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Seasonal Summary

North American Arctic Waters Summer 2014

By



Canadian Ice Service
Le service canadien des glaces

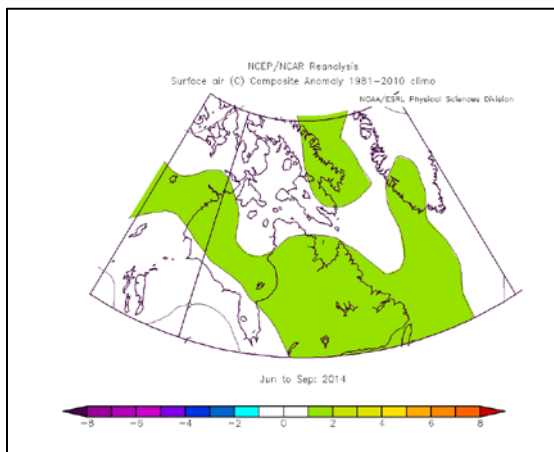
Summary over North American Arctic Waters

For a second year in a row, a near normal ice melt was observed along the Labrador Coast, in Hudson Bay and the Central Arctic during the 2014 summer season. However, ice fracture over the High Arctic and in Peel Sound was delayed by 1 to 2 weeks which maintained an extensive amount of old and first-year ice until the end of August. As well, the ice partially melted over these areas at the end of the summer season. Most of the ice near the Queen Elizabeth Islands remained consolidated during the summer. Elsewhere in the Arctic, ice melt was 1 to 3 weeks earlier than normal. Persistent northwesterly winds over M'Clintock Channel in September maintained a continuous flow of old and first-year ice into Victoria Strait.

Hudson Bay and the Labrador Coast

Summer Ice Conditions and Fall Freeze-up

Summer Temperatures: June to September



From June to September, surface air temperatures were near normal values over most locations except slightly above normal along the Labrador Coast, in Davis Strait and in central Hudson Bay. The air temperature anomaly for Hudson Bay and the Labrador Coast is shown in Figure 1.

Figure 1: Air temperature anomaly for Hudson Bay from June to September

June Ice Conditions:

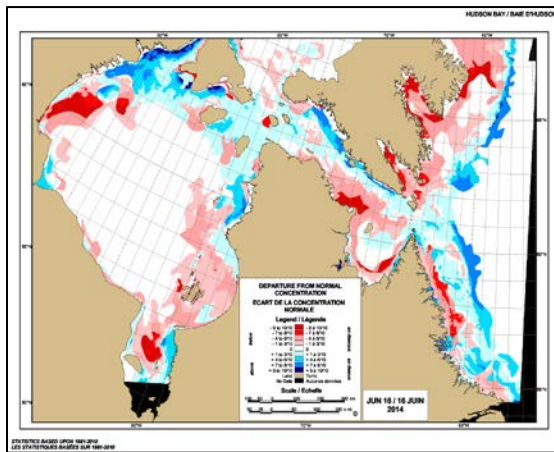


Figure 2: Departure from normal ice for Hudson Bay near mid-June

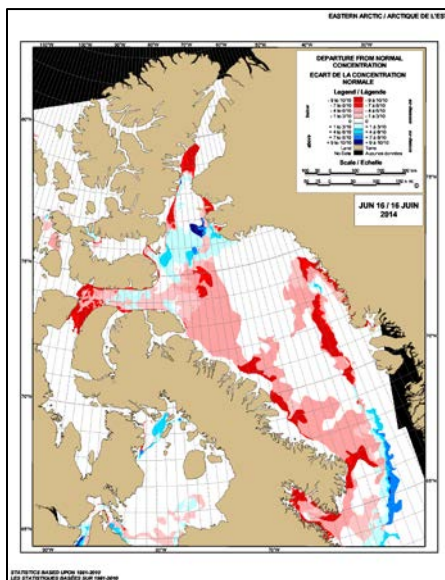


Figure 3: Departure from normal ice for the Eastern Arctic near mid-June

the ice melted normally along the Labrador Coast during the month. The ice gradually retreated to Groswater Bay during the fourth week. At that time, areas of open drift to close pack first-year ice with 2 tenths of old ice remained along the Labrador Coast north of Groswater Bay, in eastern Hudson Strait and Davis Strait. Ice concentrations decreased gradually over western Hudson Strait and along the coastal areas of Hudson Bay to become very open to open drift first-year ice during the last week. Close to very close pack first-year ice persisted over the rest of Hudson Bay and in Foxe Basin throughout the month. As well, very open to open drift first-year ice with a trace of old ice dominated over

During June, the ice melt was already under progress along the Labrador Coast, in Davis Strait, Hudson Strait and southeastern Hudson Bay. The ice extent was slightly greater than normal along the Labrador Coast and in Davis Strait. Large areas of open water developed over northwestern Hudson Bay during the last two weeks. The ice melt was near normal over most locations but 1 to 2 weeks earlier than normal over Davis Strait, Hudson Strait and the eastern and northwestern sections of Hudson Bay as seen on Figure 2 and Figure 3.

In early June, areas of close to very close pack first-year ice with 2 tenths of old ice was present over the Strait of Belle Isle, along the Northern Peninsula and the northern Labrador Coast. The ice finally melted over the Strait of Belle Isle after mid-June and along the Northern Peninsula during the fourth week. First-year ice prevailed over Lake Melville during the first week, while open drift to close pack first-year ice with a trace of old ice dominated along the Labrador Coast south of Groswater Bay and in eastern Hudson Strait. The ice melted completely over Lake Melville early in the second week. Even though the ice melt was 3 to 4 weeks late over Newfoundland Waters,

Frobisher Bay and Cumberland Sound except for consolidated ice in shallow bays and inlets.

