



Energy, Transport and Sustainability: Discovering Pathways to 2040

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Introduction

Some quotes relating to climate change:

Extinction is forever.

Anon

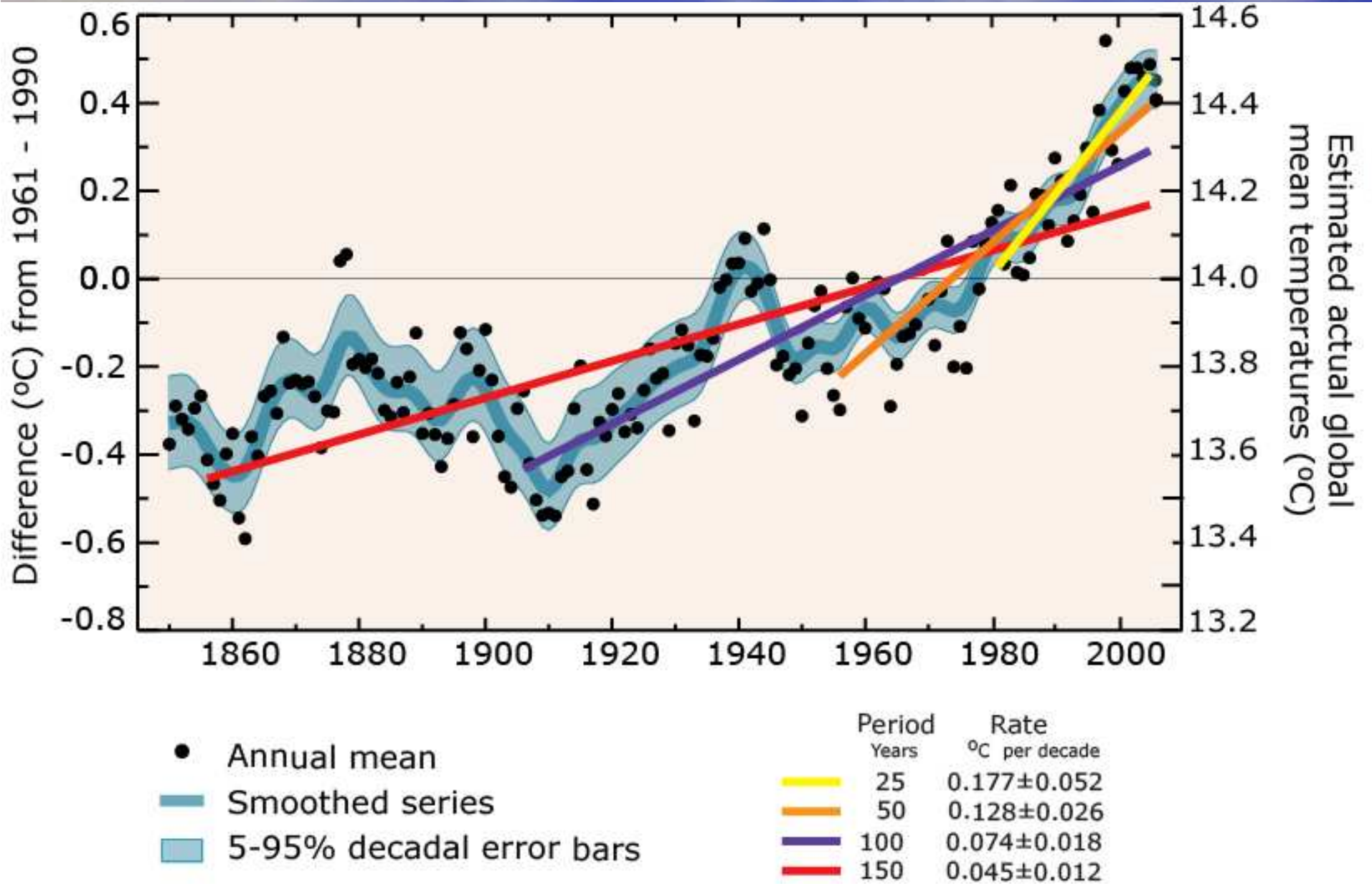
This is the most serious problem facing humanity in the 21st century ... this is the problem that if we don't address it will undermine and perhaps destroy civilization ... Don't be under 40 ... if we fail to solve this problem, my advice to people is not to be under 40.

