Environment Canada Environnement Canada

Annual Arctic Ice Atlas

Winter 2004

By

Canadian Ice Service
Le service canadien des glaces

Canada

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Freeze-Up and Winter Ice Regime 2004

- Hudson Bay and Approaches
- Eastern Arctic
- Western Arctic

Hudson Bay and Approaches

Temperatures averaged above normal over all areas during the months of October through December. Freeze up was delayed over all areas. A cold Arctic high pressure system brought well below normal temperatures to Hudson Bay for January. Temperatures remained above normal along the Labrador Coast and Hudson Strait. 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 thicknesses were less than normal over all areas during November and December and returned to near normal over southern and western Hudson Bay and James Bay in January. The measured ice thicknesses at Frobisher Bay and Coral Harbour were less than normal at the end of January.

New ice started to form along the shores of Southampton Island and in Roes Welcome Sound during the last week in October and along the northwestern shore of Hudson Bay the first week in November. By mid-November new and grey ice with patchy 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. Freeze-up was two weeks later than normal.

By the beginning of December, northwestern Hudson Bay and Foxe Channel were covered with grey and greywhite ice. New and grey ice was well established along the shores of southwestern Hudson and James Bays with a large area of open water over central and eastern Hudson Bay. There was patchy new ice along the southern shores of Ungava Bay. Bergy water persisted in Hudson Strait and along the Labrador Coast into Frobisher Bay. Normally Hudson Bay and most of Hudson Strait would be completely ice

covered at this time with the main ice edge off the Labrador Coast near Cape Chidley.

By the first of January, Hudson Bay and Hudson Strait were covered with mostly greywhite to thin first year ice except new to grey ice over southern James Bay, southeastern Hudson Bay and southwestern Ungava Bay. There was patchy open water near the Belcher Islands and along the north side of Hudson Strait. With patchy new and grey ice along the Labrador Coast, the ice extent was much less than normal. By the beginning of February, Hudson Bay and Hudson Strait was covered with thin to medium first year ice. However the ice extent along the Labrador Coast and Southern Davis Strait remained significantly less than normal.

Eastern Arctic

Temperatures averaged above normal over the Eastern Arctic including Foxe Basin from October through December. January temperatures remained above normal over Foxe Basin and Davis Strait. Below normal temperatures were reported elsewhere. By the end of January, the bergy water lead along the West Greenland Coast extended to Disco Island which was slightly farther north than normal.

At the end of the summer of 2003, the old ice distribution was near normal except for a greater than normal concentration of old ice over Barrow Strait. New ice started forming in Eureka Sound and Norwegian Bay at mid-September and over Wellington Channel, Barrow Strait and Prince Regent Inlet the third week in September. Eclipse Sound and Navy Board Inlet froze over the beginning of October, which was near normal. At this time, there was up to 7 tenths of old ice in Barrow Strait flowing into Lancaster Sound.

By the end of October, new ice was starting to form in Foxe Basin with the ice edge in Baffin Bay extending southwards to just north of Clyde. Northern Norwegian Bay and Eureka Sound was consolidated at this time. Southern Norwegian Bay consolidated a week later. This was a week later than normal. Freeze-up was about 10 days later than normal over Baffin Bay and two weeks later over Foxe Basin. Foxe Basin did not become completely ice covered until early December which was almost a month later than normal.

Jones Sound became consolidated in early January a month later than normal. Barrow Strait consolidated with up to four tenths of old ice in January. However Kane Basin remained slightly mobile. There was a large area of up to 3 tenths of old ice in the main ice pack in Baffin Bay. This was near normal. The bergy water lead extended up to Disco Island which was also farther north than normal.

Western Arctic

Temperatures were above normal over the Western Arctic including the Waterways for October and November, near to slightly below in December and below normal in January. By the end of January, the ice extent was near normal; however the old ice edge was farther offshore than normal. The calculated and measured ice thicknesses were slightly less than normal at Inuvik and near normal at Cambridge Bay.

At the beginning of freeze-up, the old ice extent was slightly greater than normal over Peel Sound and near normal over Larson Sound. There was open water from 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. New ice growth started in early October but rapid ice growth did not occur until late October with freeze-up two weeks later than normal over all areas.

Because of the later freeze-up, the Tuktoyaktuk Peninsula did not consolidate until late November. Complete consolidation of Peel and Larsen Sounds, the Waterways, Darnley, Franklin and Liverpool Bays did not occur until early December. The ice in Victoria Strait remained mobile into early February.

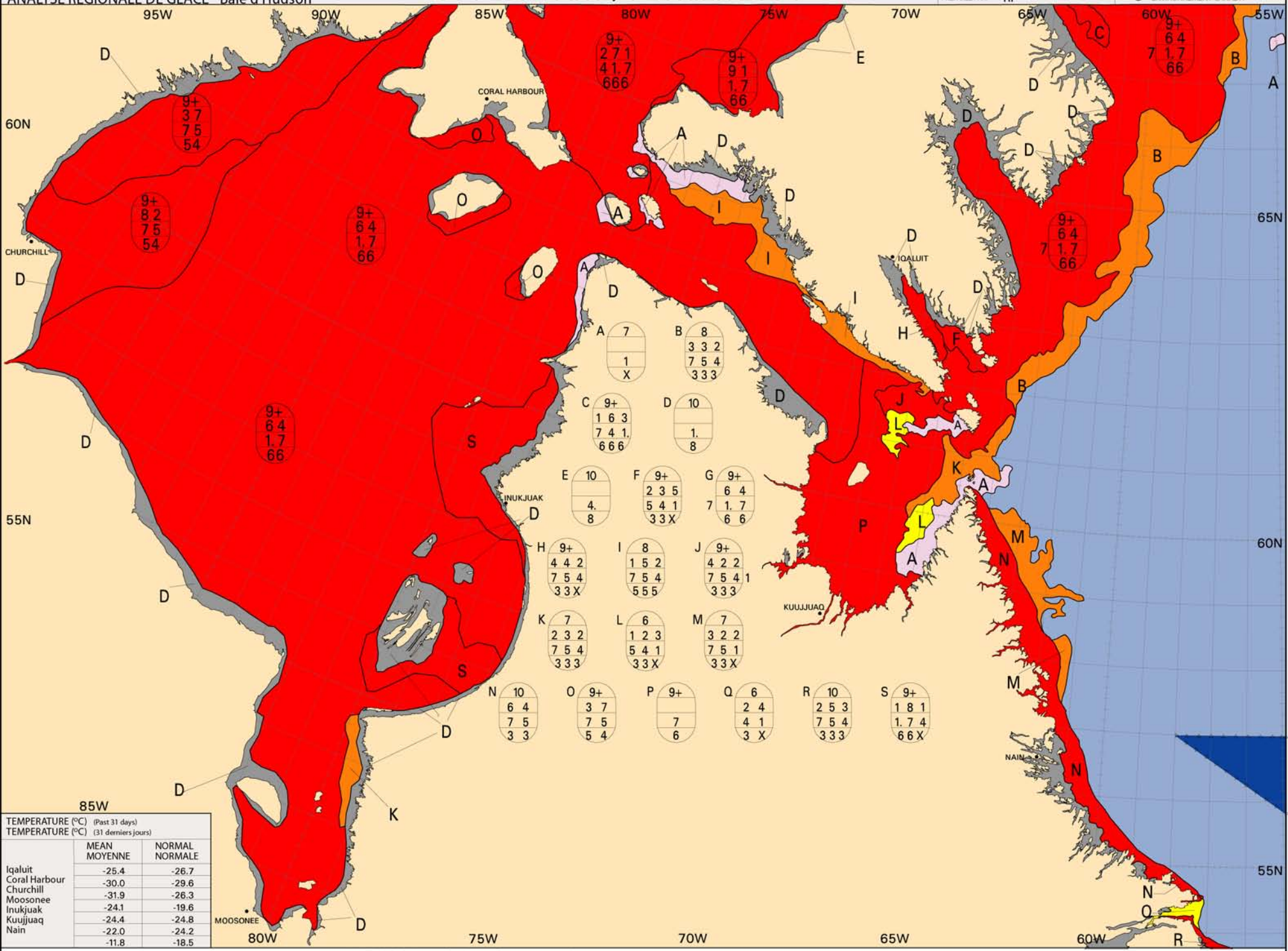
By the end of December, Amundsen Gulf and along the Alaskan Coast to the old ice edge was covered with thin and medium first year with a trace of old ice. By the end of December, the waterways was completely consolidated with medium first year ice.

