Environment Canada Environnement Canada

Annual Arctic Ice Atlas

Winter 2011

By

Canadian Ice Service
Le service canadien des glaces

Canada

Foreword

The 2011 Annual Arctic Ice Atlas is part of a continuing series, prepared each year since 1990. These atlases document Arctic winter ice conditions with synthetic aperture radar (SAR). This collection provides graphical depictions of the ice conditions for comparison from year to year.

SAR data from the RADARSAT-2 satellite has been used primarily in the compilation of the image mosaics in this Atlas (please note that RADARSAT-1 data was used to fill occasional gaps). The data were captured by the Prince Albert (Saskatchewan) and Gatineau (Quebec) receiving stations, between January 28 and February 2, 2011.

In this atlas the Arctic is divided up into four main regions and three larger-scale snapshot regions. Three of the main regions (the Eastern Arctic, the Western Arctic, and Hudson Bay) include an analysis of the data as well as a SAR image mosaic. The ice analyses were created by Environment Canada's Canadian Ice Service (CIS) personnel, who used additional supporting information (including meteorological summaries, ice thickness reports and NOAA AVHRR imagery) in their preparation. An explanation of the nomenclature on the analysis charts can be found on the Key Ice Symbols page. A more detailed explanation of the terminologies is available in MANICE (Manual of Standard Procedures for Observing and Reporting Ice Conditions), prepared by Environment Canada's Meteorological Service.

For most regions, the SAR image mosaic represents a composite of orbits from several days. The period over which the data were acquired is noted on each page. Basic geographic annotation is provided on the mosaics as a reference. During the image production, the raw data were radiometrically adjusted and enhanced. The overlapping orbits were then digitally seamed together to give a balanced and finished picture. Although the data were captured at 50 metre / pixel spacing, the SAR data were analyzed at approximately 100 metre / pixel resolution, and the published image mosaics have been resampled to approximately 200-400 metre / pixel size.

The successful completion of this project was made possible with the able assistance of many people. The following contributions should be noted:

- Project Manager: Steve McCourt, (CIS)
- RADARSAT SAR data acquisition: MDA, Céline Fabi and Kathy Clevers (CIS)
- Mosaic production: Krystalyn Lausch (CIS-COOP)
- Image analysis: Raymond Ouellet, Langis de Ladurantaye, and Pierre Boivin (CIS)
- Climate summary: Gaetan Langlois and Lionel Haché (CIS)

Funding for this project was provided by the Canadian Coast Guard (Fisheries and Oceans Canada) and the Canadian Ice Service (Environment Canada).

Table of Content

Freeze-up

Hudson Bay and Approaches

Air temperatures averaged 2 to 4 degrees Celsius above normal throughout September and October, 6 to 8°C above normal in November and 12 to 16°C above normal from early December through to the third week of January. All ice cleared out of Foxe Basin in the first week of September, 2 to 3 weeks earlier than normal, and the entire region was ice-free by mid-September breaking the record for the lowest seasonal average ice coverage. Freeze-up was delayed in all areas with initial ice formation taking place during the first week of November along the shore of Foxe Basin, Southampton Island and along the western shore of Hudson Bay. Ice development was confined to these areas until mid-December due to the mild temperatures and strong winds associated with a continuous stream of low pressure systems moving through Hudson Bay, Foxe Basin and / or moving northward along the Labrador Coast into Baffin Bay. Therefore, the ice extent into all areas was slow to develop and was delayed by 6 weeks in Hudson Bay such that it was mid-January before it was ice covered. The ice migration and development eastward through Hudson Strait was delayed by as much as 8 weeks and only became ice covered during the last week of January. Ice formation in Frobisher Bay and along the Labrador Coast was also delayed by 8 weeks with new ice developing in the inner bays during the first week of January while new ice still predominated over the Labrador Coast by the end of January. Low ice coverage records were broken for all areas especially in Hudson Strait, Davis Strait, and the northern Labrador Sea where only 36% of normal ice coverage had developed by early January, becoming near normal coverage with new ice development for most areas by the end of January. The northern Labrador Sea, however, maintained record low amounts of ice coverage. The calculated theoretical ice thicknesses were much less than normal in all areas by the end of January.

By the third week of November new and grey ice with fast ice in sheltered bays had become established along the southwestern shore of Southampton Island and the western shore of Hudson Bay with new ice extending along Hudson Bay and James Bay western shores. In early December, grey ice covered much of Roes Welcome Sound and extended southward along the western shore of Hudson Bay to Churchill with mostly new ice further south along Hudson Bay southwestern shore and James Bay shores. Grey ice was also forming along the eastern Foxe Basin shore and in sheltered bays along the northeastern shore of Southampton Island at this time. Ice continued to spread south and eastward at a slower than normal pace through December with grey and grey-white ice forming southward through Foxe Basin and western Hudson Bay. New ice started to form in southern Ungava Bay and along the northwestern shore of Hudson Strait by the third week in December. By the end of December, most of Foxe Basin and western Hudson Bay was covered with grey and grey-white ice. New and grey

ice was becoming established over much of central Hudson Bay as well as western and southern James Bay. A large area of open water, at the end of December was still evident from southern Foxe Channel to central James Bay. The total ice coverage for Hudson Bay and approaches was 15% less than normal at this time setting a new 30 year minimum record. In early January, grey-white with thin first-year ice pushed southward into Foxe Channel with grey-white ice extending further east into central Hudson Bay and western James Bay. Ice growth was still well behind normal at this time with a large area of open water still remaining in southeastern Hudson Bay. Patchy new with some grey ice started forming in Hudson Strait at this time while Frobisher Bay remained opened with patchy new ice forming in the inner bay near Iqaluit and with a mix of new and grey ice drifting southward into the entrance of Frobisher Bay to Resolution Island. Hudson Bay did not completely freeze over until mid-January with ice thicknesses much less than normal with thin first-year ice predominating along with grey-white ice. Hudson Strait became ice covered during the last week of January with predominantly grey-white ice with thin first-year ice in the western portion and mainly grey and grey-white ice in the eastern entrance and into Ungava Bay. Low ice coverage records were broken for all areas and only 36% of normal ice coverage had developed by early January in Hudson Strait, Davis Strait and the northern Labrador Sea. The ice slowly formed and thickened to grey ice for the majority of Frobisher Bay during the last week of January with a tongue of thin first year ice drifting southward into the entrance of the Bay. Patchy new and grey ice started to form along the northern Labrador coast during the last week of January and thickened to mostly grey and grey-white ice and reached the approaches to Groswater Bay by mid February. The calculated theoretical ice thicknesses were less than normal in all areas with theoretical thicknesses varying from 15 cm thinner than normal in southern Hudson Bay to 30 cm thinner than normal in Foxe Basin, northern Hudson Bay, Hudson Strait, Ungava Bay and along the Labrador Coast. Theoretical ice thicknesses were as much as 44 cm thinner than normal in Frobisher Bay.

Eastern Arctic

Mean air temperatures in all areas of the Eastern Arctic were well above normal during freeze-up. The average temperatures were 2 to 4 degrees Celsius above normal from September through to mid-October then 8 to 10°C above normal through to the end of November. December and January saw average temperatures climb as much as 14 to 18°C above normal. Air temperatures cooled to near normal values only during the last week of January. The ice extent was less than normal at the beginning of the freeze-up season for most areas with very little to no sea ice in central and northern Norwegian Bay, Eureka Sound and Greely Fjord. However, above normal concentrations of multi-year ice flowed southward from the Lincoln Sea into Nares Strait at the beginning of the season and drifted southward into Baffin Bay, Jones Sound and Lancaster Sound during the freeze-up period. By the end of January, the ice extent was

near normal for most areas with the exception of the eastern sections of Baffin Bay and Davis Strait where less than normal conditions persisted with little to no sea ice formation along the Greenland Coast. Record breaking low ice coverage was seen throughout eastern Baffin Bay and Davis Strait. The calculated ice thickness was less than normal for all areas. Interestingly, the multi-year ice flowing southward through Nares Strait and into Jones Sound was pushed sufficiently westward by currents and easterly winds during early October to reach and join with the multi year ice drifting southeastward through southern Norwegian Bay at Cardigan Strait and Hell Gate.

At the end of the 2010 summer, less than normal ice concentrations prevailed for most areas with very little to no sea ice in central and northern Norwegian Bay, Eureka Sound and Greely Fjord. However, greater than normal concentrations of multi-year ice flowed southward from the Lincoln Sea into Nares Strait by consistent northerly winds. The prevailing northerly winds also maintained greater than normal ice concentrations in southern and western Norwegian Bay, Penny Strait and Queens Channel. Much warmer than normal air temperatures centered over Committee Bay provided lower than normal ice concentrations of primarily open drift ice in Committee Bay.

Freeze-up began with new ice forming in Eureka Sound, Norwegian Bay, Queens Channel and Nares Strait during the third week of September. New ice started to form in Jones Sound, Barrow Strait and Committee Bay during the first week of October. At this point ice formation was generally two weeks behind normal. By mid-October, new ice was forming in Lancaster Sound, Eclipse Sound, Prince Regent, Navy Board, and southern Admiralty Inlets. New ice was also forming in the Gulf of Boothia. The ice thickened during the third week of October to become grey and grey-white in Barrow Strait, Prince Regent Inlet and Lancaster Sound. The ice thickened to grey-white in Jones Sound, Norwegian Bay and became consolidated grey-white with scattered multi-year ice in Eureka Sound and Greely Fjord. At the same time the multi-year ice flowing southward through Nares Strait into Baffin Bay was pushed westward into Jones and Lancaster Sound by persistent easterly winds. During the first week of November new ice was starting to form in Foxe Basin with the ice edge in Baffin Bay extending southward to Clyde River. Freeze-up was about 2 weeks later than normal over Baffin Bay and approximately 4 weeks behind in Foxe Basin. Norwegian Bay became consolidated at this time. Ice slowly thickened to become generally thin first-year ice by the end of November from Jones Sound through Lancaster Sound, Prince Regent Inlet, Admiralty Inlet and southward to the Gulf of Boothia. By the third week of December, Foxe Basin became completely ice covered. The ice edge in Baffin Bay finally pushed south of the Cumberland Peninsula in mid-December; four weeks behind normal. The eastward extent of the Baffin Bay sea ice was also much less than normal with an area of bergy water extending northward along the Greenland Coast into Melville Bay. Ice development in Cumberland Sound was even further behind

normal with new ice forming in late December and into the first week of January, seven weeks behind normal, resulting in record breaking low ice coverage for Baffin Bay and Davis Strait where only 60 % of normal ice coverage had developed by early January. The Cumberland Sound ice thickened to grey and grey-white in mid-January to become mostly thin first-year by the end of January. Western Jones Sound became consolidated by the end of January while central and eastern Jones Sound remained mobile. By the beginning of February, Kane Basin became consolidated and the first-year ice thickened to thick first-year ice in the high Arctic with medium first-year ice extending south from Kane Basin into Lancaster Sound, Prince Regent Inlet / Gulf of Boothia and along Baffin Bay into Davis Strait. Embedded very open drift multi-year ice could be found just east of Jones Sound into Lancaster Sound and Prince Regent Inlet as well as southward along Baffin Bay to Cape Dyer. By early February, Foxe Basin was covered with thin and medium first-year ice and the ice extent was near normal for most areas with the exception of eastern Baffin Bay and Davis Strait. Very little to no sea ice formation occurred along the Greenland Coast revealing an area of bergy water along the coast up to southern Melville Bay. The calculated theoretical ice thicknesses were less than normal in all areas with theoretical thicknesses varying from 15 cm thinner than normal in Eureka Sound to as much as 44 cm thinner than normal in Cumberland Sound and Frobisher Bay.

