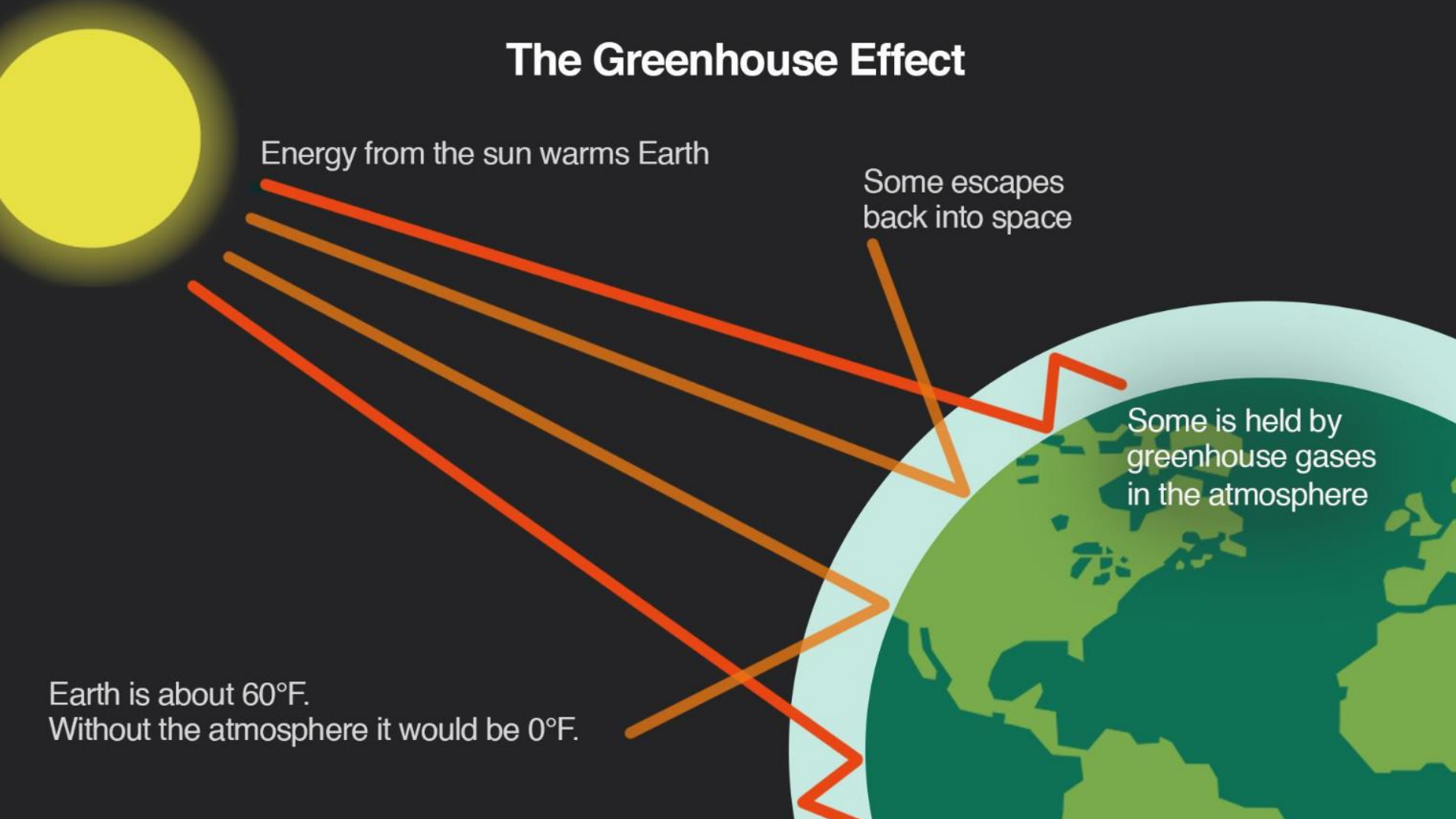


The Basics of Climate Change

...

