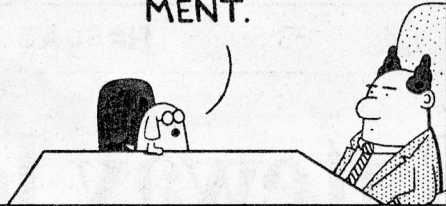


Reason for changes between 2001 & 2007 IPCC climate report?

DILBERT by Scott Adams

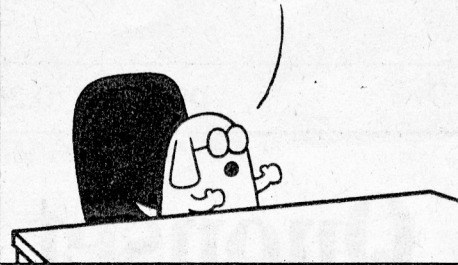
DOGBERT CONSULTS

EVERY CREDIBLE
SCIENTIST ON EARTH
SAYS YOUR PRODUCTS
HARM THE ENVIRON-
MENT.



www.dilbert.com
scottadams@aol.com

I RECOMMEND PAYING
WEASELS TO WRITE
ARTICLES CASTING
DOUBT ON THE DATA.

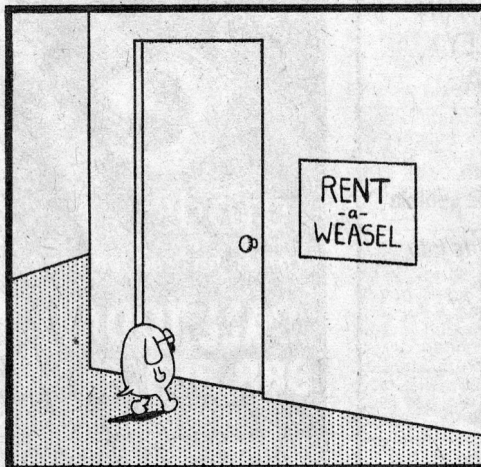


10-30-07 © 2007 Scott Adams, Inc./Dist. by UFS, Inc.

THEN EAT THE WRONG
KINDS OF FOODS AND
HOPE YOU DIE BEFORE
THE EARTH DOES.



YOU'RE
MAKING ME
HUNGRY!



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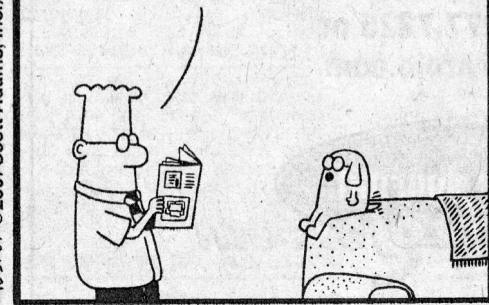
I NEED THREE BITTER
AND UNSUCCESSFUL
SCIENTISTS AND A
HUNDRED LAZY
JOURNALISTS.



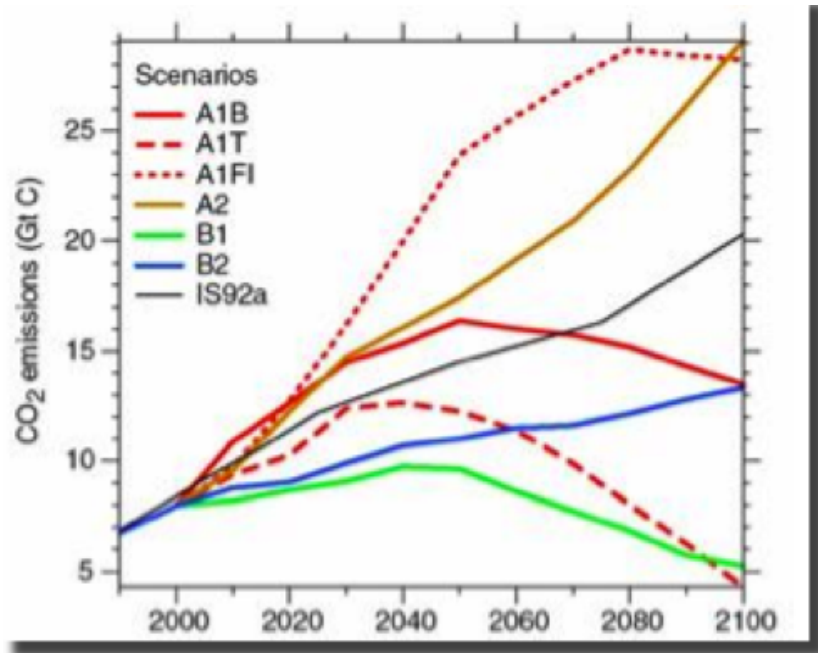
VERY
GOOD.

10-31-07 © 2007 Scott Adams, Inc./Dist. by UFS, Inc.

DID YOU KNOW
TODDLERS THRIVE
ON POLLUTION?



Increased carbon emissions = climate change



Factors

- Economic growth
(global vs local)
(service vs material intensive)
- Global populations
(mid-century peak vs steady growth)
- Introduction of new/efficient technologies
- Energy sources
(fossil vs clean vs combo)