Western Arctic

Mean average air temperatures in all areas were generally 3ºC above normal in early September and became near normal by late September and into the first week of October. The air temperature was generally 6ºC above normal for the remainder of October and November, including a period of up to 10ºC above normal during the last week of October. The months of December and January saw temperatures returning to 3ºC above normal in general intermixed with periods of below normal temperatures during the second week of December and the last week of January.

At the beginning of freeze-up the ice concentration in the Arctic Ocean ice pack was much less than normal, the third lowest on record after 1998 and 2008. Only a trace to very open drift multi-year ice was evident south of 78ºN and west of 142ºW and then open drift multi-year ice south of 82ºN and west of 140ºW. Moreover, an unusual band of very open drift thick first-year ice with a trace of multi-year ice persisted through the summer months and remained along the Alaskan Coast from Prudhoe Bay to Cape Halkett. Meanwhile, mostly open water prevailed in western Parry Channel by mid-September, setting a new record for lowest ice coverage in that area. South of Parry Channel, an area of primarily multi-year ice remained in southern M'Clintock Channel with a tongue of multi-year ice extending north and south. Ice concentrations into southwestern Larsen Sound, Victoria Strait and northern Queen Maud Gulf were greater than normal at the end of the melt season due to ice drifting from M'Clintock Channel.

Freeze-up started in mid-September with new ice forming between the predominantly multi-year ice floes in Sverdrup Channel, Maclean Strait and Queens Channel. New ice began forming in Parry Channel, Prince of Wales Strait and along the Arctic Ocean ice pack by the first week of October. There was slow and steady ice growth and expansion in October. The new ice thickened to grey and grey-white ice by mid-October throughout M'Clure Strait, Viscount Melville Sound, Barrow Strait, M'Clintock Channel, Peel Sound, and along the Arctic Ocean ice pack. At the same time, new ice started to form in the Mackenzie Delta as well as the Alaskan Coast and along the southern edge of the Arctic Ocean ice pack. By early November, the new ice thickened to predominantly thin first-year in Parry and M'Clintock Channels but remained mostly grey-white in Prince of Wales Strait and Peel Sound. New ice started to form in Larsen Sound and along the shores of Queen Maud Gulf. New ice also formed in early November along the western shore and the southern tip of Banks Island. The ice west of the Tuktoyaktuk Peninsula and along the Alaskan Coast thickened to grey ice at this time and new ice continued to migrate southward along the southern edge of the Arctic Ocean pack. During the second week of November, new ice formed along the shores of southern Victoria Island into Amundsen Gulf and Coronation Gulf. The ice also continued to form and thicken and completely cover Queen Maud Gulf. However; large open water areas were still evident throughout much of Coronation Gulf, Amundsen Gulf, and in the Beaufort Sea between the Alaskan Coast ice and the Arctic pack. Freeze-up progressed quickly and by the third week of November the Western Arctic became completely ice covered, three weeks behind normal. Open drift multi-year ice continued its southwesterly motion from the Arctic Ocean toward the Alaskan Coast and a combination of grey-white and thin first-year ice predominated in Amundsen Gulf, Coronation Gulf, and Queen Maud Gulf as well as the Alaskan Coast at this time. The developing ice continued to slowly thicken in December to become medium first-year ice north of Parry Channel and thin first-year south of the channel. By mid-December the ice consolidated in Prince of Wales Strait, Minto Inlet, Prince Albert Sound, Coronation Gulf and Rasmussen Basin. The ice was slow to consolidate in the High Arctic especially in Prince Gustaf Adolf Sea and Byam Martin Channel where moderate to strong northerly winds prevented the ice from becoming consolidated until the third week of December.

By the beginning of January, most waterways of the Queen Elizabeth Islands became consolidated with the exception of Queens Channel north of Cornwallis Island where it remained mobile until the last week of January. Queen Maud Gulf became consolidated by mid-January; however, most of Viscount Melville Sound, M'Clintock Channel and Larsen Sound remained mobile until the end of January, only to become completely consolidated by mid-February. The ice also continued to thicken reaching medium first-year ice south of Parry Channel and thick first-year north of the channel by the end of January. At that time, the main multi-year Arctic Ocean ice pack was located about 40 kilometres west of Banks Island to

175 kilometres north of the Tuktoyaktuk Peninsula and 175 kilometres northeast of Point Barrow. A trace of multi-year ice lay west of Point Barrow due to the westward migration of the remnant Alaskan Coast summer ice band and from the advancement of the Arctic Ocean ice pack. The calculated ice thicknesses were slightly below normal varying from 12 to16 cm less than normal for most areas and up to 22 cm less than normal in the Queens Channel and Barrow Strait area near Cornwallis Island.

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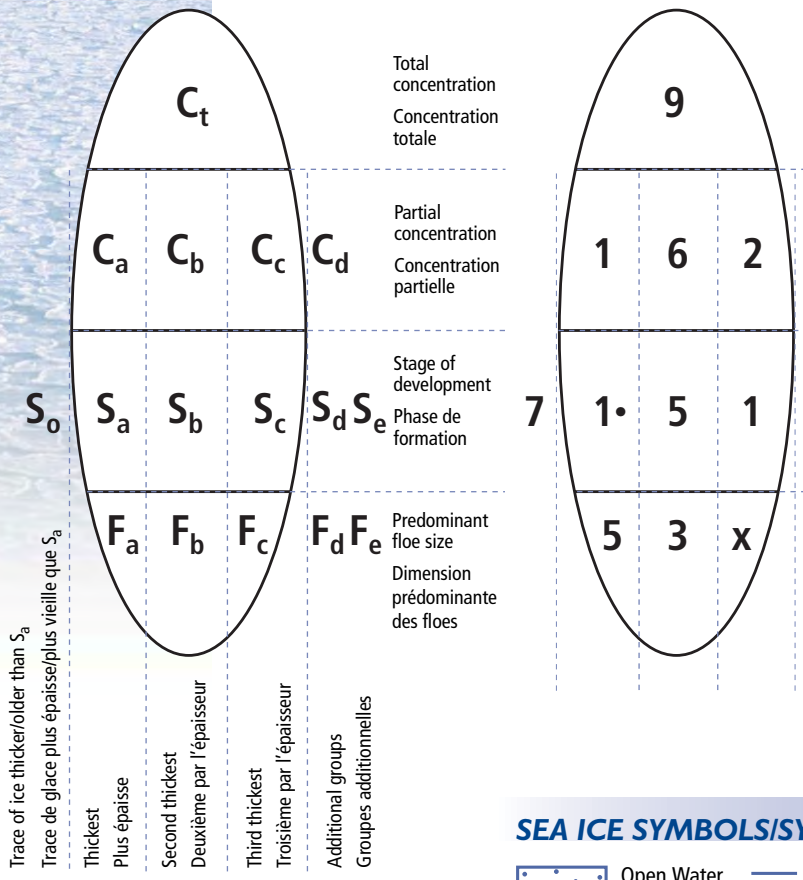
FACT SHEET / FICHE D'INFORMATION

SEA ICE SYMBOLS
SYMBOLES DE LA GLACE DE MER

2009



Total concentration: the ice coverage of an area determined by its concentration and expressed in tenths (in this example, 9/10).
Concentration totale : l'étendue de la couverture de glace, exprimée en dixièmes de la superficie du secteur (dans cet exemple, 9/10).

Partial concentration: the break-down of the total ice coverage expressed in tenths and graded by thickness. The thickest starting from the left and in this example, 1/10 is the thickest.
Concentration partielle : les concentrations respectives, exprimées en dixièmes, des glaces de différente épaisseur, par ordre décroissant. La plus épaisse commence à la gauche du diagramme, c'est-à-dire, 1/10 est le plus épais.

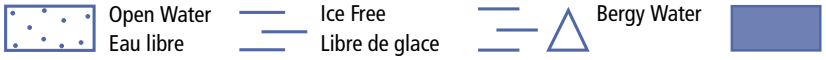
Stage of development: the type of ice in each of the grades, determined by its age, that is 1/10 is medium first-year ice (1•), 6/10 is grey-white ice (5) and 2/10 is new ice (1). Trace of old ice is represented on the lefthand side (outside the egg) by the number 7.
Stade de développement : le type de glace de chacune des catégories déterminé par son âge, c'est-à-dire, 1/10 est de la glace moyenne de première année (1•), 6/10 est de la glace blanchâtre (5), et 2/10 est de la nouvelle glace (1). Une trace de vielle glace est représentée à gauche (à l'extérieur de l'oeuf) par le chiffre 7.

Floe size: the form of the ice determined by its floe size for each section. In this example, big floes (5) for medium first-year ice (1•); small floes (3) for grey-white ice (5); and undetermined, unknown or no form floes (x) for new ice (1).
Taille des floes : la forme de la glace, déterminée par la taille des floes dominants de chaque section. Dans cette exemple, grands floes (5) pour la glace moyenne de première année (1•); petits floes (3) pour glace blanchâtre (5)et floes indéterminée, inconnue ou sans forme (x) pour la nouvelle glace (1).

Note: When an ice type has a dot (•) every other value to the left of it is also considered to have a dot.

Remarque: Lorsqu'un nombre est suivi d'un point (•), toute autre valeur apparaissant à sa gauche est également pointée.

SEA ICE SYMBOLS/SYMBOLES DE LA GLACE DE MER



Stage of Development/Stade de développement ($S_oS_aS_bS_cS_dS_e$)

Description/Élément	Thickness/Épaisseur	Code
New ice/Nouvelle glace	<10 cm	1
Nilas; ice rind/Nilas glace, vitrée	<10 cm	2
Young ice/Jeune glace	10-30 cm	3
Grey ice/Glace grise	10-15 cm	4
Grey-white ice/Glace blanchâtre	15-30 cm	5
First-year ice/Glace de première année	30 cm	6
Thin first-year ice/Glace mince de première année	30-70 cm	7
Medium first-year/ Glace moyenne de première année	70-120 cm	1•
Thick first-year ice/Glace épaisse de première année	>120 cm	4•
Old ice/Vieille glace		7•
Second-year/Glace de deuxième année		8•
Multi-year/Glace de plusieurs années		9•
Ice of land origin/Glace d'origine terrestre		▲•
Undetermined, unknown or no form/ Indéterminée, inconnue ou sans forme		X

Floe Size/Grandeur des floes ($F_aF_bF_c$)

Description/Élément	Width/Extension	Code
Pancake ice/Glace en crêpes		0
Small ice cake, brash ice/Petit glaçons, sarrasins	<2 m	1
Ice cake/Glaçons	2-20 m	2
Small floe/Petits floes	20-100 m	3
Medium floe/Floes moyens	100-500 m	4
Big floe/Grands floes	500-2000 m	5
Vast floe/Floes immenses	2-10 km	6
Giant floe/Floes géants	>10 km	7
Fast ice/Banquise côtière		8
Icebergs		9
Undetermined, unknown or no form/ Indéterminée, inconnue ou sans forme		X
Strips (concentration = C)/ Glace en cordons (concentration = C)		∽C

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Canadian Ice Service/Service canadien des glaces (CIS/SCG)

Client Services/Service à la clientèle
373 promenade Sussex Drive, E-3
Ottawa, Ontario
K1A 0H3

Tel./Tél.: 1-800-767-2885 (Canada) and/et 613-996-1550
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Email/Courriel: cis-scg.client@ec.gc.ca
Web site/Site web: http://ice-glaces.ec.gc.ca

Canada

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SEA ICE SYMBOLS
SYMBOLES DE LA GLACE DE MER

WMO Concentration Colour Code – Sea Ice
Code de couleurs de l'OMM – Concentration – Glace de mer

- Ice Free / Libre de glace
- < 1/10
- 1-3/10
- 4-6/10
- 7-8/10
- 9-10/10
- Fast Ice / Banquise côtière
- ??? Undefined / Non-définie

Optional/Facultatif

- 7/10 New Ice / Nouvelle glace
- 9+-10/10 Nilas, Grey Ice / Glace grise**

Colour is based on total ice concentration.