Professor Tom Burke, Imperial College London (BBC interview, 2006)

Introduction

- Welcome
- Thanks
- Timely event
- Oil – hit a new high today!
- Climate change
- Other environmental issues
- Challenges for NZ
- The day ahead

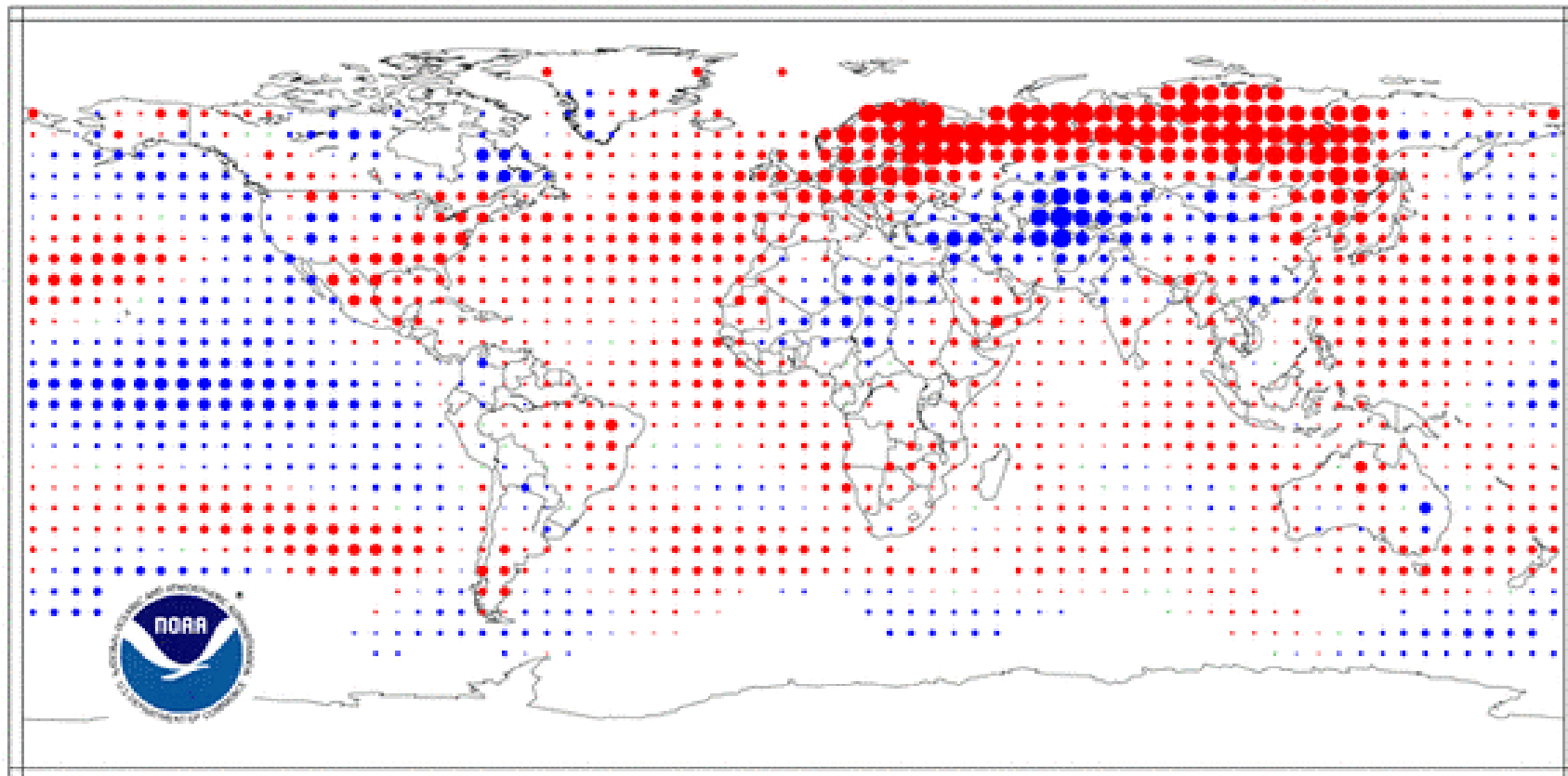
Global average temperature



Temperature Anomalies Dec-Feb 2008

(with respect to a 1961-1990 base period)

