

SEARCH Regional Sea Ice Outlook 2012 June Report

Region of Interest: Western Parry Channel region of the Northwest Passage

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Clearing of the Northwest Passage:

At the end of May total sea ice area in the Western Parry Channel region of the Northwest Passage for 2012 was tracking near the historical average and has yet to fracture (Figure 1a). The multi-year ice (MYI) component of total area was well below the historical average (Figure 1b). Mean May air temperatures in the Western Parry Channel were near normal for 2012 but elsewhere within the Canadian Arctic Archipelago air temperatures were above normal (Figure 2).

With the exception of the 2009, light ice conditions within this region have become a frequent occurrence since 2007. Clearing in recent years can be attributed to reduced seasonal ice survival from melt and export via M'Clure Strait in addition to reduced amounts of MYI being flushed southward from the Queen Elizabeth Islands. Predicting clearing in advance of breakup is difficult considering a number of factors have to occur in tandem during the melt season but the presence of MYI at the start of the melt season plays important role with respect to clearing. MYI usually makes up a considerable portion of the Western Parry Channel but at the end of May 2012 it is almost entirely seasonal first-year ice (Figure 3). Given the recent trends toward longer and warmer melt season's the removal of this seasonal ice is likely and as a result, the Western Parry Channel will likely clear during the melt season. Clearing may only be temporary because open water in this region provides a pathway for MYI to be flushed southward from the Queen Elizabeth Islands.