The science, the consequences, and the myths

The Greenhouse Effect



Energy from the sun warms Earth

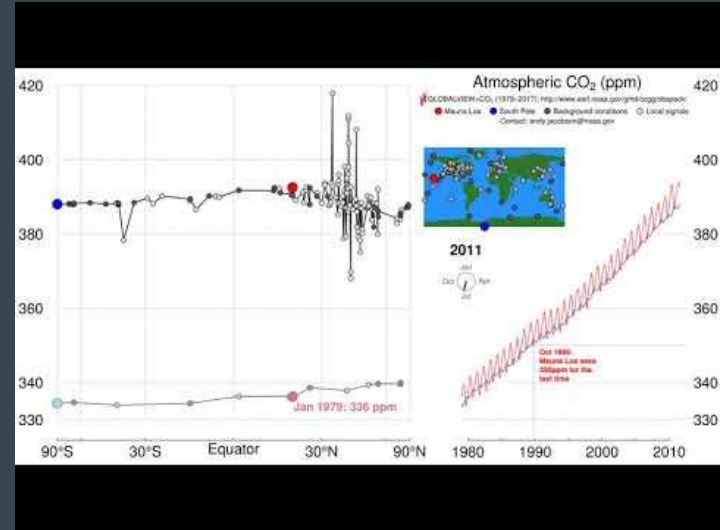
Some escapes
back into space

Some is held by
greenhouse gases
in the atmosphere

Earth is about 60°F.
Without the atmosphere it would be 0°F.

Carbon PPM timeline:

- Preindustrial: 280ppm, avg. over 10,000 years
- 1950s: ~320ppm (316 in 1958)
- 2015: annual average of 400ppm



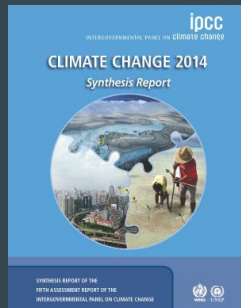
Global
baseline:
13.7°C (56.7°F)

Based on
NOAA data
from 1951-
1980*

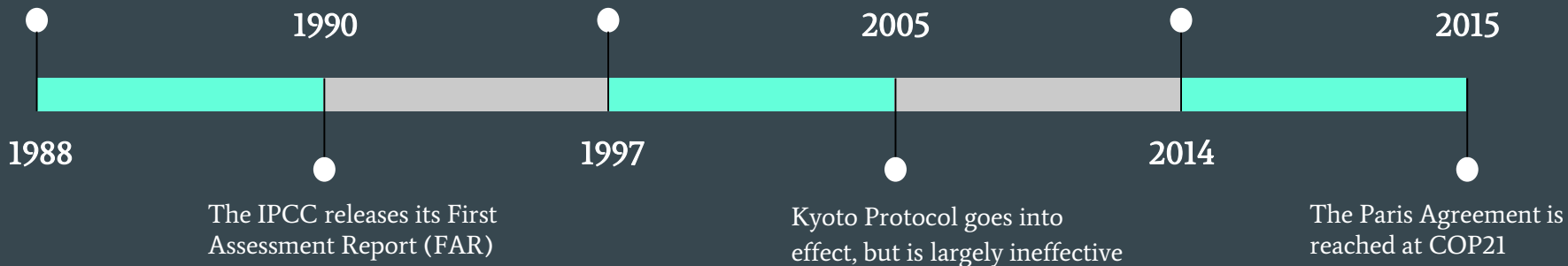
RANK 1 = WARMEST PERIOD OF RECORD: 1880–2017	YEAR	ANOMALY °C	ANOMALY °F
1	2016	0.94	1.69
2	2015	0.90	1.62
3	2017	0.84	1.51
4	2014	0.74	1.33
5	2010	0.70	1.26
6	2013	0.67	1.21
7	2005	0.66	1.19
8	2009	0.64	1.15
9	1998	0.63	1.13
10	2012	0.62	1.12