La couleur utilisée est établie en fonction de la concentration totale de la glace.

** The optional colour indicating 9/10+-10/10 of nilas or grey ice indicates level ice, mainly on leads; it is not used for ice broken into brash or ice cakes or for concentrations less than 9/10+.

La couleur optionnelle désignant 9/10+-10/10 de nilas ou de glace grise indique de la glace uniforme se retrouvant surtout dans les chenaux; elle n'est pas utilisée pour désigner des sarrasins, des glaçons ou des concentrations de glace inférieures à 9/10+.

Concentration of Ice
Concentrations de glace

	<1/10	Open water/ Eau libre
	1–3/10	Very open drift/ Banquise très lâche
	4–6/10	Open drift/ Banquise lâche
	7–8/10	Close pack/Drift Banquise serrée
	9/10	Very close pack/ Banquise très serrée
	9+/10	Very close pack/ Banquise très serrée
	10/10	Compact/Consolidated ice Banquise compact/consolidée

WMO Stage of Development Colour Code – Sea Ice
Code de couleurs de l'OMM – Stade de développement – Glace de mer

- Ice Free / Libre de glace
- Open Water / Eau libre
- New Ice / Nouvelle glace *< 10 cm*
- Grey Ice / Glace grise *10-15 cm*
- Grey-White Ice / Glace blanchâtre *15-30 cm*
- First-Year Ice / Glace de première année *>= 30 cm*
- Thin First-Year Ice / Glace mince de première année *30-70 cm*
- Medium First-Year Ice / Glace moyenne de première année *70-120 cm*
- Thick First-Year Ice / Glace épaisse de première année *120 cm >*
- Old Ice / Vieille glace
- Second-Year Ice / Glace de deuxième année
- Multi-Year Ice / Glace de plusieurs années
- Fast Ice / Banquise côtière
- ??? Undefined Ice / Glace non-définie
- Icebergs

Colour is based on stage of development of predominant ice.

La couleur utilisée est établie en fonction du stade de développement de la glace prédominante.

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Fax: 613-947-9160
Email/Courriel: cis-scg.client@ec.gc.ca
Web site/Site web: http://ice-glaces.ec.gc.ca

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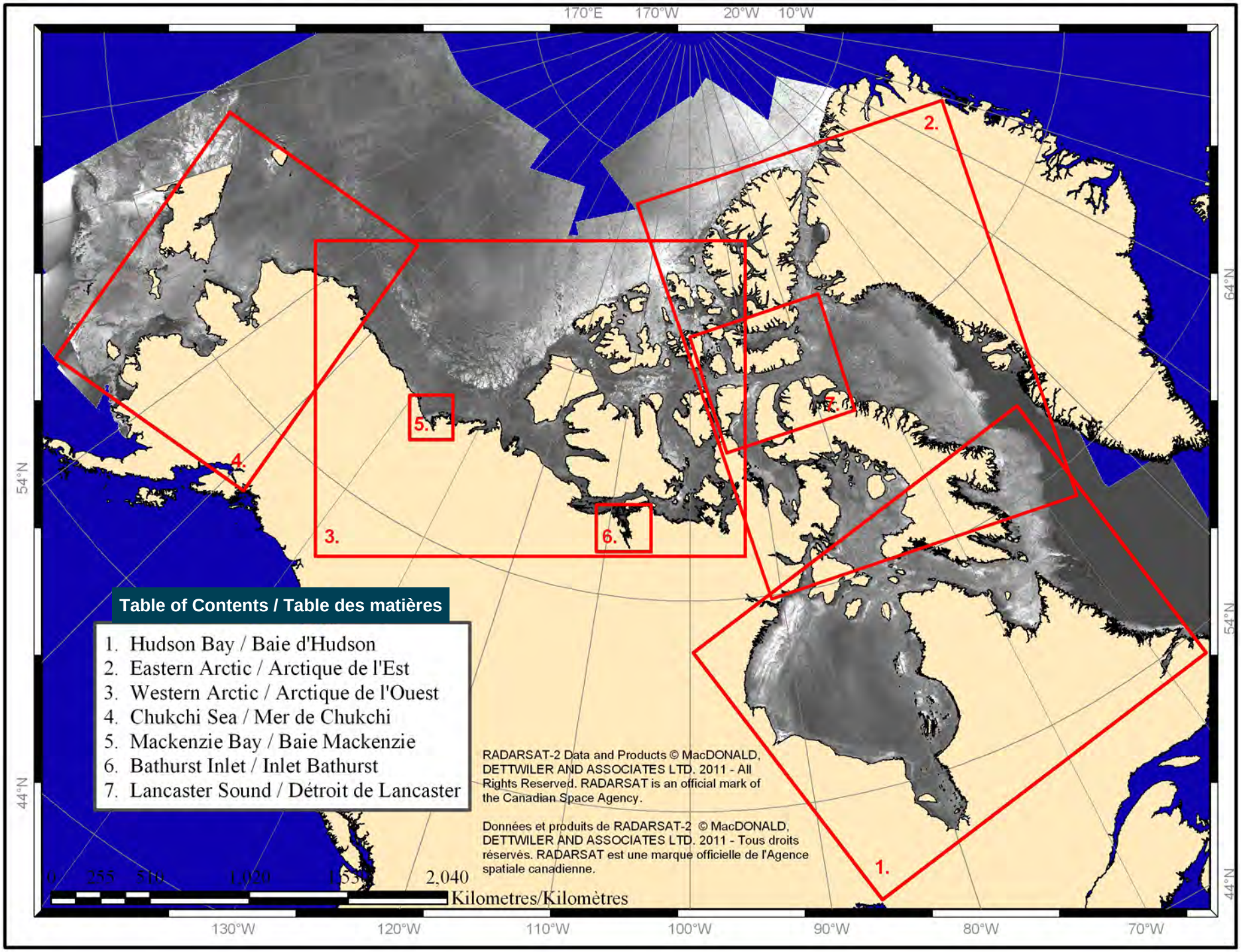
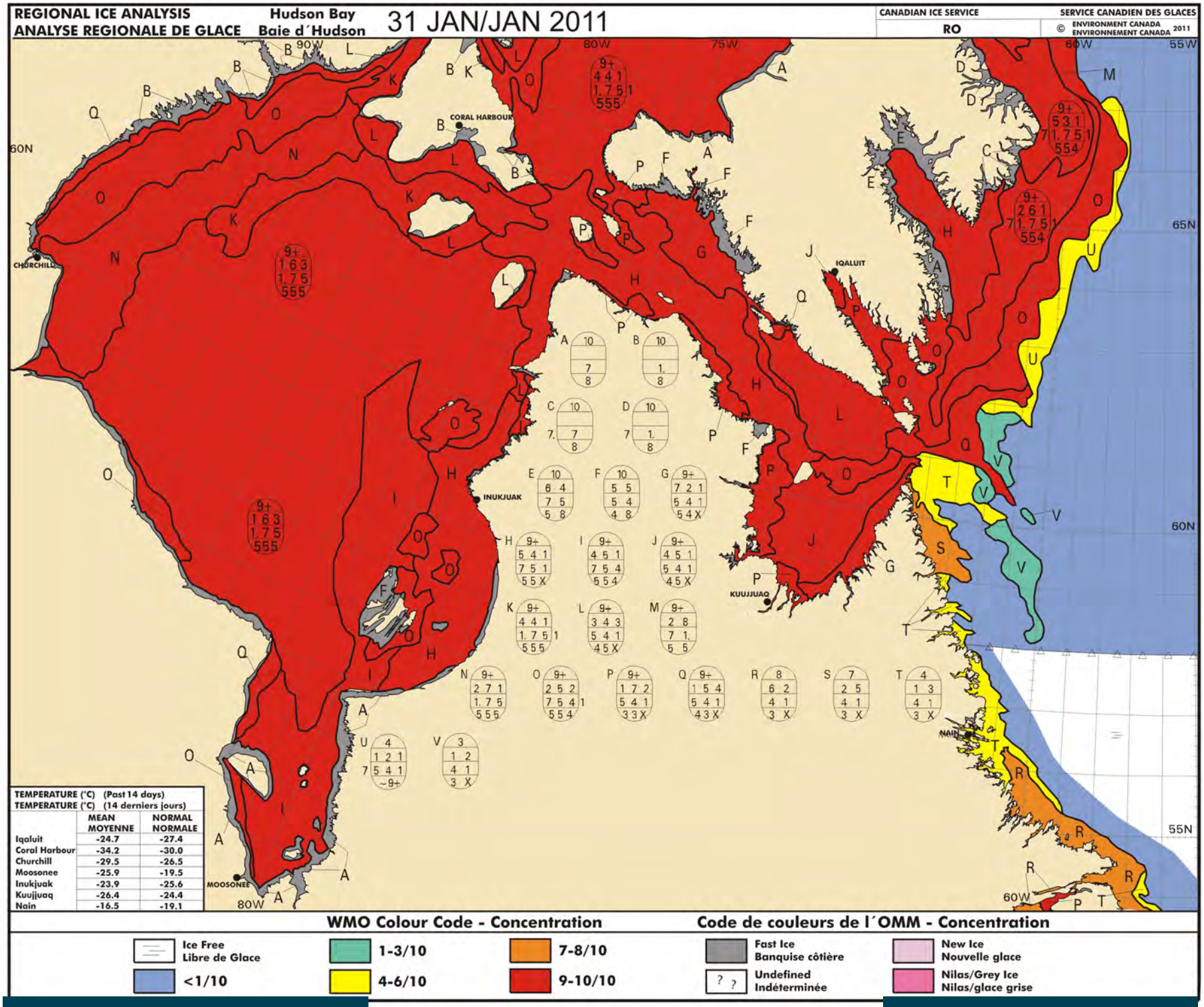
CANADIAN ARCTIC ICE CHART AND SAR IMAGE REGIONS / LES RÉGIONS POUR LES CARTES DES GLACES RÉGIONALES ET LES IMAGES ROS




