

# The Climate Change Landscape and What You Can Do

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# Today's Presentation

- Climate Change: The Big Picture
- Climate Science and Impacts
- Working Toward a Solution
  - What Your EPA is Doing about Climate Change
  - Spotlight on Aviation
  - What You Can Do



# Climate Change: The Big Picture

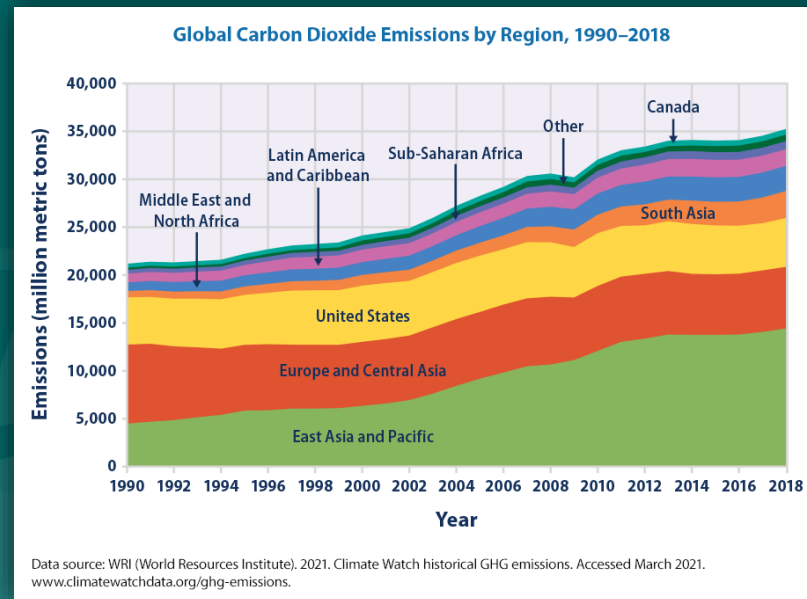
- Climate change is happening now.
- Evidence shows changes in weather, oceans, ecosystems, etc.
- Scientists overwhelmingly agree: Humans are the main cause of global warming.
- We can all take action to address climate change.





