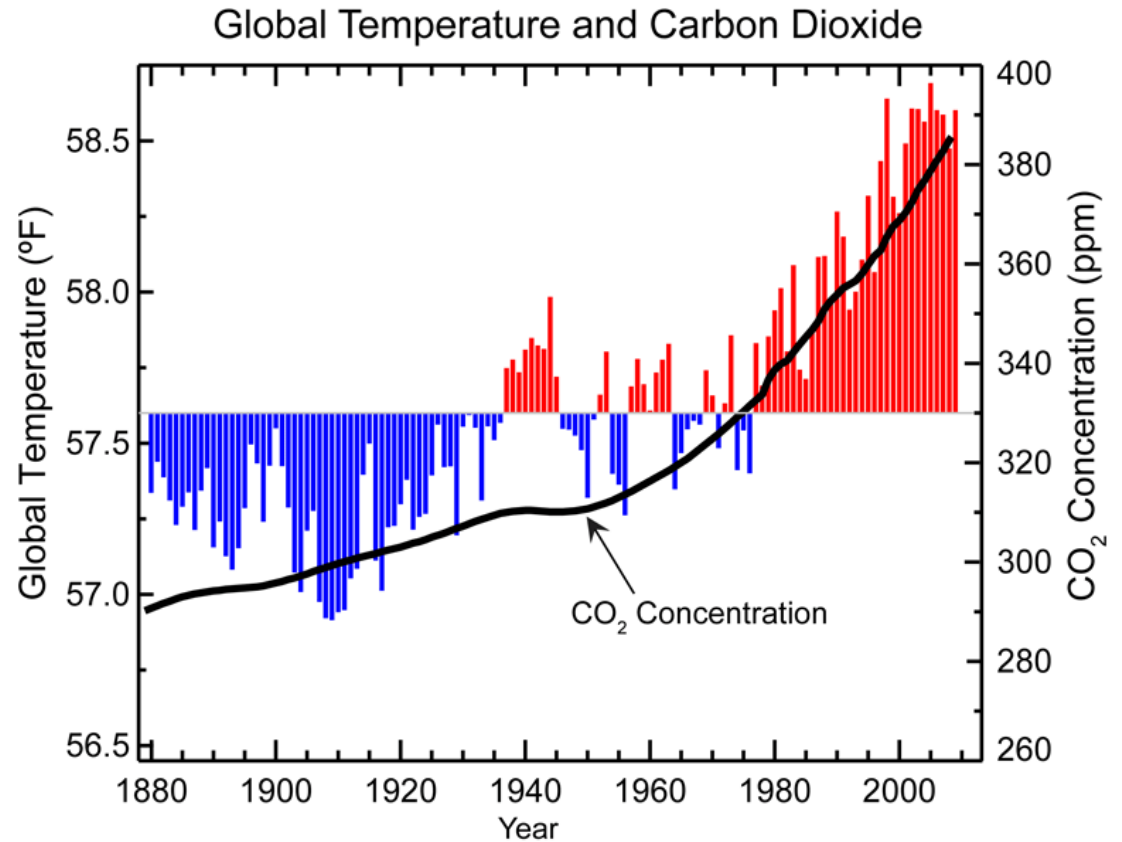




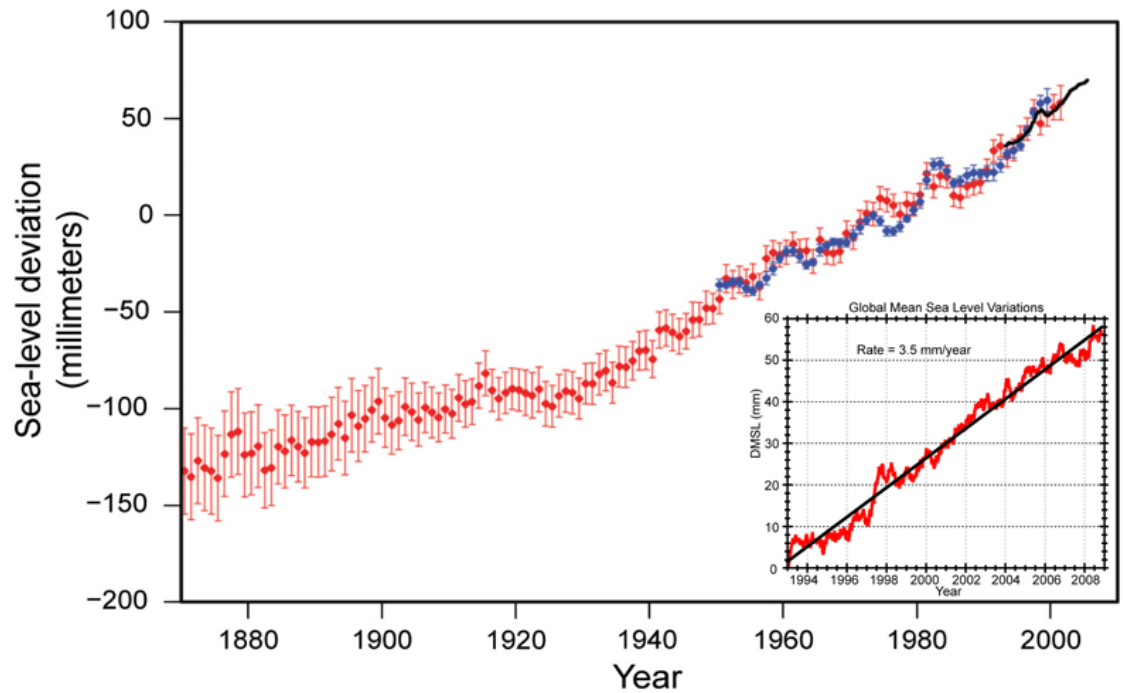
CCInnovations Conference 2017:
Construction on the Precipice of Massive Change

