

**Seasonal Summary
for the Canadian Arctic
Summer 2005**



**Produced by the Canadian Ice Service
December 06, 2005**

Table of Contents

Hudson Bay and Approaches	1
June 2005.....	1
July 2005.....	1
August 2005.....	2
Eastern Arctic	7
June 2005.....	7
July 2005.....	7
August 2005.....	8
September 2005	9
Western Arctic	15
June 2005.....	15
July 2005.....	15
August 2005.....	16
September 2005	16

Table of Tables

Table 1: Temperatures and departures from normal (°C) for Hudson Bay.....	3
Table 2: Temperatures and departures from normal (°C) for Eastern Arctic.....	10
Table 3: Temperatures and departures from normal (°C) for Western Arctic.....	18

Table of Figures

Figure 1: Temperature trend at Churchill, June – September 2005.....	3
Figure 2: Temperature trend at Iqaluit, June – September 2005	3
Figure 3: Hudson Bay regional chart – 13 June 2005.....	4
Figure 4: Departure from normal ice concentration Hudson Bay –13 June 2005	4
Figure 5: Hudson Bay regional chart – 18 July 2005.....	5
Figure 6: Departure from normal ice concentration Hudson Bay – 18 July 2005.....	5
Figure 7: Hudson Bay regional – 01 Aug. 2005.....	6
Figure 8: Departure from normal ice concentration Hudson Bay – 01 Aug. 2005.....	6
Figure 9: Temperature trend at Resolute, June – September 2005.....	10
Figure 10: Temperature trend at Hall Beach, June – September 2005	10
Figure 11: Eastern Arctic regional chart – 13 June 2005.....	11
Figure 12: Departure from normal ice concentration, Eastern Arctic–13 June 2005.....	11
Figure 13: Eastern Arctic Regional chart – 18 July 2005.....	12
Figure 14: Departure from normal ice concentration, Eastern Arctic – 18 July 2005.....	12
Figure 15: Eastern Arctic regional – 15 Aug. 2005.....	13
Figure 16: Departure from normal ice concentration, Eastern Arctic–15 Aug. 2005.....	13
Figure 17: Eastern Arctic regional chart – 19 Sept. 2005	13
Figure 18: Departure from normal ice concentration Eastern Arctic–19 Sept. 2005.....	14

Canadian Ice Service

Figure 19: Temperature trend at Tuktoyaktuk, June – September 2005 18
Figure 20: Temperature trend at Cambridge Bay, June – September 2005..... 18
Figure 21: Western Arctic regional chart – 13 June 2005..... 19
Figure 22: Departure from normal ice concentration, western Arctic – 13 June 2005 ... 19
Figure 23: Western Arctic regional – 18 July 2005..... 20
Figure 24: Departure from normal ice concentration, Western Arctic – 18 July 2005.... 20
Figure 25: Western Arctic regional chart – 15 Aug. 2005 21
Figure 26: Departure from normal ice concentration, Western Arctic–15 Aug. 2005..... 21
Figure 27: Western Arctic regional chart – 19 Sept. 2005 21
Figure 28: Departure from normal ice concentration Western Arctic–19 Sept. 2005..... 22
Figure 29: 1000 mb pattern for June 1–15 and 16-30 23
Figure 30: 1000 mb pattern for July 1–5 and July 16-31 23
Figure 31: 1000 mb pattern for August 1–15 and 16-31 24
Figure 32: 1000 mb pattern for September 1–15 and 16-30..... 24

Hudson Bay and Approaches

Due to significantly higher than normal temperatures in May, ice conditions at the end of May were in general 10 days to three weeks earlier than normal. The only exception was over northwestern Hudson Bay where May's temperatures were slightly below normal and ice conditions were close to normal. The last of the ice in Goose Bay melted during the last week in May.

June 2005

Winds were generally light and variable over the first half of June but increased to light to moderate westerly for the second half (Figure 29, page 25). Above normal temperatures continued to prevail in June over most areas (Table 1, page 5). As a result ice melt continued at a rapid pace. This was more apparent along the Labrador coast where ice was disappearing at a near record pace. At the end of the month the Labrador coast was almost clear of sea ice except for the extreme northern section. Open water areas started to develop in southern Ungava Bay and northern Hudson Strait near mid-June and expanded gradually during the rest of the month. The northwestern section of Hudson Bay did not change significantly during the first half of June but rapid melting occurred and wide open water areas developed during the second half. At the end of June, James Bay was generally open water except for loose ice persisting over its northwestern section. At that time a large open water lead existed along the eastern shore of Hudson Bay south of Inukjuak while open drift conditions prevailed northward along the shore. Conditions in Frobisher Bay remained closed to normal during the entire month of June but were generally easier than normal in its approaches. At the end of June ice conditions were about 10 days earlier than normal except near 3 weeks earlier along the Labrador coast.

Ice conditions as well as the departure from normal ice concentration chart for mid-June are shown on page 6, Figure 3 and Figure 4, respectively.

July 2005

Above normal temperatures continued to prevail during the month of July except near normal over the northeast section of Hudson Bay (Table 1, page 5). Over Hudson Bay winds were generally light to moderate from the southwest during the first half of July but moderate northwesterly during the second half. Winds were generally light to moderate southerly along the Labrador coast throughout July. (Figure 30, page 25).

Warmer than normal temperatures, as well as prevailing southwesterly winds, contributed to a rapid melting of the ice in Hudson Bay and James Bay. James Bay became open water in early July while Hudson Bay was almost entirely open water by the end of the month except for a very small area of loose ice that was persisting north of Churchill. The open water route along the eastern shore of Hudson Bay developed during the second week of July which is near normal. Bergy water became predominant along the entire Labrador coast during the second week of July and in Ungava Bay and

Hudson Strait during the last week of the month. The open water route to Churchill had developed by the last week of the month which is a near normal event.

Rapid ice melt was also noticed in Davis Strait and at mid-July the southern ice edge was located at the entrance to Cumberland Sound while the Sound itself was mainly bergy water. At that time the last of the ice in Frobisher Bay had just melted. At the end of the month loose ice areas were still found in the northern section of the Davis Strait.

Ice conditions as well as the departure from normal ice concentration chart for mid-July are shown on page 7, figure 5 and figure 6, respectively.

August 2005

Near normal temperatures were generally reported in August (Table 1, page 5). Winds were generally light and variable except moderate westerly over the northern section during the second half of August (Figure 31, page 26). The last patch of ice in northwestern Hudson Bay melted early in the month. Foxe Channel was mainly open water by mid-August. The ice edge in Davis Strait retreated north of Cape Dyer shortly after mid-month.

Ice conditions as well as the departure from normal ice concentration chart for the beginning of August are shown on page 8, figure 7 and figure 8, respectively.

Canadian Ice Service

Table 1: Temperatures and departures from normal (°C)

Stations	June		July		August		September	
	Temp.	Depart.	Temp.	Depart.	Temp.	Depart.	Temp.	Depart.
Nain	8.3	2.2	12.4	2.3	10.8	0.2	8.3	1.6
Iqaluit	4.2	0.7	7.7	0.2	7.1	0.3	3.4	1.2
Kuujuaq	9.1	2.1	12.4	1.1	11.3	0.8	7.0	1.4
Cape Dorset	3.4	1.1	6.4	-0.7	6.1	0.3	2.3	0.9
Churchill	7.6	1.0	14.6	2.8	12.8	1.3	6.8	1.1
Moosonee	11.0	-1.4	15.1	-0.6	12.4	-2.5	12.2	1.7
Kuujuarapik	8.5	1.6	14.8	4.2	13.8	2.5	9.7	2.4

