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# Seasonal Summary

## North American Arctic Waters Spring 2018

By

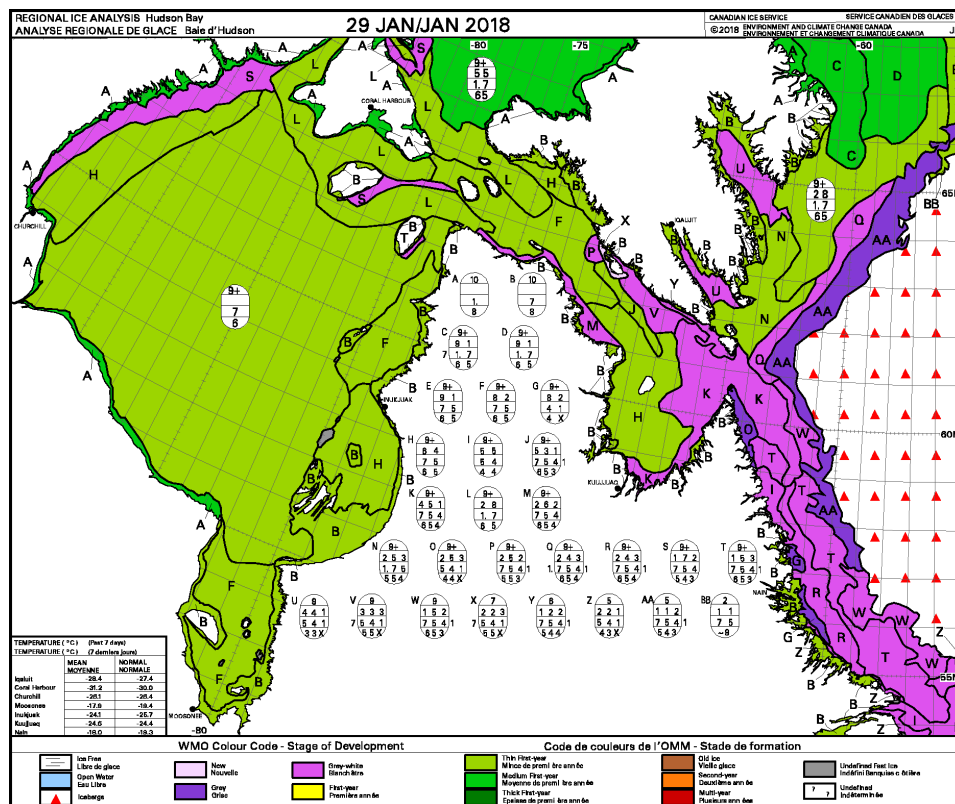


Canadian Ice Service  
Le service canadien des glaces

# Foxe Basin, Hudson Bay, Davis Strait and Labrador Coast

## End of Winter and Spring Ice Conditions

At the end of January, a mix of thin and medium first-year ice covered Foxe Basin (figure 1). Northern Davis Strait had mostly medium first-year ice while thin first-year ice covered Hudson Bay, Hudson Strait and southern Davis Strait. A trace of old ice was embedded in the ice pack in northern Davis Strait. Mostly grey-white ice was present in Cumberland Sound, Frobisher Bay, northwestern Hudson Bay as well as the Labrador coast. During the month of February, ice generally thickened to mostly medium first-year ice. The exception was along the northwestern part of Hudson Bay, the southeastern coast of Baffin Island and most of the Labrador coast where mostly thin first-year ice prevailed. Thick first-year ice became predominant in Foxe Basin and Davis Strait during March and spread over central Hudson Bay, Hudson Strait and northern Labrador coast during the month of April.