REGIONAL ICE ANALYSIS
ANALYSE REGIONALE DE GLACE
Hudson Bay
Baie d´Hudson
31 JAN/JAN 2011
CANADIAN ICE SERVICE
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SERVICE CANADIEN DES GLACES
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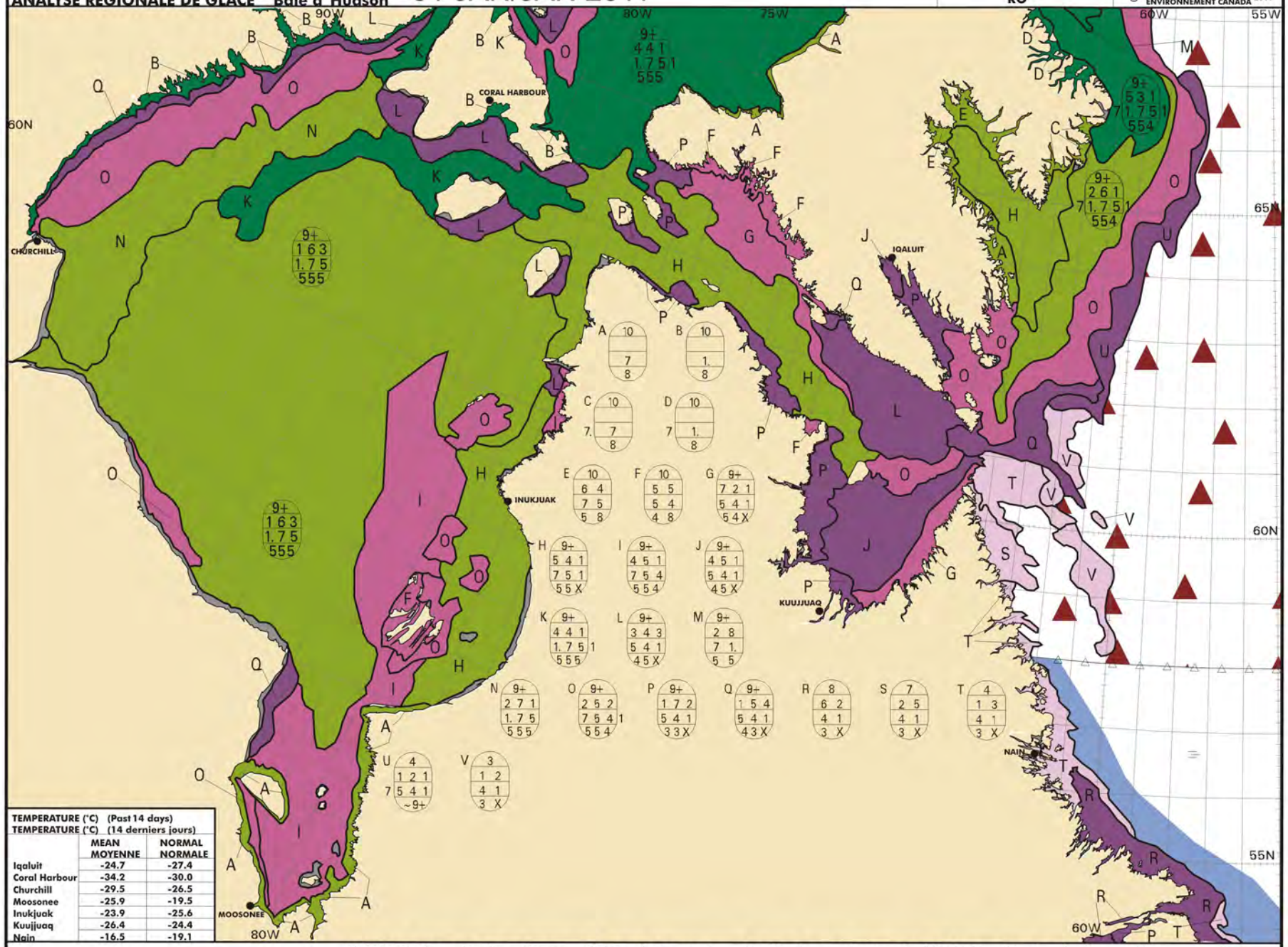
CORAL HARBOUR
CHURCHILL
IQALUIT
INUKJUAK
KUUJJUAQ
NAIN
MOOSONEE
90W
80W
75W
60W
55W
60N
65N
55N
TEMPERATURE (°C) (Past 14 days)
TEMPERATURE (°C) (14 derniers jours)
MEAN MOYENNE
NORMAL NORMALE
Iqaluit -24.7 -27.4
Coral Harbour -34.2 -30.0
Churchill -29.5 -26.5
Moosonee -25.9 -19.5
Inukjuak -23.9 -25.6
Kuujjuaq -26.4 -24.4
Nain -16.5 -19.1
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**

31 JAN/JAN 2011

CANADIAN ICE SERVICE | SERVICE CANADIEN DES GLACES
RO

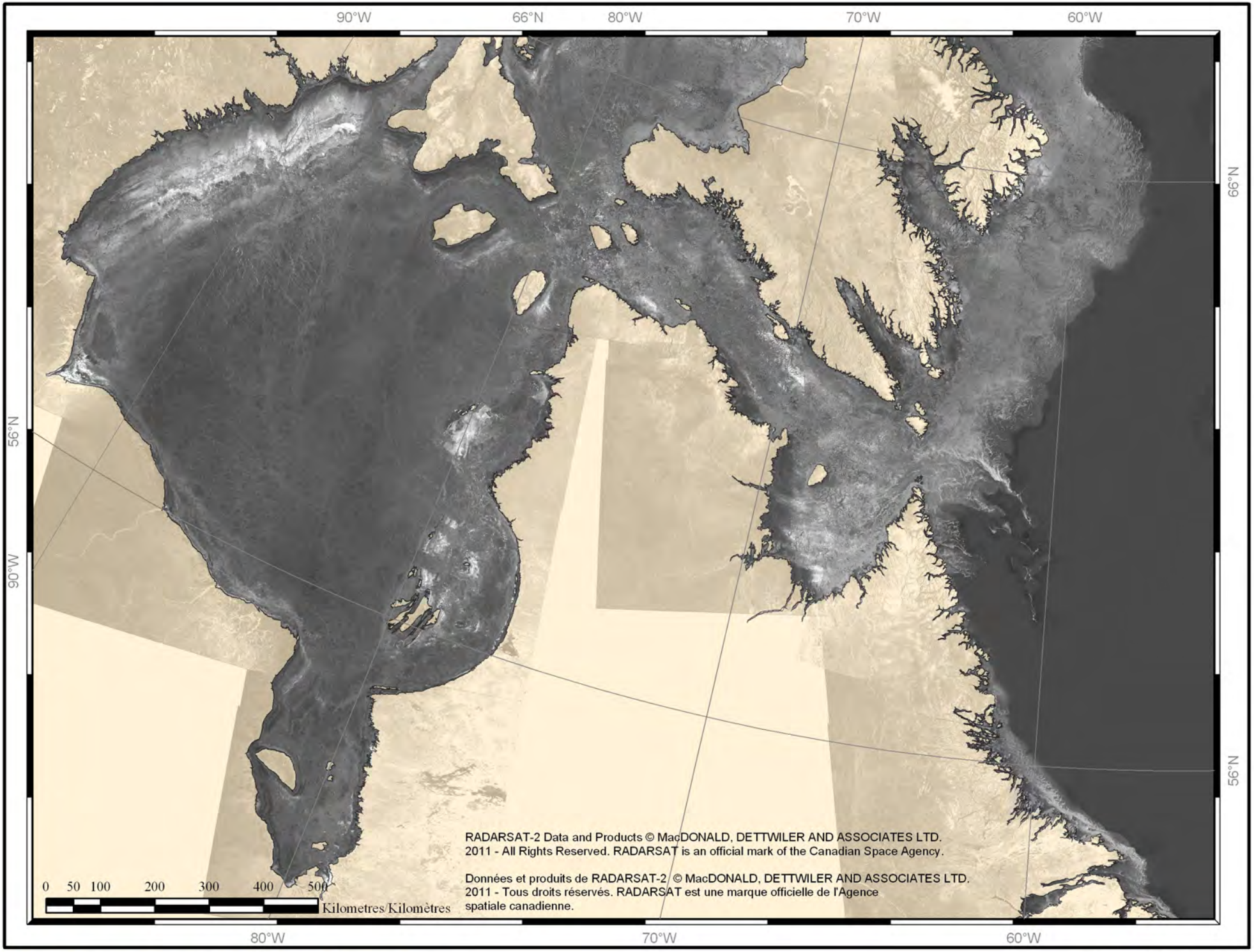


TEMPERATURE (°C) (Past 14 days)
TEMPERATURE (°C) (14 derniers jours)

	MEAN MOYENNE	NORMAL NORMALE
Iqaluit	-24.7	-27.4
Coral Harbour	-34.2	-30.0
Churchill	-29.5	-26.5
Moosonee	-25.9	-19.5
Inukjuak	-23.9	-25.6
Kuujjuaq	-26.4	-24.4
Nain	-16.5	-19.1

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



Hudson Bay / Baie d'Hudson

01/28/2011 - 01/31/2011

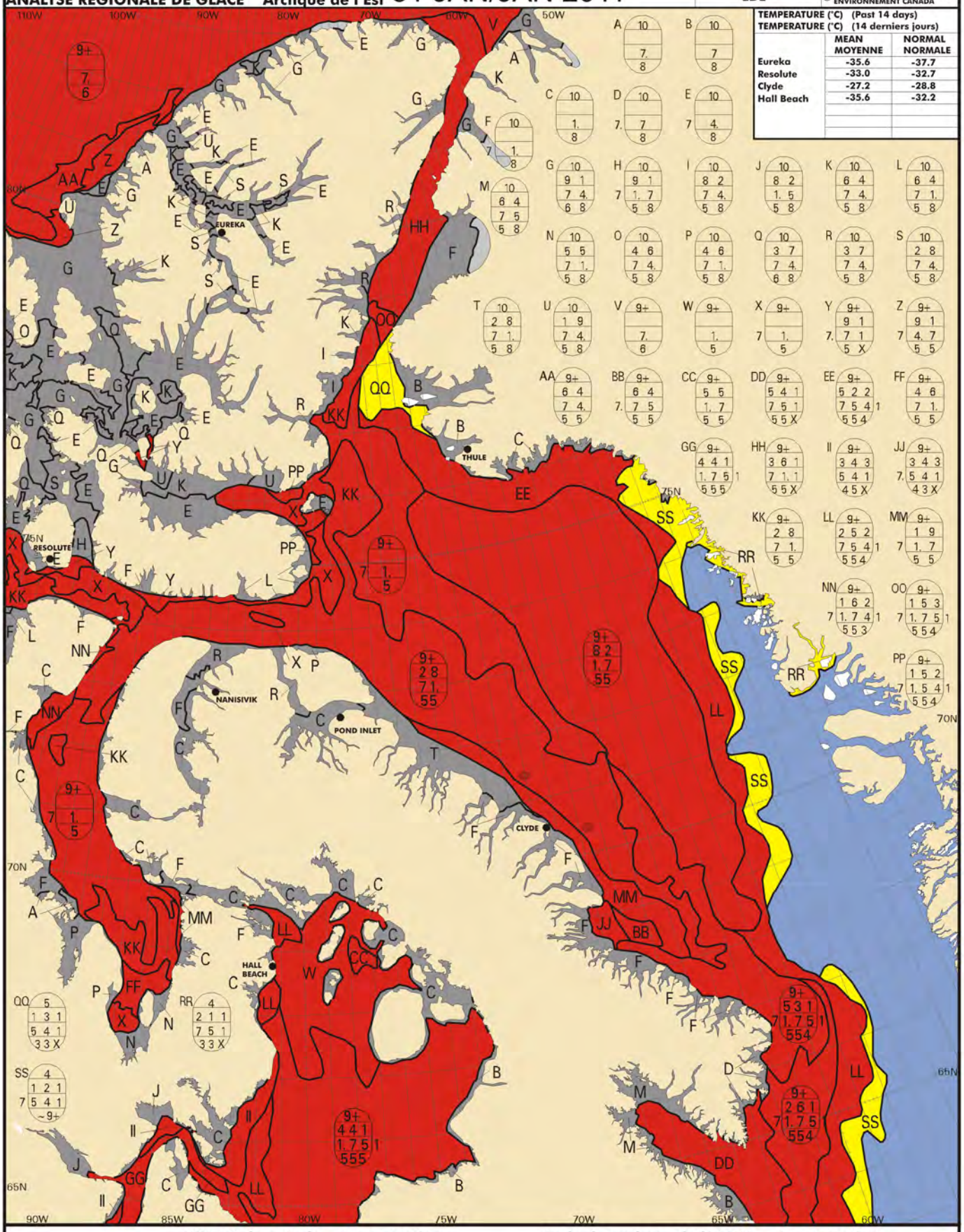
Overview Map / Vue d'ensemble

REGIONAL ICE ANALYSIS **Eastern Arctic** **31 JAN/JAN 2011**
ANALYSE REGIONALE DE GLACE **Arctique de l'Est**