How Will Institutions Meet the Challenges of Climate Change and Thrive?

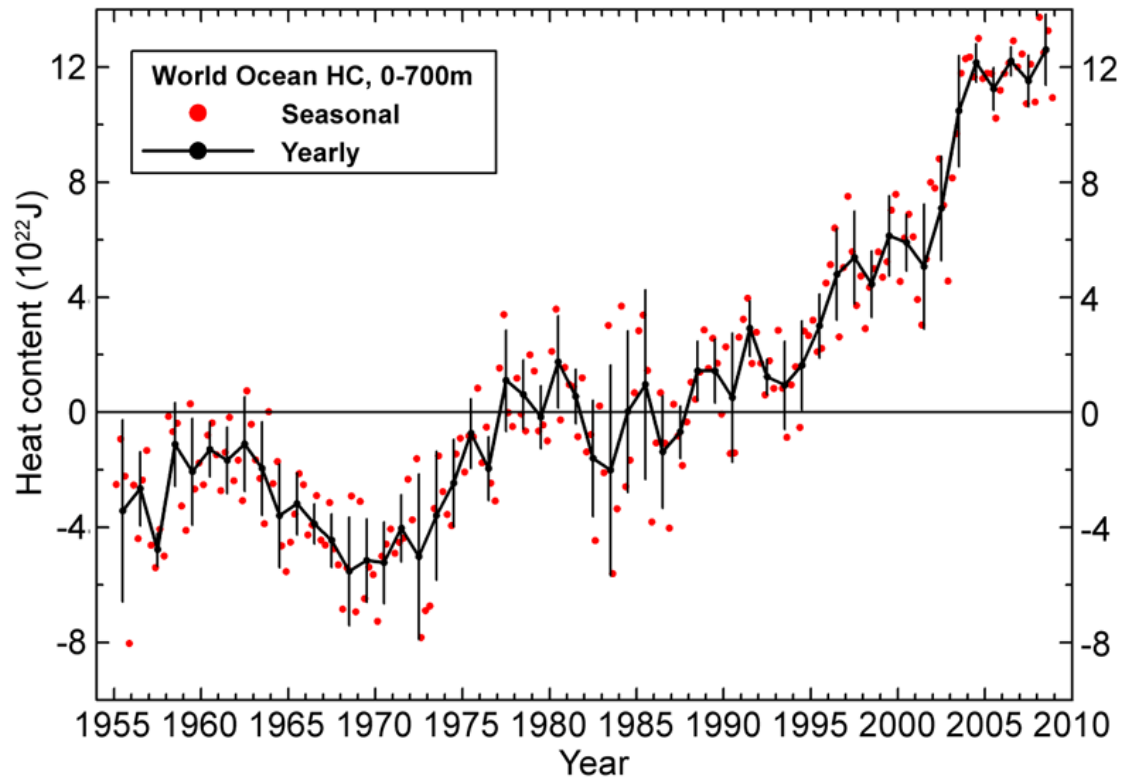
The global
surface
temperature is
rising



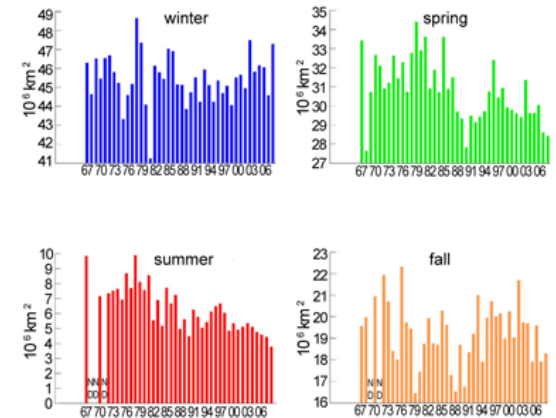
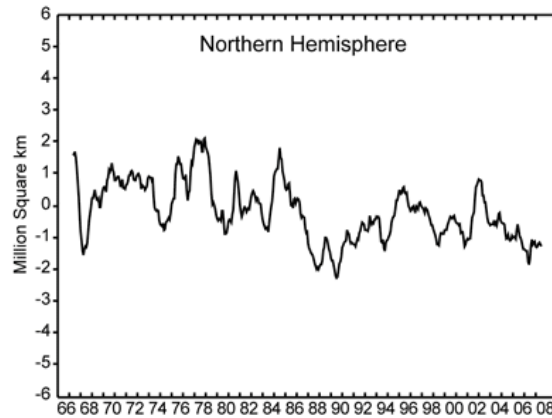
Sea level is
rising



