



# UPDATE ON CLIMATE CHANGE SCIENCE AND SOLUTIONS

**Amanda Staudt, Ph.D.**  
**National Wildlife Federation**  
**June 16, 2009**



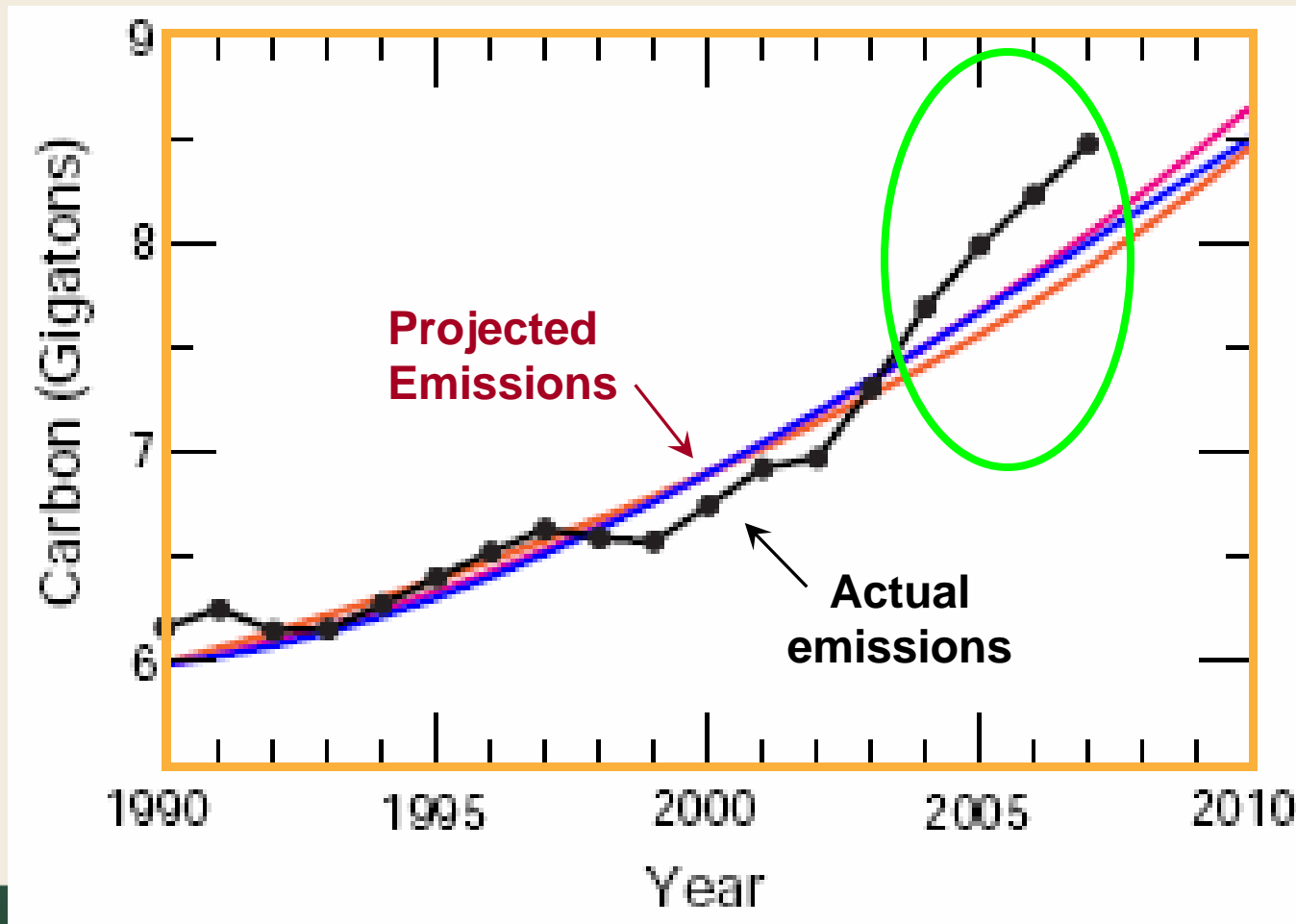
# Mounting scientific evidence

- Urgency
- Irreversible
- Already being impacted
- Solutions

Urgency

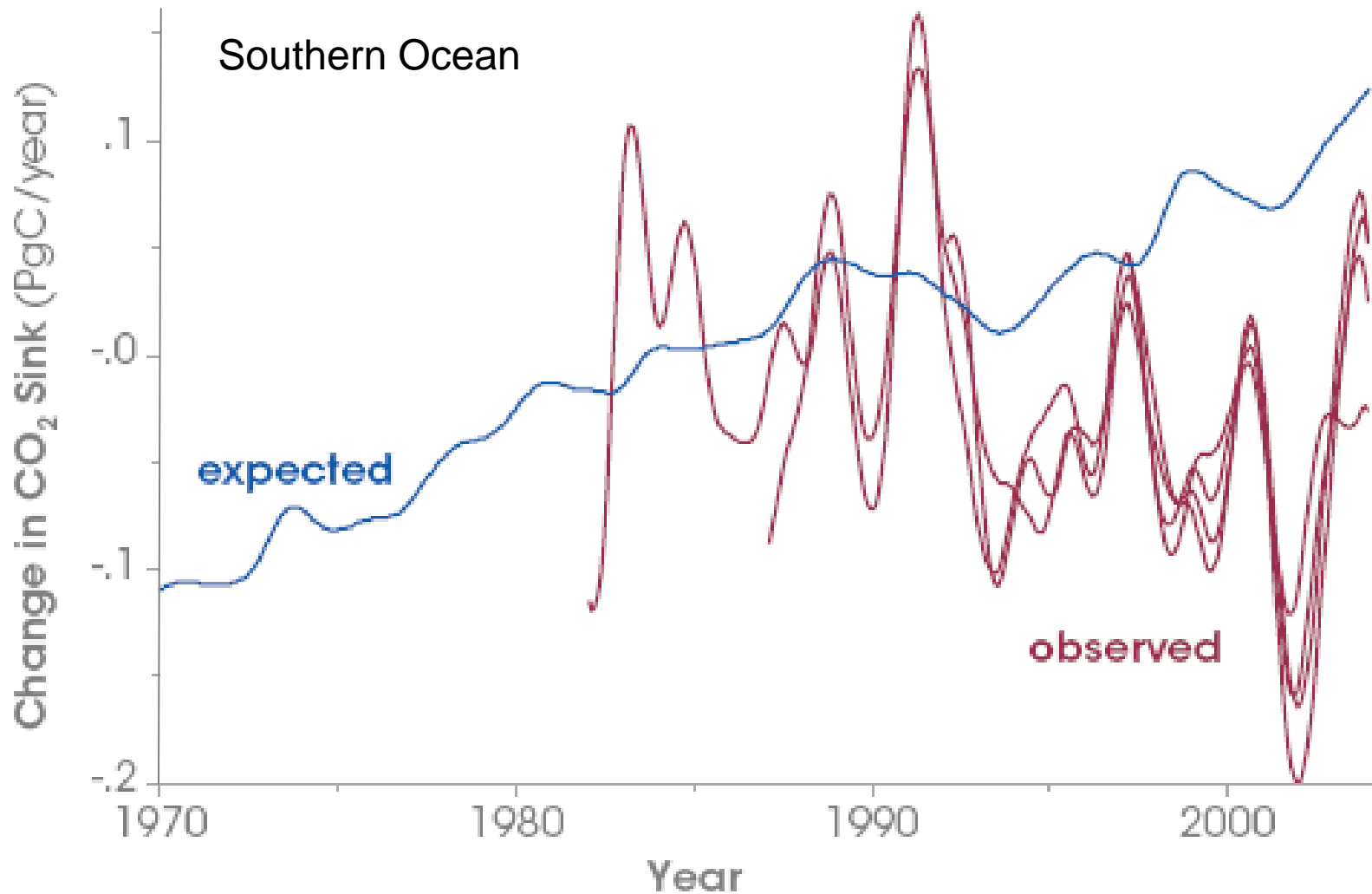