James Hansen testifies in front of the US Senate & formation of IPCC

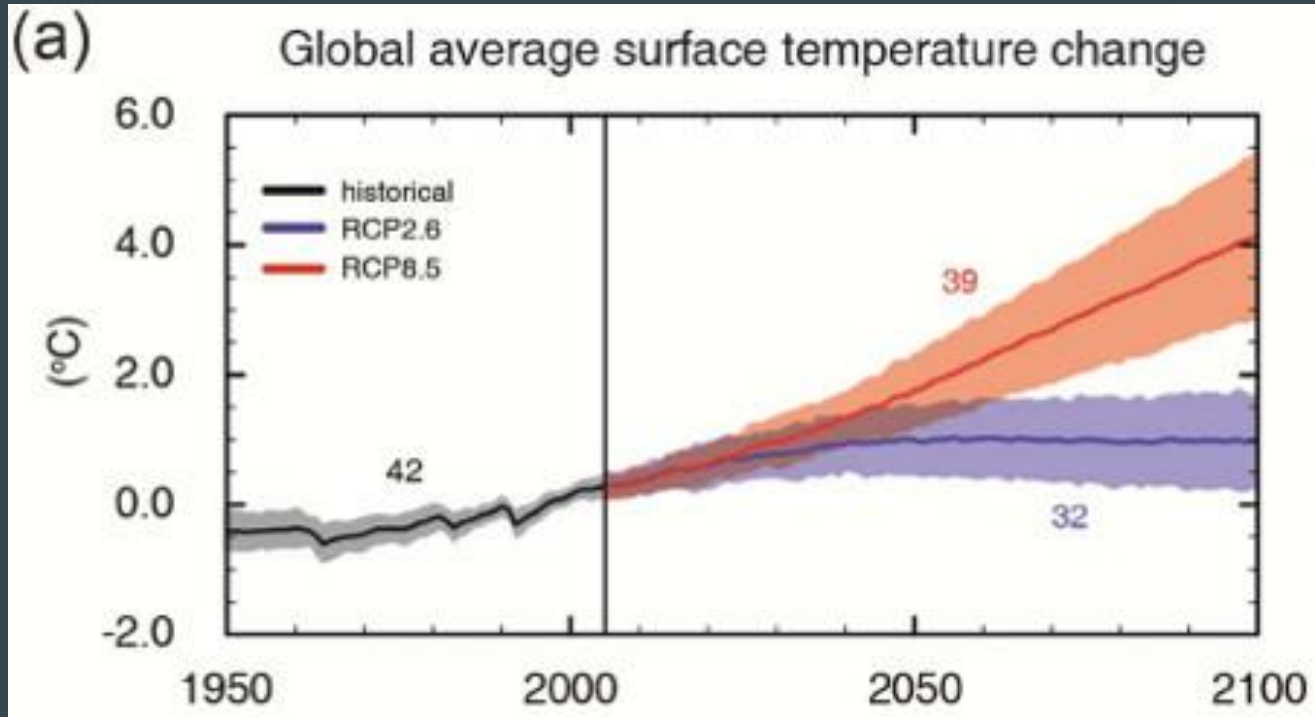


The IPCC releases its Fourth Assessment Report, predicting a 2°C rise by 2100



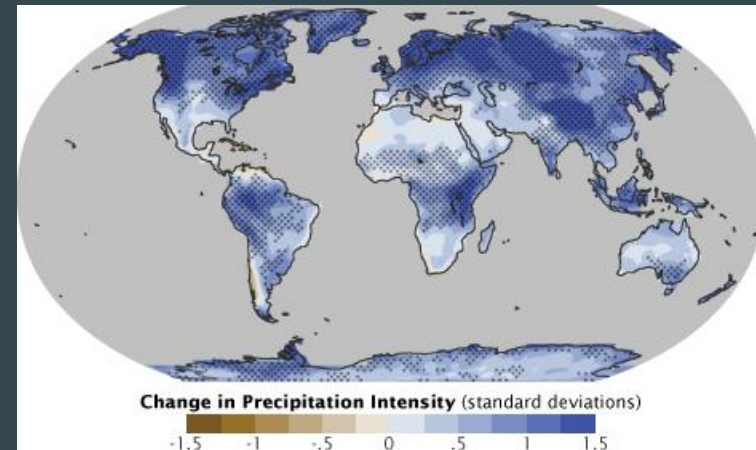
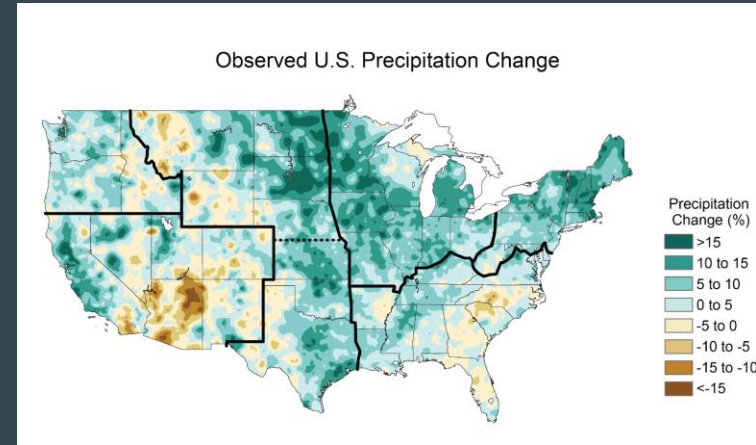
Impacts of Climate Change

Global Warming



