



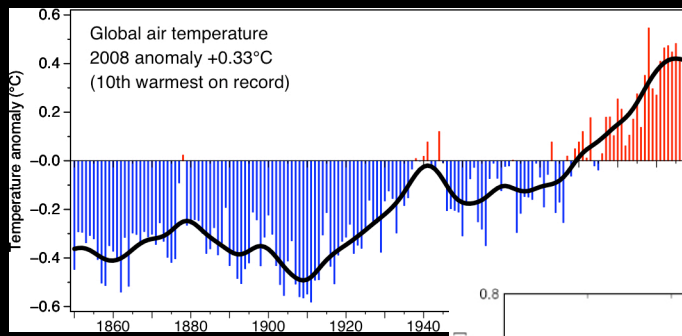
# COP15 - Copenhagen 2009: A Science Perspective on the Outcome

**Prof Will Steffen**

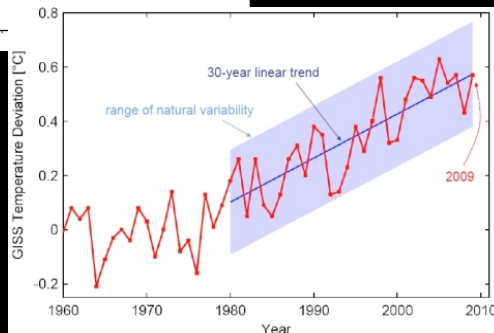
**Executive Director  
The ANU Climate Change Institute  
The Australian National University  
and  
Science Adviser  
Department of Climate Change  
Australian Government**

