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July 2008 Sea Ice Outlook: Report Based on July Data

Sea Ice Assessment within the Northwest Passage for 2008: July 2008 Update

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July 2008 Update: As of July 28th, multi-year ice (MYI) the Western Parry Channel region of the Northwest Passage has remained relatively unchanged (Figure 1) and the Canadian Arctic Archipelago itself still contains high sea ice concentrations (Figure 1; bottom right panel). The weekly time series of MYI coverage in the region for 2008 illustrates that although well below the 1968-2000 average, more MYI is present in 2008 compared to the record low of 1999 (Figure 2). The entrance to the M'Clure Strait does contain low sea ice concentrations and almost no MYI (Figure 1) but the opening of the entire Northwest Passage in 2008 will also be contingent on i) MYI from the Queen Elizabeth Islands entering the region and ii) the survival of seasonal first-year ice (FYI) in the region, both of which are known to occur (see May report).

Breakup in this region of the Northwest Passage is now just getting underway and when the FYI eventually breaks up this will cause the MYI to become mobile. Flushing of MYI from the Queen Elizabeth Islands should occur provided northerly winds prevail. We expect this MYI to then be transported into this bottleneck region of the Northwest Passage (Figure 1; bottom middle panel) and begin to accumulate just north of Victoria Island. However, there is considerable uncertainty as to how much MYI will survive in the region after it has been flushed. Flushing from the Queen Elizabeth Islands is undoubtedly going to occur but warm August temperatures could ablate this flushed MYI soon afterward.