Rising Temperatures
Rising Sea Level

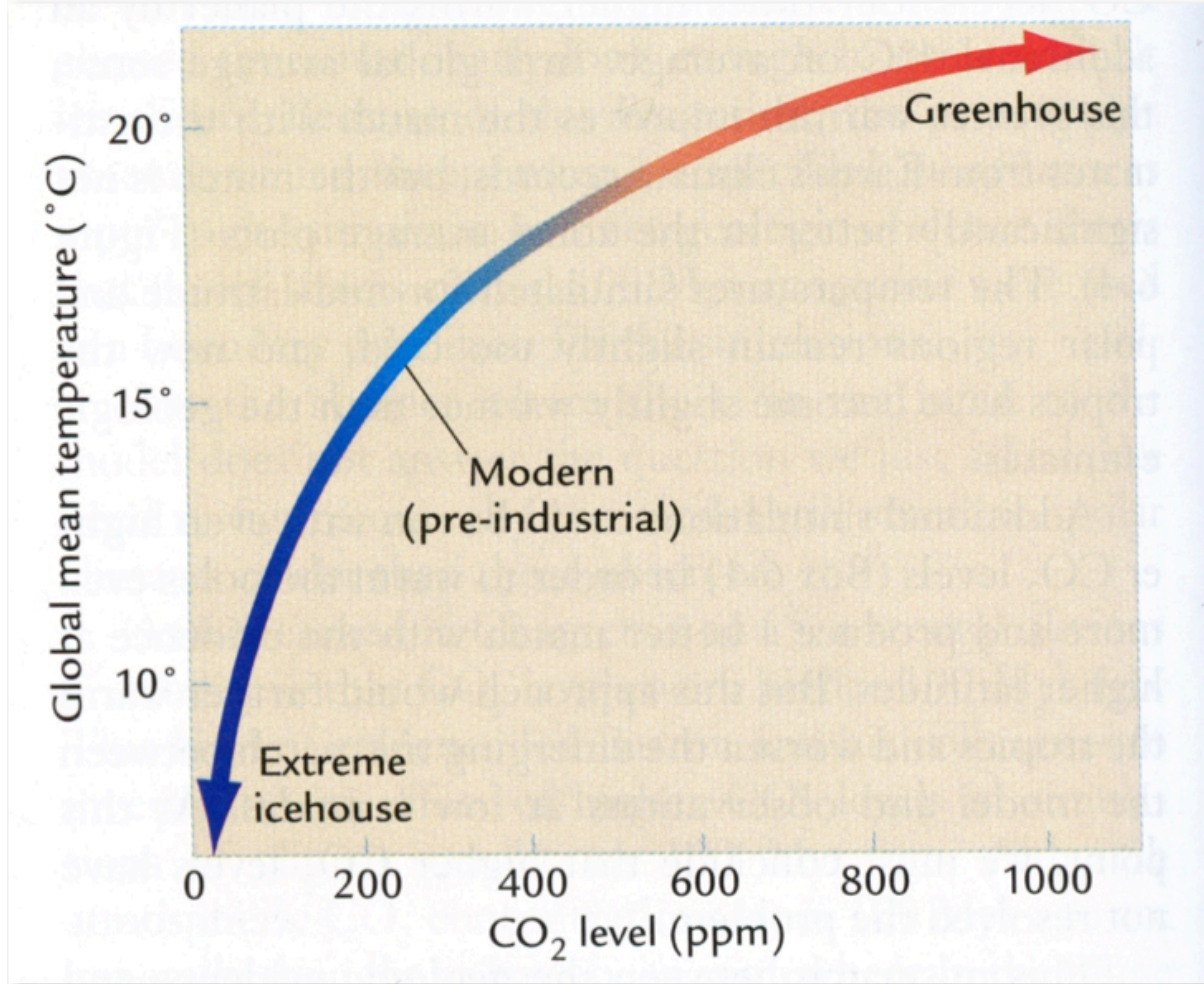


Increased Carbon Emissions



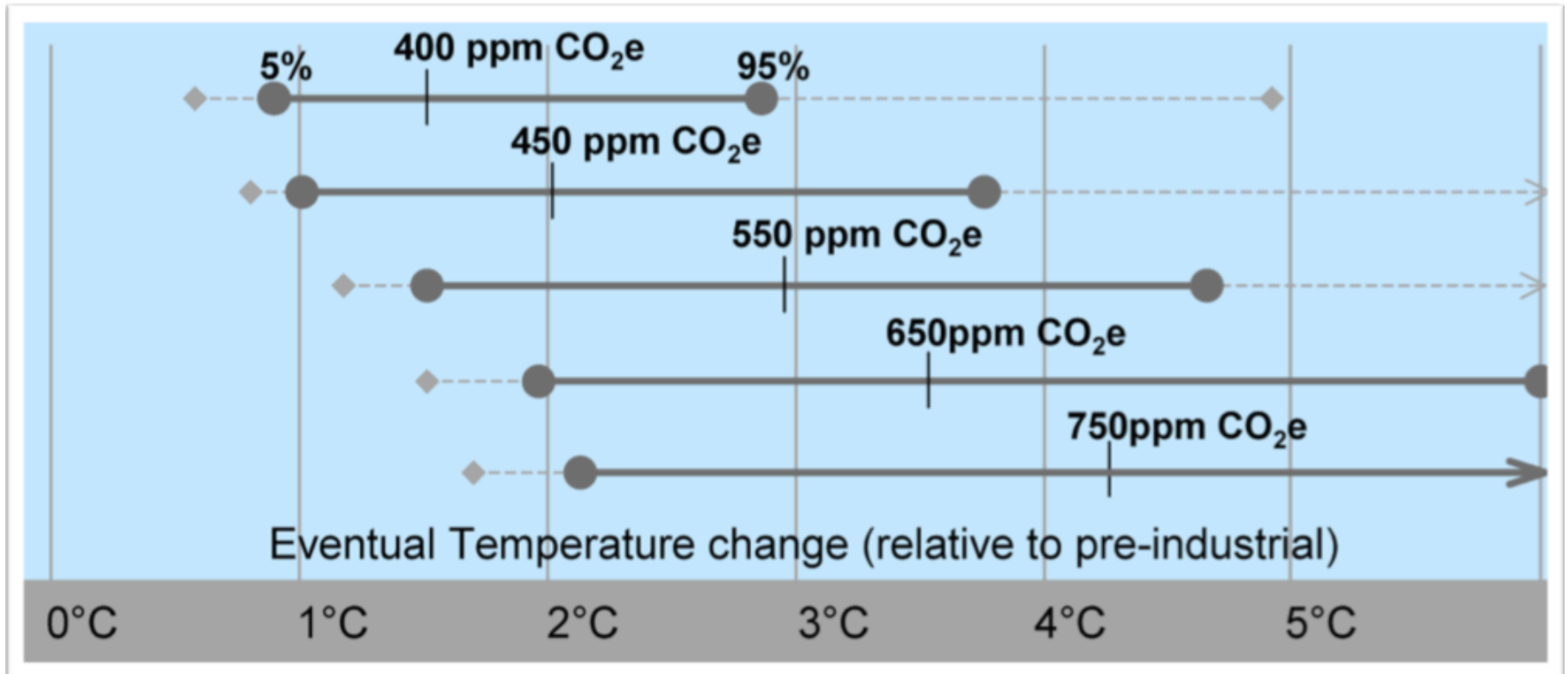
Rising Temperatures

Effect of CO₂ on Climate

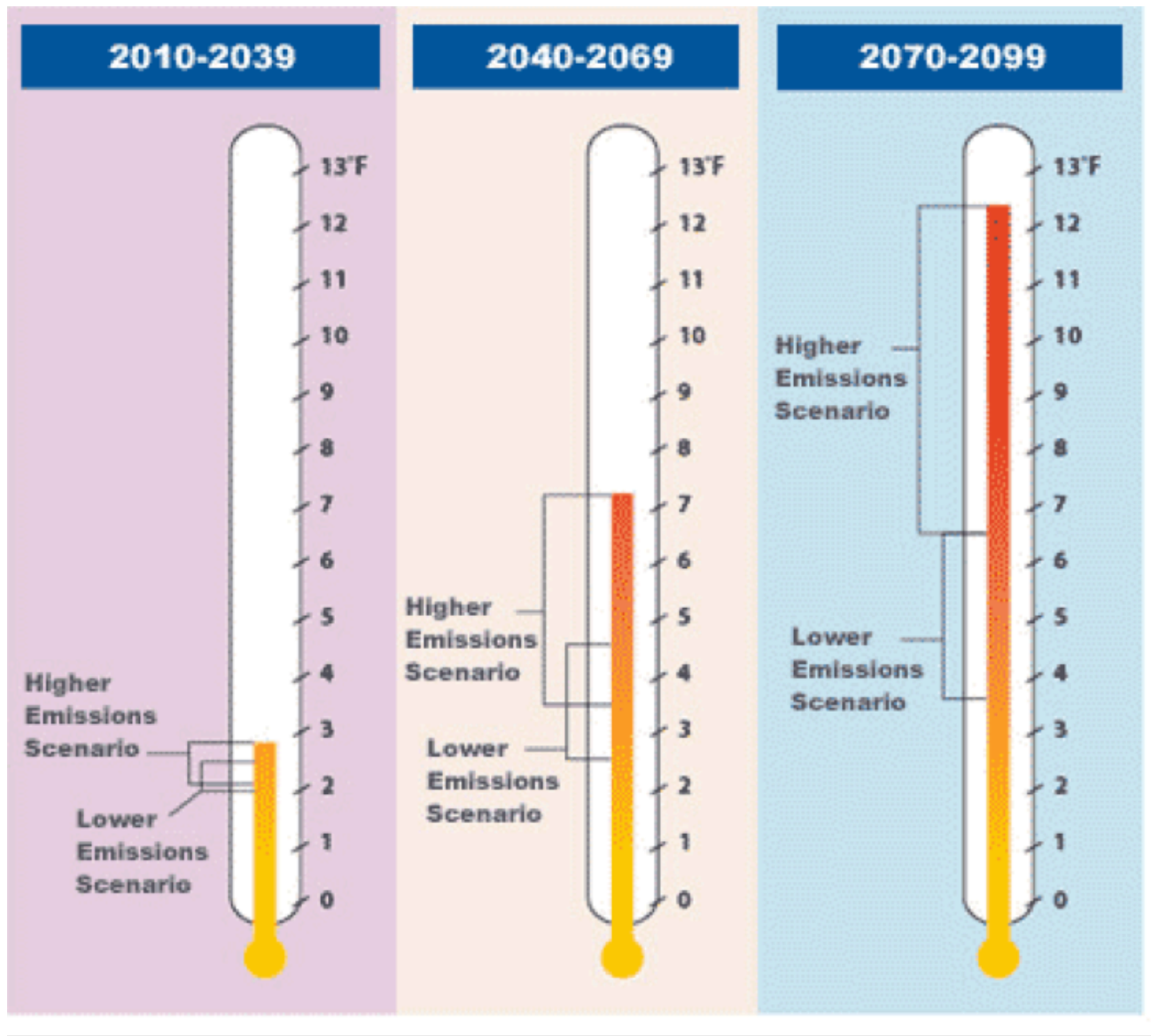


- Higher CO₂ levels leads to higher global temperatures.
- Climate temperature is more sensitive at lower CO₂ concentrations.