Figure 1: Temperature trend at Churchill, June – September 2005

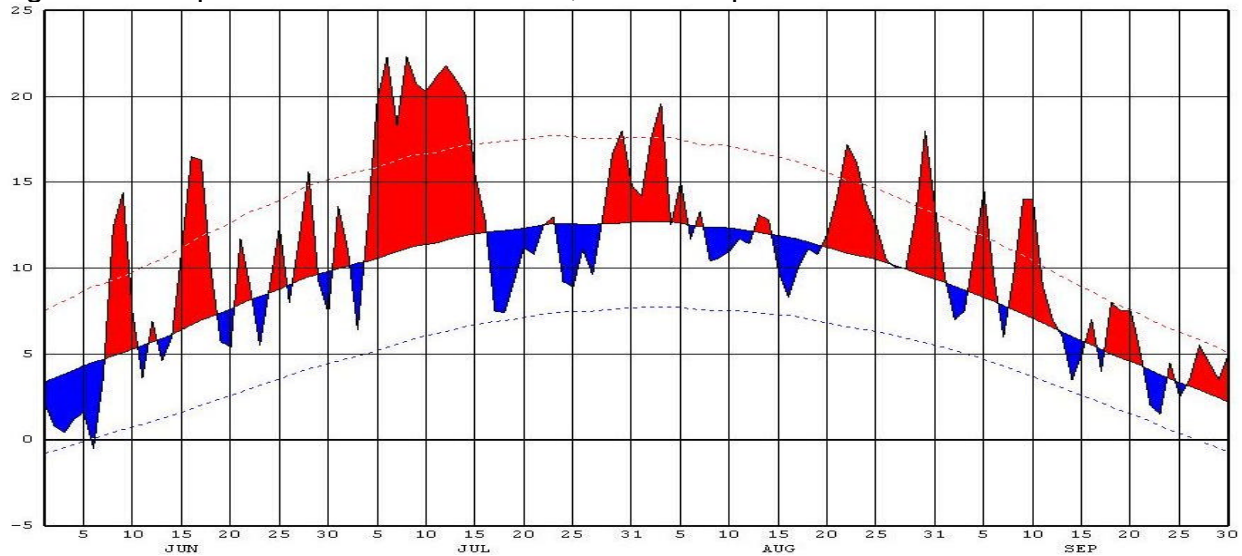


Figure 2: Temperature trend at Iqaluit, June – September 2005

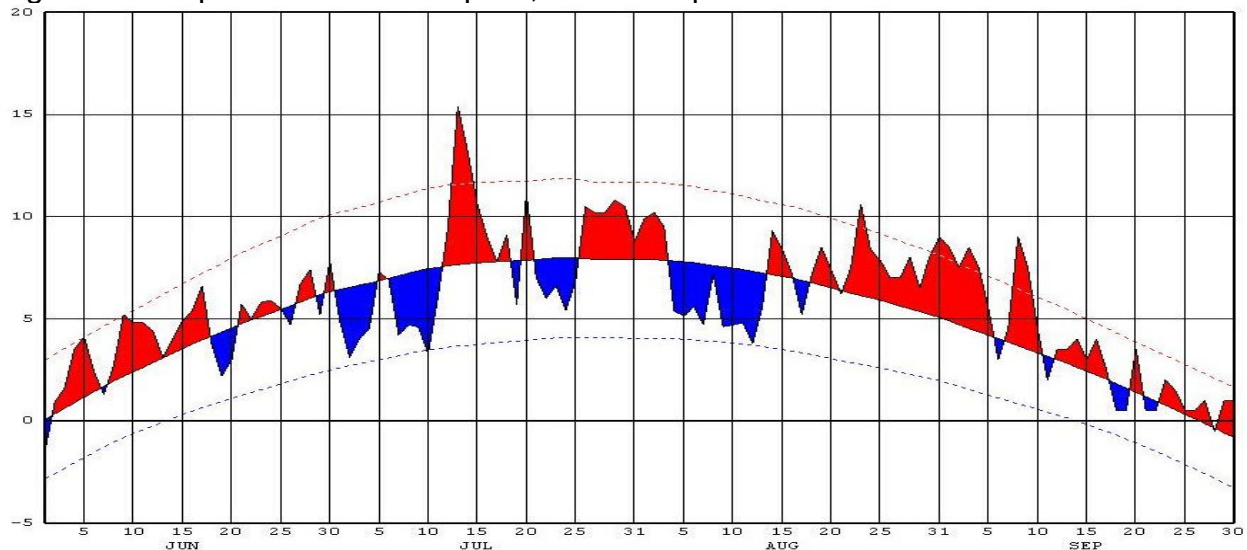


Figure 3: Hudson Bay regional chart - 13 June, 2005

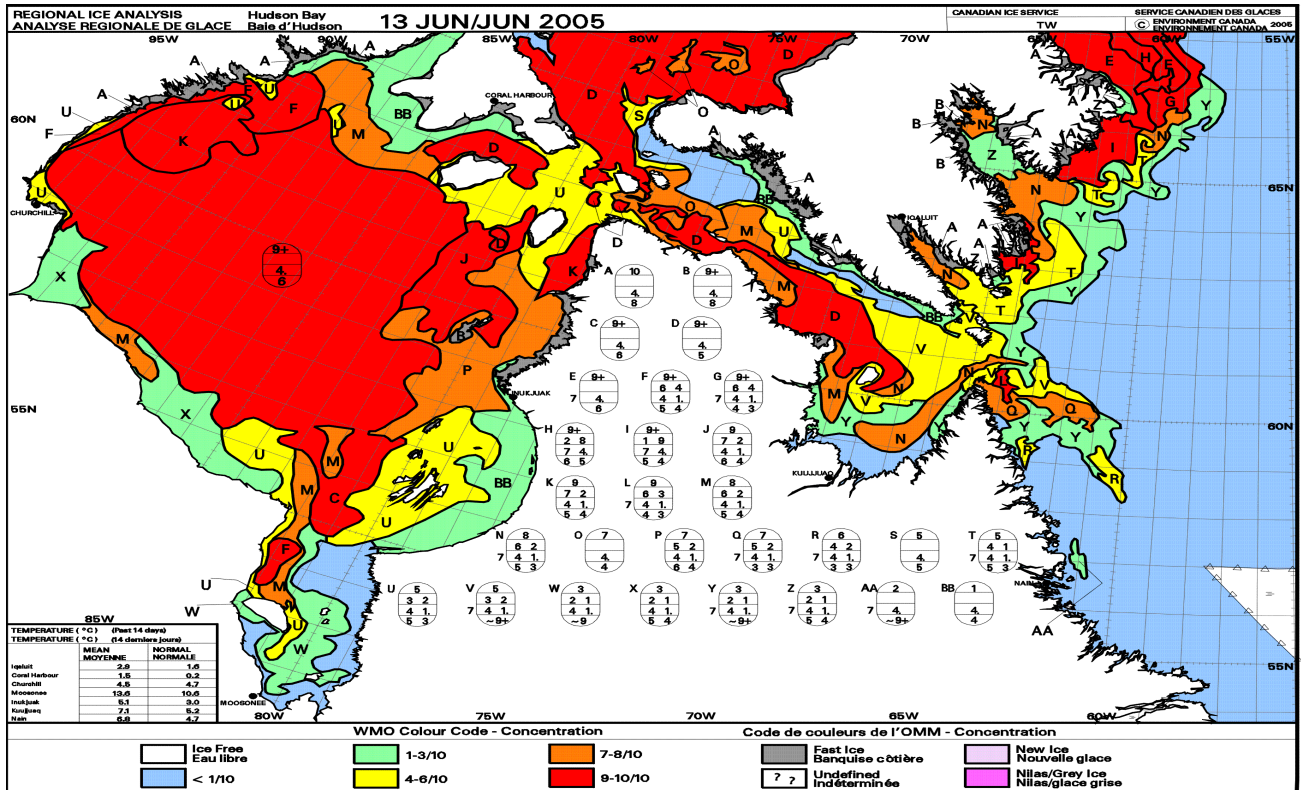


Figure 4: Departure from normal ice concentration Hudson Bay -13 June.