July Ice Conditions:

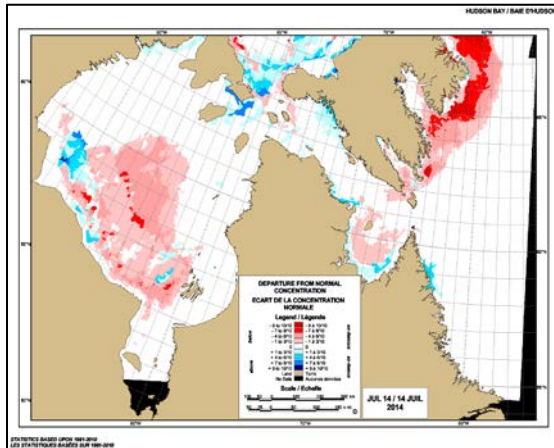


Figure 4: Departure from normal ice for Hudson Bay near mid-July

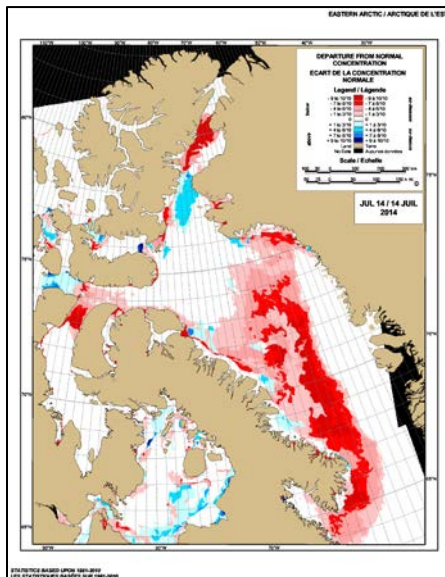


Figure 5: Departure from normal ice for the Eastern Arctic near mid-July

old ice along the Cumberland Peninsula. The pack ice from Foxe Basin drifted out of the area during the period to maintain areas of very open to open drift first-year ice along the southeastern coast of Southampton Island and in Roes Welcome Sound. Open drift to close pack first-year ice prevailed over southwestern Hudson Bay. Close to very close pack first-year ice dominated over Foxe Basin. Open water or bergy water prevailed over the rest of the area.

In July, the ice melted rapidly over most locations except for southern Hudson Bay and Foxe Basin where it melted at a near normal rate. At mid-July, the ice cover was less than normal over most locations except near normal over southern Hudson Bay and Foxe Basin as seen on Figure 4 and Figure 5.

In early July, large areas of open water were present over the northwestern section and southeastern coast of Hudson Bay and in southern James Bay. During the first two weeks, ice concentrations decreased rapidly in all regions except for Foxe Basin and southern Hudson Bay where the pack ice melted at a slower pace. At mid-July, a few isolated areas of very open to open drift first-year ice with up to 1 tenth of old ice remained along the coast over the extreme northern section of the Labrador Coast, along the coastal areas of Hudson Strait, the eastern coast of Hall Peninsula and in the eastern entrance to Frobisher Bay. Also, remnants of fast ice persisted in shallow bays in western Cumberland Sound and western Frobisher Bay. Persistent easterly winds over Davis Strait pushed the pack ice onshore maintaining an area of close to very close pack first-year ice with 2 tenths of

During the second half, the ice continued to melt at the same pace except for Foxe Basin and southwestern Hudson Bay. During that time, the ice melted completely along the Labrador Coast, in southern Davis Strait, Hudson Strait and southeastern Hudson Bay. At the end of July, ice concentrations along the eastern coast of Cumberland Peninsula decreased rapidly but narrow patches of very open drift old ice remained along the coast. A narrow area of close to very close pack first-year ice persisted along the shore from southeast of Churchill to Fort Severn. In Foxe Basin, very open to open drift first-year ice dominated over the south central section, while the rest of the area was covered with close to very close pack first-year ice. Open water or bergy water prevailed over the rest of the area.

August Ice Conditions:

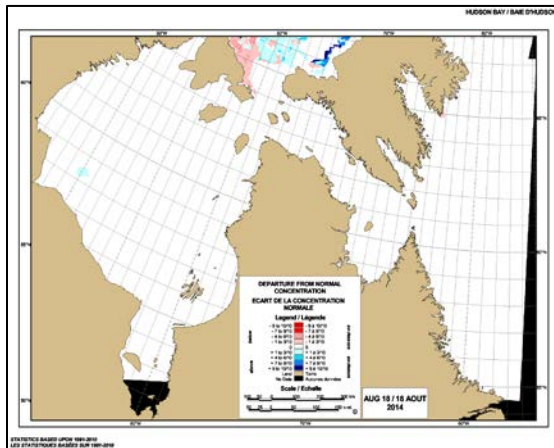


Figure 6: Departure from normal ice for Hudson Bay near mid-August

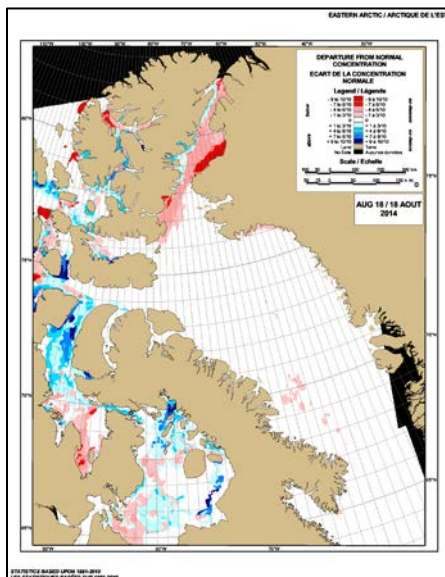


Figure 7: Departure from normal ice for the Eastern Arctic near mid-August

In August, the remaining ice continued to decay normally over southern Hudson Bay and in Foxe Basin. At mid-August, the ice cover was near normal for southern Hudson Bay and Foxe Basin as seen on Figure 6 and Figure 7.