During the month of January the fast ice edge along the Alaskan Coast and Amundsen Gulf broadened and thickened to medium first year with a trace of old ice. At the end of January, the old ice edge lay about 60 miles west of Banks Island, 110 miles north of the Tuktoyaktuk Peninsula and 30miles north of Point Barrow. The old ice concentrations were less than normal off Point Barrow.

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

01 FEBRUARY / FÉVRIER 2004

CANADIAN ICE SERVICE SERVICE CANADIEN DES GLACES
PREPARED BY: RP
PREPAREE PAR:



TEMPERATURE (°C) (Past 31 days) / TEMPERATURE (°C) (31 derniers jours)	MEAN MOYENNE	NORMAL NORMALE
Iqaluit	-25.4	-26.7
Coral Harbour	-30.0	-29.6
Churchill	-31.9	-26.3
Moosonee	-24.1	-19.6
Inukjuak	-24.4	-24.8
Kuujjuaq	-22.0	-24.2
Nain	-11.8	-18.5

WMO Colour Code - Concentration

Code de couleurs de l'OMM - Concentration

- Ice Free / Libre de glace
- < 1/10
- 1-3/10
- 4-6/10
- 7-8/10
- 9-10/10
- Fast Ice / Banquise côtière
- ? ? Undefined / Indéterminée
- New Ice / Nouvelle glace
- Nilas/Grey Ice / Nilas/glace grise

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

01 FEBRUARY / FÉVRIER 2004

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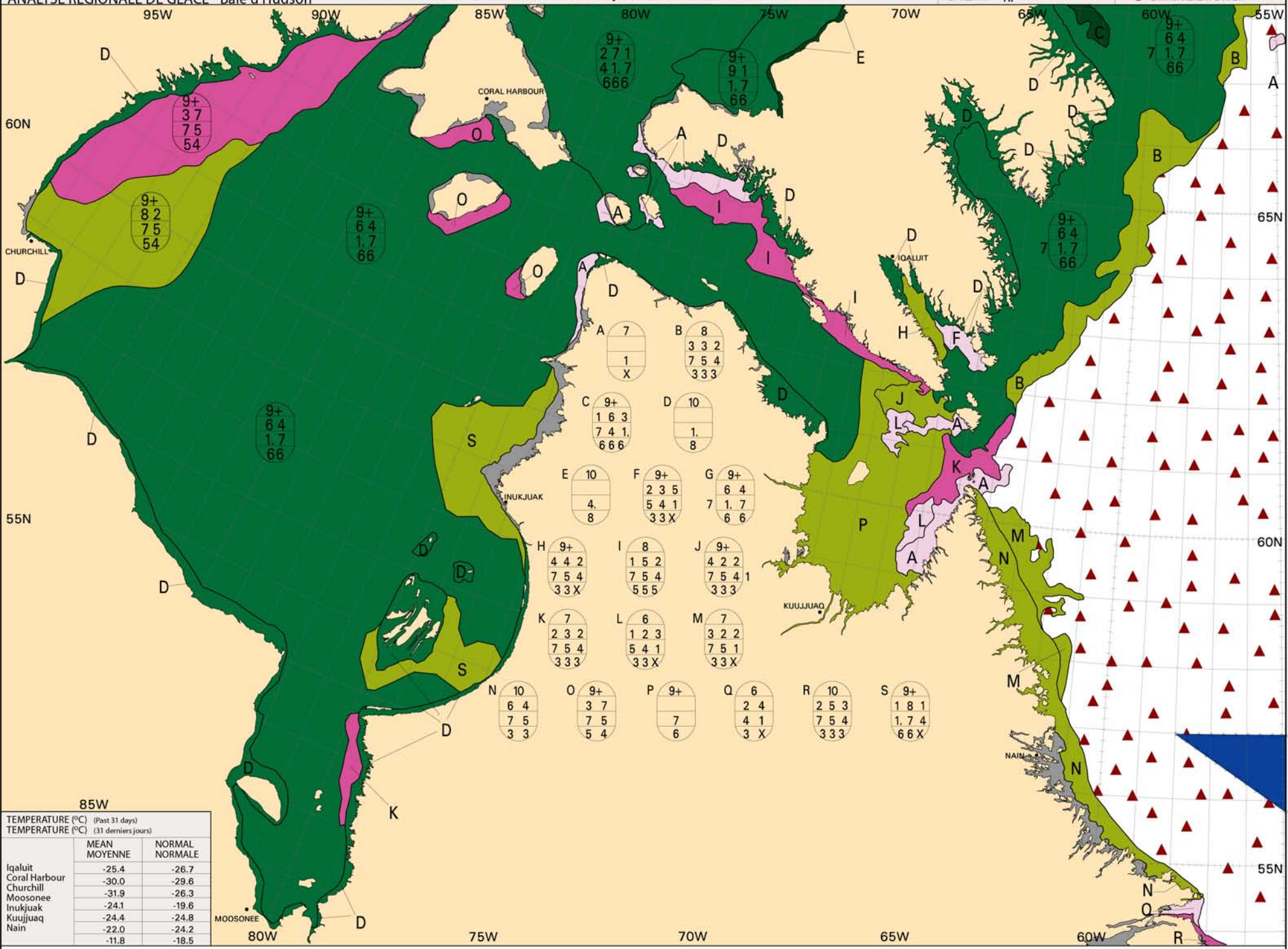

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WMO Colour Code - Stage of Development

Code de couleurs de l'OMM - Stade de formation

- Ice Free / Libre de glace
- Open Water / Eau Libre
- Icebergs
- New / Nouvelle
- Grey / Grise
- Grey-white / Blanchâtre
- First-year / Première année
- Thin First-year / Mince de première année
- Medium First-year / Moyenne de première année
- Thick First-year / Epaisse de première année
- Old ice / Vieille glace
- Second-year / Deuxième année
- Multi-year / Plusieurs années
- Undefined Fast Ice / Indéfini Banquise côtière
- ? ? Undefined / Indéterminée

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

01 FEB / FÉV 2004

CANADIAN ICE SERVICE SERVICE CANADIEN DES GLACES
PREPARED BY: RP
PREPAREE PAR:
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TEMPERATURE (°C) (Past 31 days)
TEMPERATURE (°C) (31 derniers jours)

	MEAN MOYENNE	NORMAL NORMALE
Eureka	-33.8	-37.0
Resolute	-33.8	-32.2
Clyde	-31.2	-28.3
Hall Beach	-34.1	-31.7

110W 100W 90W 80W 70W 60W 50W
80N 75N 70N 65N
90W 85W 80W 75W 70W 65W 60W

EUREKA THULE RESOLUTE NANISIVIK POND INLET CLYDE HALL BEACH

WMO Colour Code - Concentration

Ice Free / Libre de glace
< 1/10
1-3/10
4-6/10
7-8/10
9-10/10

Code de couleurs de l'OMM - Concentration

Fast Ice / Banquise côtière
Undefined / Indéterminée
New Ice / Nouvelle glace
Nilas/Grey Ice / Nilas/glace grise

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

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110W 100W 90W 80W 70W 60W 50W
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EUREKA
THULE
RESOLUTE
NANISIVIK
POND INLET
CLYDE
HALL BEACH