2009/10 CEEM Annual Conference, UNSW, Sydney, 25 Feb 2010

## Trends in global air temperature

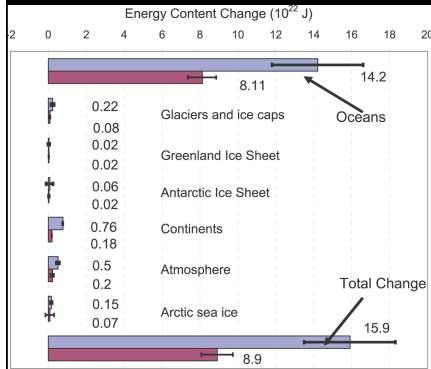


CRU, UK, 2009

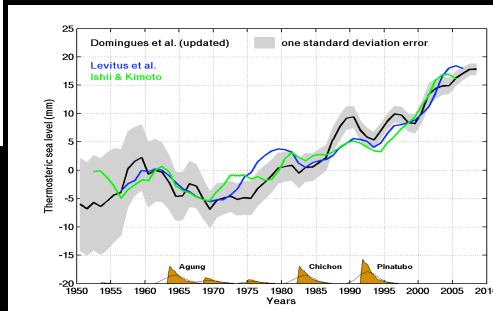


NASA GISS, 2010

# The Climate as a System: Ocean Heat Content

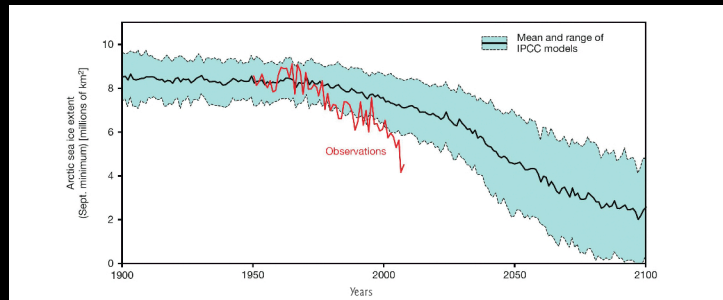


IPCC AR4 2007

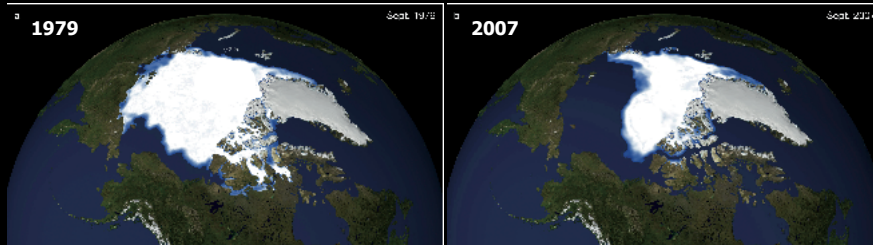


J. Church, CSIRO, 2010

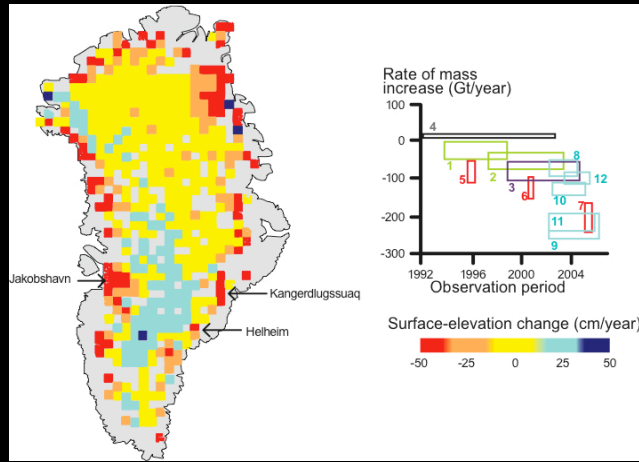
# Loss of Arctic Sea Ice



From Stroeve et al. (2007) updated with 2008 data