# Emissions increasing faster than worst-case scenario



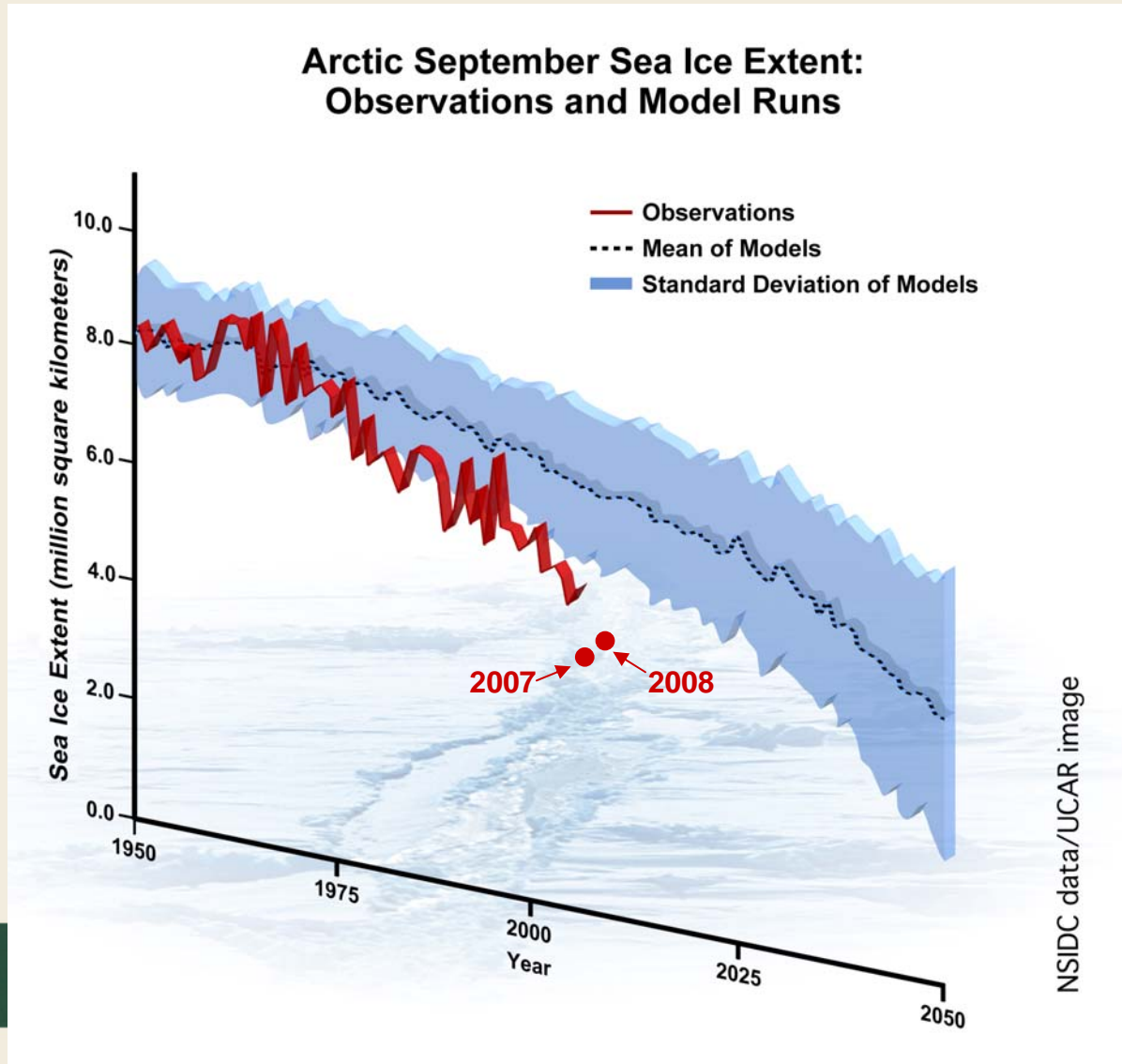
(Canadell, et al., 2007)

# Declining Ability of Ocean and Terrestrial Biosphere to Store Carbon



Le Quéré et al., 2007

# Arctic Sea Ice Rapidly Melting



# Polar bears on thin ice



Howard Ruby



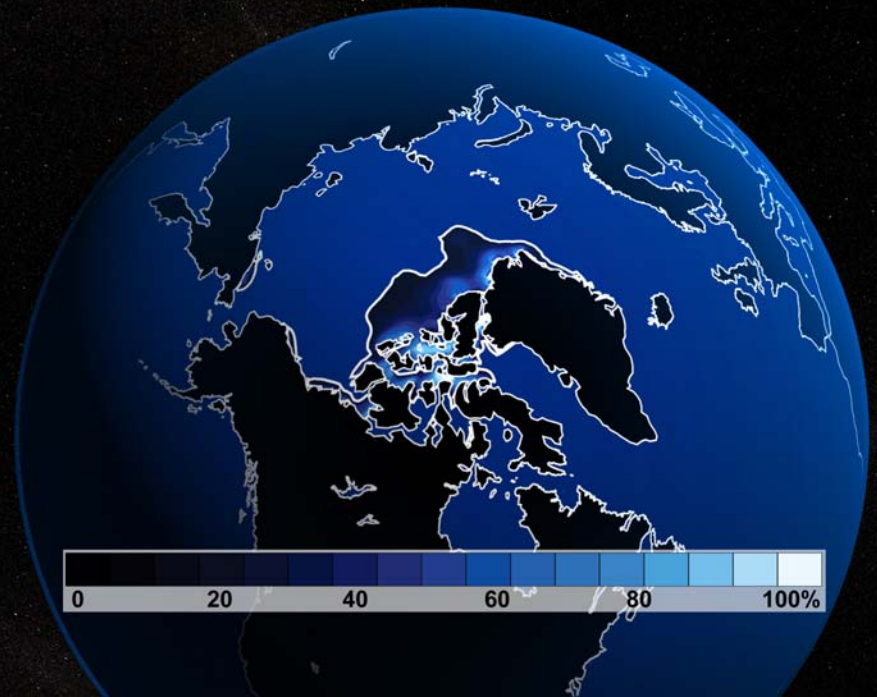
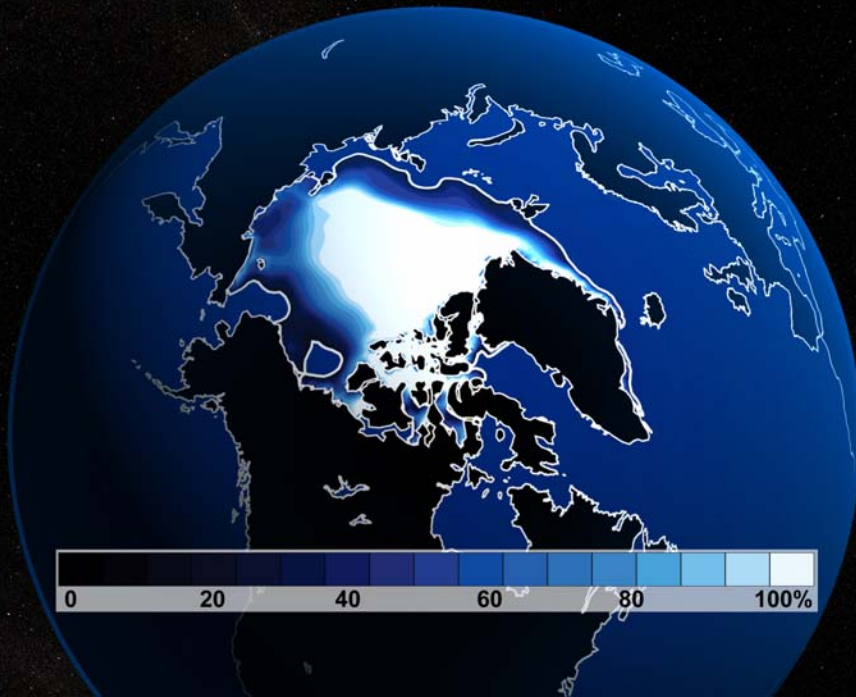
Larry Master



