Environment Canada Environnement Canada

Annual Arctic Ice Atlas

Winter 2003

By

Canadian Ice Service
Le service canadien des glaces

Canada

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Freeze-Up and Winter Ice Regime 2003

Hudson Bay and Approaches

Temperatures averaged slightly below normal over southern Hudson Bay for October and November and along the Labrador Coast for November. Elsewhere temperatures averaged near to slightly above normal for October and November. Temperatures were above normal over all areas for December and January. Freeze-up was delayed over all areas. The ice extent remained less than normal over Hudson Bay and Hudson Strait in November and December and along the Labrador Coast into February. The calculated ice thickness was less than normal over all areas. The measured ice thickness at Coral Harbour was also less than normal.

New ice began to form along the shores of Southampton Island, in Roes Welcome Sound and along the northwestern shore of Hudson Bay during the first week in November.

By mid-November new and grey ice with fast ice in sheltered bays had become established along the southern shore of Southampton Island, western shore of Hudson Bay and along the shores of James Bay. There was mostly grey ice cover in Roes Welcome Channel, along the northern and eastern sides of Southampton Island to Nottingham Island and over northwestern Foxe Channel. Patchy new ice was also forming in sheltered bays along the western side of Baffin Island north of Iqaluit and southern Ungava Bay. Ice continued to spread southward at a slightly slower than normal pace through November.

By the end of November, western Hudson Bay and Foxe Channel were covered with grey and grey-white ice. New and grey ice was well established along the shores of southwestern Hudson and James Bays at this time. An area of open water persisted along the eastern side of Hudson Bay. Patchy mostly new ice covered the shores of Ungava Bay, Hudson Strait, northern Labrador Coast and Frobisher Bay.

By mid December, all of Hudson Bay and Hudson Strait was ice covered. By the end of December, Hudson Bay and Hudson Strait were covered with mostly grey white to thin first year. The ice extent was less than

normal along the northern Labrador Coast with mostly grey-white ice. The wind direction over Hudson Bay and Hudson Strait was predominately moderate westerly in January. This caused leads to form followed quickly by new ice formation.

By the beginning of February, there was thinner area than normal of mostly grey-white to grey ice along the northwestern shore of Hudson Bay and Ungava Bay. Due to frequent storms, the ice edge along the northern Labrador Coast was also less than normal.

Eastern Arctic

Temperatures were above normal over the Eastern Arctic including Foxe Basin from October through January. By the end of January, the ice extent was near normal, however the calculated ice thickness was slightly less than normal. The measured ice thickness at Eureka was less than normal. However the measured ice thickness at Resolute was near normal.

At the end of the summer of 2002, the old ice distribution was near normal except for less old ice than normal over the southern Gulf of Boothia and Committee Bay. New ice started forming in Eureka Sound and Norwegian Bay the second week in September and over Wellington Channel, Barrow Strait and Prince Regent Inlet the third week in September. This was near normal. With above normal temperatures, ice growth and expansion was slower than normal in October. Eclipse Sound and Navy Board Inlet did not freeze over until the third week of October, which was 10 days later than normal. At this time, Prince Regent Inlet and western Barrow Strait were covered with mostly grey and grey-white ice with new and grey ice over Lancaster Sound. Ice had thickened to grey-white and thin first year over Norwegian Bay and Eureka Sound.

By the end of October, new ice was starting to form in Foxe Basin with the ice edge in Baffin Bay extending south to Clyde. Most of Norwegian Bay and Eureka Sound became consolidated at this time. Freeze-up was about 10 days later than normal over Baffin Bay and two weeks later over Foxe Basin. Foxe Basin became completely ice covered and Jones Sound became consolidated the third week of November.

Just before the New Year, Kane Basin became consolidated and stopped the source of old ice flowing into Baffin Bay. The fast ice edge was just west of Resolute at this time. There was an area of very open drift old

ice embedded in the main pack of first year ice as far south as Home Bay. This was near normal.