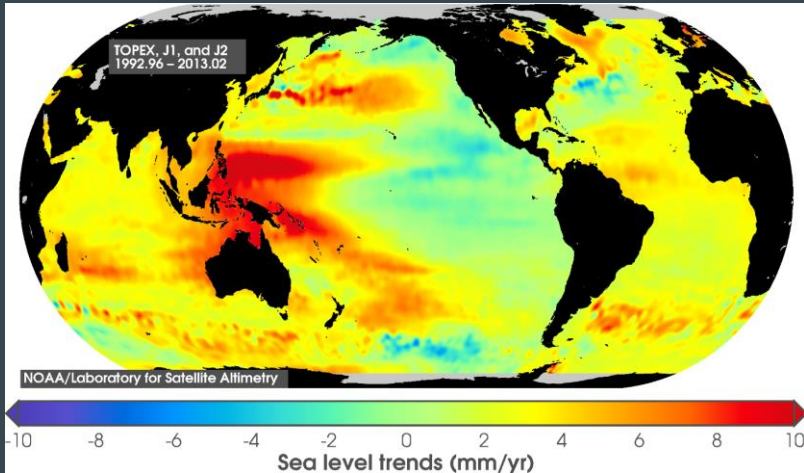
Changes in Precipitation & Storms

- Intensifies drought and storm effects
- Greater evaporation and surface drying
- Water holding capacity of air increases by 7% per 1C warming → increased water vapor in the atmosphere
- Overall, dry areas will be dryer and wet areas will be wetter

