki/Climate_change#cite_note-8) Even if efforts to minimise future warming are successful, some [effects](https://en.wikipedia.org/wiki/Effects_of_climate_change) will continue for centuries. These include [ocean heating](https://en.wikipedia.org/wiki/Ocean_temperature#Increasing_temperature_due_to_climate_change), [ocean acidification](https://en.wikipedia.org/wiki/Ocean_acidification) and [sea level rise](https://en.wikipedia.org/wiki/Sea_level_rise).[[9]](https://en.wikipedia.org/wiki/Climate_change#cite_note-9)

Climate change [threatens people](https://en.wikipedia.org/wiki/Effects_of_climate_change_on_human_health) with [food](https://en.wikipedia.org/wiki/Effects_of_climate_change_on_agriculture) and [water](https://en.wikipedia.org/wiki/Water_scarcity#Climate_change) scarcity, increased flooding, extreme heat, more disease, and [economic loss](https://en.wikipedia.org/wiki/Economic_impacts_of_climate_change). [Human migration](https://en.wikipedia.org/wiki/Environmental_migrant) and conflict can also be a result.[[10]](https://en.wikipedia.org/wiki/Climate_change#cite_note-auto3-10) The [World Health Organization](https://en.wikipedia.org/wiki/World_Health_Organization) (WHO) calls climate change the greatest threat to global health in the 21st century.[[11]](https://en.wikipedia.org/wiki/Climate_change#cite_note-11) Communities may [adapt to climate change](https://en.wikipedia.org/wiki/Climate_change_adaptation) through efforts like [coastline protection](https://en.wikipedia.org/wiki/Coastal_protection) or expanding access to [air conditioning](https://en.wikipedia.org/wiki/Air_conditioning), but some impacts are unavoidable. Poorer countries are responsible for [a small share of global emissions](https://en.wikipedia.org/wiki/Climate_justice), yet they have the least ability to adapt and are most [vulnerable to climate change](https://en.wikipedia.org/wiki/Climate_change_vulnerability).

Many climate change impacts are already felt at the current 1.2 °C (2.2 °F) level of warming. Additional warming will increase these impacts and may trigger [tipping points](https://en.wikipedia.org/wiki/Tipping_points_in_the_climate_system), such as the melting of the [Greenland ice sheet](https://en.wikipedia.org/wiki/Greenland_ice_sheet).[[12]](https://en.wikipedia.org/wiki/Climate_change#cite_note-12) Under the 2015 [Paris Agreement](https://en.wikipedia.org/wiki/Paris_Agreement), nations collectively agreed to keep warming "well under 2 °C". However, with pledges made under the Agreement, global warming would still reach about 2.7 °C (4.9 °F) by the end of the century.[[13]](https://en.wikipedia.org/wiki/Climate_change#cite_note-UNEP2021-13) Limiting warming to 1.5 °C will require halving emissions by 2030 and achieving net-zero emissions by 2050.[[14]](https://en.wikipedia.org/wiki/Climate_change#cite_note-14)

[](https://en.wikipedia.org/wiki/File:Bobcat_Fire,_Los_Angeles,_San_Gabriel_Mountains.jpg)