Photodisc

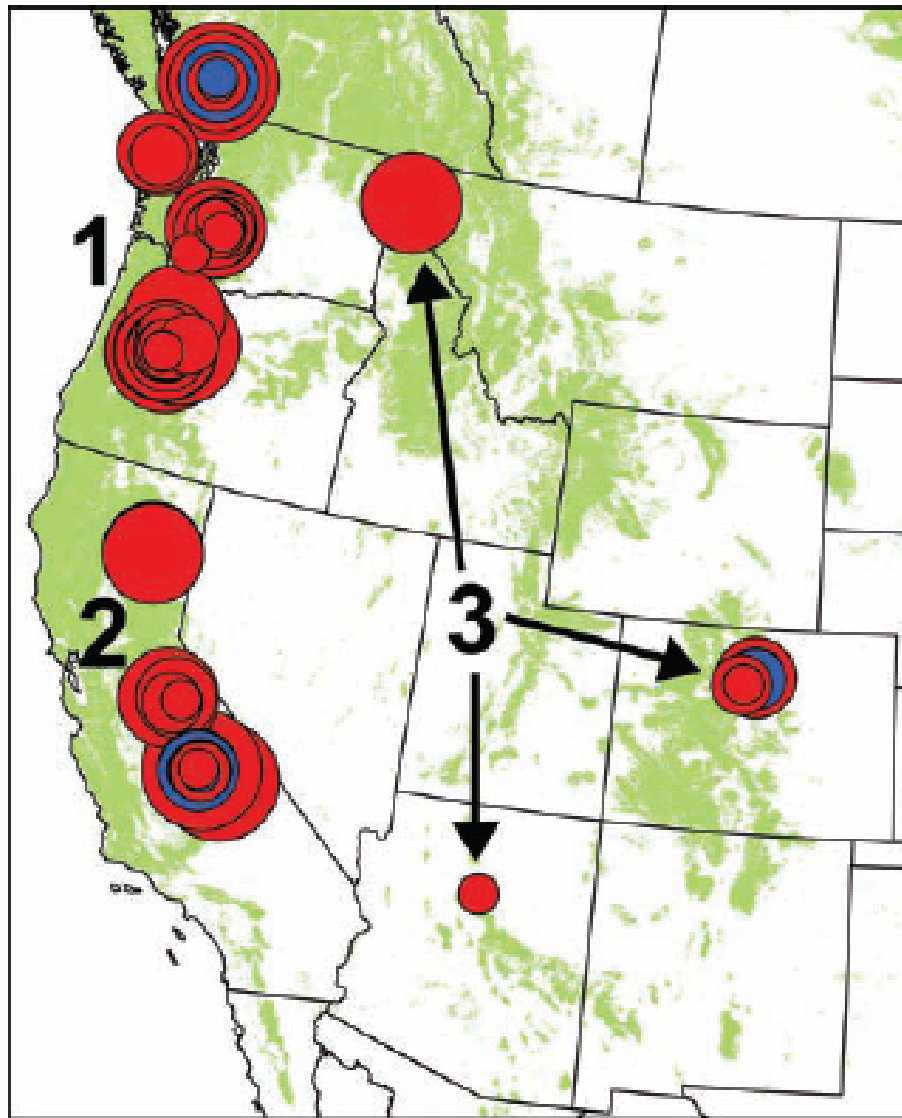


# Declining Albedo





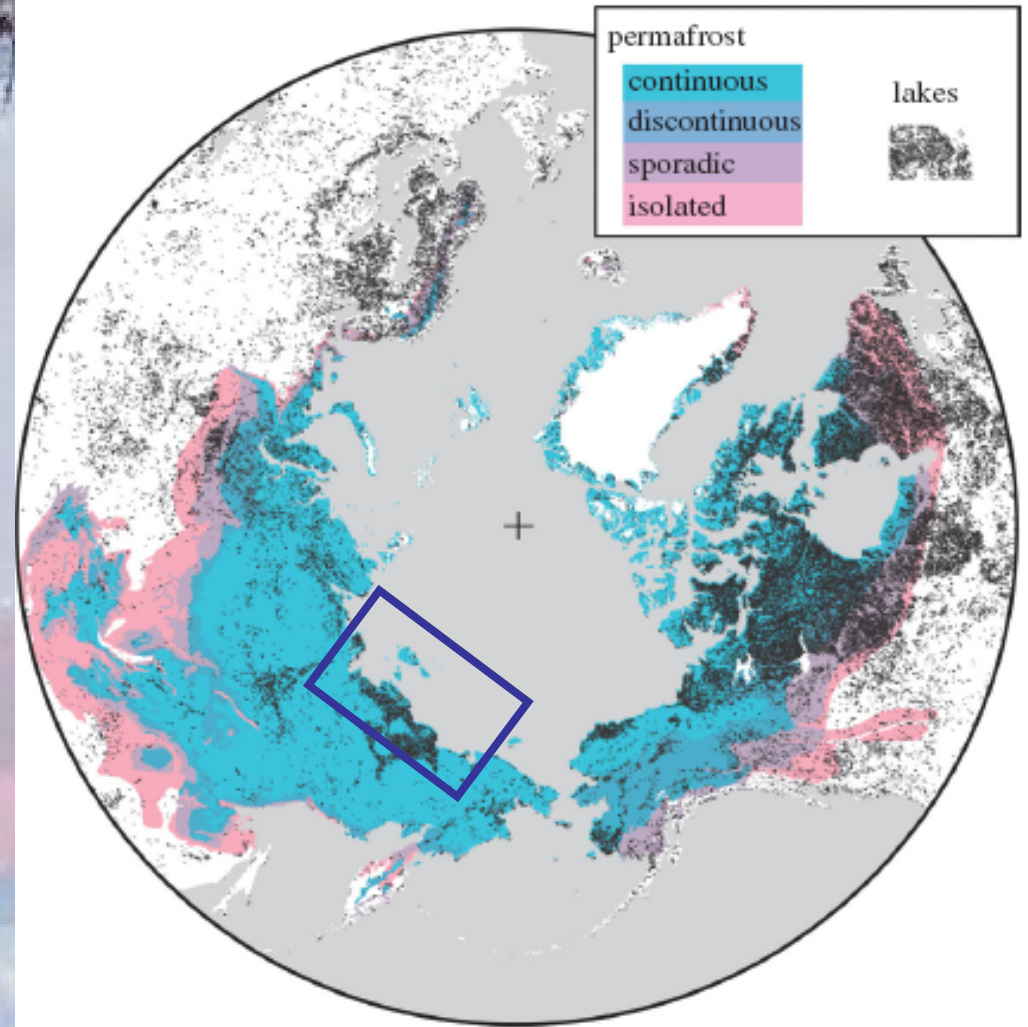
# Widespread forest