National Climatic Data Center/NESDIS/NOAA

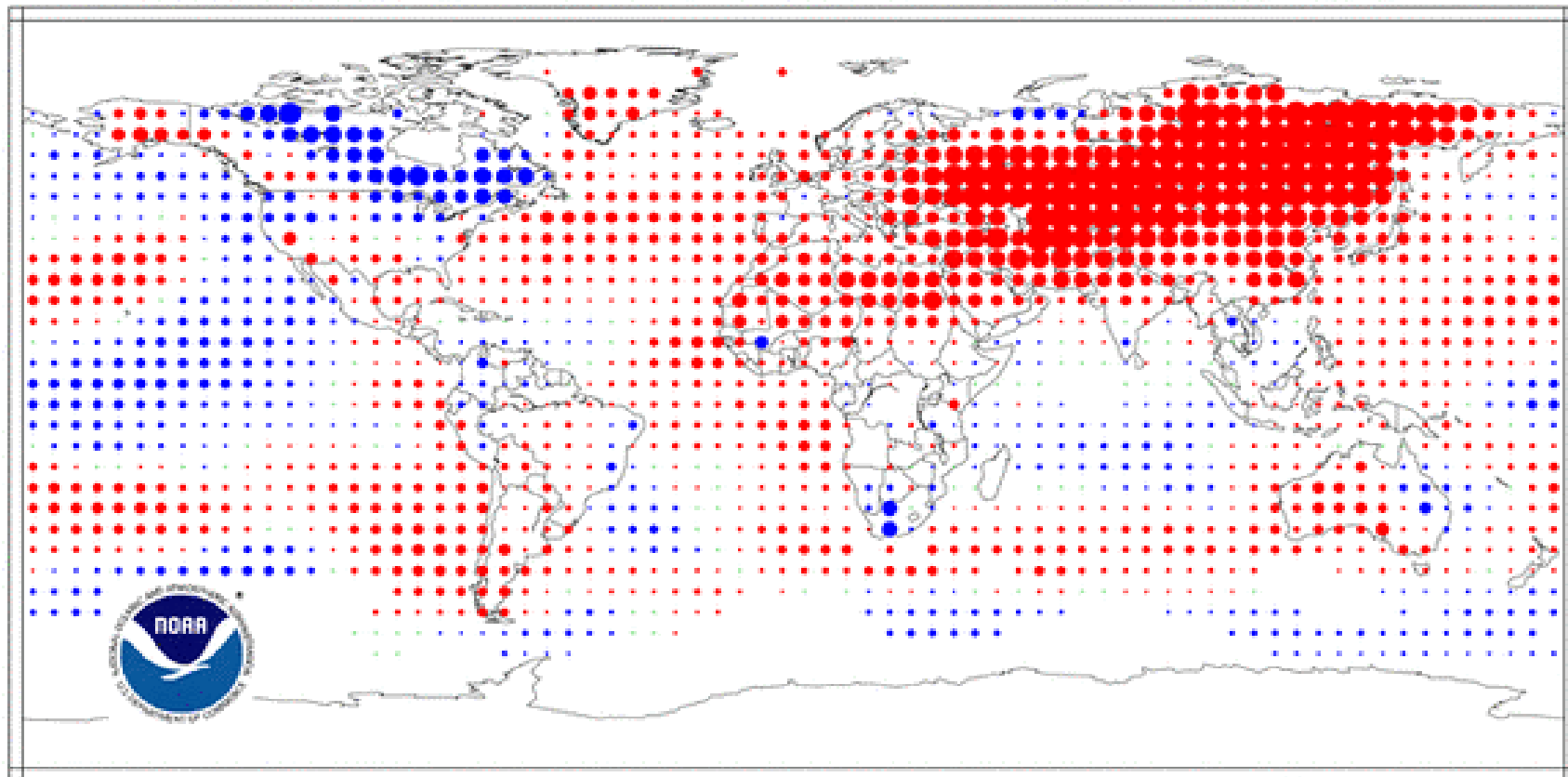


Degrees Celsius

