



National Snow and Ice Data Center
Supporting Cryospheric Research Since 1976



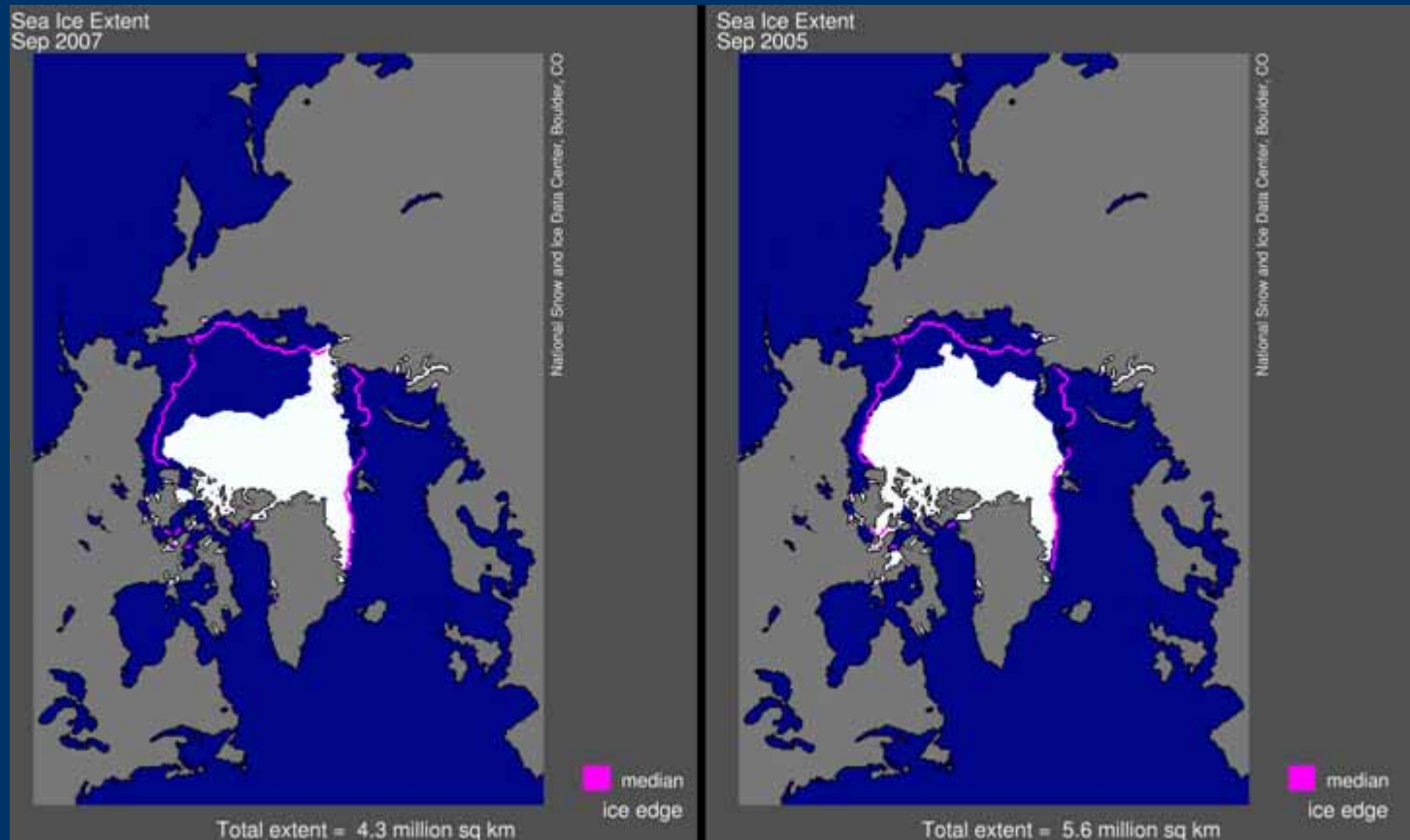
Arctic Sea Ice Melt

