Bering Strait Moorings
- Update and 2012 plans

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Since 1990
1-4 near-bottom moorings

Since 2007
(International Polar Year)
8 moorings with upper and lower sensors

With
- Nutrient sensors – Terry Whitledge
- Whale Recorders – Kate Stafford and Carter Esch
- pH and pCO2 sensors – Fred Prahl, OSU

Annual CTD sections
The role of Pacific waters in the Arctic

Important for Marine Life
most nutrient-rich waters entering the Arctic
(Walsh et al, 1989)

Trigger for the seasonal melt-back of ice
In summer, source of near-surface heat to the Arctic

Significant and variable part of Arctic Freshwater Budget
~ 1/3rd of Arctic freshwater input
(Wijffels et al, 1992; Aagaard & Carmack, 1989; Woodgate & Aagaard, 2005)

Important for Arctic Stratification
In winter, form a cold (halocline) layer, which insulating ice from warm Atlantic waters beneath
Bering Strait Heat Flux

Acts as a trigger for sea-ice melt

Large enough to be significant in the Arctic
- 2007 could melt the difference between the 2006 and 2007 Sept ice extents
- greater than solar input to Chukchi
- 1/3rd of Fram Strait heat

Found over half the Arctic Ocean as subsurface temperature max

Highly variable
(2007=twice 2001)

Heat flux relative to -1.9deg C, Errors ~ 0.1 Sv, 10^{20}J

Woodgate et al, 2010
IBCAO Bathymetry with RUSALCA CTD line

Figure from Ron Lindsay
Above: Comparison of IBCAO with NOAA 2011 Bathymetry data from Kathy Crane. Plot by Ron Lindsay
Below: As per Melling et al 2008, IBCAO (?) map of the strait
Above:
Eastern Bering Strait Bathymetry, plotted by Ron Lindsay, from NOAA mapping survey (data via Kathy Crane, Fall 2011)
Right: Detail around Little Diomede
RUSALCA 2012 - Khromov

10th – 22nd July 2012
Nome to Nome
(including on and off load)

11 moorings to recover
(3 likely by dragging)

8 moorings to deploy
- Including BPG, Nutrients, Whale, pCO2