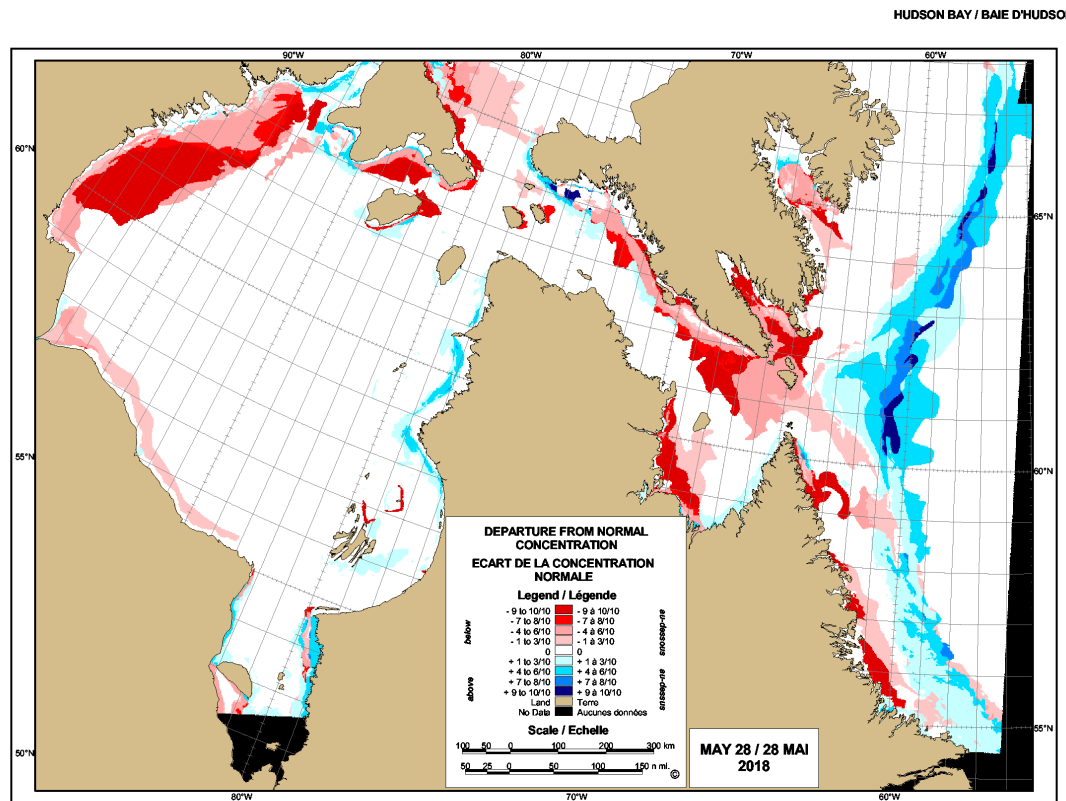
**Figure 1:** Ice stage of development analysis for the Hudson Bay area in late January 2018.

For the month of January, ice extent along the Labrador coast and Davis Strait was less or much less than normal however by the beginning of February the ice

extent was greater than normal in Davis Strait and persisted until the end of April. At the same time the ice edge along the Labrador coast remained generally below normal.

Several coastal leads began to form in the Hudson Bay area at the beginning of May. By the end of the month, an area of open water was located over northwestern Hudson Bay. Some areas of open water were present in James Bay. Bergy water areas developed in parts of northern Hudson Strait, western Ungava and significant parts of Frobisher Bay and Cumberland Sound. The ice extent along the ice edge in Davis Strait and the Labrador Coast was great than normal at the end of May.

Ice break-up was generally 3-4 weeks earlier than climatology (1981-2010) over the northwestern Hudson Bay, northern Hudson Strait, western Ungava Bay and Cumberland Sound. Despite the greater than normal ice extent along the Davis Strait and Labrador coast general ice concentrations were lower than normal (figure 2).