By the beginning of February the southern edge of embedded very open drift old ice lay east of Cape Dryer with an area of open drift old ice east of Clyde. Foxe Basin was covered with medium first year ice. There was mostly medium first year ice over Prince Regent Inlet into Lancaster Sound, Barrow Strait and the main ice pack over Baffin Bay. The ice in Barrow Strait remained mobile with the fast ice edge back to southwest of Lowther Island when normally it would be located near Griffen Island. The ice extent was near normal over all areas.

Western Arctic

Temperatures were above normal over the Western Arctic including the Waterways from October through January. By the end of January, the ice extent was near normal, however the calculated ice thickness was less than normal. The measured ice thickness at Cambridge Bay and Inuvik was also less than normal.

Before the beginning of freeze-up in late September, the old ice extent was less than normal over Larsen Sound. There was open water from southern Peel Sound through Victoria Strait into the Amundsen Gulf and along the Alaskan Coast. The main pack of old ice was farther offshore than normal along the Alaskan Coast. Over the Amundsen Gulf there was patchy old ice which had drifted through the Prince of Wales Strait late in the season. There was rapid new ice growth in October. Five tenths of old ice drifted into Larsen Sound during this period of freeze-up. This old ice concentration was less than normal with only a trace of old ice in Victoria Strait and Queen Maud Gulf.

By the end of November, Southern Peel Sound, Queen Maud and Coronation Gulfs, Dolphin and Union Straits, Mackenzie, Liverpool, Franklin and Darnley Bays and just along the Alaskan Coast were consolidated with thin first year to grey-white ice. The thin first year with 5 tenths of old ice remained slightly mobile in Larsen Sound.

By early December, Amundsen Gulf and along the Alaskan Coast to the old ice edge was mostly thin first year with a trace of old ice except patchy old ice in eastern Amundsen Gulf. By the end of December, the waterways was completely consolidated with thin first year ice except for the 5 tenths of old ice embedded in Larsen Sound.

During the month of January there were periods of offshore winds along the Alaskan Coast. This caused the main ice pack to move even farther offshore with thinner than normal ice forming along the fast ice edge along the Tuktoyaktuk Peninsula. The calculated ice thickness was less than normal over all areas. By the beginning of February the old ice edge lay about 200 miles north of the Tuktoyaktuk Peninsula and 70 miles north of Point Barrow.

REGIONAL ICE ANALYSIS Hudson Bay
ANALYSE REGIONALE DE GLACE Baie d'Hudson

01 FEBRUARY / FÉVRIER 2003

CANADIAN ICE SERVICE
PREPARED BY: RP
PREPARÉE PAR:

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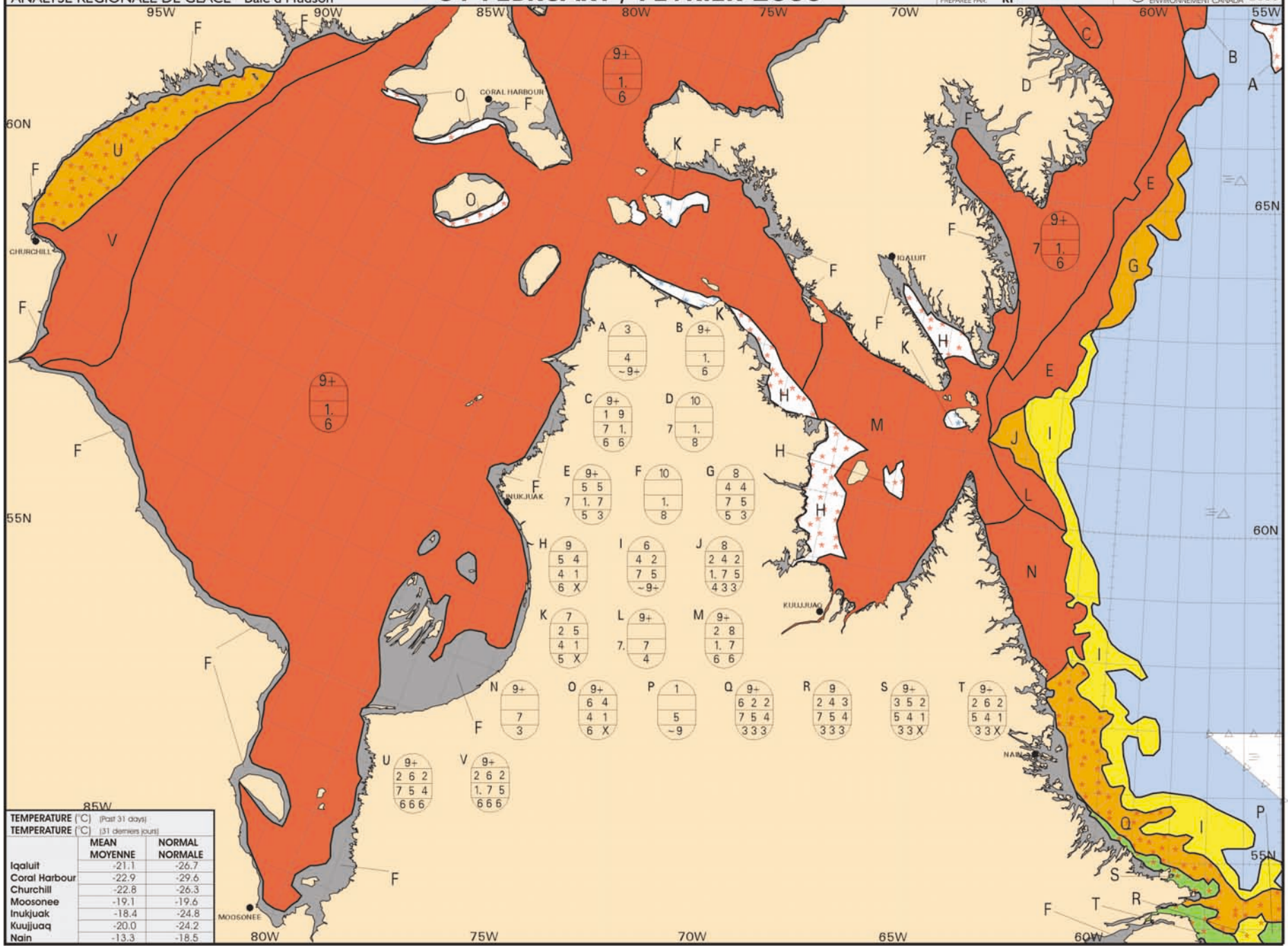

TEMPERATURE (°C) (Past 31 days) / TEMPERATURE (°C) (31 derniers jours)	MEAN MOYENNE	NORMAL NORMALE
Iqaluit	-21.1	-26.7
Coral Harbour	-22.9	-29.6
Churchill	-22.8	-26.3
Moosonee	-19.1	-19.6
Inukjuak	-18.4	-24.8
Kuujjuaq	-20.0	-24.2
Nain	-13.3	-18.5

REGIONAL ICE ANALYSIS — Eastern Arctic
ANALYSE REGIONALE DE GLACE — Arctique de l'est