WMO Colour Code - Stage of Development

Ice Free
Libre de glace
Open Water
Eau Libre
Icebergs
New
Nouvelle
Grey
Grise
Grey-white
Blanchâtre
First-year
Première année
Thin First-year
Mince de première année
Medium First-year
Moyenne de première année
Thick First-year
Epaisse de première année
Old ice
Vieille glace
Second-year
Deuxième année
Multi-year
Plusieurs années
Undefined Fast Ice
Indéfini Banquise côtière
Undefined
Indéterminée

Code de couleurs de l'OMM - Stade de formation

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

01 FEBRUARY / FÉVRIER 2004

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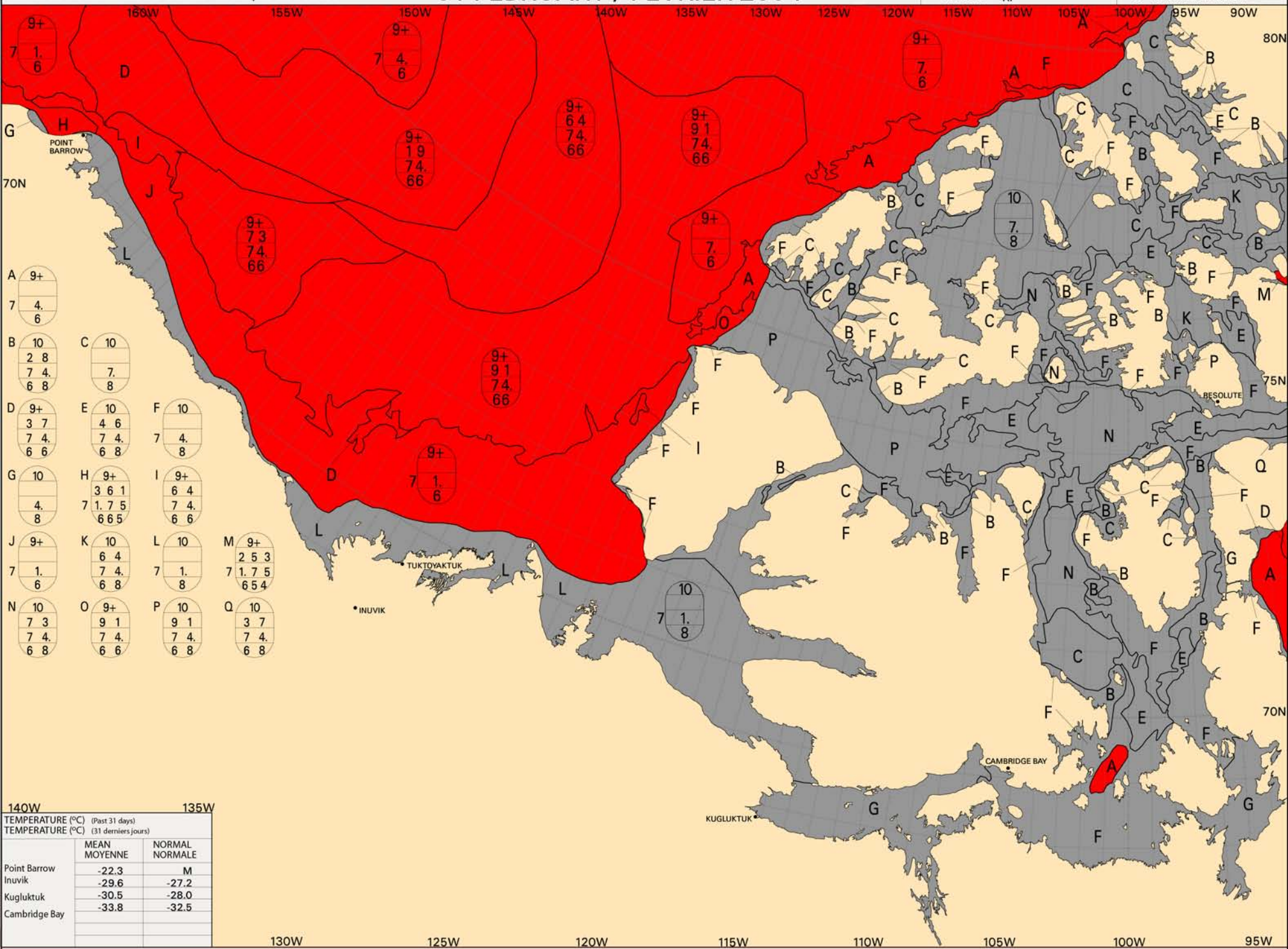

TEMPERATURE (°C) (Past 31 days)
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	MEAN MOYENNE	NORMAL NORMALE
Point Barrow	-22.3	M
Inuvik	-29.6	-27.2
Kugluktuk	-30.5	-28.0
Cambridge Bay	-33.8	-32.5

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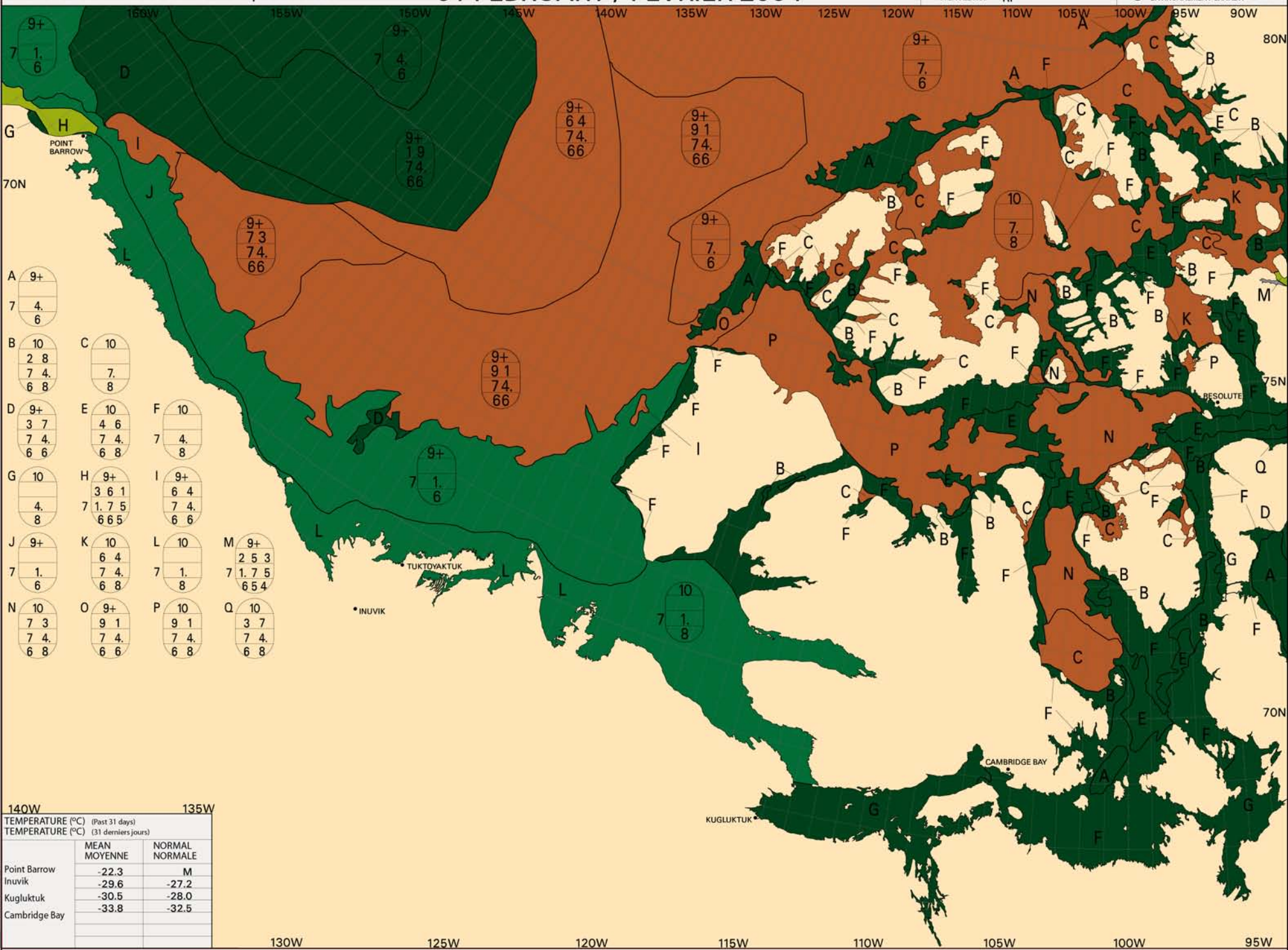