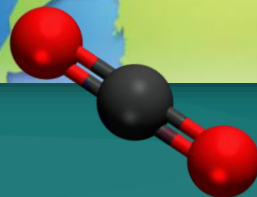
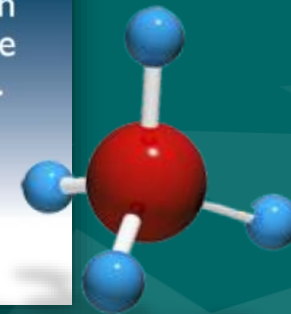
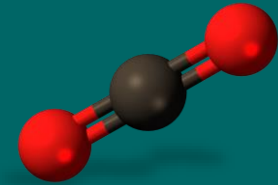
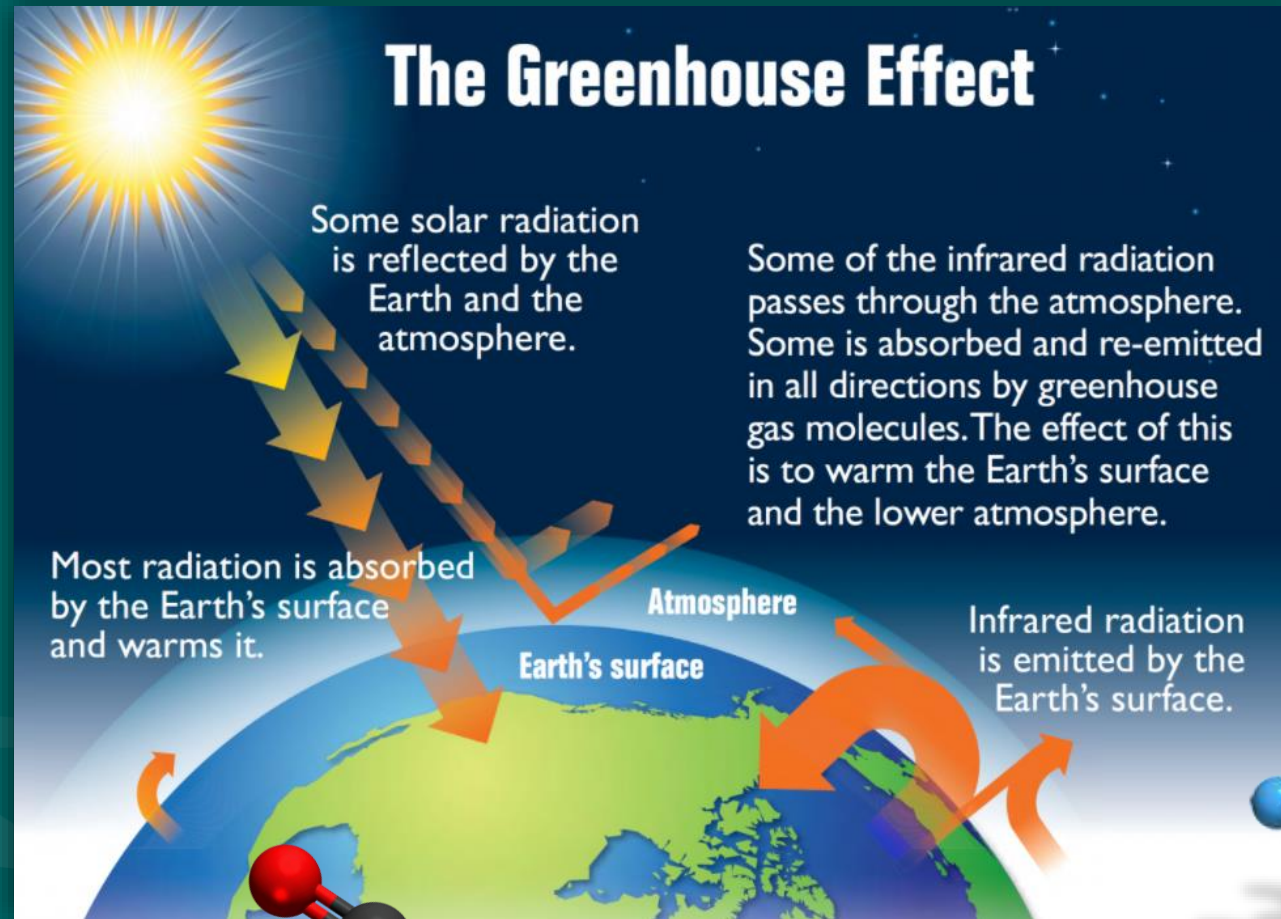
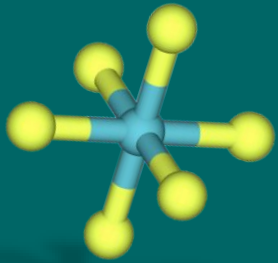
# The Problem

- Greenhouse gases (GHGs) come from human activities, including:
  - burning fossil fuels for heat, transportation, and energy;
  - clearing forests and fertilizing crops;
  - storing waste in landfills; and
  - raising livestock.
- Global emissions are climbing.



*It is unequivocal that human influence has warmed the atmosphere, ocean and land.*  
- Intergovernmental Panel on Climate Change, 2021

# Global Temperature In—and Out—of Balance



# Impacts

## Drivers

### U.S. Greenhouse Gas Emissions



### U.S. and Global Temperature



## Physical/ Ecological

### Drought



### Tropical Cyclone Activity



### Wildfires



### Coastal Flooding



## Health

### Heat-Related Deaths



### Ragweed Pollen Season





# What Your EPA is Doing About Climate Change

- *Mission:* Protect public health and the environment.
- *Objective:* Mitigate GHG emissions and climate risks.
- *Mode:* EPA uses a variety of approaches.
  - Regulations and policy;
  - Domestic and international partnerships;
  - Technical expertise and tools;
  - Environmental and health research;
  - Economic and risk analysis;
  - Promotion of adaptation.



