

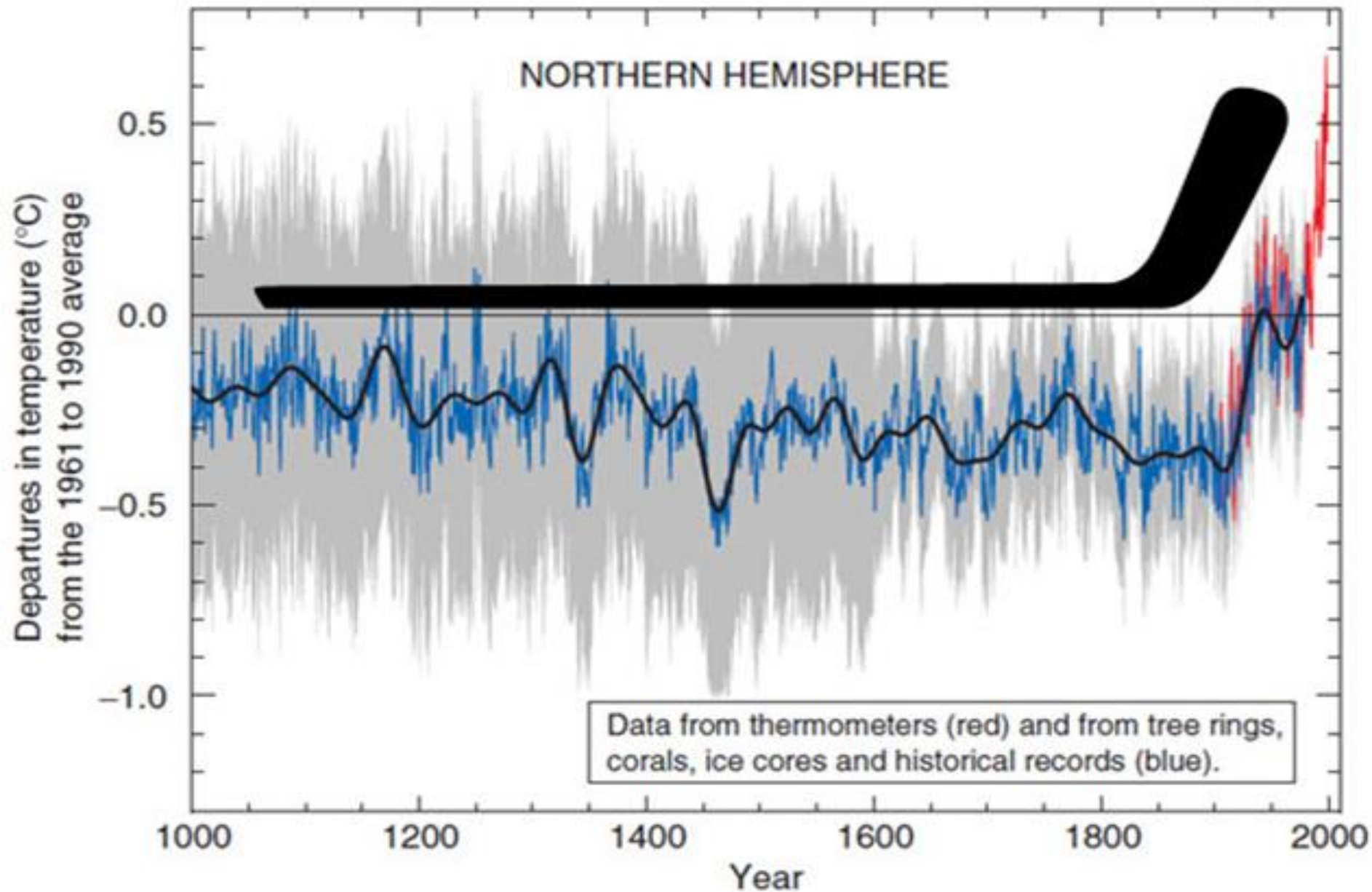
Water and Climate Change on Cape Cod  
What you should know  
June 14, 2024  
Orleans Snow Library

*Climate Change Overview*

Richard Delaney, Executive Director  
Center for Coastal Studies

A 3D topographic map of Earth showing elevation and bathymetry. The map uses a color scale where red and orange represent low elevations (sea level and below), yellow and green represent intermediate elevations, and blue and purple represent high elevations (mountain ranges and plateaus). The map is centered on the Atlantic Ocean, showing the Americas on the left and Europe and Africa on the right. The text "Climate Science is Settled!" is overlaid in white on the map.

