

CLIMATE CHANGE

The planet's surface temperature has risen at an **unprecedented rate** over the last century. Most of this change is our fault.

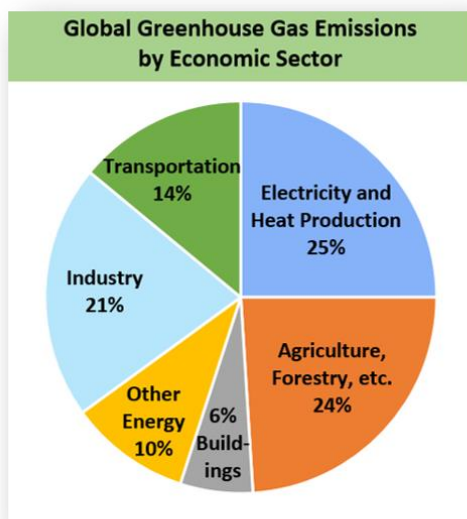
How are humans causing climate change?

Our increased use of fossil fuels such as coal and gas has created a "greenhouse effect." Carbon dioxide, methane, nitrous oxide, and water vapor block the sun's heat from being released back into the air. Instead, the heat is trapped in our atmosphere, just like in a greenhouse.

Fossil fuels currently provide most of the energy we use for transportation, electricity production, heating and cooling, and industrial activity. The graph on the right shows how carbon dioxide levels have changed throughout history.



Deforestation is another way we cause climate change. Trees absorb CO₂ from the atmosphere. That benefit is lost when they're cut down, and all the stored carbon is released into the atmosphere. **Over 30 million acres of forests and woodlands are cut down every year.** The biggest reason for deforestation is to clear land for crops and livestock.



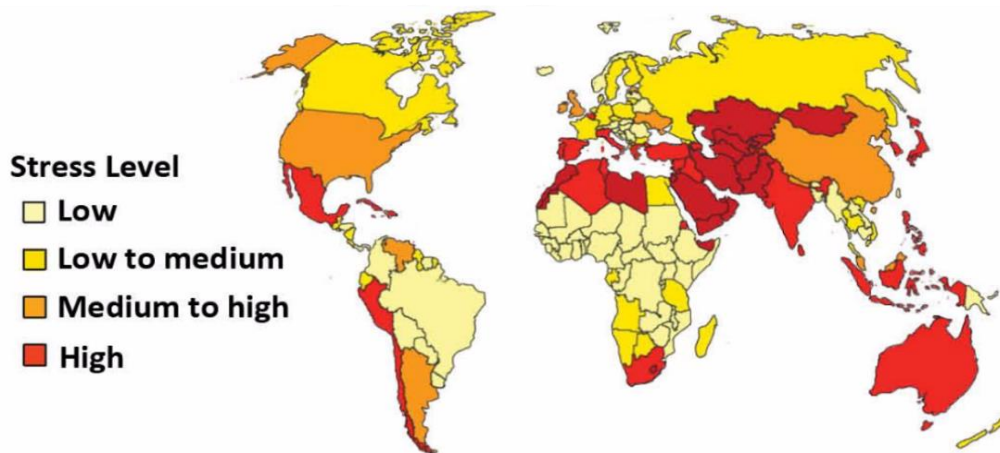
Livestock farming also contributes to climate change. **Nearly 10 billion land animals are raised each year in the US** for meat, eggs, and milk. Cows and sheep produce large amounts of methane when they digest their food. Feeding, processing, and packaging animals releases hundreds of millions of tons of CO₂ into the air each year. The graph on the left shows greenhouse gas emissions by economic sector.

What are the effects of climate change?

Climate change has already caused damage to the environment. Glaciers have shrunk and sea ice has melted; plant and animal ranges have shifted; sea levels have risen; longer, more intense heat waves have caused extreme droughts; and increased precipitation has created extreme flooding. Climate change has produced stronger, more

intense natural disasters that force **26 million people** into poverty each year. Climate change is also linked to conflict. The countries with the least water are the countries most affected by conflict. The map below shows water stress by country.

Water Stress by Country



What will happen if climate change continues?

By 2030

- Up to **325 million people** will be living in countries exposed to unprecedented droughts, flooding, and natural disasters.
- The number of people exposed to flooding each year is at risk of **tripling** from 21 million to 54 million people.
- An additional **100 million people will be pushed into poverty.**

Beyond 2030

Rising sea levels constitute one of the greatest dangers of climate change. 75% of major cities are located by oceans. If climate change continues, researchers estimate that land occupied by **280 million people** today could be completely submerged in a few hundred years.

In less than 25 years, much of the world is expected to suffer from high levels of water supply withdrawals, including the United States. This will lead to increased food insecurity, poverty, and conflict.