Science briefing on the latest research



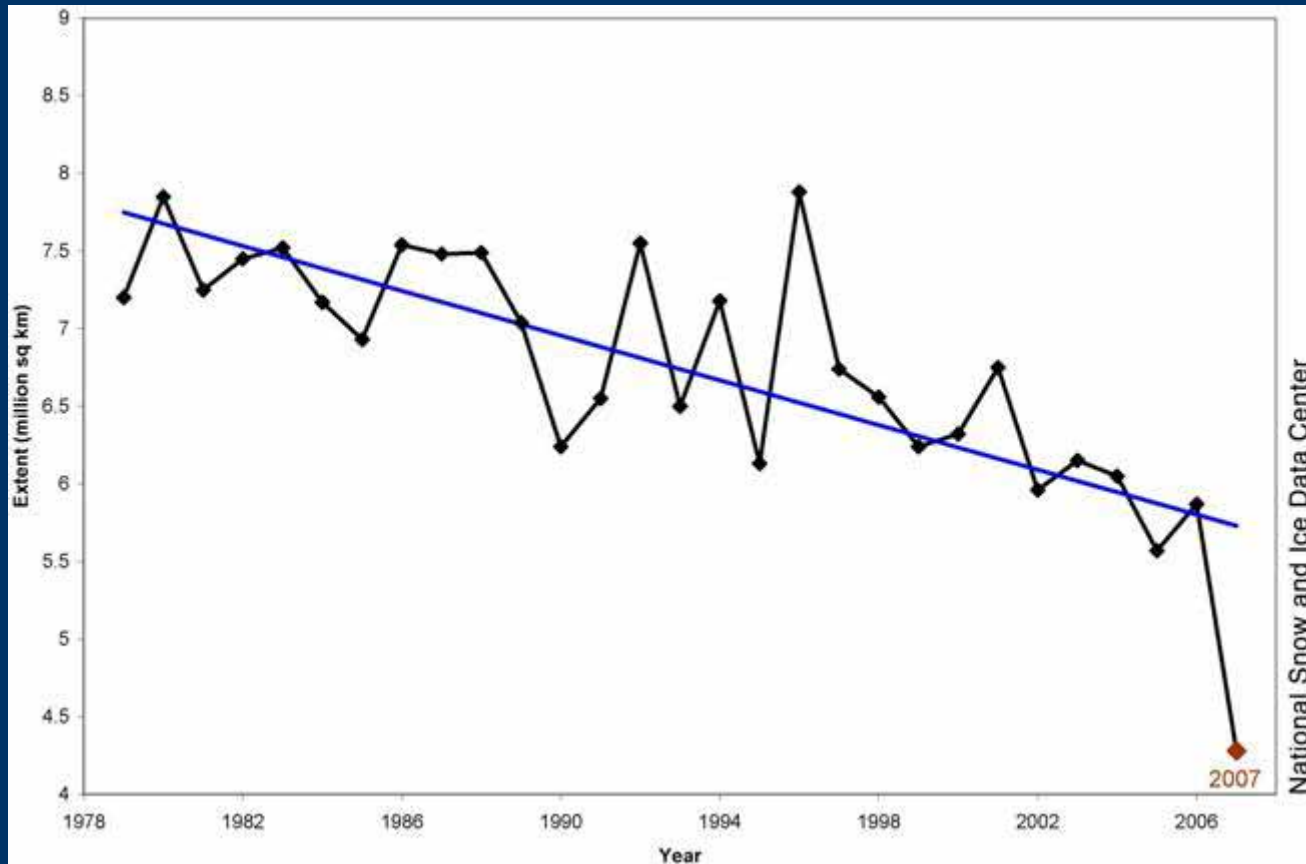
Rapid Loss of Arctic Sea Ice

2007 Sea ice extent compared to