

New Brunswick

December 2020 Review January 2021 and Winter Outlook

Jill Maepea

Meteorological Service of Canada
Environment and Climate Change Canada
January 4, 2021



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December 2020; Climate Summary

Station Name	Prov	TC ID	Station Type	Mean Temperature (°C)			Total Precip (mm)		
				Monthly Mean	Normal Mean	Diff from Normal	Monthly Total	Normal Total	Total as % of Normal
AROOSTOOK	NB		DAILY	-3.0	-7.6	4.6	114.0	89.7	127
BAS CARAQUET	NB	WXS	AU8	-1.4	-5.1	3.8	141.7	106.6	133
BAS CARAQUET	NB		DAILY				172.0	106.6	161
BATHURST A	NB	ZBF	NCA	-3.4	-6.0	2.6			
BOUCTOUCHE CDA CS	NB	ABT	AU8	-0.9	-5.1	4.2	168.8	101.1	167
CHARLO AUTO	NB	ZCR	AU8	-3.7	-7.9	4.2	108.1	79.6	136
MIRAMICHI RCS	NB	ACQ	AU8	-2.0	-6.2	4.3	160.5	85.3	188
DOAKTOWN AUTO RCS	NB	ADN	AU8	-1.9	-6.4	4.5	172.8	96.7	179
FREDERICTON CDA CS	NB	AFC	AU8	-1.0	-5.3	4.3	167.5	91.8	183
FUNDY PARK (ALMA) CS	NB	AFY	AU8	0.9	-3.3	4.2	229.1	146.6	156
GAGETOWN AWOS A	NB	YCX	AU5	-0.8	-4.4	3.5			
KOUCHIBOUGUAC	NB	AKC	AU8	-1.5	-6.2	4.7	190.0	125.4	152
MISCOU ISLAND (AUT)	NB	WMI	AU8	-1.7					
MONCTON INTL A	NB	YQM	NCH				164.5	114.4	144
MONCTON A	NB	YQM	NCA	0.2	-4.8	5.0			
OAK POINT	NB		DAILY	-0.4	-4.4	4.0	280.4	98.4	285
POINT LEPREAU CS	NB	WPE	AU8	1.1	-3.4	4.5			
RED PINES	NB	ARP	AU8	-3.4	-7.2	3.8	179.7	87.4	206
SAINT JOHN A	NB	YSJ	NCH	0.2	-4.4	4.6	300.5	130.4	230
ST. STEPHEN	NB	WSS	AU8	-0.7			157.7		
SUSSEX FOUR CORNERS	NB	ASF	AU8	-0.2	-4.5	4.2	207.9	105.6	197
WOODSTOCK NEWBRIDGE	NB	EWD	AU8	-2.8	-7.0	4.1	133.4	103.2	129
Average				-1.3	-5.5	4.2	179.3	104.3	173
Max				1.1	-3.3	5.0	300.5	146.6	285
Min				-3.7	-7.9	2.6	108.1	79.6	127

Highlights:

The average temperature anomaly was much above normal (**+4.2C**). All sites reported positive anomalies with Moncton recorded the largest anomaly at +5.0C and their warmest month ever. Several sites recorded their top 5 warmest on record.

Total precipitation amounts were above normal, with an average of **173%** of total precipitation. Oak Point saw nearly 3 times their normal precipitation. December was the wettest month of 2020 for most areas except the northwest. Rainfall was much above normal than snowfall.



December 2020; Climate Summary

Events:

December 1-2: “Warm, wet and windy”. A slow-moving moisture-laden trough brought heavy rain to widespread areas of the province. Crowe Brook received the most rain at an astounding 208 mm while Point Lepreau recorded the strongest wind gust at 98 km/h. The warm air also shattered 24 daily records and 4 monthly records...see next slide for details.

December 5-6: “Mixed Weather Event”. A system brought rain to the south, snow to the north and the strongest winds to the northeast. Oak Point saw the most rain at 66 mm, Doyleville amassed 41 cm of snow, while Miscou Island recorded the strongest wind gust at 96 km/h.

December 12-13: “Snow and Freezing Rain”. Some snow fell over northern portions of the province leaving behind 17 cm in both St-Quentin and Doyleville areas. A few hours of freezing rain and ice pellets occurred over some central areas.

December 25-26: “Unfestive Event”. An abnormal weather pattern allowed for 22 daily maximum temperature records to be broken along with as much as 64 mm of rain in the Saint John area. Warm, southerly winds gusted as high as 82 km/h in the Fredericton area.

Days of month with lightning in New Brunswick; none

2020 saw the second lowest number of strokes at 25,291. The record lowest number of strokes still stands at 22,814 in 2009 (Data climatology from 2002-2020).

Day of month with temperature record broken or tied in New Brunswick; 1 2 25 26
(red=maximum, blue=minimum)



Dec.; Record monthly max. temperatures

New Record (°C)	ECCC Station	Old Record (°C)	Date
17.3 (Dec. 25)	Fredericton	16.1	Dec. 1 2020
17.2 (tie) (Dec. 1)	Kouchibouguac	17.2	Dec. 11 1966
17.1 (Dec. 1)	Miramichi	15.6	Dec. 5 & 11 1950 Dec. 21 1957
17.0 (Dec. 1)	Fredericton	16.1	Dec. 4 1950
16.4 (Dec. 1)	Doaktown	15.0	Dec. 11 1966 Dec. 21 & 22 1973



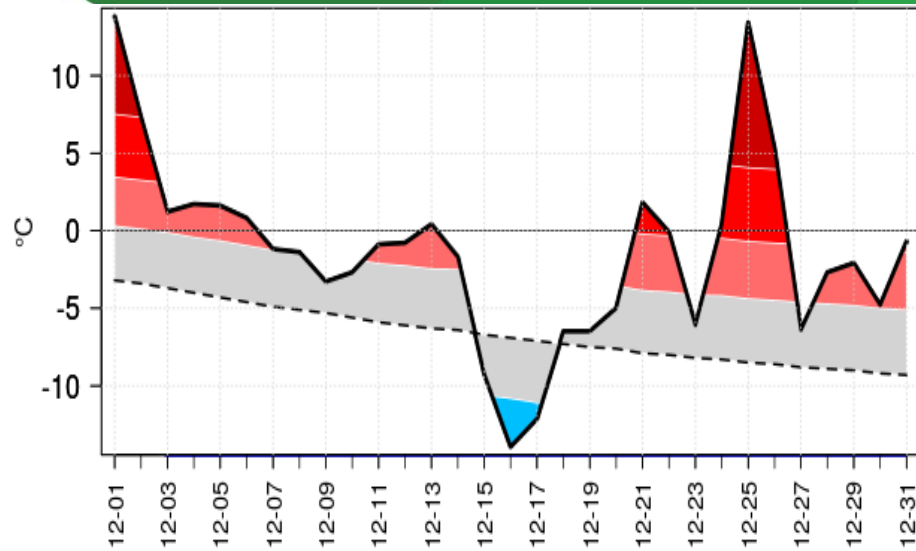
December 2020; Provincial Climate Extremes

Parameter	Value	ECCC Station	Day of month
Daily Maximum Temperature	17.8°C	Gagetown	25
Daily Minimum Temperature* <small>*This value is lower but this was the lowest value recorded before equipment failure</small>	-20.2°C	Edmundston	16
Maximum Daily Total Precipitation	171.5 mm	Mechanic Settlement	1
Daily Maximum Wind Gust	98 km/h	Point Lepreau	1
Daily Maximum Wind Chill	-29	Mechanic Settlement	16