Relationship between CO₂ concentration and global warming

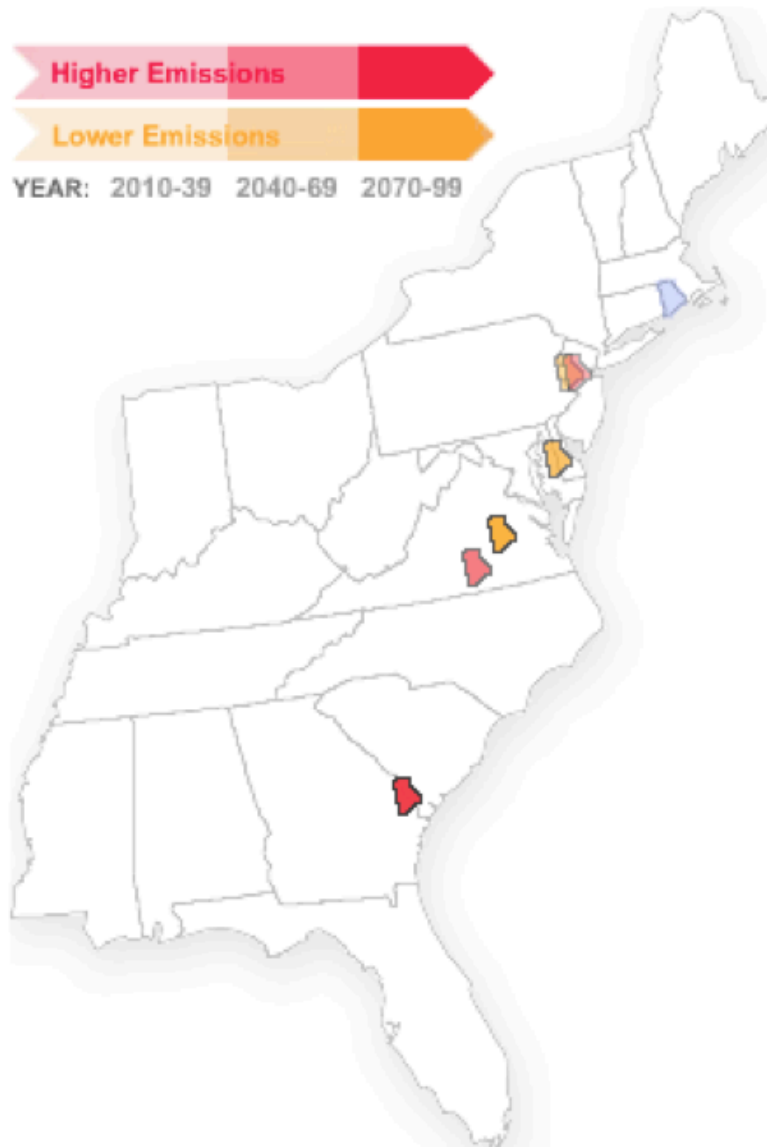


Rising Temperatures



Courtesy of the Union of Concerned Scientists

Rhode Island climate “migration”

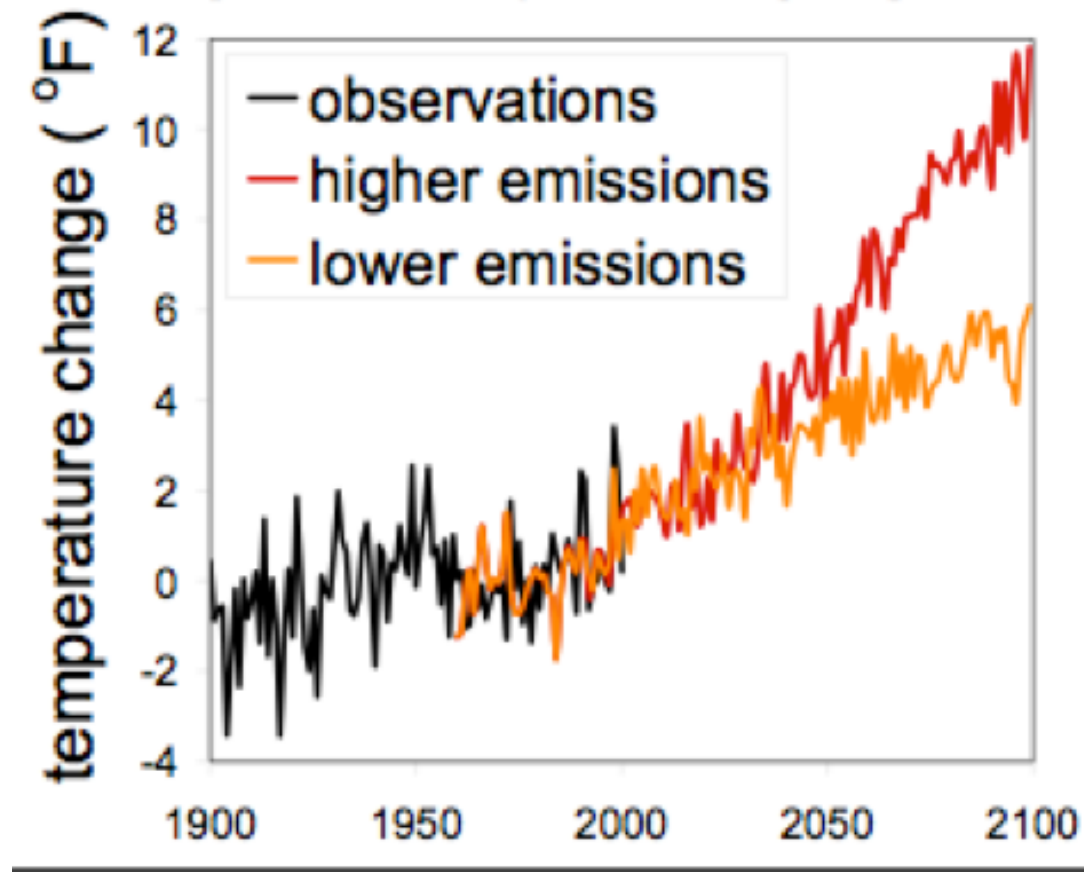


Summer in Rhode Island could feel like the typical summer in coastal South Carolina or Georgia by the end of the century unless we take action to reduce heat-trapping emissions today.

Lower-Emissions Scenarios: a shift away from fossil fuels in favor of clean energy technologies, causing heat-trapping emissions to decline by mid-century

Higher-Emissions Scenarios: continued heavy reliance on fossil fuels, causing heat-trapping emissions to rise rapidly over the century

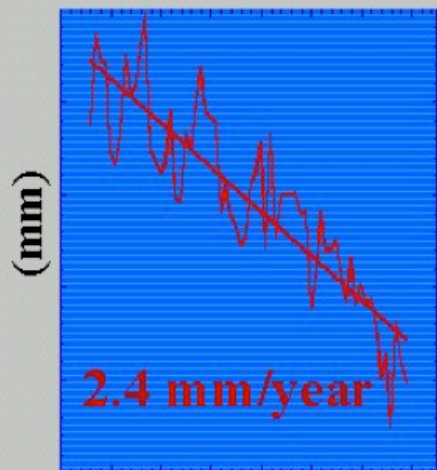
Changes in annual average temperature - Northeast US





