

RARGOM

**Symposium on Coastal Ocean
Observations in the Gulf of Maine**

**Elliott Alumni Center, University of New
Hampshire**

August 12, 2003

Development of an Integrated Ocean Observing System for the U.S.

see <http://www.ocean.us>

- 1998: Congressional request for a “plan to achieve a truly integrated ocean observing system”
- 1999: “Towards a U.S. Plan for an Integrated, Sustained Ocean Observing System”
- 2000: Establishment of Ocean.US interagency office
- 2002: “Building Consensus: Toward an Integrated and Sustained Ocean Observing System

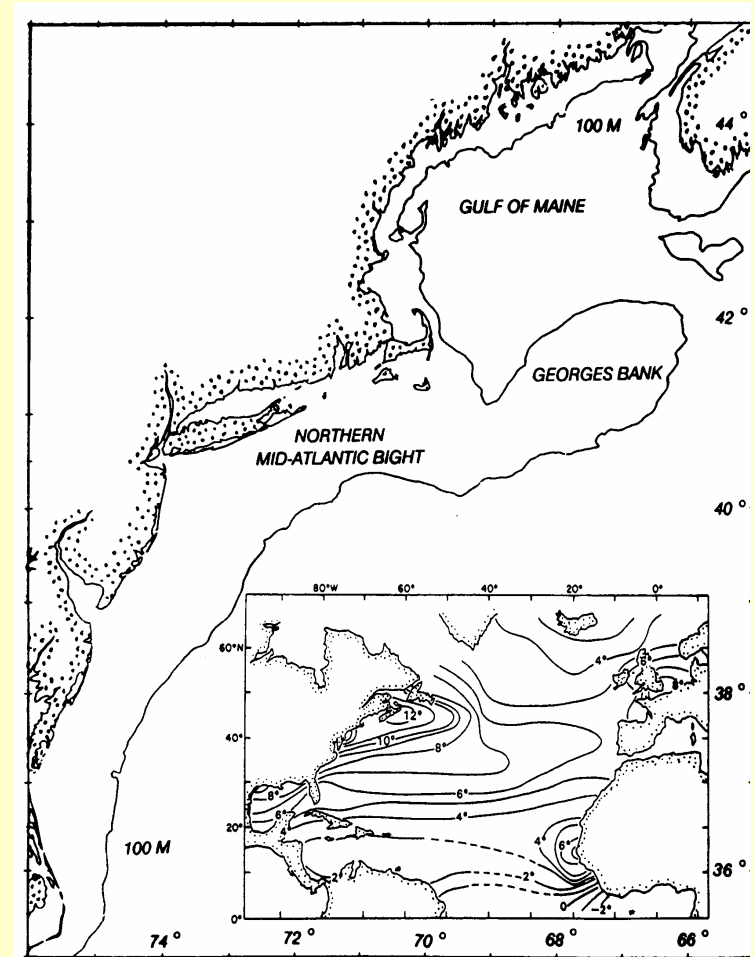
Regional Ocean Observing Systems

- 2003: “Regional Ocean Observing Systems.
An Ocean.US Summit
- Establishment of a National Federation of
Regional Association
- Regional Associations manage the design,
implementation, operation and development
of regional ocean observing systems.