Sea ice conditions in the Western Parry Channel route of the Northwest Passage

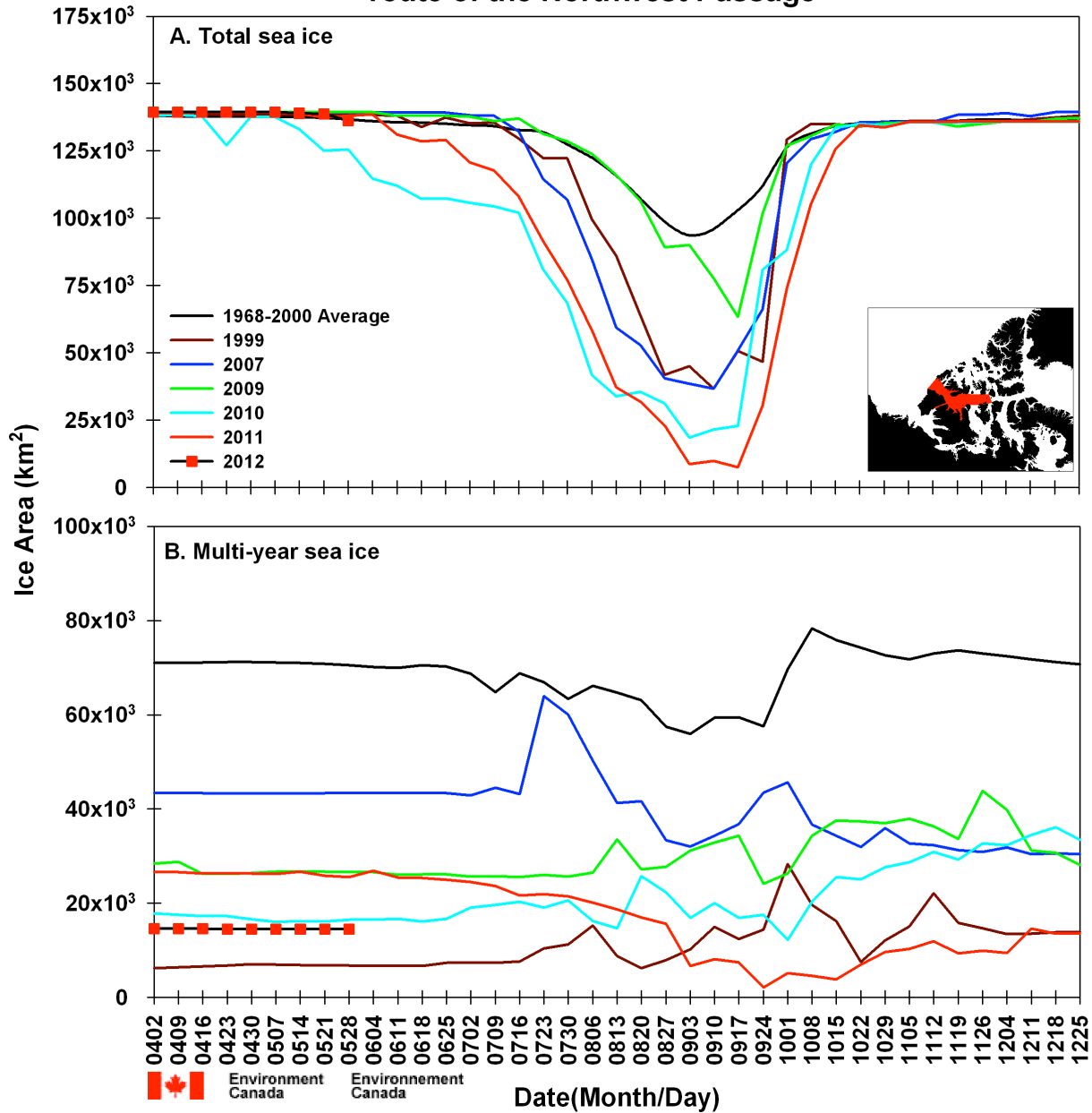


Figure 1. Time series a) total sea ice and b) multi-year ice (MYI) area for selected years within the Western Parry Channel. Data is from the Canadian Ice Service.