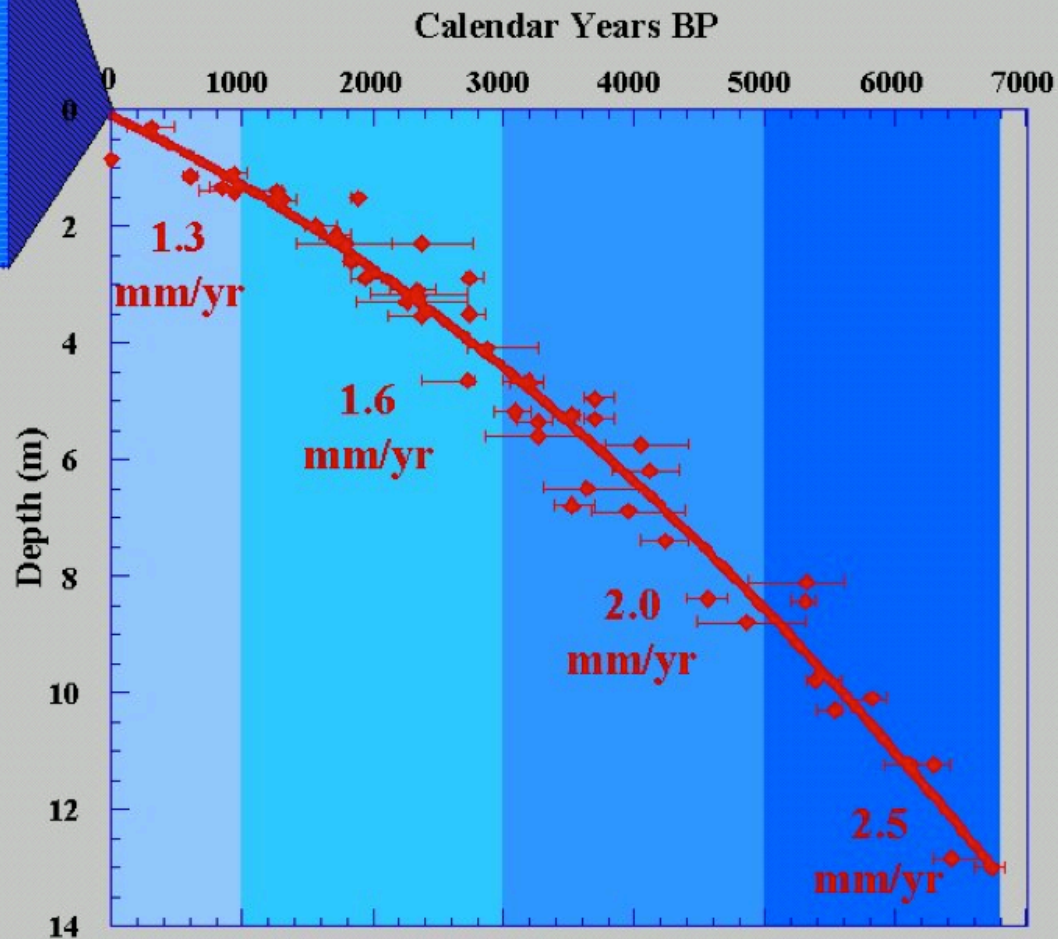
Rising Sea Level

1994 AD \longleftrightarrow 1931 AD



Newport, RI
Tide Gauge

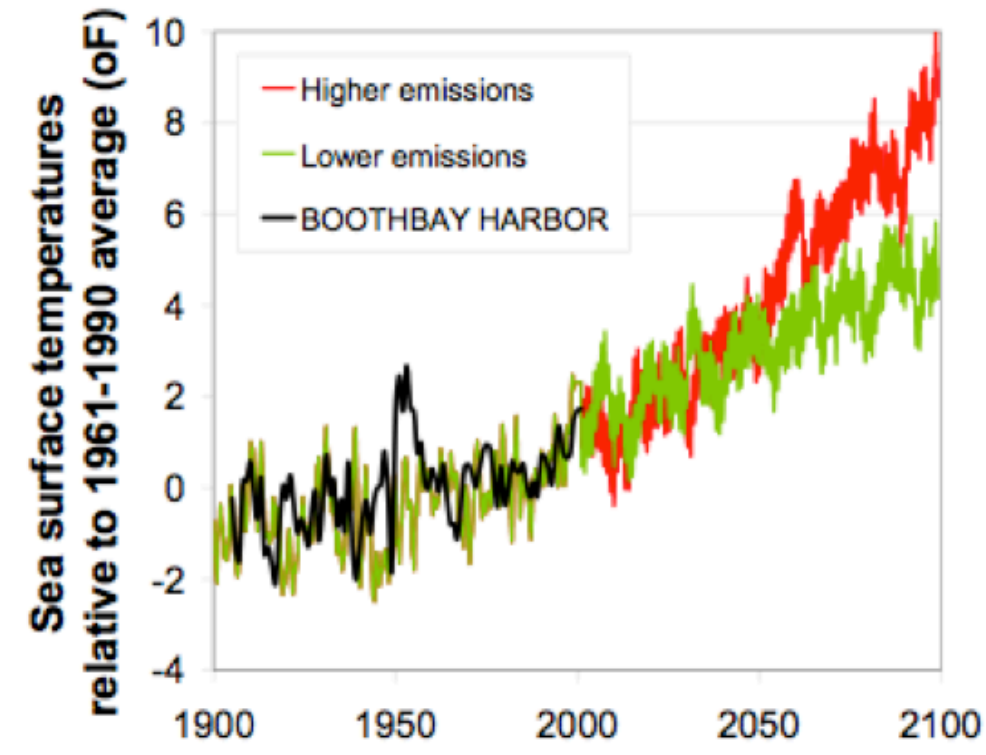
Late Holocene Sea Level Curve from Southern New England and New Jersey (Donnelly 1998)



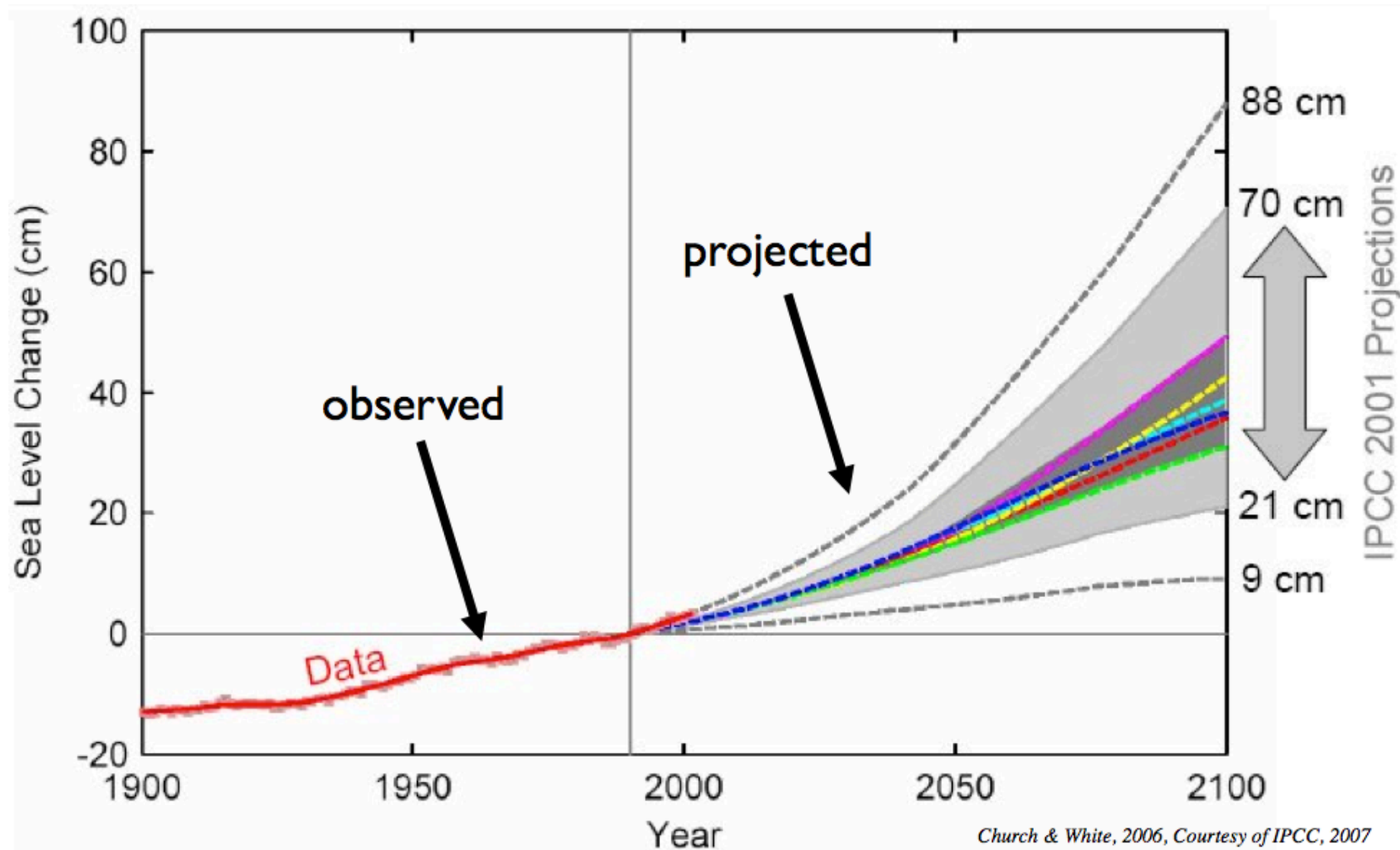
Four contributions to sea level rise

1. Thermal expansion of seawater
2. Melting of glaciers and ice caps
3. Ice sheet surface mass balance
 - snowfall - melting
4. Ice sheet surface dynamical imbalance
 - increased flow rate