Temperature Anomalies March 2008

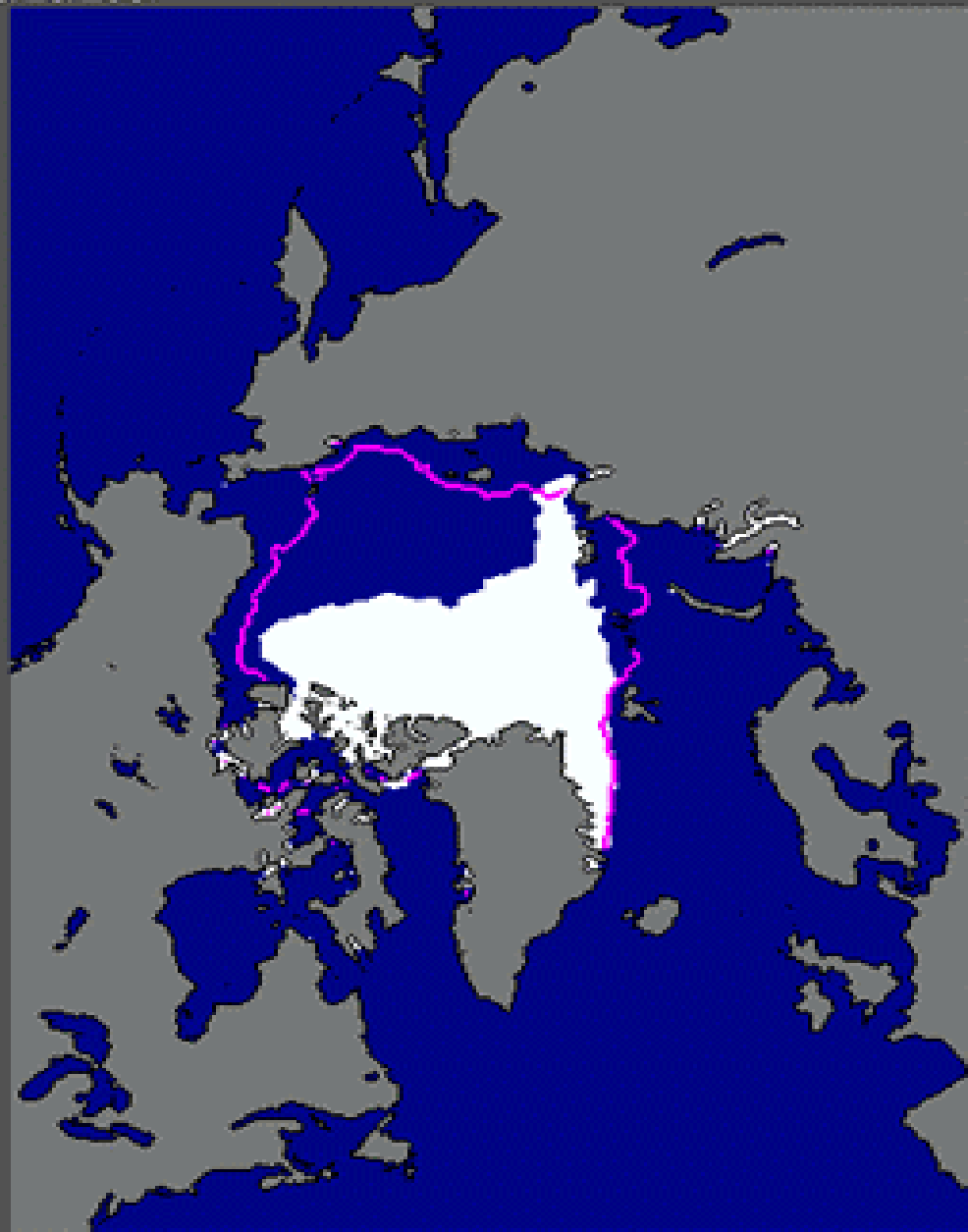
(with respect to a 1961-1990 base period)