**Climate Science is Settled!**

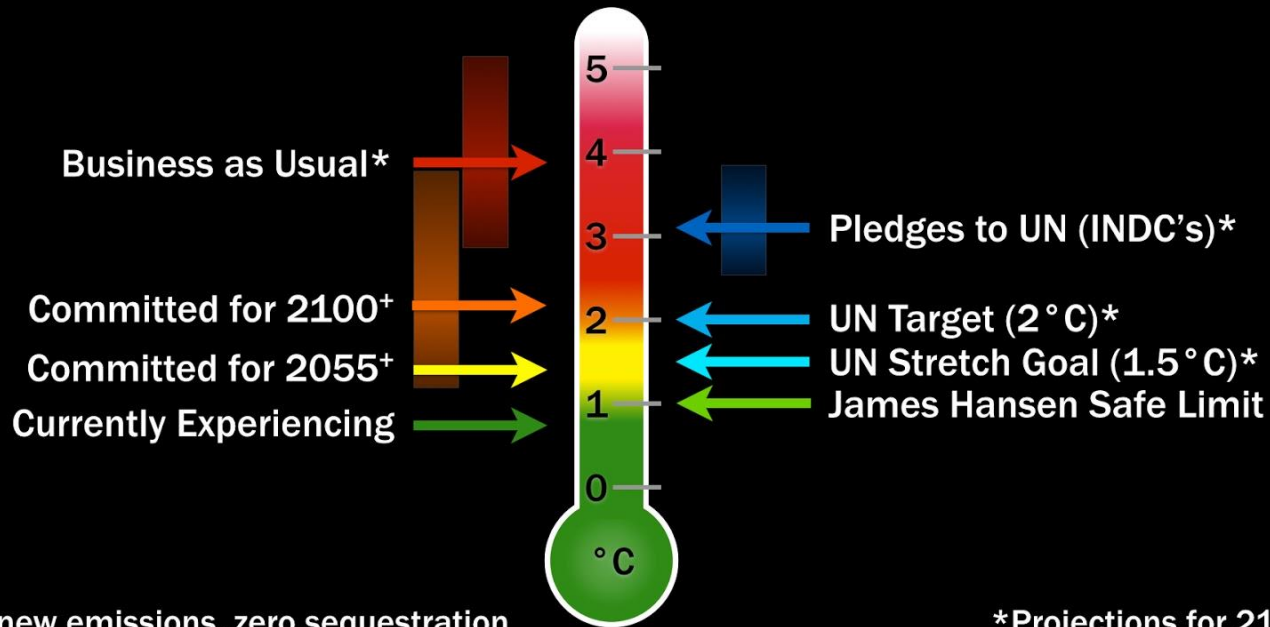


# Common Target for Temperature

To keep increase in global temperature “well below” 2 degrees C (3.6 F) and “endeavor to limit” them even more to 1.5 degrees C above pre-industrial times.