mortality



# Pine beetle infestations

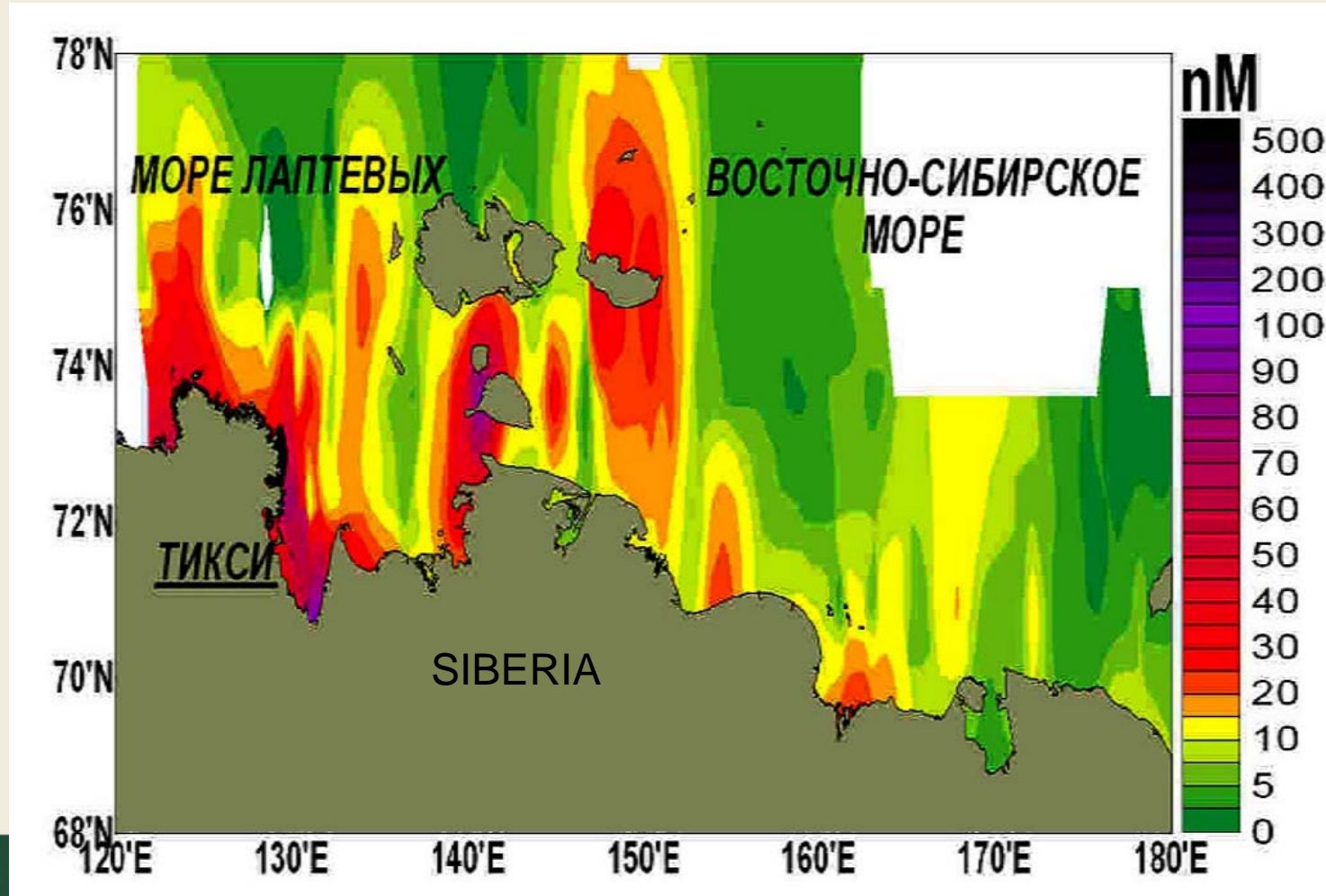


# Melting Permafrost Releasing Methane



(Walter et al., 2007)