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- Thick First-year / Epaisse de première année
- Old ice / Vieille glace
- Second-year / Deuxième année
- Multi-year / Plusieurs années
- Undefined Fast Ice / Indéfini Banquise côtière
- Undefined / Indéterminée

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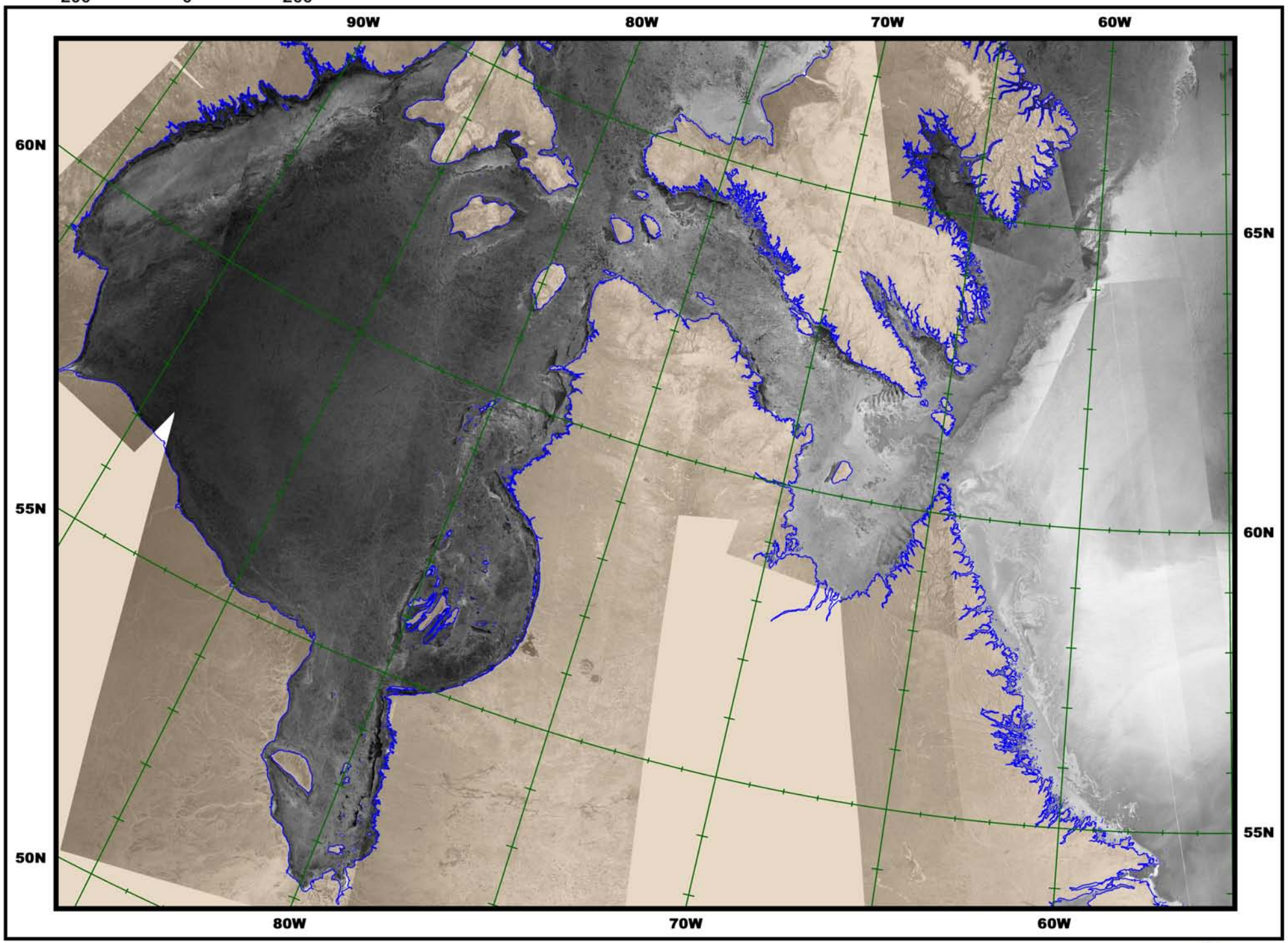
Scale / Échelle
200 0 200 Km

Hudson Bay / Baie d'Hudson



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Eastern Arctic / Arctique de l'est

Scale / Échelle
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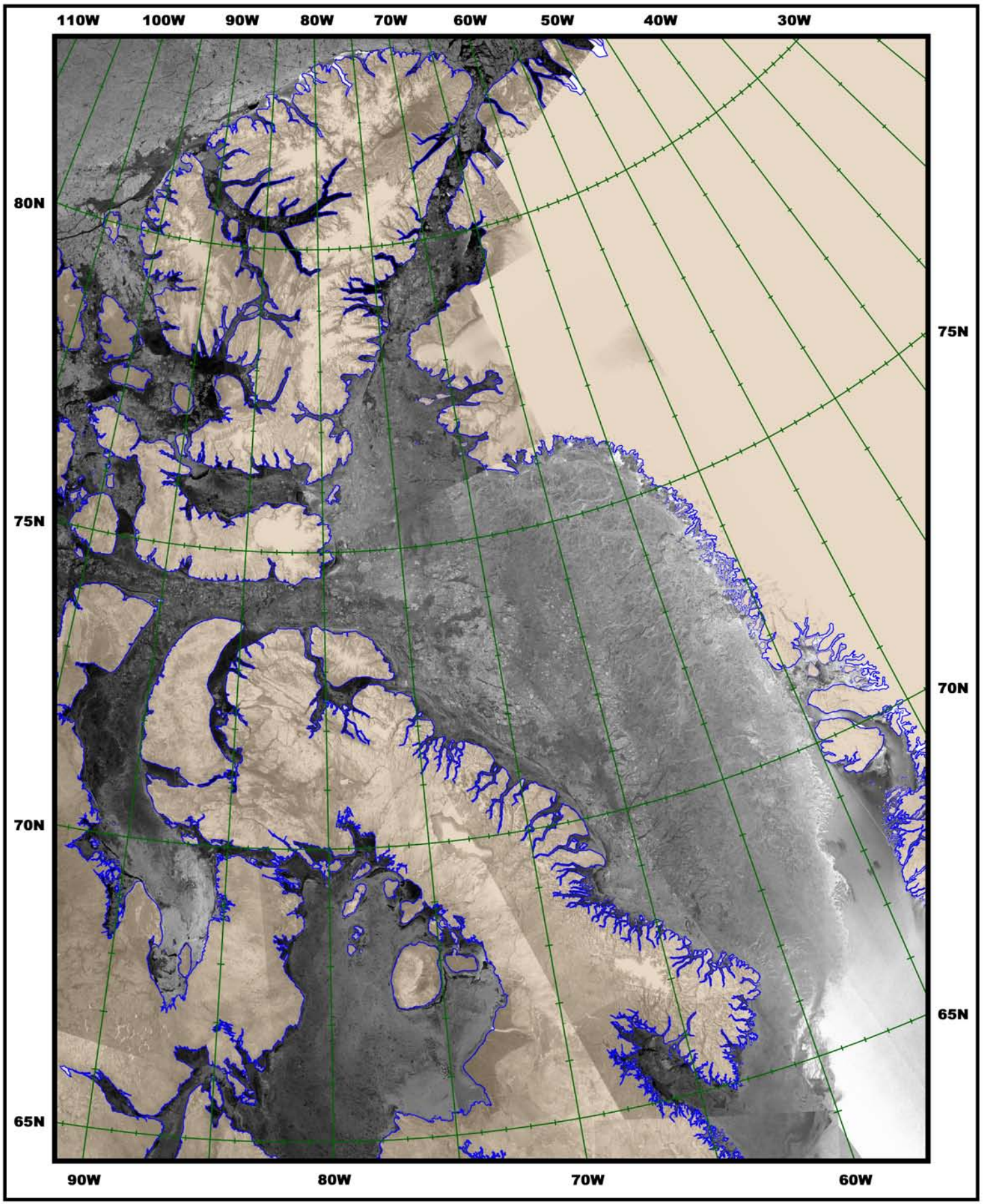