In early August, the ice melted completely along the eastern coast of Cumberland Peninsula. An area of open drift to close pack first-year ice over the extreme southwestern section of Hudson Bay persisted until it melted completely during the third week. Bergy water was present along the Labrador Coast, over the rest of Davis Strait and in Hudson Strait during August. Ice free conditions prevailed over the rest of Hudson Bay. In Foxe Basin, the pack ice continued to melt at a near normal pace during the month. During the first three weeks, open drift to close pack first-year ice persisted over Foxe Basin except for large areas of open water in eastern Foxe Channel, south of Prince Charles Island and in the extreme northwestern section. Ice concentrations over Foxe Basin decreased normally to become very open to open drift first-year ice over the

western section and along the eastern shore during the last week. Open water dominated over the rest of Foxe Basin and in Foxe Channel.

September Ice Conditions:

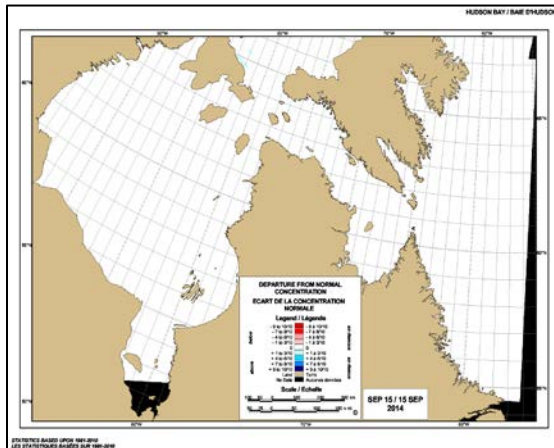


Figure 8: Departure from normal ice for Hudson Bay near mid-September

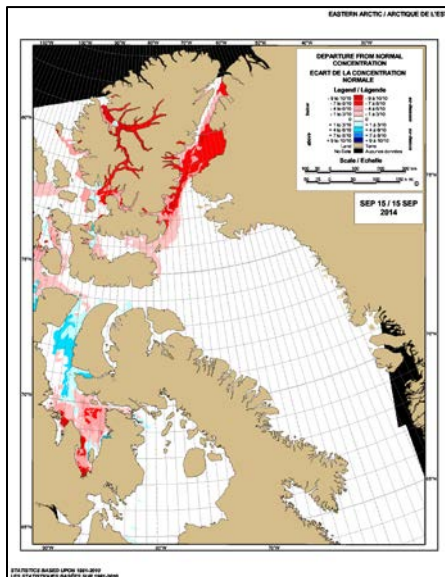


Figure 9: Departure from normal ice for the Eastern Arctic near mid-September

In September, the remaining ice melted normally in Foxe Basin. At mid-September, the ice cover was near normal over Foxe Basin as seen on Figure 8 and Figure 9.

In September, bergy water was present along the Labrador Coast, in Hudson Strait and Davis Strait. Ice free conditions prevailed over Hudson Bay. In early September, areas of very open to open drift first-year ice prevailed over

the southern section of Foxe Basin and from Prince Charles Island to south of Steensby Inlet. As the ice continued to decay in Foxe Basin, the ice melted completely over the southeastern section during the first week. The remaining ice in Foxe Basin persisted until the third week. Open water was present over the rest of Foxe Basin. New ice formed normally in shallow waters and near islands over the northern and eastern sections of Foxe Basin at the end of September.

Eastern Arctic and Canadian Archipelago

Summer Ice Conditions and Fall Freeze-up

Summer Temperatures: June to September

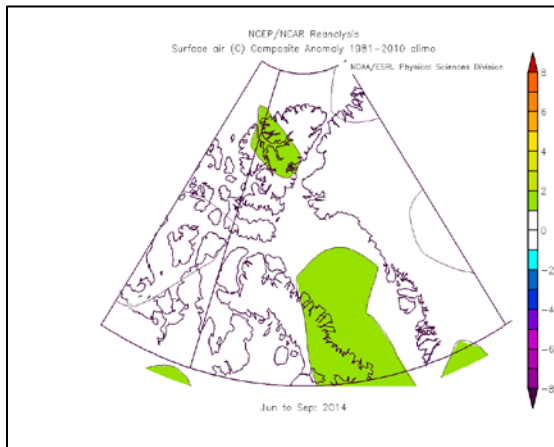


Figure 10: Air temperature anomaly for the Eastern Arctic from June to September

From June to September, surface air temperatures were near normal over most locations except slightly above normal over Baffin Bay and in Greely Fiord. The air temperature anomaly for the Eastern Arctic is shown in Figure 10.