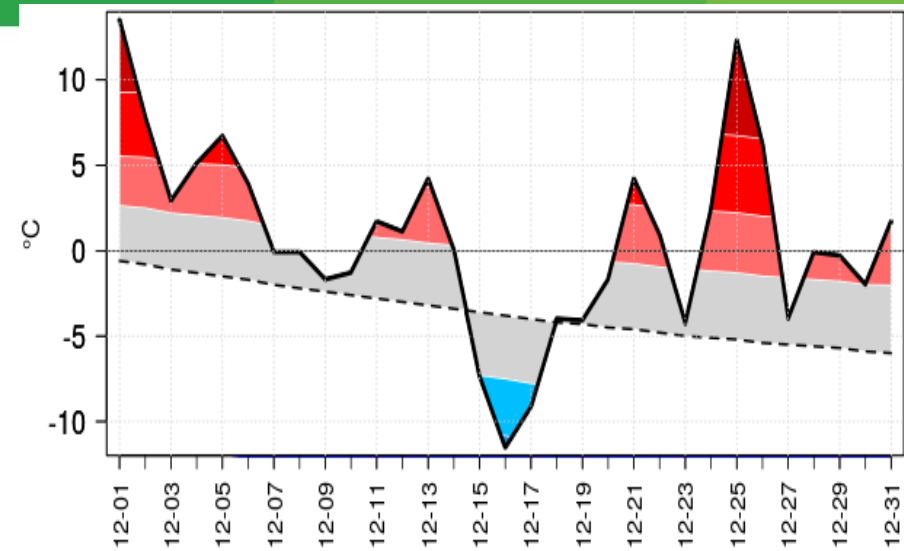


December 2020 - Temperature

Daily Mean Temperature (line), Long-Term Mean (dashed line) Based on gridded observations / Climatology 1981-2010
and Categories based on Standard Deviations (blue and red) Std. dev. thresholds $\pm 0.7, 1.3, 2.1$



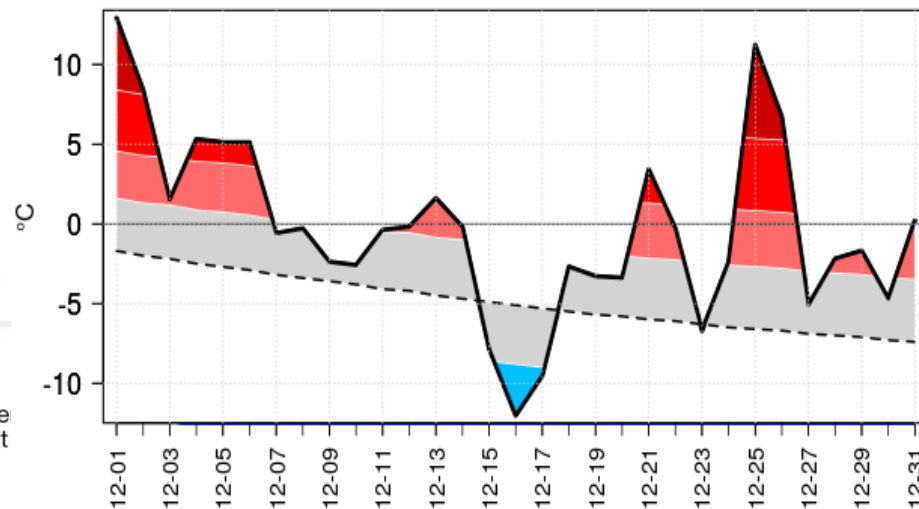
Fredericton



Saint John

All sites were
above normal

Moncton



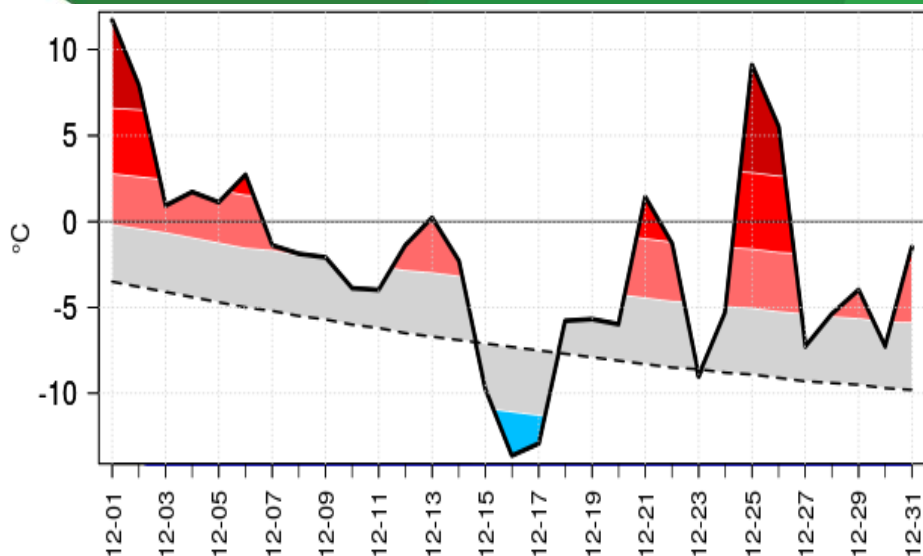
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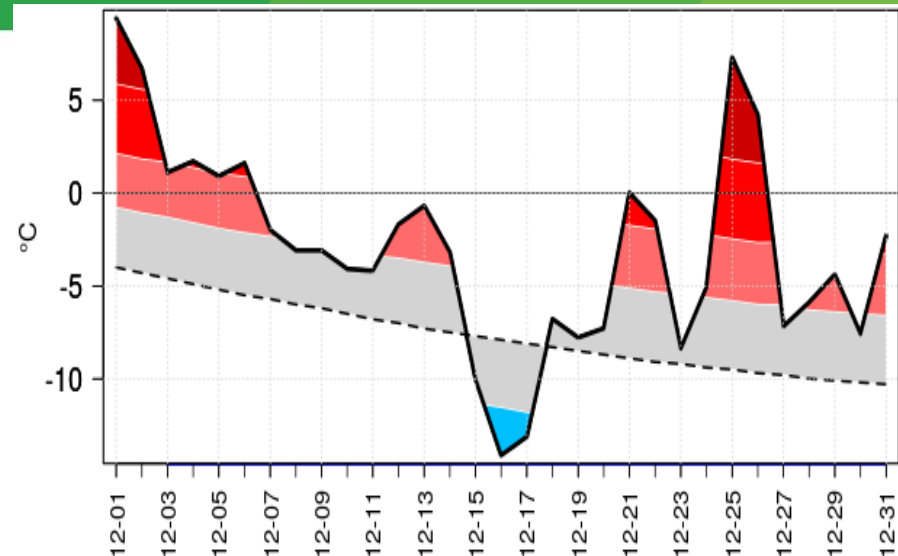
Canada

December 2020 - Temperature

Daily Mean Temperature (line), Long-Term Mean (dashed line) and Categories based on Standard Deviations (blue and red) Based on gridded observations / Climatology 1981-2010
Std. dev. thresholds $\pm 0.7, 1.3, 2.1$