Canada

Western Arctic / Arctique de l'ouest

Scale / Échelle
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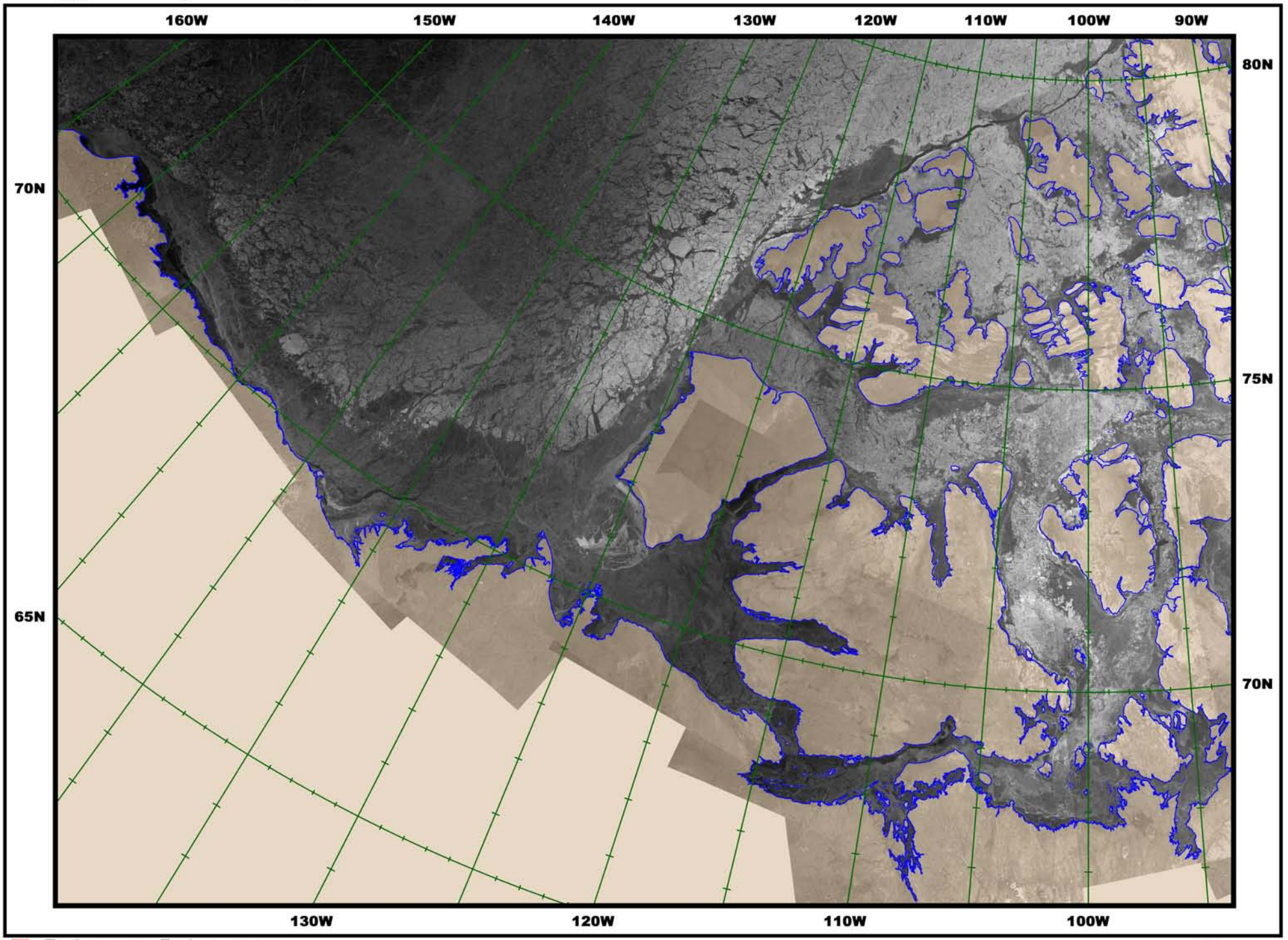

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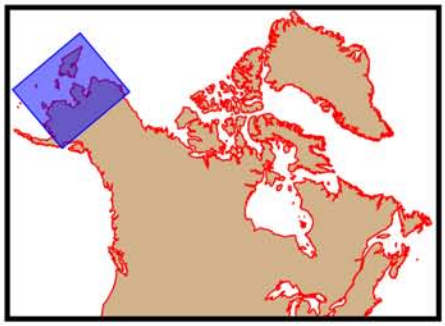
Chukchi Sea / Mer de Chukchi



Environment Canada / Environnement Canada

Scale / Échelle

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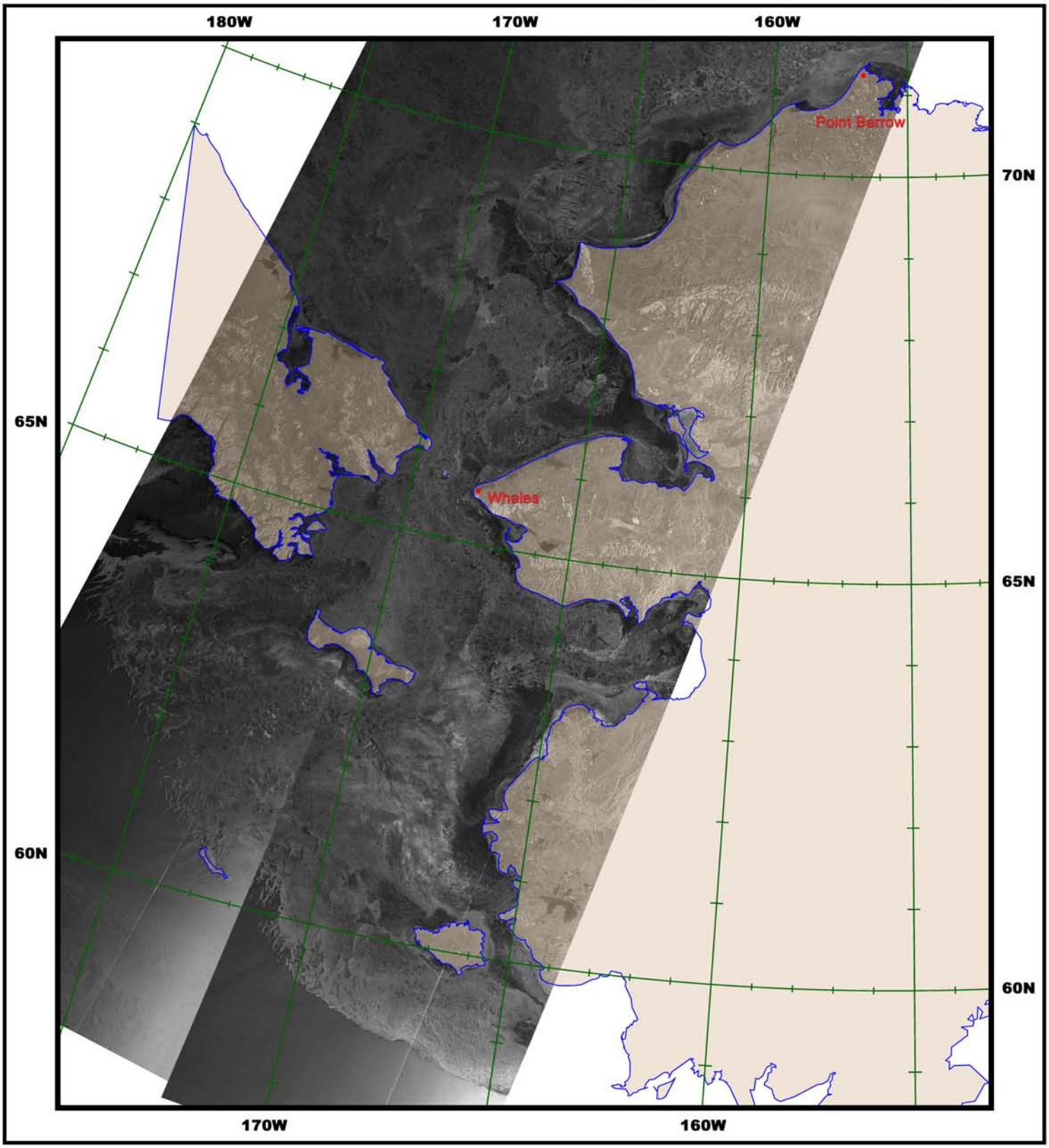