# Methane release from ocean floor

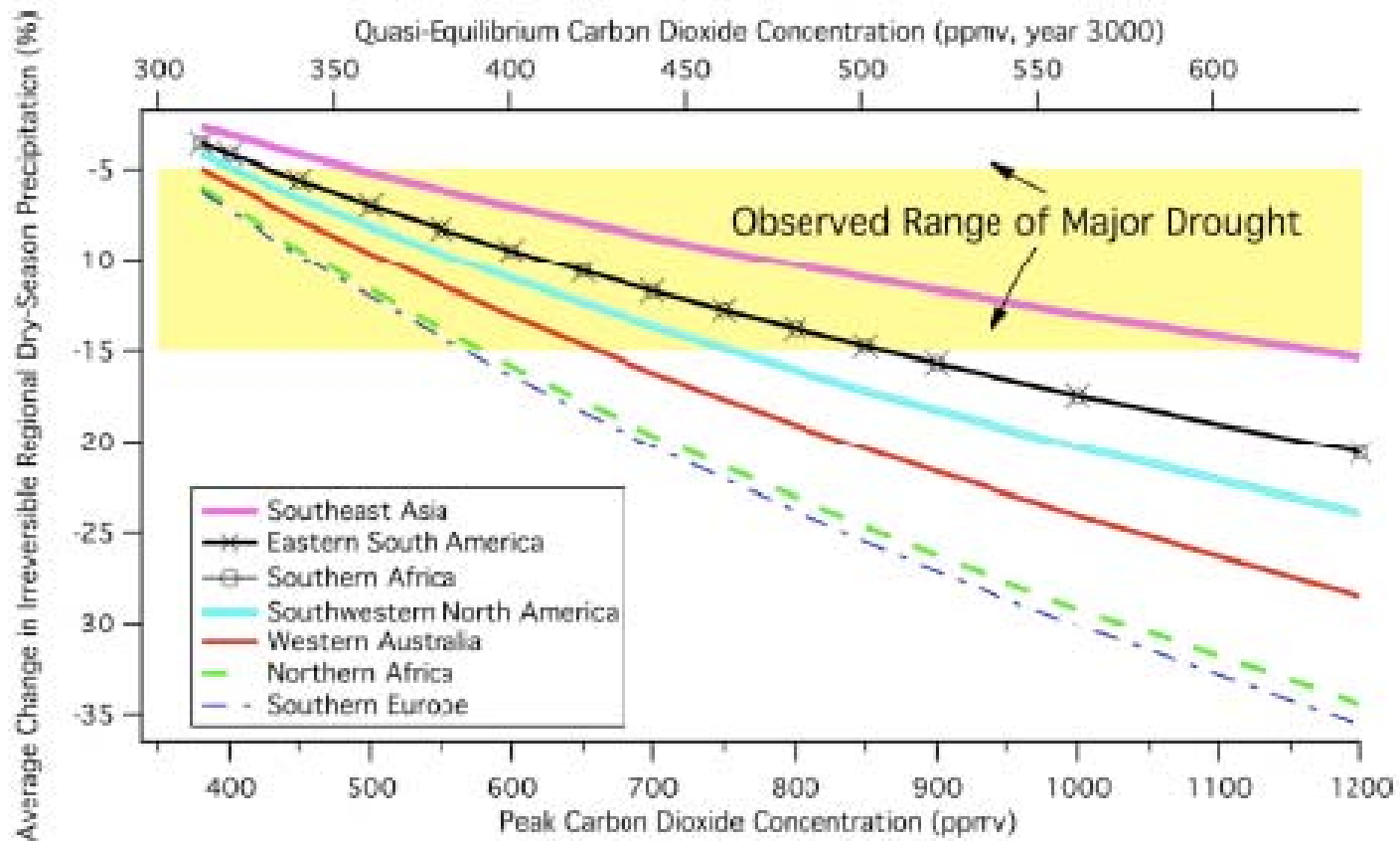
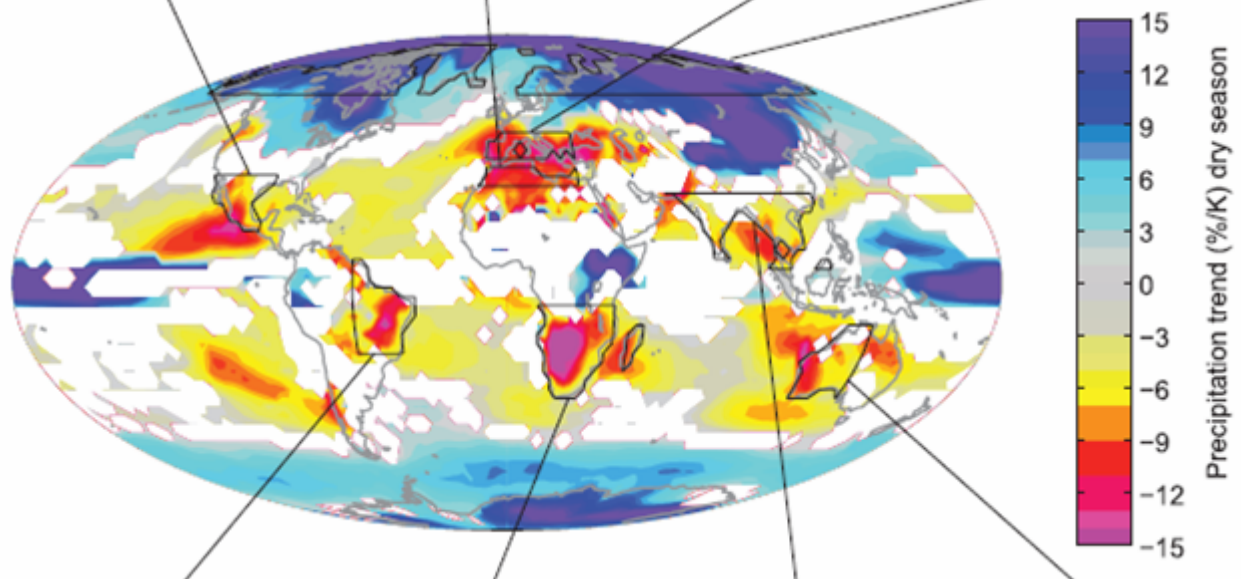