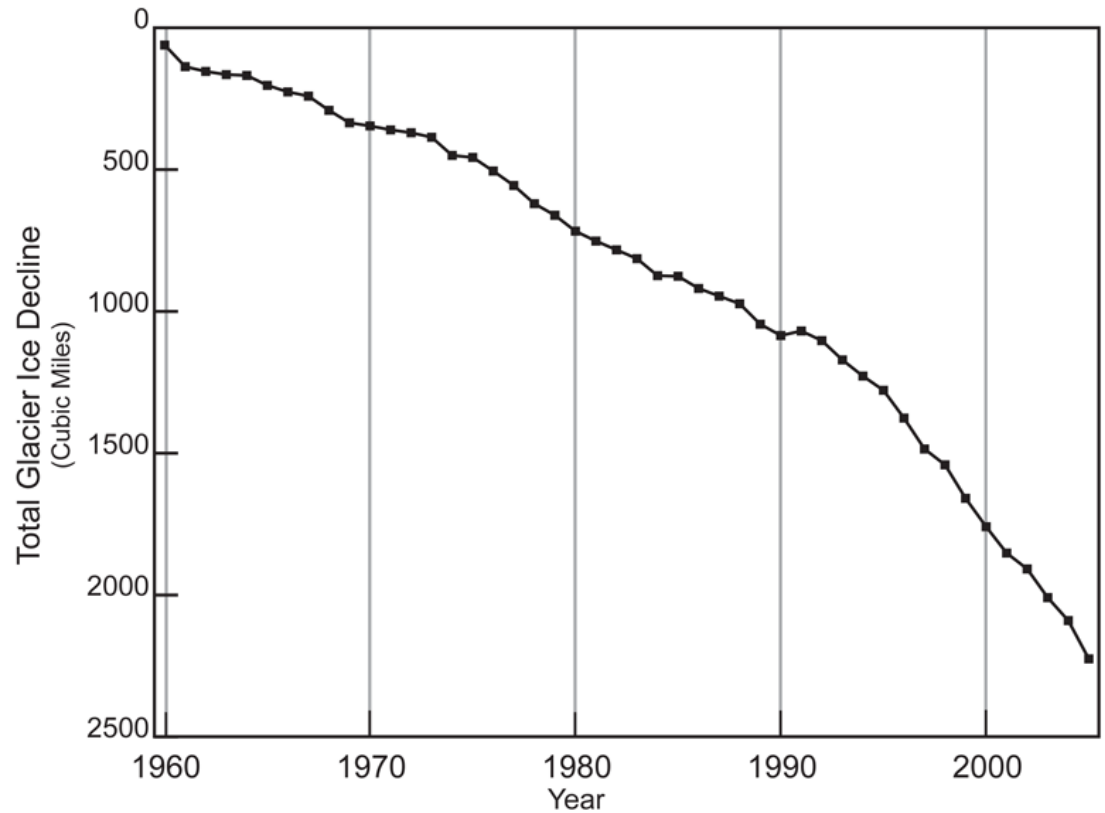
Heat content is
rising globally
in the upper
oceans



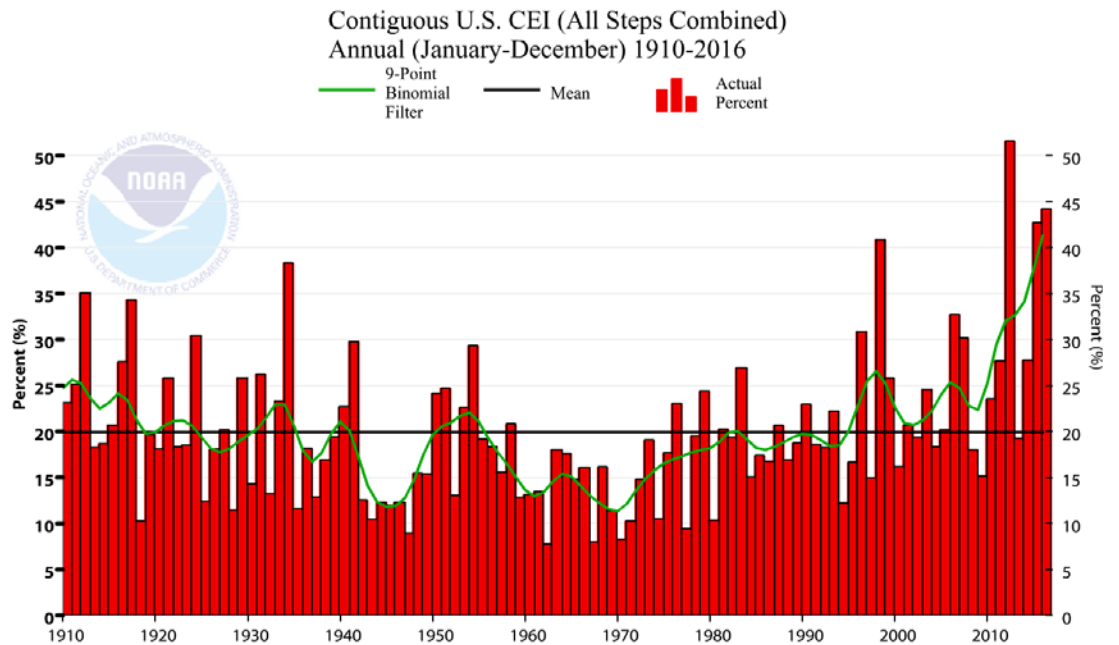
Snow cover in
the northern
hemisphere is
retreating