STATISTICS BASED UPON 1981-2010 (INTERPOLATED BETWEEN 15-MAY AND 11-JUN)  
LES STATISTIQUES BASÉES SUR 1981-2010 (INTERPOLÉES ENTRE LE 15-MAI ET LE 11-JUN)

**Figure 2:** Departure from normal ice concentration for the Hudson Bay area at the end of May 2018.

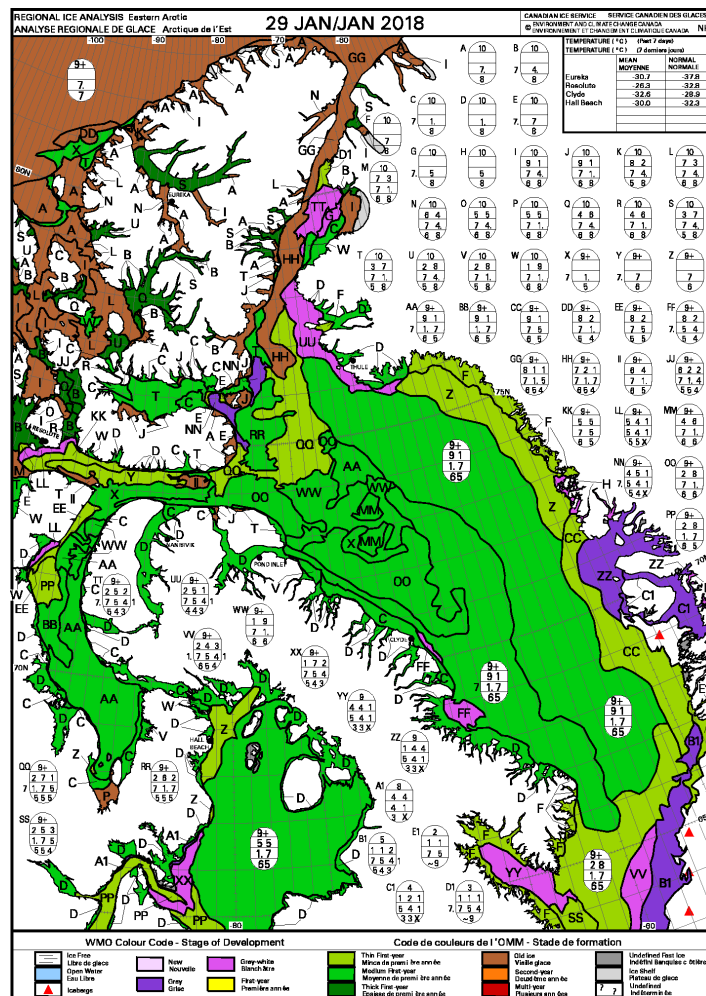
Station	Actual end of April FDD	Median end of April FDD (1981-2010)	Percent of normal FDD	May average temperatures (°C)	May departure from normal (°C)
Nain	1903	2254	84	-1.9	-2.9
Iqaluit	3416	4019	85	-6.9	-2.5
Kuuujuaq	2881	3188	90	-5.1	0.2
Inukjuak	3288	3316	99	-6.2	-4.4
Cape Dorset	3289	3424	96	-6.9	-1.9
Churchill	3539	3638	97	-1.9	-1.2
Hall Beach	4841	5229	93	-10.7	-1.6

**Table 1:** End of April freezing degree days (FDD) and May temperatures for the Hudson Bay area.

## **Eastern and Northern Arctic**

### **End of Winter and Spring Ice Conditions**

At the end of January, predominantly medium first-year ice including up to one tenth of old ice covered most of Baffin Bay except for thinner ice near Disko Island and in the extreme northwestern section of Baffin Bay (figure 3). Areas of up to 4 tenths old ice were present in the western part of Baffin Bay. A mix of thin and medium first-year ice with some old ice prevailed in Lancaster Sound. Medium first-year ice with a trace of old ice was present in Prince Regent Inlet to Committee Bay. Medium first-year ice with some old ice present in Western Baffin Bay thickened to thick first-year during the first half of March. Consolidated ice was present along the Baffin Island coast, Eclipse Sound, Admiralty Inlet, and the rest of the High Arctic. High concentrations of old ice were observed in Queen Basin, and in Norwegian Bay and parts of Nares Strait. Several bands of up to 3 tenths of old ice were present near the central section of Baffin Bay. At mid-March, concentrations of old ice were slightly greater than normal in Baffin Bay, Prince Regent Inlet and Jones Sound with greater than normal old ice north of Cornwallis Island and the southern portion of the Queen Elizabeth Islands. Concentrations of old ice were less than normal in parts of Nares Strait, in the northwestern portion of the Queen Elizabeth Islands and most of Committee Bay.