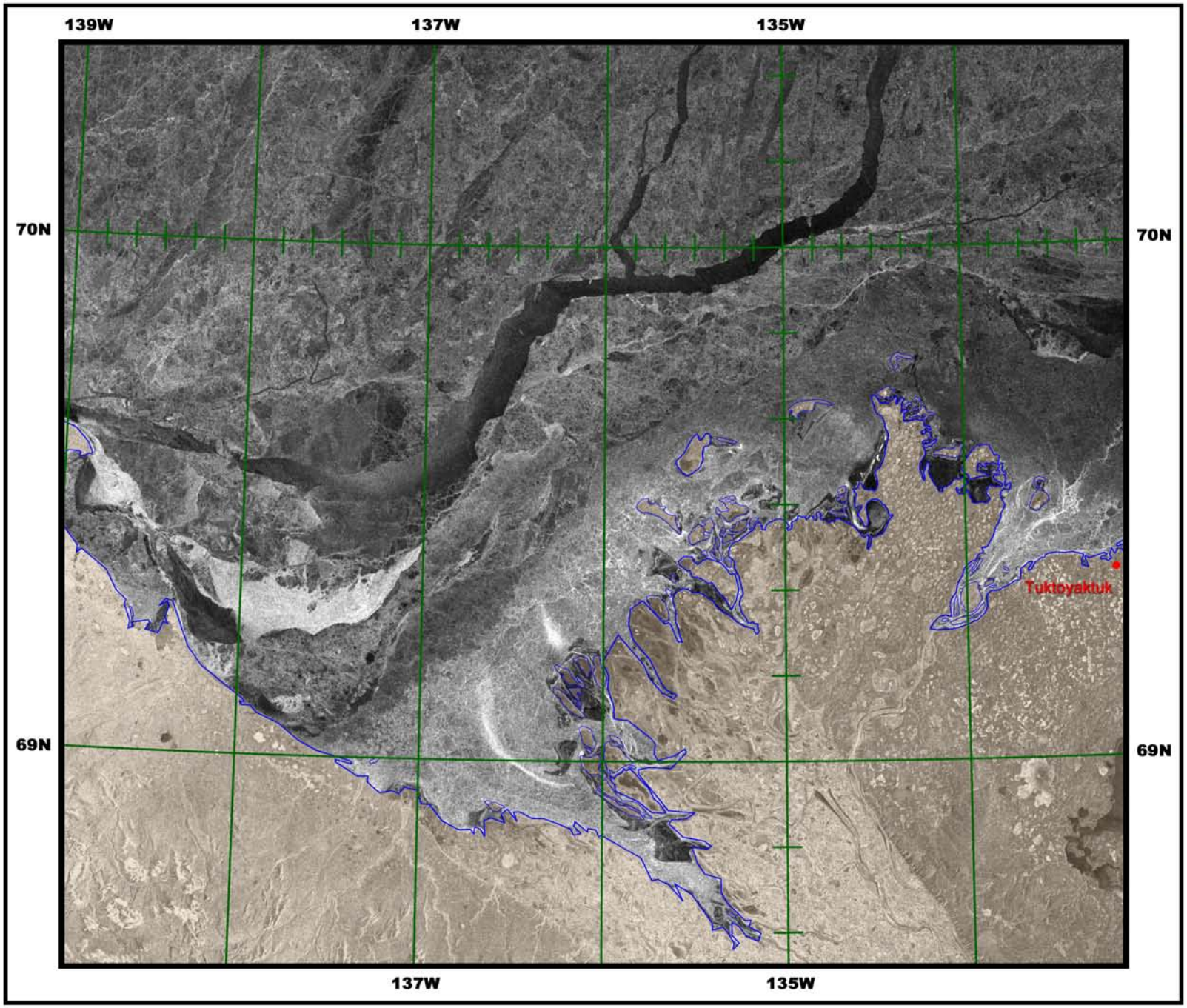
Canada

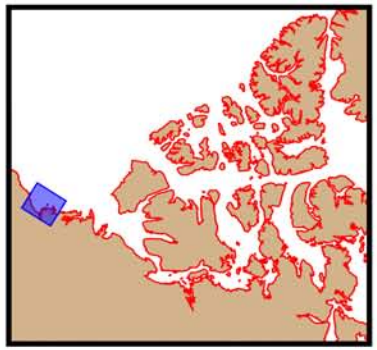
Environment Canada Environnement Canada

Mackenzie Bay / Baie Mackenzie

Scale / Échelle

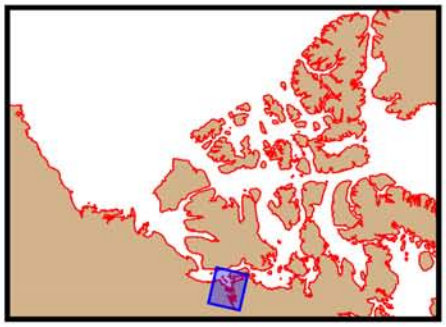
0 50 Km