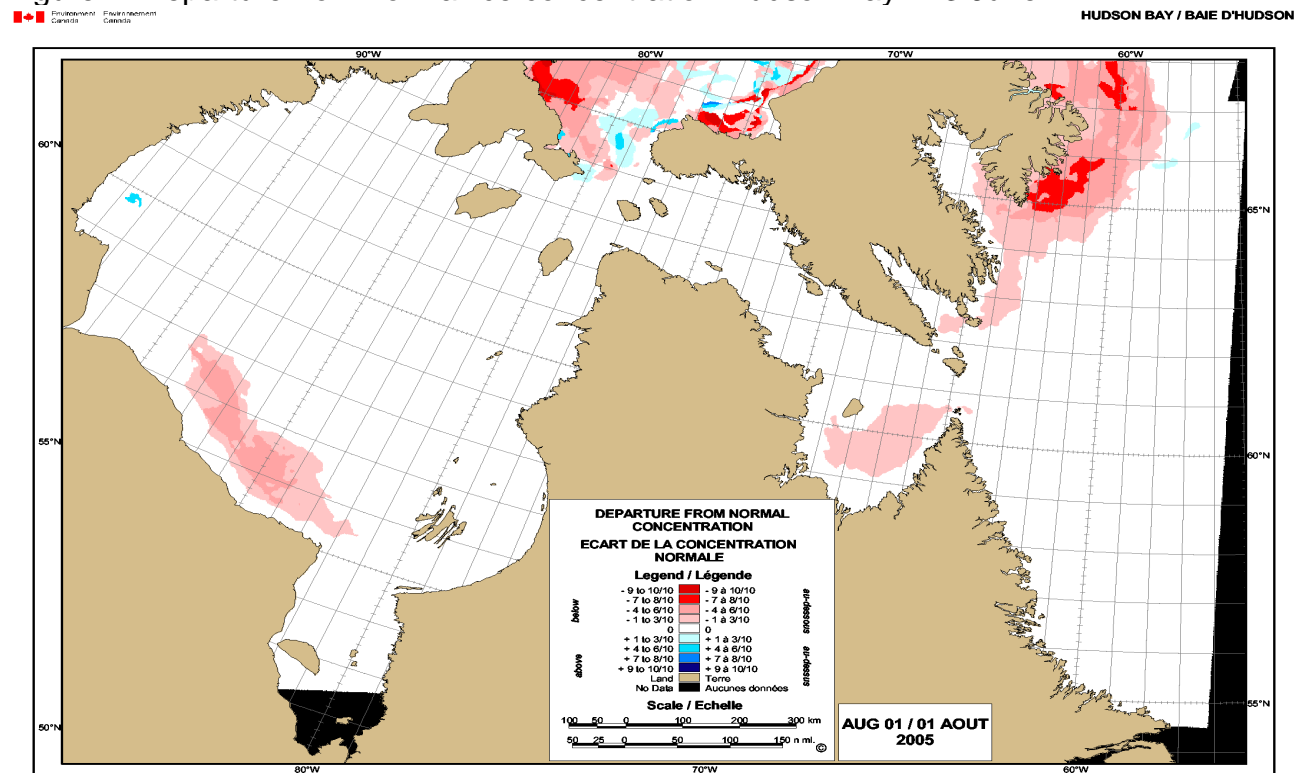


Figure 5: Hudson Bay regional chart – 18 July 2005

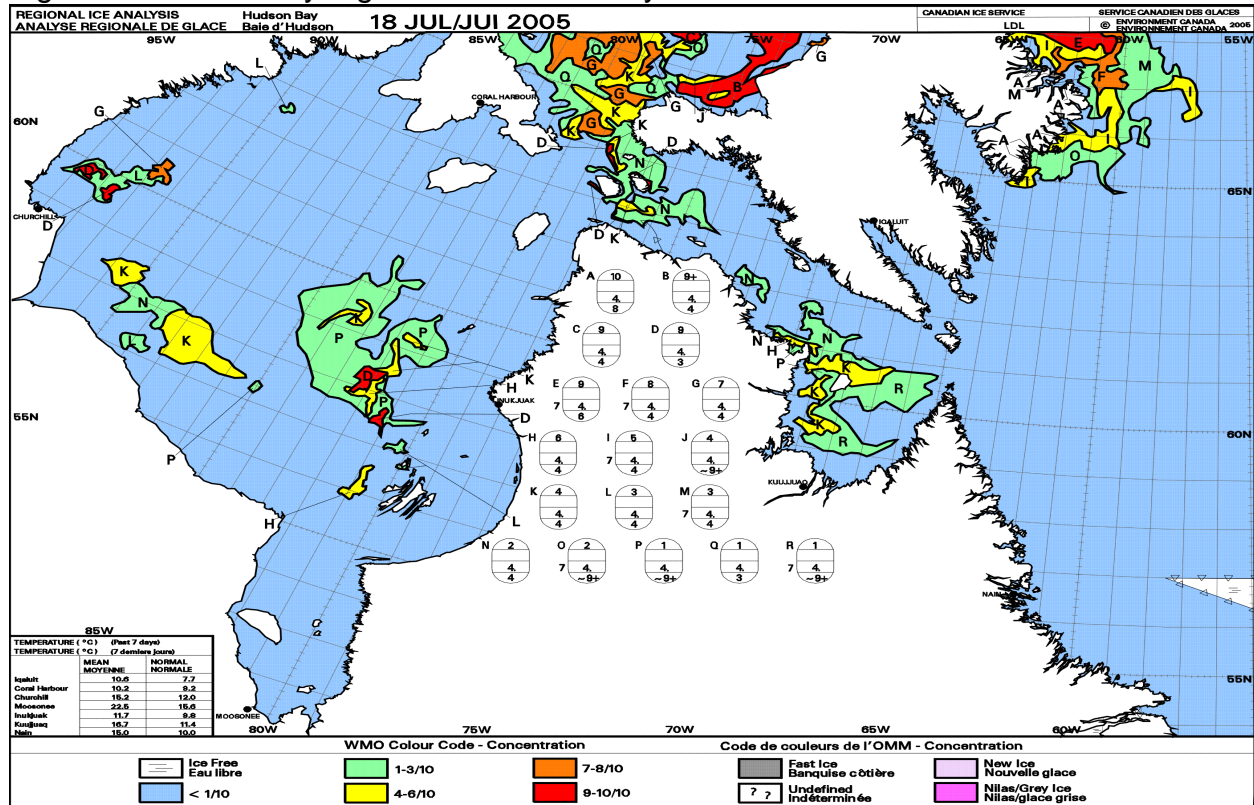


Figure 6: Departure from normal ice concentration Hudson Bay – 18 July 2005

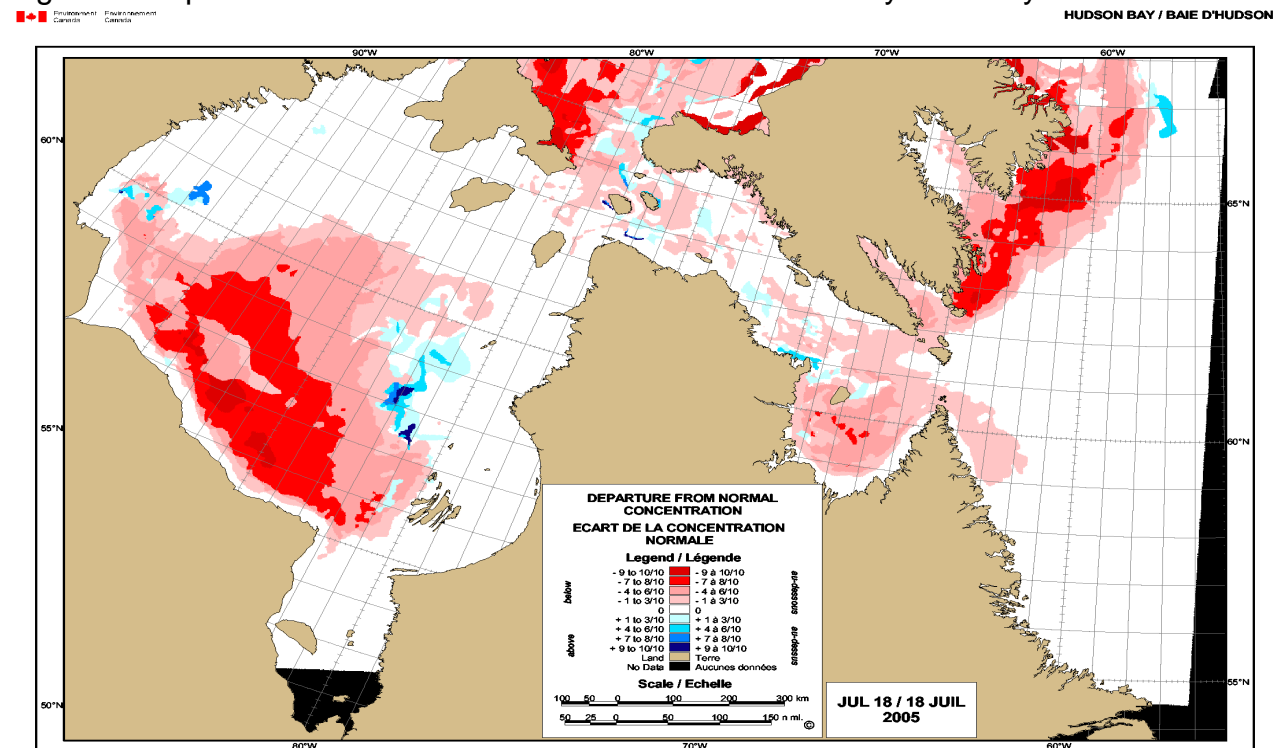


Figure 7: Hudson Bay regional – 01 August 2005

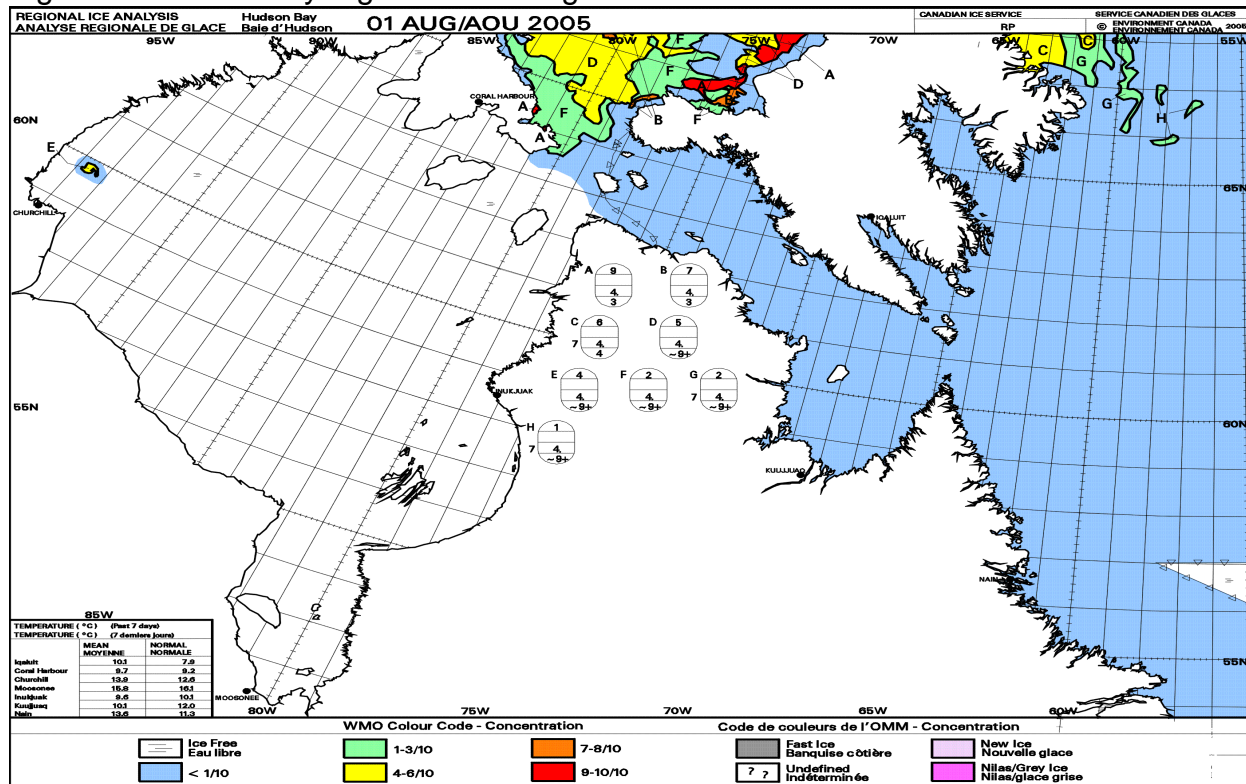
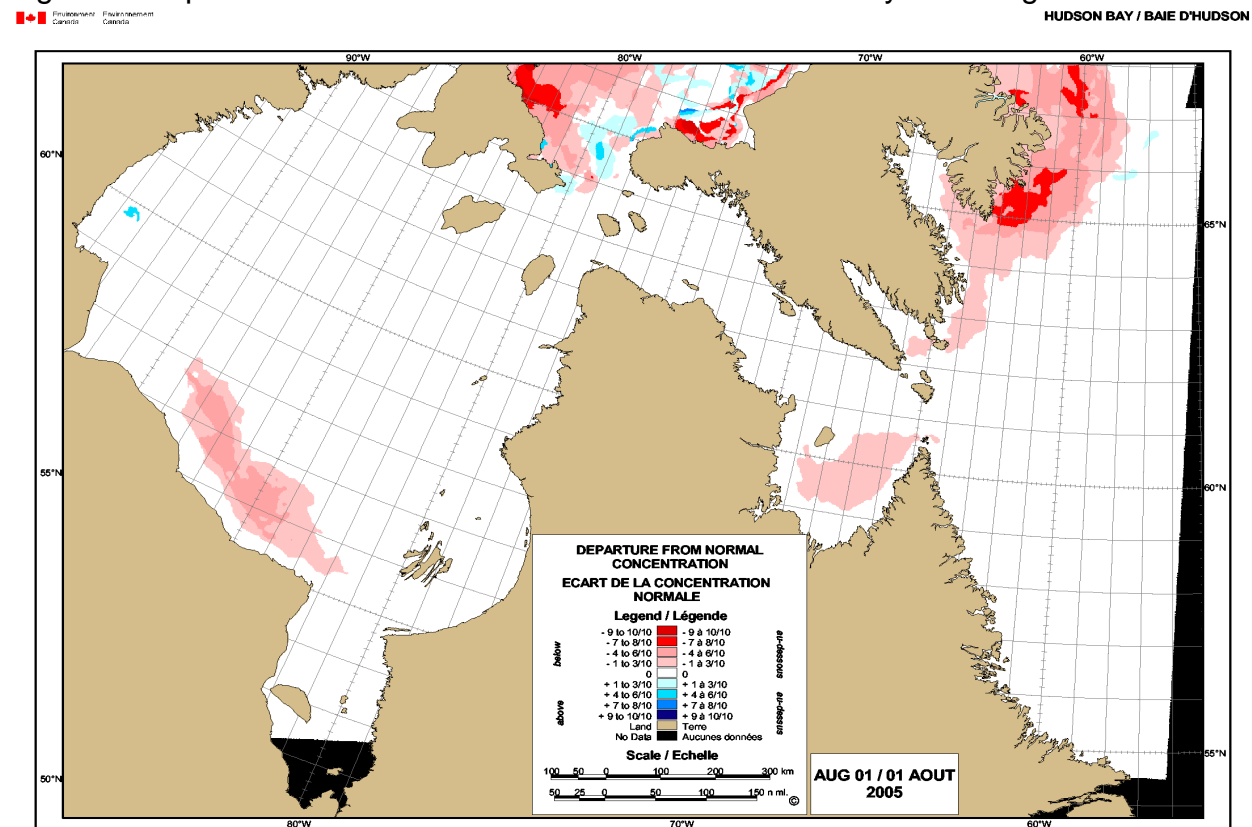


Figure 8: Departure from normal ice concentration Hudson Bay – 01 August 2005



Eastern Arctic

At the end of May the bergy water area in southern Nares Strait was more extensive than normal. Ice in Lancaster Sound remained mobile throughout the winter and at the end of May a bergy water area had already developed in the western section of the Strait. Normally most of Lancaster is consolidated at the end of May. Otherwise ice conditions are close to normal.

June 2005

Winds were generally light and variable throughout June except moderate northwesterly over the archipelago during the second half (Figure 29, page 25). Temperatures were generally above normal over most areas during the month of June (Table 2, page 12) allowing the ice to melt at a moderate pace. Bergy water areas in southern Nares Strait and in western Lancaster Sound expanded rapidly and at mid-June Lancaster Sound was for the most part bergy water. The bergy water lead along the western shore of Greenland expanded northward to near 75N at the end of the month which is near its normal position. Ice concentration in Davis Strait remained less than normal throughout June. Prince Regent Inlet fractured in late June. At that time ice conditions in Foxe Basin were less severe than normal as a loose ice area was developing in the centre of the basin. Otherwise conditions were near normal. The departure from normal ice concentration chart for June 13 (Figure 12, page 13) indicates that there is a lot less ice than normal in Eastern Baffin Bay, eastern Barrow Strait as well as in Western Lancaster Sound.

Ice conditions and the departure from normal ice concentration chart, at mid-June, can be seen on page 13, figure 11 and 12 respectively.

July 2005

Winds were for the most part light and variable over most of the eastern Arctic area during the first half of July. During the second half winds were generally moderate from the southeast over Baffin Bay but moderate northerly elsewhere (Figure 30, page 25). Reported temperatures were in general near normal. (Table 2, page 12).

Ice melted rapidly along the northwestern coast of Greenland and in northern Baffin Bay and a bergy water route across northern Baffin Bay to Thule established itself during the third week of July. The bergy water area in northwestern Baffin Bay expanded southward along the Baffin Island coast. Lancaster Sound remained, for the most part, bergy water but pieces of broken fast ice occasionally drifted in the western part of the sound. Eastern Barrow strait fractured late in the month. Admiralty Inlet, Pond Inlet, Jones Sound, Kane Basin, as well as Pelly Bay fractured during the third week of July which is, for most areas, near normal events. Eureka Sound started to fracture late during the first week in July and bergy water areas developed shortly thereafter. Eureka Sound was entirely fractured by

the last week of the month. At that time Norwegian Bay had also fractured completely. Easier than normal ice conditions prevailed in Foxe Basin throughout July.

Ice conditions and the departure from normal ice concentration chart, at mid-July, can be seen on page 14, figure 13 and 14 respectively.

August 2005

Winds were generally light northeasterly over all areas in August except moderate westerly over Foxe Basin during the second half of August (Figure 31, page 26). Temperatures were above normal everywhere (Table 2, page 12). Ice in Baffin Bay continued to melt at a rapid pace and was all gone by the end of the month which is close to two weeks earlier than normal. The same trend was also notice over Foxe Basin where most of the ice has melted by the end of August. The only exception was some old ice drifting from Fury and Hecla Strait into the northwestern section of the Basin. This condition in Foxe Basin is normally encountered late into the third week of September. Eureka Channel became mainly bergy water during the second week in August. Close to very close pack conditions prevailed in Norwegian Bay during the first two weeks of August but conditions improved rapidly afterwards and conditions during the second half of August were much easier than normal. The transit through Jones Sound was more difficult than normal at the beginning of August but conditions improved to near normal during the latter part of the month. Lancaster Sound remained mainly bergy water throughout August while loose ice was generally found in eastern Barrow Strait into Resolute. Pelly Bay itself remained open water throughout the month but the southern section of the Gulf of Boothia reported close to very close pack conditions. Southern Prince Regent Inlet and northern Gulf of Boothia experienced a gradual decrease in ice concentration but loose ice was still found over those areas at the end of August.

Eureka Sound was mainly bergy water at the end of August except for loose ice persisting over the northern section. Wellington Channel and McDougall Sound fractured about a week into the month but the area between LCI and Cornwallis Island remained consolidated throughout the summer season. Pelly Bay was mainly open water by mid-month but close to very close pack thick first year and old ice persisted in southern Prince Regent Inlet throughout the rest of the month. Bergy water developed in northern Admiralty Inlet within a week into August. The fracture of Viscount Melville Sound allow for a continuous flow of mainly old ice into Barrow Strait and western Lancaster Sound specially during the second half of August so at the end of the month there was more ice than normal over these above mentioned areas.

Ice conditions as well as the departure from normal ice concentration chart, at mid-August, are shown on page 15, figure 15 and 16 respectively.

September 2005

Generally a light to moderate northwesterly flow continue to predominate over the High and Central Arctic while a light and variable flow was generally reported over Baffin Bay and Foxe Basin (Figure 32, page 26). Reported temperatures have been generally above normal except near Normal over Pelly Bay area (Table 2, page 12).

Bergy water continued to predominate over Baffin Bay except for the continuous flow of mainly old ice drifting down from Nares Strait into the extreme northwest section of the bay and into the entrance to Jones Sound. Lancaster Sound, Prince Regent Inlet as well as eastern Barrow Strait remain bergy throughout September except for new ice developing late in the month. Significant amount of first year and old ice persisted in southern Gulf of Boothia and in the approach to Pelly Bay, but not as much as normally. New ice started to develop in above areas during the last week of the month. Eureka Sound remained bergy water until the last week of September at which time new ice started to develop. A lot less ice than normal was found in Norwegian Bay at the beginning of September but new ice started to develop near mid-September and was covering the entire bay a week or so later.

Ice conditions and the departure from the normal ice concentration chart, at mid-September, are shown on page 16, figure 17 and 18 respectively.

Table 2: Temperatures and departures from normal (°C)

Stations	June		July		August		September	
	Temp.	Depart.	Temp.	Depart.	Temp.	Depart.	Temp.	Depart.
Eureka	4.8	3.1	7.2	1.7	4.9	2.4	-4.6	3.3
Resolute	0.4	0.8	3.9	-0.1	3.7	2.3	-3.3	1.7
Pond Inlet	2.8	1.2	6.4	0.6	5.4	1.4	0.1	1.9
Clyde	1.3	0.8	5.0	0.8	5.1	1.3	0.4	0.7
Hall Beach	1.3	0.7	5.2	-0.6	5.7	1.2	0.6	1.1
Pelly Bay	2.6	-0.3	8.2	-0.5	8.5	2.1	-0.5	-0.6

