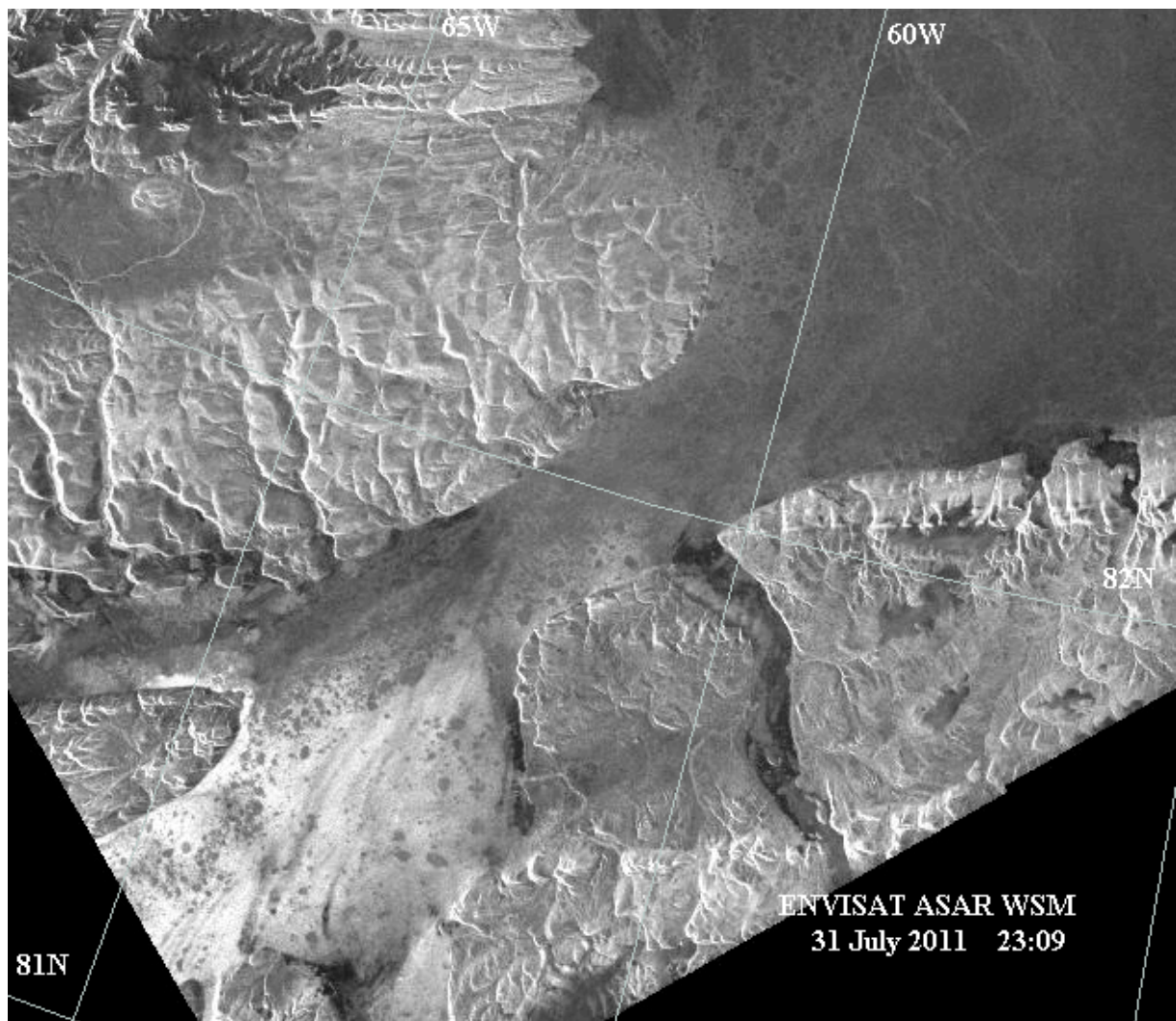


2011 Regional Sea Ice Outlook Lincoln Sea and Nares Strait August Report

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Shortly after the formation of the Icebridge in the southern Kane Basin in the beginning of February ice drift ceased in the Nares Strait to the extent that another barrier formed just south of the entrance of the Robeson Channel a week later. Thus, the ice canopy in the Lincoln Sea showed only internal movements including south-to-north movements caused by strong southern winds followed by a relaxation in the opposite direction. By 12 June radar scenes showed that surface melt began in the southern part of the Sea and MODIS scenes showed that the Lincoln Sea was covered by clouds all of July – 17 days with clouds and heavy clouds and 14 days with light clouds that permitted some observation of floes.

By 27 June the solid ice canopy in the Robeson Channel began disintegrating and a slow drift of ice out of the Lincoln Sea began after 148 days of ‘isolation’. Being subject to very low temperatures in the initial period and later to relatively high temperatures the present state of the ice is uncertain but there are indications that the first-year ice is rather brittle, breaking up into smaller floes at the time when entering the Nares Strait. The attached radar scene illustrates that but also that the dynamics of a small area like the Lincoln Sea and the Nares Strait is very much dependent upon the weather conditions – in the present case a relatively strong southern wind. By the time of writing (8 August) this wind persists at a slightly lower level except for a very short period of few hours.



This radar scene of 31 July 2011 shows the effect of a southern wind in the upper part of the Nares Strait and the Lincoln Sea with the Kennedy Channel (in part), the Hall Basin and the Robeson Channel. The bright areas show the wind-roughened sea that extends into the Lincoln Sea with ripples on the many melt water ponds. The southern wind began about noon and rose to 10 m/s at the time of the acquisition creating movement of the ice of 5 to 6 km in a 23.6-hour period but in the direction against the wind. This is due to inertia since before this day we observed a long period of northern winds. The wind is measured at Hans Island about 200 km south of the entrance to the Nares Strait and may only be an indication. However, inertia has been observed in great many cases before in a study of the wind-movement correlation near Hans Island in the centre of the Kennedy Channel.