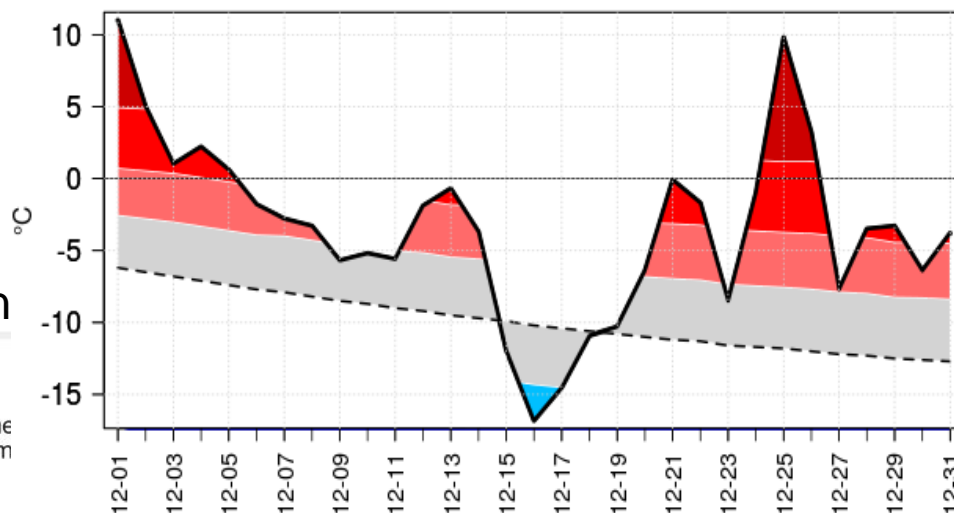
Miramichi



Bathurst

All site were
above normal

Edmundston



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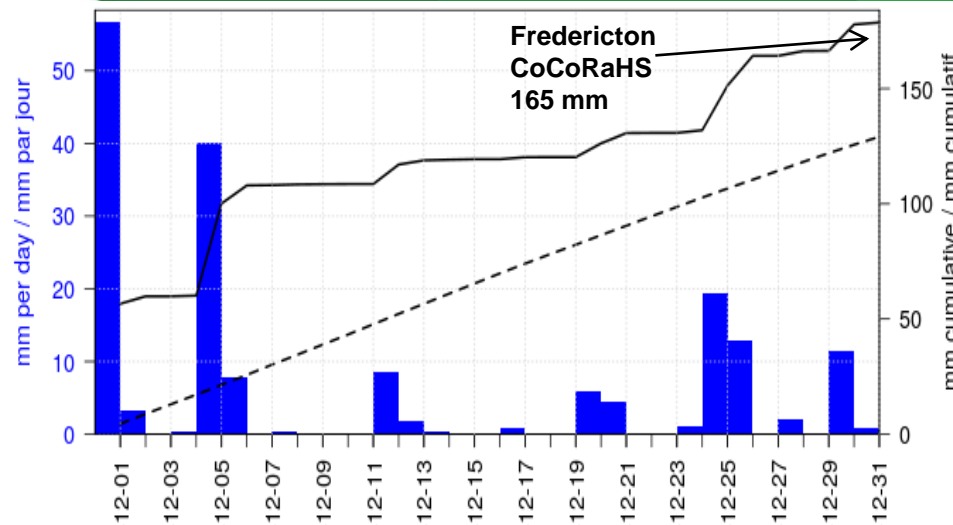
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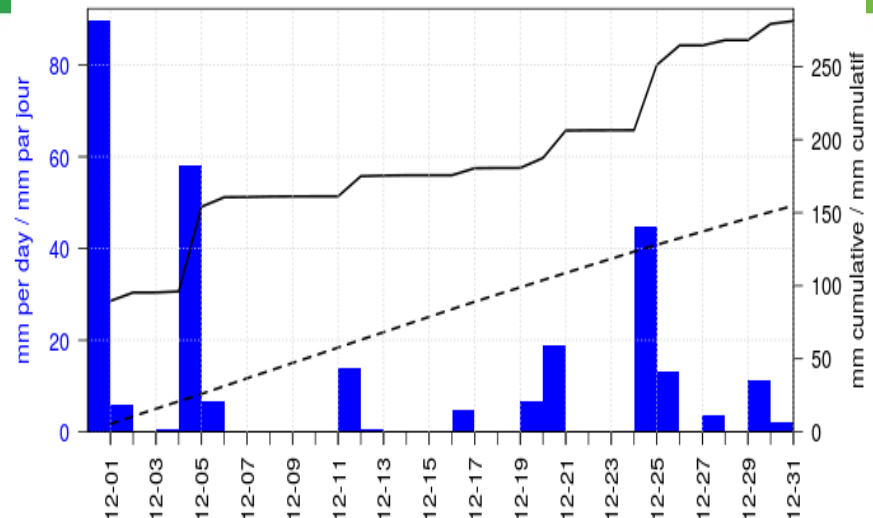
December 2020 - Precipitation

Daily Total Precipitation (bars), Cumulative (line) and Cumulative Long-Term Mean (dashed line)

Based on ECCC gridded precipitation analysis
Climatology 2002-2019



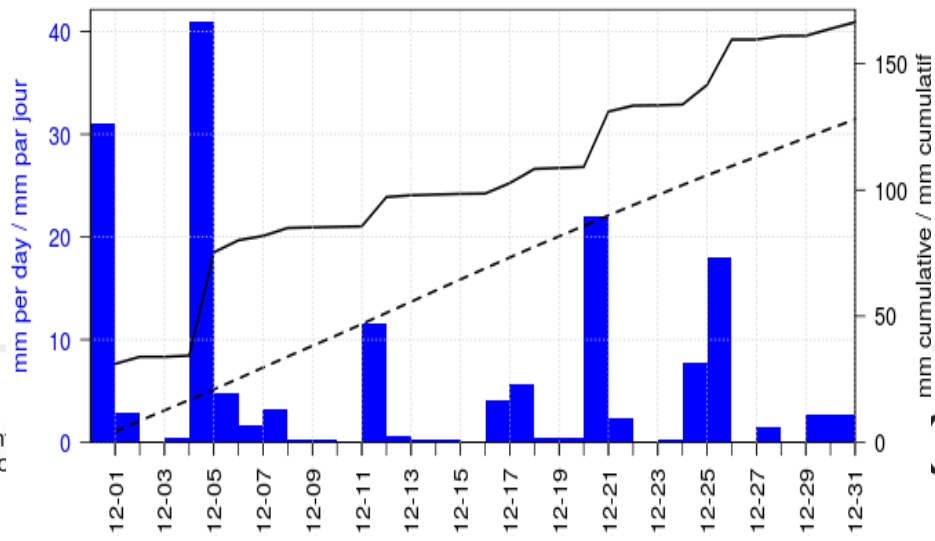
Fredericton (and area)



Saint John

All sites were
above normal

Moncton



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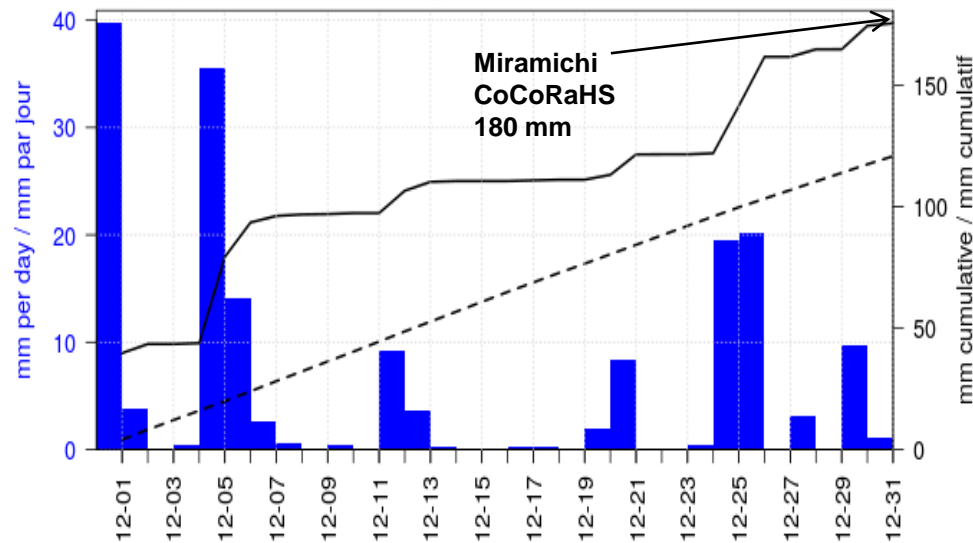
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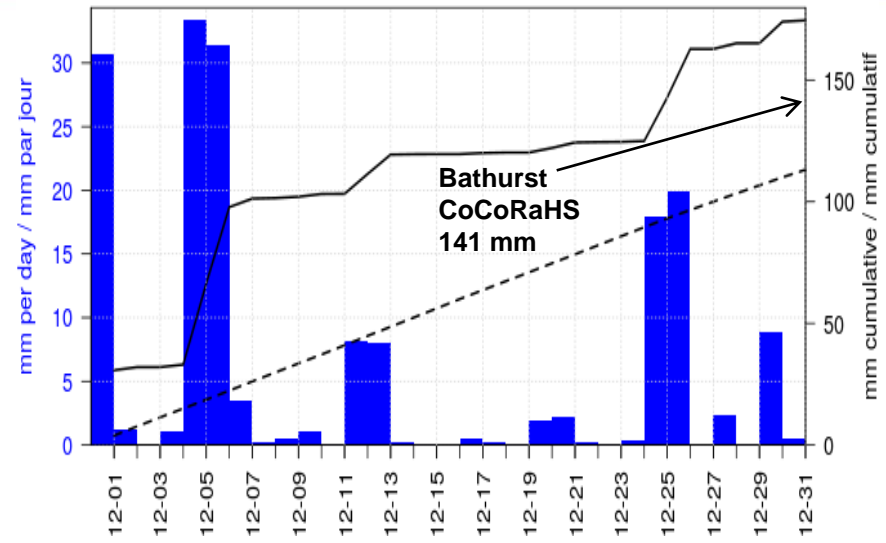
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Climatology 2002-2019