June Ice Conditions:

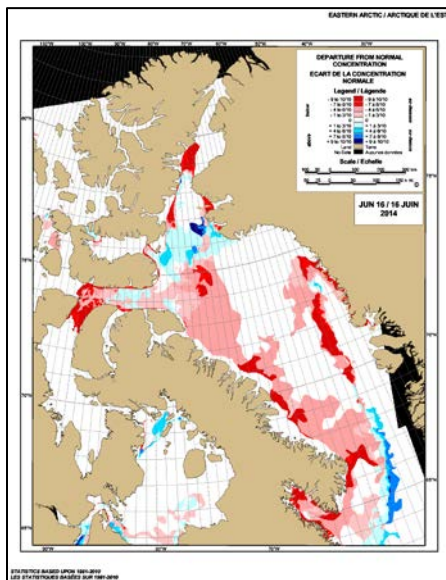


Figure 11: Departure from normal ice for the Eastern Arctic near mid-June

In June, the ice melt was near normal over most locations but 2 to 3 weeks earlier than normal over Baffin Bay, Kane Basin and Prince Regent Inlet as seen in Figure 11.

During the first two weeks, consolidated old and first-year ice persisted over Kane Basin except for very open drift old ice over the southwestern section. A lead of bergy water developing along the western shore of Greenland expanded northward to reach 74°30'N near mid-June. During the first half of June, close to very close pack first-year ice with up to 2 tenths of old ice prevailed over the rest of Baffin Bay except for large areas of very open to open drift first-year ice with a trace of old ice over the extreme northwestern section. Meanwhile, very open drift first-year ice with a trace of old ice dominated over Lancaster Sound and in northern Prince Regent Inlet.

During the second half of June, the ice melt accelerated over Baffin Bay and Kane Basin. Ice concentrations decreased rapidly over Baffin Bay to become open drift to close pack first-year ice with up to 1 tenth of old ice near the end of June. The ice fractured over the western section of Kane Basin during the last week, while consolidated first-year ice persisted over the eastern section. During the month, consolidated first-year ice with up to 3 tenths of old ice was present over the rest of the Arctic and in Pelly Bay except for higher amounts of old ice over Norwegian Bay. The rest of Prince Regent Inlet and the Gulf of Boothia were covered with very close pack first-year ice with a trace of old ice. As well, Committee Bay was covered with very close pack old and first-year ice.

July Ice Conditions:

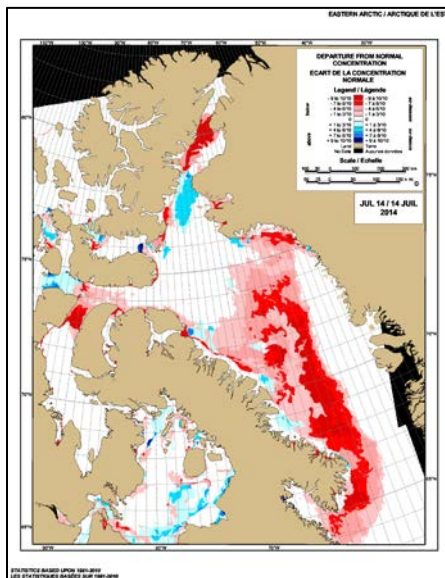


Figure 12: Departure from normal ice for the Eastern Arctic near mid-July

and Pelly Bay. Up to 3 tenths of old ice was embedded in the pack ice over these areas except for Admiralty Inlet and Baffin Island where only a trace of old ice was present. Close pack old and first-year ice dominated over Kane Basin.

In July, a near normal ice melt continued over most locations except for a faster ice melt over Baffin Bay, Nares Strait and northern Prince Regent as seen in Figure 12. The only exception would be that the ice cover west of Resolute and over the High Arctic remained consolidated during July.

In early July, only bergy water remained between 74°N and 74°30'N over northern Baffin Bay. During the first half, sea ice cleared, leaving large areas of bergy water over eastern and northwestern Baffin Bay, in Lancaster Sound and northern Prince Regent Inlet. The rest of Baffin Bay was covered with open drift to close pack first-year ice with a trace of old ice. Consolidated first-year ice persisted along eastern Baffin Island, in Pond Inlet, Admiralty Inlet, west of Lancaster Sound, Jones Sound

During the second half, the ice melted rapidly over Baffin Bay and Kane Basin. The ice fractured in Pelly Bay just after mid-July and melted completely near the end of July. Fracture events occurred normally during the third week over Pond Inlet, Admiralty Inlet, Wellington Channel and Jones Sound. The pack ice over these areas became close to very close pack ice during the last week. Very open to open drift first-year ice with a trace of old ice prevailed over central Baffin Bay until the ice melted during the last week. However, along the shore of eastern Baffin Island, the consolidated first-year ice fractured and lingered as areas of close to very close pack ice. Meanwhile, bergy water dominated over

the rest of Baffin Bay and in Lancaster Sound. Ice concentrations over western Kane Basin decreased rapidly to become very open to open drift old ice at the end of July. Fracture events continued to occur over Barrow Strait during the last week except for the northwestern section where the ice remained consolidated. Some of the fractured ice from Barrow Strait drifted into western Lancaster Sound and in northern Prince Regent Inlet during that time. At the end of July, ice fractured over the extreme southern portion of Norwegian Bay and in central Eureka Sound. During the month, consolidated first-year ice with up to 3 tenths of old ice was present over the rest of the Arctic except for higher amounts of old ice over Norwegian Bay. The rest of Prince Regent Inlet and the Gulf of Boothia were covered with very close pack first-year ice with a trace of old ice. Committee Bay was covered with very close pack old and first-year ice.

