




Is there a long-term effect?

Carbon dioxide remains in the atmosphere for 50–200 years, so the impact of the CO₂ we emit now will be felt for generations to come.

Other greenhouse gases can remain in the atmosphere for thousands of years.




Isn't the greenhouse effect natural?


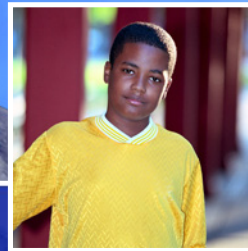


Yes, most greenhouse gases occur naturally and include water vapor, carbon dioxide, and methane.

The greenhouse effect has always existed. In fact, the planet would be 60° Fahrenheit colder than it is today without the natural greenhouse effect.




If the greenhouse effect is natural, *what's the big deal?*



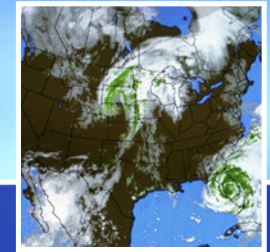
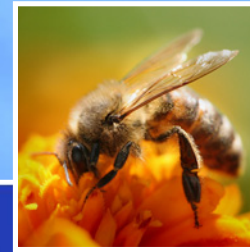
Greenhouse gases are building up in the atmosphere faster than they can be removed by natural “sinks” such as trees and the oceans. That’s causing the climate to change.




Scientists believe it will change even more in the years ahead.




How do we know the climate is changing?



Years of weather station data from all over the world show that the climate is changing.



Scientists also use indirect measures of temperature and precipitation (such as tree rings and pollen samples) to reveal changes in climate that occurred before people started keeping records.



How do we know that greenhouse gases are increasing?



Collected air samples show that greenhouse gas concentrations are increasing in the atmosphere.



Ancient air bubbles trapped in glacial ice show that CO₂ concentrations are higher now than at any time in the last 650,000 years.

More evidence of climate change:



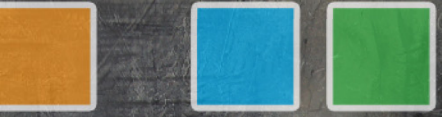
Glaciers in many parts of the world are melting. The melting ice contributes to higher sea levels.



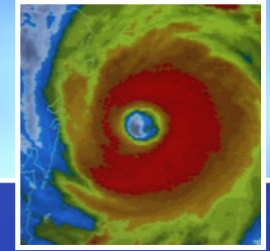
What will happen in the future?

 Nobody can predict the future with certainty. But most scientists agree that the climate will keep changing.

 During this century, the Earth is expected to warm by another 3 to 7 degrees Fahrenheit.



Why should we care if the climate changes?







Changes in temperature, precipitation, sea level, and weather patterns could have important effects on plants, animals, and people.

Some of those effects could be welcome, such as longer growing seasons in the North, but others may be harmful, such as heat waves and poor air quality.



Some of the potential effects of climate change:




-  Warmer temperatures may cause some plant and animal species to shift their ranges northward.
-  Droughts and floods may become more frequent in some areas.
-  Higher sea levels may increase coastal flooding and erosion.
-  Agriculture may benefit in some areas but suffer in others.



A global problem with local effects



 Climate change is happening worldwide, but its effects are felt differently from place to place.

 In general, wet areas will become wetter and dry areas will become drier.