Figure 9: Temperature trend at Resolute, June - September 2005

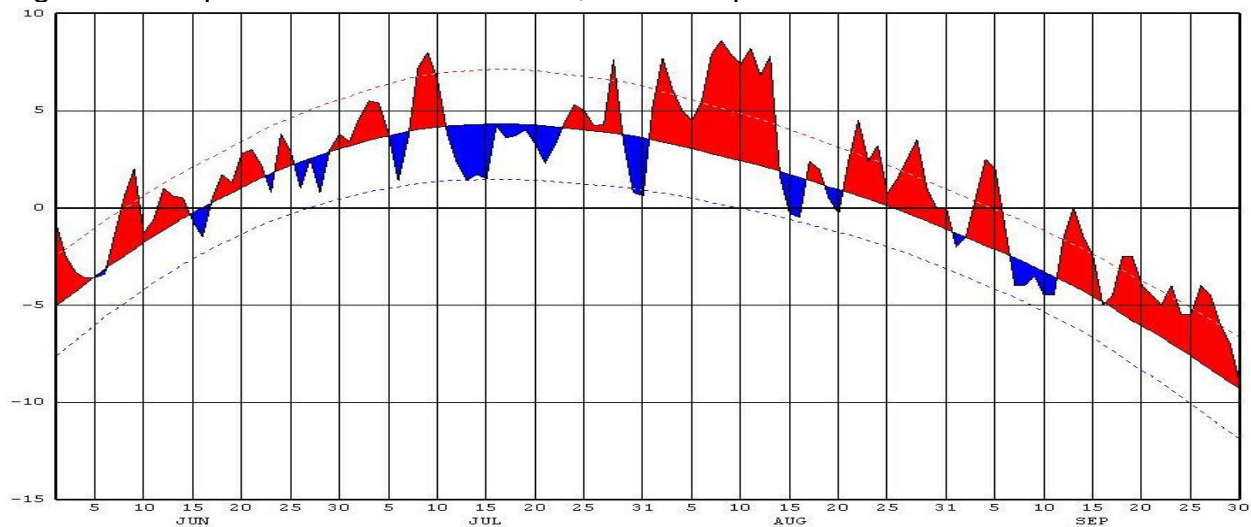


Figure 10: Temperature trend at Hall Beach, June - September 2005

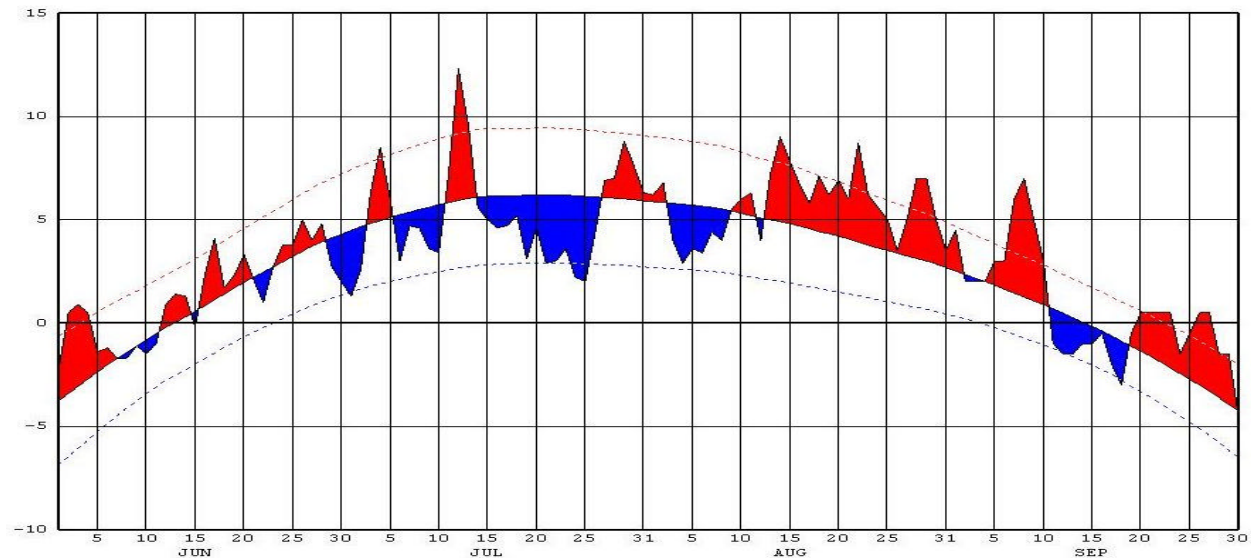


Figure 11: Eastern Arctic regional chart – 13 June 2005

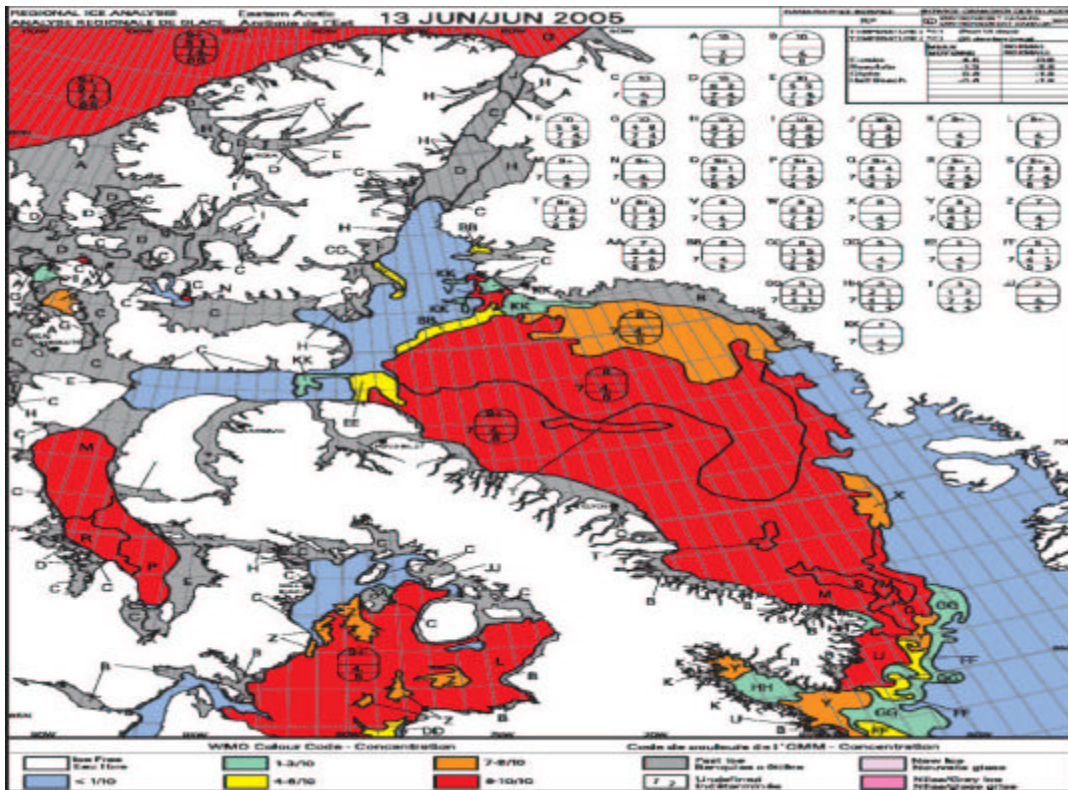


Figure 12: Departure from normal ice concentration, Eastern Arctic-13 June 2005

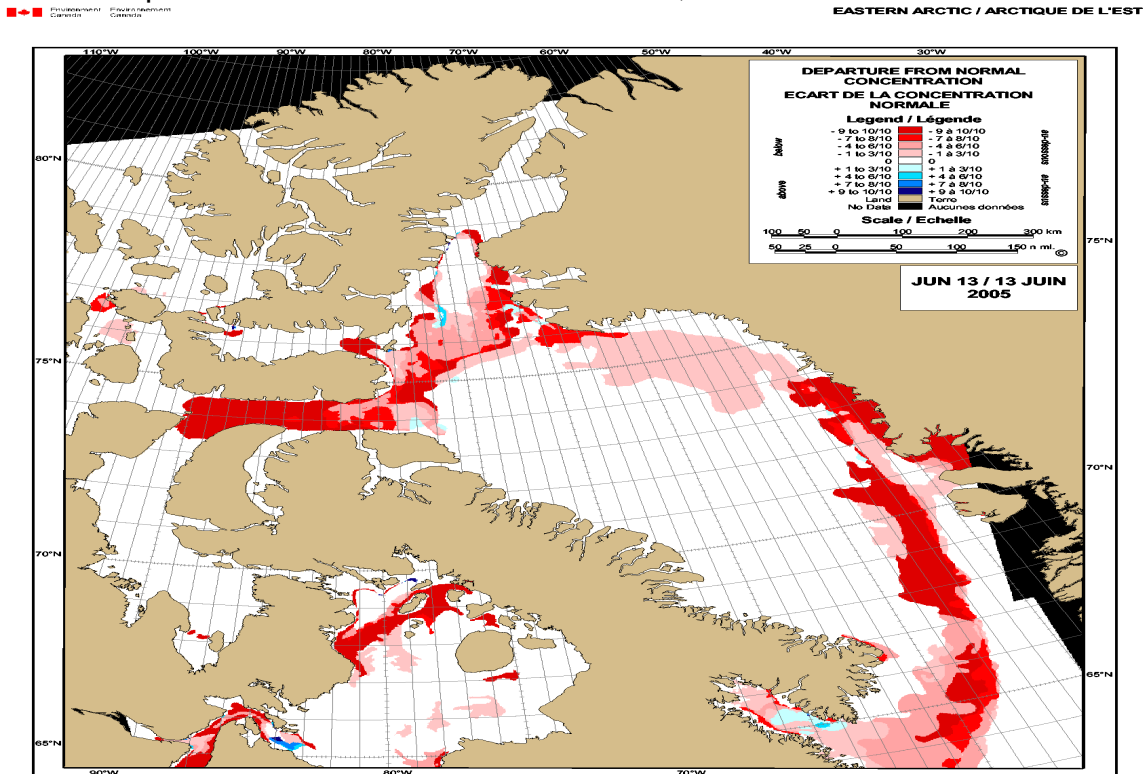


Figure 13: Eastern Arctic Regional chart 18 July 2005

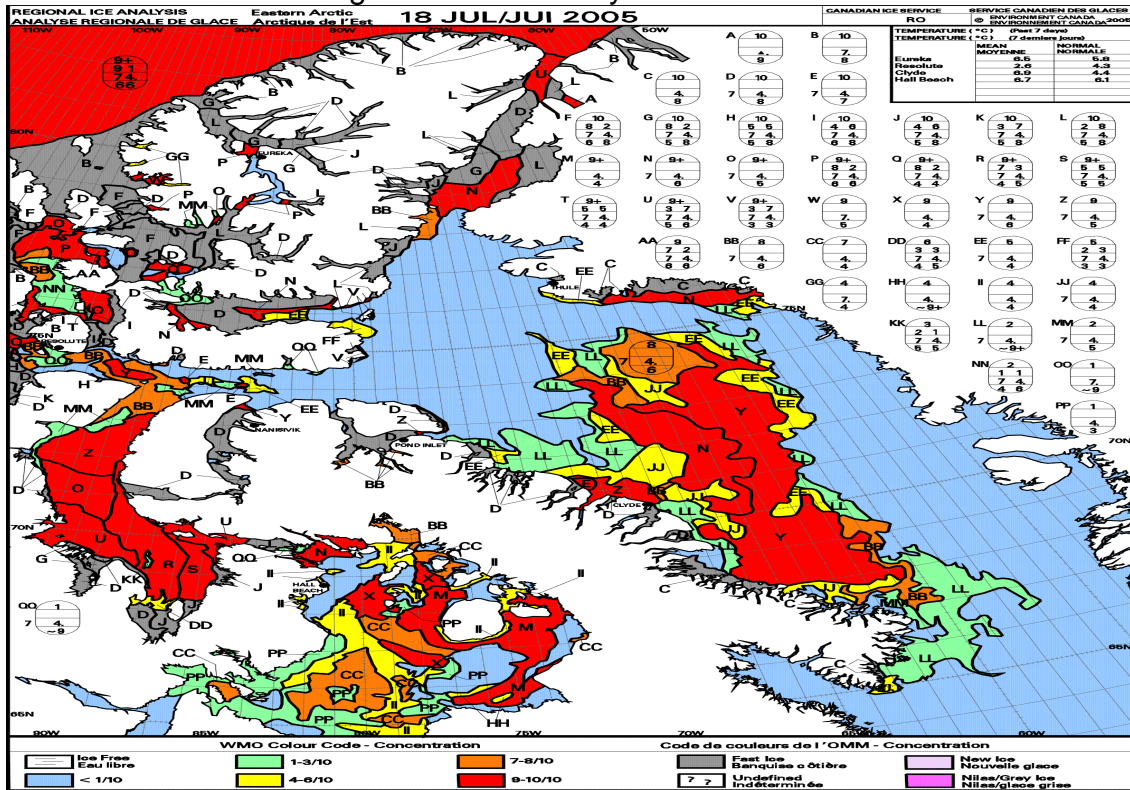


Figure 14: Departure from normal ice concentration, Eastern Arctic – 18 July 2004

