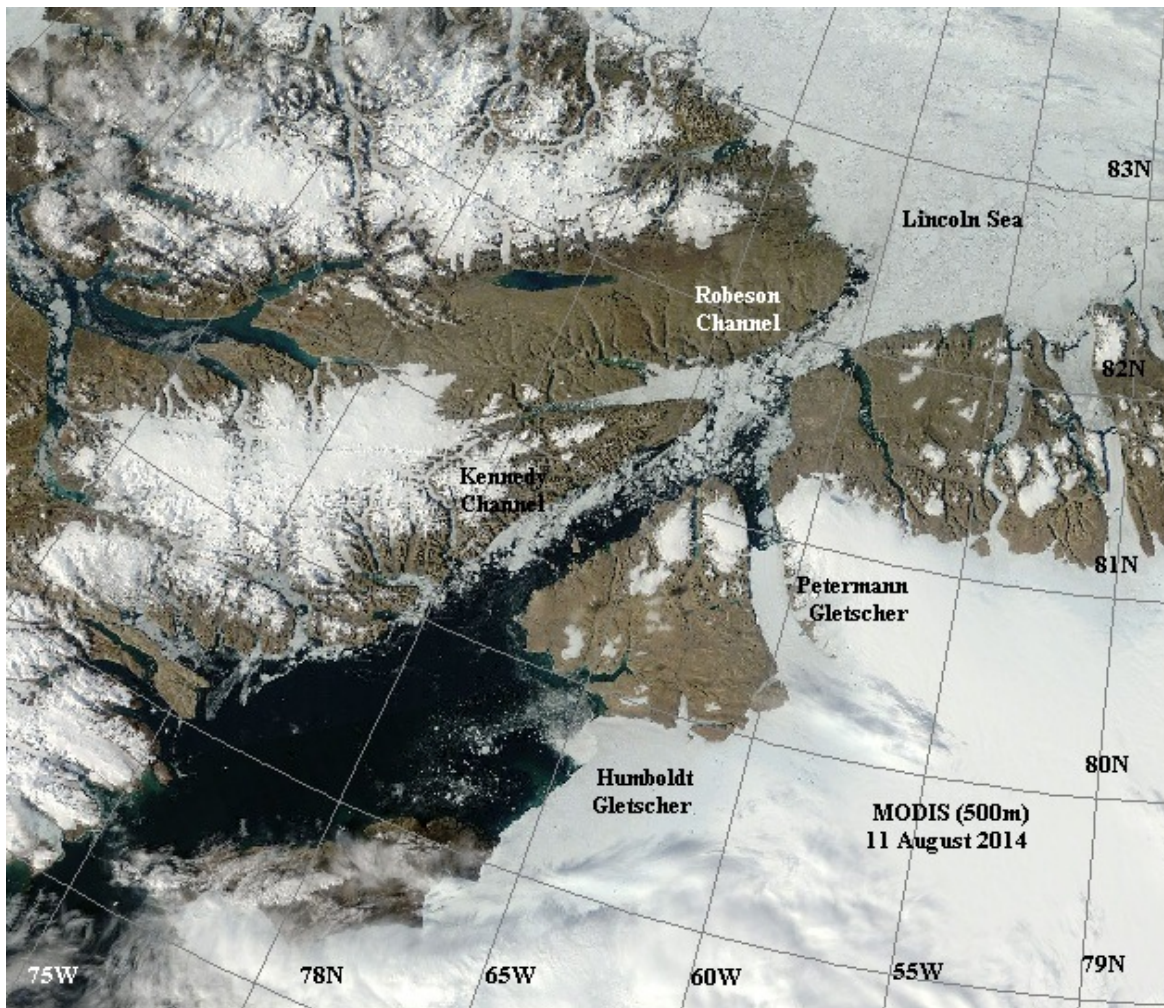


## 2014 SIPN Sea Ice Outlook Regional August Report: Lincoln Sea and Nares Strait

Preben Gudmandsen  
Danish National Space Institute  
Technical University of Denmark



The research area from 83°N to 78°N from the Lincoln Sea to the North Water in Northern Baffin Bay composed by the Robeson Channel, the Hall Basin in front of the Petermann Gletscher, the Kennedy Channel, the Kane Basin with the 100-km wide Humboldt Gletscher and the Smith Sound the meet the North Water in south. A small brown spot in the centre of the Kennedy Channel (80.83°N, 66.46°W) is Hans Island with an automatic weather station.

The scene is acquired by MODIS on 11 August 2014 showing drift ice along the coast of Ellesmere Island carried by the south-going current from the Lincoln Sea subject to mostly a northern wind. The ice is subject to surface melting that began in the Kennedy Channel by 1 July at weekly average temperatures of 3.5°C measured at Hans Island. Radarsat images show the melting to extend to well beyond the Lincoln Sea into the Arctic Ocean. We therefore expect that we shall see a drift of ice where floes disintegrate and melt when passing the Kennedy Channel so that the Kane Basin and the Smith Sound will be void of sea ice as illustrated by the 11-August scene above. However, the Humboldt Gletscher produces all year round a great number of small icebergs and growlers that eventually drift into the Smith Sound with the south-going current, see the scene above.

These predictions are subject to strong modifications if a large floe may block one of the channels as it was observed this year when a floe blocked the Robeson Channel in a period of six months (7 January to 7 July). However, due to advanced melting we do not expect a blocking will have a long life. Another possibility is that an arch-formed barrier occurs in the Lincoln Sea, once observed in the summer 2009 when a small ship (Arctic Sunrise) met no sea ice on its north-going route and could anchor at the ice edge at 82.6°N.