



How is Climate Change affecting the Oceans? – FACT SHEET

Introduction: Understanding how climate change affects the oceans is crucial for fostering environmental literacy and global awareness among students. The world's oceans play a vital role in regulating climate, supporting diverse ecosystems, and sustaining life on Earth. This fact sheet aims to provide educators with factual information on three key aspects of climate change's impact on the oceans—sea level rise, ocean acidification, and temperature increase.

1. Sea Level Rise:

- Global warming is causing polar ice caps and glaciers to melt, contributing to a rise in sea levels.
- Thermal expansion of seawater due to increased temperatures also plays a role in sea level elevation.

Impacts:

- Coastal regions and low-lying islands face increased risks of flooding and erosion.
- Intrusion of saltwater into freshwater sources affects coastal ecosystems and communities.

2. Ocean Acidification:

- Rising carbon dioxide (CO₂) emissions are being absorbed by the oceans, leading to ocean acidification.
- CO₂ reacts with seawater, forming carbonic acid and causing a decrease in ocean pH.

Impacts:

- Acidification negatively affects marine life with calcium carbonate shells or skeletons, including corals, mollusks, and some plankton.
- Disruption of marine food webs and ecosystems due to the vulnerability of different species.

3. Temperature Rise:

- Oceans absorb heat from the atmosphere, contributing to an increase in ocean temperatures.
- Warmer ocean temperatures result in changes to marine ecosystems and weather patterns.

Impacts:

- Coral bleaching occurs as corals expel symbiotic algae in response to high temperatures, leading to the loss of vibrant colors and potential coral death.
- Shifts in the distribution and behavior of marine species as they adapt to changing temperature conditions.



AU2.3 Teacher Fact Sheet