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MACKENZIE DELTA AND BEAUFORT COAST SPRING BREAKUP NEWSLETTER

Report **2018-15**

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Welcome to Breakup 2018

Welcome to the 2018 Mackenzie and Beaufort breakup season. We are now into our 13th season of the breakup newsletter, which was started by Steve Solomon in 2006.

This year is the third breakup season for the Mackenzie-Beaufort Breakup group on Facebook <https://www.facebook.com/groups/1745524288993851/>. Over time we hope this forum hosted in the ISR will take over as the main place to share observations and experience during breakup in the Delta and the coastal communities of the region.

Funding for our current breakup monitoring activity is from the Climate Change Geoscience Program of the Geological Survey of Canada, Natural Resources Canada. Again this year we are posting the newsletters on the CACCON website: www.caccon.org/mackenzie-beaufort-break-up-newsletter/. Please let us know if you do not wish to receive these reports (contact info above) and we will take you off the list. For those of you living in the north, we welcome photos, observations of timing of events, or anything out of the ordinary, and we thank you for all of the feedback received so far.

Water-level data are courtesy of Environment and Climate Change Canada [ECCC] (Water Survey of Canada) and derived from the real-time hydrometric data website at http://www.wateroffice.ec.gc.ca/index_e.html, which we acknowledge with thanks. Weather forecasts are also courtesy ECCC (Meteorological Service of Canada) at <http://weather.gc.ca>.

Current Conditions

It's a cloudy day in the Delta, with a forecast high of 9 °C, a low tonight of 3 °C, and 30% chance of showers in both Aklavik and Inuvik. Tuktoyaktuk is cloudy but clearing this afternoon, with a high of 5 °C and low tonight of -3 °C. In Paulatuk, the rain will be changing to snow with a risk of freezing rain later this morning, ending near noon, and clearing this evening, high 3 °C and low tonight of -1 °C. Ulukhaktok will have snow beginning this morning, wind west 30 km/h, becoming light later this morning, temperature steady near 0 °C. Sachs Harbour will also see snow, 2 cm, wind SW 40 km/h, gusting to 60, high 0 °C.

Water levels

The real-time hydrometric site is down as of writing

Satellite Imagery

Yesterday there was still a lot of cloud around, but we can see through to the general patterns of melt expansion in the outer Mackenzie Delta (Figure 1). The outer edge of the landfast ice is obscured off the Yukon coast, appears stable off the Mackenzie Delta, and is obscured again off the eastern Tuktoyaktuk Peninsula. There is a very large area of open water with loose ice to the north and west (Figure 1). Unfortunately Kugmallit Bay was still shrouded in cloud at the time of imaging, so no updates on open-water progression toward Tuk. Any on-site reports or photos would be very welcome.

