

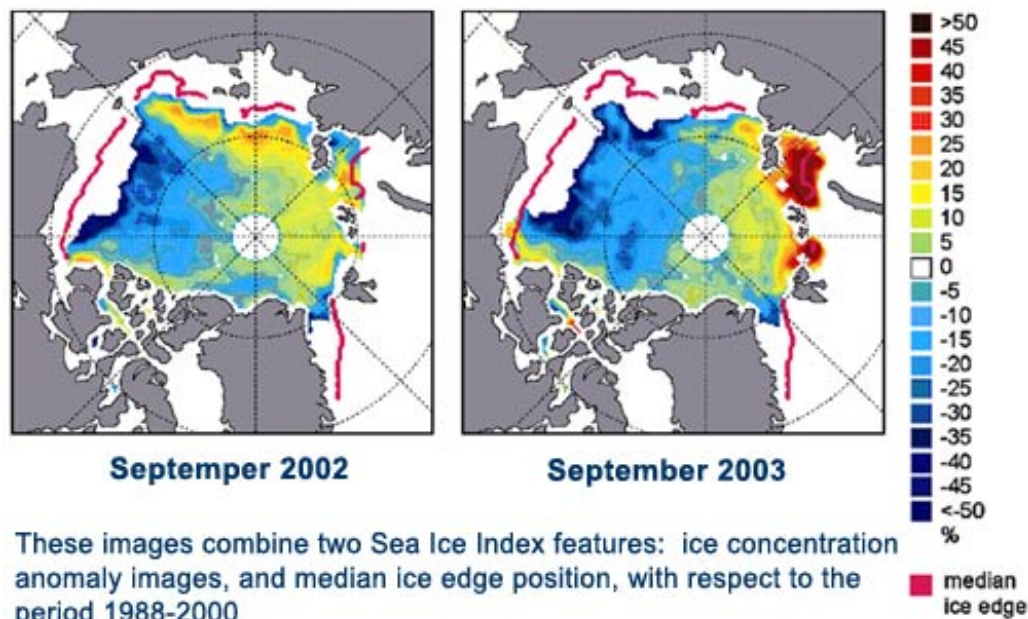
## 2004 Annual Meeting & Arctic Forum | Arctic Forum Focus

Arctic Forum 2004

13-14 May 2004

Conveners: Wieslaw Maslowski and Mark Serreze

### Recent Decrease of the Arctic Sea Ice: Its Causes, Consequences and Historical Perspective



The Arctic region is highly variable with major large-scale regime shifts taking place at time scales ranging from several years to decades. The perennial sea ice at the surface buffers some of this variability but it is also highly sensitive to relatively small imbalances in external atmospheric and oceanic forcing. As evidenced from in-situ data sources, satellite remote sensing and submarine sonar records, the last decade has experienced strong warming and decreases in sea ice extent and thickness. A record minimum in ice extent for September 2002 (referenced to the period 1979-2002) was nearly matched in September 2003. The sea ice changes appear to have been attended by increased southward export of freshwater into the regions of deep-water formation in the sub-polar North Atlantic.

Some of these changes have been successfully modeled. However, an in-depth understanding of how changes in the sea ice regime are coupled to changes in other Arctic system components and global climate is still missing. Regardless of the causes, there are potentially important societal impacts. The Northeast sea route is becoming open for shipping on a seasonal basis. Marine ecosystems of the arctic marginal seas have been observed to respond to the warming and retreat of the sea ice cover. These ecological adaptations impact feeding habits and migratory routes of arctic marine mammals and native/local communities that depend on them for food.

For the reasons outlined above, the Arctic Forum of 2004 focuses on the recent changes in the Arctic sea ice cover. The forum will review current knowledge of its causes and consequences in the context of past, present, and projected future climate states. We expect to solicit presentations from leading experts in the arctic research community addressing aspects of the atmosphere, physical oceanography, marine ecosystems, coastal transformation, and societal impacts. Past and present perspectives of arctic native communities and of management and government agencies will also be sought.