CANADIAN ICE SERVICE — SERVICE CANADIEN DES GLACES
LDL

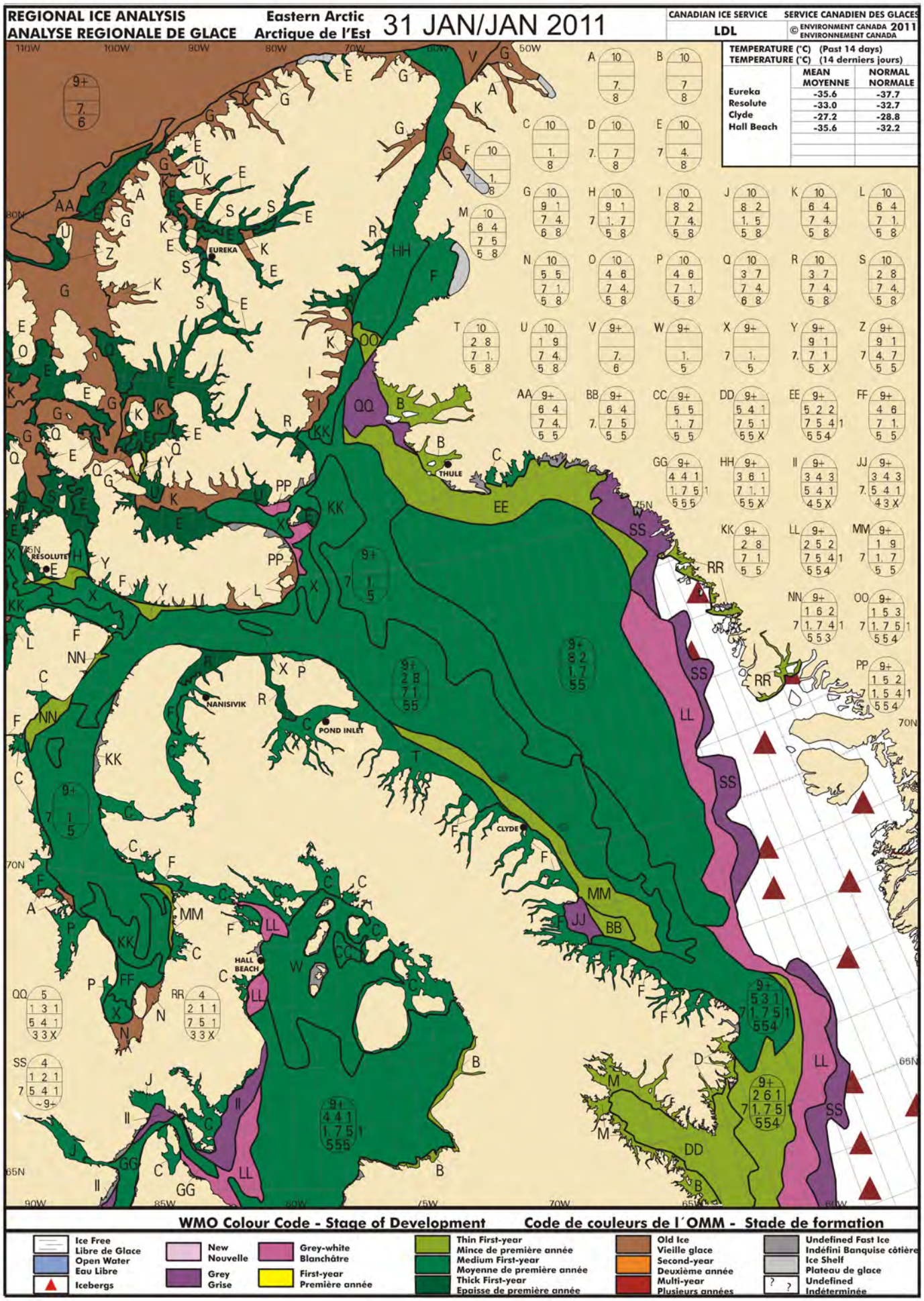
TEMPERATURE (°C) (Past 14 days)
TEMPERATURE (°C) (14 derniers jours)

	MEAN MOYENNE	NORMAL NORMALE
Eureka	-35.6	-37.7
Resolute	-33.0	-32.7
Clyde	-27.2	-28.8
Hall Beach	-35.6	-32.2



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
- New Ice / Nouvelle glace
- Nilas/Grey Ice / Nilas/glace grise
- Fast Ice / Banquise côtière
- Ice Shelf / Plateau de glace
- Undefined / Indéterminée


REGIONAL ICE ANALYSIS
ANALYSE REGIONALE DE GLACE
Eastern Arctic
Arctique de l'Est
31 JAN/JAN 2011
CANADIAN ICE SERVICE
SERVICE CANADIEN DES GLACES
LDL
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TEMPERATURE (°C) (Past 14 days)
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MEAN MOYENNE
NORMAL NORMALE
Eureka -35.6 -37.7
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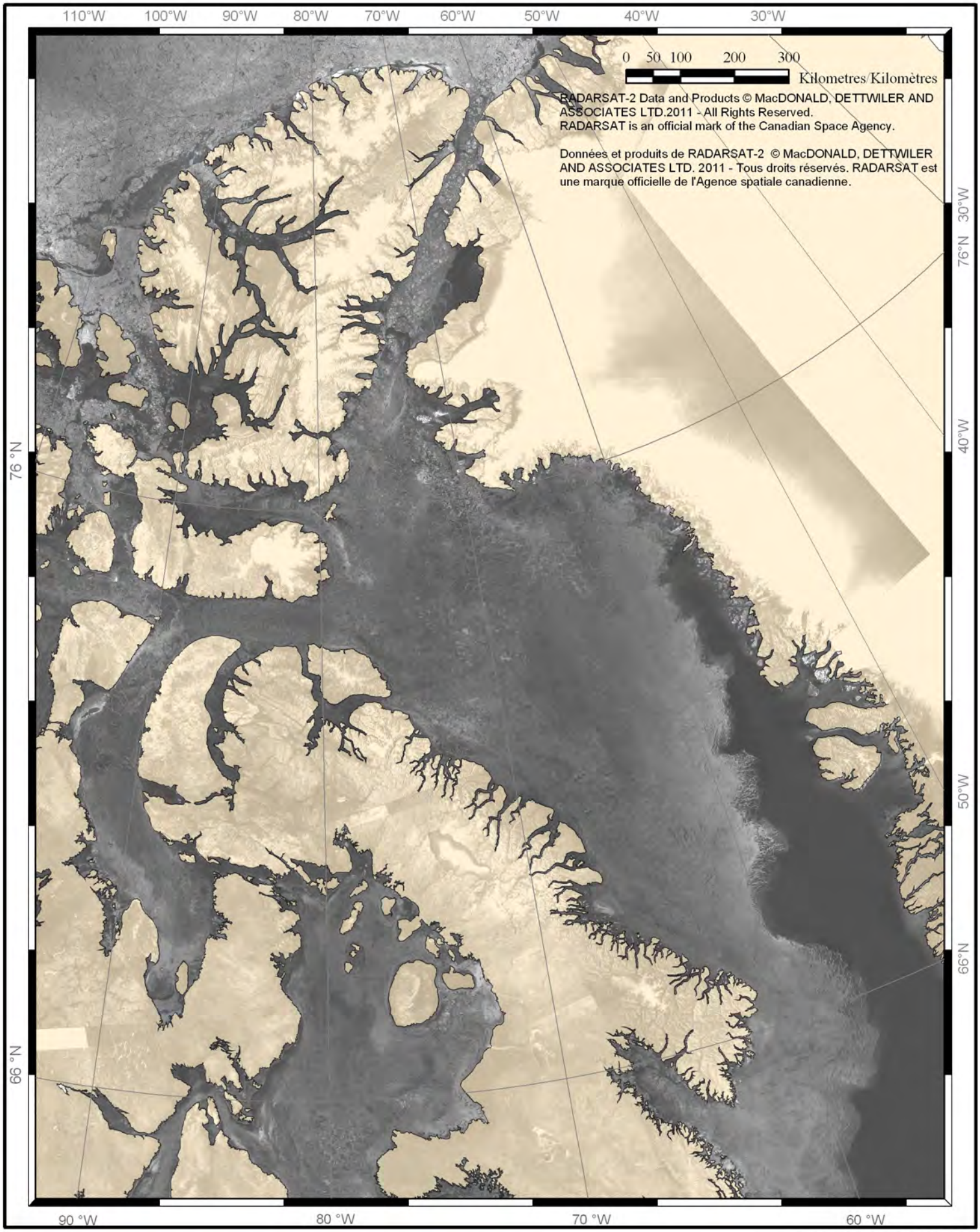
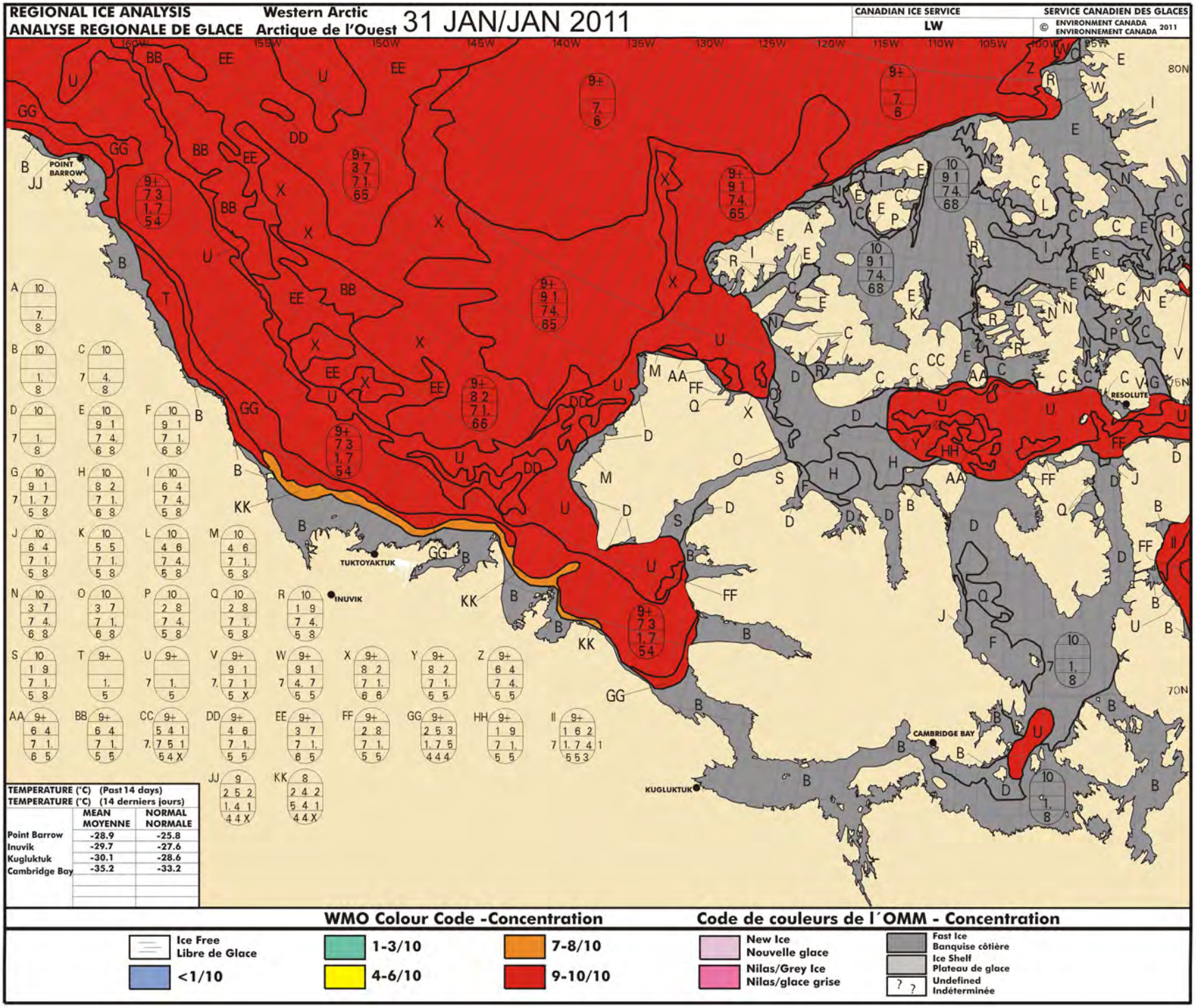
Clyde -27.2 -28.8
Hall Beach -35.6 -32.2
EUREKA
THULE
RESOLUTE
NANISIVIK
POND INLET
CLYDE
HALL BEACH
WMO Colour Code - Stage of Development
Code de couleurs de l'OMM - Stade de formation
Ice Free
Libre de Glace
Open Water
Eau Libre
Icebergs
New
Nouvelle
Grey
Grise
Grey-white
Blanchâtre
First-year
Première 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
Ice Shelf
Plateau de glace
Undefined
Indéterminée