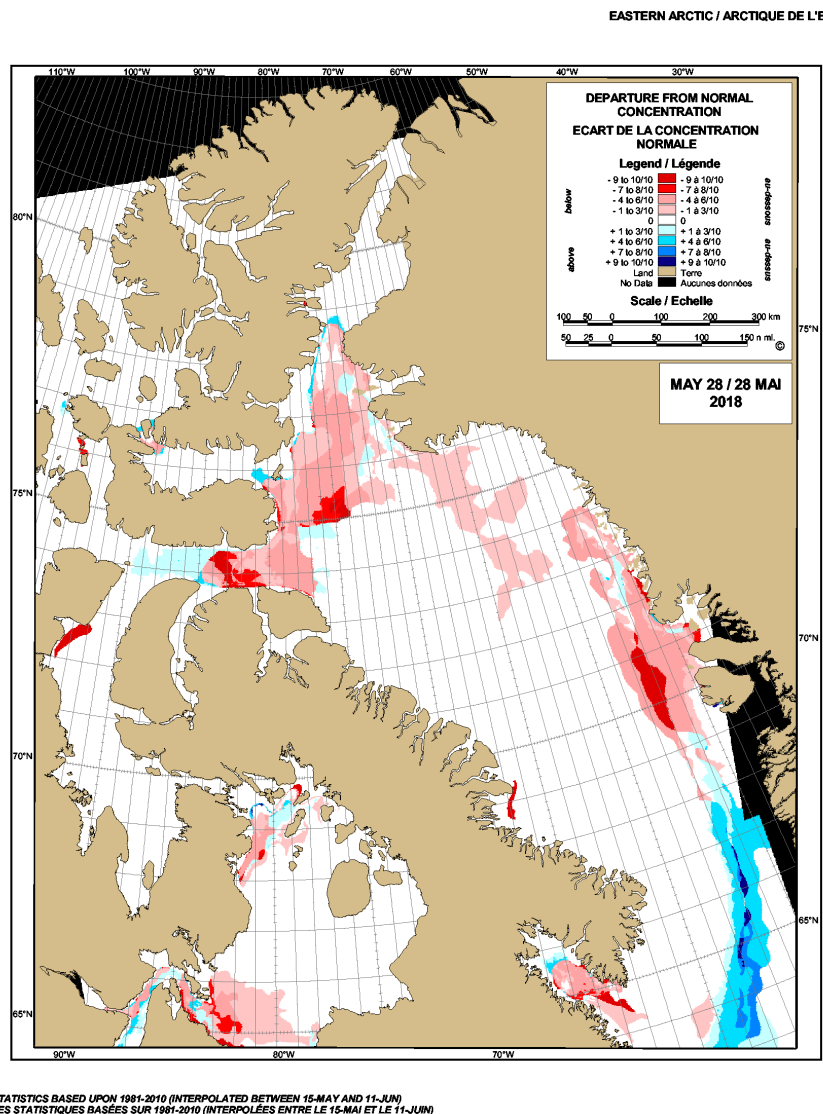
**Figure 3:** Ice stage of development analysis for the Eastern Arctic area in late January 2018.

By the end of March, medium first-year ice consolidated over Barrow Strait and extreme western Lancaster Sound. Most of Prince Regent Inlet became consolidated with thick first-year ice with some old ice. Throughout the month, areas of relatively thinner ice persisted over eastern Lancaster Sound due to the continuous outflow of ice from this area.

By mid-April, the consolidated medium and thick first-year ice covered the western part of Lancaster Sound and most of Prince Regent Inlet. Thin and medium first-year ice with some old ice was present over northwestern Baffin Bay. Elsewhere in Baffin Bay and most of Davis Strait, ice thickened to thick first-year ice.