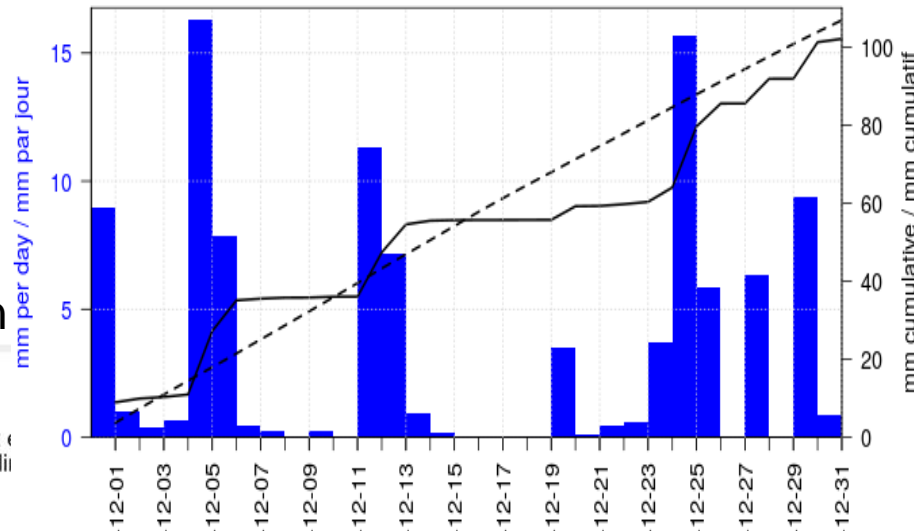
Miramichi



Bathurst

Miramichi and Bathurst were above normal

Edmundston



Edmundston was near normal



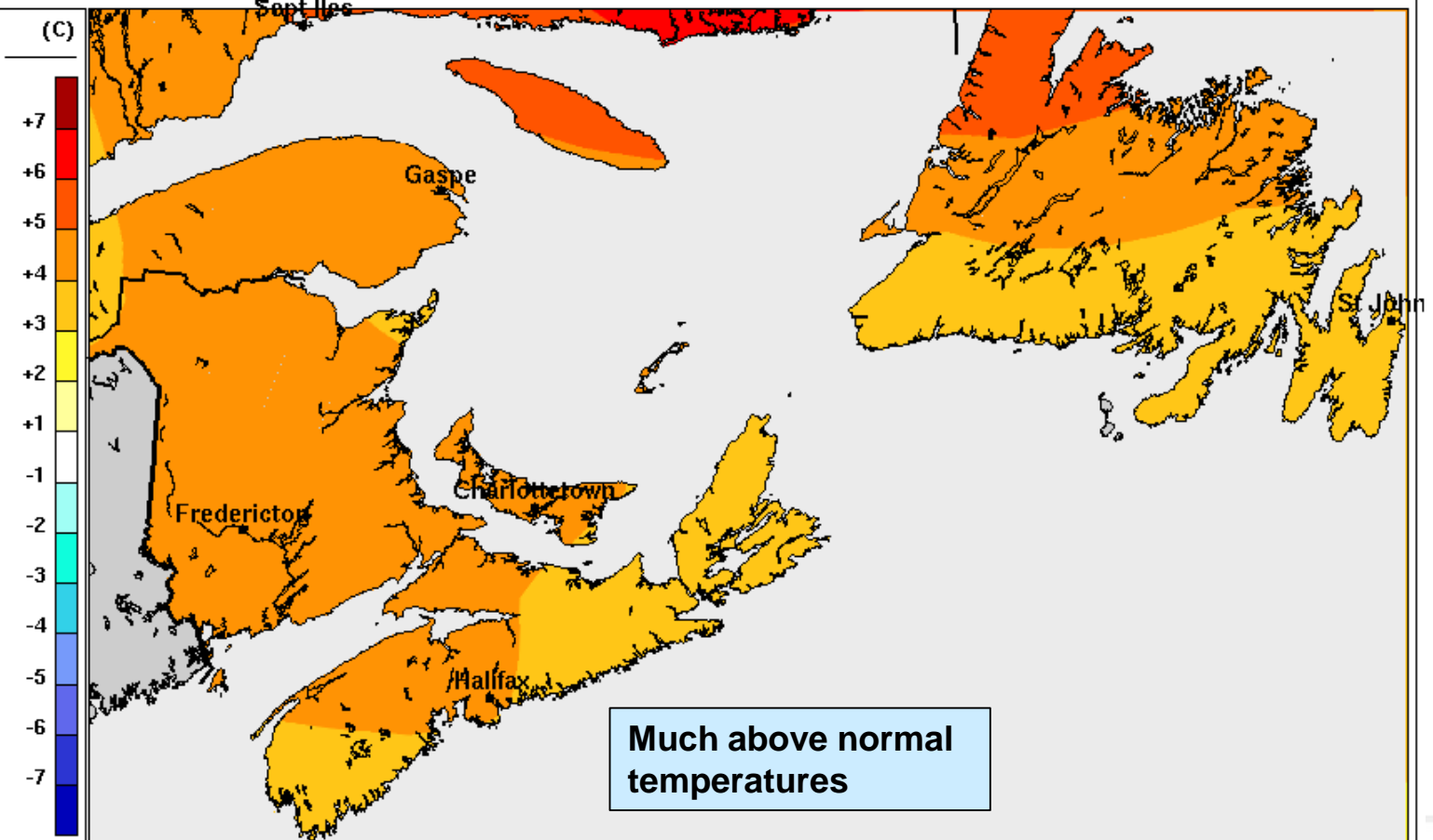
December 2020 – Temperature departure from 1981-2010 mean

Temperature Anomaly: 202012
Anomalie de température: 202012



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ECCC Climate Archives data / Données des Archives Climatiques de ECCC. Clim: 1981-2010