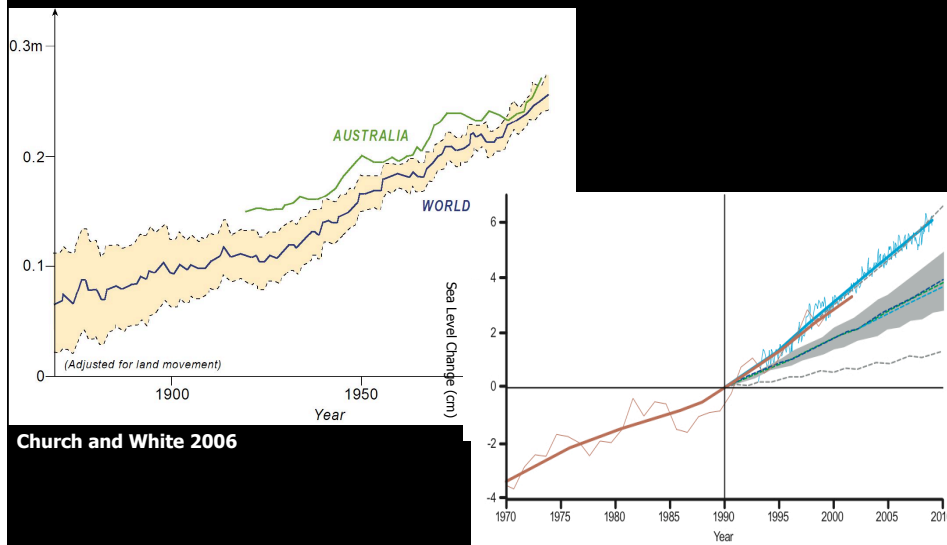


# Polar Ice Sheets: Greenland



K. Steffen, Natl Snow & Ice Center, U. of Colorado, USA

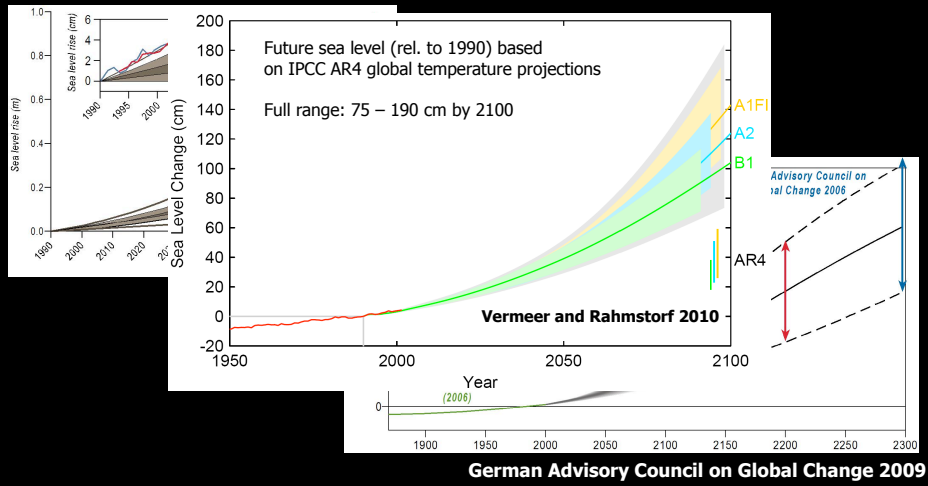
# Sea-level rise



Church and White 2006

Sources: Rahmstorf et al. 2007; Cazenave and Narn 2004; Cazenave 2006 & 2006-2008 data from A. Cazenave

## Projections of Sea-level Rise

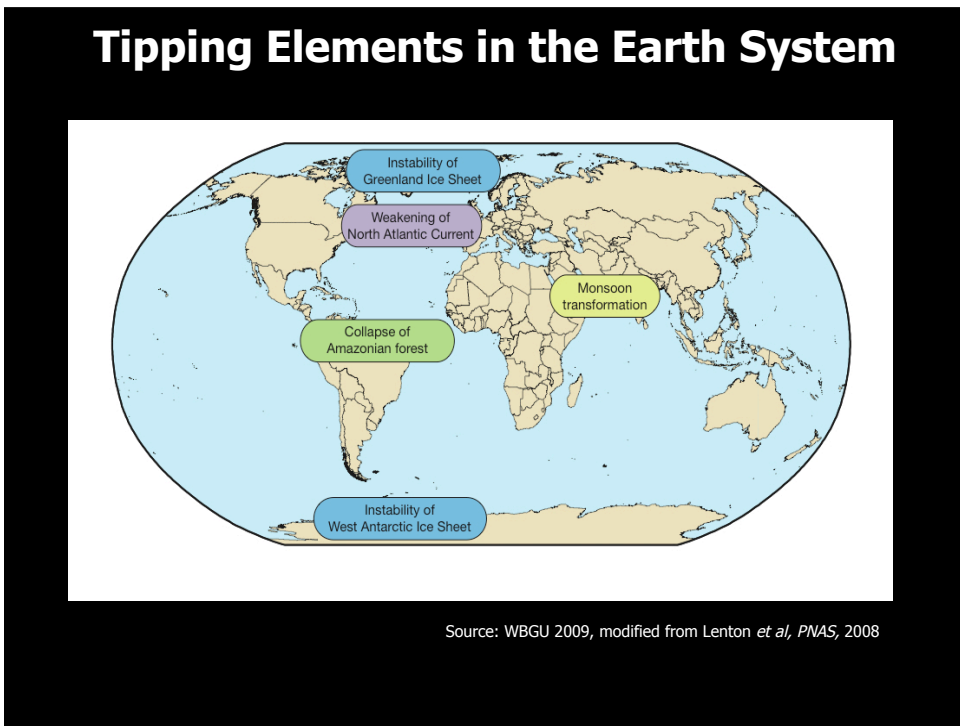
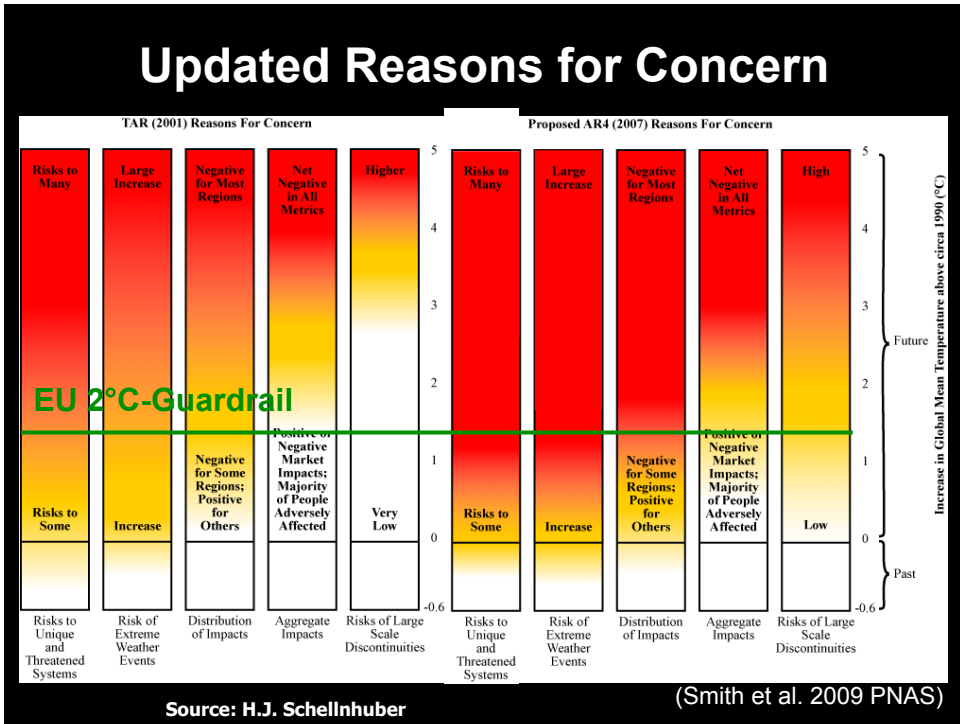