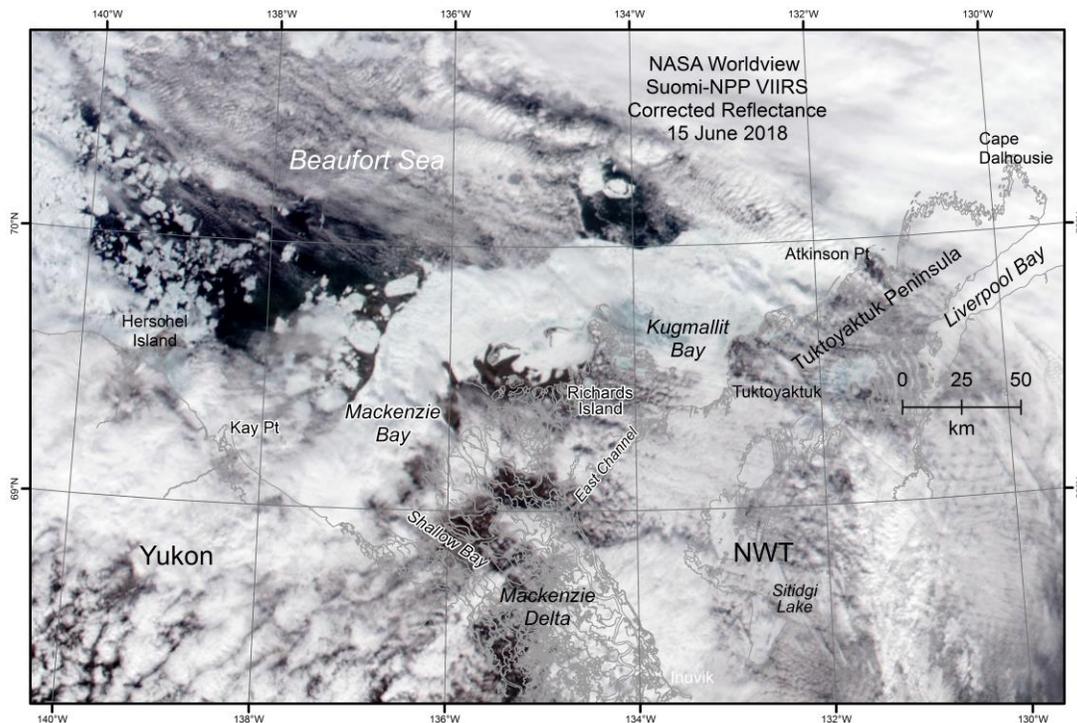


Figure 1. NASA Worldview Corrected Reflectance from the NOAA/NASA/Suomi NPP satellite with VIIRS for 15 June 2018, showing the Beaufort coast from the Alaska border to Cape Dalhousie.

The open water in central and southern Kugmallit Bay is cloud masked (Figure 2). We can see dark water through the cloud east of Hendrickson Island. The extensive area of blue ice off the northeast coast of Richards Island is a noteworthy development, indicating that the landfast ice is melting in place with warm Mackenzie runoff flowing beneath it. The outer edge remains quite stable, still with little change over the past few days. In the outer Mackenzie Delta, the melt pools off the main distributaries and Shallow Bay continue to expand. An extensive area of open water is present in western Beluga Bay between Garry, Kendall, and Pelly islands and there is a continuous band of open water against the delta front in southern Beluga Bay.

In Amundsen Gulf, the ice in both Franklin Bay and Darnley Bay is a lovely blue, suggesting surface melt, but unfortunately there was cloud yesterday over the inner bay near Paulatuk (Figure 3). It is difficult to see the situation at Ulukhaktok, but the narrow band of landfast ice to the northwest is blue. Sachs Harbour seems to be still encased in ice.