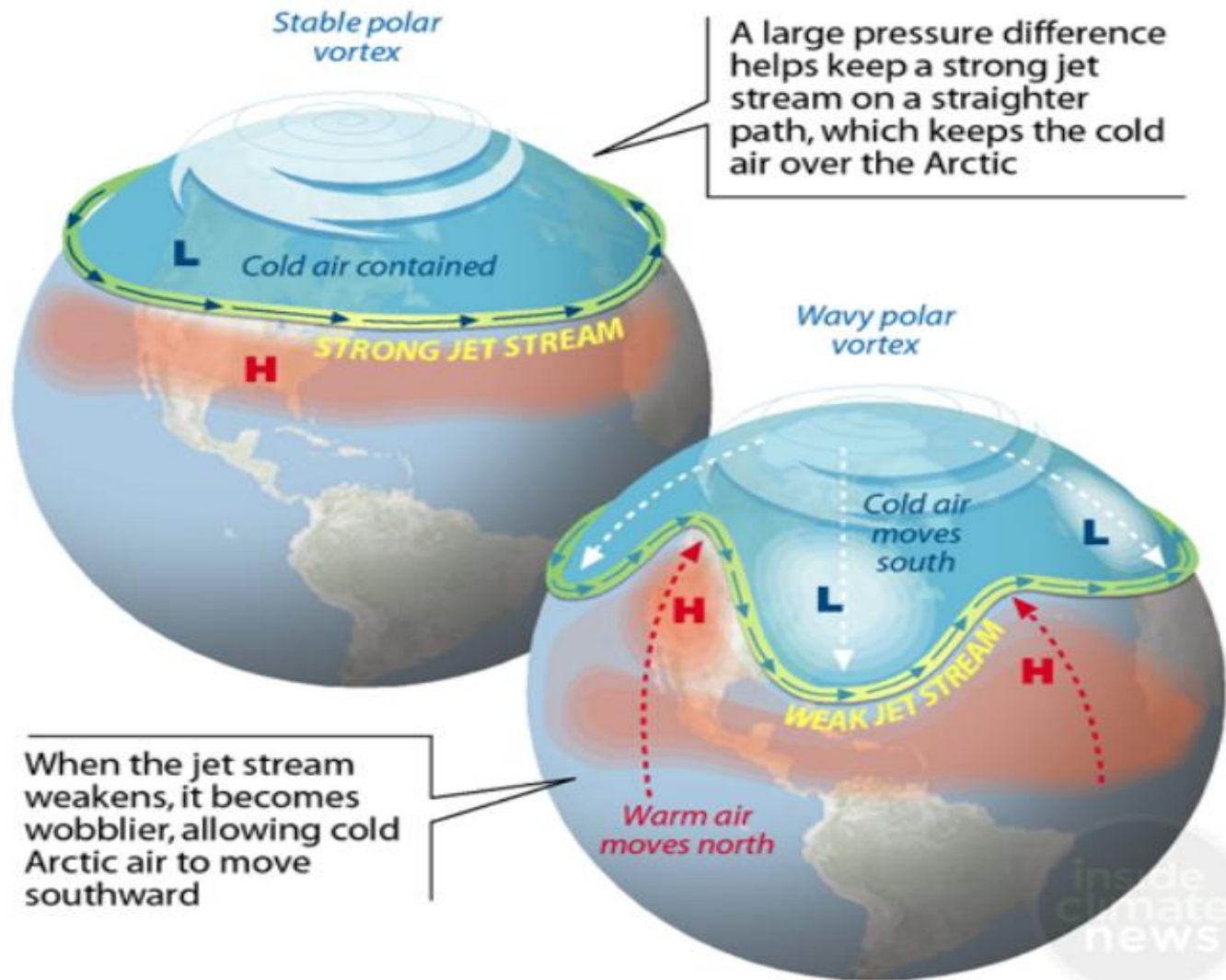


Impacts on the Ocean

- The ocean is absorbing heat and carbon dioxide, resulting in warming and acidification
- The marine environment = most vulnerable
- Higher sea levels erode coasts, forcing immigration



Polar Vortex



Health effects

- Extreme weather events and temperatures
- Disease spread
- Pollutants

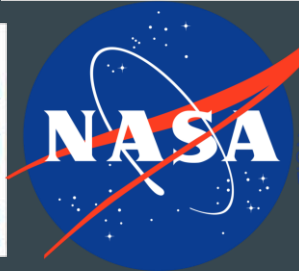
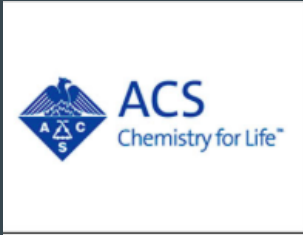
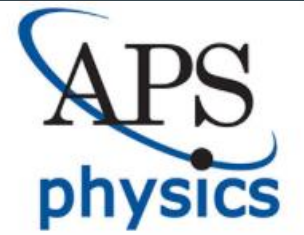