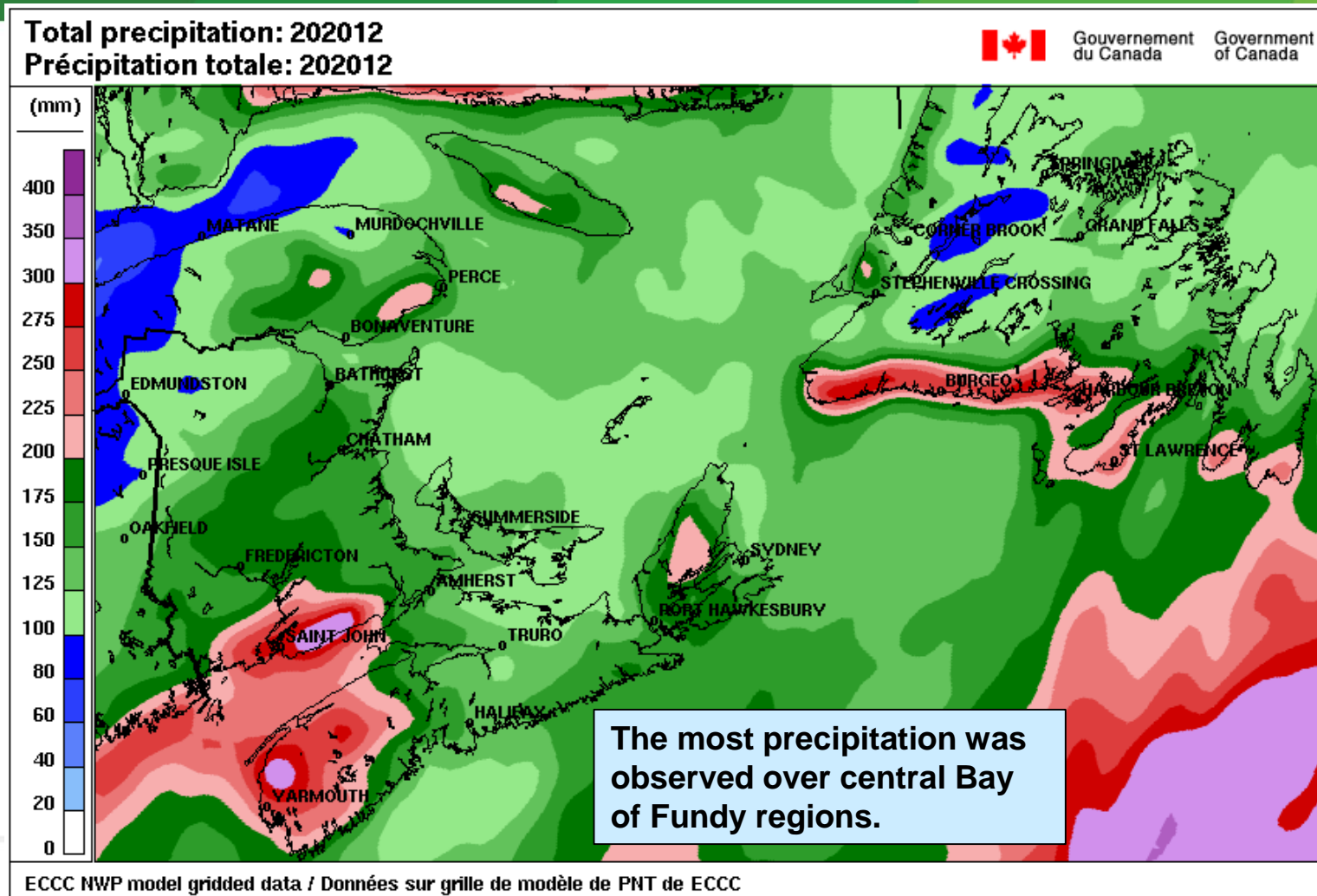


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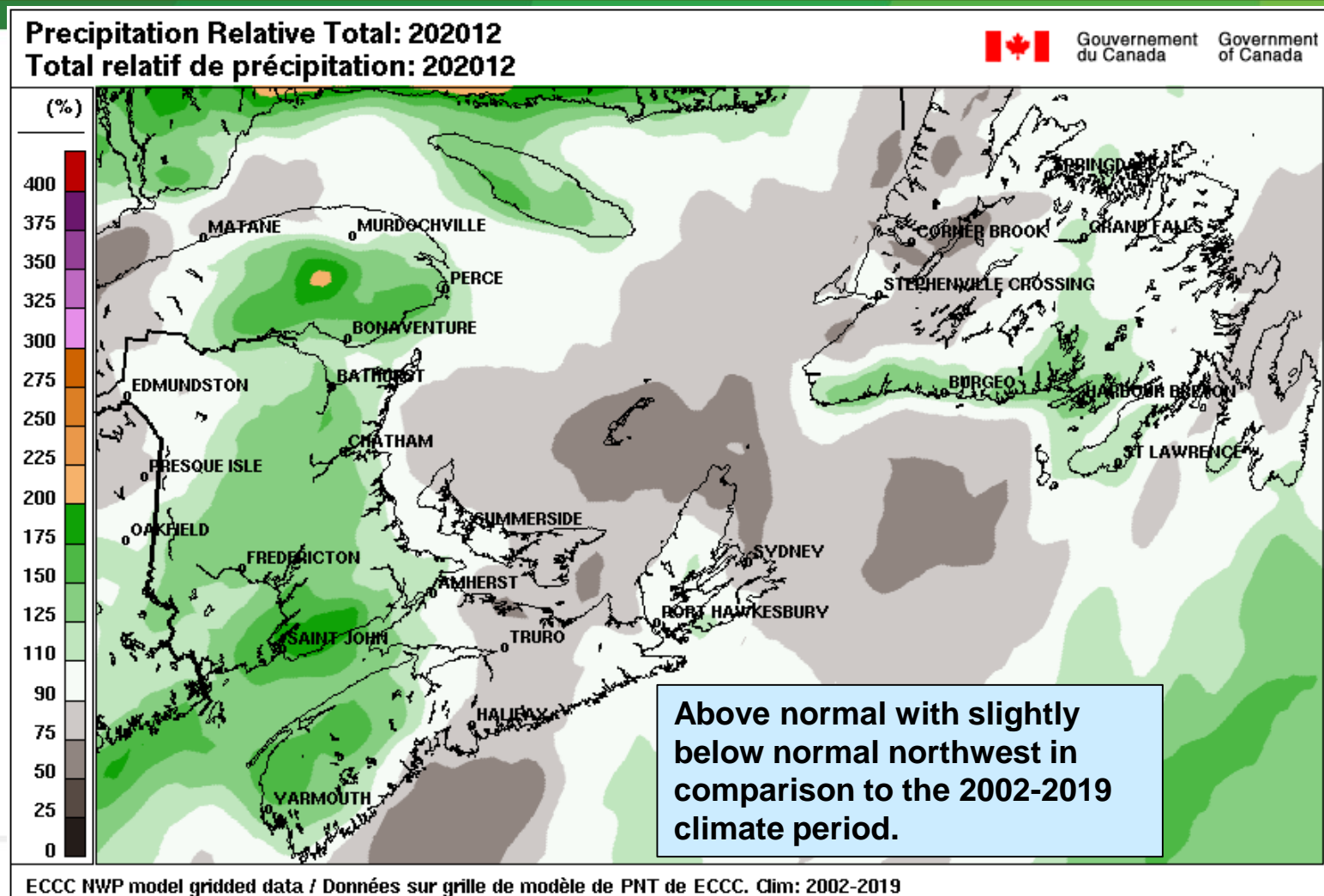
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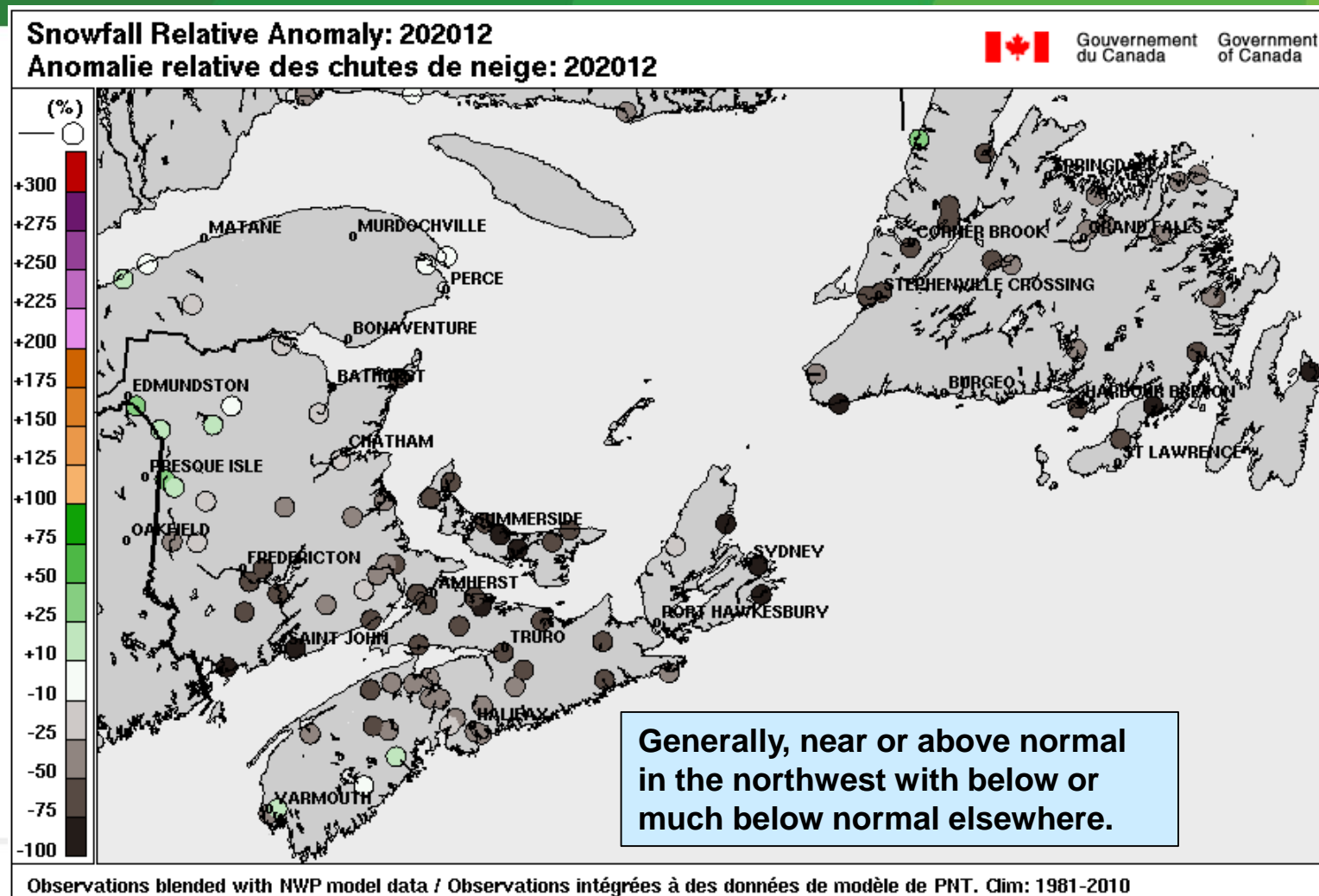
December 2020 – Total precipitation



