

# Update on Arctic observations and potential IPY legacies

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**GCOS**  
The Global Climate  
Observing System



The Global Ocean  
Observing System

**WCRP**

World Climate  
Research Programme



IOC



WMO



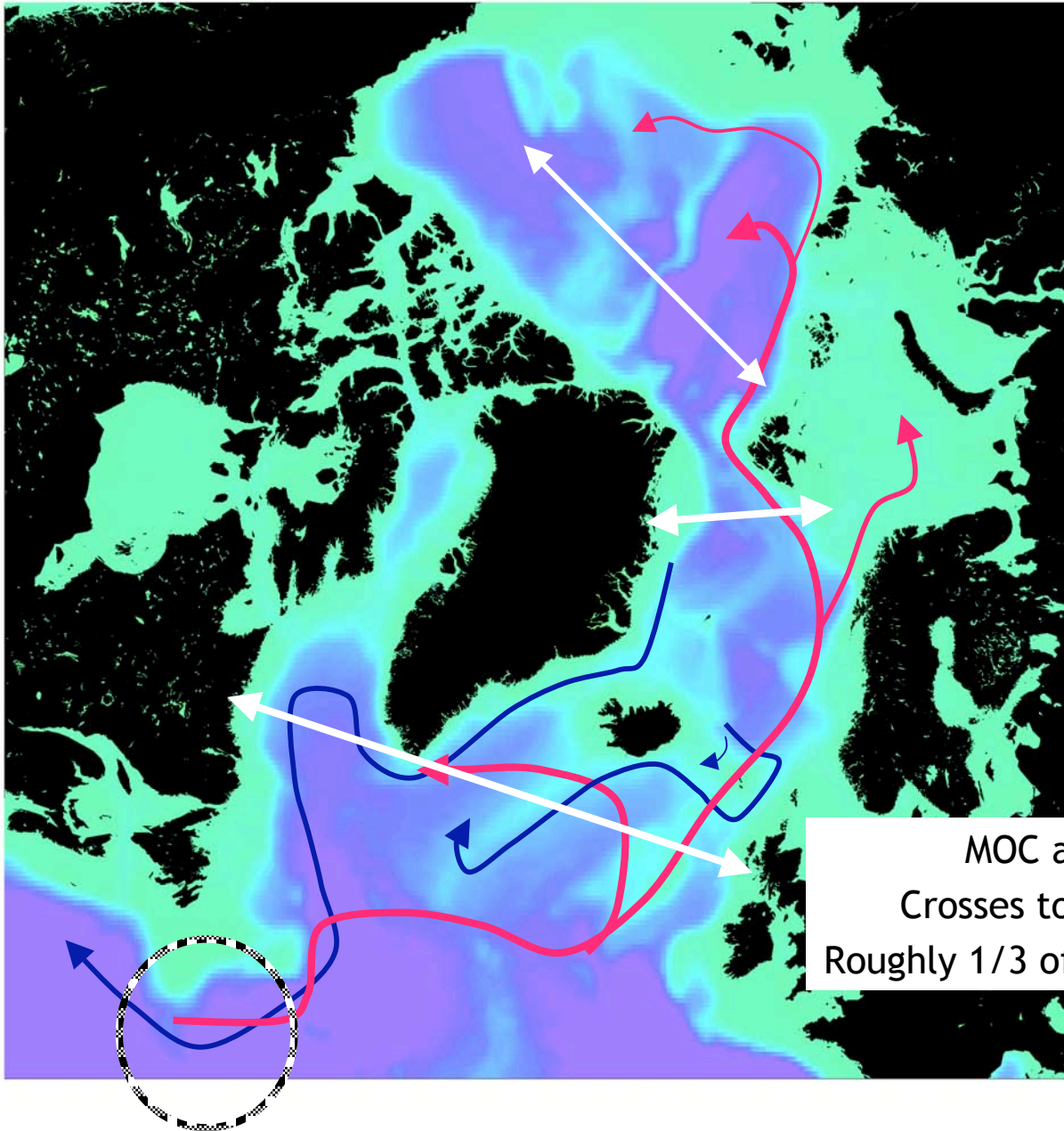
UNEP



ICSU

## Some developments

- CLIVAR SSG (April) agreed to co-sponsor the now CliC-CLIVAR Arctic Climate Panel (ACP)
- Many ocean observations are coordinated by the Arctic Ocean Science Board (AOSB) and other national and regional programs, and the ACP will work with these bodies
  - AOSB coordinating iAOOS: integrated Arctic Ocean Observing System
  - Arctic GOOS proposal (EuroGOOS, Norway)
- Funding of observational projects for the IPY is not finalized, but will be soon - there will be a big ramp-up in observations