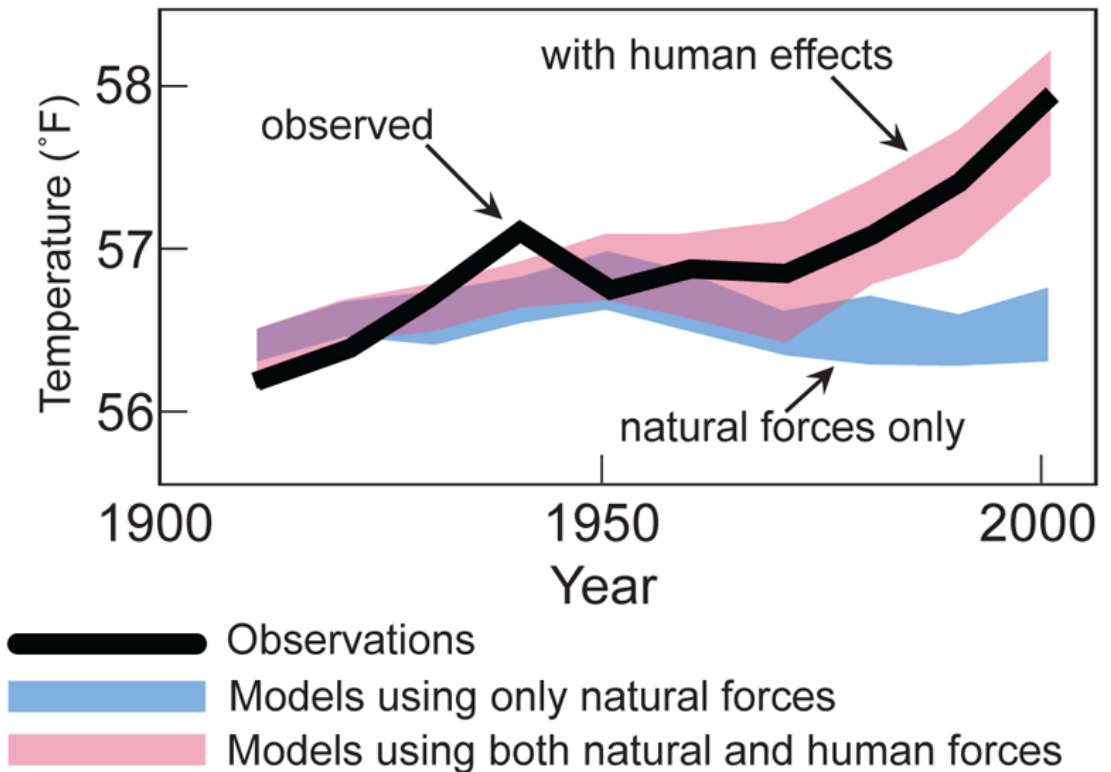
Glacier volume
is shrinking



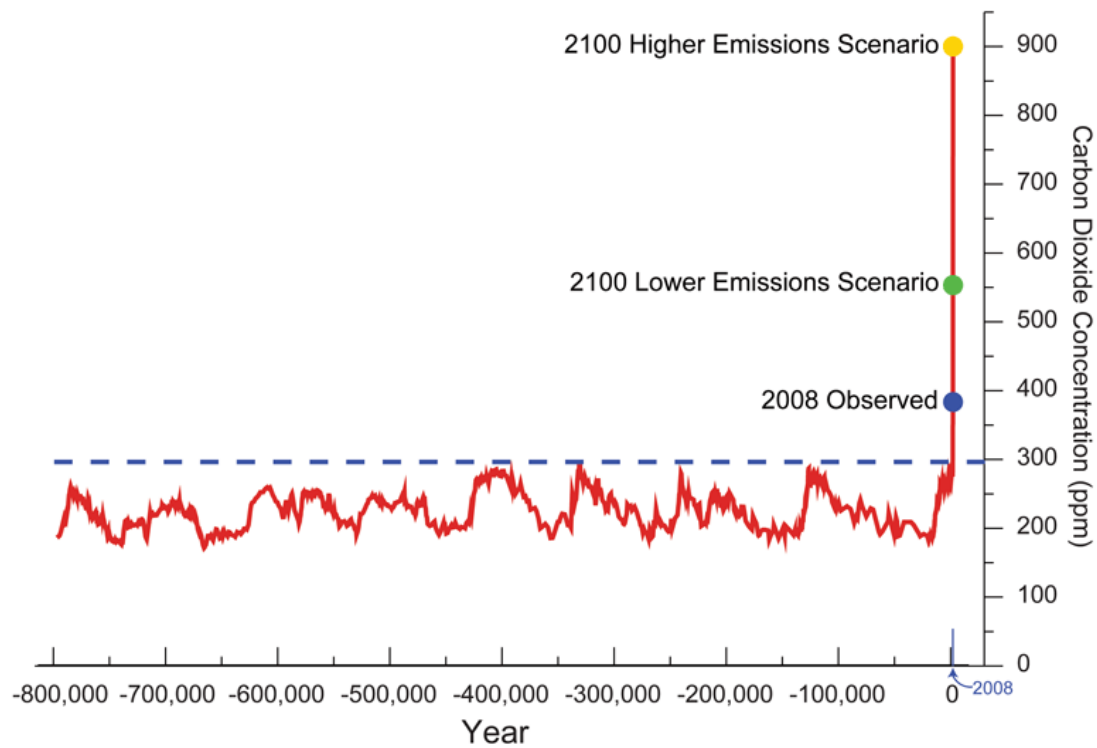
Climate
extremes are
increasing



Climate
models are
tracking actual
climate
observations