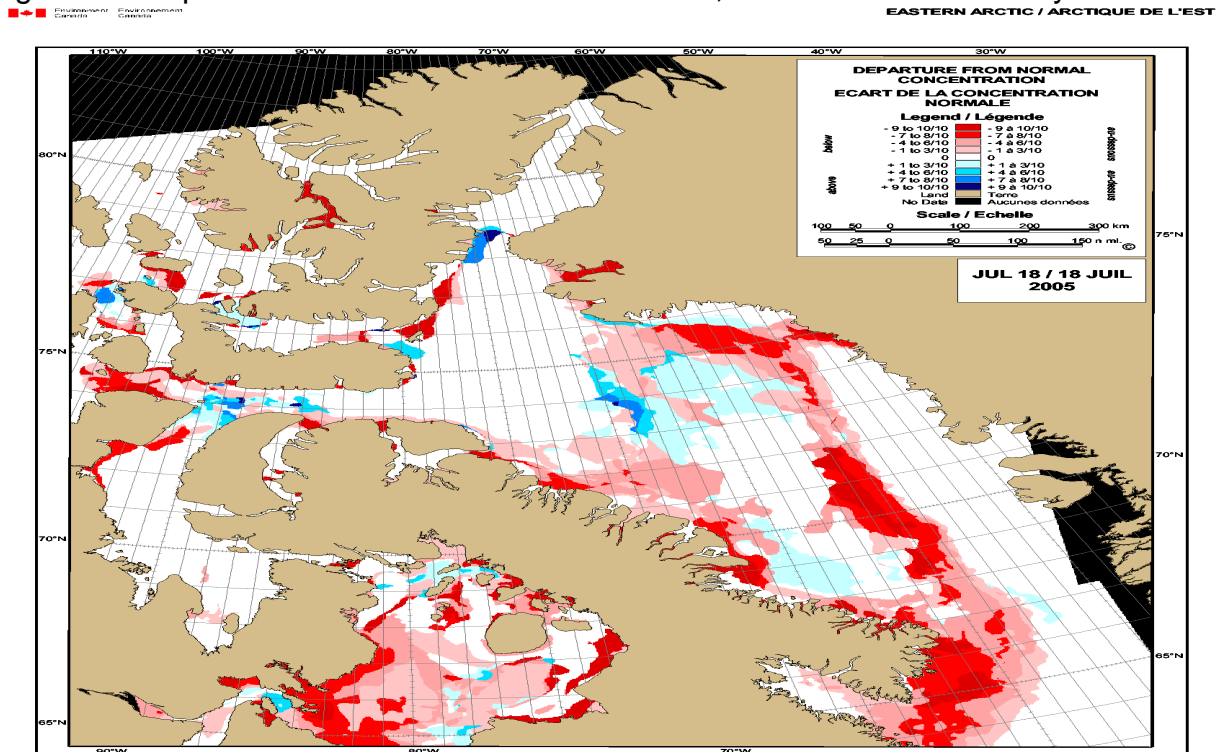


Figure 15: Eastern Arctic regional – 15 August 2005

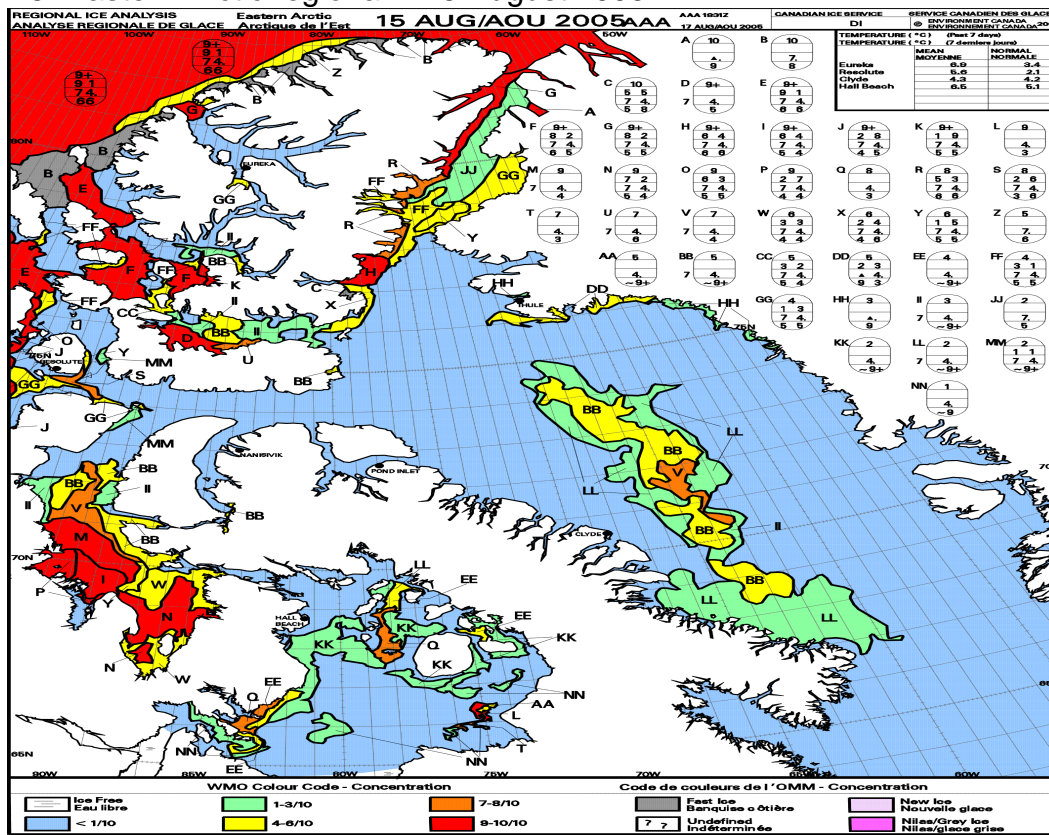


Figure 16: Departure from normal ice concentration, Eastern Arctic–15 August 2005

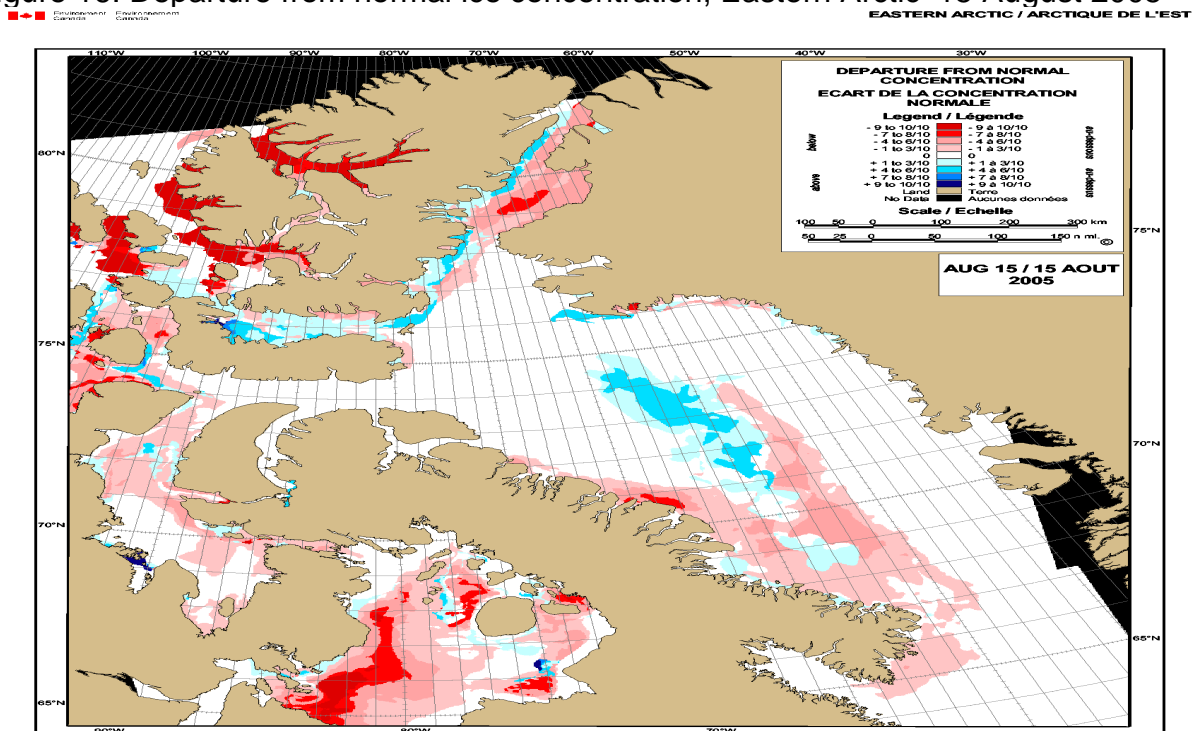


Figure 17: Eastern Arctic regional chart – 19 September 2005

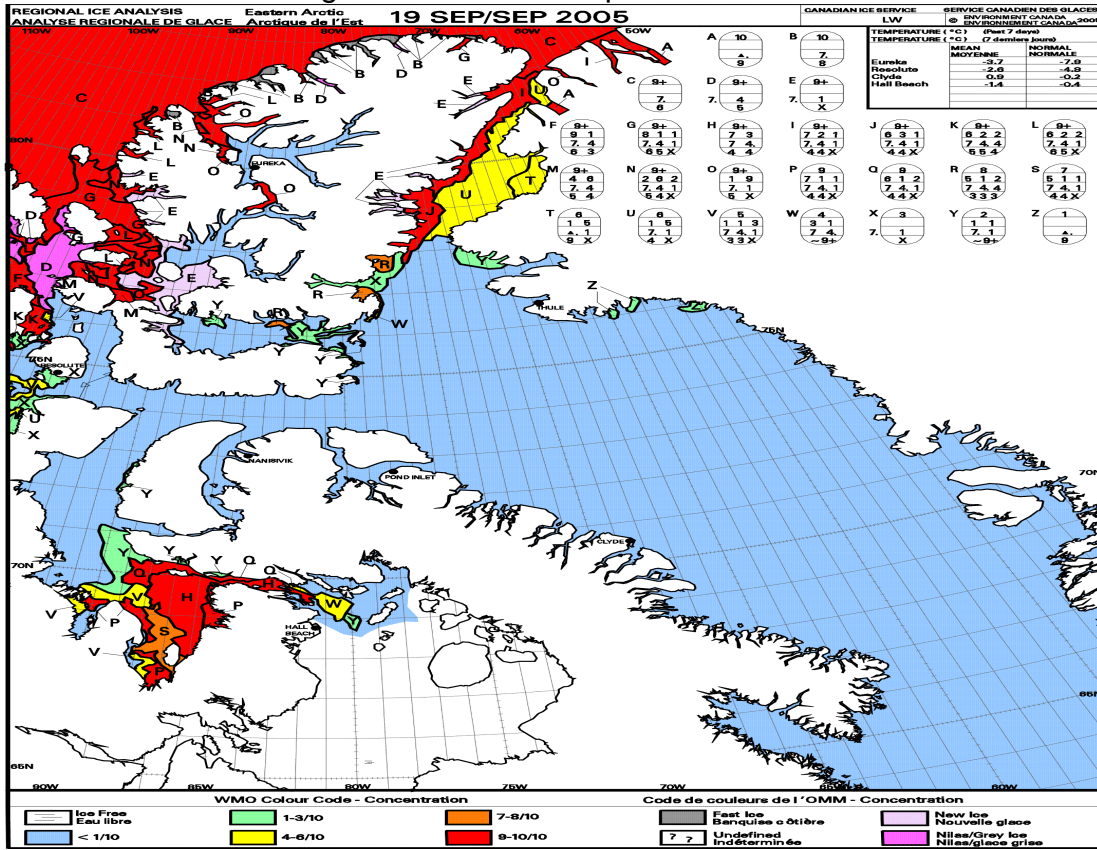
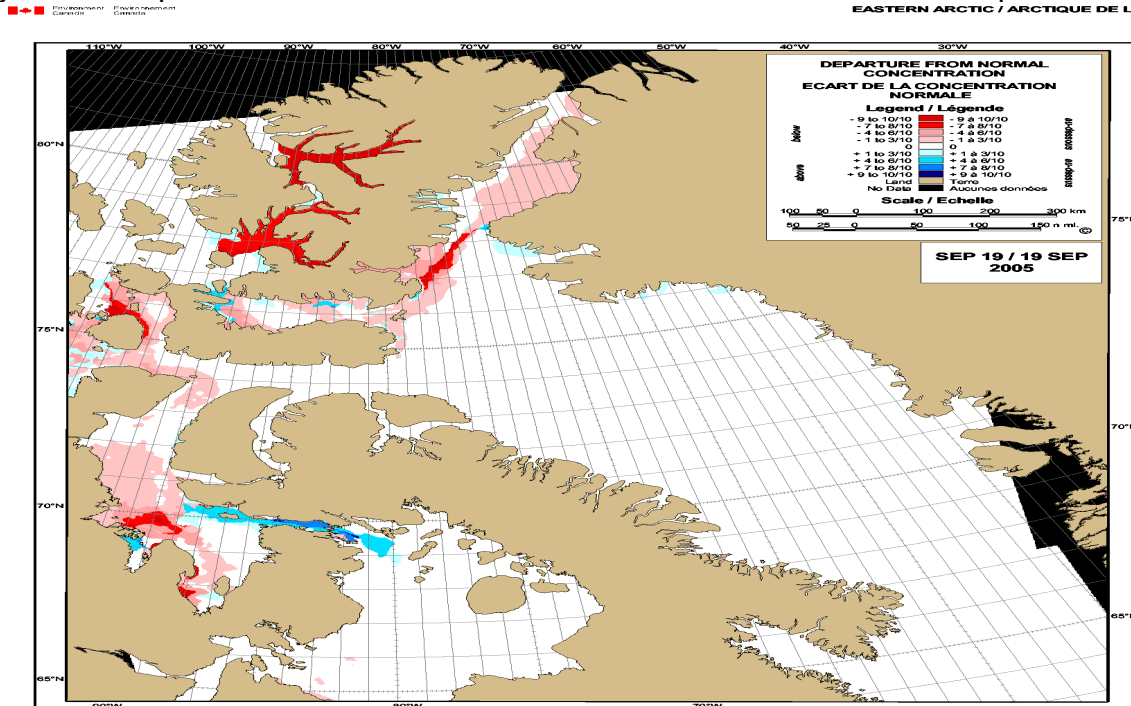


Figure 18: Departure from normal ice concentration Eastern Arctic–19 September 2005



Western Arctic

At the end of May the ice situation in the western Arctic was near normal except in southeastern Beaufort Sea and western Amundsen Gulf areas where large areas of open water had already developed. Areas of open water had also developed along the Alaskan coast southwest of Point Barrow which is not normally the case so early into the melting season.

June 2005

Winds were generally light to moderate easterly over the Beaufort Sea area during June. East of Amundsen Gulf light and variable winds were generally reported during the first half of June but increasing to moderate northwesterly during the second half. (Figure 29, page 25). Temperatures were in general close to normal (Table 3, page 20).

The lead along the Alaskan coast west of Point Barrow persisted throughout the month but did narrow somewhat late in the month. The open water area in southeast Beaufort Sea did expand slightly during June. The Mackenzie Delta and Kugmalit Bay fractured and then melted during the third week in June which is near normal events. Franklin Bay and Darnley Bay also fractured near their normal date that is to say during the last week in June. At that time the consolidated ice along the Tuktoyaktuk Peninsula started to fracture.

Ice conditions and the departure from normal ice concentration chart, at mid-June, are shown on page 21, figure 21 and 22 respectively.

July 2005

A Light and variable flow prevailed over the area during the first half of July. The second half of the month was characterized by a moderate northwesterly flow except for a moderate southeasterly flow over the western section of the Beaufort Sea (Figure 30, page 25). As a consequence temperatures were in general below normal over all areas (Table 3, page 20).

