

# Climate Change



## Rising Seas

As temperatures heat up, seas begin to rise as warmer water expands due to a process known as thermal expansion. Melting glaciers and ice sheets compound the problem by releasing more and more water into the ocean. Research suggests that the global sea level is now rising at a rate that is almost double what it was in 1993. These rising sea levels will continue to threaten low-lying areas, islands, and coastal populations, as well as contaminate aquifers and agricultural soils, erode shorelines, and threaten ecosystems.

## Ecosystems

Climate plays a crucial environmental role within ecosystems. Plants and animals live in areas with very specific climate conditions, enabling them to survive and flourish. Any change in climate can impact the habitats of plants and animals and the ecosystems to which they are connected. Although species are able to adapt to environmental changes, such a rapidly changing climate could require adaptation on a larger and faster scale than in the past. Polar bears, the North Atlantic cod, and the Quiver tree are all examples of species whose habitats are changing faster than they can adapt to new conditions. This could have far-reaching effects due to their connection to other organisms through food webs and other interactions.

## Agriculture

Climate change affects agriculture in various ways. Although some countries may actually benefit from the changing conditions of increased temperatures and carbon dioxide, climate change is expected to negatively affect crops, livestock, and fisheries in many regions, especially due to changes in the frequency and severity of droughts and floods. For example, California is expected to suffer from continued weather extremes, and crops such as rice and corn are projected to lose 10-30% of their yields through 2050. These changes in weather patterns will continue to put an extra burden on the global agricultural system, which is already struggling to respond to the increased demands of food and renewable energy.

## Human Health

The influences of climate change on human health are significant globally but its effects will ultimately impact different communities to different degrees. Consequences such as rising sea-levels, extreme weather patterns, and degraded air quality directly and indirectly threaten our health, impacting the food we eat, the water we drink, the air we breathe, and the weather we experience. These health threats are significant even in wealthy nations such as the United States, but people in developing countries may be the most vulnerable to health risks throughout the globe.

For instance, sea level rise in Bangladesh will increase salinity in coastal areas leading to shortages in drinking water and food availability, and malnutrition and water-borne diseases will likely follow. The impacts will fall disproportionately upon the poorest sectors within all countries, intensifying health inequities as well as access to sufficient food, clean water, and other resources.

#### Sources

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