01 FEB / FÉV 2003

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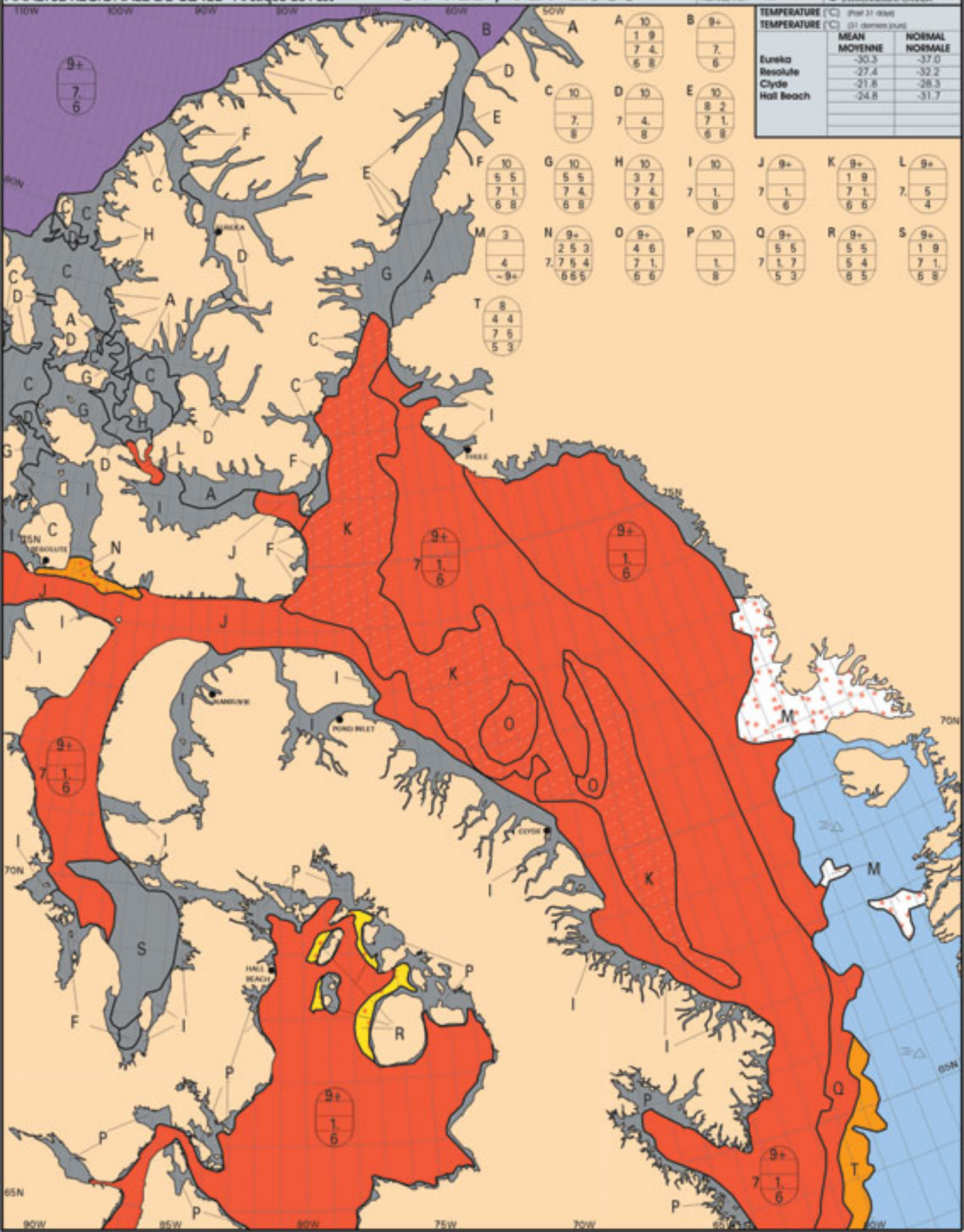
TEMPERATURE (°C) (Past 31 days)
TEMPERATURE (°C) (31 derniers jours)

	MEAN MOYENNE	NORMAL NORMALE
Eureka	-30.3	-37.0
Resolute	-27.4	-32.2
Clyde	-21.8	-28.3
Hall Beach	-24.8	-31.7



REGIONAL ICE ANALYSIS Western Arctic
ANALYSE REGIONALE DE GLACE Arctique de l'ouest