The consolidated ice in eastern Amundsen Gulf fractured by the end of the first week of July which is close to two weeks later than normal. The rest of the consolidated ice along the Tuktoyaktuk Peninsula fractured within a week into July and melted by mid-month. However the prevailing northwesterly winds during the second half of July caused loose ice to drift from the main pack towards the Tuktoyaktuk Peninsula and as a result the open water route from Mackenzie Bay to Cape Bathurst was yet to be established at the end of July. The ice west of Mackenzie Bay to Barter Island gradually melted during the period but the coastal area further west to Point Barrow remained ice covered. The open water route along the coast southwest of point Barrow persisted throughout July.

The Waterways fractured by mid-July which is normal and most of the ice in its eastern section had melted by month's end. Parts of Queen Maud Gulf fractured early in the second week of July but the section of the gulf with the highest concentration of old ice

fractured only during the last week which is week or so later than normal. Dolphin and Union Strait which is normally open water was still covered with very close pack first year ice at the end of July. At that time Larsen Sound and Peel Sound were still consolidated which is normally the case.

Ice conditions and the departure from normal ice concentration chart, at mid-July, can be seen on page 22, figure 23 and 24 respectively.

August 2005

A return to near normal temperatures was reported over the western Arctic area in August (Table 3, page 20). Winds were generally light to moderate and variable over all areas. (Figure 31, page 26).

In early August an open water route from Mackenzie Bay to Cape Bathurst established itself. However as the main pack of old slowly edged southward, loose ice was back to the Tuktoyaktuk Peninsula coast by the last week of the month. The ice along the Alaskan coast west of Barter Island melted at a slower pace than normal and as a result an area of close pack first year ice was still lying in the Approaches to Prudhoe Bay at the end of August. At that time the main pack was somewhat closer from the shore than normal.

More old ice than normal and slightly colder than normal temperatures delayed the fracture in Peel Sound and Larsen Sound by about two weeks. The fractures in those areas occurred during the second week in August. Queen Maud Gulf and Rasmussen Basin melted at a slower pace than normal and became mainly open water in late August, close to two weeks later than normal. Some ice lingered in Dolphin and Union strait and in extreme Coronation Gulf until the last week of August which is significantly later than normal. Amundsen Gulf was generally open water in August except for occasional intrusions of old ice into its western section.

Ice conditions and the departure from normal ice concentration chart, at mid-August, can be seen on page 23, figure 25 and 26 respectively.

September 2005

Slightly below normal temperatures were reported over the western Arctic area (Table 3, page 20). Winds were generally light and variable during the first half of September but moderate occasionally strong over the Beaufort Sea during the second half. Light to moderate northerly flow generally prevailed east of the waterways during the last two weeks of September. (Figure 32, page 26).

Most of the first year and old ice in Peel Sound melted during the first half of September. Larsen Sound remained covered with old and first year ice throughout September except for the northern section which, by mid-September, was mostly open water. However new ice developed rapidly during the third week of the month in Peel

Sound and in northern Larsen Sound. Queen Maud Gulf remained open water for the first half of September but prevailing northerly winds during the second half resulted in a significant amount of old ice drifting into the northwestern section of the Gulf. Ice free or open water persisted in the Waterways and eastern Amundsen Gulf but areas of loose ice continued to intrude in the western section of the gulf. The loose ice areas which were found close to the Tuktoyaktuk Peninsula coast and along parts of the Alaskan coast melted during the first half of September. At the end of September the main ice pack along the Alaskan coast was farther offshore than normal. At that time new ice was starting to develop along the ice edge in Beaufort Sea. The start of the freeze up in the western Arctic occurred near its normal date.

Ice conditions and the departure from normal ice concentration chart, at mid-September, can be seen on page 24, figure 27 and 28 respectively.

Canadian Ice Service

Table 3: Temperatures and departures from normal (°C)

Stations	June		July		August		September	
	Temp.	Depart.	Temp.	Depart.	Temp.	Depart.	Temp.	Depart.
Gjoa Haven	0.7	-0.8	6.1	-1.4	6.5	0.9	-1.0	-0.7
Cambridge Bay	2.8	0.6	7.0	-1.1	7.7	1.5	-0.7	-0.1
Kugluktuk	5.2	0.3	8.5	-1.9	8.7	0.1	1.5	-1.1
Tuktoyaktuk	5.4	-0.8	7.6	-3.4	8.7	-0.4	2.7	0.0
Point Barrow	1.1	-1.2	4.0	-0.3	5.9	2.8	0.9	1.6

Figure 19: Temperature trend at Tuktoyaktuk, June – September 2005

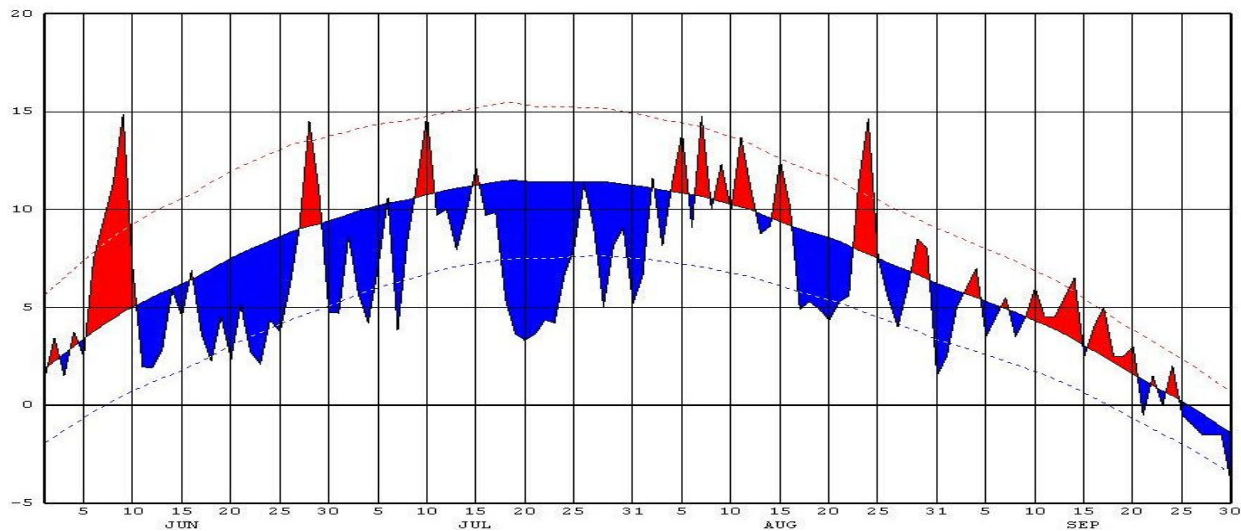


Figure 20: Temperature trend at Cambridge Bay, June – September 2005

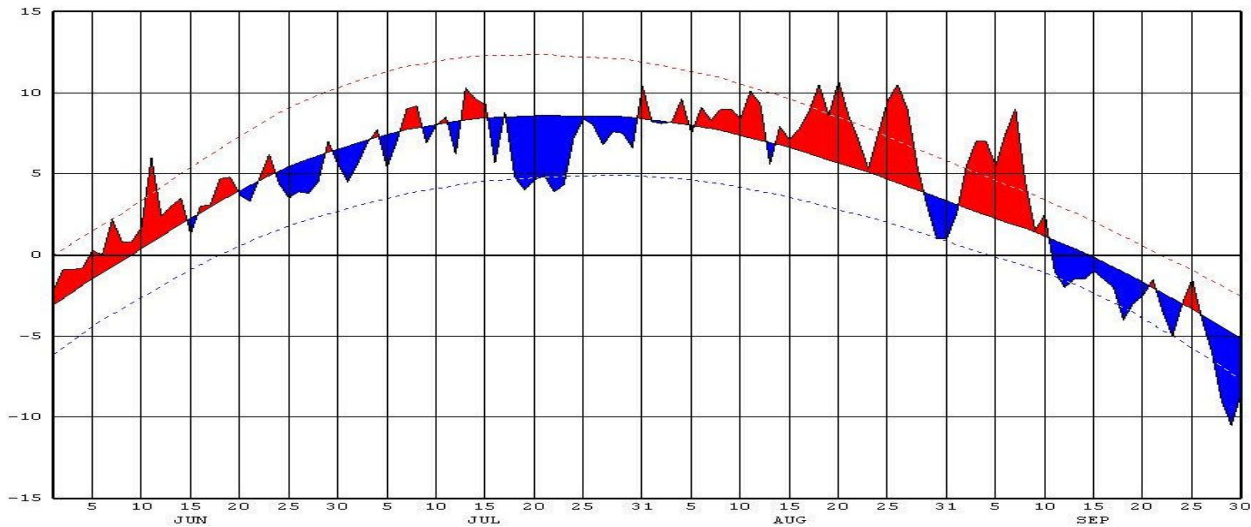


Figure 21: Western Arctic regional chart - 13 June 2005

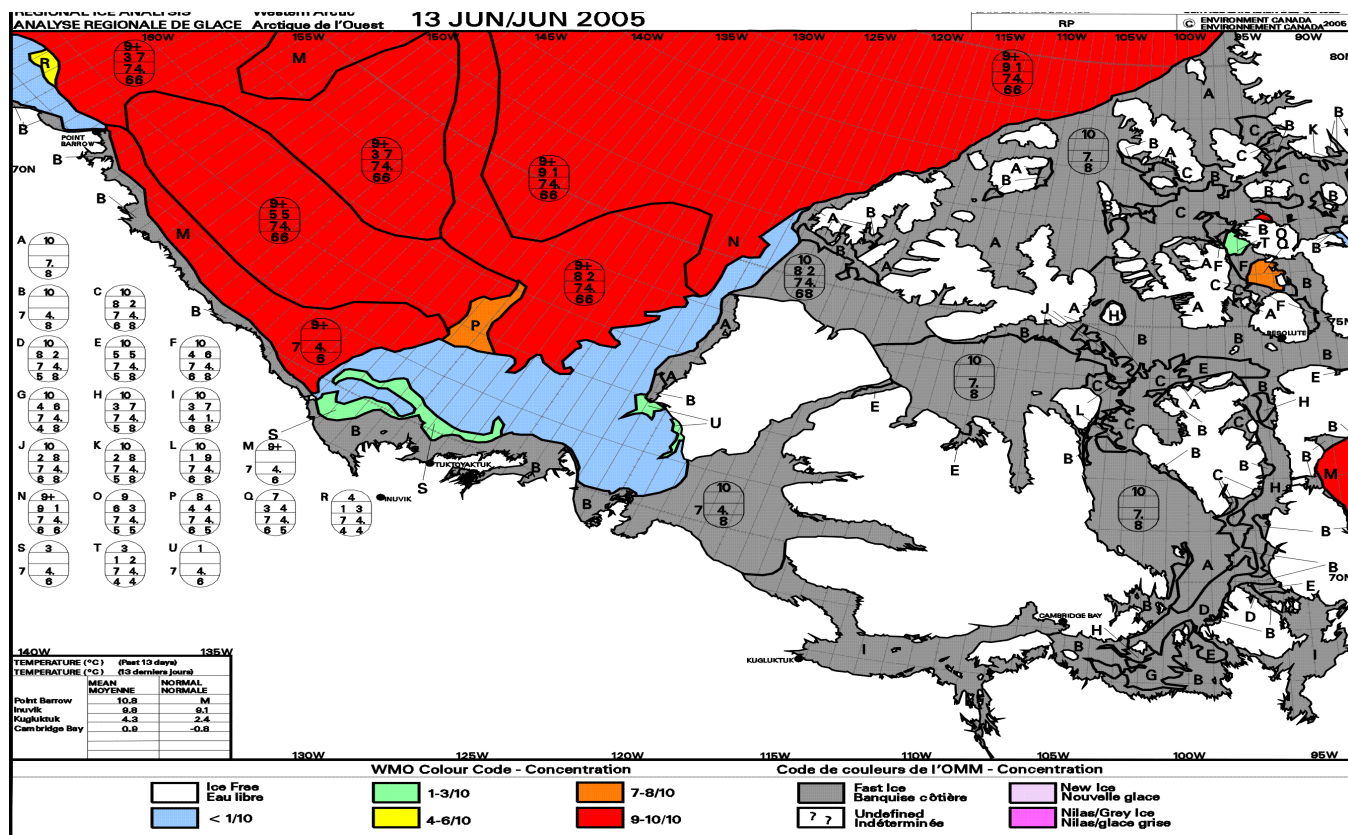


Figure 22: Departure from normal ice concentration, western Arctic – 13 June 2005