(Shakhova and Semiletov, 2009)<sub>2</sub>

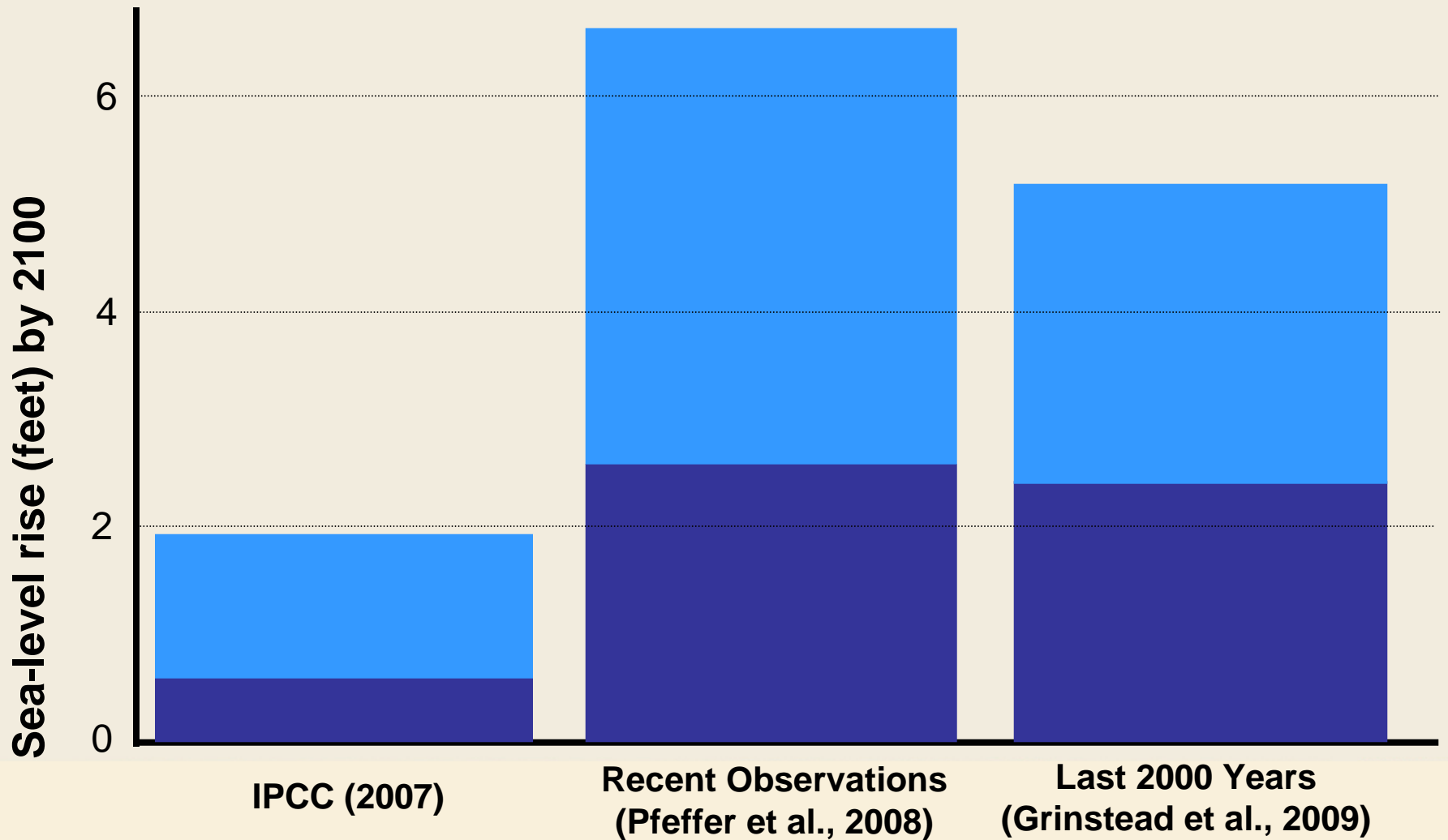
# Irreversible changes



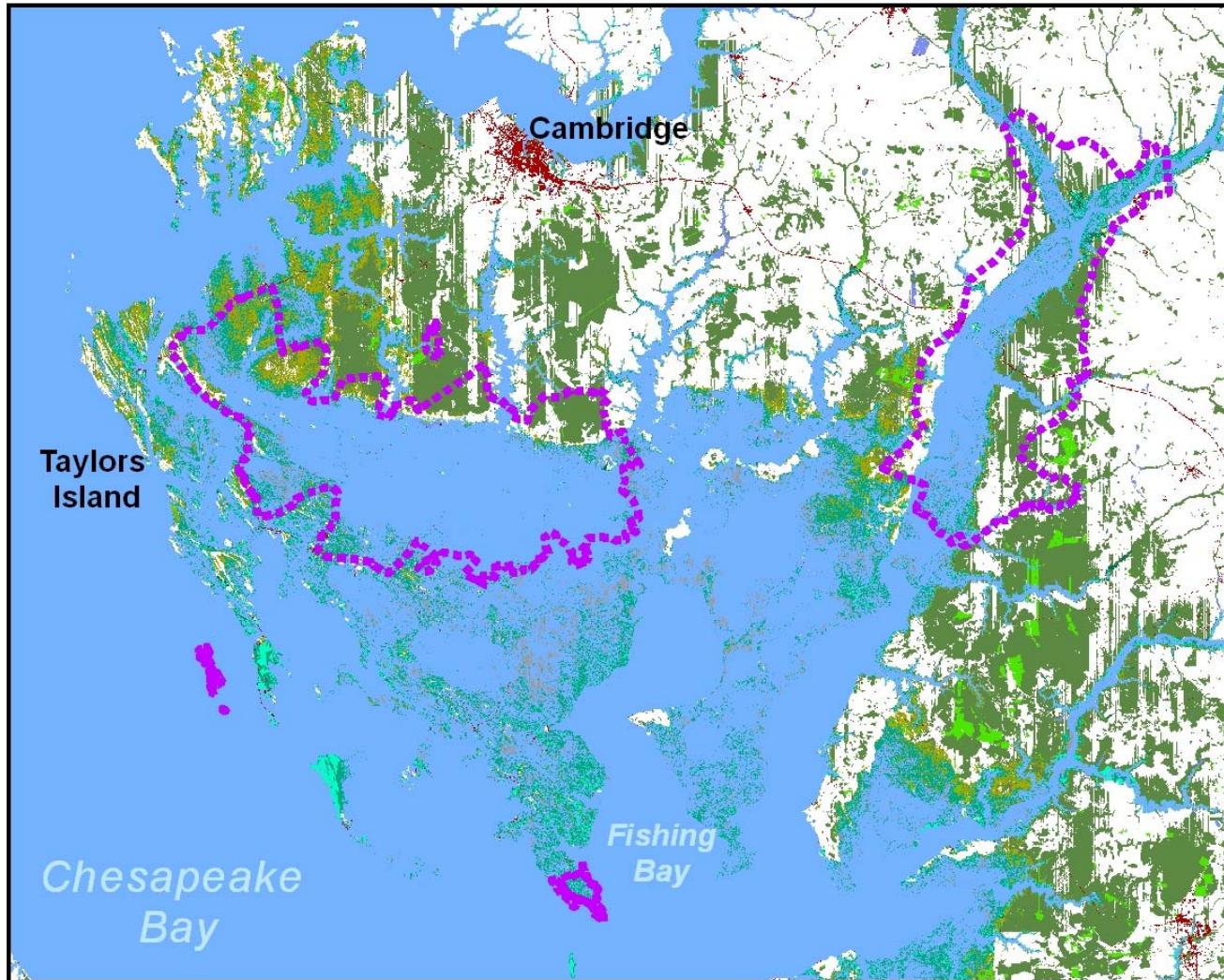
# Shifts to semi-arid conditions



# Sea-level Rise Rates Larger Than Previously Projected



# Blackwater National Wildlife Refuge

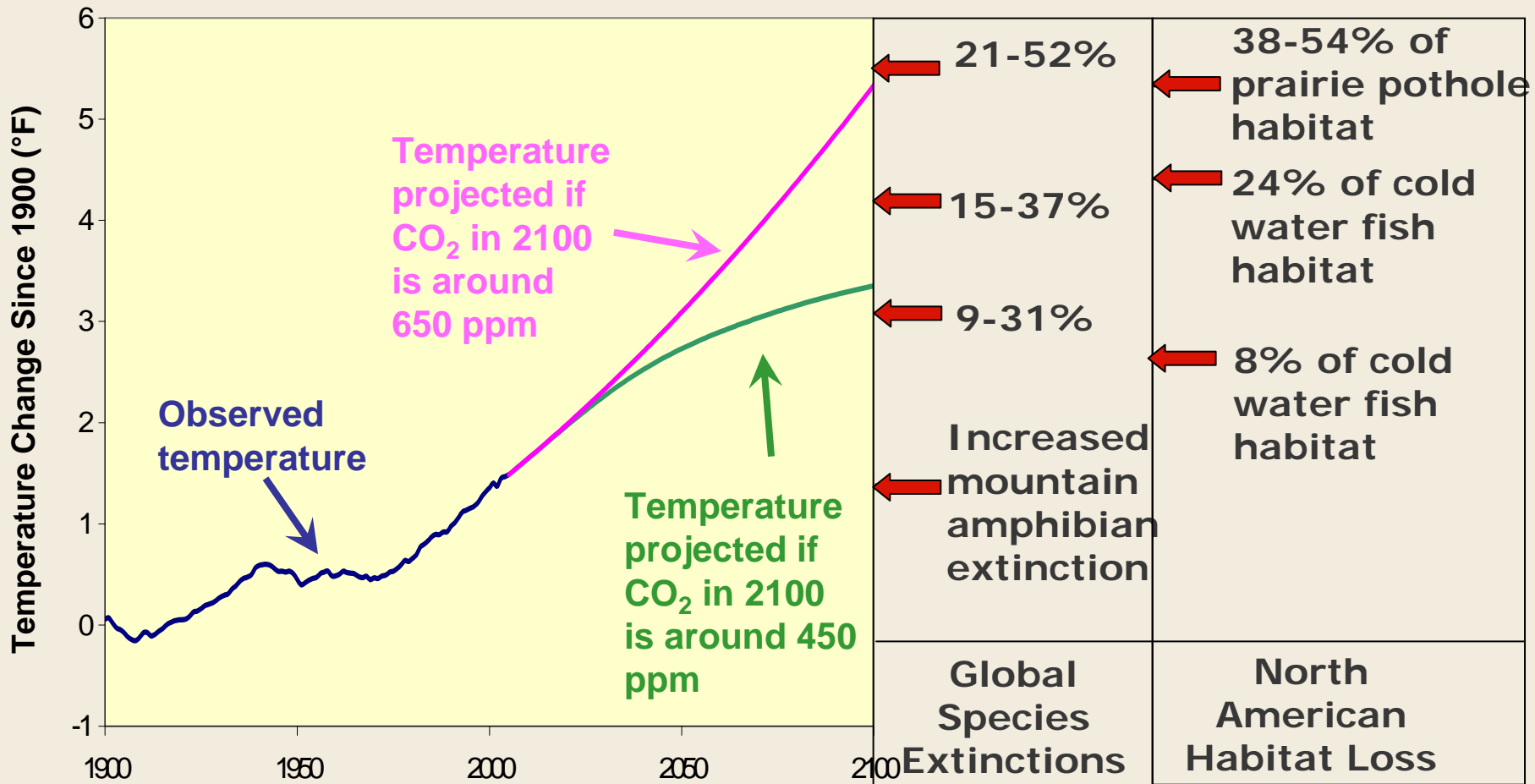


global sea level rise = +2.3 feet





# Species extinction

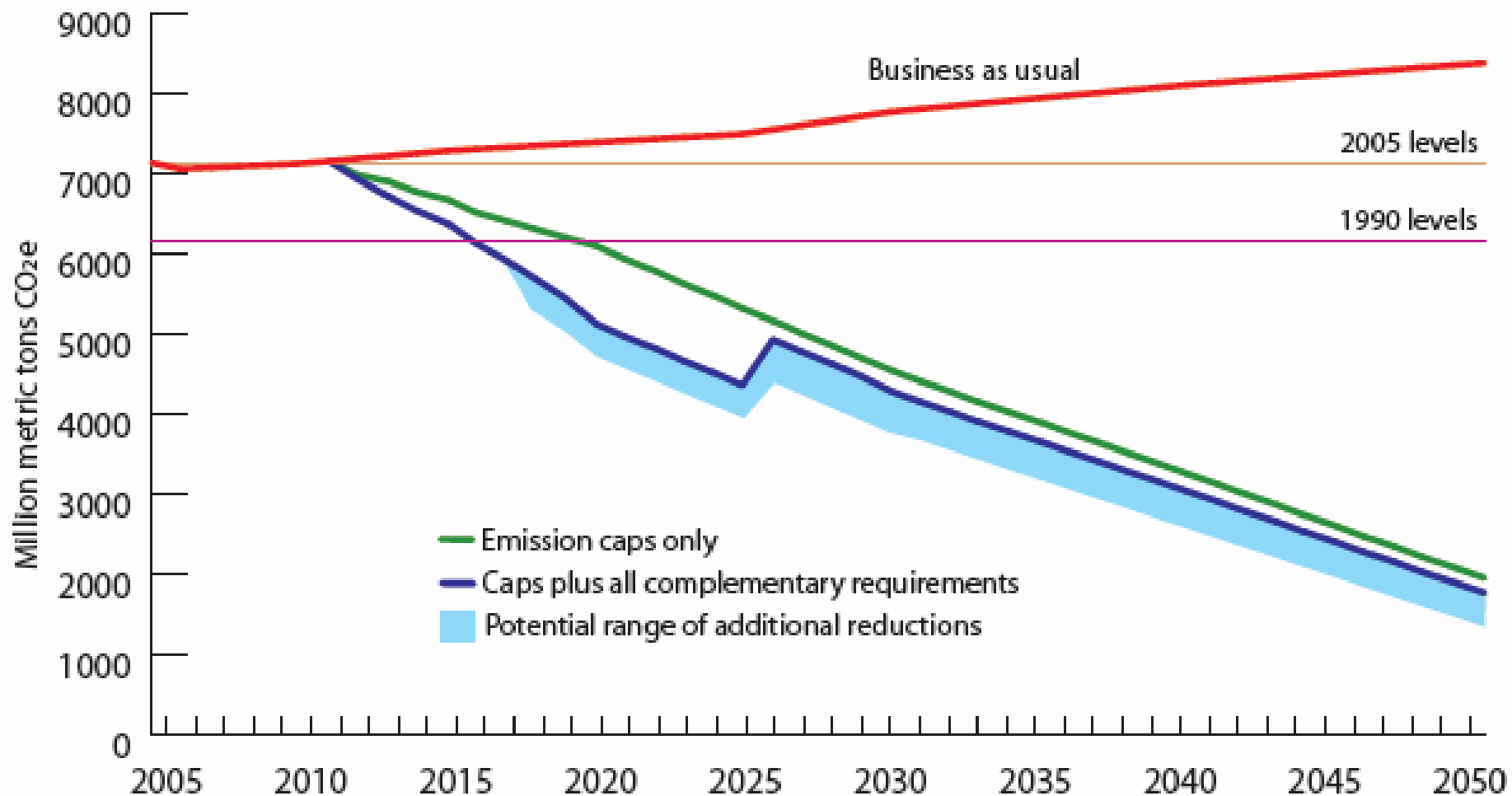