Canada

Bathurst Inlet / Inlet Bathurst



Environment Canada | Environnement Canada

Scale / Échelle
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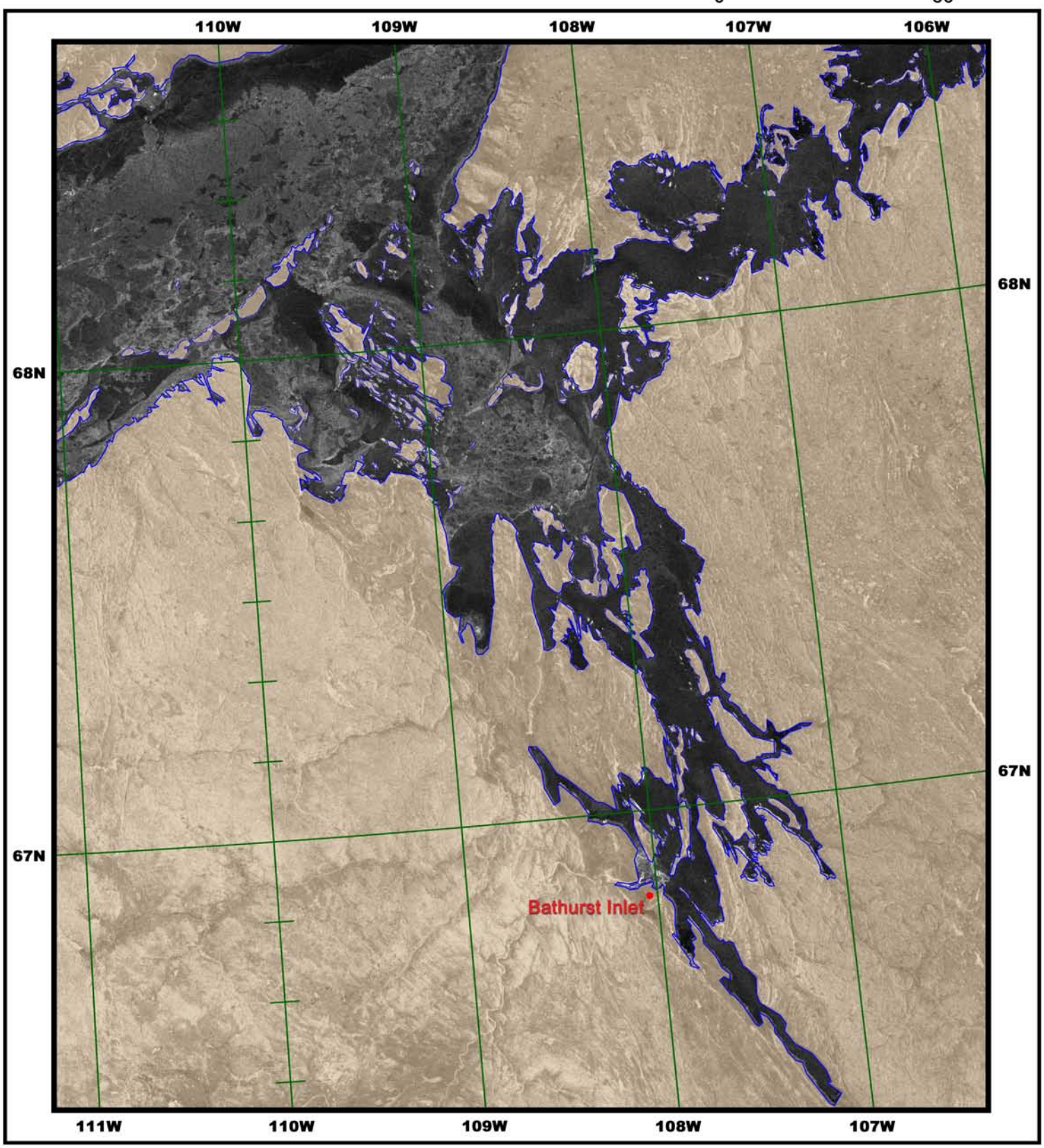
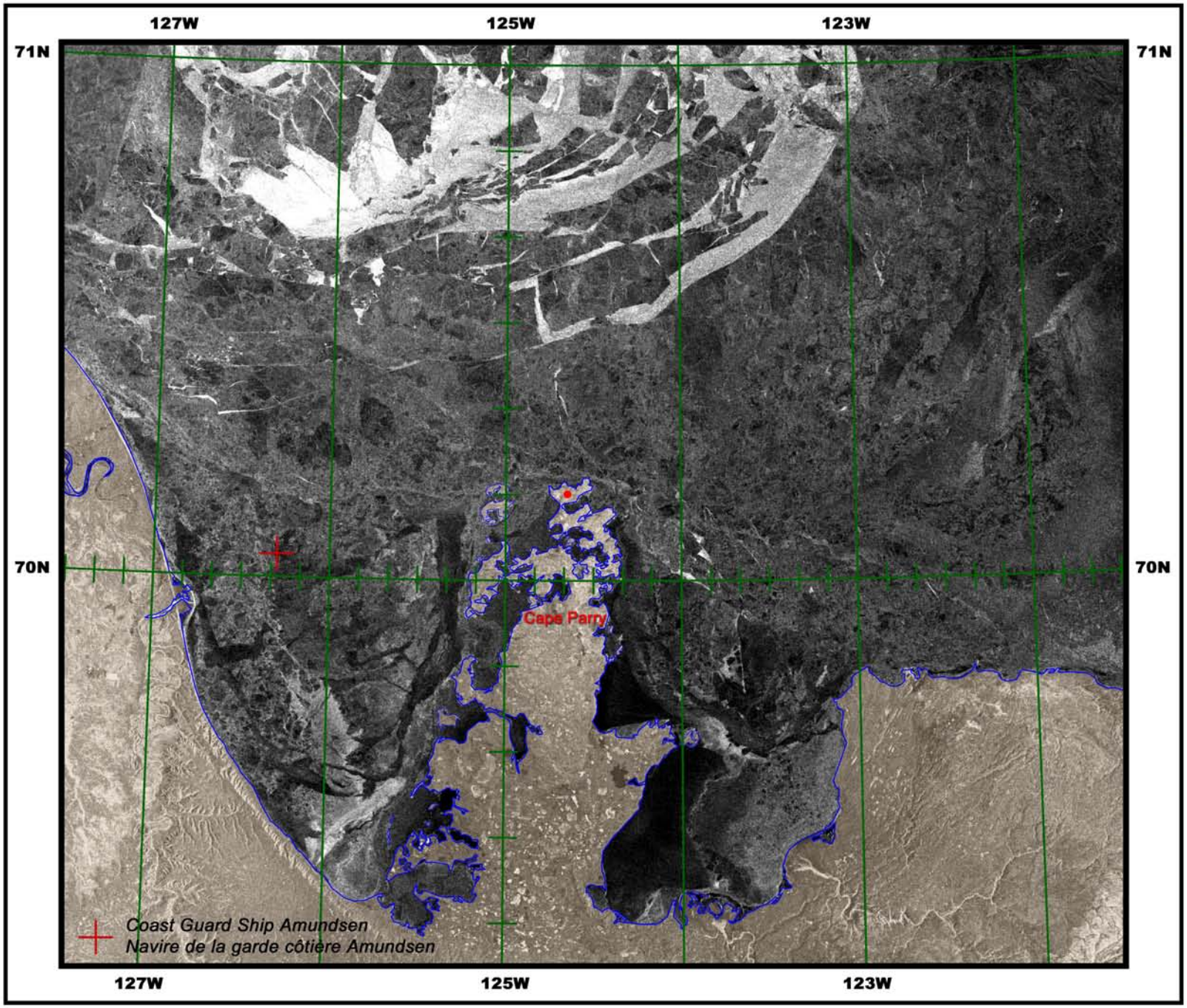


