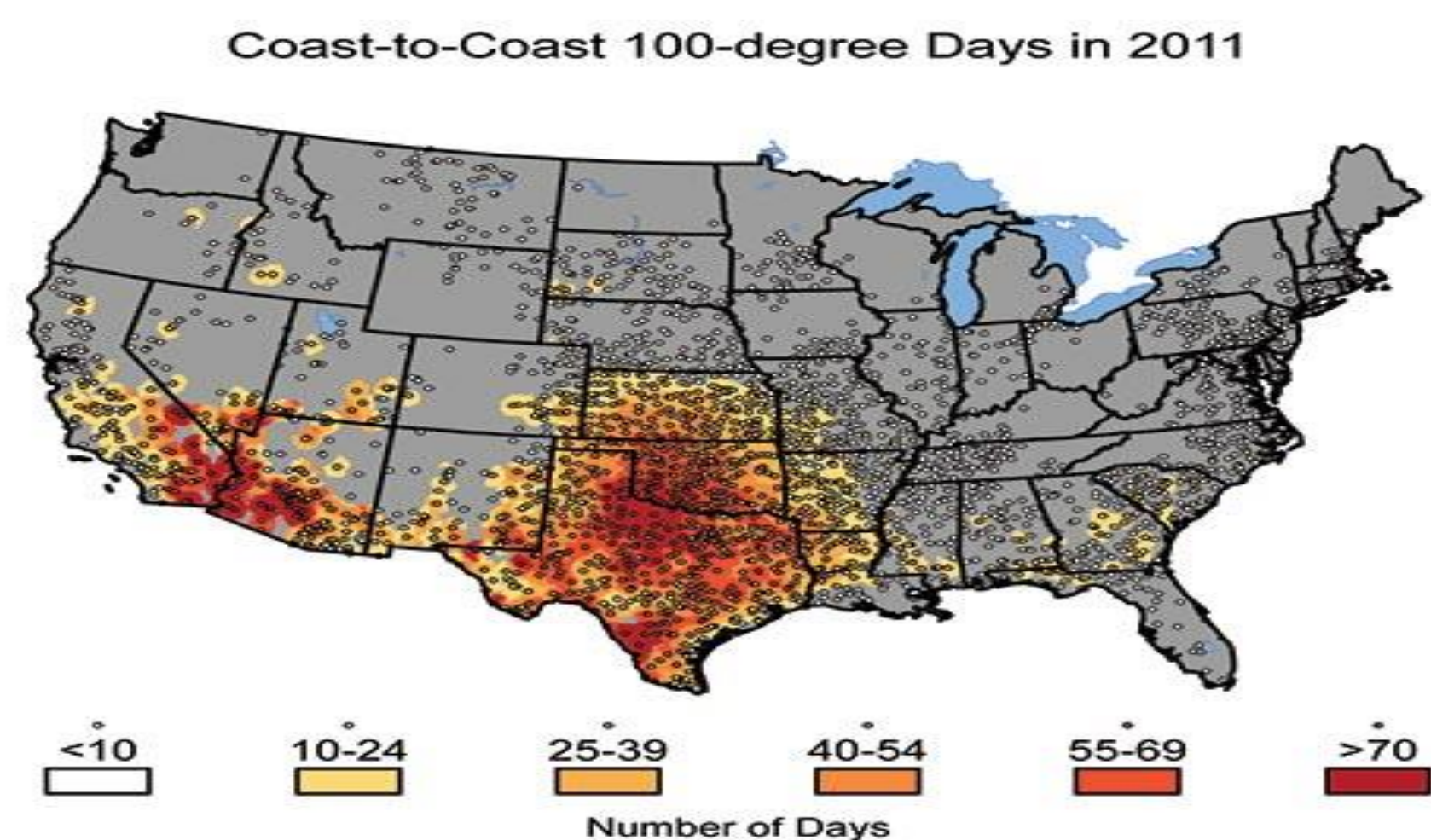


Choose Ohio First

What is Climate Change: Climate change refers to significant changes in global temperature, precipitation, wind patterns and other measures of climate that occur

The History of Climate change:

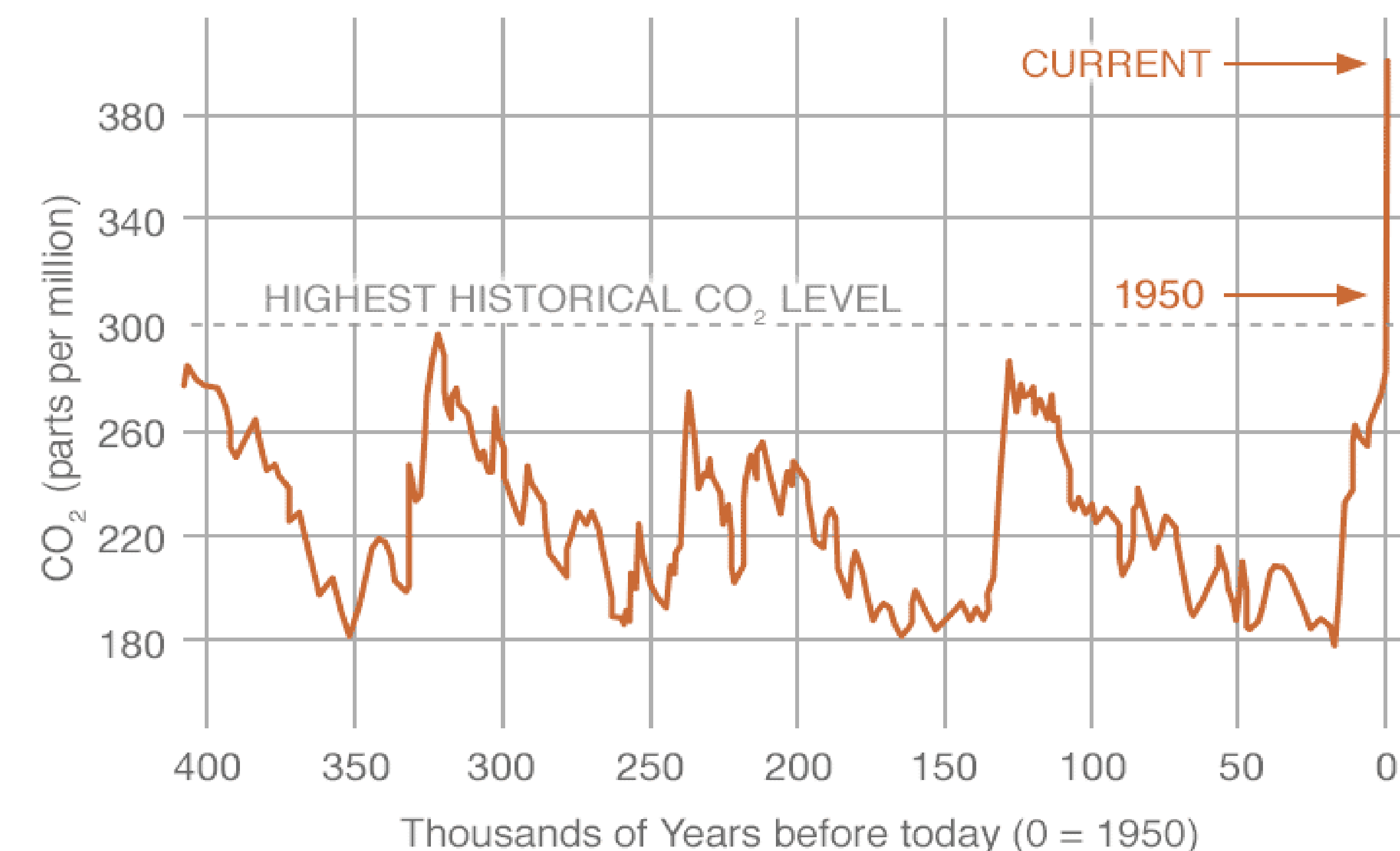
In the 1800s, there were experiments proposing that human activity could alter the climate of our planet. By the late 1950s, CO₂ readings would offer some of the first data to substantiate the global warning



Heat waves are periods of abnormally hot weather lasting days to weeks. The number of heat waves has been increasing in recent years. This trend has continued in 2011 and 2012, with the number of intense heat waves being almost triple the long-term average



The potential future effects of global climate change include more frequent wildfires, longer periods of drought in some regions and an increase in the number, duration and intensity of tropical storms