previous record set in 2005



2007 Sea ice conditions in context

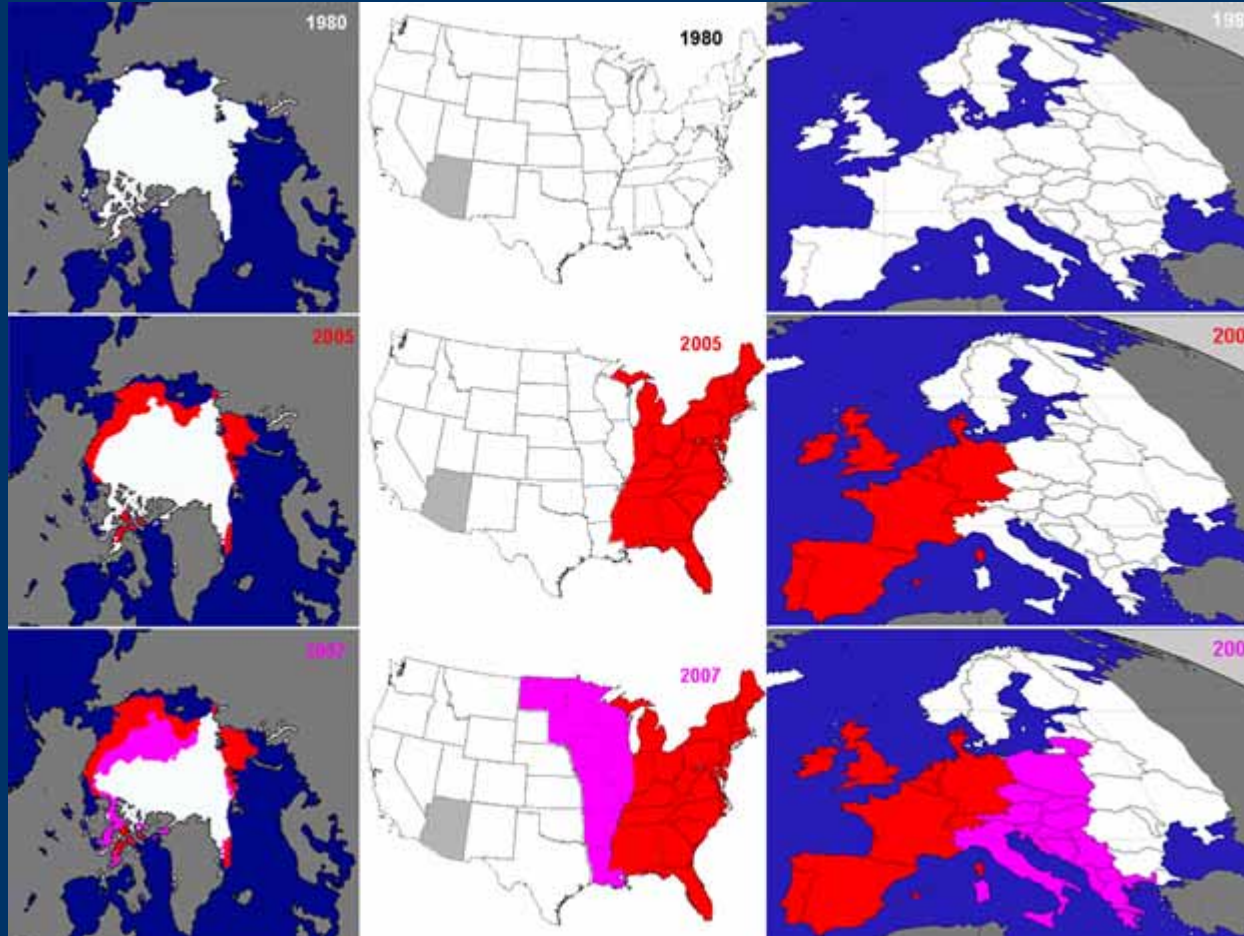
September Sea Ice Extent (1979–2007)