National Climatic Data Center/NESDIS/NOAA



Degrees Celsius

Current Ice Extent
09/25/2007



National Snow and Ice Data Center, Boulder, CO

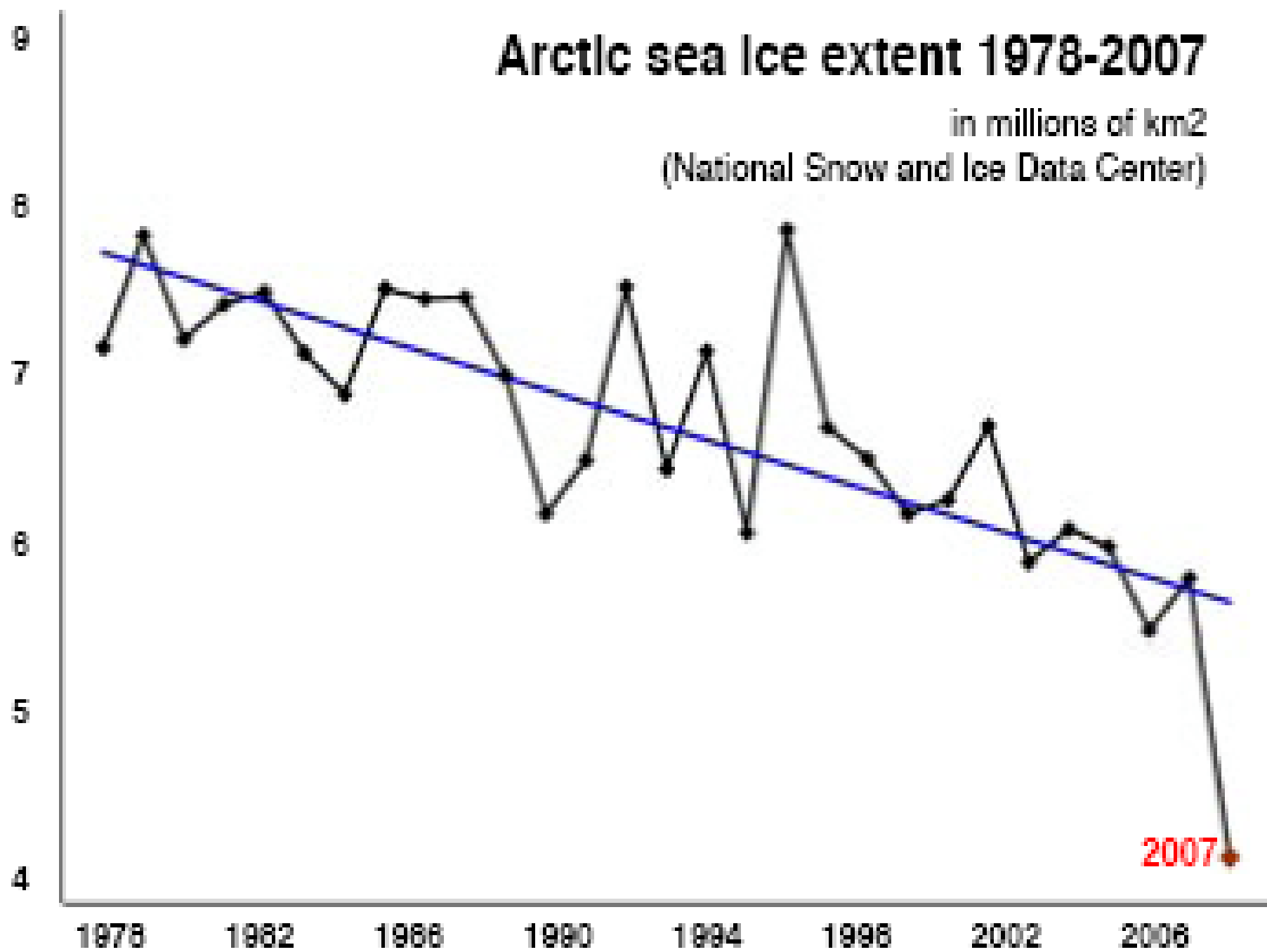