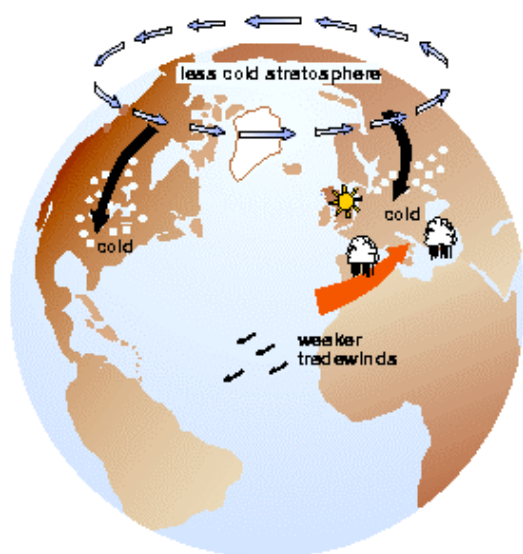
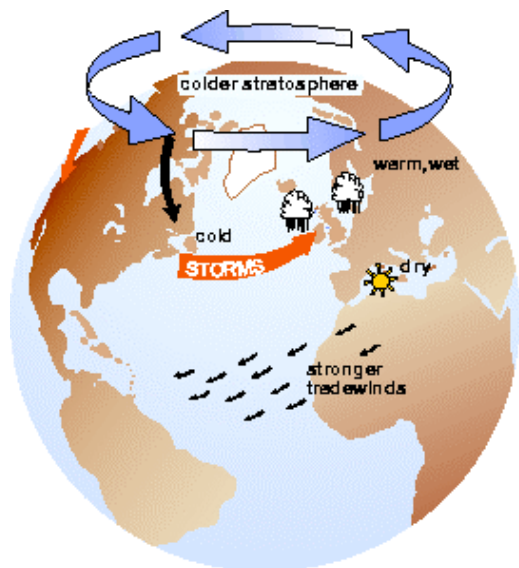


MOC at high latitudes:  
Crosses to become eastern BC  
Roughly 1/3 of MOC enters Nordic Seas