*Science • Mitigation • Adaptation*

# Partnership Programs

ENERGY STAR®

SmartWay Transport Partnership

State and Local Climate and Energy Program

Center for Corporate Leadership

Methane Emission Reduction Partnership Programs

Green Power Partnership

Combined Heat and Power Partnership

Ports Initiative

EPA works with businesses, universities, governments, and others to:

- promote the use of new technologies;
- identify new markets and customers;
- realize efficiencies and promote sustainability;
- share expertise and tools; and
- reduce GHG emissions.





# International Activities

## Treaties

- United Nations Framework Convention on Climate Change
- Paris Climate Agreement
- Montreal Protocol on Substances that Deplete the Ozone Layer

## Partnerships

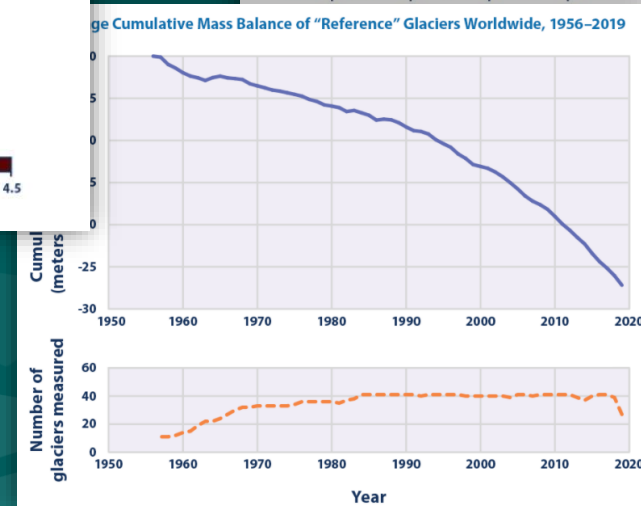
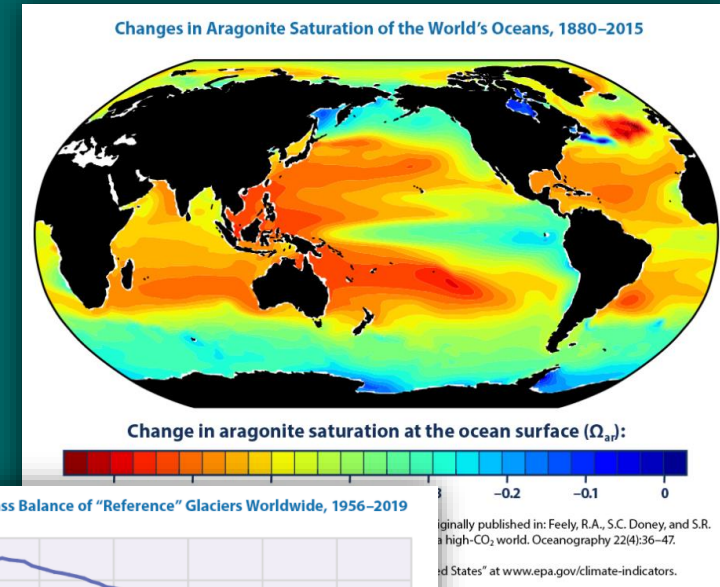
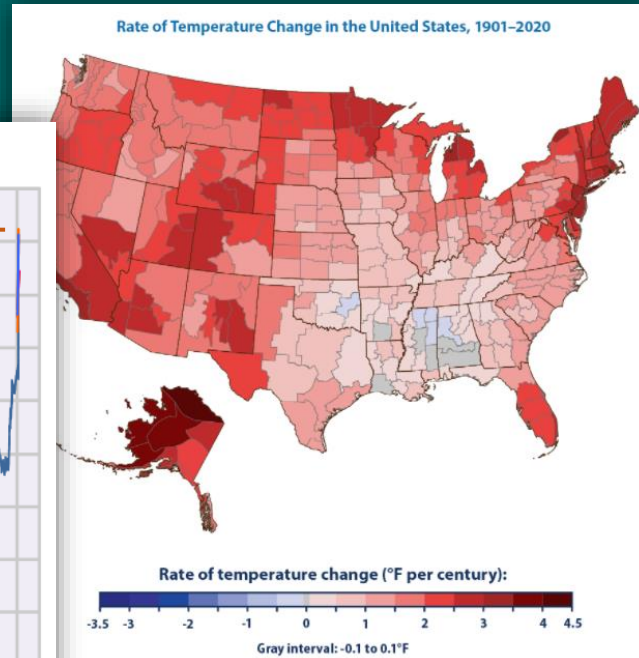
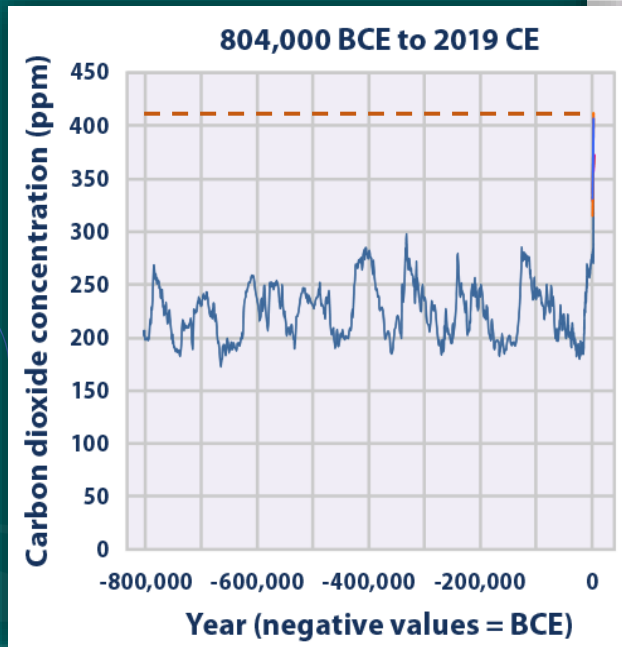
- International Civil Aviation Organization (ICAO)
- Capacity Building for National Greenhouse Gas Inventories
- Arctic Council