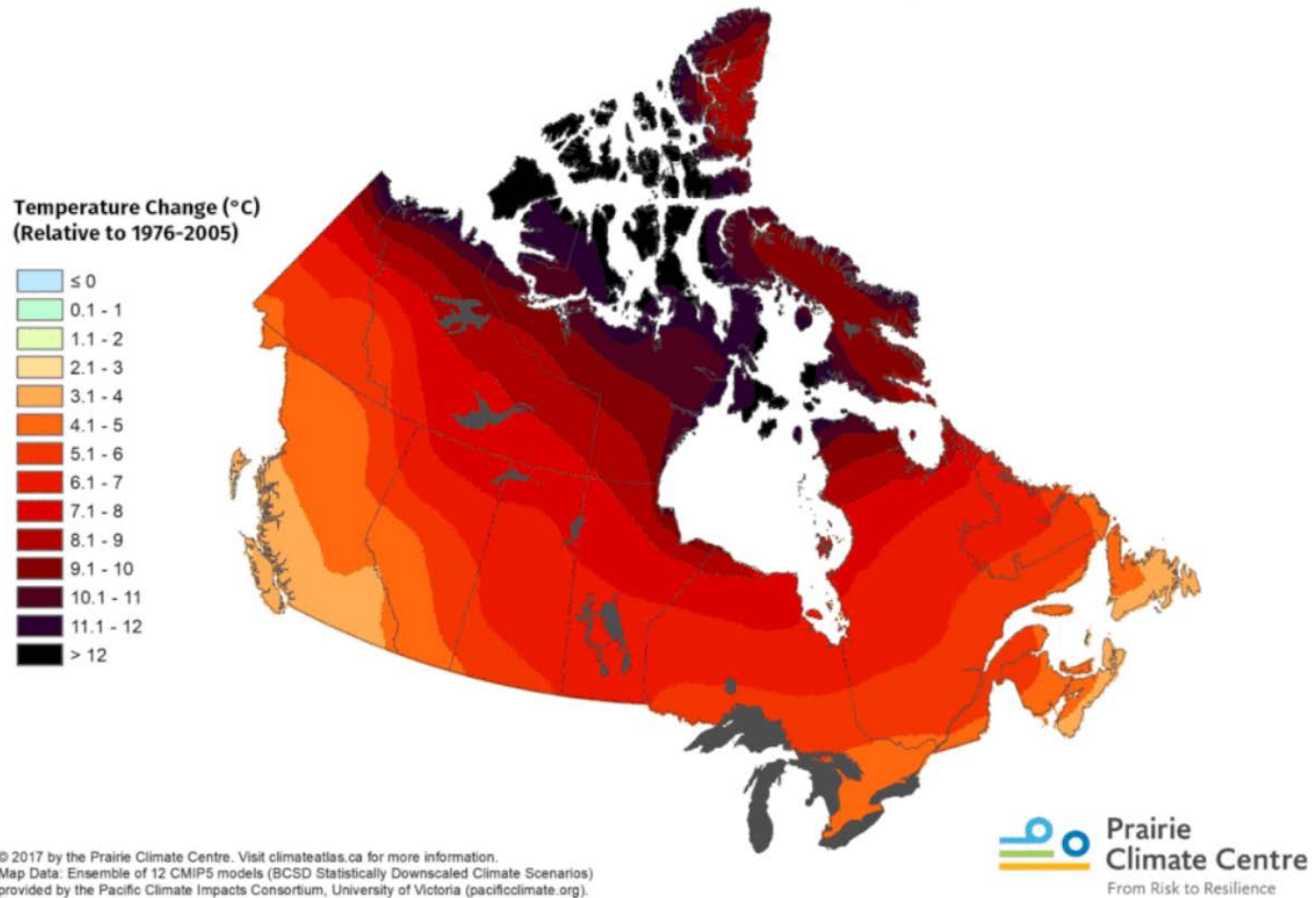


800,000 year
record of CO₂
concentrations



2051-2080 Projected Change in Mean Temperature: December

Under the RCP8.5 scenario, relative to a baseline of 1976-2005



