

REGIONAL OUTLOOK 2011 – Petrich, Druckenmiller, Eicken

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AUGUST REPORT (using data until July).

1. Region of Interest: *Beaufort-Chukchi Seas*

Landfast sea ice at the Chukchi Sea coast at Barrow, Alaska

2. Sea Ice Parameter

Parameter predicted: Date of break-up of landfast sea ice at Barrow, Alaska

Comparison with 2010: Break-up happened on the 4th of July weekend in 2011. We are in the process of recovering instruments for analysis of this year's break-up events and comparison with 2010.

3. Outline of Methods/Techniques

An empirical model is used to forecast break-up of landfast sea ice, based on two parameters:

1. Mechanical stability of the landfast ice cover, and
2. Cumulative irradiance.

See contribution by Petrich, Druckenmiller, and Eicken to regional outlook June 2011 and http://seaice.alaska.edu/gi/observatories/barrow_breakup for details.

4. Estimate of Forecast Skill

Complicating factors this year are seemingly larger amounts of sediment entrained into the landfast ice compared to recent years, which affects the absorption of solar heat, and an early onset of surface melt around May 20 which preconditions ice for earlier break-up.