Total extent = 4.2 million sq km

median
ice edge

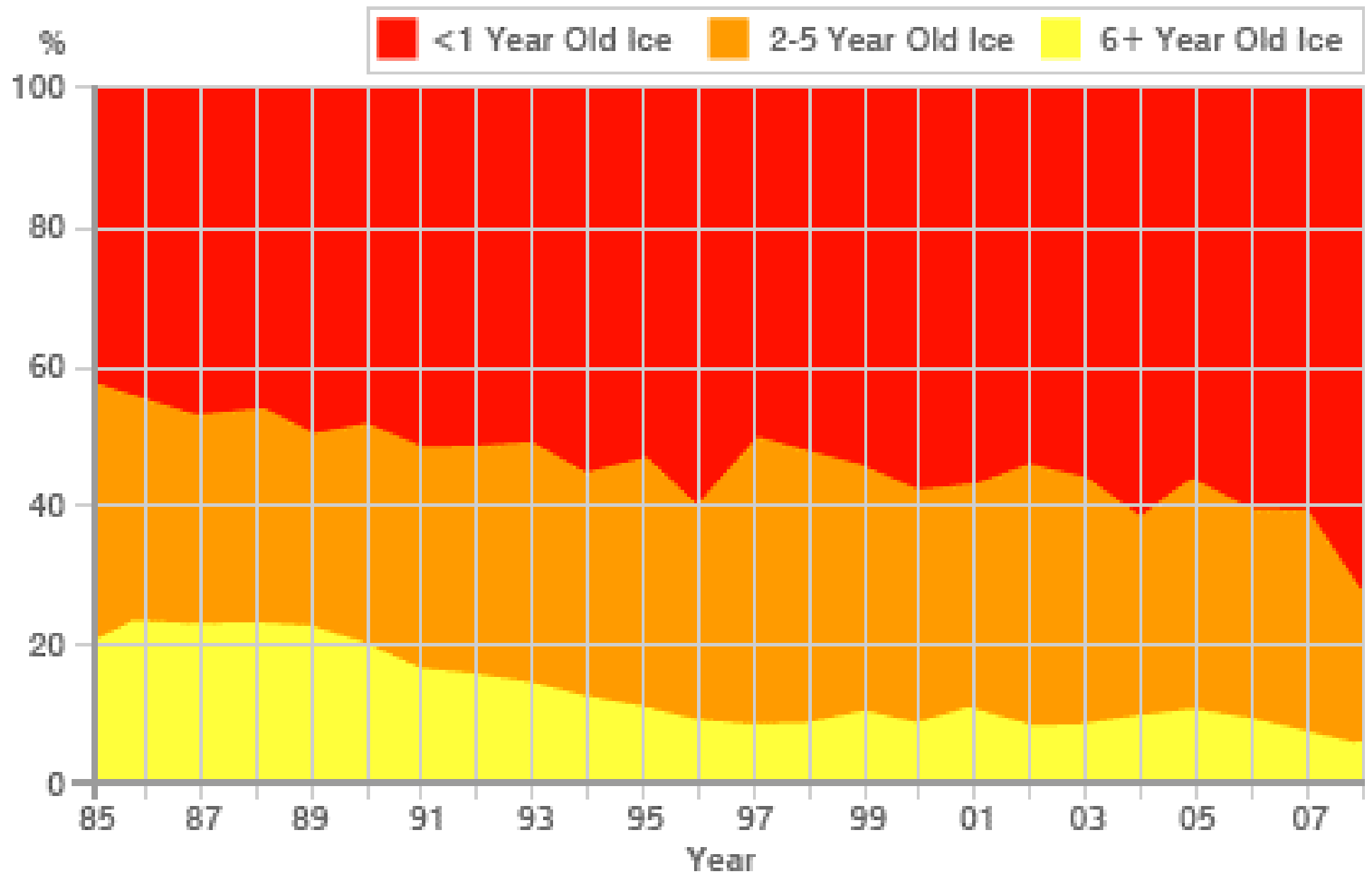
Arctic sea ice extent 1978-2007

in millions of km²

(National Snow and Ice Data Center)