December 2020 – Precipitation departure from 2002-2019 mean



December 2020 – Snowfall departure from 1981-2010 mean



December 2020 – Snow depth at month end

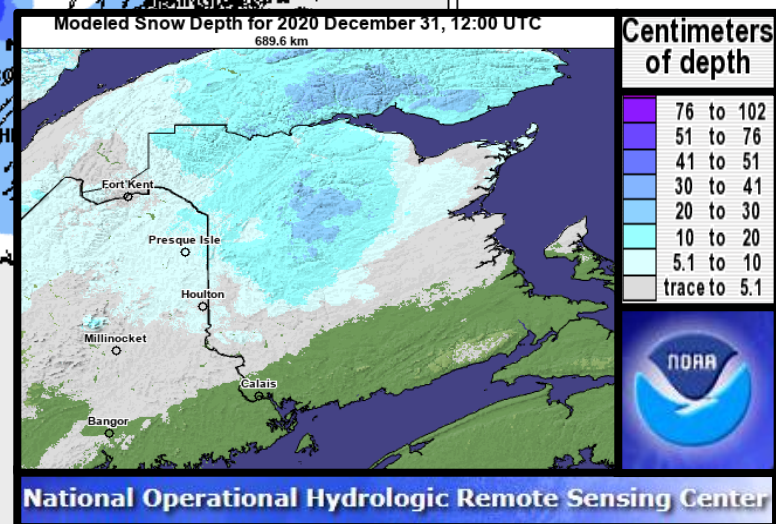
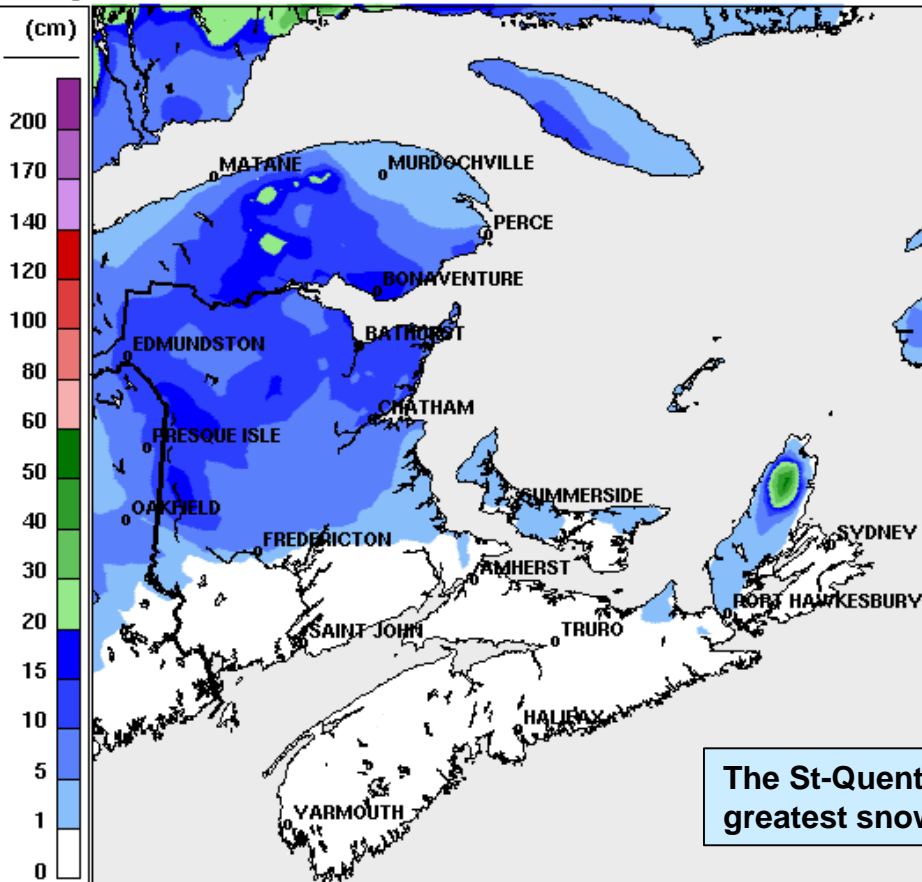
Extracted from Canadian computer model

Snow Depth: 20201231
Neige au sol: 20201231



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The St-Quentin area reported the
greatest snow depth at 22 cm.