The break-up was underway throughout the month of May. The reduced ice concentration over eastern Baffin Bay extended northward from Disko Island along the Greenland coast. However the ice edge in Davis Strait was melting at a slower pace during the same period. During the second half of the month, periods of strong northwesterly winds accelerated the destruction of the ice. Near the end of the month, sections of bergy water dominated over northern Baffin Bay.

Ice melt was generally 2-3 weeks earlier than climatology (1981-2010) over the northern Baffin Bay (figure 4). The exception was along the ice edge in northern Davis and southeastern Baffin Bay where conditions were 1-2 weeks later than normal due to colder than usual temperatures in the area.



**Figure 4:** Departure from normal ice concentration for the Eastern Arctic area at the end of May 2018.

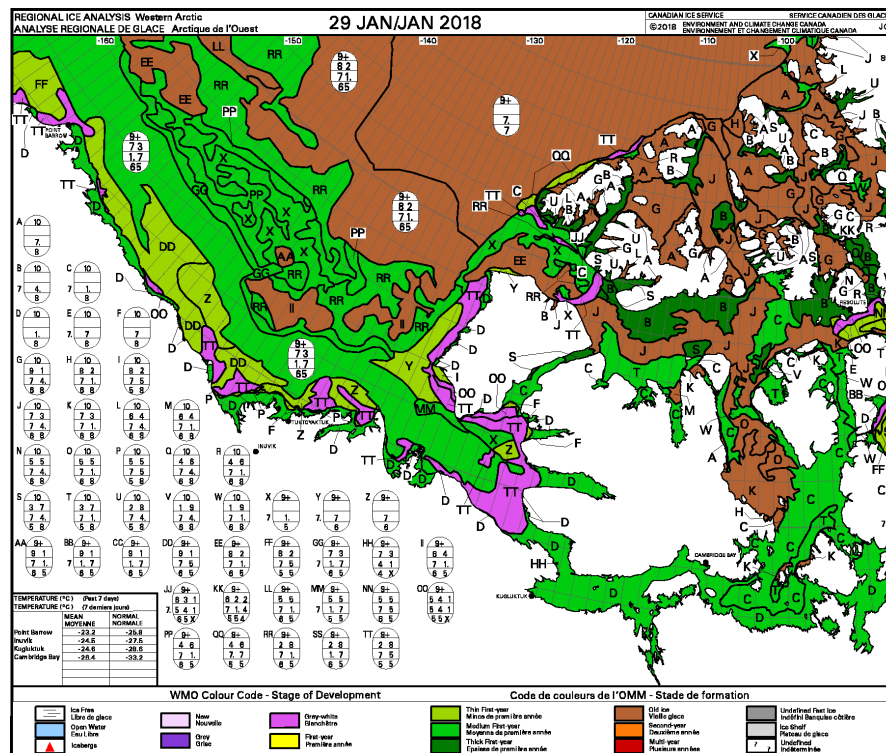
Station	Actual end of April FDD	Median end of April FDD (1981-2010)	Percent of normal FDD	May average temperatures (°C)	May departure from normal (°C)
Clyde	4410	4678	94	-9.1	-0.9
Pond Inlet	5086	5433	94	-10.1	-0.9
Resolute	5148	5797	89	-11.1	-0.3
Eureka	6549	7131	92	-13.3	-2.3

**Table 1:** End of April freezing degree days (FDD) and May temperatures for the Eastern Arctic area.



## End of Winter and Spring Ice Conditions

At the end of January medium first-year ice with some old ice was present over the southern Beaufort Sea. Over the northern Beaufort Sea as well as M'Clure Strait, mostly old ice with some medium first-year ice prevailed. Consolidated medium first-year ice was present in shallow waters along the southern mainland coast in the Beaufort Sea, along the shipping route from Dolphin and Union Strait to Taloyoak and into Peel Sound. Consolidated old and thick-first year ice prevailed in the Viscount Melville Sound as well as over the Queen Elizabeth Islands. Areas of lower concentrations of old ice were present in most of M'Clintock Channel, Viscount Melville Sound and M'Clure Strait as well as northwestern Queen Elizabeth Islands.