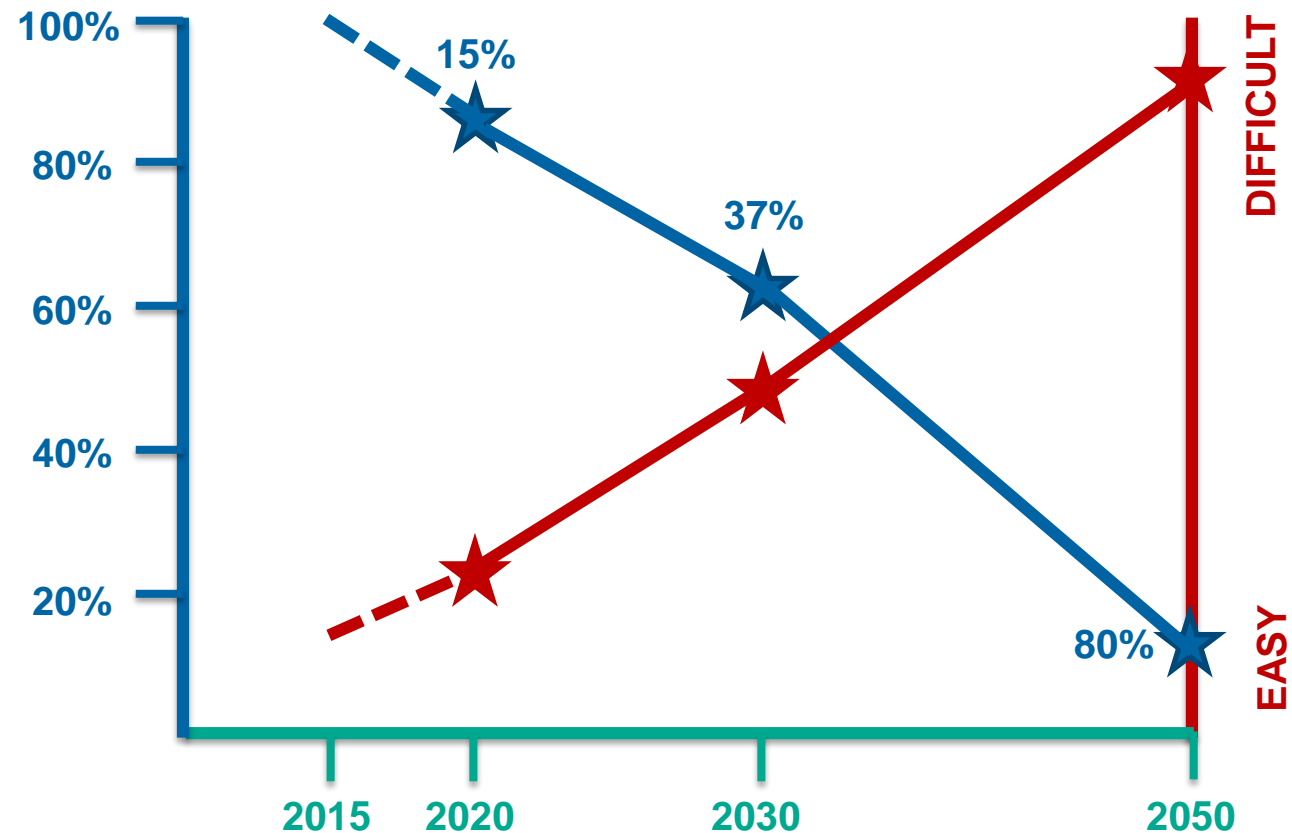
SCIENTIFIC CONSENSUS:
*We must reduce global GHG
emissions to 80% below 1990
levels by 2050 to avert the
worst impacts of global
warming*