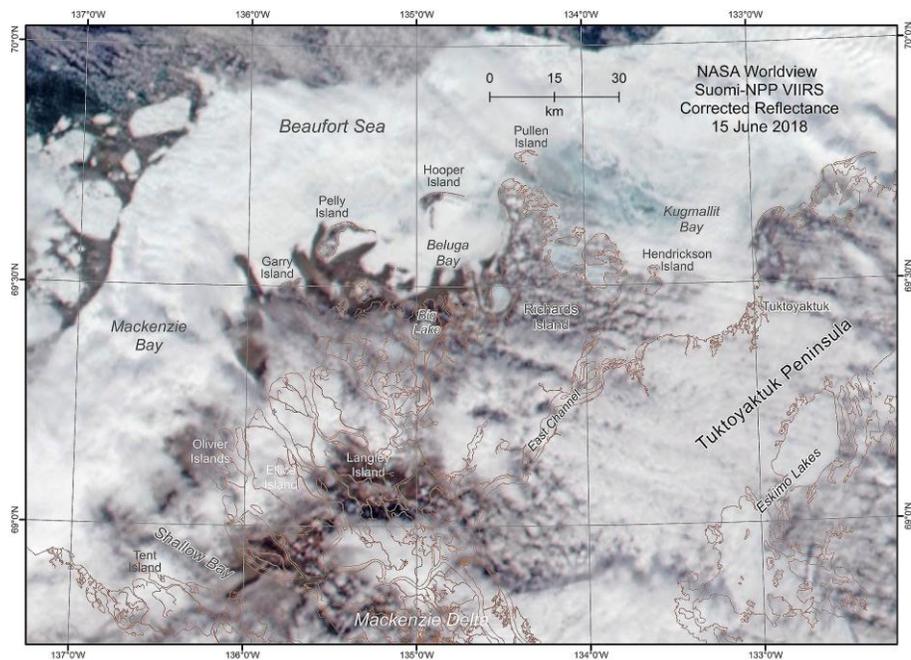


Figure 2. A closer view of the northern delta and Kugmallit Bay: NASA Worldview Corrected Reflectance from the NOAA/NASA/Suomi NPP satellite with VIIRS for 15 June 2018.

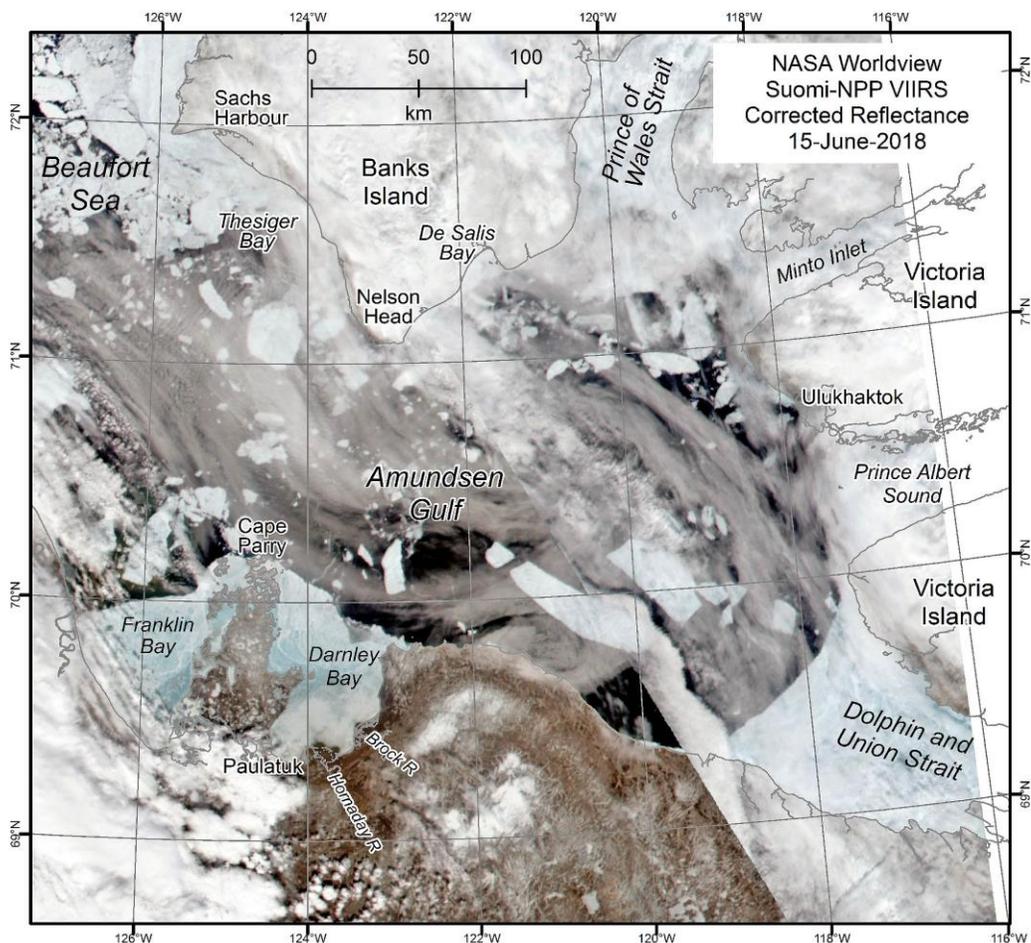


Figure 3. NASA Worldview Corrected Reflectance from the NOAA/NASA/Suomi NPP satellite with VIIRS for 15 June 2018, showing Amundsen Gulf and the eastern ISR communities.