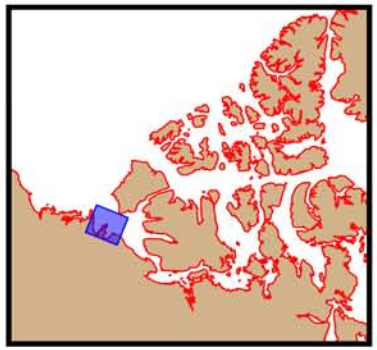
Canada

Environment Canada Environnement Canada

Franklin Bay / Baie Franklin

Scale / Échelle
0 50 Km





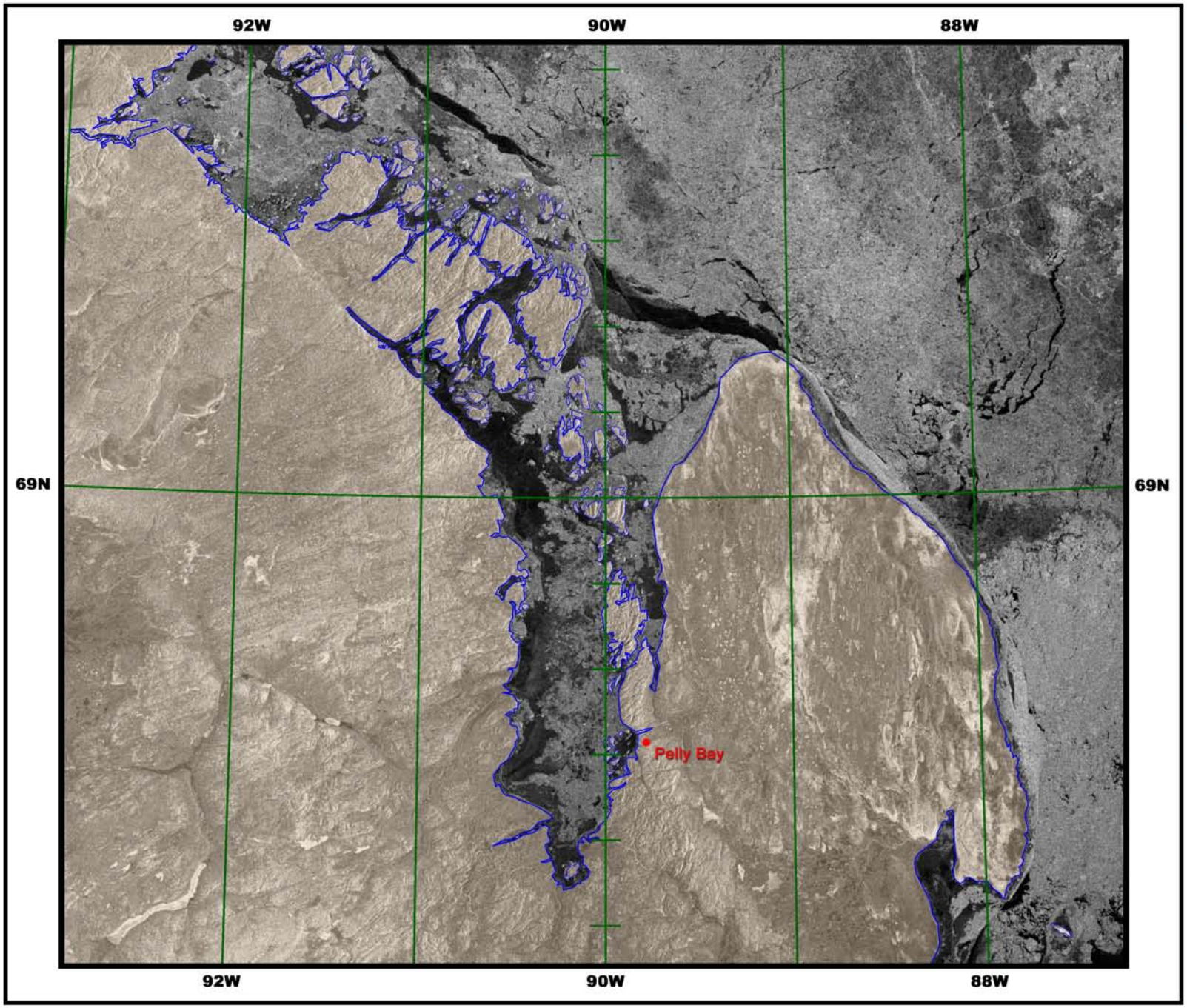
Canada

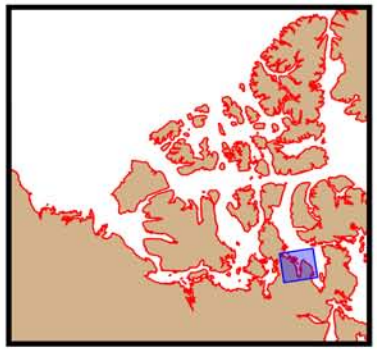
Environment Canada Environnement Canada

Pelly Bay / Baie Pelly

Scale / Échelle

0 50 Km





Canada

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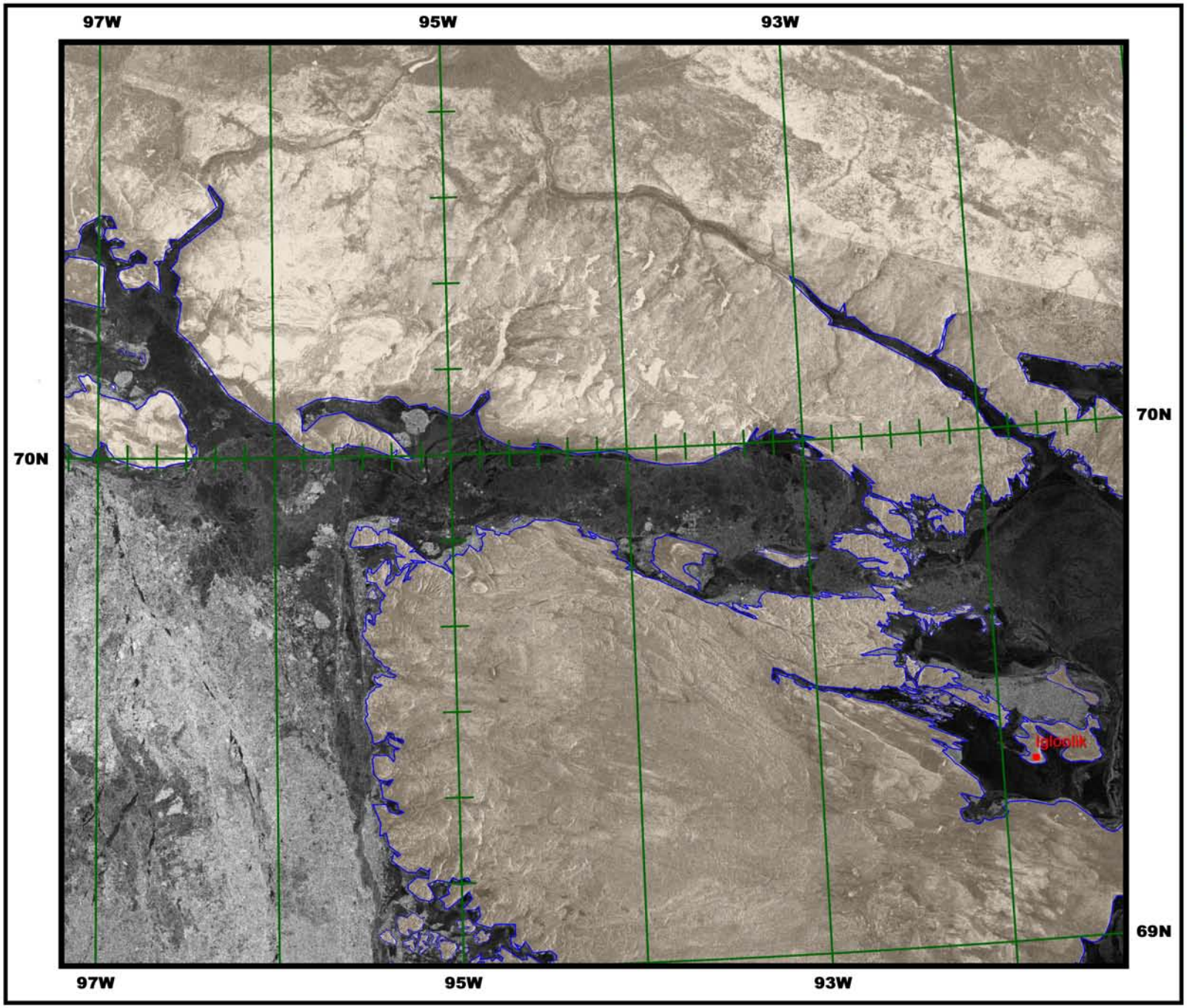
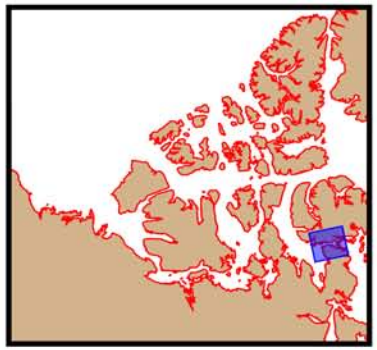
Fury and Hecla Strait / Détroit Fury et Hecla

Scale / Échelle

0 50 Km





Canada