Barrow Sea Ice Observatory: An Online Portal to Near-Real-Time Coastal Sea Ice Conditions

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Website front page
www.gi.alaska.edu/BRWICE

FUTURE OUTLOOK AND FEEDBACK

- Rich data set of mass balance measurements
- Promising new ge-eco measurements of in situ salinity
- Planned improvements to our contribution to the AOOOS project
- Regional network of mass balance sites in coastal ice
- Optimizing ease of accessibility and usefulness of data delivery.

Please log on to our site and send us feedback on improving the web delivery, additional measurements that would be of specific interest or value to you or others, or any other aspects of this work.

WEB DELIVERY - AUTOMATED HOURLY UPDATES

Online data are intended to be accessible and useful for scientific users with an interest in local sea ice conditions, and the local community. Features include:

- Results in metric units and Fahrenheit and feet/ inches.
- Automatically updated plots of (i) temperatures and (ii) snow and ice thickness, and water depth.
- Figures of the last month, and ice growth season thus far
- Annotated explanation plots

Of interest to stakeholders concerned about on-ice safety, we show on the front page:
- Near-real-time air temperature and ice thickness;
- Recent variations in sea level as well as

EQUIPMENT DETAILS

- Radar:
  - 10kW X-band marine radar (9.4 GHz)
  - Updated on website every 5 minutes
- Webcam:
  - Network Camera in heated enclosure
  - Updated on website every hour
- Mass Balance Site:
  - Located on level first-year landfast sea ice near Barrow, AK (see map left)
  - Single Campbell CR10X data logger and Free Wave radio
- Acoustic sounders measure snow and ice thickness, local sea level.
  - Thermistor strings measure temperature profile through air-show-ice-water
  - Also shielded air temperature and relative humidity at 2.25 m above ice
  - Site also includes developmental approaches to measuring in situ sea ice salinity (dielectric probes, and cross-borehole tomography electrode strings)
  - Data telemetered to network-connected computer and transferred to UAF over the internet
  - Data processed automatically and updated on website every hour
- De-icing the radar and webcam
- Sketch of mass balance site equipment.

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Example plots: Data are shown for:
- Year thus far (L)
- Last 4 weeks (not shown here)
- Annotated example (R)
See web site for similar plots for snow depth, ice thickness and sea level.

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