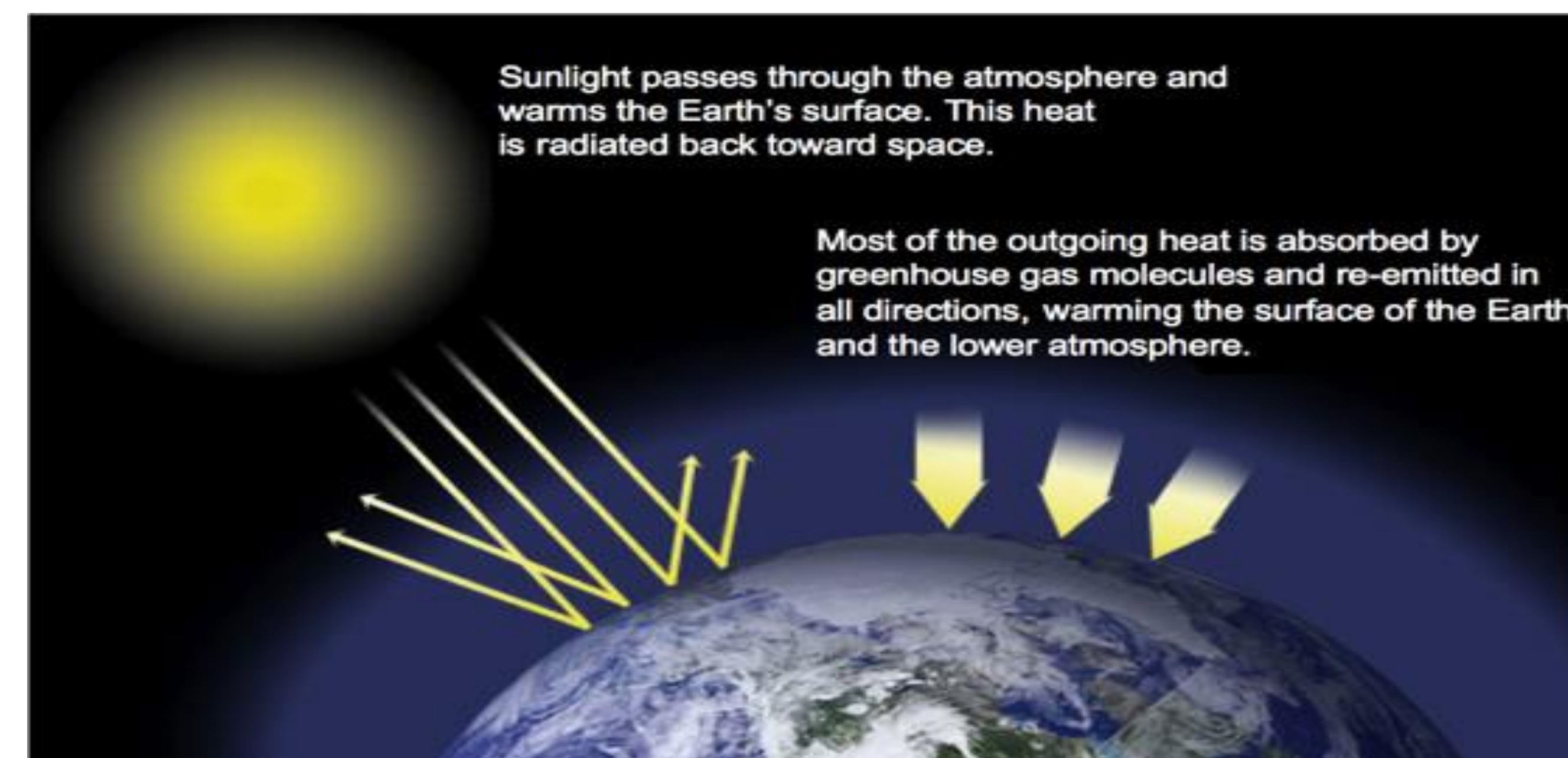


Carbon dioxide (CO₂) is an important heat-trapping (greenhouse) gas, which is released through human activities such as deforestation and burning fossil fuels, as well as natural processes such as respiration and volcanic eruptions.

Environmental Feasibility
Student Researcher: Steven Fairley
Advisor: Dr. Margolius
Cleveland State University

Abstract

The three most important global resources are water, food, and energy. I am researching climate change: the definition of climate change, the evidence of climate change, the causes of climate change, the scientific census about climate change. I am also researching the eXtreme Green solution and how it can possibly be applied to climate change. The eXtreme Green is a concept originally developed at NASA's GreenLab Research Facility where renewable, alternative, and sustainable techniques were researched and implemented. *Green* means the product is created through environmentally and social conscious means. *Renewable* means does it come from the Earth's natural replenishing resources, such as the Sun, wind, water and land. *Alternative* means is it different then what's being used today, or has a lower carbon footprint than conventional tools. *Sustainable* means are you preserving what you are doing for future use and future generations



A layer of greenhouse gases – primarily water vapor, and including much smaller amounts of carbon dioxide, methane and nitrous oxide – acts as a thermal blanket for the Earth, absorbing heat and warming the surface to a life-supporting average of 59 degrees Fahrenheit (15 degrees Celsius).