ECCC NWP model data / Données de modèle de PNT d'ECCC

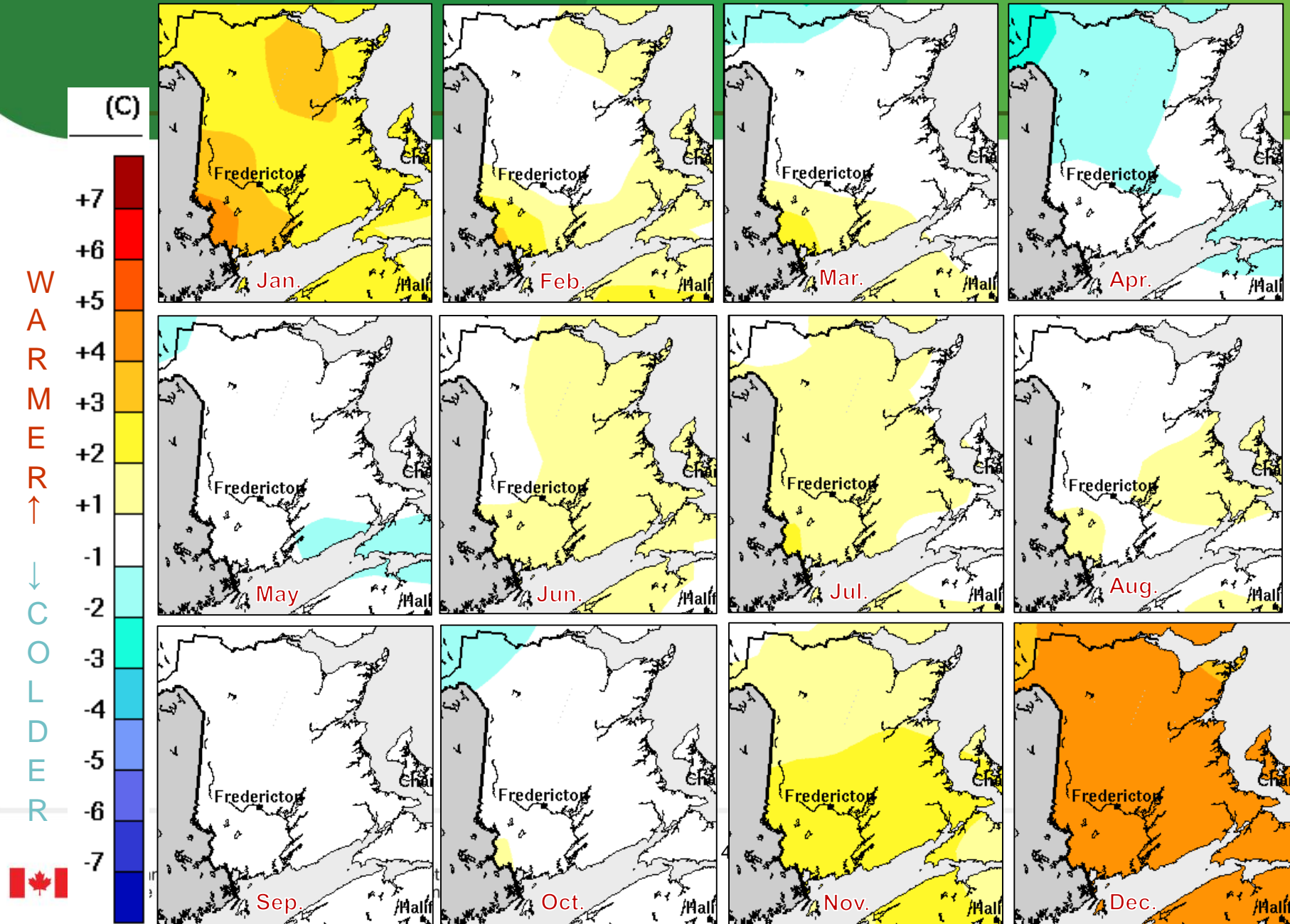


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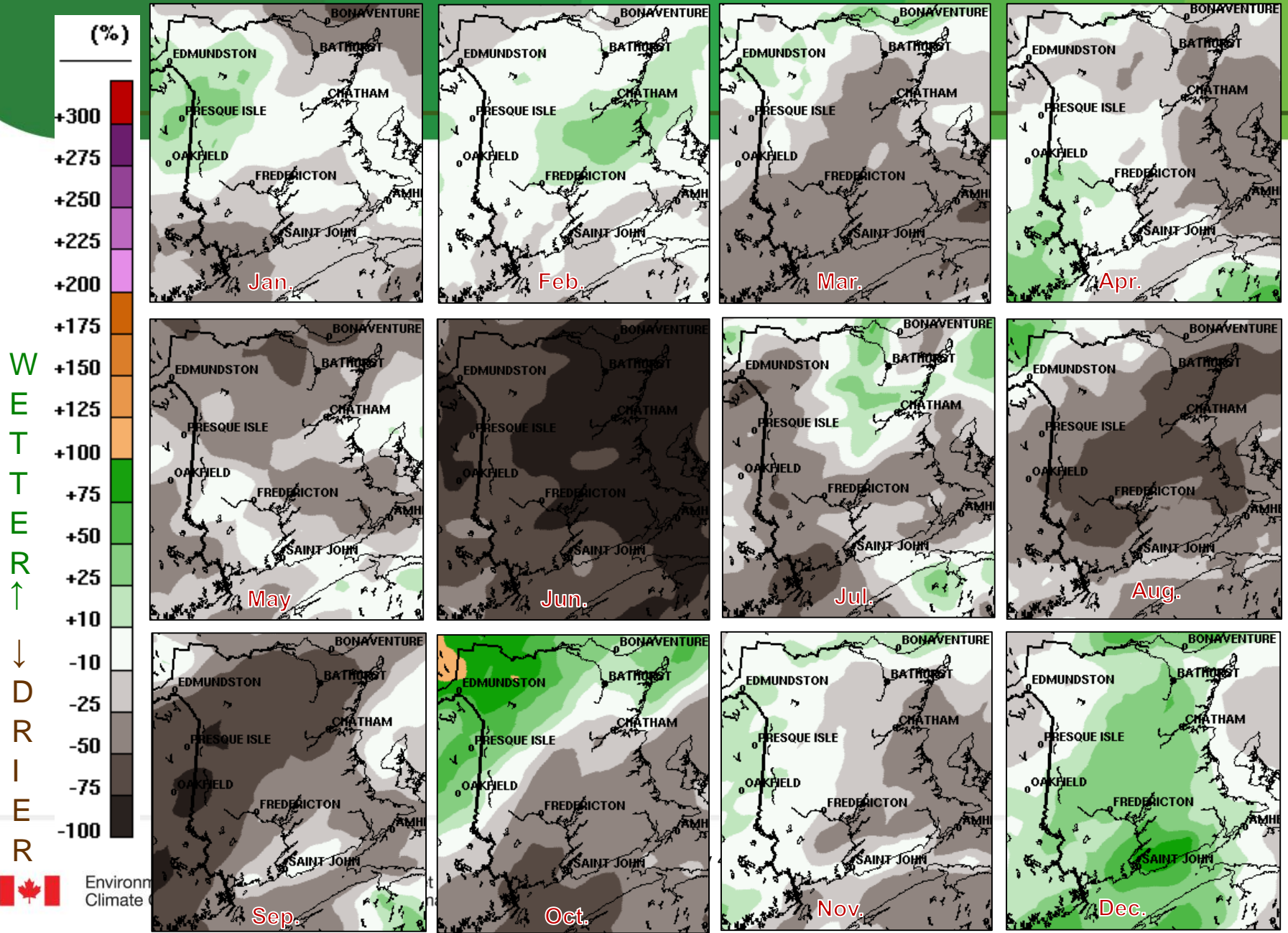
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Temperature anomaly by month in 2020