## The larger role of the Arctic

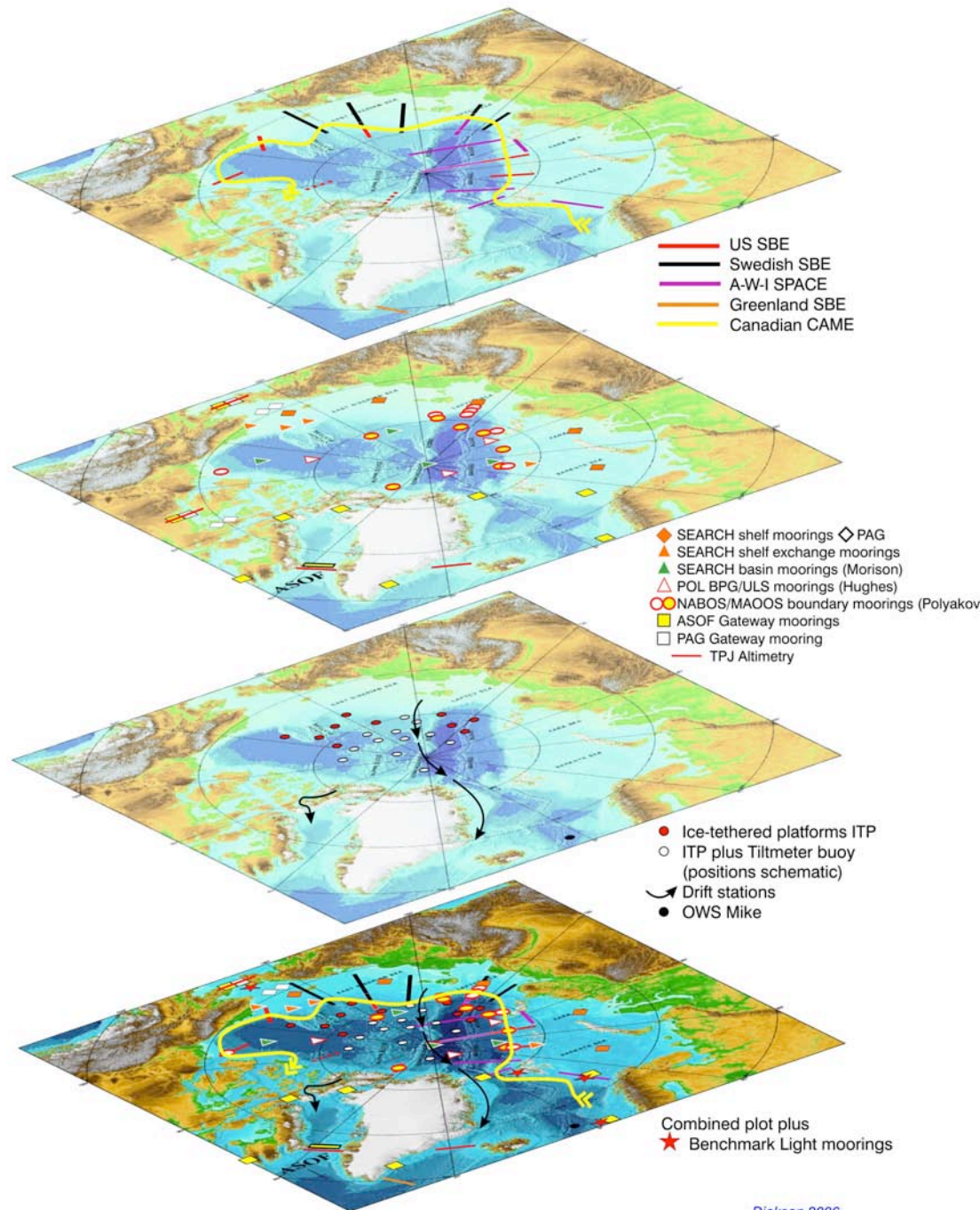
- Transformations of water masses in Nordic Seas and Arctic Ocean important to the overflows, and to setting conditions in deep areas of deep convection in the N. Atlantic
- Enter through Fram Strait, Barents Sea; Bering Strait; Freshwater runoff
- Exit through Canadian archipelago and western Fram Strait
- Many different processes transform water in the Arctic:
  - residence time between 1-100 years depending on pathway
  - topographic steering and cyclonic circulation of Atlantic waters entering the Arctic
  - interactions with sea ice, surface fluxes

# Arctic's Role in Climate Change?



- Connections to subarctic may not be limited to ocean and ice.
- Ex: high vs. low AO/NAO: predictors of NAO associated with subtropical/tropical SST; involves ENSO?
- Important to consider the three media (ice, ocean, atmosphere) jointly - one pulsating muscle
- Everything seems to be happening at the same time: causal relationships?
- Smoking guns?
- Many research questions remain

Giving one version -  
 --still incomplete --  
 of what the 'ocean  
 part' of an  
 integrated Arctic  
 Ocean Observing  
 System (iAOOS) for  
 the IPY might look  
 like.



# IPY Legacy: sustained observations?

- Messages I got from this morning:
  - OOPC should signal that it is pleased and encouraged at the coordination and the breadth of planned activities for the IPY
  - OOPC should support the activities of the (joint AOPC) sub-group on sea ice
  - OOPC encourages the plans for an Arctic GOOS (or other structure) to coordinate sustained observations after the IPY
  - The 'IPY legacy' will be defined towards the end of the IPY
  - OOPC should maintain liaison with CliC and other relevant groups (ACP)