Debunking Myths and Misunderstandings

Climate change is nothing new; it's part of a natural cycle



Climate change is scientifically still up for debate

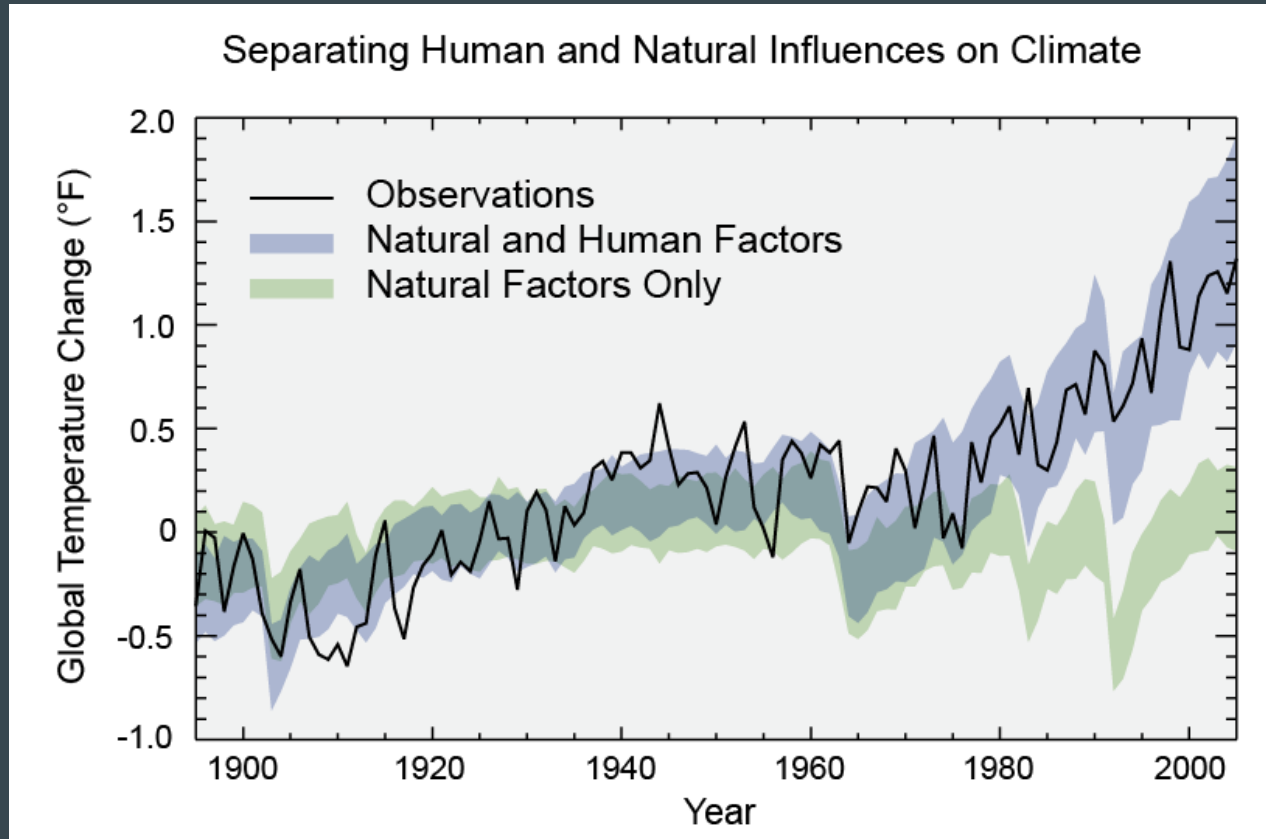


Cold weather streaks are proof that climate change can't be real

**If we're sinking why are we
hundreds of feet up in the air?**

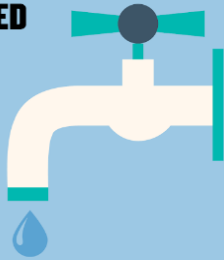


Climate change may be real, but there's no proof that it's caused by humans



Climate change doesn't affect me

REDUCED WATER and AIR quality.



DECREASED PRODUCTIVITY of corn and soybean crops.