01/28/2011 - 02/01/2011

Eastern Arctic / Arctique de l'Est

Overview Map / Vue d'ensemble


REGIONAL ICE ANALYSIS
ANALYSE REGIONALE DE GLACE
Western Arctic
Arctique de l'Ouest
31 JAN/JAN 2011
CANADIAN ICE SERVICE
SERVICE CANADIEN DES GLACES
LW
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POINT BARROW
TUKTOYAKTUK
INUVIK
RESOLUTE
CAMBRIDGE BAY
KUGLUKTUK
TEMPERATURE (°C) (Past 14 days)
TEMPERATURE (°C) (14 derniers jours)
MEAN MOYENNE
NORMAL NORMALE
Point Barrow -28.9 -25.8
Inuvik -29.7 -27.6
Kugluktuk -30.1 -28.6
Cambridge Bay -35.2 -33.2
WMO Colour Code -Concentration
Code de couleurs de l´OMM - Concentration
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4-6/10
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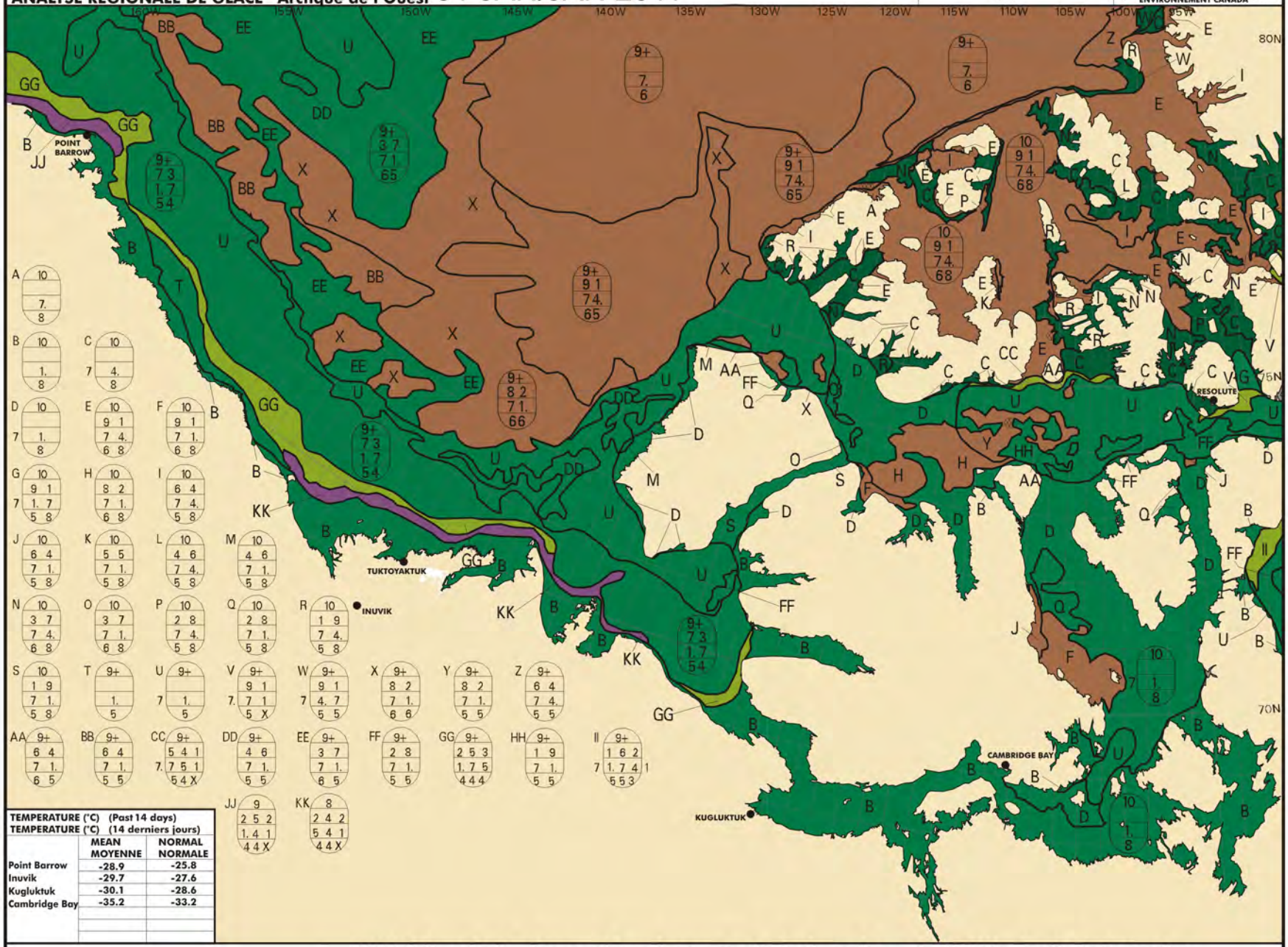
New Ice
Nouvelle glace
Nilas/Grey Ice
Nilas/glace grise
Fast Ice
Banquise côtière
Ice Shelf
Plateau de glace
Undefined
Indéterminée

REGIONAL ICE ANALYSIS **Western Arctic** 31 JAN/JAN 2011
ANALYSE REGIONALE DE GLACE **Arctique de l'Ouest**

CANADIAN ICE SERVICE — SERVICE CANADIEN DES GLACES
LW



TEMPERATURE (°C) (Past 14 days)
TEMPERATURE (°C) (14 derniers jours)

	MEAN MOYENNE	NORMAL NORMALE
Point Barrow	-28.9	-25.8
Inuvik	-29.7	-27.6
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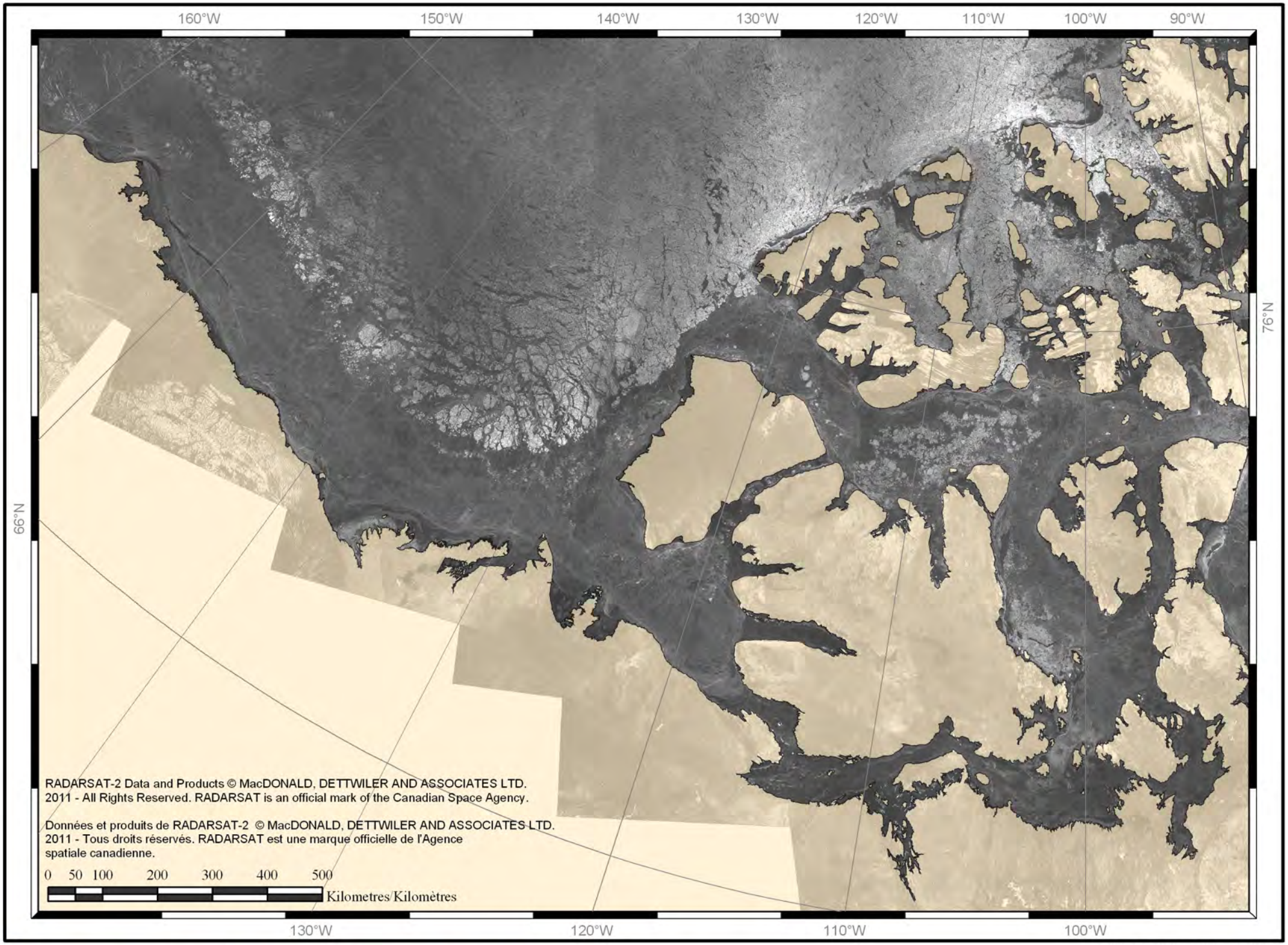
WMO Colour Code - Stage of Development **Code de couleurs de l´OMM - Stade de formation**