## CLIMATE CHANGE NUMBERS FOR COP21 IN PARIS

*Temperature Increases Above Pre-Industrial Levels*



+Zero new emissions, zero sequestration

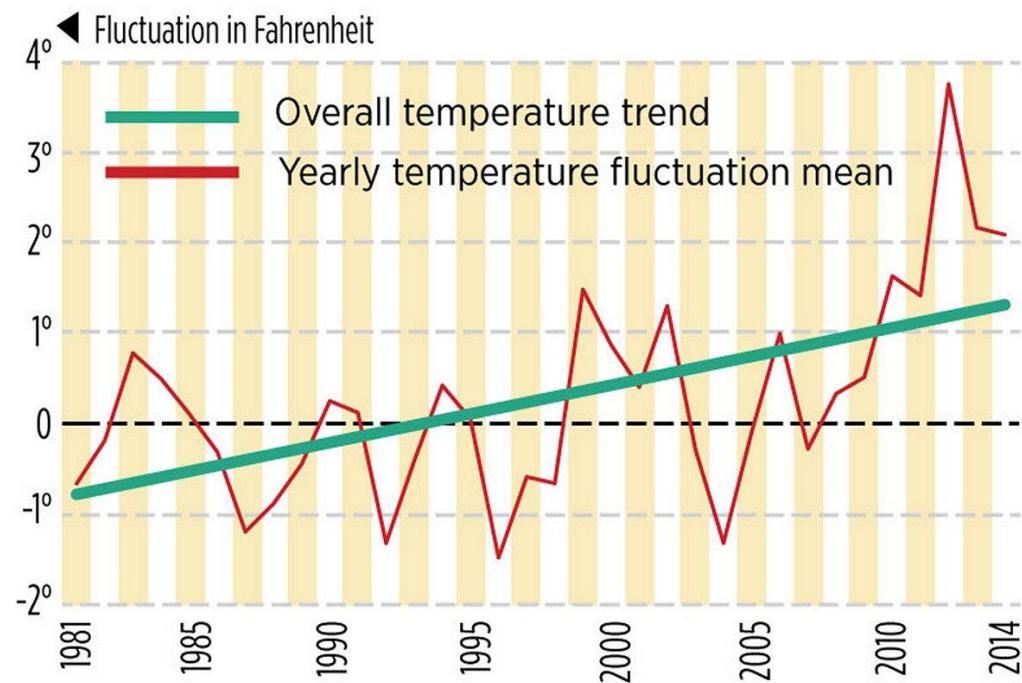
\*Projections for 2100

\*NOTE: Pledges, BAU Scenario, and temperature colors from ©Ecofys and Climate Analytics, <http://climateactiontracker.org/>, other credits at [markatcop21.wordpress.com](http://markatcop21.wordpress.com)

# Gulf of Maine – World's #1 Hotspot?

## Getting warmer

Sea surface temperatures in the Gulf of Maine have been rising over the past 35 years, and at nearly the fastest rate on the planet over the last 10. 2012 had the warmest readings in the 150 years humans have been collecting them.



SOURCE: Andrew J. Pershing/Gulf of Maine Research Institute

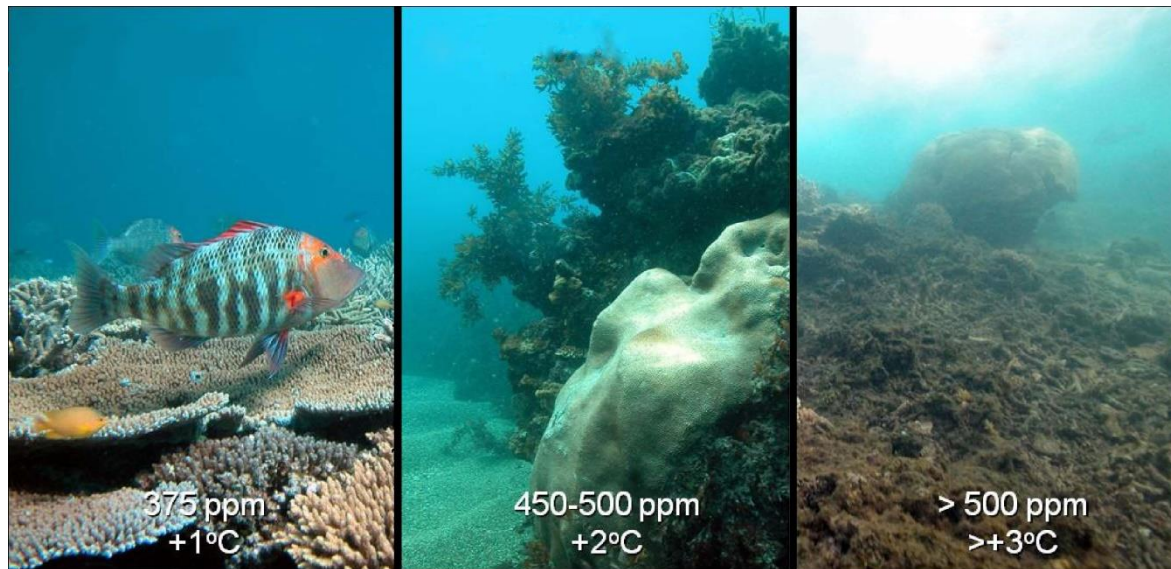
STAFF GRAPHIC | MICHAEL FISHER

# **Oceans and Climate and People are Inextricably Linked**

- **Generate 50% of oxygen we breathe**
- **Has sequestered 50% of CO<sub>2</sub> produced so far.**
  - **Drive our weather systems**
- **Provide major portions of world's protein**
- **Absorbed 90% of heat added to global system  
in last 200 years.**

# Climate Change Impacts on Cape Cod

- \*Average temperature has risen
- \*Acidity has increased
- \*Sea levels are rising / Increased erosion
- \* Salt water intrusion
- \*Habitats are shifting
- \*Ocean currents are changing
- \*Weather events are intensifying



# What Happened in Paris?



196 Presidents / Prime Ministers came together and signed an agreement to *slow* the rate of climate warming – a truly historic event by any measure!