LOSS OF SPECIES, such as the Karner Blue Butterfly.



INCREASED HEAVY RAINFALL, leading to more flooding.



DELAYED FALL FREEZE, extending the ragweed allergy season.



WHAT WILL CLIMATE CHANGE MEAN IN INDIANA?

Since the beginning of the 20th century in Indiana, temperatures have risen 1°F and total annual precipitation has increased nearly 5 inches. What does that mean for Hoosiers? Led by the Purdue Climate Change Research Center, scientists and decision makers from across the state are developing the Indiana Climate Change Impacts Assessment (IN CCIA) to assess effects of climate change for informed decision-making. Here are a few effects already documented or projected.



PURDUE UNIVERSITY
Discovery Park

SHORTER WINTERS, increasing exposure to ticks and Lyme Disease.



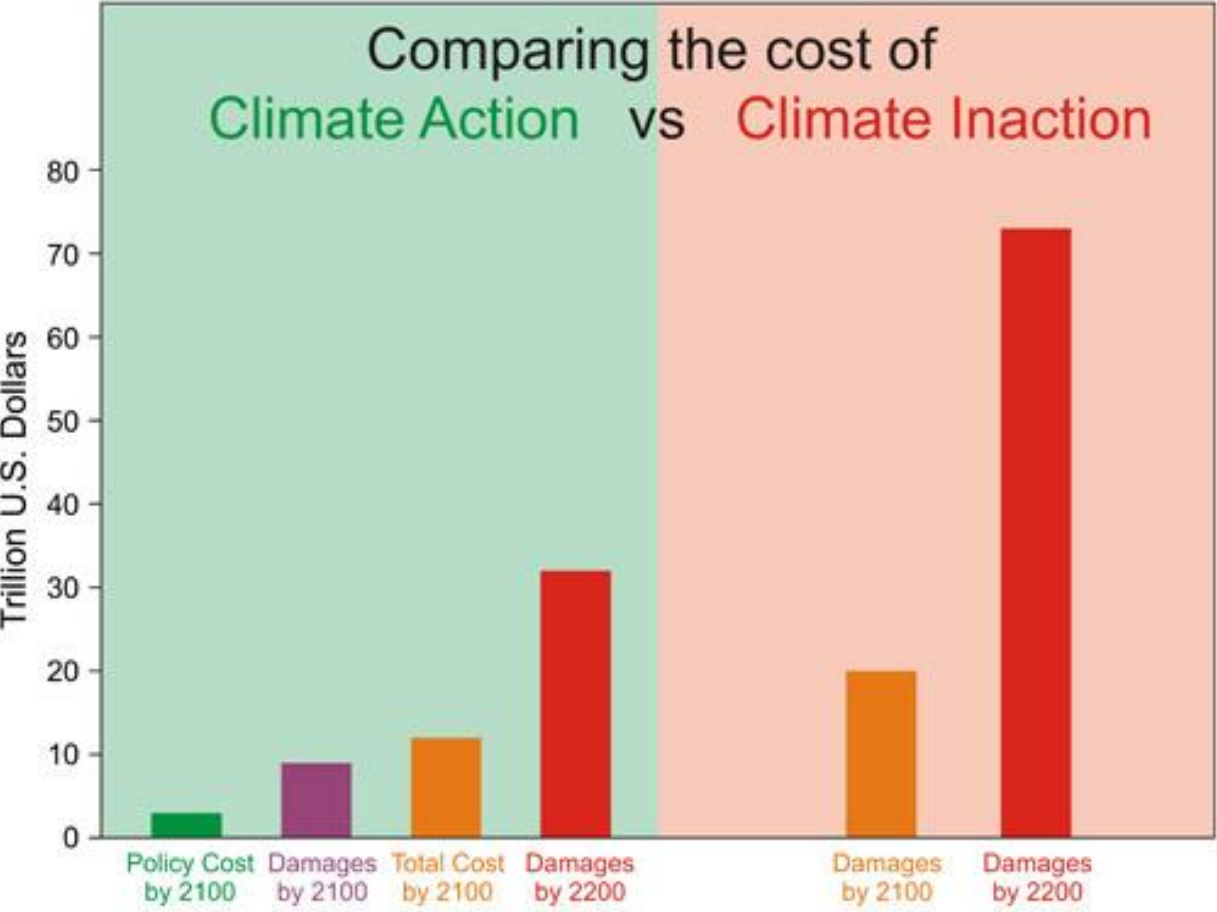
RECORD-BREAKING heat waves.