Changes in sea surface temperature - Maine



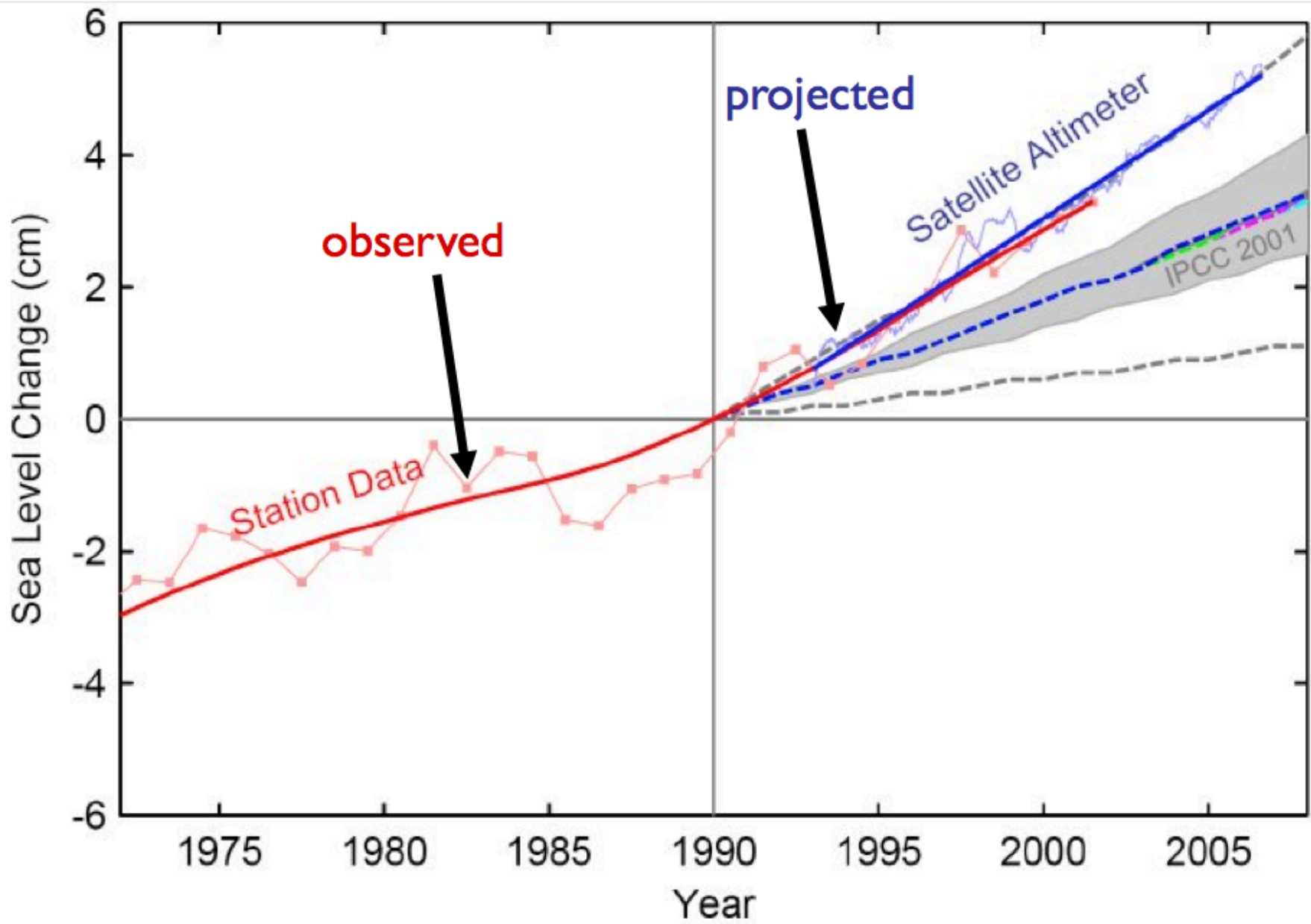
Observed and Projected Sea Level Rise by 2100



Sea Level Rise: Observed vs. Projected

Interval	Model Prediction mm/year	Observed mm/year
1993 - 2003	2.6	3.1
1961 - 2003	1.2	1.8

Sea Level Rise: Observed = Projected



Sea Level Rise: New Estimates

Reference	By 2100 (feet)	Total Rise (feet)
Overpeck, <i>et al.</i> , 2006	> 3	13 - 20
Rahmsorf, 2007	1.6 - 4.6	- - -
Pfeffer, <i>et al.</i> , 2008	2.6 - 6.6	- - -

Increased sea level rise estimates for New England

Reference	Additions to global rise predictions
Yin, <i>et al.</i> , 2009	+ 8 inches
Hu, <i>et al.</i> , 2009	+ 12 - 20 inches
Total global + regional	2.3 - 8.3 feet



Rising Sea Level:

Rhode Island

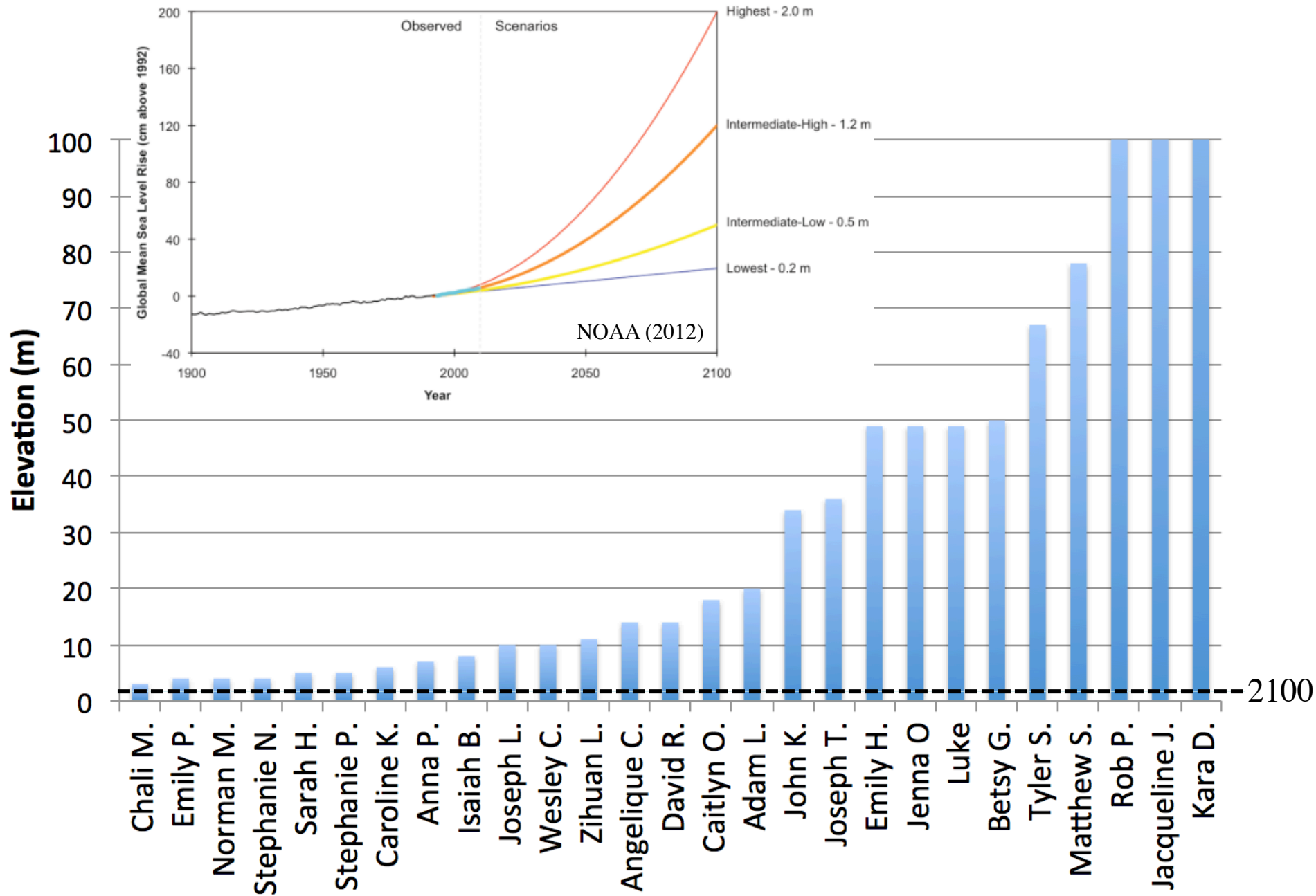




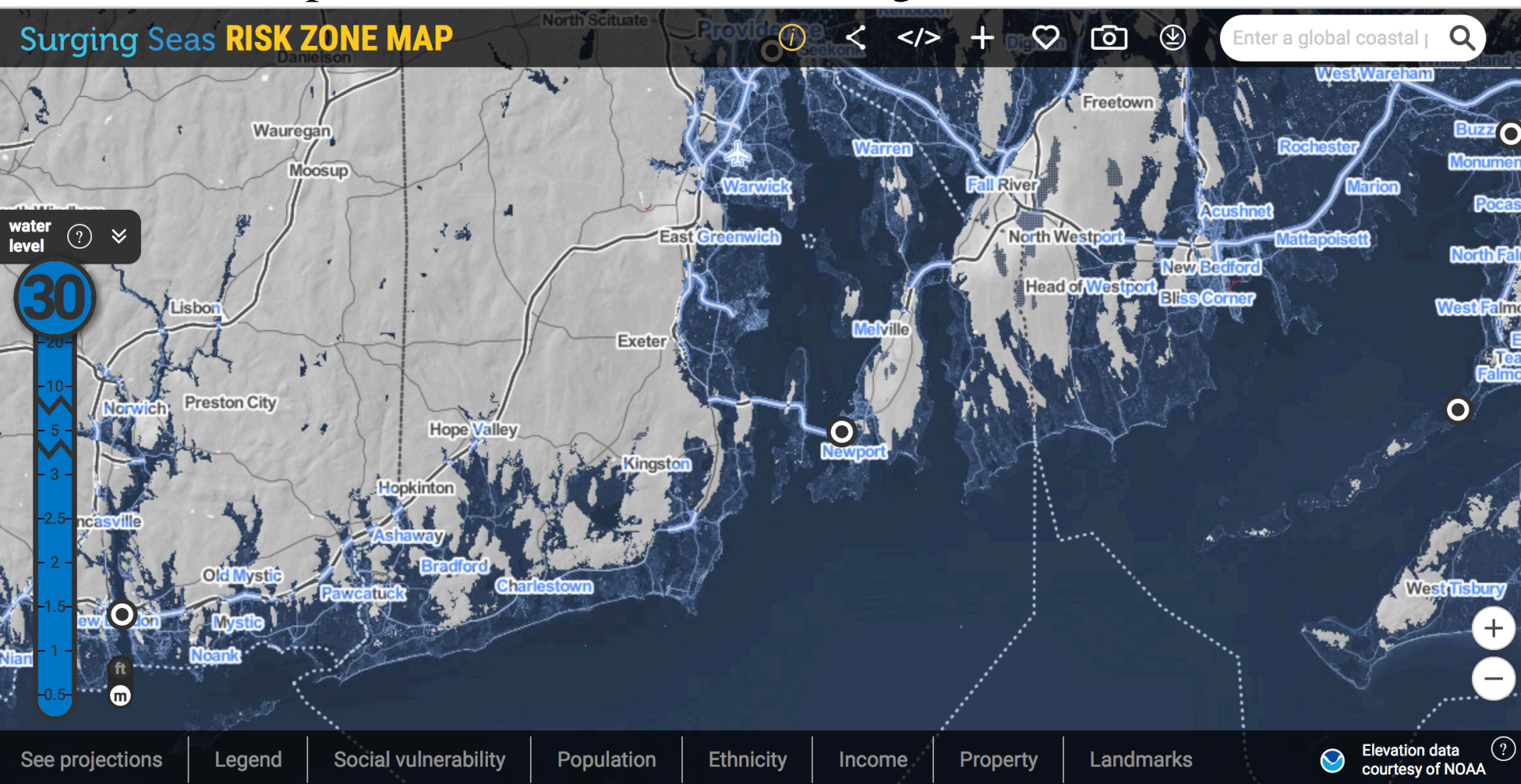
Rising Sea Level:

Northeast





<http://sealevel.climatecentral.org/ssrf/rhode-island>



Hong Kong

<http://ss2.climatecentral.org/#10/22.2929/114.2331?show=satellite&projections=0-RCP85-SLR&level=0.5&unit=meters&pois=hide>

Beijing

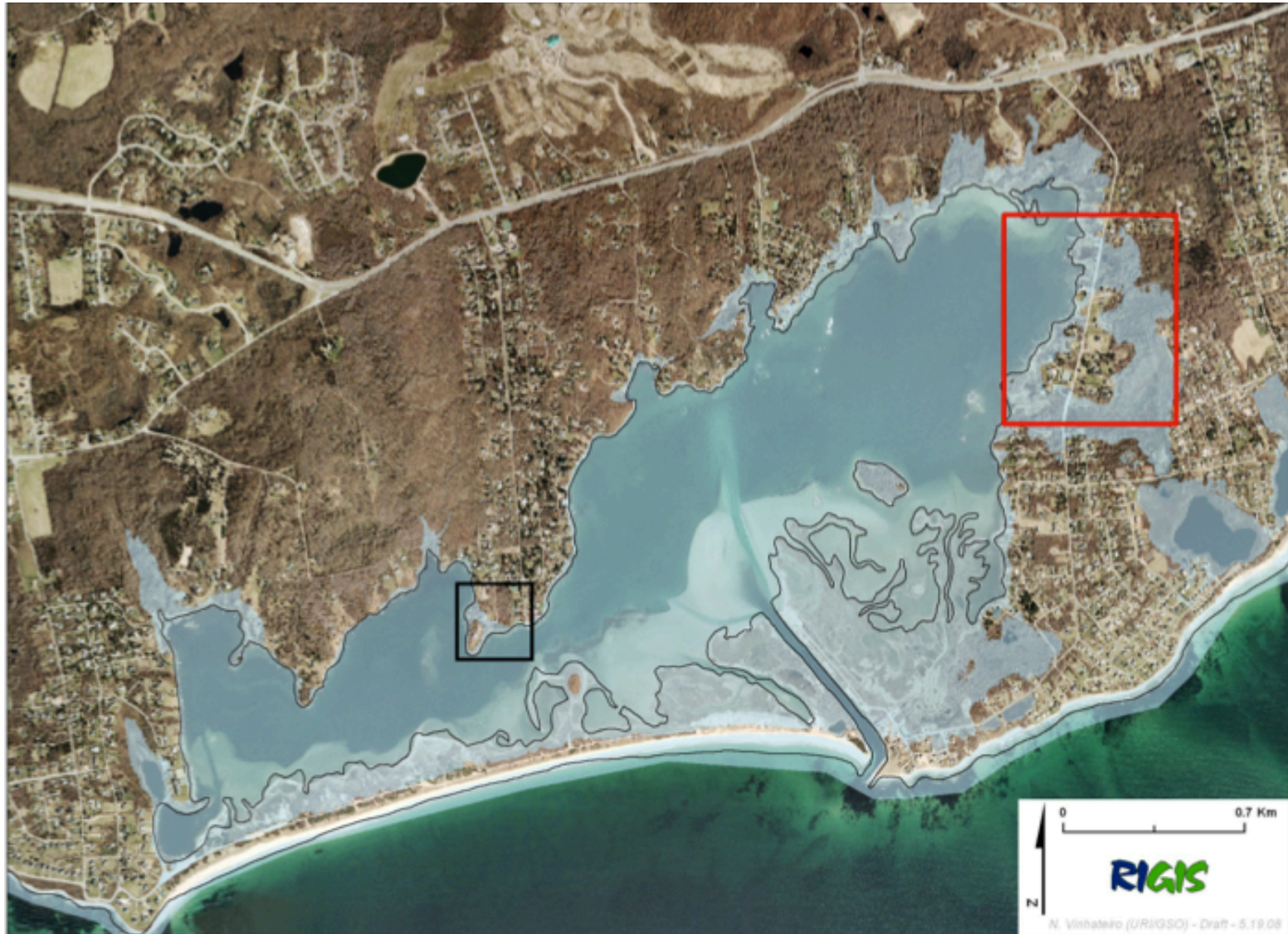
<http://ss2.climatecentral.org/#9/39.4892/117.3120?show=satellite&projections=0-RCP85-SLR&level=0.5&unit=meters&pois=hide>