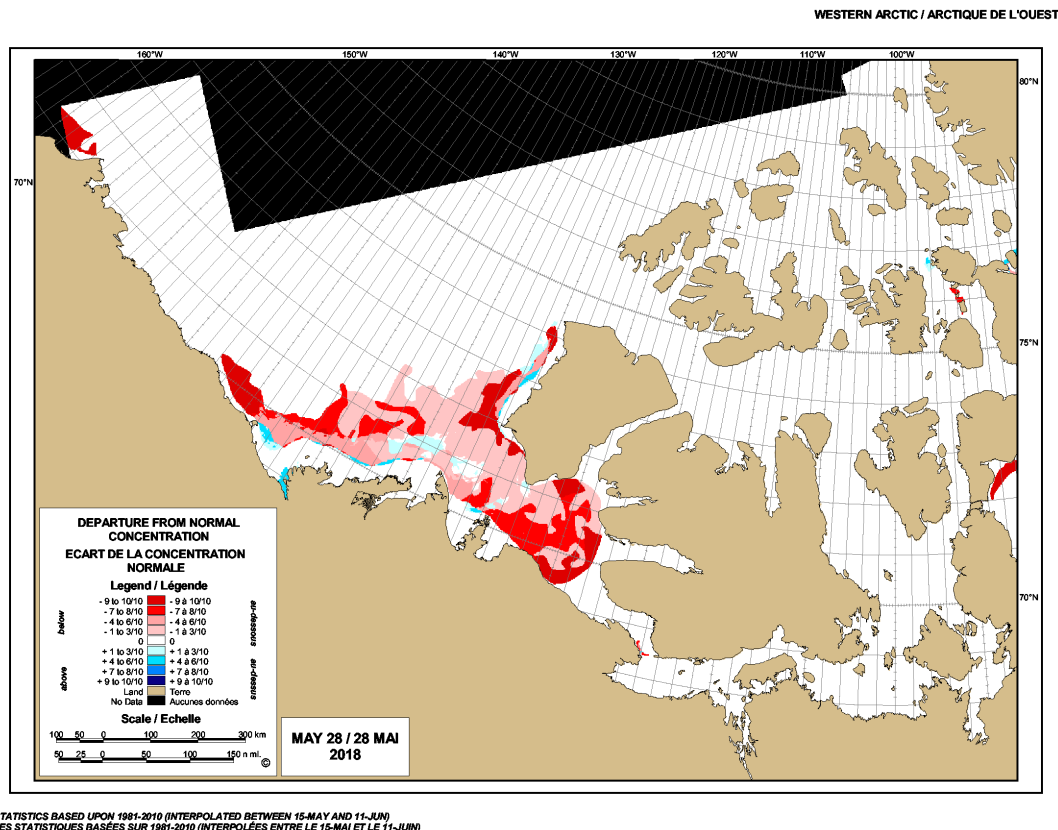


**Figure 5:** Ice stage of development analysis for the Western Arctic area in late January 2018.

During the first half of February, ice from Peel Sound, Larsen Sound and into Queen Maud Gulf thickened to consolidated thick first-year ice. Over the southern Beaufort Sea, the leading edge of higher concentration of old ice