INCREASED DEMAND for cooling.



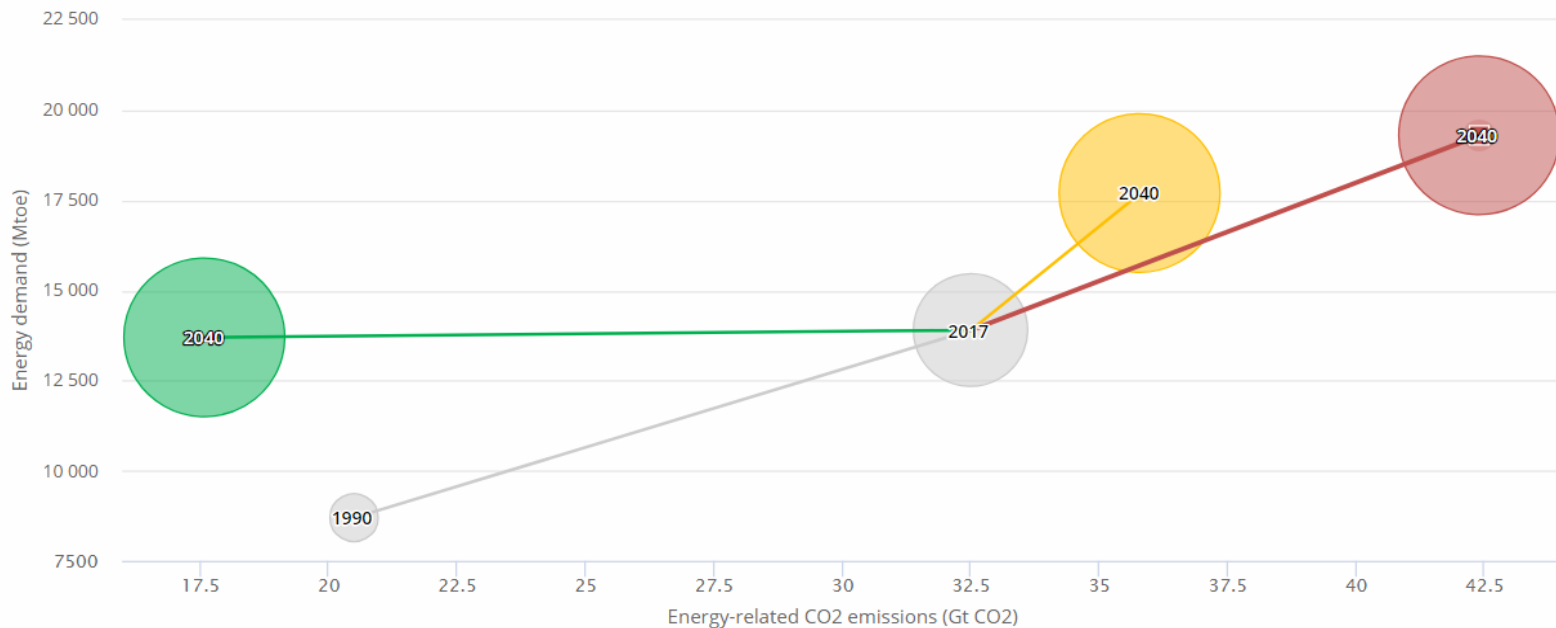
It's too expensive to fight climate change



It's too late to do anything about climate change

World primary energy demand and energy-related CO2 emissions by scenario

Bubble size represents size of global economy



● Sustainable Development ● New Policies ● Current Policies

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