

Ice islands of the Eastern Canadian Arctic

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Two research projects on ice islands (very large icebergs) were carried out in 2014. Both of the ice islands likely came from the Petermann Glacier of Northwest Greenland.

One research team used the CCGS *Amundsen*, during the annual ArcticNet research cruise, to access an ice island in Kane Basin. The ice island ('Petermann Ice Island (PII)-K') was approximately 1 km² and was located at 79°N, 71°W at the time of fieldwork on August 5th. Fieldwork activities included the deployment of two tracking beacons for drift monitoring and the installation of stakes for surface melt measurement. The latter will be calculated by re-visiting the ice island in 2015 and re-measuring the stake height above the ice surface. A temperature sensor was installed on half of the stakes so that the melt can be associated with the recorded temperature conditions. Additionally, a radar system which records ice thickness was towed across the ice island's surface for 1.5 km. The thickness will be remeasured next year so we can calculate the thickness change and the melt on the top and bottom horizontal surfaces of the ice island.



PII-K (approximately 0.8 km x 1.2 km) while adrift in Kane Basin on 5 August, 2014.

The second field team focused on an ice island grounded near the community of Resolute, Nunavut. The location of this ice island provided a rare opportunity to collect data concerning the effects of melt water on the marine environment. Research activities were conducted in August and local guides (Ross Pudluk, Peter and Jeffrey Amarualik) assisted in accessing the ice island by boat. A general survey of the surrounding area involved measuring water salinity, temperature, and nutrient concentrations. Samples of the ice island were also analyzed as a potential source of

nutrients. Phytoplankton biomass was measured adjacent to the ice island as an indicator of biological activity. Preliminary results indicate that phytoplankton biomass adjacent to the ice island is higher than normal and similar to bloom conditions.



Grounded ice island (about 250 m long) near Resolute Bay, NU on August 29, 2014.