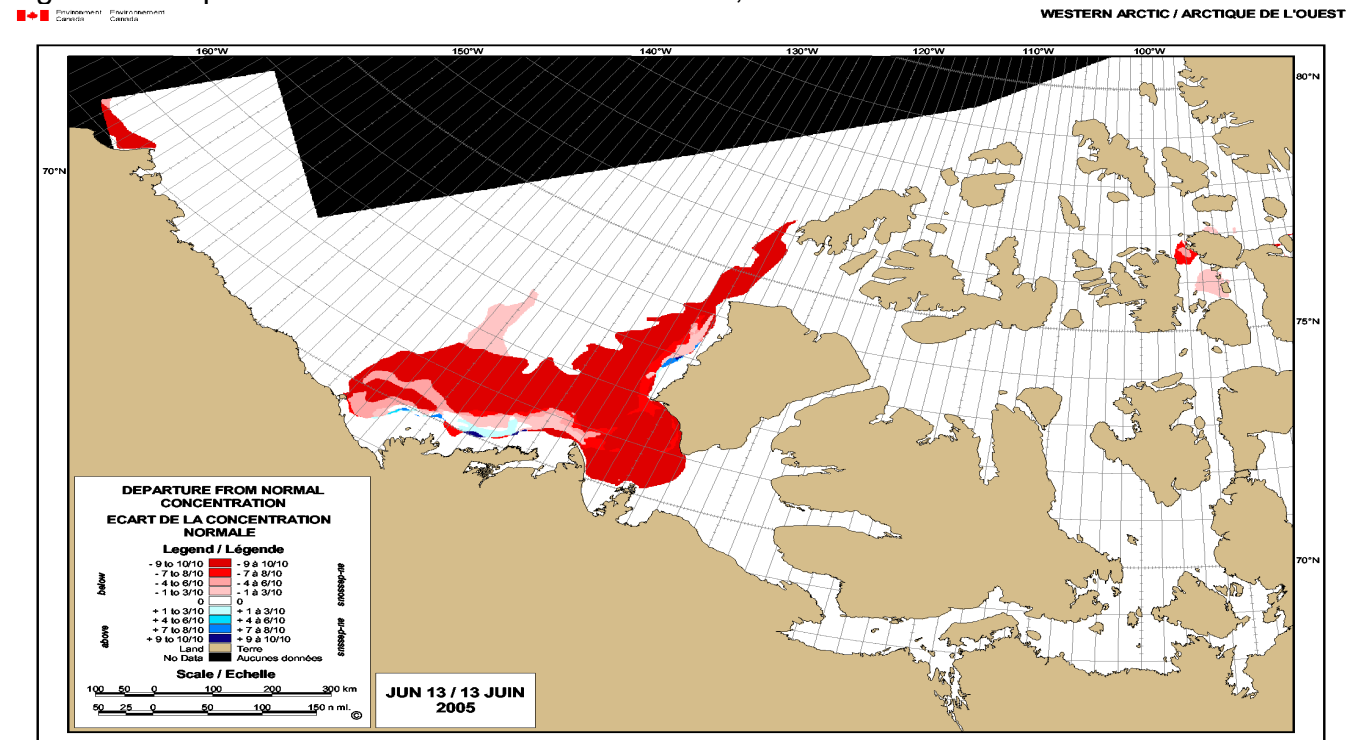


Figure 23: Western Arctic regional – 18 July 2005

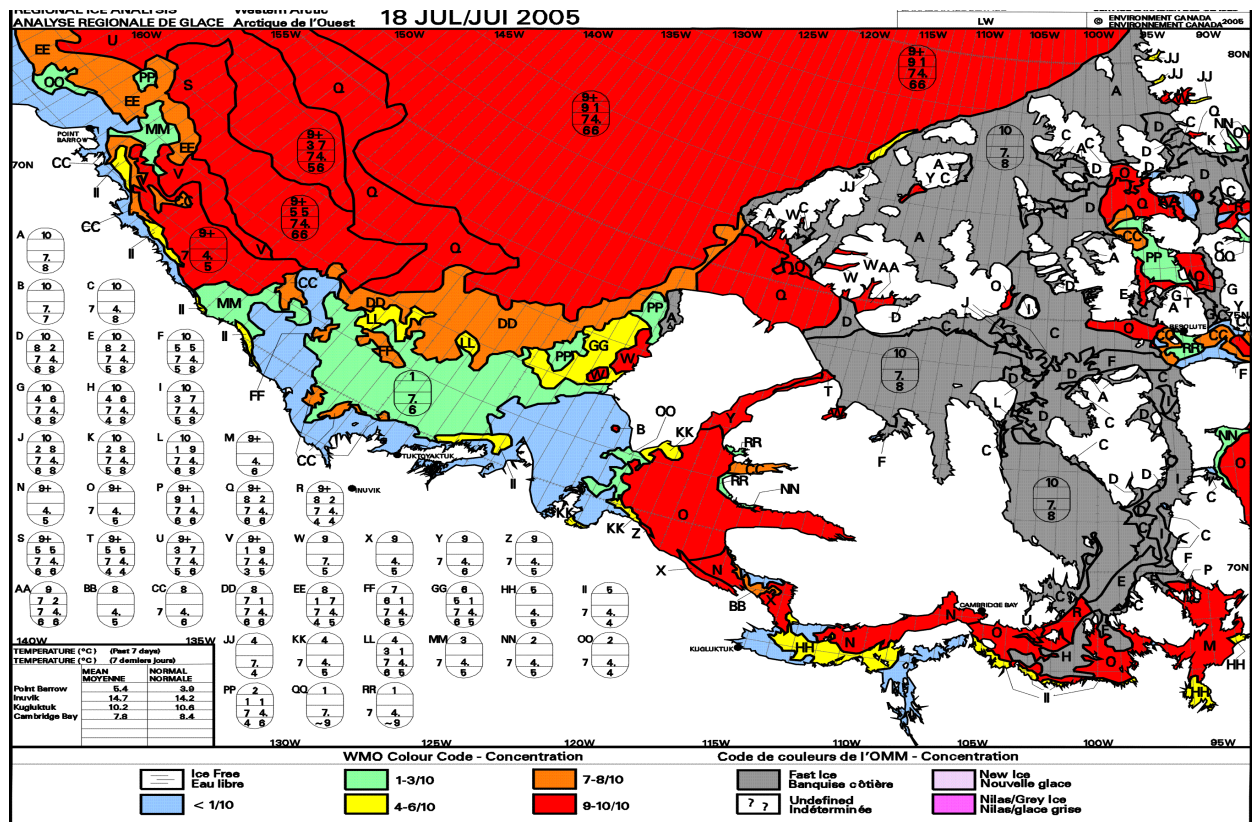


Figure 24: Departure from normal ice concentration, Western Arctic – 18 July 2005

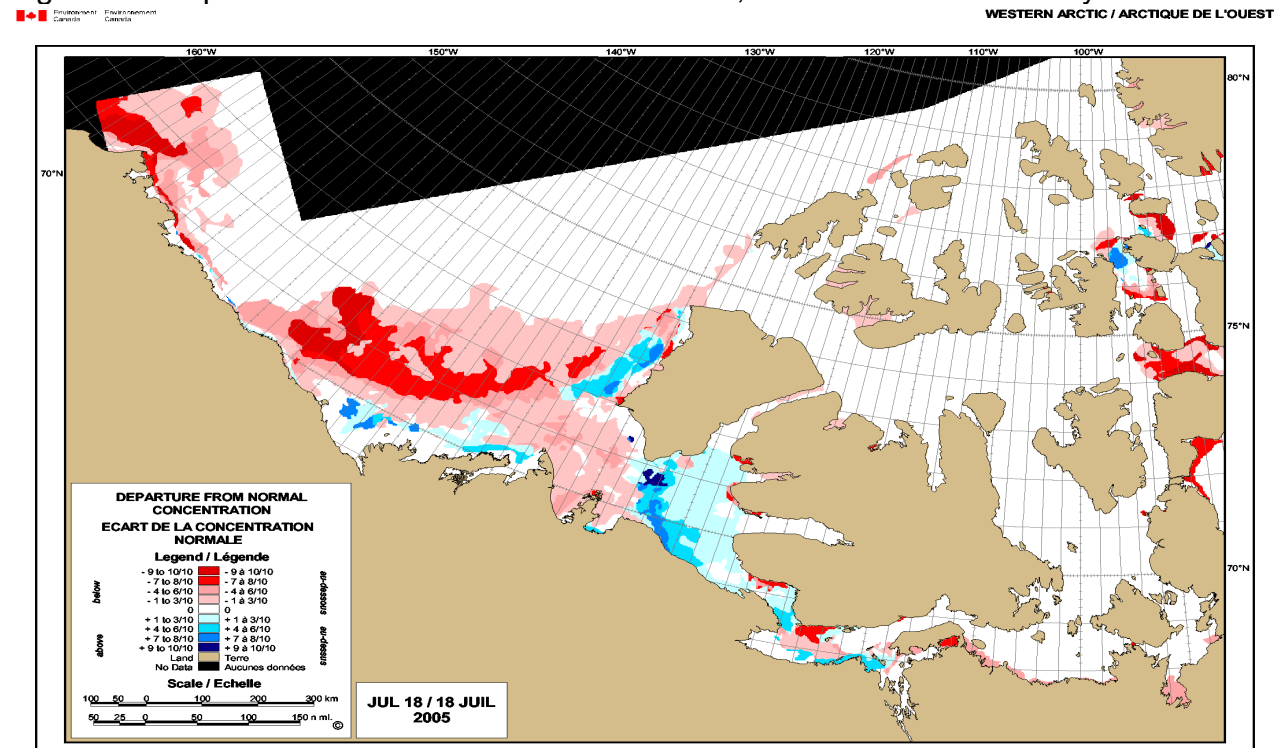


Figure 25: Western Arctic regional chart – 15 August 2005

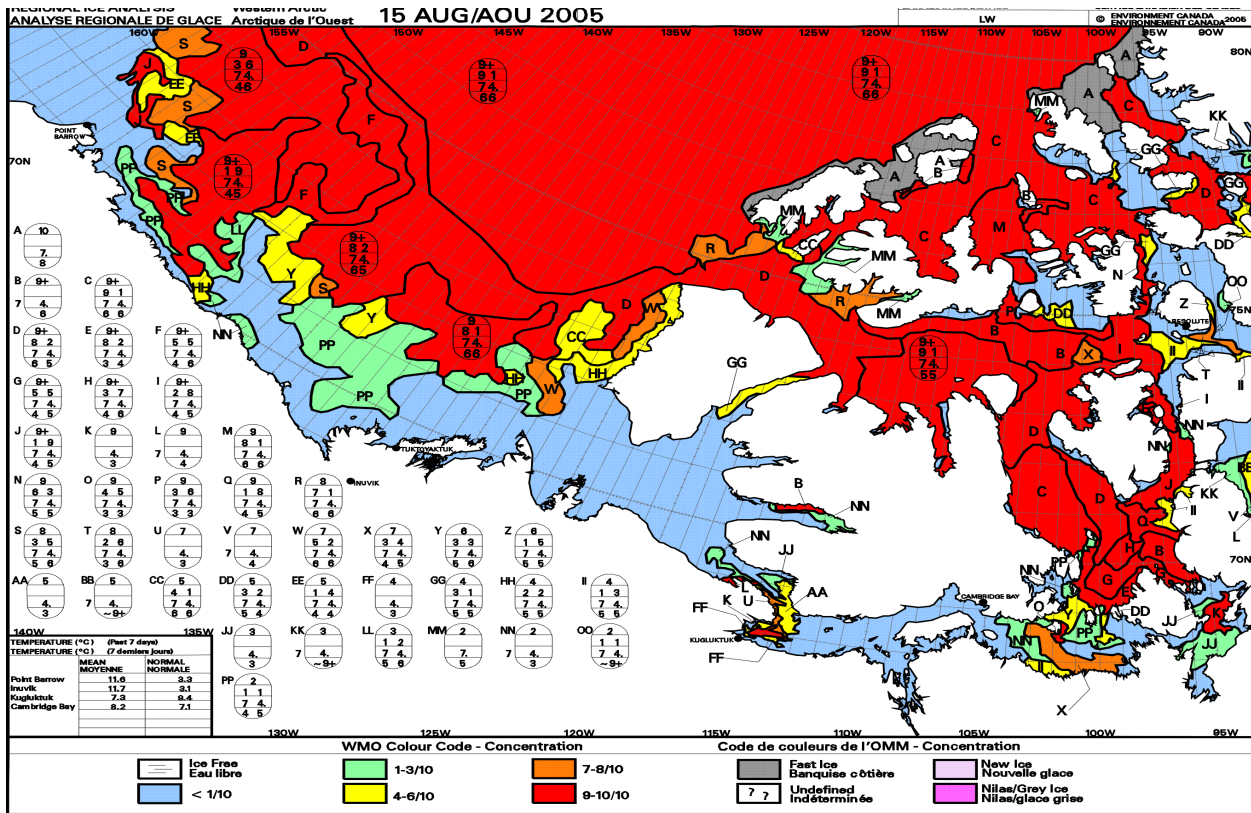


Figure 26: Departure from normal ice concentration, Western Arctic – 15 August 2005