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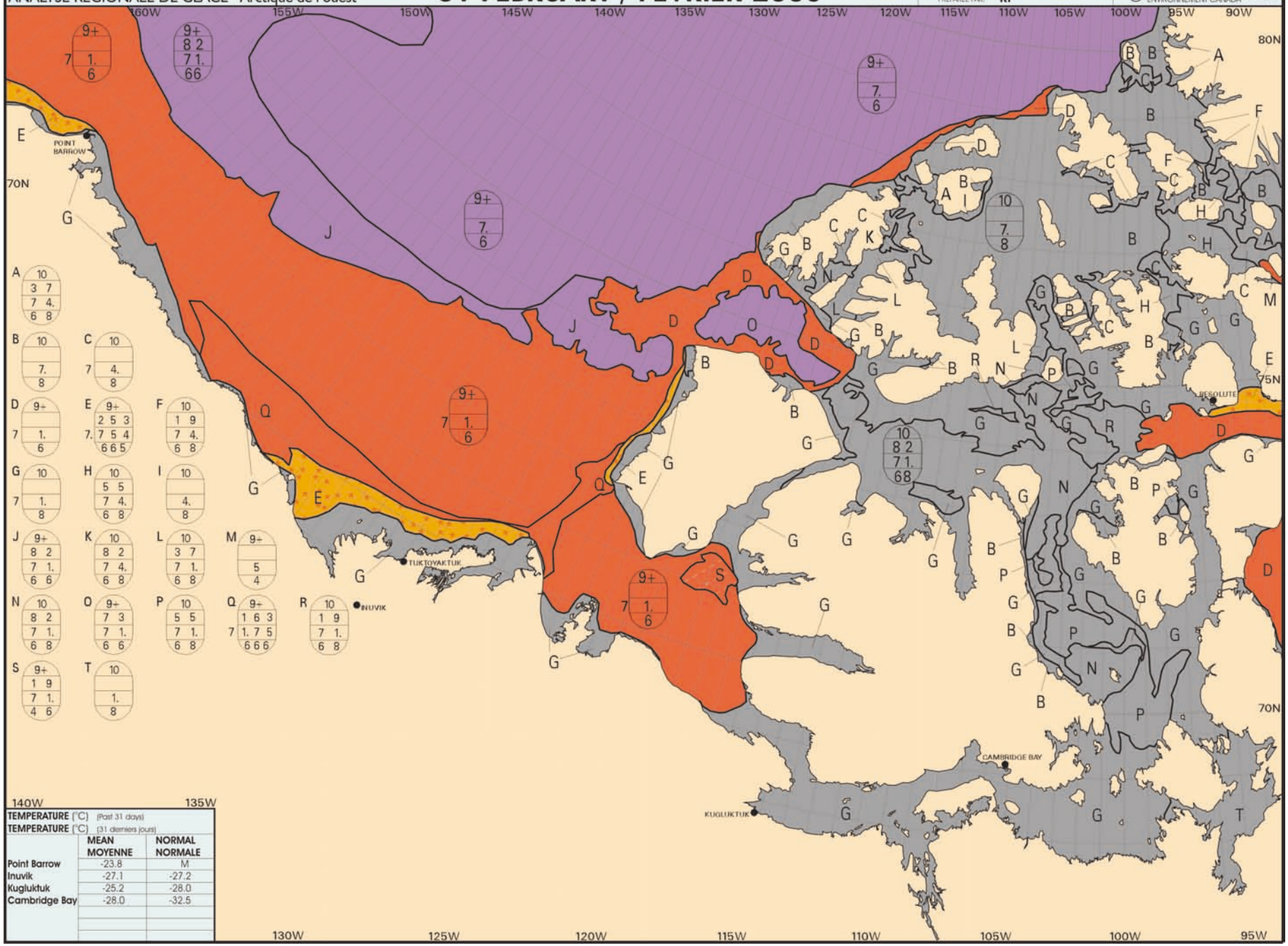
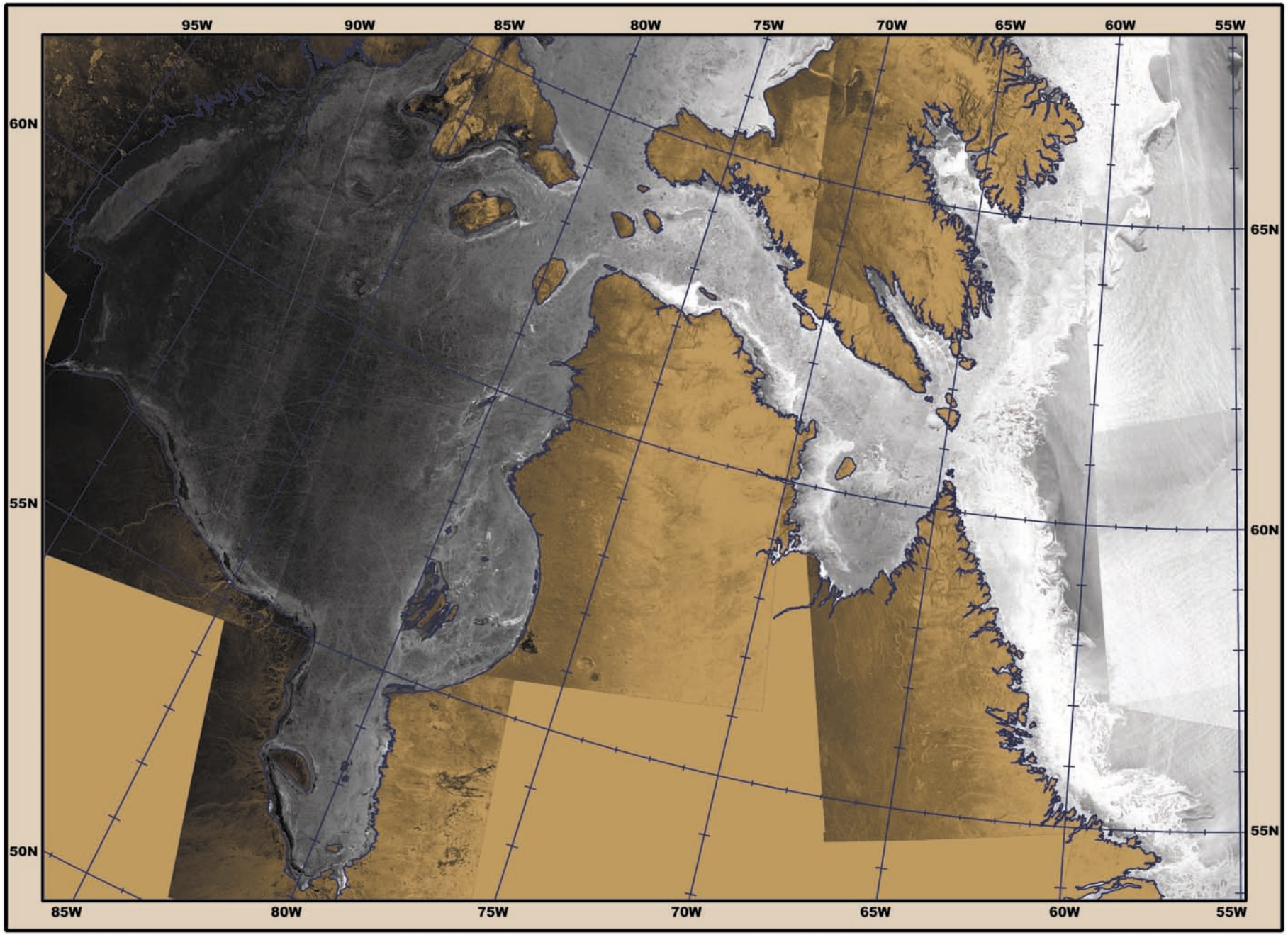