Rising Sea Level in Rhode Island ~

Southern Coastal Ponds

Quonochontaug Pond 5' sea level rise: Model by Nathan Vinhateiro, GSO-URI



The 1938 Hurricane: Napatree Point



The 1938 Hurricane: Misquamicut Beach



The 1938 Hurricane: Narragansett Sea Wall



"The Towers"

The 1938 Hurricane: Pawtuxet Village





Assessing the Impact of Climate Change:

An Alternative Approach to IPCC

The Stern Review

Sir Nicholas Stern



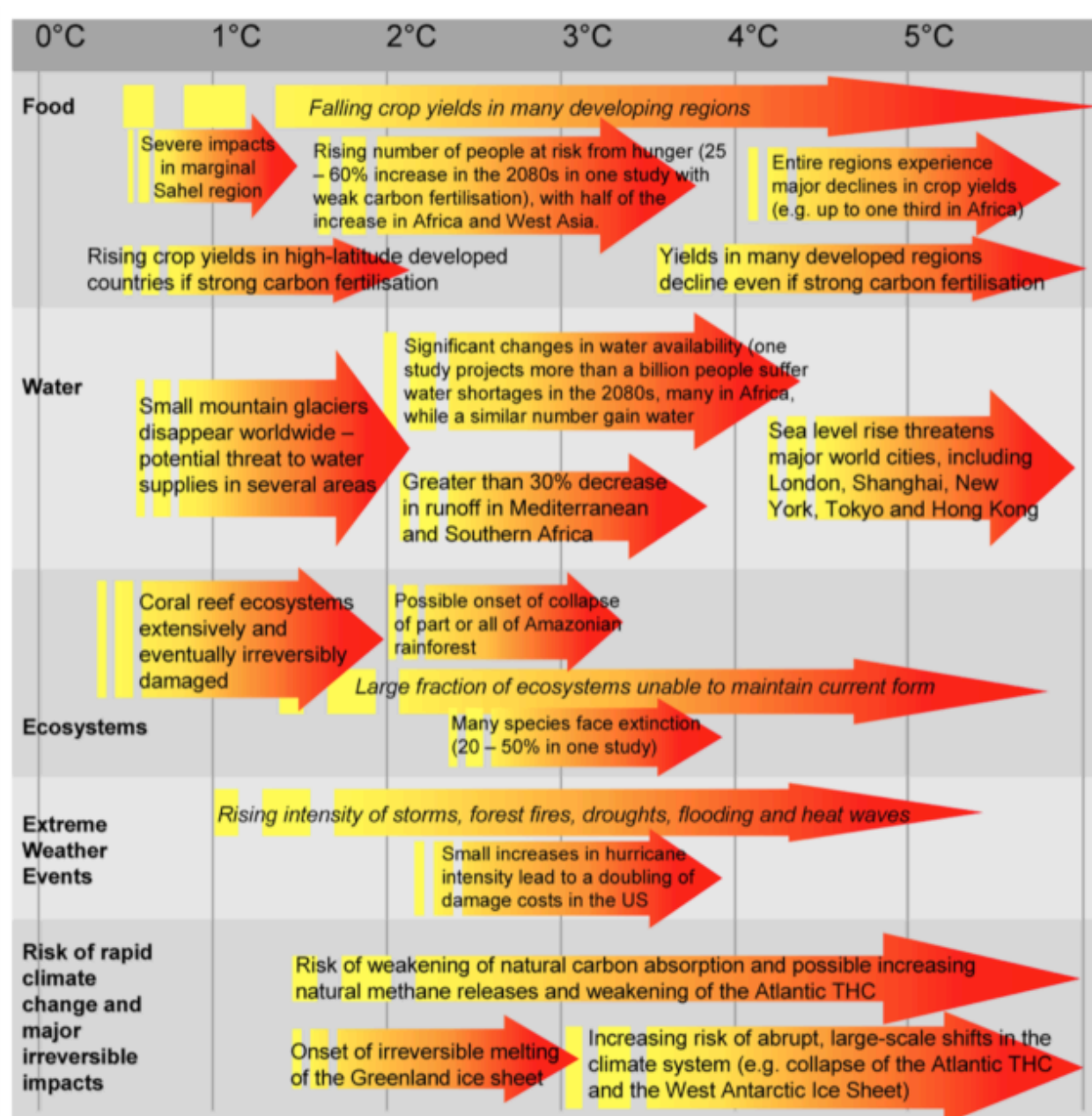
- Ph.D. Economics, Oxford University
- Academic, 1970-1999
- Chief economist, World Bank, 2000 - 2003
- Knighted, 2004
- Member, House of Lords, 2007

The Stern Review: The Economics of Climate Change

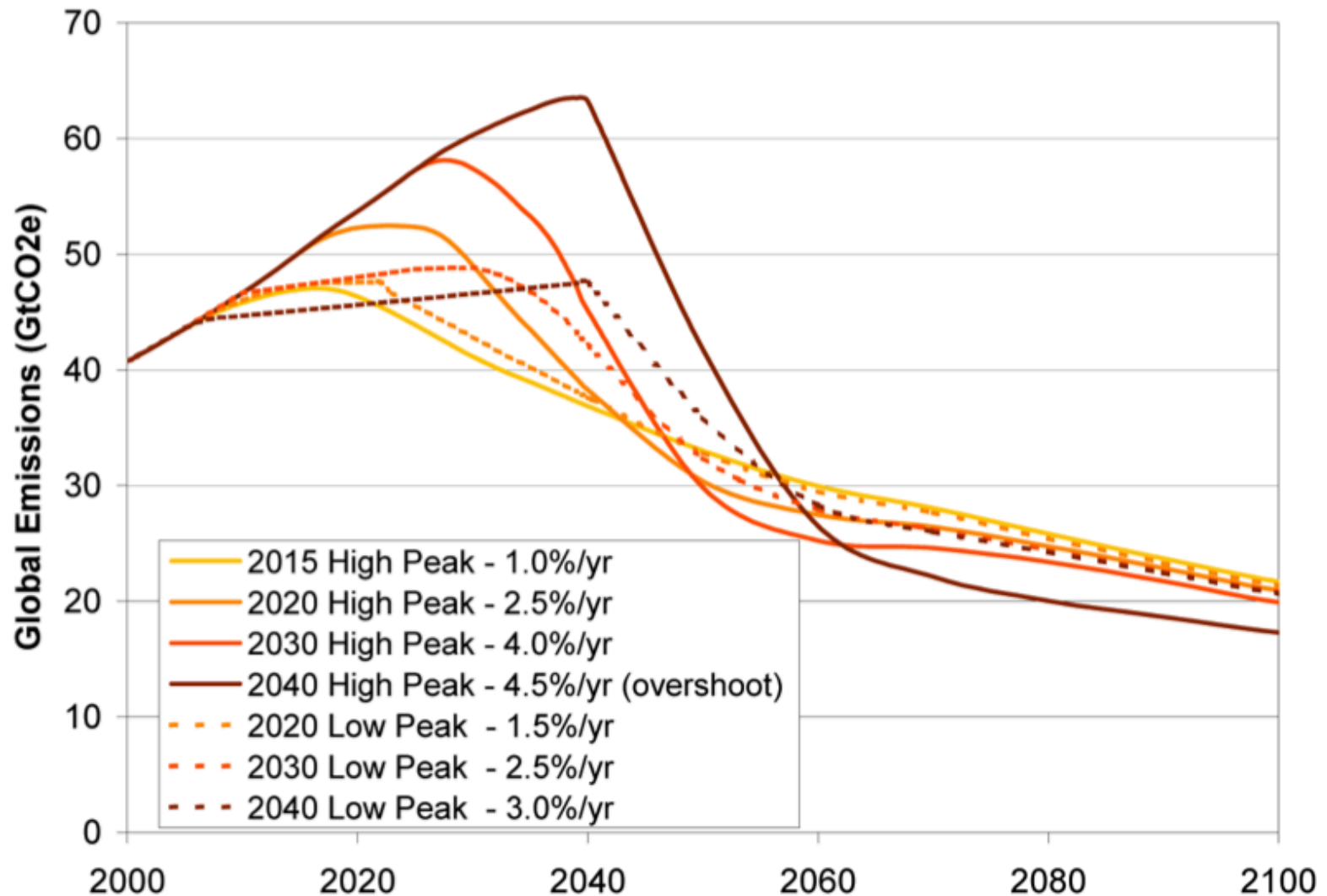


- 670 page independent review commissioned by the British government to better understand the economics of climate change
- Uses risk-management approach to assess the impact of climate change
- The risk- management approach focuses on worst case scenarios and how to prevent them
- Stern Review tends to be more definitive than the IPCC report