August Ice Conditions:

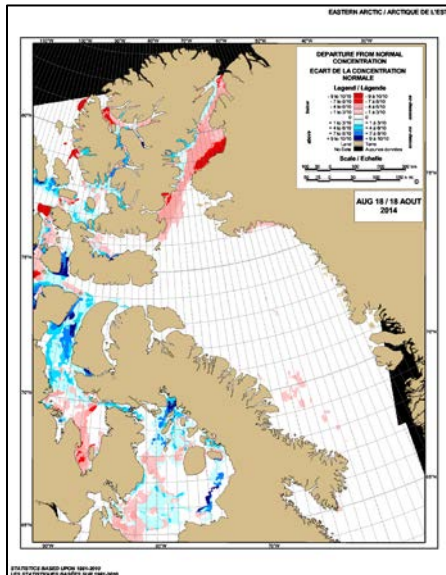


Figure 13: Departure from normal ice for the Eastern Arctic near mid-August

Due to the delayed breakup over the Central and High Arctic in August, the ice melt was 1 to 2 weeks later than normal over these areas. Elsewhere, the ice continued to melt at a faster pace than normal. The departure from normal ice over the Eastern Arctic is shown in Figure 13.

Areas of open drift to close pack first-year ice with up to 1 tenth of old ice along the eastern shore of Baffin Island and in Pond Inlet persisted until mid-August. Meanwhile, bergy water was present over the rest of Baffin Bay. The ice melted rapidly over the central portion of Jones Sound in early August and along the coast during the second week. However, a narrow area of very close pack first-year ice with 2 tenths of old ice remained along the southwestern shore of Jones Sound. Ice concentrations decreased rapidly over Kane

Basin to become isolated areas of very open to open drift old ice along coastal areas near mid-August. As the ice drifted out of Wellington Channel and McDougall Sound, it maintained an area of close pack old and first-year ice over western Lancaster Sound and in Barrow Strait. Some of the ice from western Lancaster Sound drifted into the eastern section and in the northern entrance of Admiralty Inlet during the first week. Meanwhile, very open to open drift first-year ice with a trace of old ice persisted over northern Prince Regent Inlet. Close to very close pack first-year ice with a trace of old ice dominated over southern Prince Regent Inlet and the Gulf of Boothia. Ice concentrations slowly decreased over southern Committee Bay to become very open to open drift old and first-

year ice. The rest of Committee Bay was covered with close to very close pack old and first-year ice. Bergy water prevailed over Pelly Bay during the period. The consolidated ice over Norwegian Bay and Eureka Sound fractured during the second week which was 1 to 2 weeks later than normal.

During the second half, bergy water was present over Baffin Bay, Pond Inlet and eastern Lancaster Sound. Old ice from Kennedy Channel drifted southward bringing areas of very open to open drift ice into Kane Basin. However, the ice melt over the rest of the Eastern Arctic was 1 to 2 weeks later than normal. At mid-August, close to very close pack first-year ice with up to 3 tenths of old ice dominated from Prince Regent Inlet to the Gulf of Boothia and in Barrow Strait. Very close pack old and first-year ice dominated over southern Wellington Channel, while bergy water was present over the northern section. Ice concentrations decreased slowly over the rest of Parry Channel and along the shipping route to Pelly Bay during the last two weeks. As a result, very open to open drift first-year ice with up to 1 tenth of old ice prevailed from western Lancaster Sound to north of Pelly Bay. Bergy water conditions persisted in Pelly Bay. Meanwhile, ice from Wellington Channel and Viscount Melville Sound continued to drift into Barrow Strait maintaining areas of open drift to close pack first-year ice with 2 tenths of old ice. Bergy water dominated over Jones Sound except for narrow areas of very open to open drift old and first-year ice along the southwestern shore. Close to very close pack old and first-year ice persisted over Norwegian Bay during the period. In Eureka Sound, ice concentrations slowly decrease to become very open drift old ice at the end of August.

September Ice Conditions:

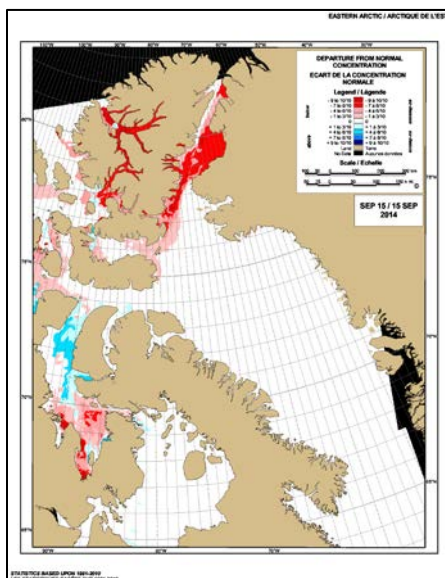


Figure 14: Departure from normal ice for the Eastern Arctic near mid-September

In September, the ice melt accelerated over the Central and High Arctic until the freeze-up started during the last week of September. The pack ice had only partially melted over these areas by the end of the summer season. The departure from normal ice over the Eastern Arctic is shown in Figure 14.

During the first half, bergy water was present over Baffin Bay, Pond Inlet, Admiralty Inlet and eastern Lancaster Sound. During the period, most of Jones Sound was free of ice except very open drift old ice along the western shore. Areas of very open to open drift old ice persisted over western Kane Basin, while bergy water conditions dominated over the eastern section. Very open to open drift first-year ice with up to 2 tenths of old ice was still observed

along the shipping routes from western Lancaster Sound to Resolute and to north of Pelly Bay. Most of the ice melted out over western Lancaster Sound and Barrow Strait during the second week except for some very narrow areas of old ice along the southern shores. However the ice cover remained over Prince Regent Inlet and the Gulf of Boothia. Close to very close pack old and first-year ice persisted over Norwegian Bay during the first half. Remnants of old ice floes were still present over Eureka Sound having not completely melted by the end of the summer season.