NEOS: The Northeast Observing System

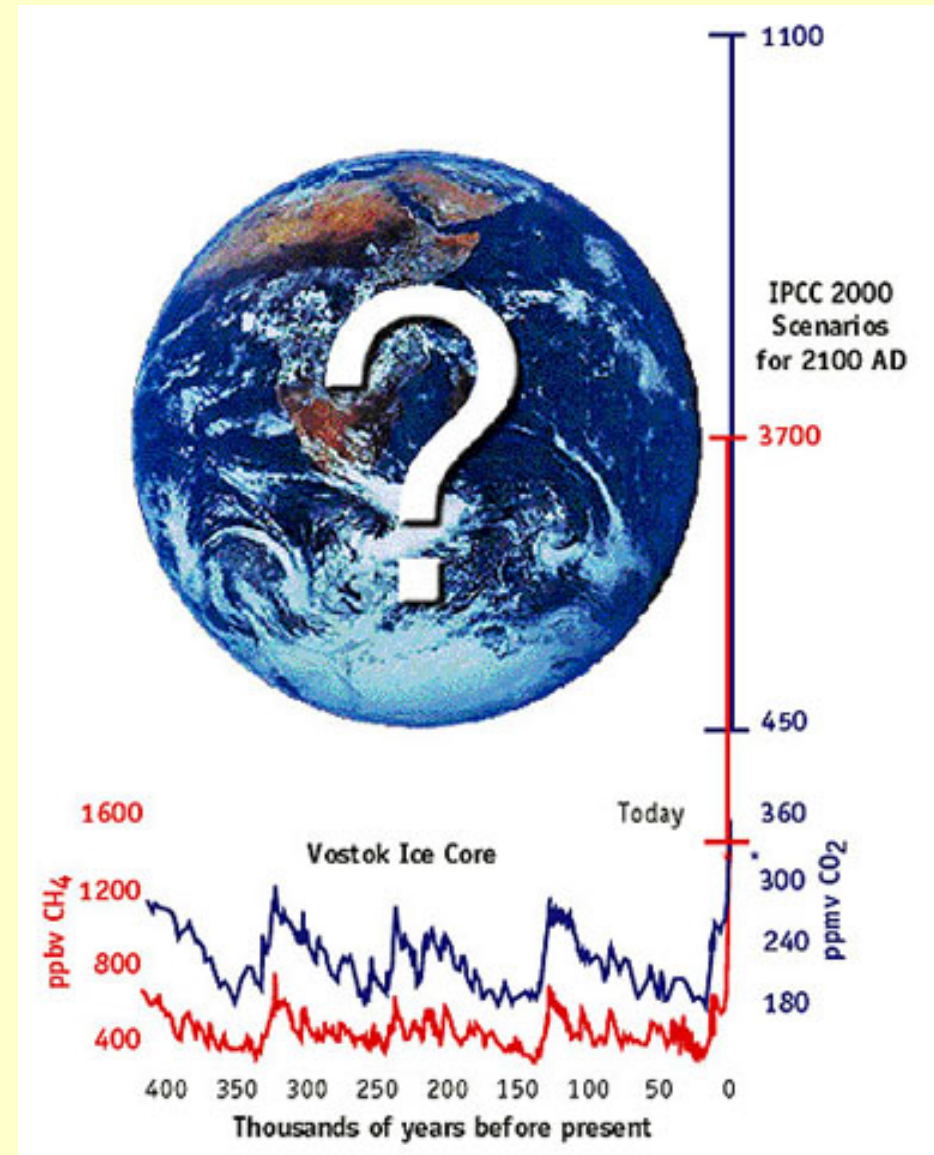
- The Northeast Region: mid-Atlantic Bight to the Gulf of Maine
- Present Regional Association structure continues to evolve

