Long-range forecasting of Arctic and Great Lakes sea-ice conditions

Communicating the forecast

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Sea-ice forecasting: Why bother?

September sea-ice cover – 1979 vs. 2003

Observed sea ice September 1979

Observed sea ice September 2003

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Sea-ice forecasting: Why bother?

Alaska

Percent change in sea-ice concentration 1979 – 2005

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Deterministic Point Forecast

- “The Navigable Ice Season will begin on August 17”
- “The Barnett Severity Index will be 520”

- Pro: Generally, high user understanding
- Con: Limited information
Rank Forecast

“The length of the Navigable Ice Season will be the second longest over the 1953 through 2005 record”

- **Pro:** Always yields high user understanding
- **Con:** Limited information and no real deterministic information
Probability of Exceedence

- 2001 forecast
- 1953 through 2000 Climatology

Point forecast: 132
Anomaly: -152
Rank Forecast: 35
Clim mean: 284
Clim median: 251

50% conf interval: 102 to 164
90% conf interval: 54 to 228

Last 15 years ending 2000
Mean: 332
Anomaly: 48
Median: 339
Spatial Probability

Probability of sea-ice occurrence

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