During the second half, the pack ice continued to melt during the third week but the situation shifted suddenly with the formation of new and grey ice during the last week. Bergy water was present over Baffin Bay, Pond Inlet, Admiralty Inlet, Lancaster Sound and most of Jones Sound. Ice concentrations decreased to become isolated areas of very open to open drift first-year ice with 1 tenth of old ice over Prince Regent Inlet and the Gulf of Boothia. Due to northerly winds which developed during the last two weeks, some of the ice from the Gulf of Boothia drifted along the northeastern shore of Pelly Bay with some pack ice compressing along the shore. The rest of Pelly Bay remained bergy water. Narrow areas of old and first-year ice persisted along the southern shores of Barrow Strait. Isolated areas of very open drift old ice prevailed along the western shore of Jones Sound, in northeastern Norwegian Bay and in Eureka Sound. New and grey ice formed rapidly over the High Arctic, in Barrow Strait and in Prince Regent Inlet during the last week where thicker ice was already present.

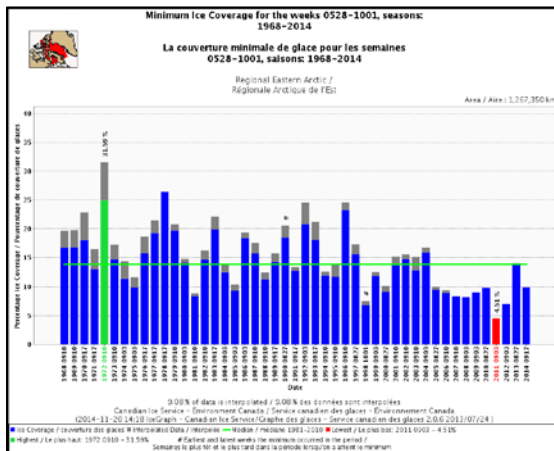


Figure 15: Minimum sea ice coverage for the Eastern Arctic in September

The minimum sea ice cover over the Eastern Arctic was reached on September 17 with the start of the freeze-up as shown in Figure 15. The minimum sea ice cover observed in September was less than last year and below normal values.

Western Arctic

Summer Ice Conditions and Fall Freeze-up

Summer Temperatures: June to September

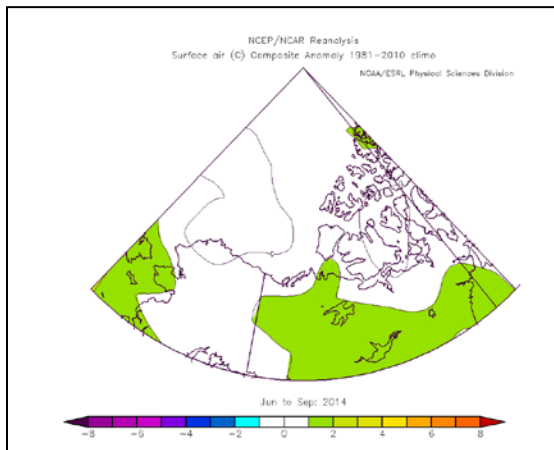


Figure 16: Air temperature anomaly for the Western Arctic from June to September

From June to September, surface air temperatures were generally near normal over most locations except for slightly above normal over central Amundsen Gulf. The air temperature anomaly for the Western Arctic is shown in Figure 16.

June Ice Conditions:

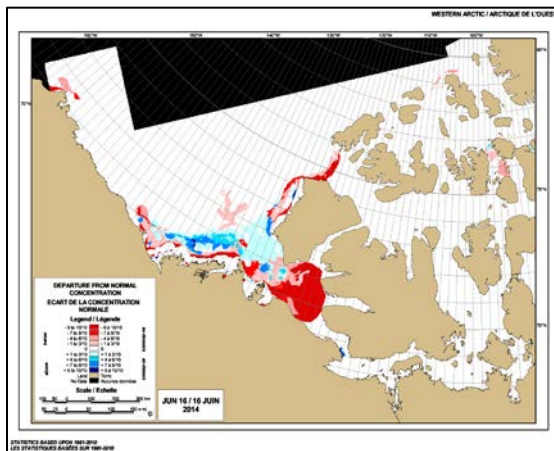


Figure 17: Departure from normal ice for the Western Arctic near mid-June

In June, the ice melt was near normal over most locations except 1 to 2 weeks earlier than normal over the southeastern Beaufort Sea and eastern Amundsen Gulf. The departure from normal ice over the Western Arctic is shown in Figure 17.

During the first two weeks, large openings in the first-year ice were forming over eastern Amundsen Gulf and off the consolidated first-year ice along Tuktoyaktuk Peninsula. Over the rest of Amundsen Gulf and within 220 kilometres north of the mainland coast

over the Beaufort Sea, ice conditions were very close pack first-year ice with up to 1 tenth of old ice. Consolidated first-year ice was present in shallow waters along the Alaskan Coast. The southern edge of the area of old ice in the Beaufort Sea was located about 220 kilometres north of the coast which was near normal. Consolidated first-year ice was present in shallow bays in Amundsen Gulf, along the shipping route from Dolphin and Union Strait to southern Larsen Sound and

from Prince of Wales Strait to southern M'Clure Strait. A trace of old ice was embedded in the pack ice over southern Larsen Sound, Prince of Wales Strait and southern M'Clure Strait. Consolidated first-year ice with up to 3 tenths of old ice dominated over the rest of the Central Arctic except for much higher amounts of old ice over northern M'Clure Strait, eastern Viscount Melville Sound, M'Clintock Channel and Queen Elizabeth Islands.