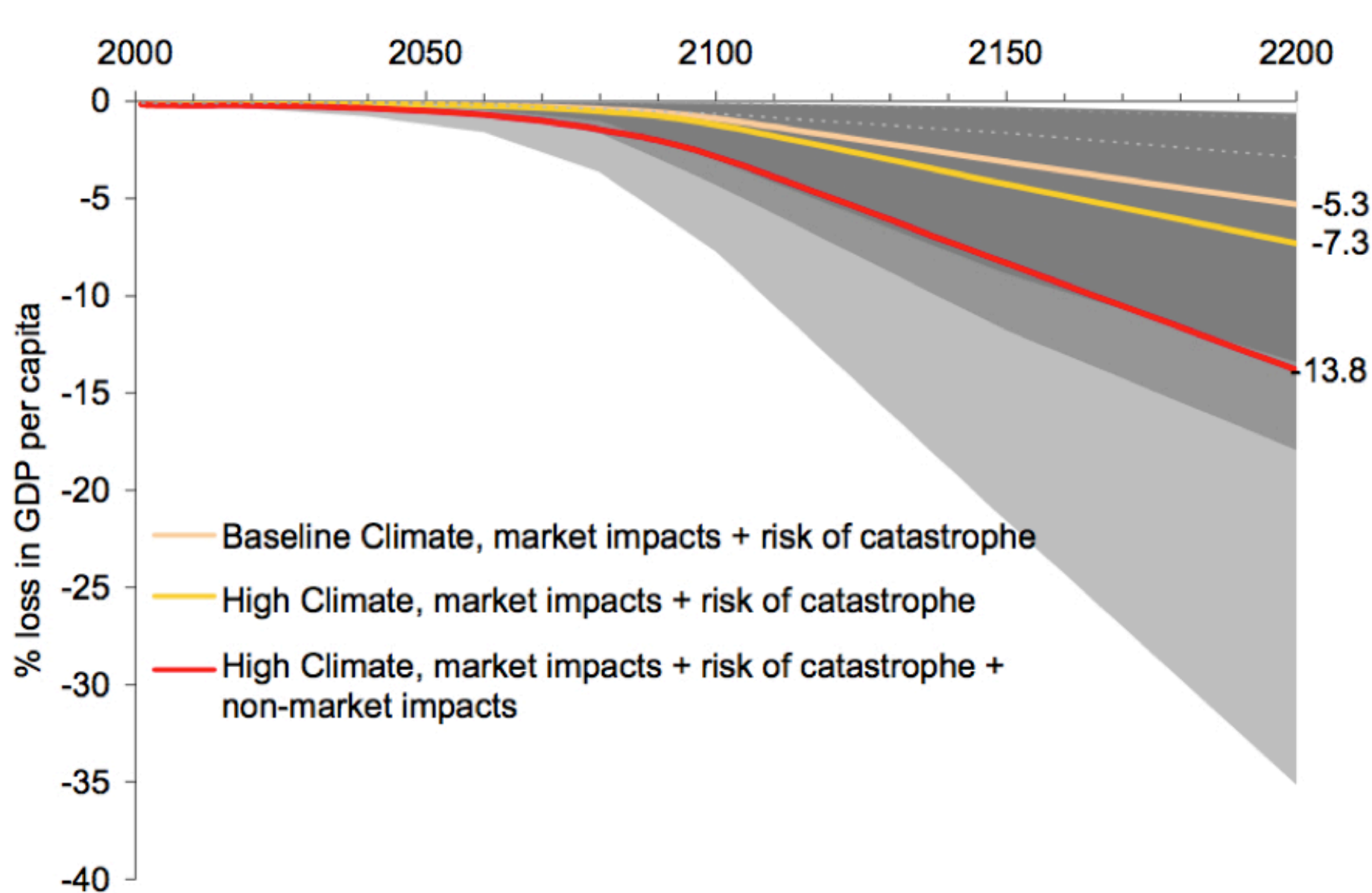
Impacts of increased greenhouse gases



Scenarios to stabilize at 550 ppm CO₂



Losses in per capita income due to climate change



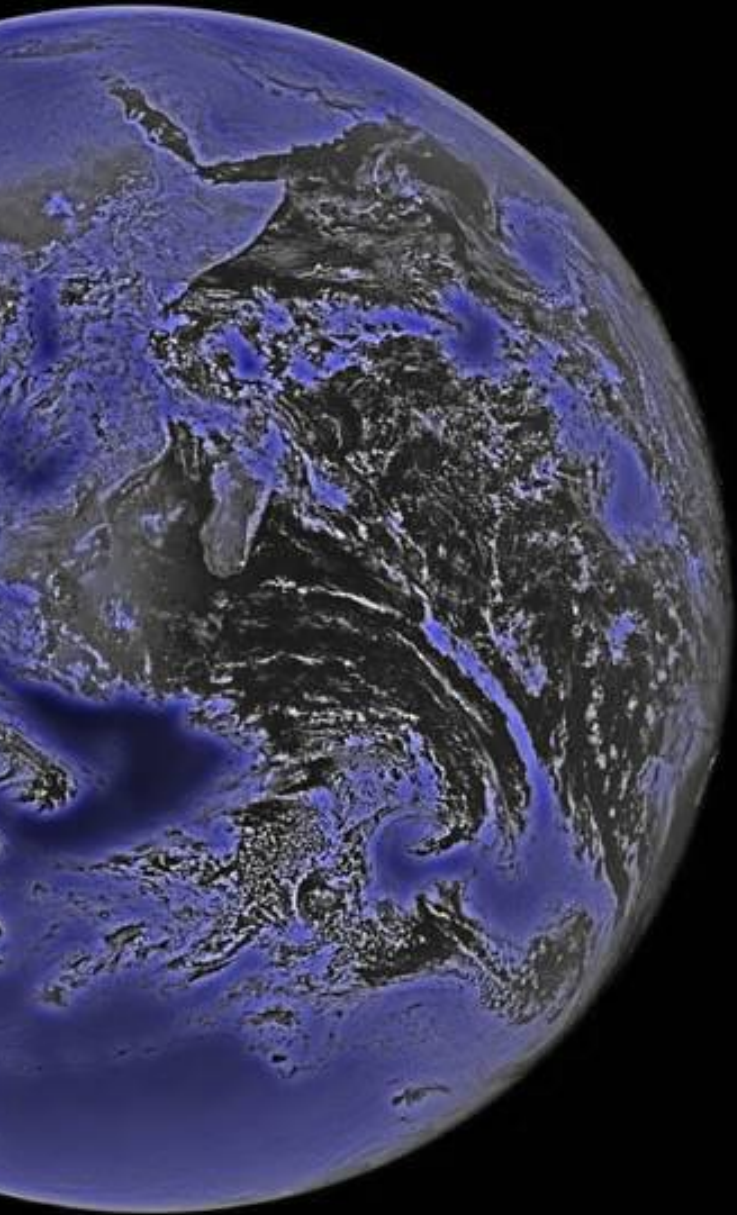


Conclusions:

The scientific community has reached a consensus that current climate change is human-induced, and will produce devastating environmental and societal impacts during the next century.

The benefits of strong early action to mitigate climate change clearly outweigh the costs.

The US should aim for moral, scientific and industrial leadership to mitigate climate change, rather than vying to be the head weasel.



“Perhaps our epitaph will be:

**The good Earth. We could have
saved it, but we were too damn
cheap and lazy.”**

~ Kurt Vonnegut