National Snow and Ice Data Center

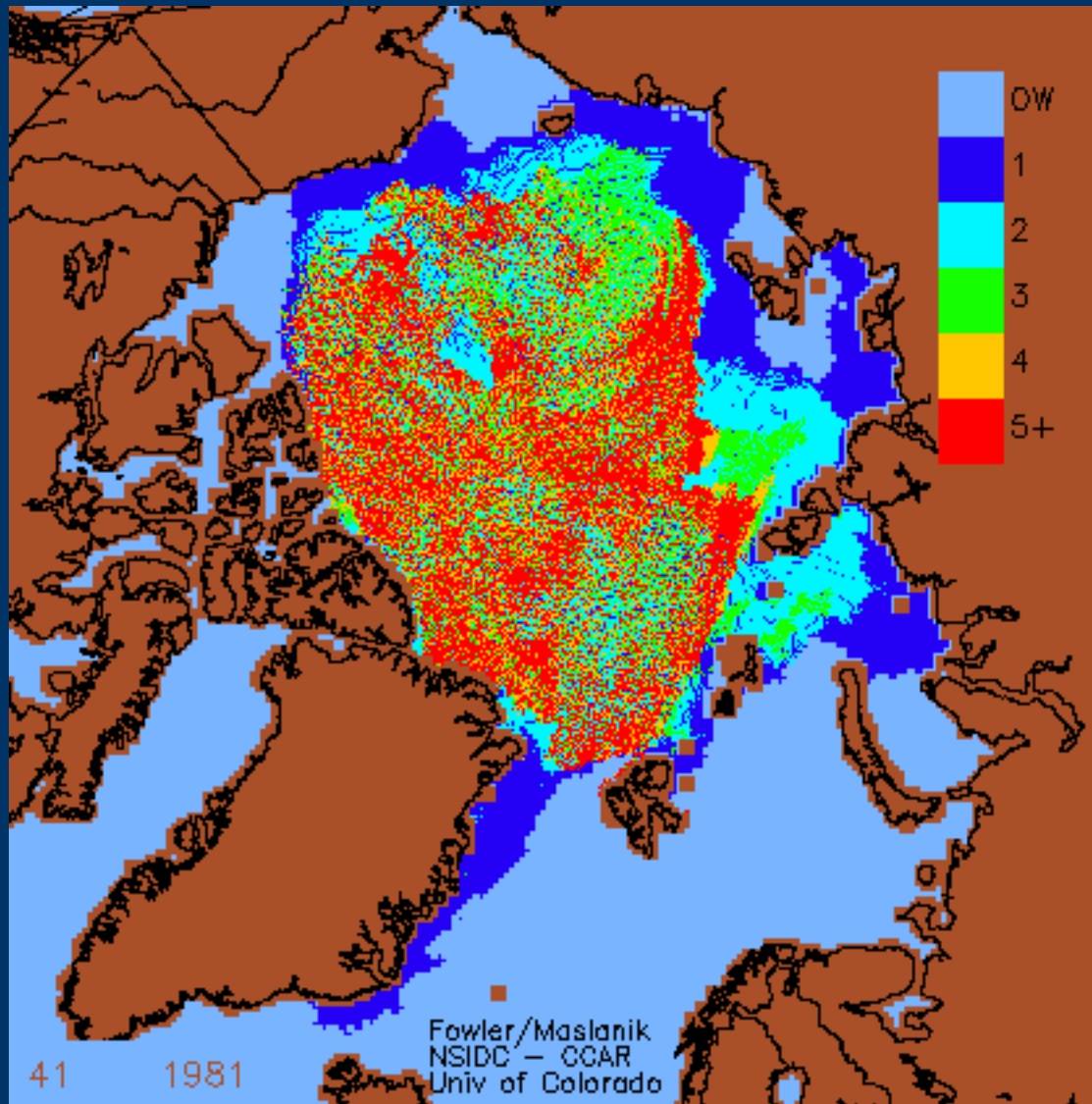
September 2007
4.28 million km²

Some useful comparisons

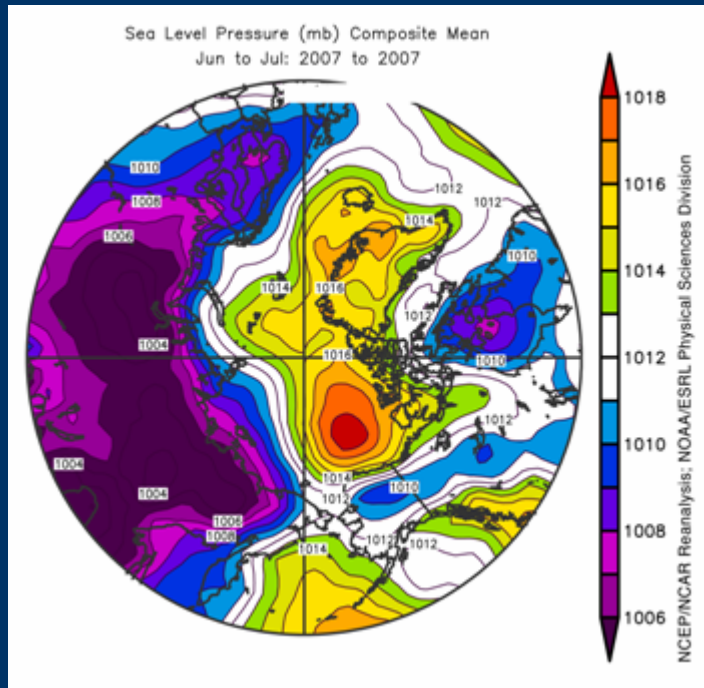