During the second half, the pack ice remained consolidated over the Central Arctic and along the mainland coast of the Beaufort Sea. Large areas of open water developed over Amundsen Gulf, within 110 kilometres north of the coast from Herschel Island eastward, west of Banks Island and west of M'Clure Strait. An area of very close pack first-year ice over western Amundsen Gulf continued to drift rapidly westward into the Beaufort Sea during the third week. At that time, the ice fractured over Darnley Bay, Franklin Bay, western Tuktoyaktuk Peninsula and Mackenzie Bay maintaining areas of open drift to close pack first-year ice along the coast. The ice fractured over the rest of Tuktoyaktuk Peninsula at the end of June. Within 200 kilometres north of the coast from Herschel Island westward, close to very close pack first-year ice with up to 1 tenth of old ice prevailed over the area. Farther offshore, ice conditions were very close pack old ice over the northern Beaufort Sea and in the Arctic Ocean.

July Ice Conditions:

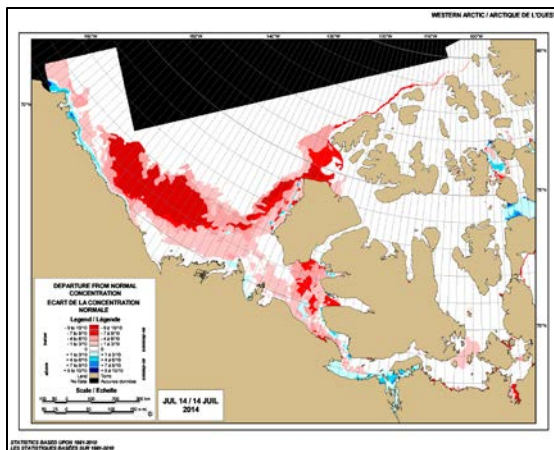


Figure 18: Departure from normal ice for the Western Arctic near mid-July

the coastal areas of Amundsen Gulf, the western shore of Banks Island, the eastern section of Tuktoyaktuk Peninsula and near Barter Island. During the period, close to very close pack first-year ice with up to 1 tenth of old ice persisted within 165 kilometres north of the coast from 110 kilometres west of Barter Island to west of Point Barrow. Farther north, an area of very close pack old ice persisted beyond 165 kilometres north of the mainland coast in the southern Beaufort Sea. Little change was observed in the consolidated ice over

In July, the ice melted at a faster pace than normal over the southern Beaufort Sea and in the Amundsen Gulf, while the rest of the Western Arctic experienced a near normal ice melt. The departure from normal ice over the Western Arctic is shown in Figure 18.

Open water areas which formed over most of Amundsen Gulf, in southeastern Beaufort Sea and west of Banks Island continued to expand during the first half. However, remnants of fractured ice were still present along

the Central Arctic except for a few exceptions. The ice completely fractured over Dolphin and Union Strait, western Coronation Gulf, Victoria Strait and western M'Clure Strait during the second week.

During the second half, a 165 kilometre wide area of open water developed over the southeastern Beaufort Sea and Amundsen Gulf. Afterwards, a few areas of close to very close pack first-year ice were still observed near Prince of Wales Strait and in Prince Albert Sound during the fourth week. Within 165 kilometres north of the coast and from Barter Island westward, ice concentrations slowly decreased to open drift to close pack first-year ice with up to 1 tenth of old ice during that time. Beyond 165 kilometres north of the mainland coast, very close pack old ice dominated over the northern Beaufort Sea and the Arctic Ocean. Consolidated ice fractured over southern Prince of Wales Strait, in Queen Maud Gulf and Larsen Sound during the third week and in eastern M'Clure Strait, southeastern M'Clintock Channel and northern Prince of Wales Strait a week later. At that time, the ice melted completely over Dolphin and Union Strait and western Coronation Gulf. The rest of Western Arctic was covered with consolidated ice. Very close pack first-year ice with up to 3 tenths of old ice persisted over western M'Clure Strait during the period.

August Ice Conditions:

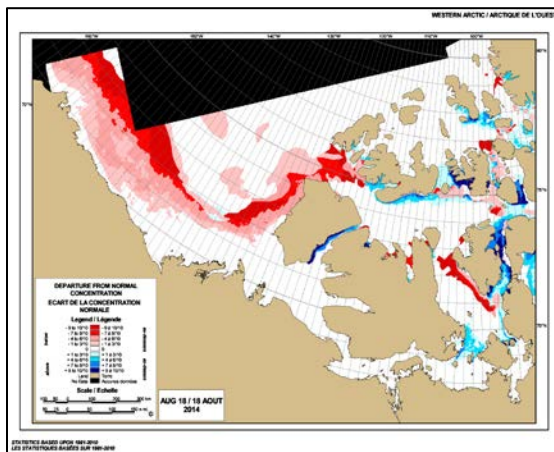


Figure 19: Departure from normal ice for the Western Arctic near mid-August

Barter Island westward, ice conditions were generally open drift to close pack first-year ice with up to 1 tenth of old ice. The ice melted completely from the Alaskan Coast during the second week except for a very narrow area of very open drift old and first-year ice along the coast. An area of close to very close pack old ice prevailed over the northern Beaufort Sea and in the Arctic Ocean. Ice concentrations south of 76°N and west of 143°W decreased to become open drift to close pack old ice. The ice melted completely over eastern Coronation Gulf and Dease Strait in early August and Amundsen Gulf during the first week.

In August, the ice decayed at a much slower pace than normal over the Central Arctic, Queen Elizabeth Islands and the Arctic Ocean so much so that the ice melt was 1 to 2 weeks later than normal. Elsewhere, the ice continued to melt at a faster pace than normal. The departure from normal ice over the Western Arctic is shown in Figure 19.