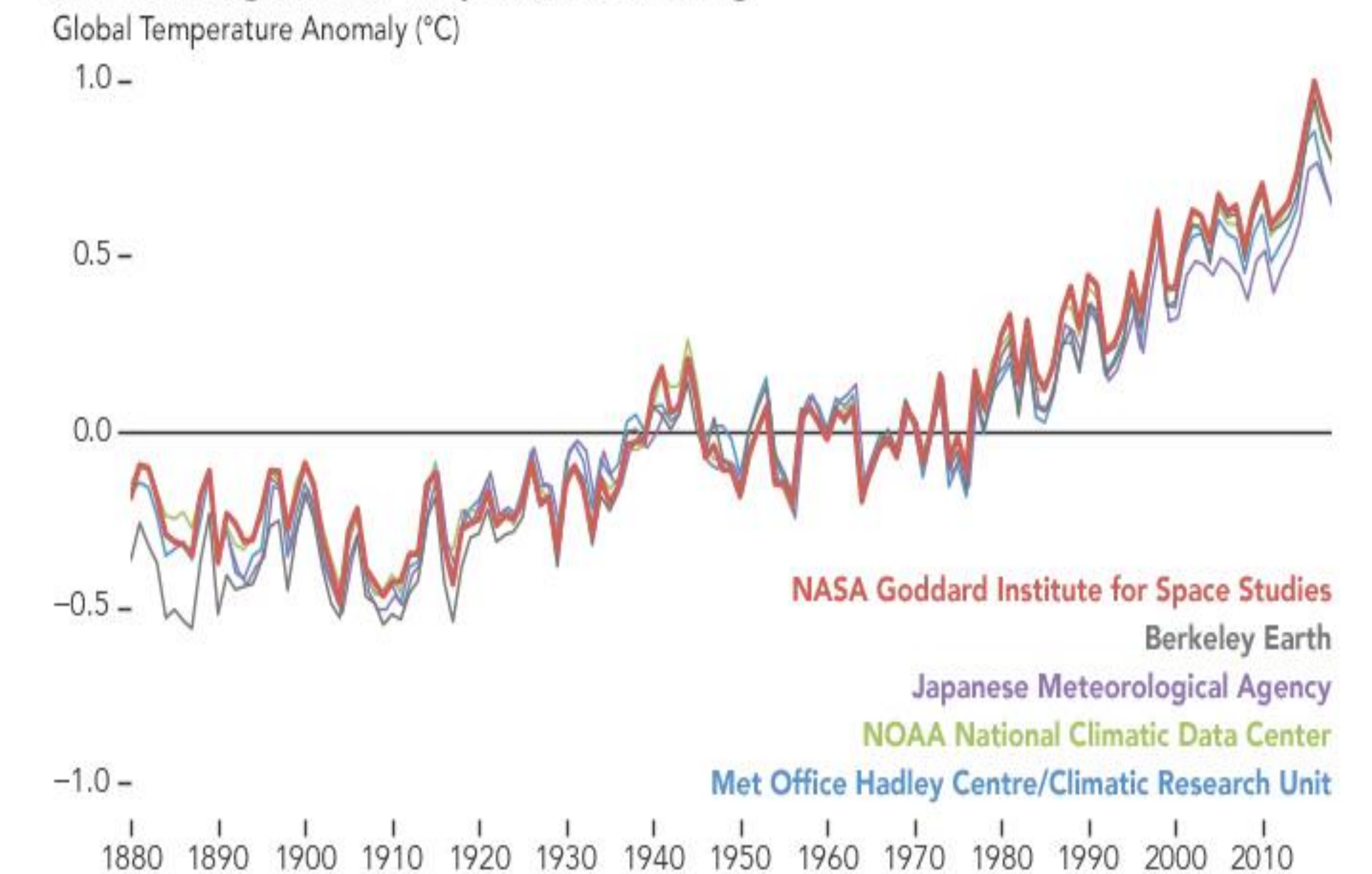
Warming oceans



The oceans have absorbed much of this increased heat, with the top 700 meters (about 2,300 feet) of ocean showing warming of more than 0.4 degrees Fahrenheit since 1969

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Kara D'Angelos, Coordinator Choose Ohio First Program

A World of Agreement: Temperatures are Rising



Temperature data showing rapid warming in the past few decades, the latest data going up to 2018. According to NASA data, 2016 was the warmest year since 1880, continuing a long-term trend of rising global temperatures. The 10 warmest years in the 139-year record all have occurred since 2005, with the five warmest years being the five most recent years



NASA partners with community to demonstrate hydrogen bus



Electricity in the air
Engineers at NASA's Langley Research Center are helping to develop a novel approach to generating energy with wind turbines

REFERENCES: Talks, TEDx. "Cutting Edge Biofuels |Dr. Bilal Bomani | TEDxNASA@SiliconValley." *You Tube*, YouTube, 2 Sept. 2011, www.youtube.com/watch?v=GCoc31fQi7A. "Climate Change Evidence: How Do We Know?" NASA, NASA, 26 Mar. 2019, climate.nasa.gov/evidence/.