# Solutions

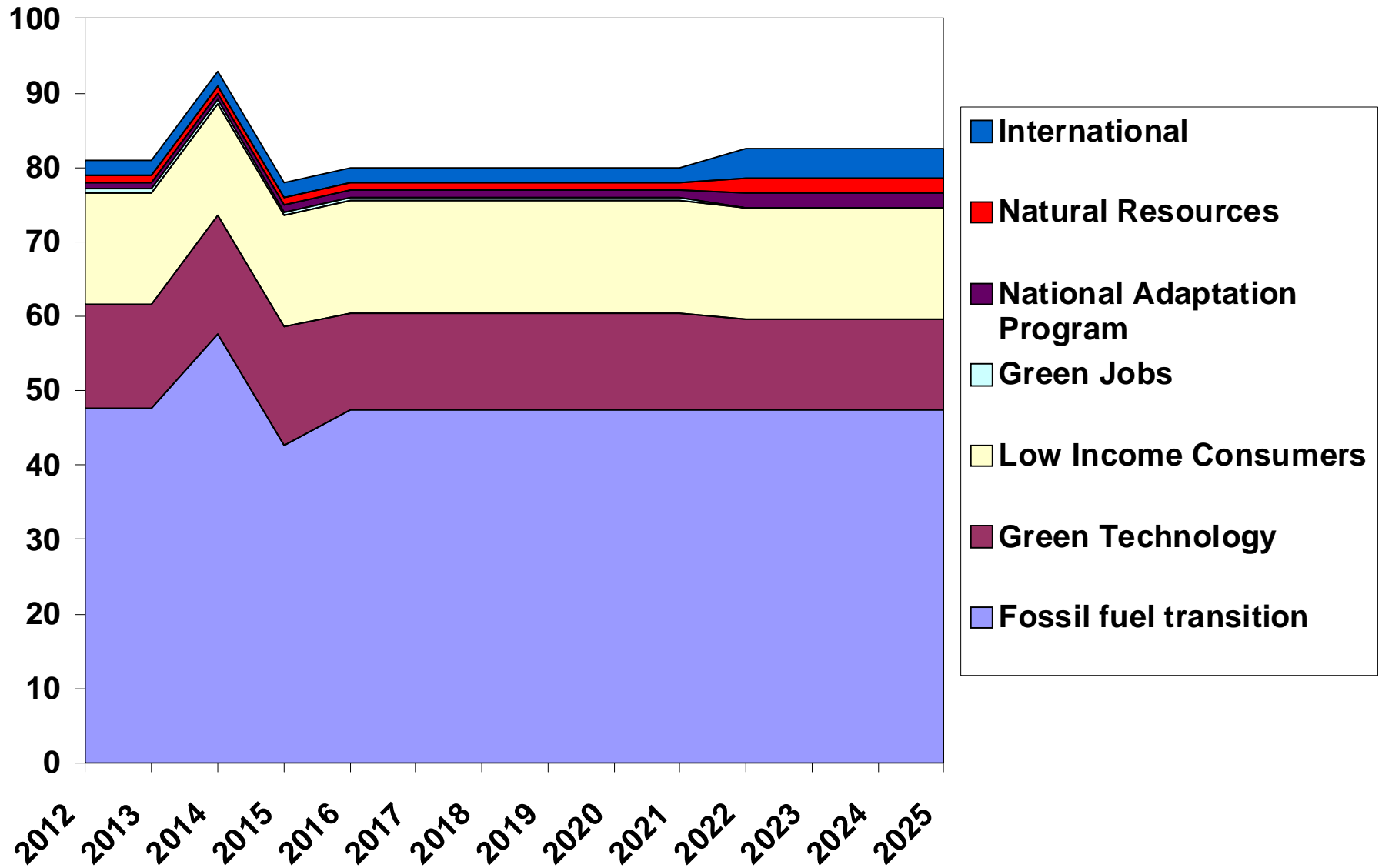


# Emission Reductions Under H.R. 2454, the American Clean Energy and Security Act, 2005-2050

May 19, 2009

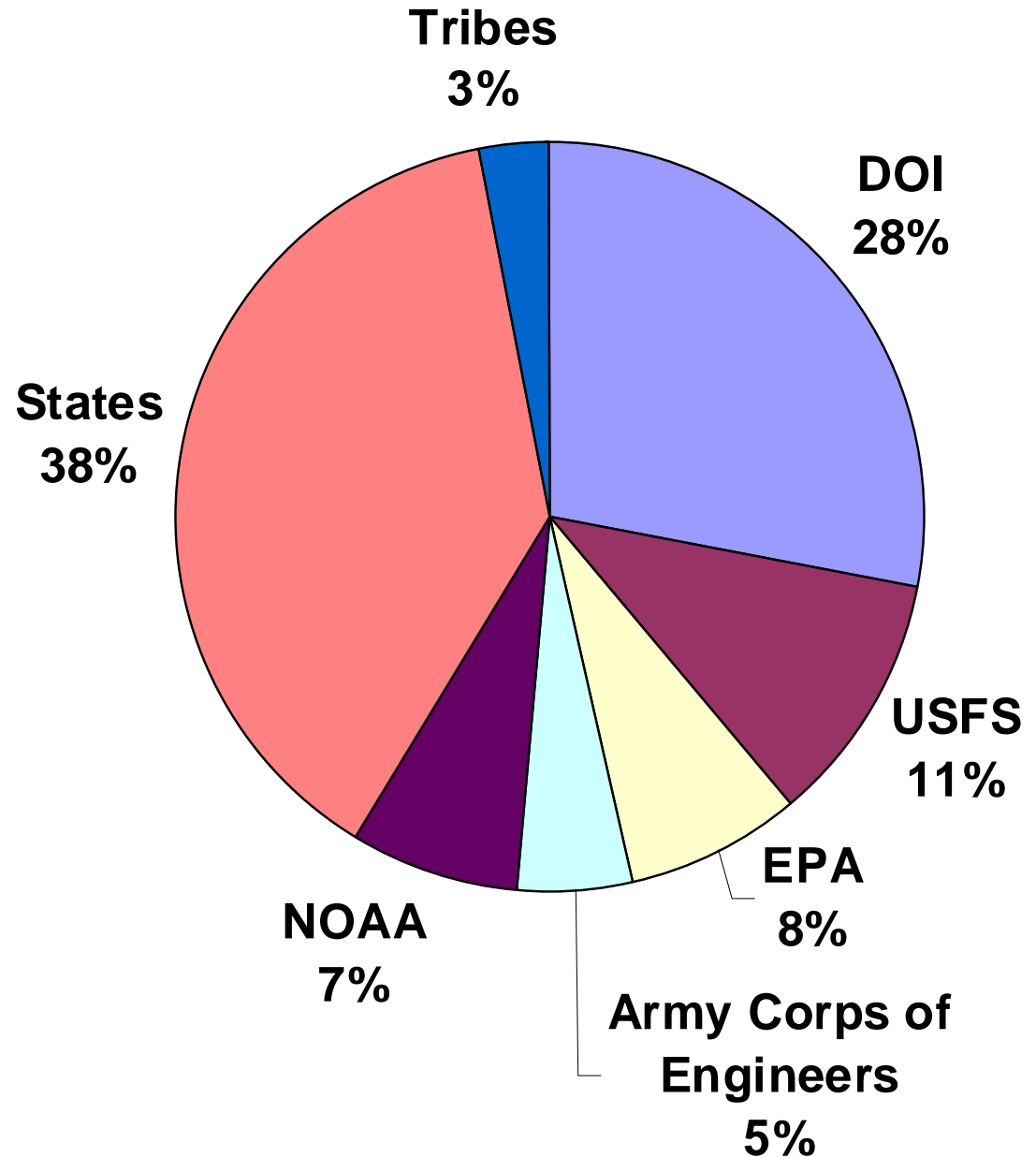


# ACES Allocations



# Allocation of Natural Resources Funding

Average annual funding through 2030 = \$1.71 B



# How ACES Would Transform Conservation

Eligibility for Large-Scale Adaptation Funding:

- 1) Helping species, habitats, ecosystems, ecological processes survive climate change & ocean acidification
- 2) Consistent with national, federal agency, or state natural resources adaptation plan



# Historic Opportunity...

- ...to reduce global warming pollution
- ...to repower America by advancing a clean energy economy
- ...to protect wildlife for our children's future