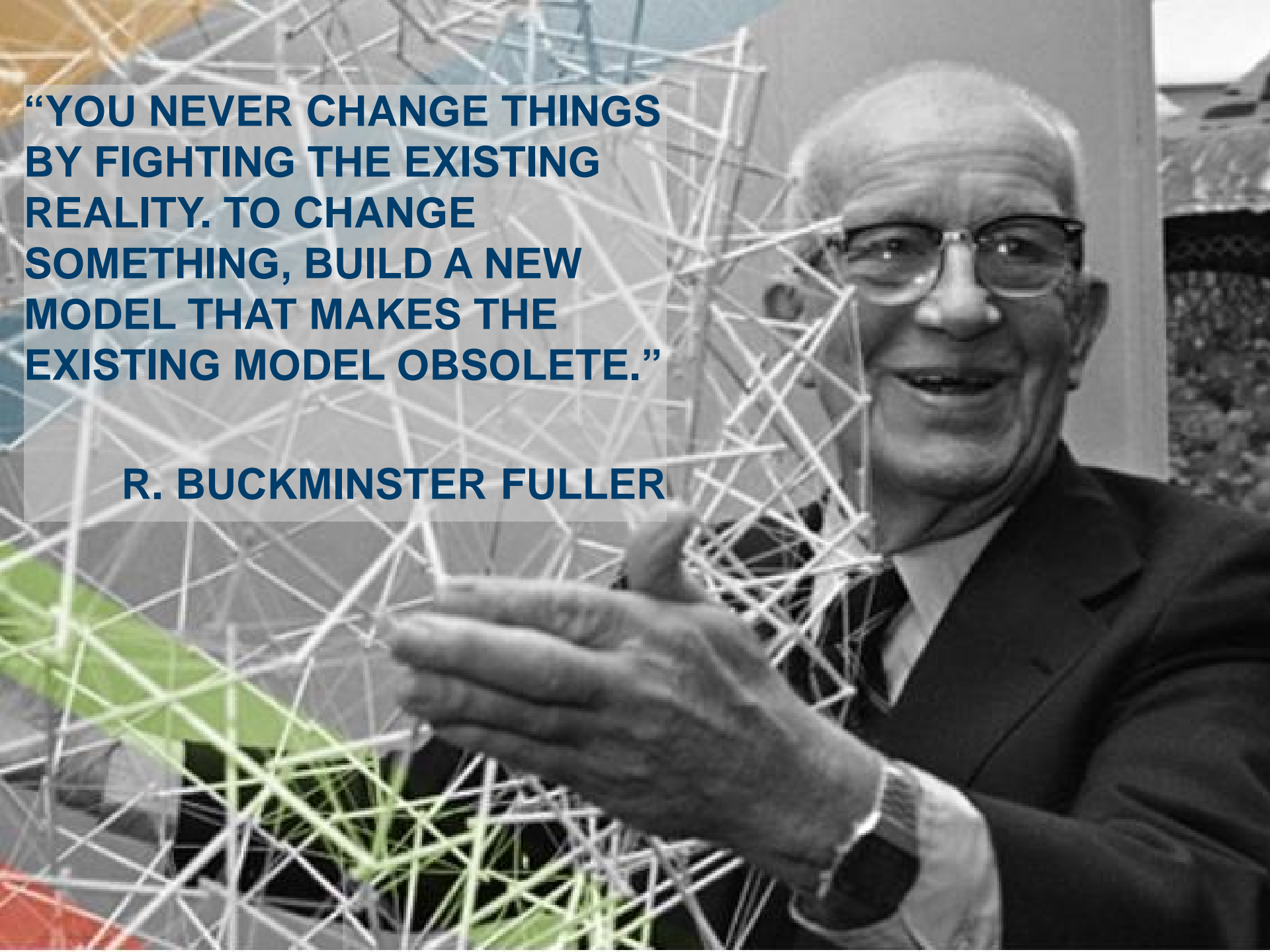


The Climate Change Challenge Requires Transformational Strategy

Ontario GHG Goals

15% GHG reduction 2020
37% GHG reduction 2030
80% GHG reduction 2050



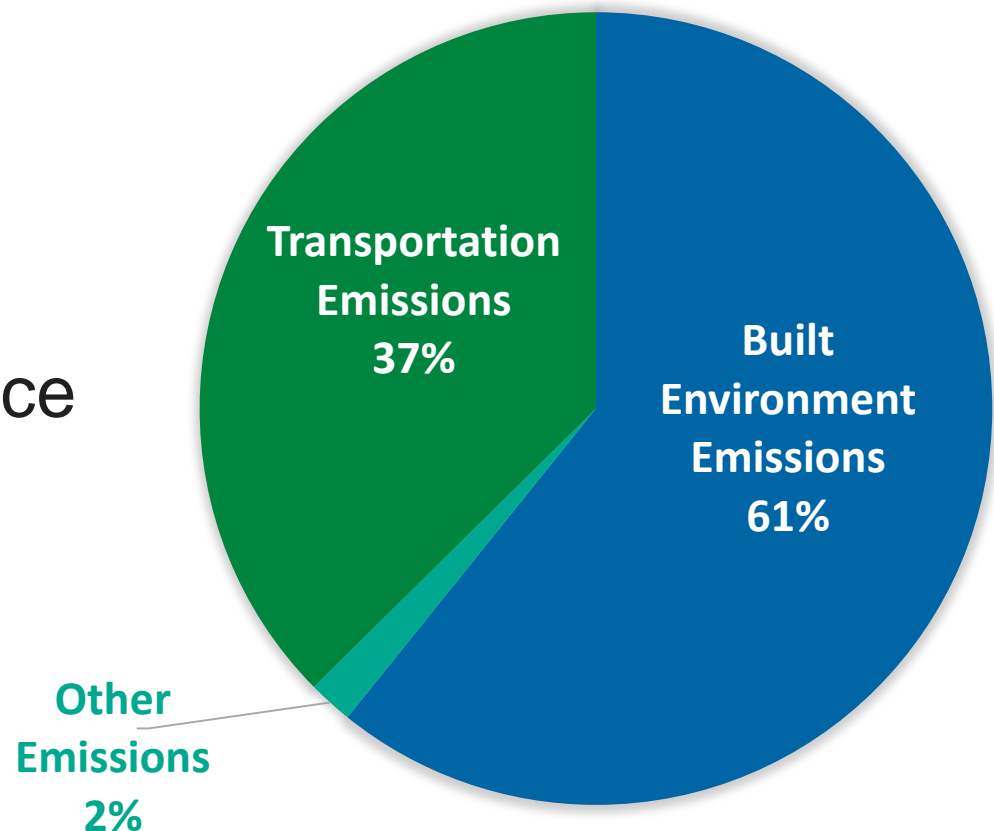


**“YOU NEVER CHANGE THINGS
BY FIGHTING THE EXISTING
REALITY. TO CHANGE
SOMETHING, BUILD A NEW
MODEL THAT MAKES THE
EXISTING MODEL OBSOLETE.”**

R. BUCKMINSTER FULLER

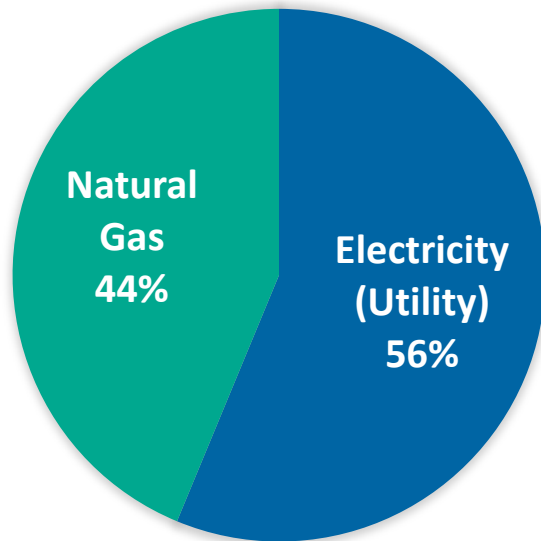
Buildings and Transportation: Largest Impact on GHG Emissions

Focus on new and existing buildings and transportation to reduce GHG emissions

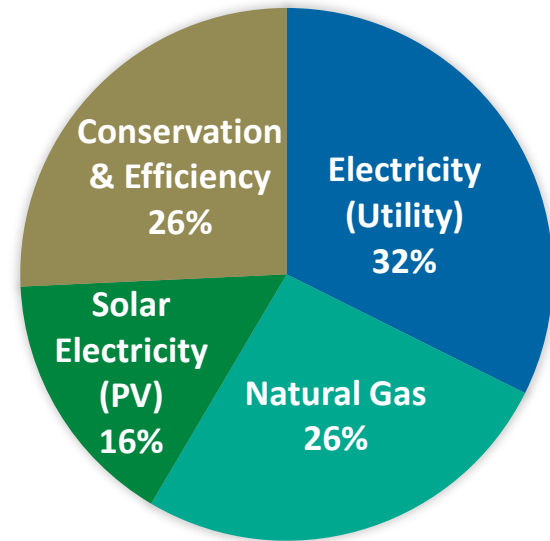


Energy Conservation, Efficiency, and Renewable Energy: Critical Ingredients of GHG Emissions Reduction Programs

COLLEGE BASELINE - ENERGY USE FORECAST,
2017-2030 (MMBTU)



COLLEGE GHG ROADMAP - ENERGY USE FORECAST,
2017-2030 (MMBTU)



Roadmap Components and Select Strategies

Built Environment	Supply & Infrastructure	Transportation	Institutional
<ul style="list-style-type: none">• Highly-efficient new construction and renovations• Reduce dependence upon natural gas• Implement large, integrated energy upgrade programs	<ul style="list-style-type: none">• Increase efficiency• On-site PV & solar thermal• Energy storage• Develop flexible microgrids• Off-site renewables	<ul style="list-style-type: none">• Optimize to reduce vehicle miles traveled (VMT)• Move to efficient vehicles• Integrate alternatively-fueled vehicles & microgrid• Offsets for air travel	<ul style="list-style-type: none">• GHG Emissions Management System (GEMS)• Enhance sustainable building guidelines• Engagement / behavioral programs• New financing & project delivery mechanisms

The Path to Carbon Neutrality is Not Linear...



...Success Requires Progress in Many Areas and an Integrated Approach to Overcome Barriers

Which Path Will You Choose?



What Can Your Organization Do to Help and Thrive?

- Leadership!
- Commit → Baseline → Trends
- Understand provincial programs
- Strategy
- Partner → Pilot → Prepare
- Learn from your peers...

Panelists

- **Terry Homma**

- Director General, Public Services and Procurement Canada

- **Grant McDonald**

- President, Finesco

- **Mike Szabo**

- Principal and Sustainability Lead, Diamond-Schmitt Architects

- **Michael Deane**

- VP of Sustainability, Turner Construction

- **Mark Wilhelm**

- Climate Change Consultant, Ameresco Canada - Moderator

Panelist Questions

1. What has your organization done to address climate change and associated changes in the market?
2. Do you think your organization is doing enough to help meet climate change goals?