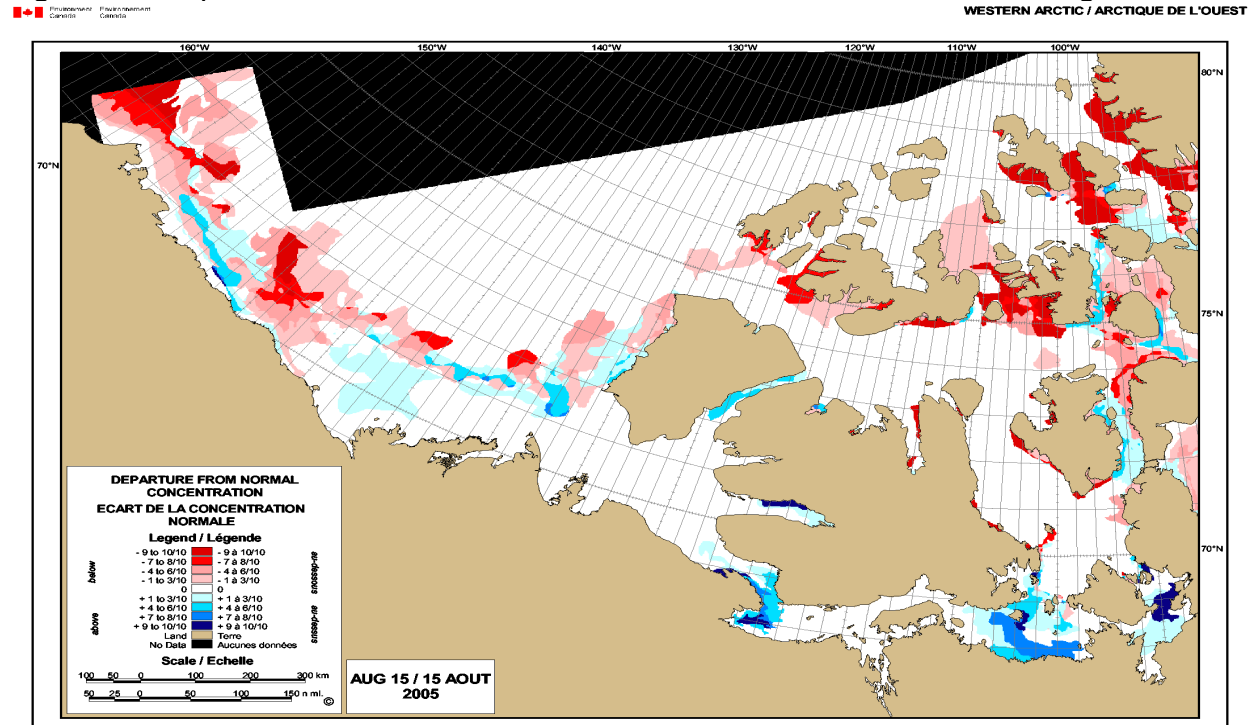


Figure 27: Western Arctic regional chart – 19 September 2005

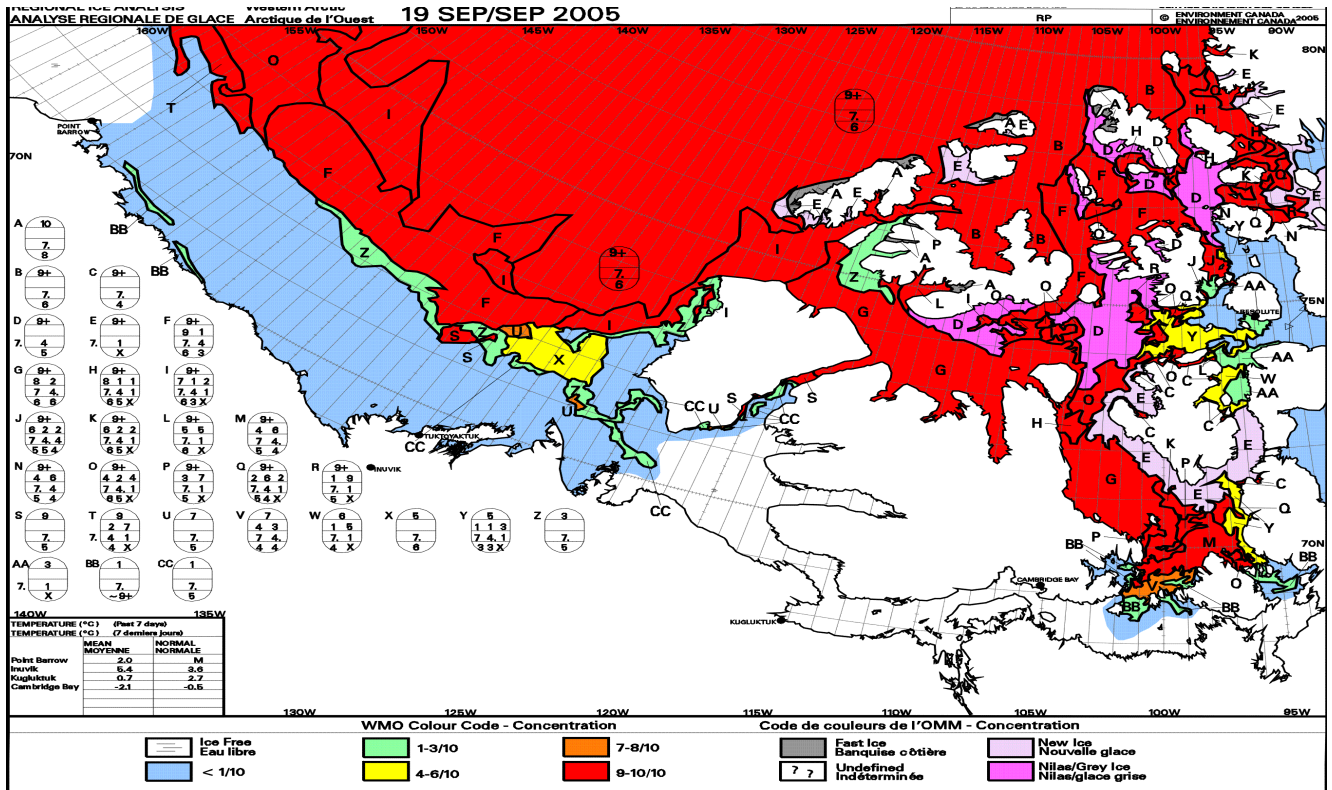


Figure 28: Departure from normal ice concentration Western Arctic–19 September 2005

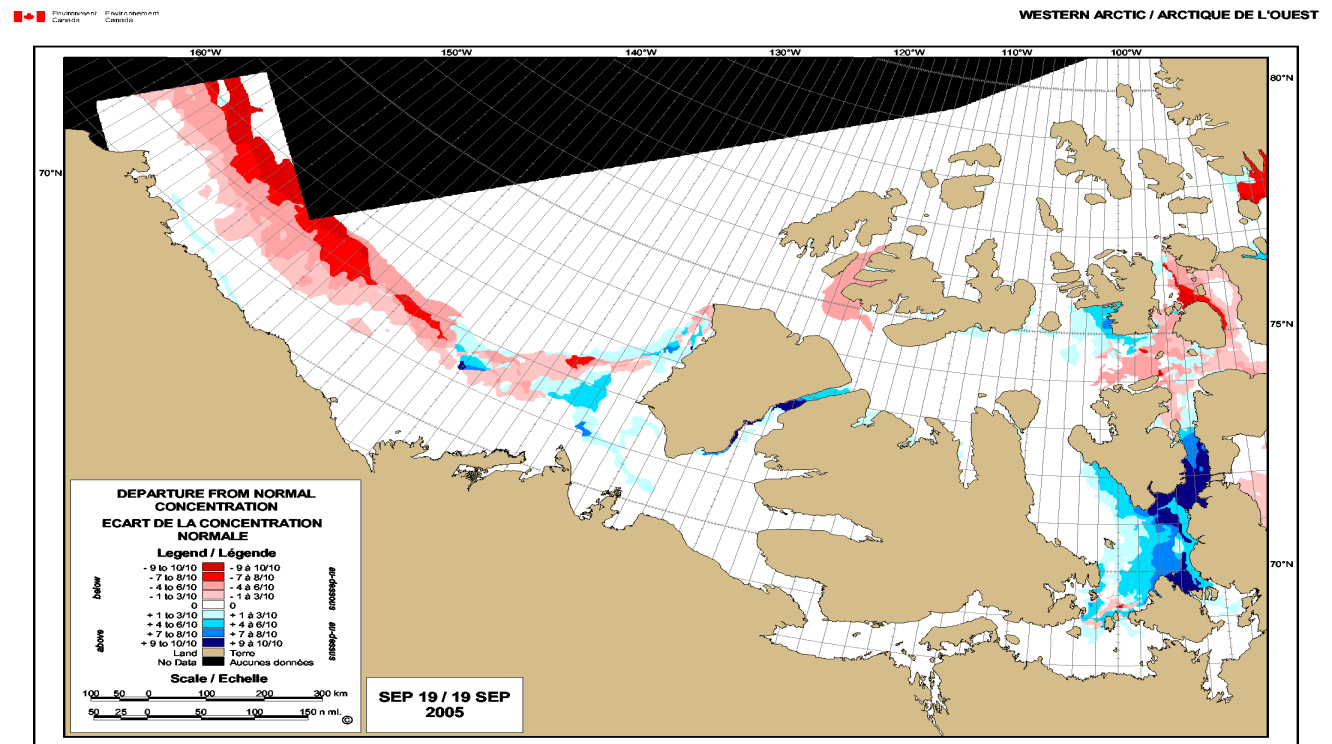


Figure 29: 1000 mb pattern for June 1-15 and 16-30

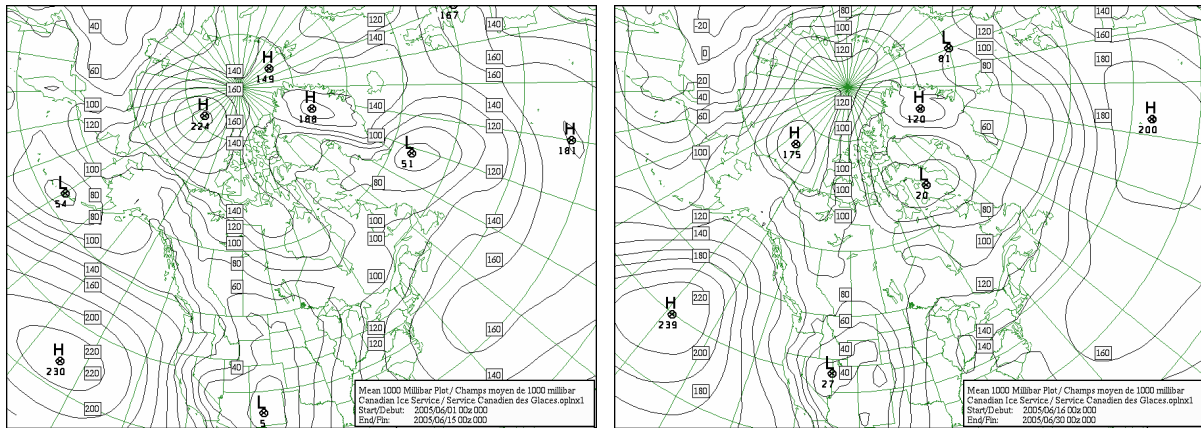


Figure 30: 1000 mb pattern for July 1-5 and July 16-31

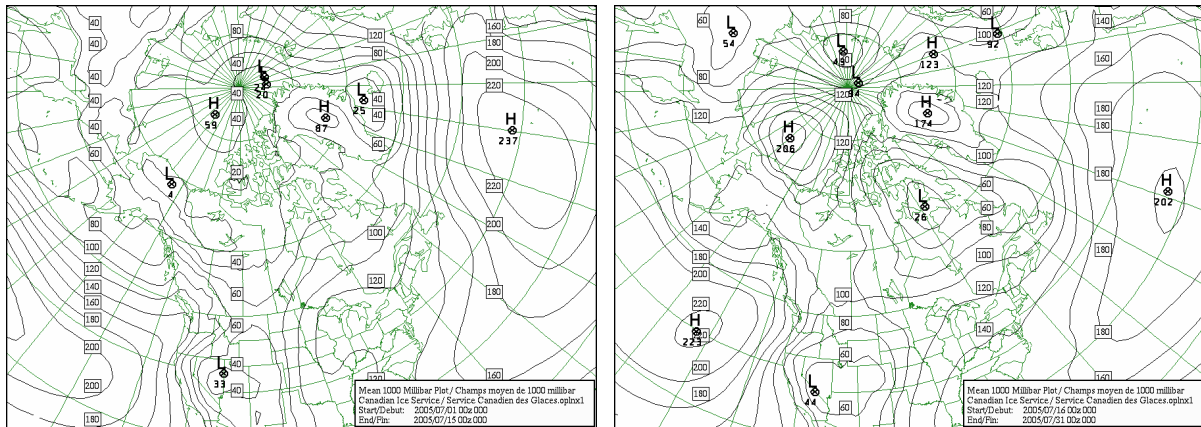


Figure 31: 1000 mb pattern for August 1-15 and 16-31

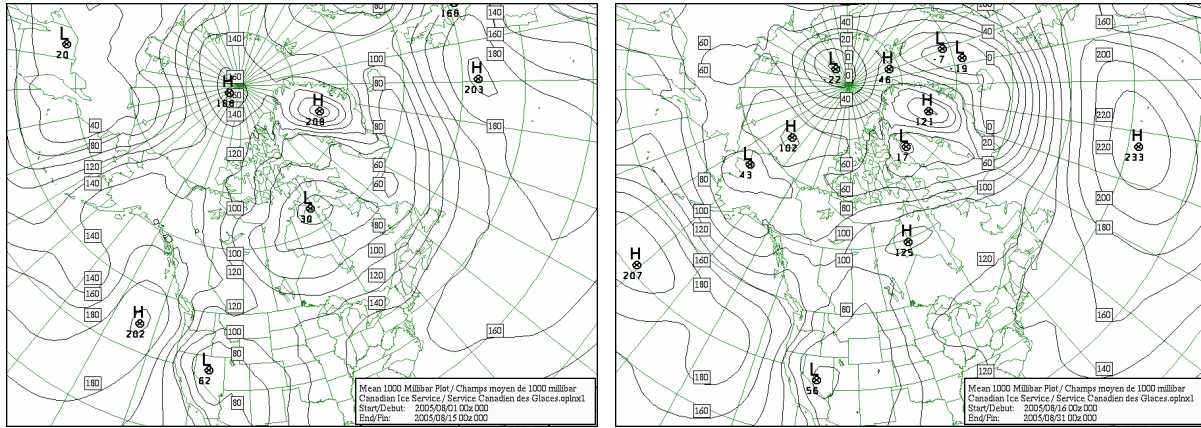


Figure 32: 1000 mb pattern for September 1-15 and 16-30