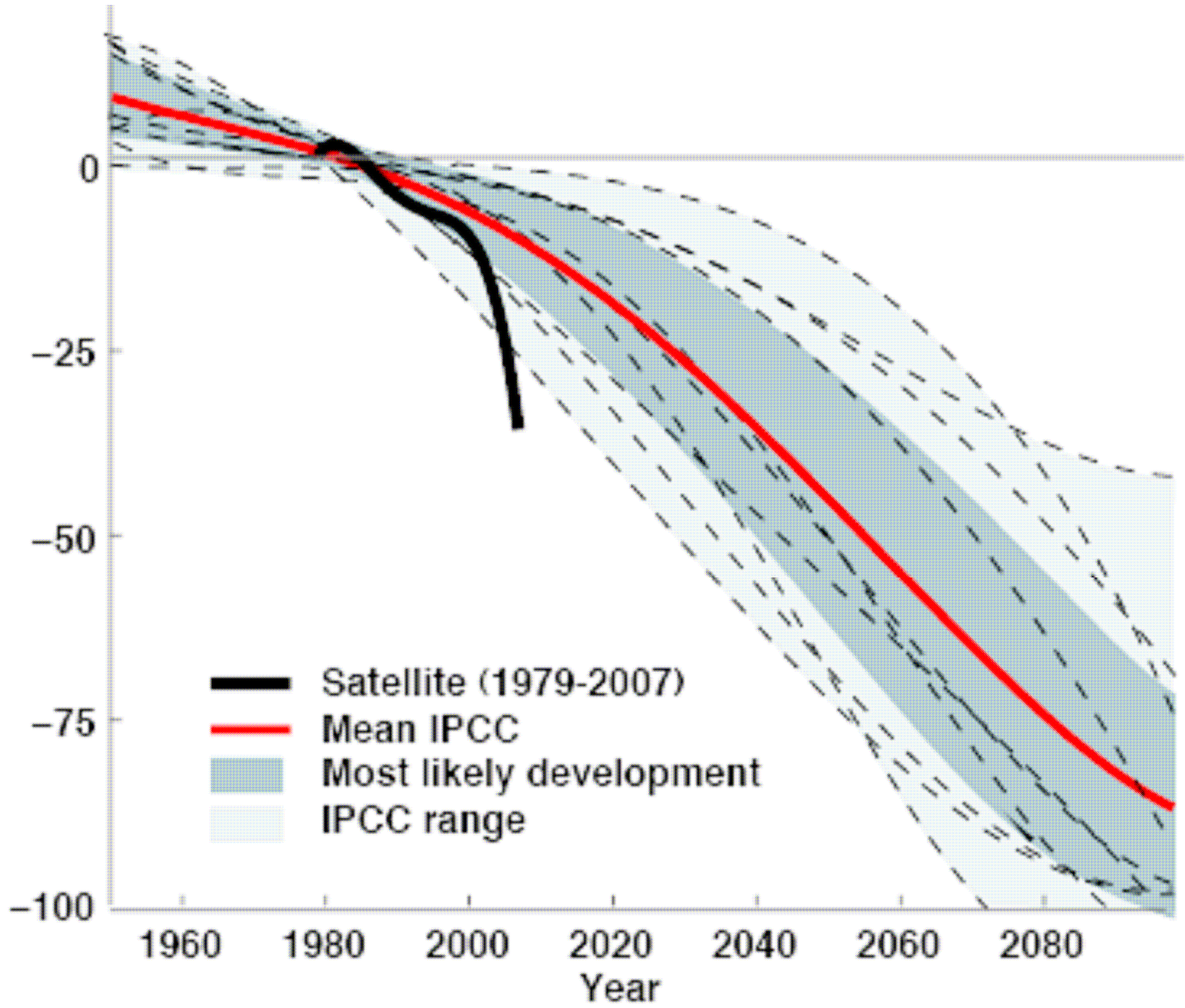


ICE AGE - THE ARCTIC IN FEBRUARY



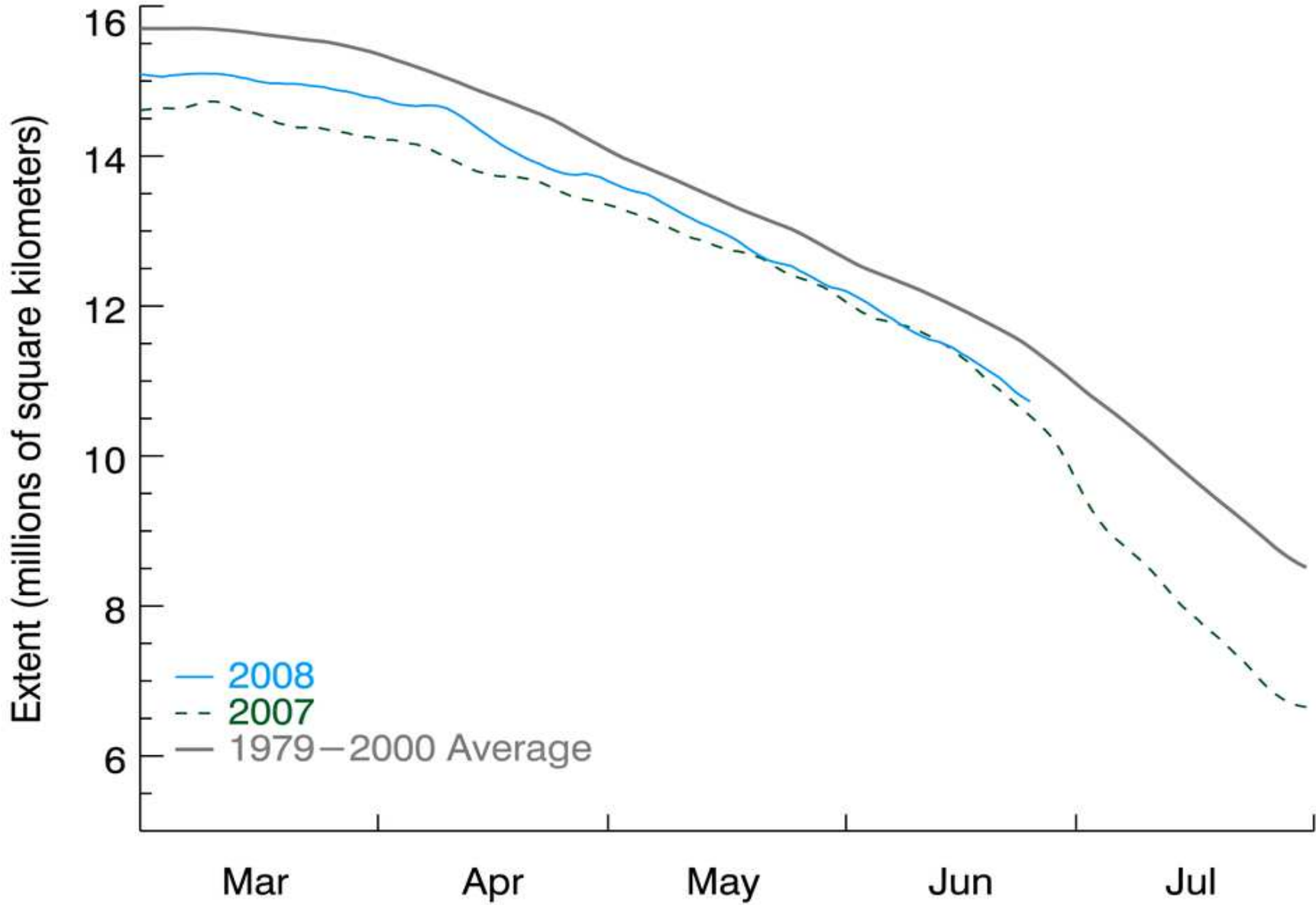
SOURCE: NSIDC

% CHANGE FROM 1979-1990 MEAN



- Satellite (1979-2007)
- Mean IPCC
- Most likely development
- IPCC range

Arctic Sea Ice Extent (Area of ocean with at least 15% sea ice)



National Snow and Ice Data Center, Boulder CO

Jakobshavn Ice Stream in Greenland

Discharge from major Greenland ice streams is accelerating markedly.



*Source: Prof. Konrad Steffen,
Univ. of Colorado*