Murawski1993

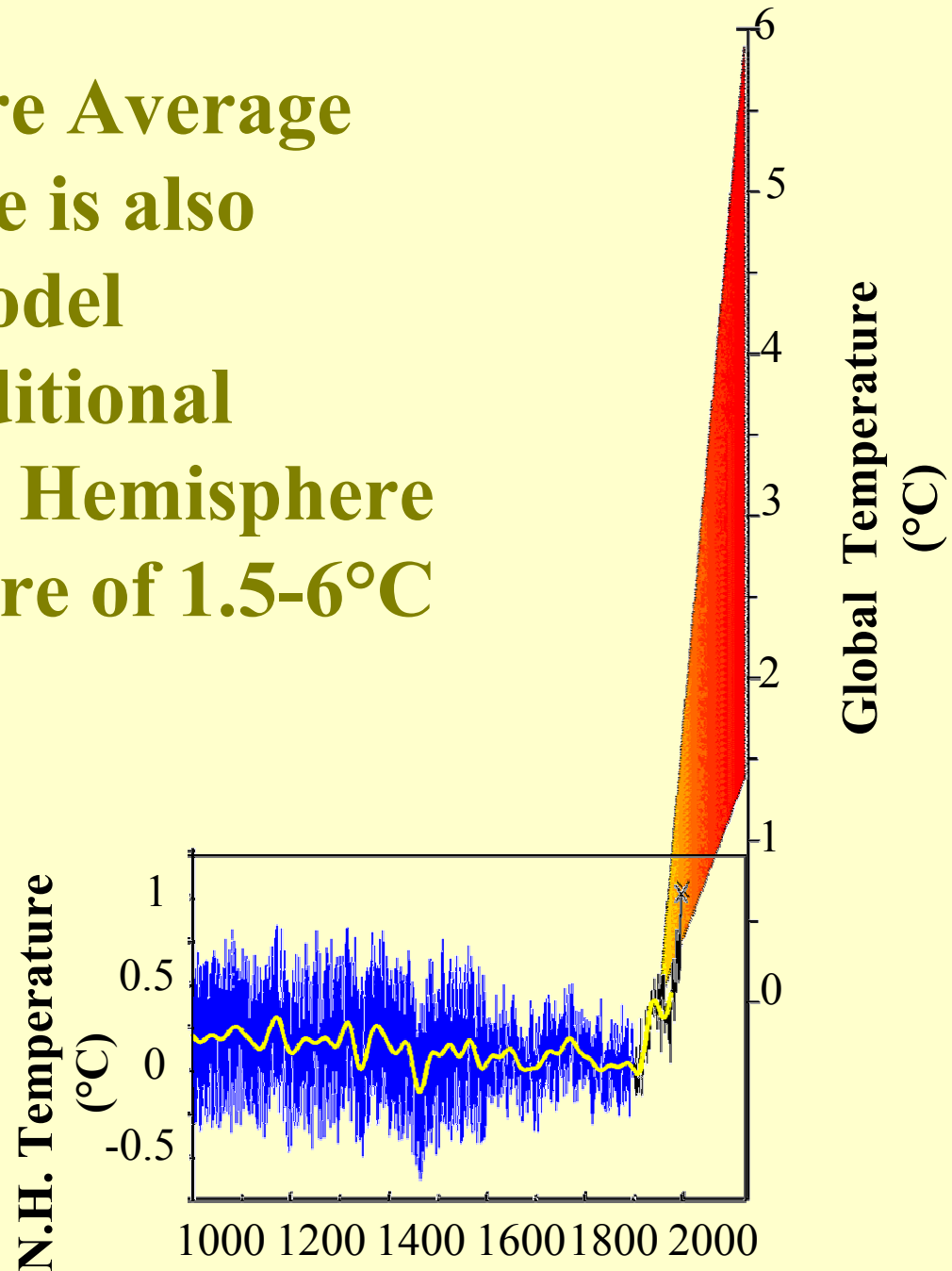


The IGBP II summit on global change in Banff, June, 2003.

- Note that present carbon dioxide and methane levels exceed levels observed in the previous 400,000 years.
- IPCC model predictions are for greenhouse gas levels to increase again by factor of 2-4 in next century.



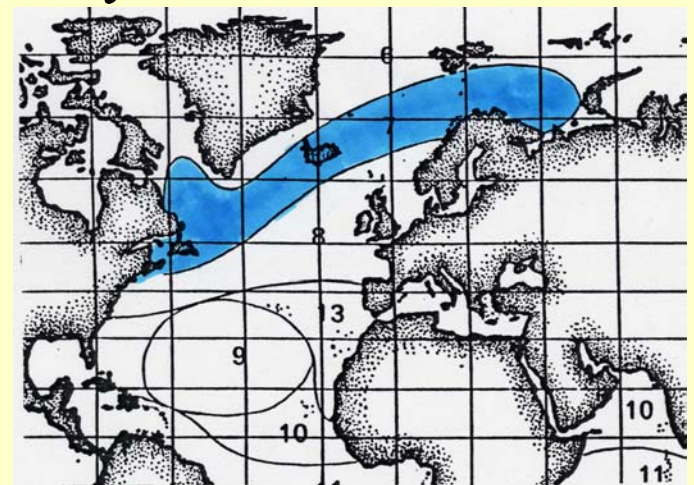
Northern Hemisphere Average Surface Temperature is also rising, with IPCC model predictions of an additional increase of Northern Hemisphere (N.H.) air temperature of 1.5-6°C by 2100.



(IGBP Website)



An example of the potential impact of warming temperature in the Gulf of Maine is the distribution of the planktonic copepod, *Calanus finmarchicus*, which presently dominates the zooplankton assemblage in deeper waters of the Gulf of Maine. Because this subarctic species is on the southern limit of its distribution, even changes on the order of 1-2°C in the Gulf may influence its life cycle and population dynamics to an extent that would effectively shift its distribution northward. As the distribution and population dynamics of important higher trophic level consumers, including herring and right whale, are coupled to *Calanus*, such a shift would have a major impact on the Gulf of Maine ecosystem.



Van der Spoel and Heyman (1983)

Calanus finmarchicus and map showing its subarctic distribution