Courtesy of Don Perovich, CRREL

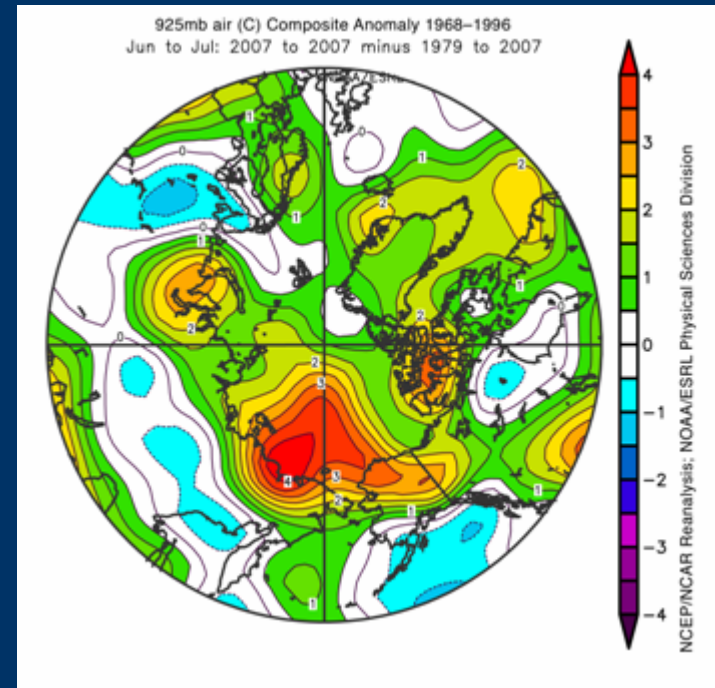
Sea Ice is becoming younger and thinner



Factors contributing to the 2007 record

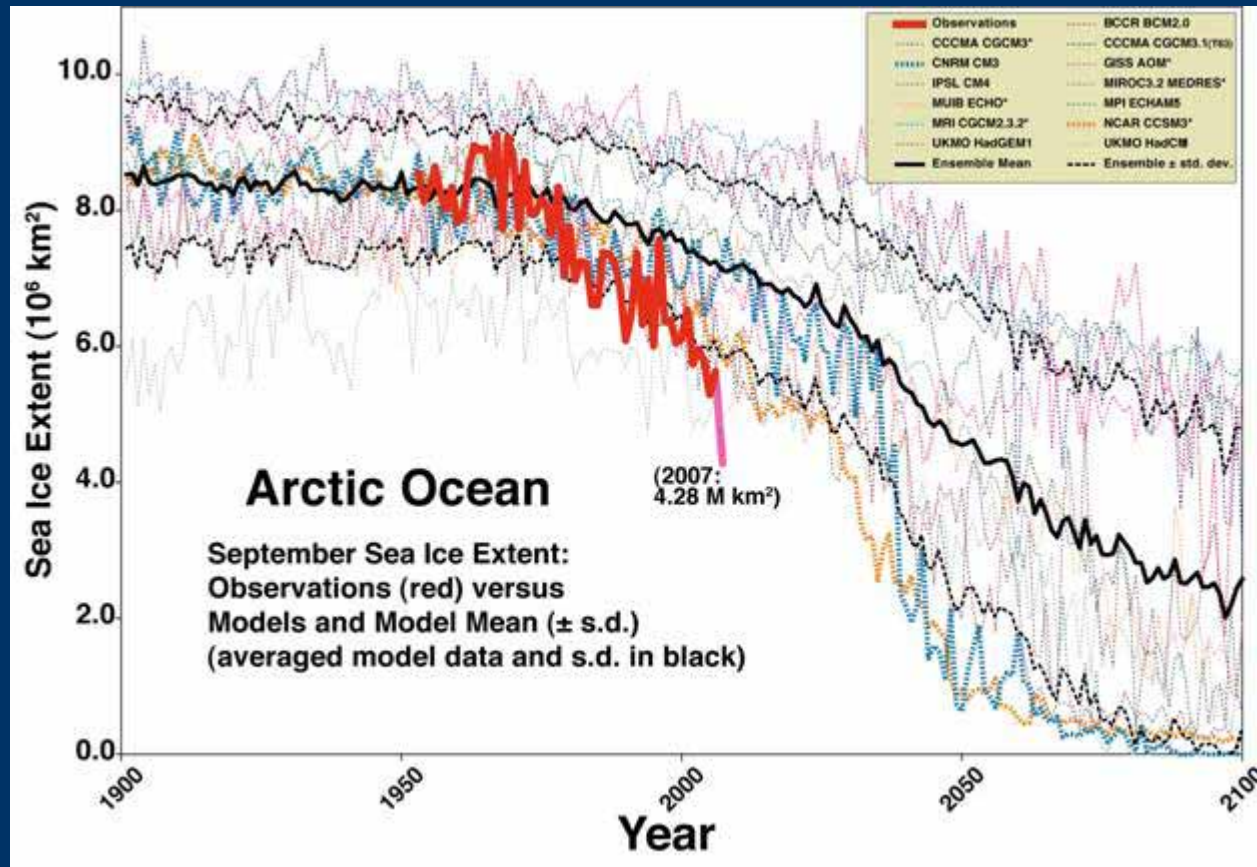