## Risks of inundation to infrastructure

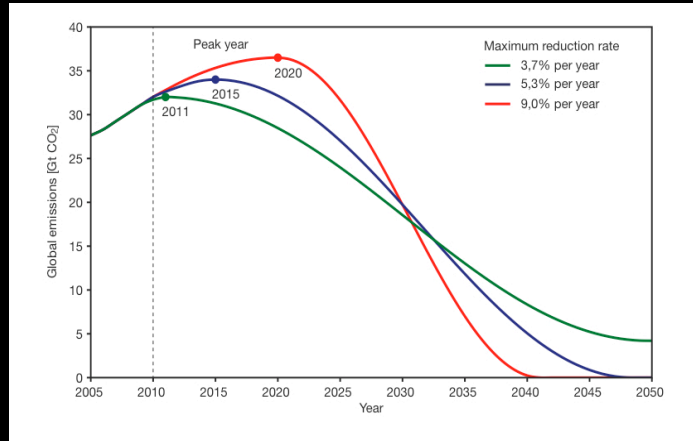


Brisbane Airport today (left) and in 2100 (right), with a 1.1 m sea-level rise above 1990 levels coupled with a high tide and storm surge.

DCC Coastal Vulnerability Assessment, 2009



## Emission trajectories for 2 C guardrail: Cumulative emissions approach

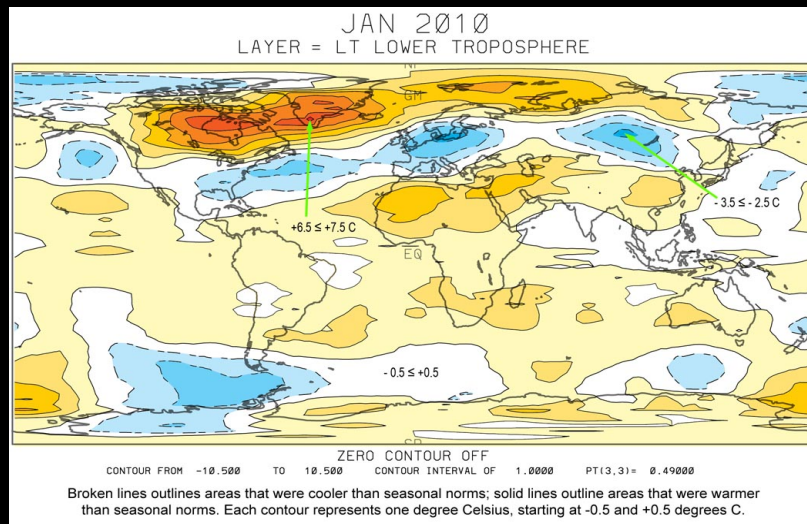


WBGU 2009

## Winter (N.H.) 2009-2010: Is this the end of global warming?



# January 2010: Hottest on record?



Source: R Spencer, UAH, USA