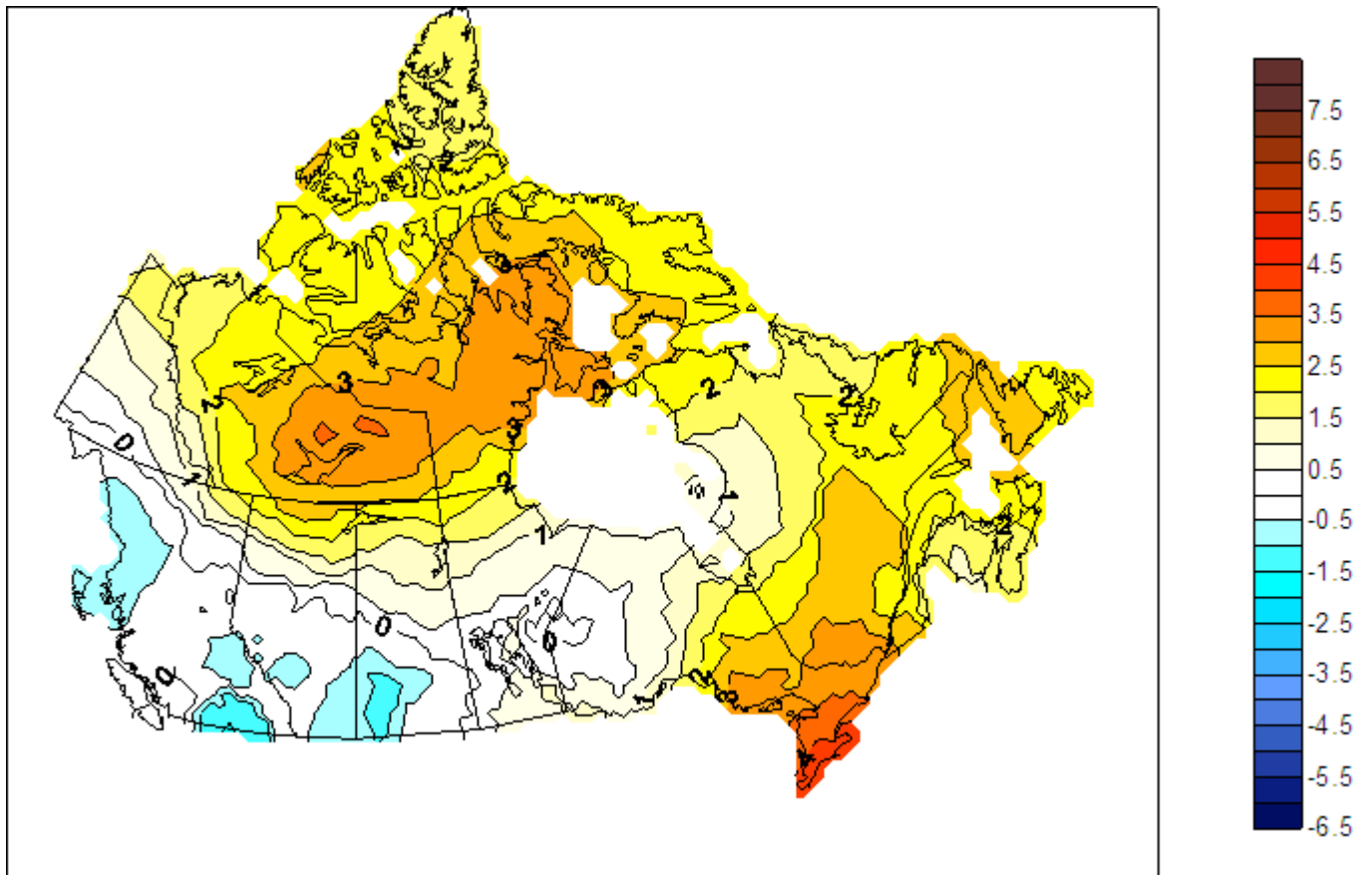


Figure 2. June 2012 surface temperature anomalies over Canada compared to the 1970-1999 average. Data is from Environment Canada.

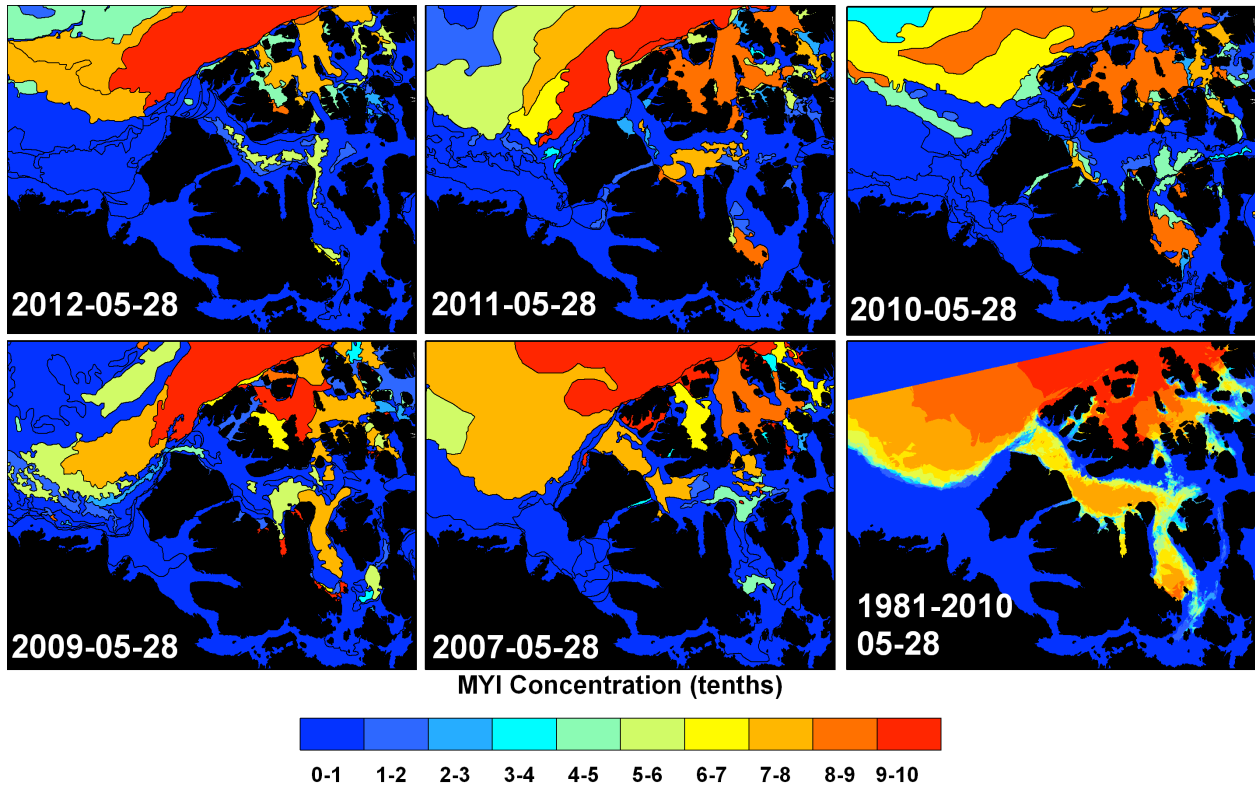


Figure 3. Spatial distribution of multi-year ice (MYI) in the Western Parry Channel at the end of May for 2012, 2011, 2010, 2009, 2007 and the 1981-2010 median climatology. Data is from the Canadian Ice Service