TEMPERATURE (°C) (Past 31 days) / TEMPERATURE (°C) (31 derniers jours)	MEAN MOYENNE	NORMAL NORMALE
Point Barrow	-23.8	M
Inuvik	-27.1	-27.2
Kugluktuk	-25.2	-28.0
Cambridge Bay	-28.0	-32.5

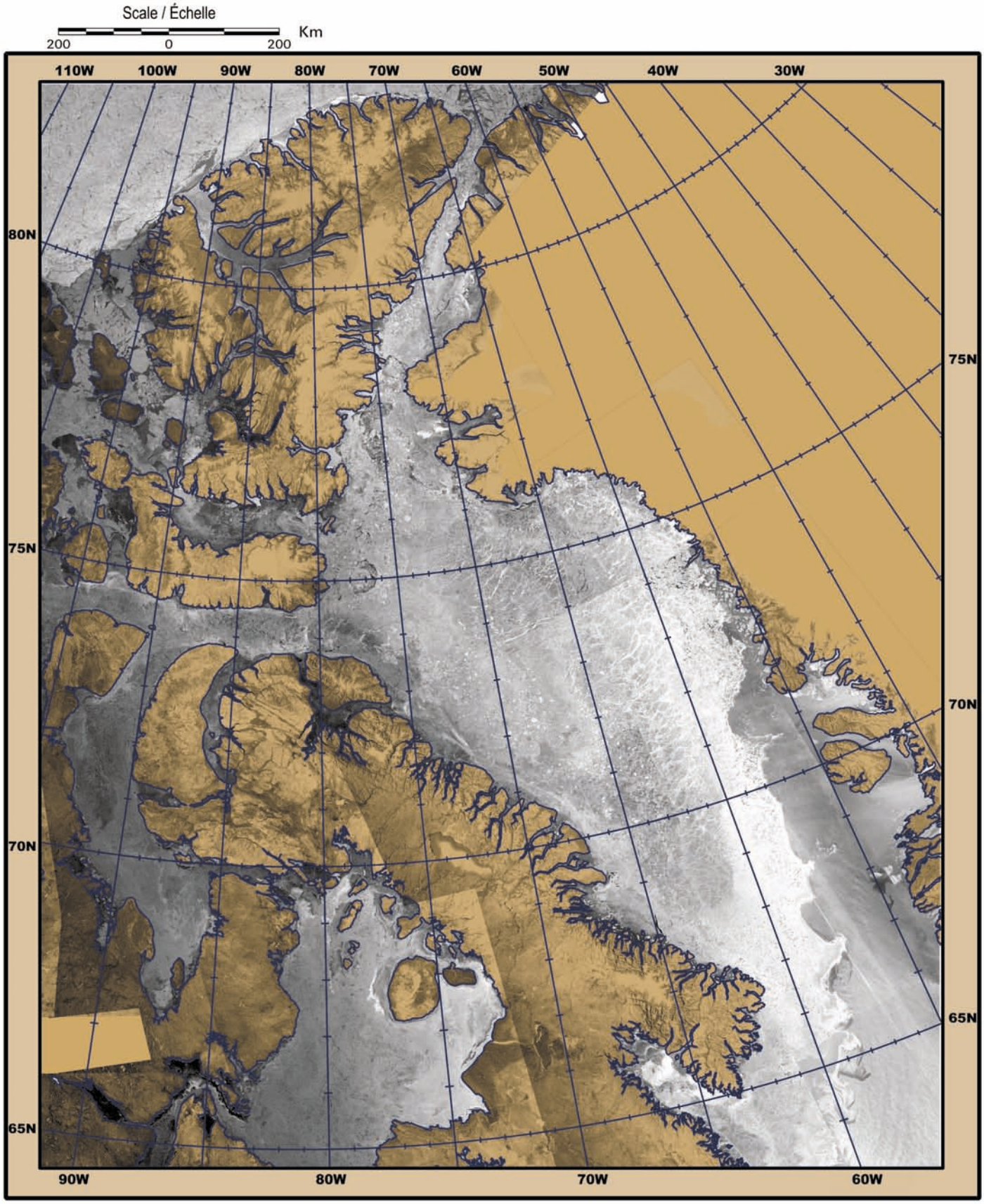
Scale / Échelle

200 0 200 Km

Hudson Bay / Baie d'Hudson



Eastern Arctic / Arctique de l'est



Scale / Échelle

200 0 200 Km

Western Arctic / Arctique de l'ouest