- 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
- Ice Shelf / Plateau de glace
- Undefined / Indéterminée

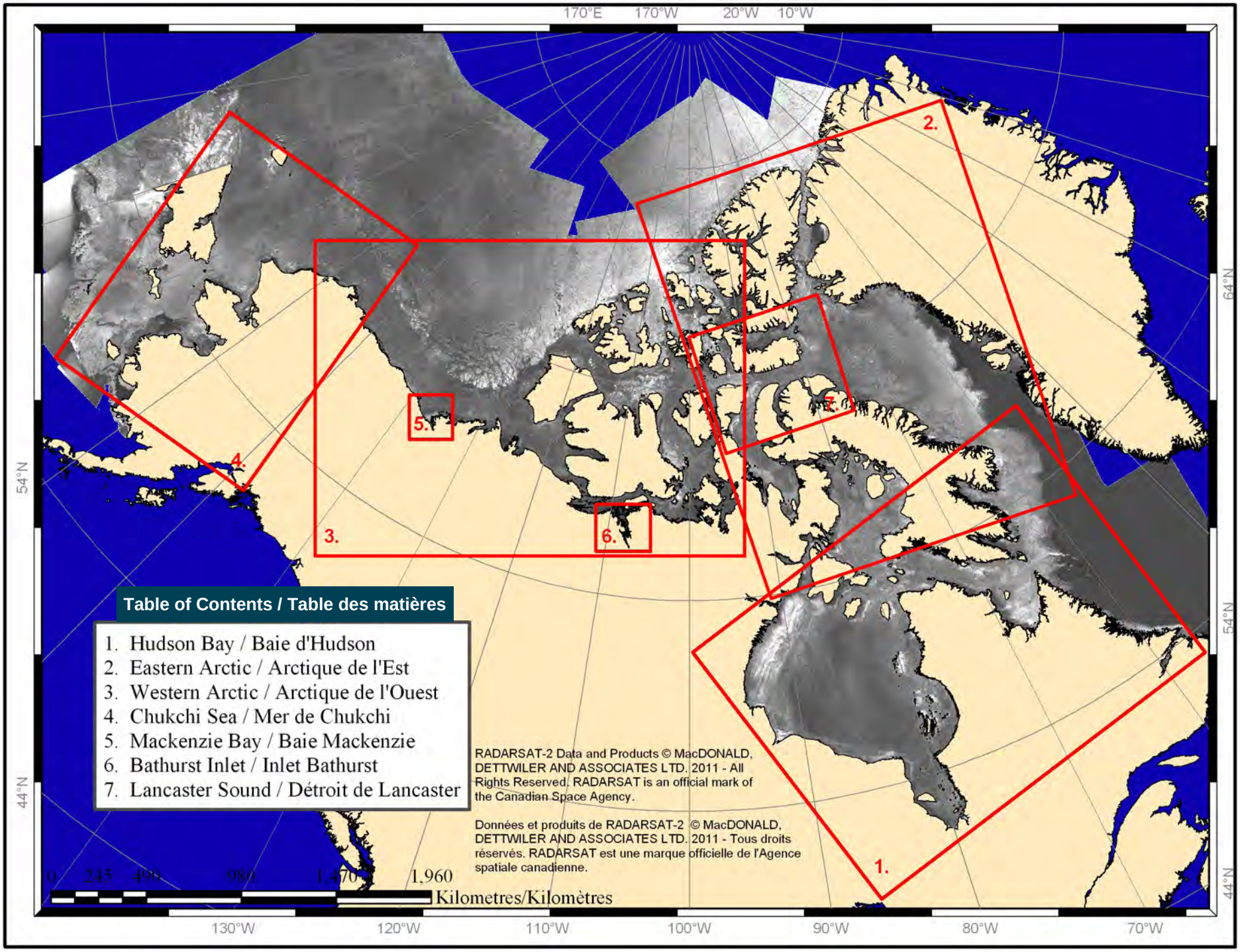


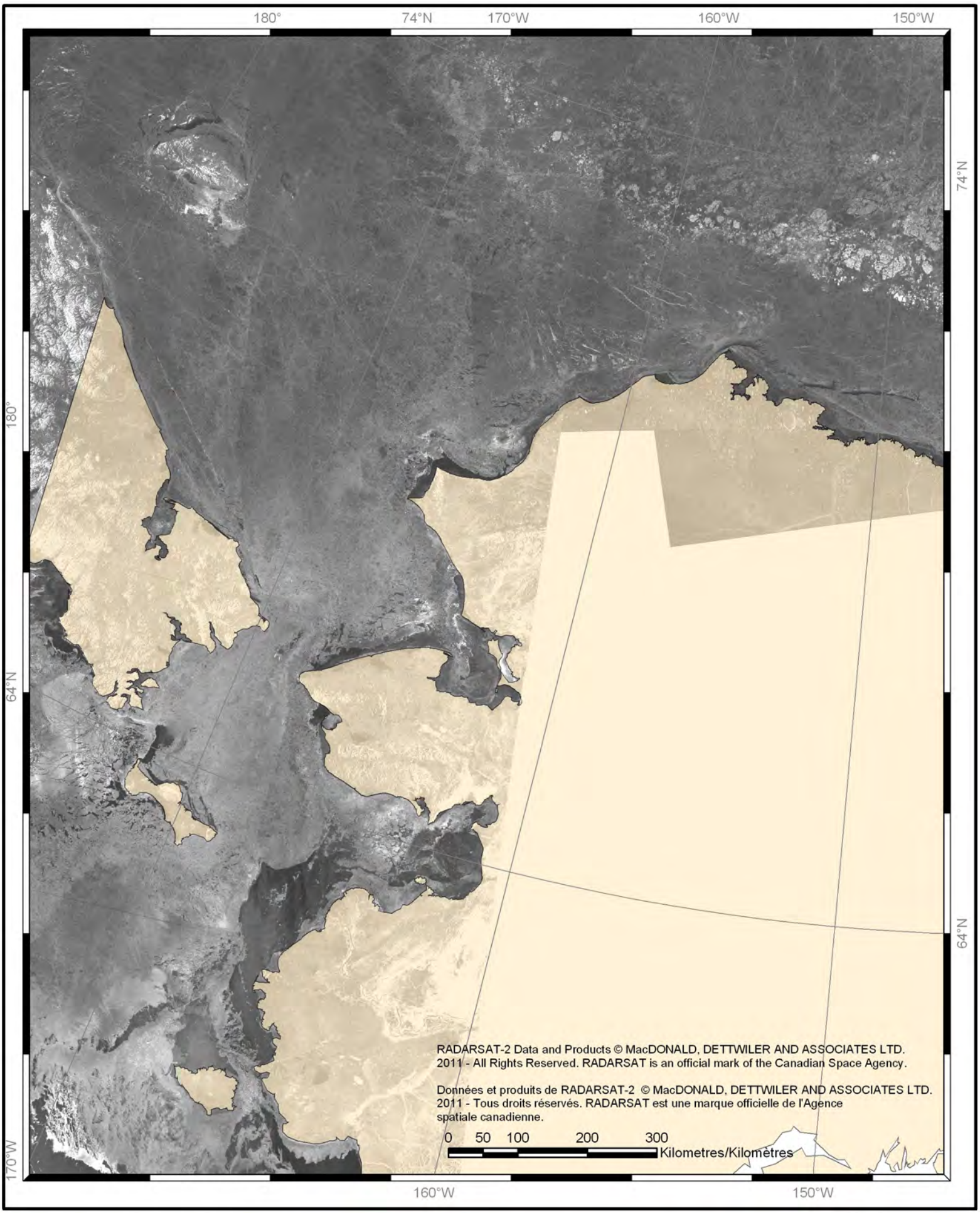
Western Arctic / Arctique de l'Ouest

01/28/2011 - 01/31/2011

Overview Map / Vue d'ensemble

CANADIAN ARCTIC MOSAIC / MOSAÏQUE DE L'ARCTIQUE CANADIEN

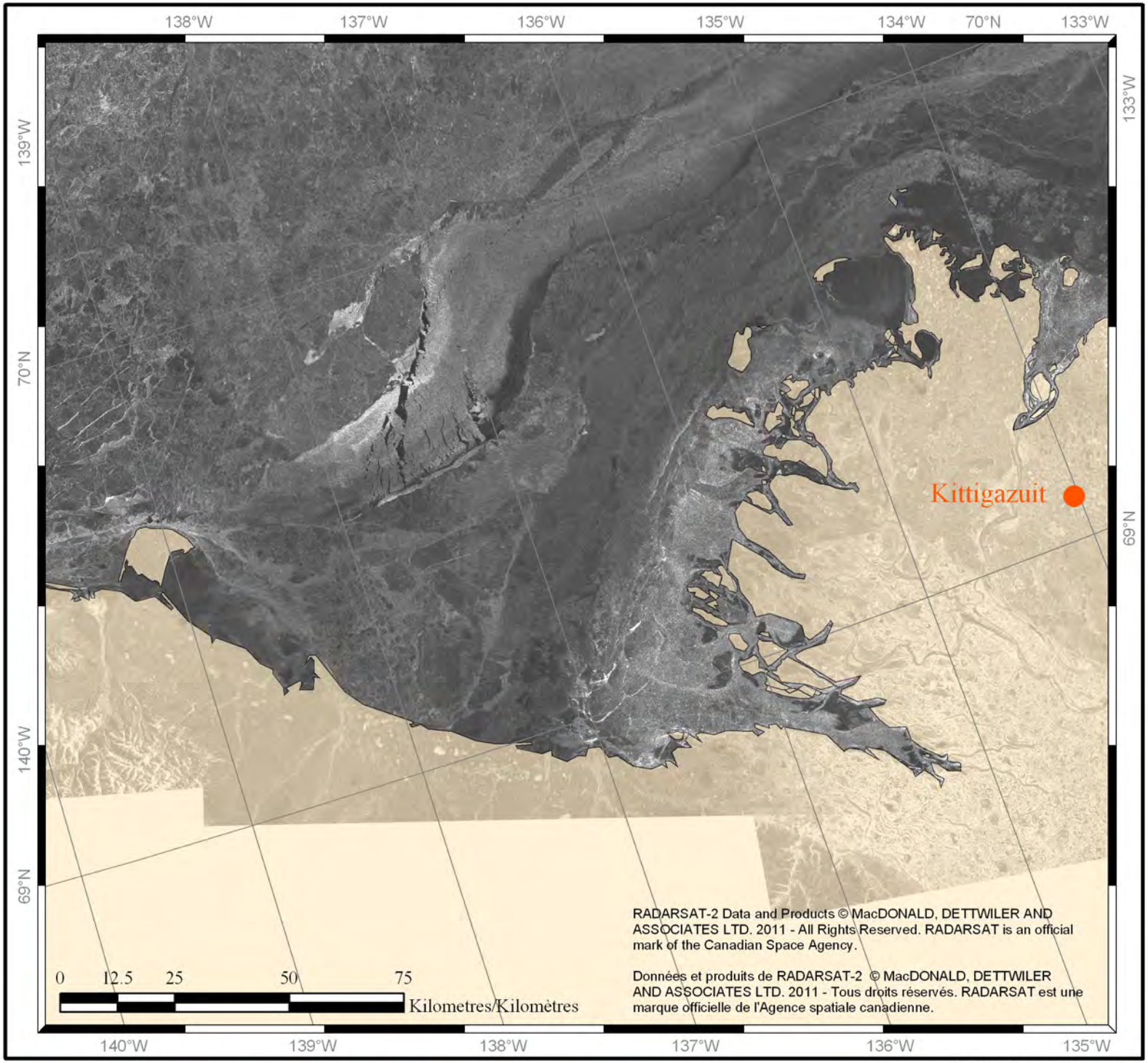




Chukchi Sea / Mer de Chukchi

01/29/2011 - 01/31/2011

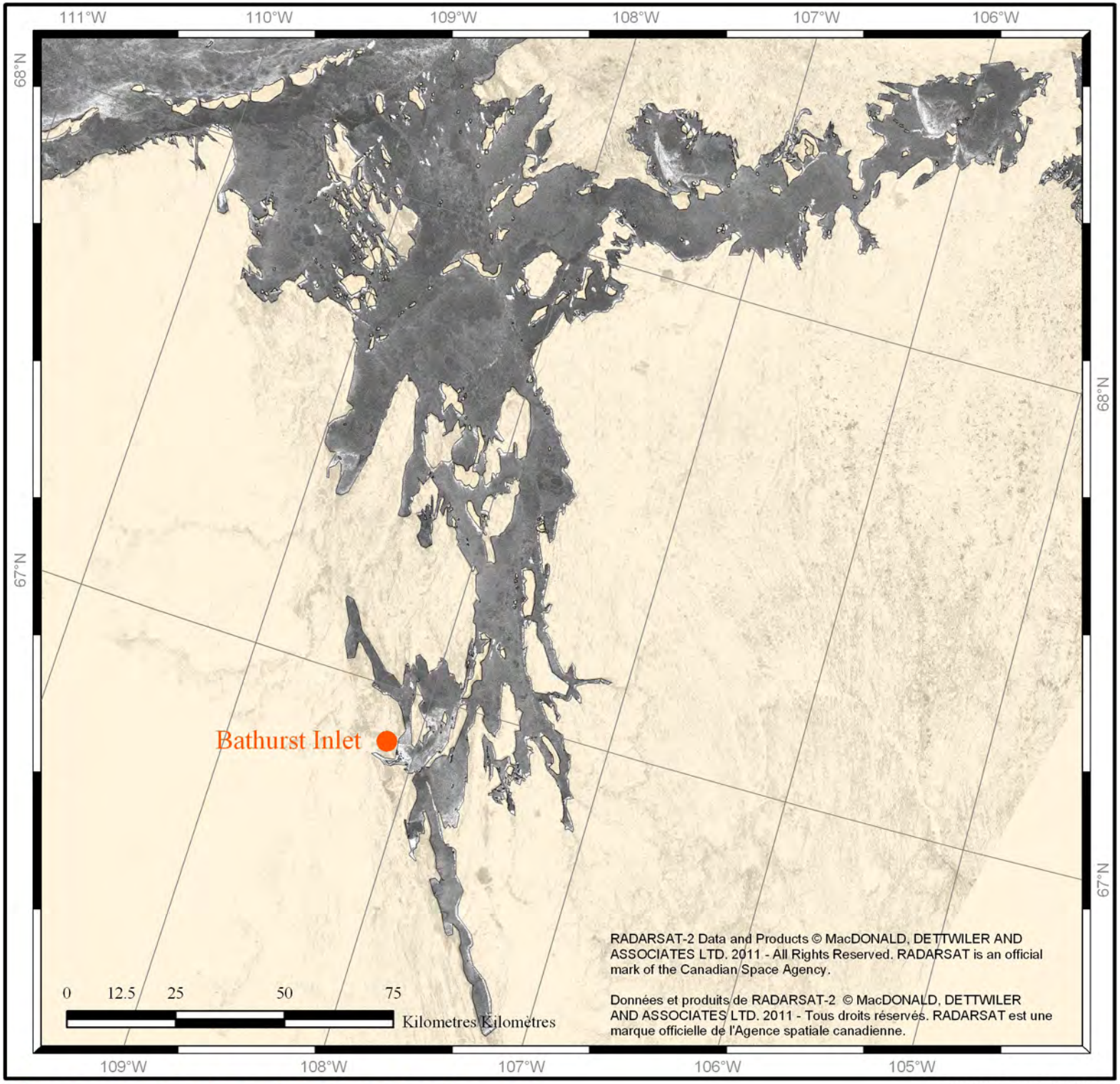
Overview Map / Vue d'ensemble



01/29/2011 - 02/01/2011

Mackenzie Bay / Baie Mackenzie

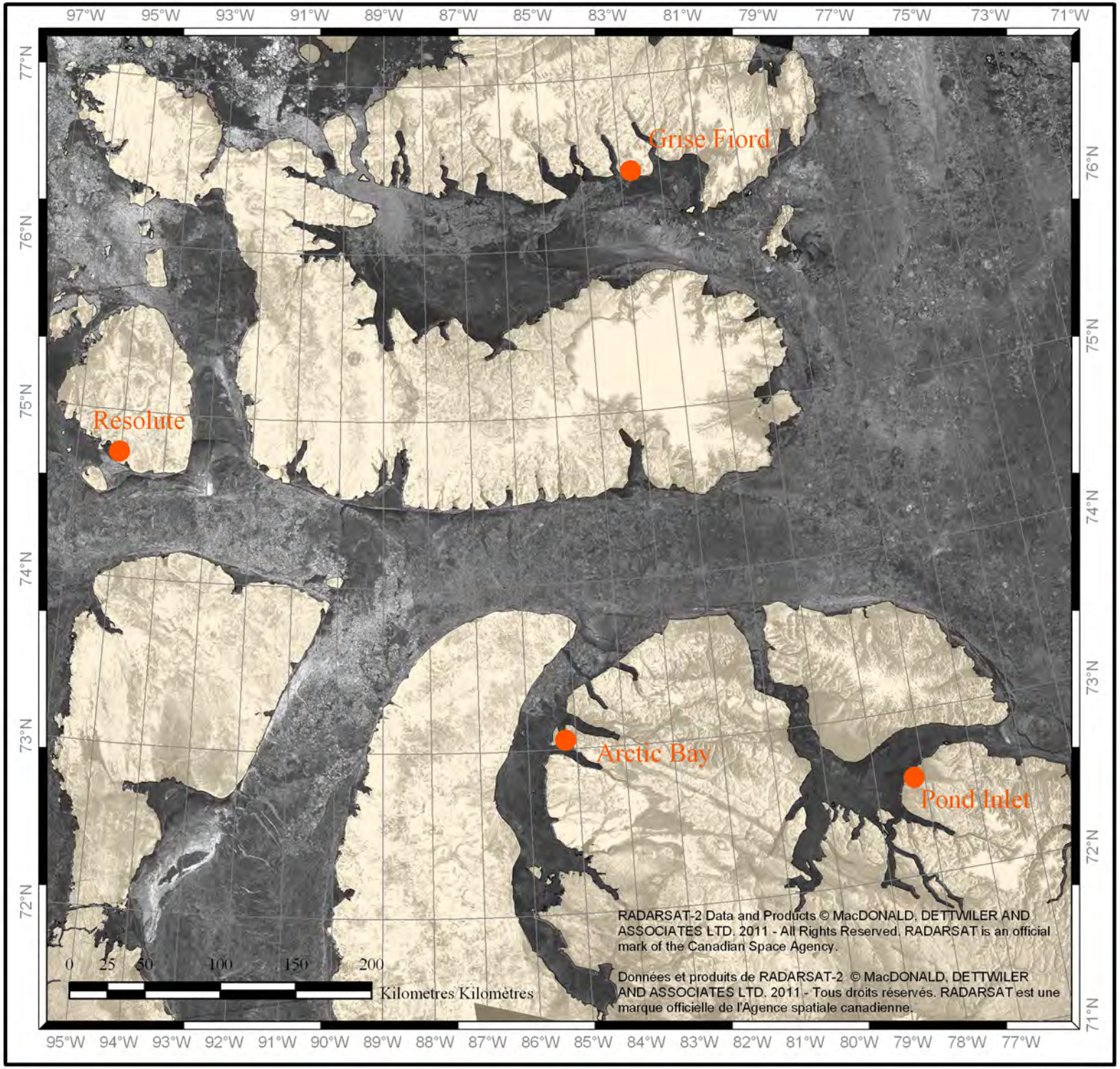
Overview Map / Vue d'ensemble

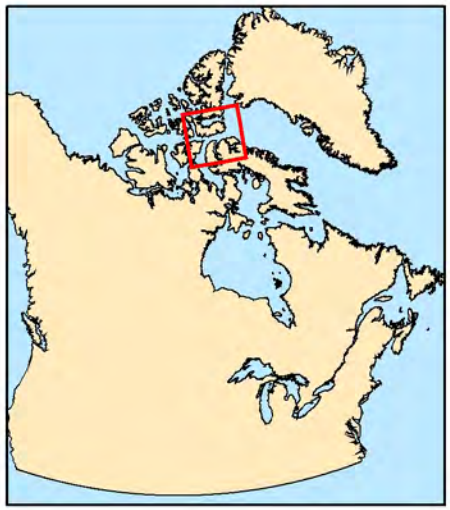


Bathurst Inlet / Inlet Bathurst

01/29/2011 - 01/31/2011

Overview Map / Vue d'ensemble





Lancaster Sound / Détroit de Lancaster

02/01/2011 - 02/02/2011

Overview Map / Vue d'ensemble

Contact Us

Environment Canada
Canadian Ice Services
373 Sussex Drive, E-3
Ottawa, Ontario Canada, K1A 0H3
Attention: Client Services

Telephone: 1-877-789-7733
E-mail: Weather.Info.Meteo@ec.gc.ca
Fax: 613 947-9160
Web site: http://ice-glaces.ec.gc.ca

Contactez-nous

Environnement Canada
Service canadien des glaces
373, promenade Sussex, E-3
Ottawa (Ontario) Canada, K1A 0H3
À l'attention du: Service à la clientèle

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