High pressure, clear skies,
southerly winds



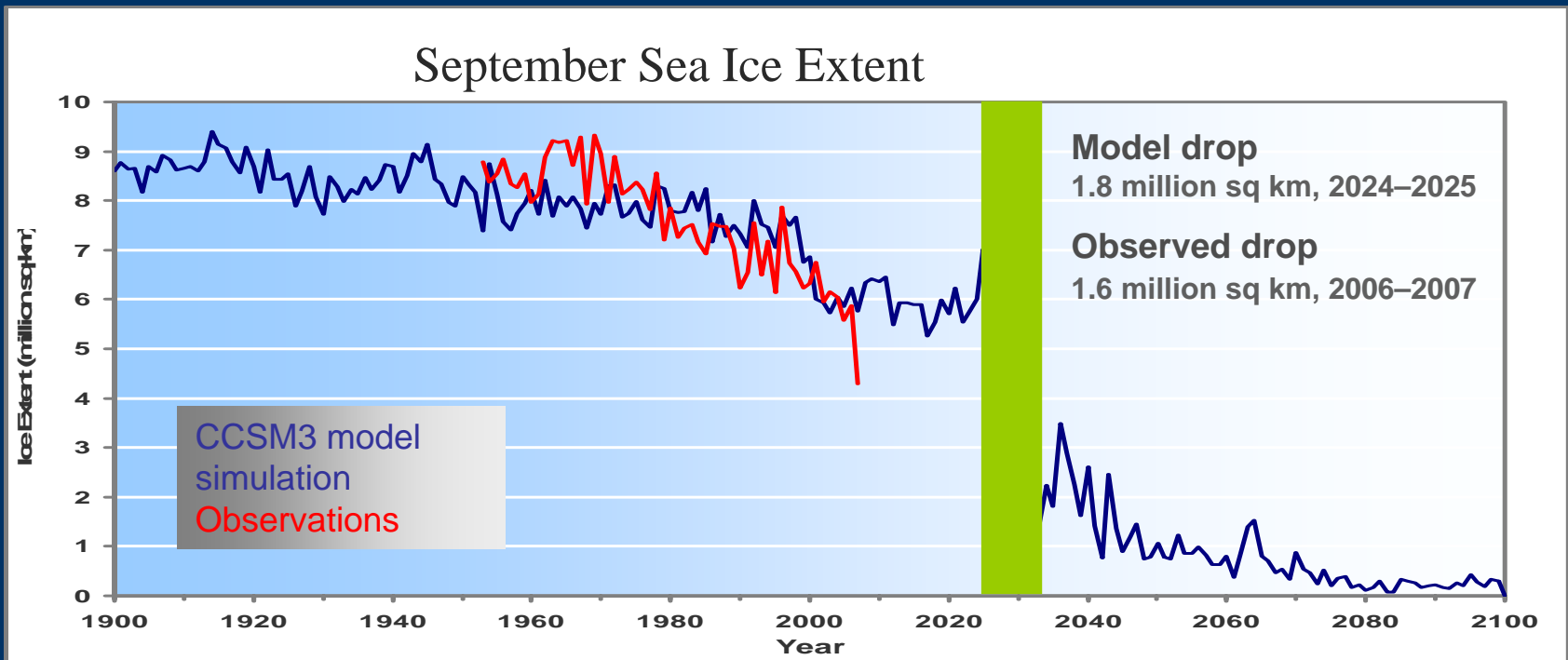
A very warm Arctic

Observed rate of loss faster than expected



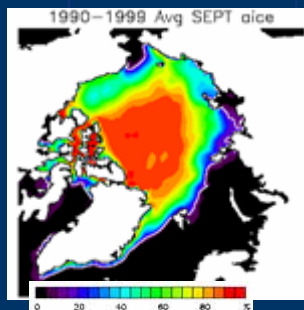
Observed sea ice
decline: faster than in
IPCC models

Are we near a tipping point?

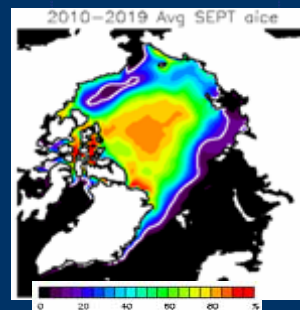


Ice concentration:

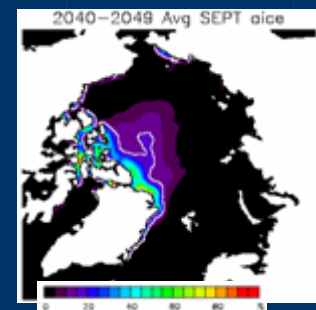
1990–1999



2010–2019



2040–2049



Impacts of sea ice loss on coastal erosion

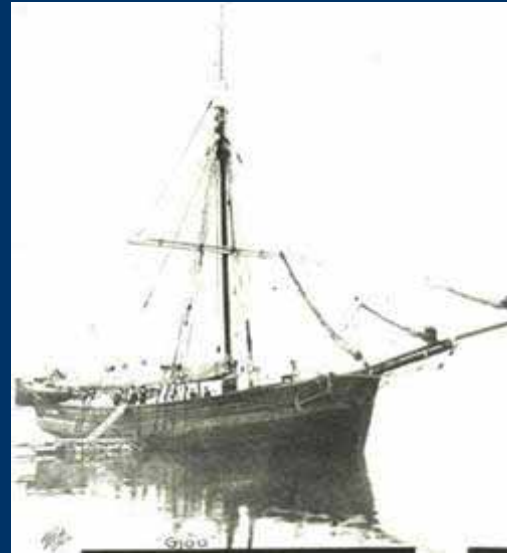
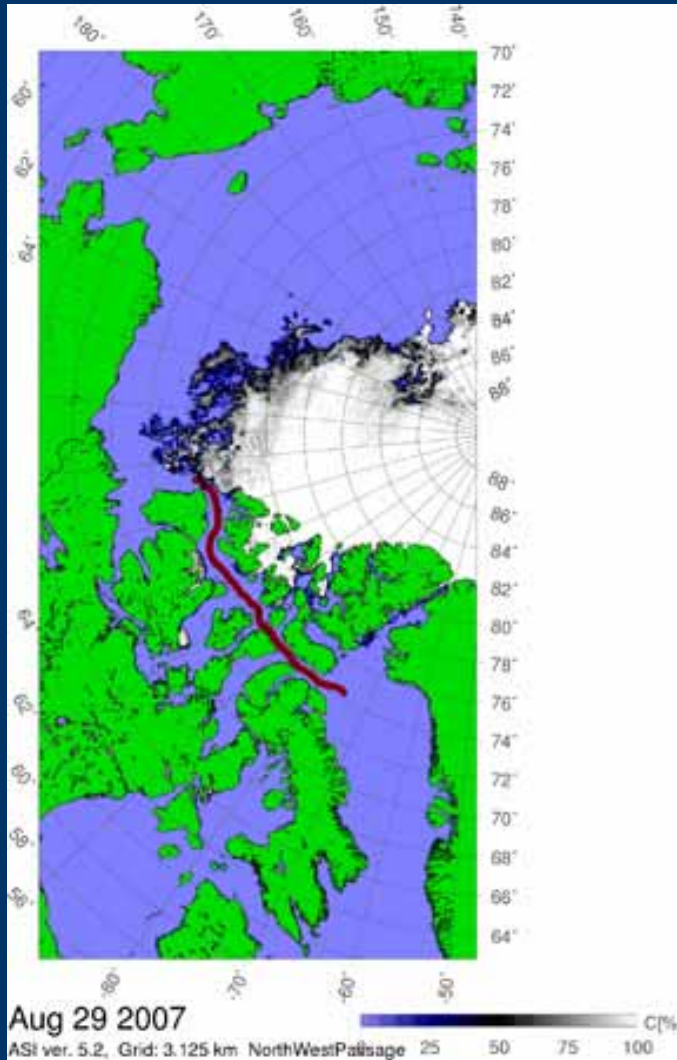


Two-hour time lapse showing storm damage
Shismaref, Alaska

Sea wall damage
September 4, 2007
Kivalena, Alaska



The Northwest Passage: open by late August 2007



Gjoa
1903



Manhattan
1968

Impacts beyond the Arctic?
Changes in mid-latitude weather patterns
There are many unknowns



Sea Ice is becoming younger and thinner