Open water dominated over western Coronation Gulf and within 175 kilometres north of the coast from Barter Island eastward. Within 185 kilometres north of the coast from

Open drift to close pack first-year ice with a trace of old ice persisted over southern Victoria Strait and Queen Maud Gulf. The ice in Queen Maud Gulf melted completely near mid-August. Close to very close pack first-year ice with up to 3 tenths of old ice persisted over northern Victoria Strait, Larsen Sound and eastern M'Clure Strait. The consolidated ice over Peel Sound and the northern and western sections of M'Clintock Channel completely fractured during the second week which was 1 to 2 weeks later than normal. At that time, all of the ice except the central portion of Viscount Melville Sound was fractured. The rest of M'Clure Strait was covered with very open to open drift old ice. The ice over Queen Elizabeth Islands remained consolidated during the period.

During the second half, ice free or open water dominated within 220 kilometres north of the coast over the southern Beaufort Sea, within 55 kilometres west of Banks Island and along the shipping route from Amundsen Gulf to Taloyoak. Very close pack old ice prevailed beyond 220 kilometres north of the mainland coast in the Beaufort Sea and east of 145°W, while open drift to close pack old ice was observed west of 145°W. Close to very close pack first-year ice with up to 3 tenths of old ice was present over Victoria Strait, Larsen Sound, western Viscount Melville Sound and eastern M'Clure Strait. Ice concentrations in Peel Sound slowly decreased during the last two weeks to become open drift to close pack first-year ice with up to 3 tenths of old ice. Close to very close pack old and first-year ice covered most of M'Clintock Channel and eastern Viscount Melville Sound during the period. However shore leads which formed over northern Viscount Melville Sound and in southeastern M'Clintock Channel were short-lived as they were filled with ice during the last week. Close to very close pack first-year ice with a trace of old ice was present over Prince of Wales Strait. The rest of M'Clure Strait was covered with very open to open drift old ice. Due to persistent east to northeasterly winds which developed during the second half, some of the ice from Victoria Strait drifted into northwestern Queen Maud Gulf. Meanwhile, the ice in Prince of Wales Strait drifted along the southeastern shore of Banks Island. Most of the ice in Queen Elizabeth Islands remained consolidated during the period.

September Ice Conditions:

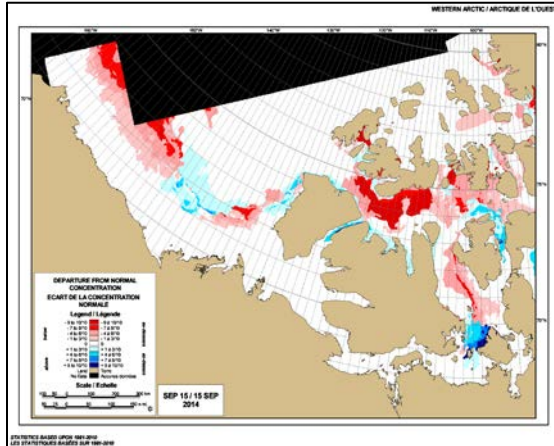


Figure 20: Departure from normal ice for the Western Arctic near mid-September

The ice continued to melt during the first two weeks of September then freeze-up over the Western Arctic started normally during the second half. The departure from normal ice over the Western Arctic is shown in Figure 20.

Ice free prevailed within 185 kilometres north of Tuktoyaktuk Peninsula, within 220 kilometres north of the Alaskan Coast and along the shipping route from Amundsen Gulf to Dease Strait. Farther offshore over the Beaufort Sea and south of 76°30'N, close to very close pack old ice

remained, with lower old ice concentrations west of 144°W in open drift to close pack ice. North of 76°30'N, very close pack old ice persisted during the period. Remnants of old ice along the southeastern shore of Banks Island melted completely during the first week. With strong northwesterly winds developing over the Central Arctic during the second week, significant ice destruction was observed over the area. Near mid-September, large areas of open water existed over most of Larsen Sound, southern Peel Sound, southeastern M'Clintock Channel, northern Viscount Melville Sound and northeastern M'Clure Strait. However, a persistent flow of old and first-year ice from M'Clintock Channel drifted into the shipping channel in Victoria Strait and the extreme northern section of Queen Maud Gulf maintaining areas of open drift to close pack first-year ice with up to 2 tenths of old ice. Some of the ice from Viscount Melville Sound drifted into northern Peel Sound with areas of very open drift old ice during the second week. As well, fractured old ice floes from Byam Martin Channel drifted southward into northeastern Viscount Melville Sound. Very close pack old and first-year ice dominated over southeastern Viscount Melville Sound and the rest of M'Clintock Channel, while southwestern Viscount Melville Sound was covered with very close pack first-year ice with a trace of old ice. The main pack of old ice over the Arctic Ocean brought an area of very close pack old ice into the western and southern sections of M'Clure Strait near mid-September. Most of the ice in Queen Elizabeth Islands remained consolidated during the period.

During the last two weeks, little change was observed in the ice conditions over the Central Arctic except for the formation of new and grey ice in areas where thicker sea ice survived the summer melt. Meanwhile, the main pack of old

ice in the Beaufort Sea drifted northward when strong southeasterly winds developed during the third week. As a result, the southern edge of the main pack ice was located about 220 kilometres north of Tuktoyaktuk Peninsula and 275 kilometres north of the Alaskan Coast at the end of September. During the period, ice free conditions prevailed over the southern Beaufort Sea and from Amundsen Gulf to Coronation Gulf.

