

# Our World and Its Climate: How Humans Are Changing Them



## Mission: Planet Earth: Our World and Its Climate--and How Humans Are Changing Them by Sally Ride

★★★★★ 5 out of 5

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Screen Reader : Supported  
Enhanced typesetting : Enabled  
Word Wise : Enabled  
Print length : 81 pages



## The Earth's Climate

The Earth's climate is a complex system that has been evolving over billions of years. It is influenced by a variety of factors, including the sun, the oceans, the atmosphere, and the land surface.

The sun is the primary source of energy for the Earth's climate. The sun's energy reaches the Earth's atmosphere in the form of shortwave radiation. Some of this radiation is reflected back into space by clouds and other particles in the atmosphere. The rest of the radiation is absorbed by the Earth's surface and warms it.

The Earth's oceans play a major role in regulating the climate. The oceans absorb heat from the sun and then release it slowly over time. This helps to keep the Earth's temperature relatively stable.

The atmosphere is a layer of gases that surrounds the Earth. The atmosphere helps to trap heat from the sun and keep the Earth warm. The atmosphere also contains water vapor, which can form clouds and precipitation.

The land surface also plays a role in the climate. The land surface can absorb heat from the sun and release it slowly over time. The land surface can also reflect heat back into space.

The Earth's climate is a complex system that is constantly changing. However, human activities are now having a significant impact on the climate.

## **Human Impacts on the Climate**

Humans are having a significant impact on the climate, primarily through the release of greenhouse gases. Greenhouse gases are gases that trap heat in the atmosphere. The main greenhouse gases emitted by humans are carbon dioxide, methane, and nitrous oxide.

Carbon dioxide is released into the atmosphere when fossil fuels are burned. Fossil fuels are used to generate electricity, power cars, and heat homes and businesses. Methane is released into the atmosphere from landfills, agriculture, and the production of natural gas. Nitrous oxide is released into the atmosphere from fertilizers and industrial processes.

The release of greenhouse gases into the atmosphere is leading to global warming. Global warming is the long-term increase in the Earth's average temperature. Global warming is causing a variety of changes to the climate, including:

\* Rising sea levels \* More extreme weather events \* Changes in plant and animal life

## **The Effects of Climate Change**

The effects of climate change are already being felt around the world. Rising sea levels are threatening coastal communities and infrastructure. More extreme weather events are causing widespread damage and loss of life. Changes in plant and animal life are disrupting ecosystems and affecting food security.

Climate change is a major threat to human health. The World Health Organization estimates that climate change will cause 250,000 additional deaths per year by 2030. Climate change will also increase the risk of heat-related illnesses, respiratory problems, and waterborne diseases.

## **What Can We Do?**

There are a number of things that we can do to reduce our impact on the climate and mitigate the effects of climate change. These include:

\* Reducing our emissions of greenhouse gases \* Investing in renewable energy sources \* Improving energy efficiency \* Promoting sustainable agriculture practices \* Protecting forests \* Adapting to the effects of climate change

Climate change is a serious threat to our planet and our way of life. However, it is not too late to take action. By working together, we can reduce our impact on the climate and create a more sustainable future for all.

## Additional Resources

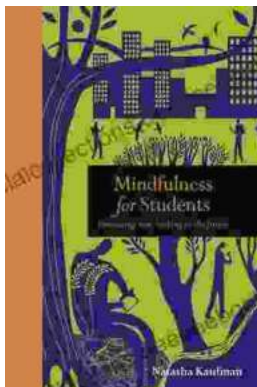
\* [NASA Climate Change](https://climate.nasa.gov/) \* [National Oceanic and Atmospheric Administration](https://www.noaa.gov/climate) \* [Intergovernmental Panel on Climate Change](https://www.ipcc.ch/) \* [United Nations Environment Programme](https://www.unep.org/climate-change) \* [World Health Organization](https://www.who.int/health-topics/climate-change)



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