## Science

- Intergovernmental Panel on Climate Change

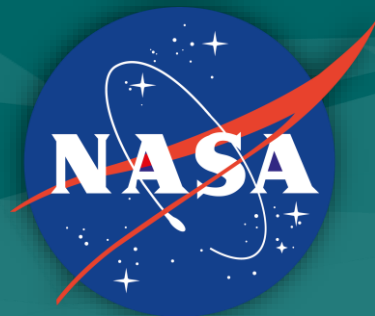


# EPA's Climate Change Indicators



Source: U.S. EPA *Climate Change Indicators in the United States*

# U.S. Global Change Research Program



Smithsonian





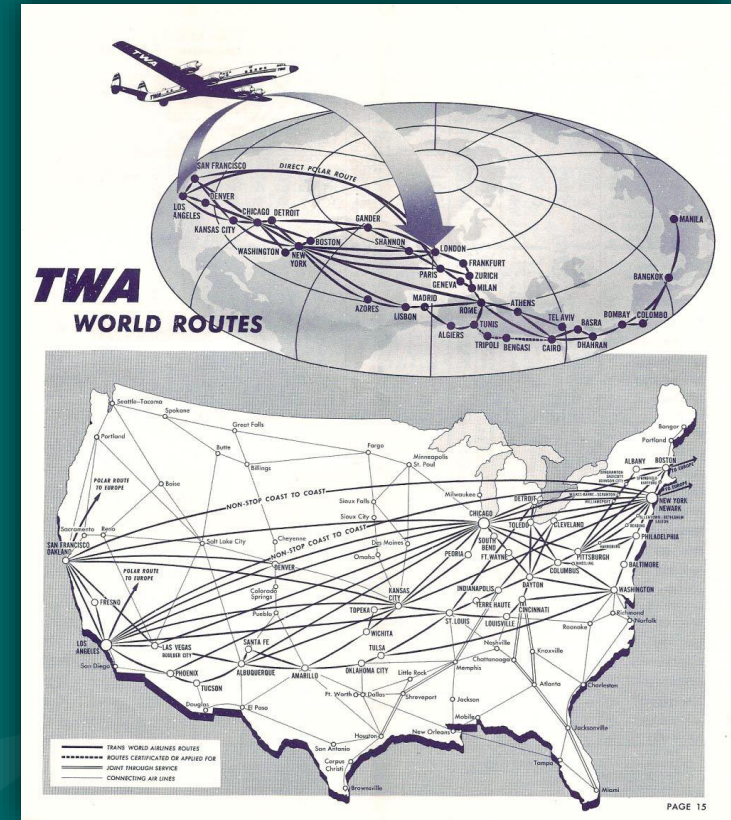
# Making a Difference

- Everyone plays a role in protecting the environment.
  - Your government (e.g., federal agencies, state, local, tribal)
  - Your university, campus, and class
  - Your industry
  - Your employer
  - Your community
  - Your friends and family
  - You



# Spotlight on Aviation

- Aircraft account for 3% of all U.S. GHG emissions.\*
- EPA regulates GHGs and conventional air pollutants.
  - We work with FAA on U.S. regulations and with ICAO on international standards.
- Advanced engineering, lighter materials, improved training and maintenance, etc. have transformed the industry's environmental and economic performance.
- *Bottom line: Sustainability matters and has multiple benefits.*



**The Golden Age of Air Travel?**



\* Source: Draft U.S. EPA *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2020*

# Opportunities at Every Step



## ***Components***

design  
engineering  
materials  
manufacturing

## ***Products***

airframes  
engines  
parts  
fuels

## ***Operations***

airlines  
airports  
training  
maintenance

## ***Results***

profitability  
continuous  
improvement  
environmental  
stewardship  
sustainability



***Externalities*** (e.g., climate change)

Source: Kevin Rosseel



# Building Sustainability

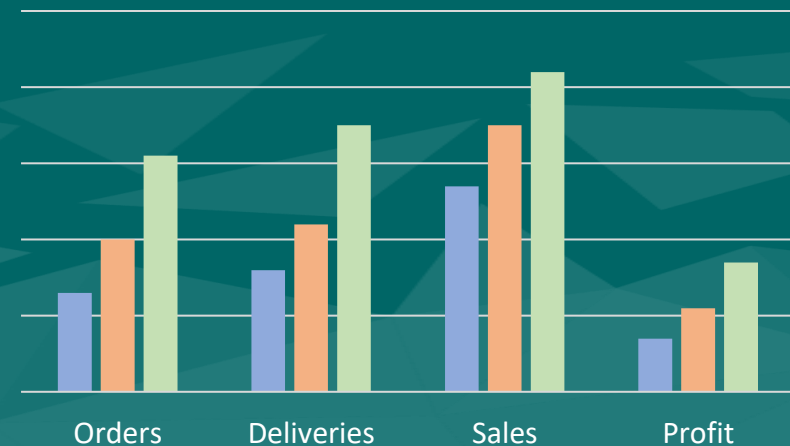


## Strategic investments

- Create a “climate-smart” workforce.
- Build environmental protection into jobs.
- Institute environmental policies and practices.
- Join an EPA climate partnership, then set and meet goals.
- Design and build products with the latest materials and technologies.
- Sponsor community/ academic partnerships to monitor, mitigate, and motivate.
- Assess climate impacts and then adapt.



Year-over-Year Performance



# What You Can Do

- Learn about climate change.
- Reduce GHG emissions:
  - Energy (e.g., use ENERGY STAR® products)
  - Waste (e.g., compost kitchen waste)
  - Transportation (e.g., use public transportation)
  - Water (e.g., replace leaky faucets)
  - Environmental Justice (e.g., get involved)
  - Do More! (e.g., calculate your carbon footprint)
- Improve the environment and your community.
- Save money.
- Visit [www.epa.gov/climate-change](http://www.epa.gov/climate-change)



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*Thank you,  
Embry-Riddle community!*





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