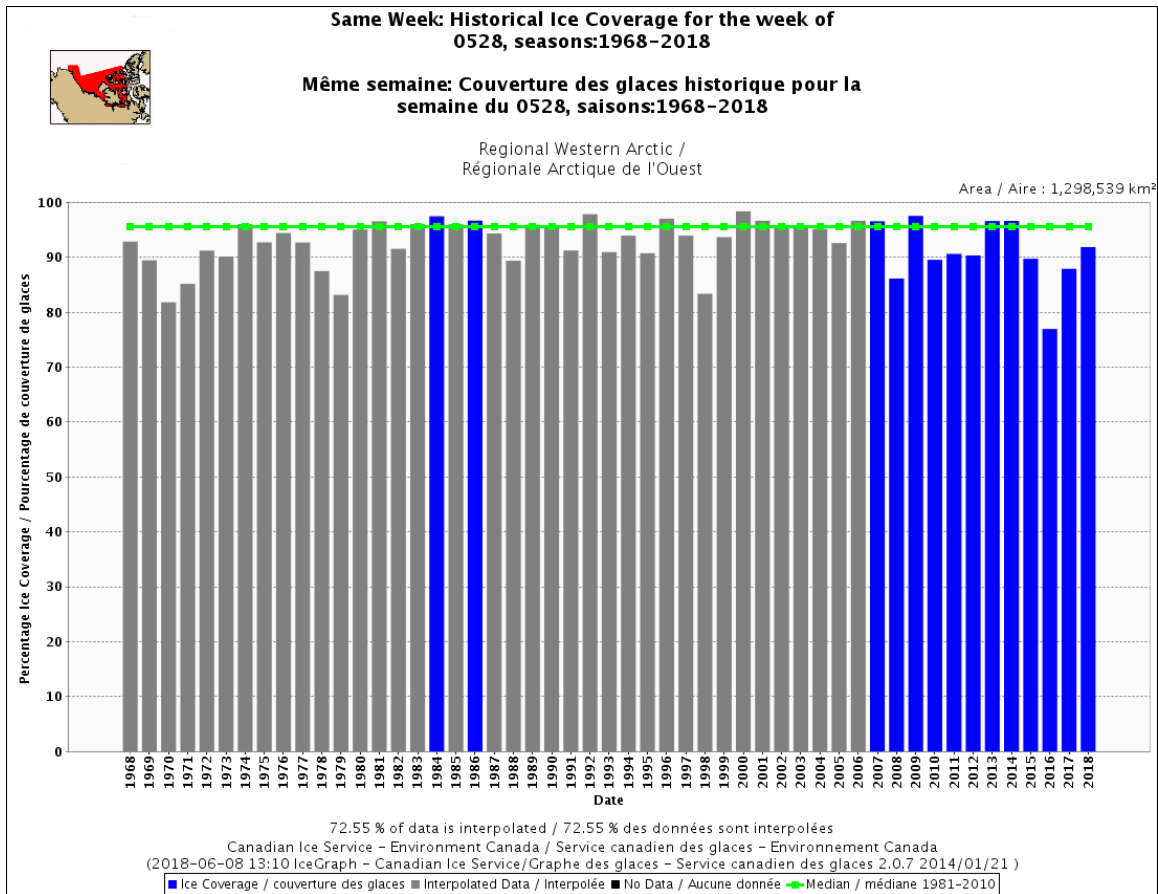
slumped further south and was located about 60 to 120 nautical miles north of the Beaufort Sea coast. Ice had thickened to thick first-year during the second half of February in Coronation Gulf. Amundsen Gulf had medium and thick first year ice at the beginning of April.

During the last week of April, a combination of persistent easterly winds and warmer than normal temperature caused an early break-up of the ice in the southern Beaufort Sea. The break-up continued throughout May, and by the end of the month open water dominated the southeastern Beaufort Sea as well as southwest of Point Barrow (figure 7).



**Figure 6:** Departure from normal ice concentration for the Western Arctic area at the end of May 2018.

Ice melt over the Western Arctic at the end of May was 3-4 weeks earlier than climatology (1981-2010). However ice conditions this year did not set an ice coverage record (see Figure 8).



**Figure 7:** Comparison of historical ice coverage in the Western Arctic area at the end of May.

Station	Actual end of April FDD	Median end of April FDD (1981-2010)	Percent of normal FDD	May average temperatures (°C)	May departure from normal (°C)
Mould Bay	5526	6148	90	-10.9	0.9
Cambridge Bay	5126	5513	93	-11.0	-1.9
Kugluktuk	4143	4598	90	-7.2	-2.2
Tuktoyaktuk	3499	4271	82	-5.8	-1.6

**Table 2:** End of April freezing degree days and May temperatures (FDD= Freezing Degree Days).