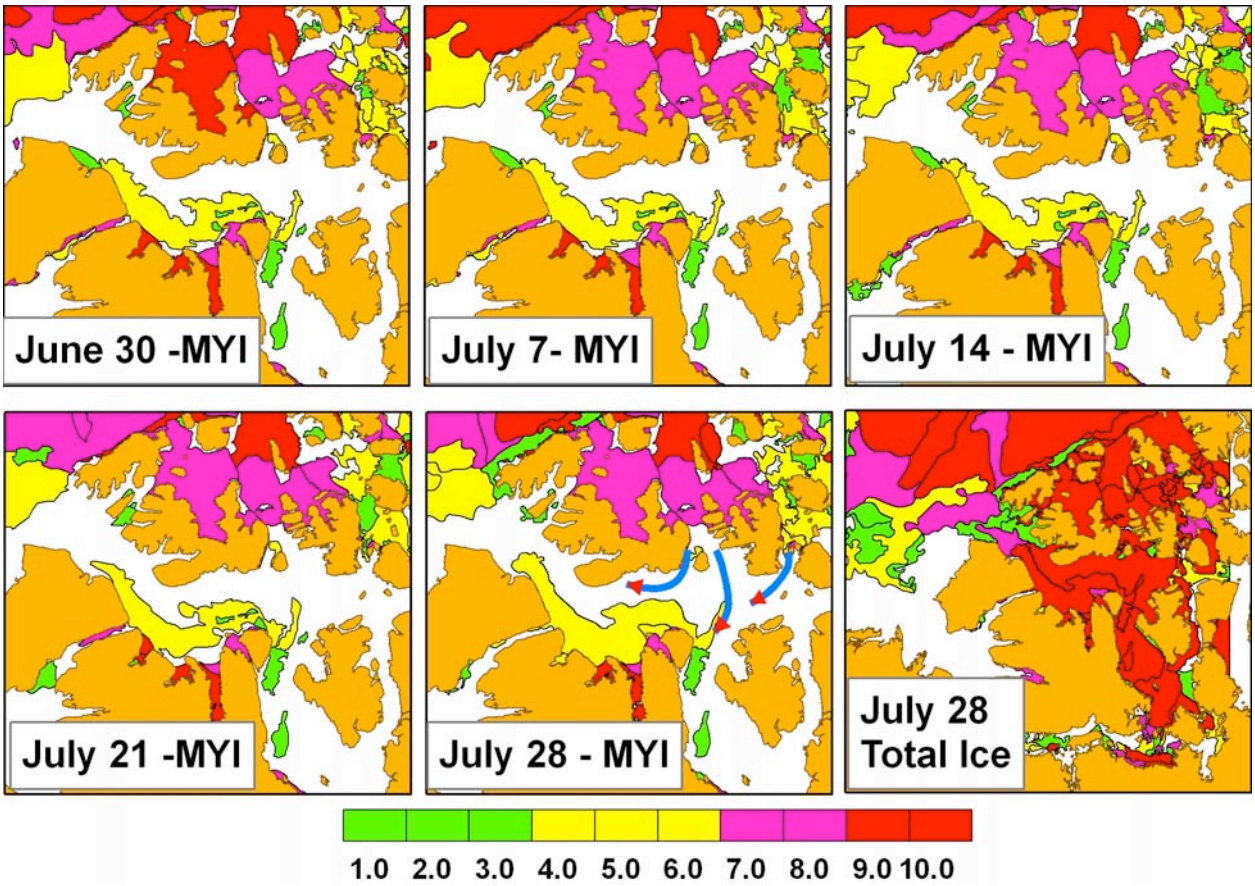

Figure 1. Spatial distribution of multi-year ice concentration in the Western Parry Channel region of the Northwest Passage for July 2008. Total sea ice concentration on July 28 shown in the bottom right panel. Legend is concentration in tenths.

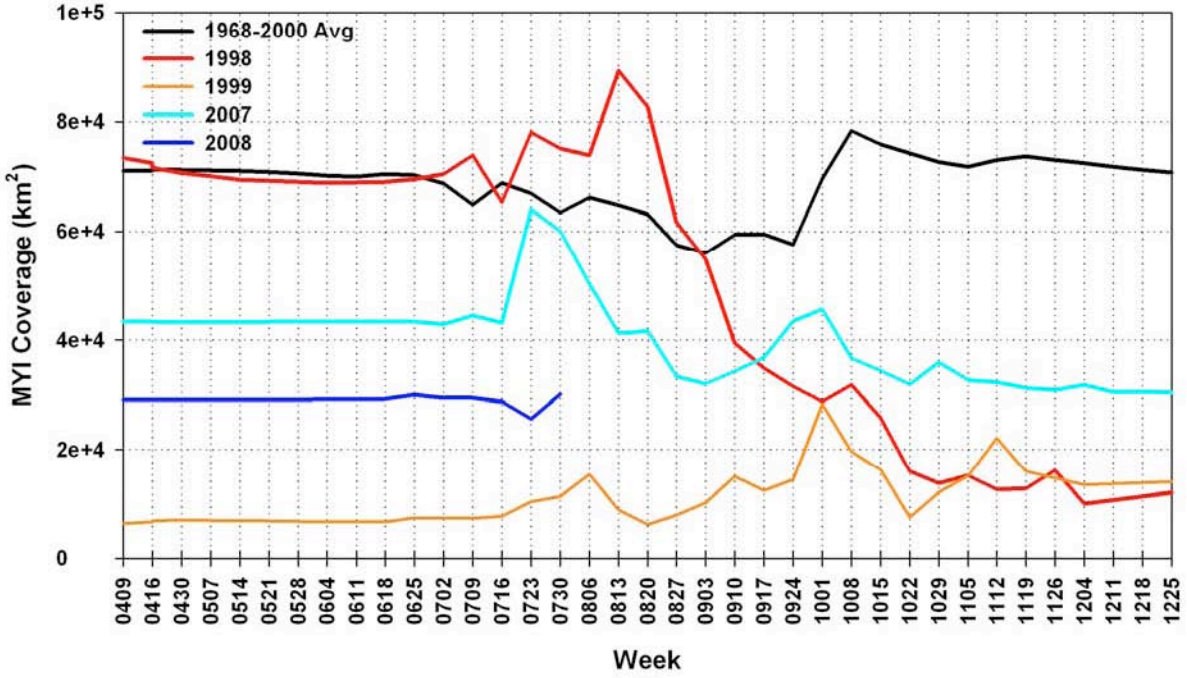

Figure 2. Weekly time series of multi-year ice coverage in the Western Parry Channel region of the Northwest Passage.