# **Launched a Decentralized Campaign A “Global Earth / Ocean Day”**

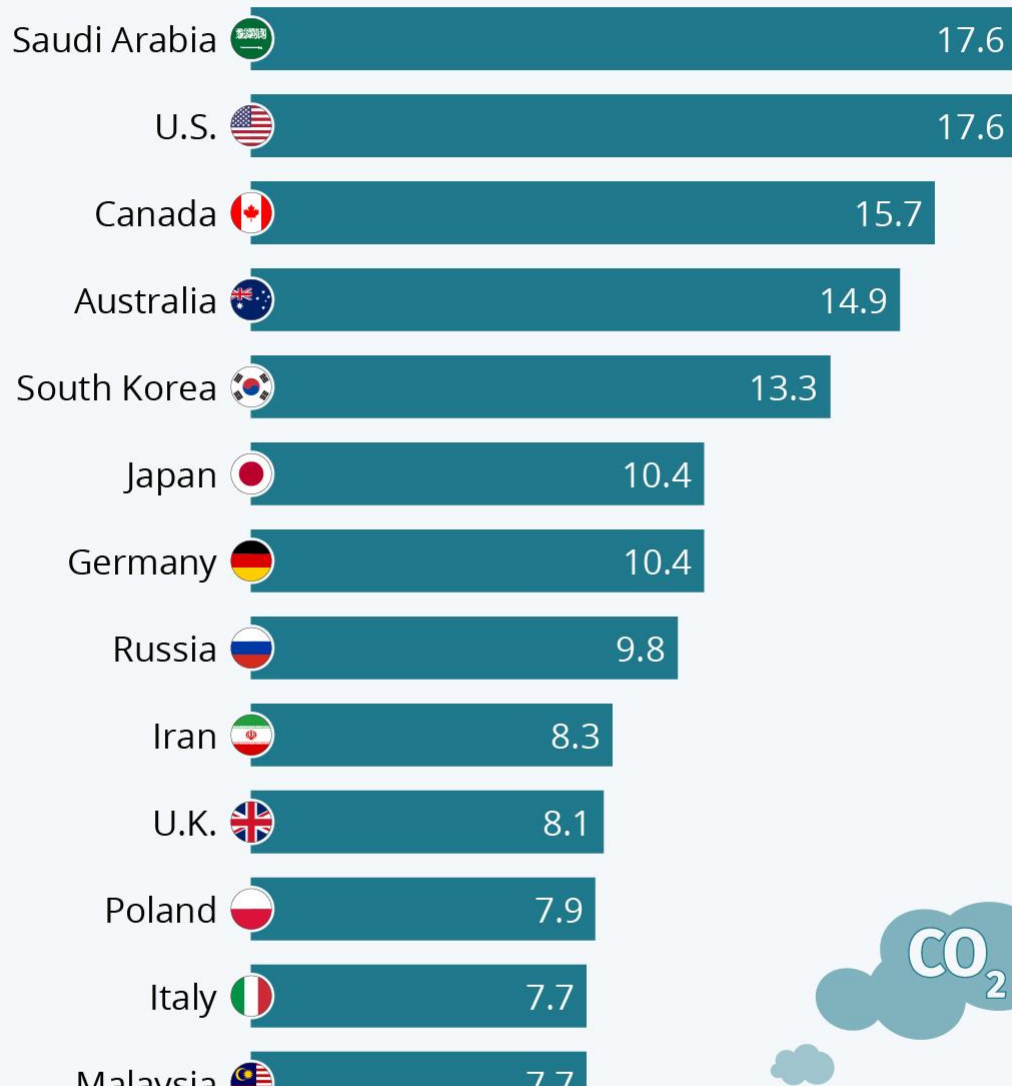
- \* 2,250 cities**
- 2,025 companies**
- 424 investors**
- 235 non-profit organizations**

# What Happened in Dubai COP 28

- Signaled the “beginning of the end” for fossil fuel era in a just and equitable way
- Triple renewable capacity
- Double energy efficiency
- Stop deforestation / link with biodiversity
- New funding for “loss and damage”

# Wealthy Nations Lead Per-Capita Emissions

Countries with highest per-capita emissions, in metric tons CO<sub>2</sub>



# **Cape Cod Regional Initiatives**

- **Governor Healey 1<sup>st</sup> Day Executive Order**
- **Climate Chief and Office of Climate Innovation and Resilience**
- **Cape Cod Commission Climate Action Plan**
- **Cape Cod Climate Change Collaborative**
- **Orleans Climate Action Network**
- **Center for Coastal Studies – 10 programs**

# The Challenges:

- Can change happen at a scale and speed sufficient to slow climate warming?
- Can we adapt and become more resilient to already baked-in changes?
- Will fossil fuel-driven businesses and economies be willing and able to transition to renewable energy sources?
- What about the moral, spiritual, equity and

# What Should Know and DO?

1. Elect “Climate Champions” at all levels (the Inflation Reduction Act)
2. Make climate-responsible investments
3. Reduce your “carbon footprint”
  1. Drive an electric car or truck
  2. Install solar and heat pumps.
  3. Consume less / waste less
  4. Eat less meat
  5. Drive and fly less
  6. STAY INFORMED – thanks for listening today!