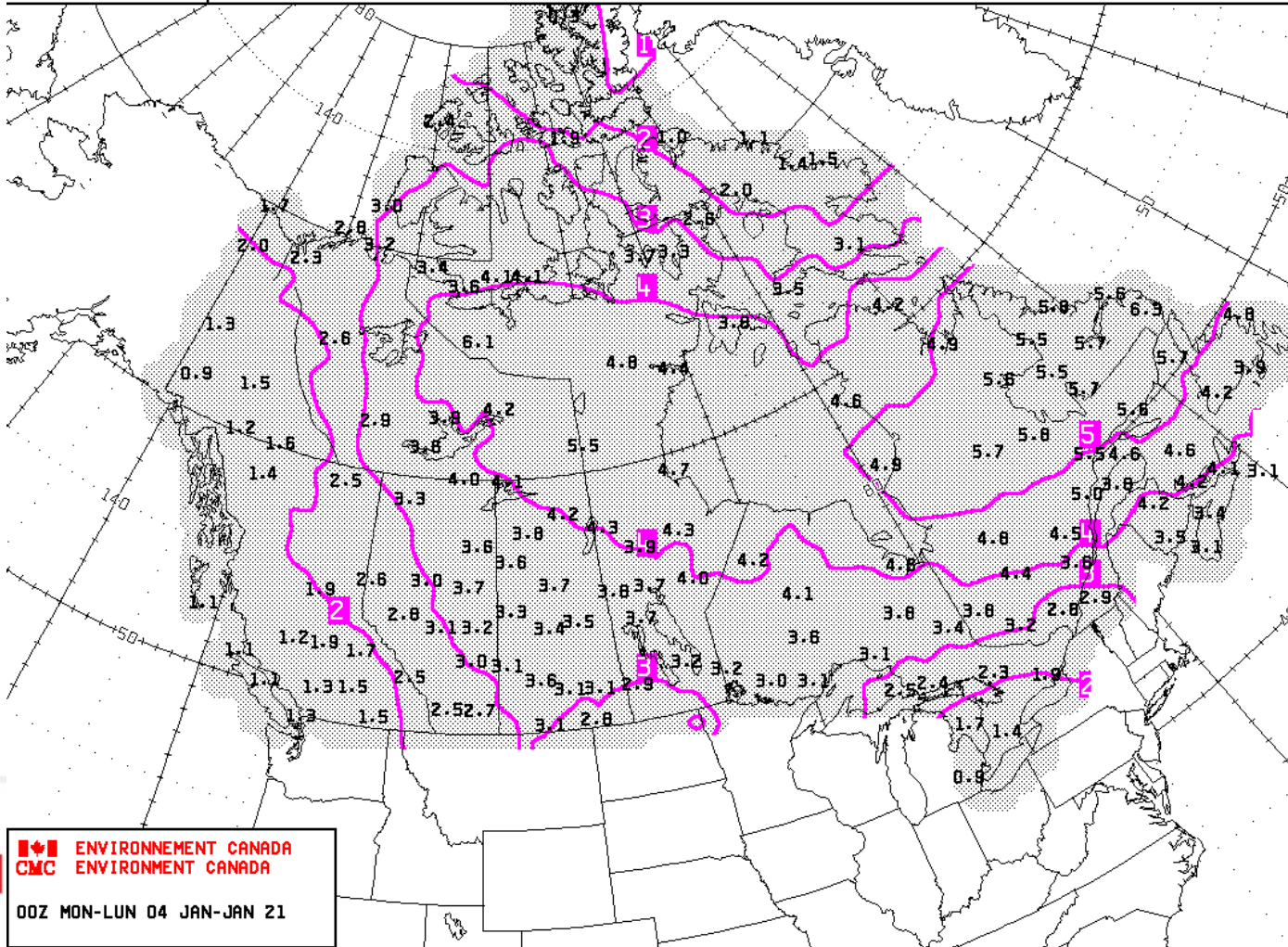
Precipitation anomaly by month in 2020



Outlook – 10 day mean temperature

(Suggesting above normal conditions (+3.5 to +4.2°C))

ENSEMBLE 20 GEM	10 DAY MEAN - MOYENNE SUR 10 JOURS
	NORMALISED TEMPERATURE ANOMALY ANOMALIE DE TEMPERATURE NORMALISEE



10 day
forecast
ending
January
14, 2021



ENVIRONNEMENT CANADA
CMC ENVIRONNEMENT CANADA

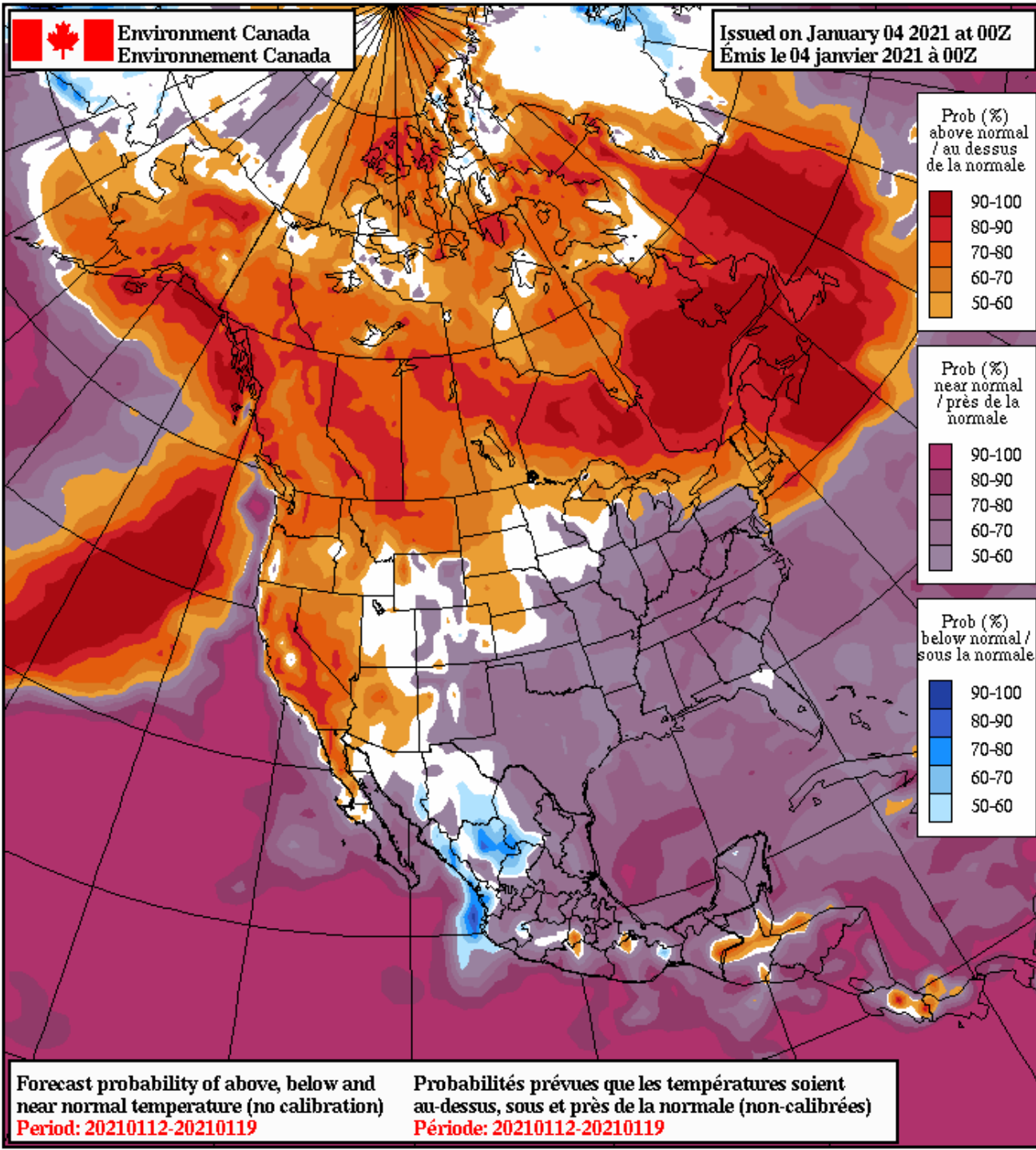
00Z MON-LUN 04 JAN-JAN 21

Canada

Day 8 to 14 Forecast

Period ending
January 19, 2021

Suggesting a strong
signal of above normal.



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Fredericton

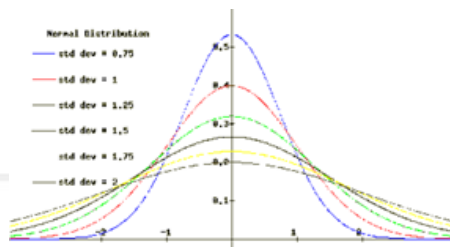
January

Normal high: -3.8°C

Normal low: -15.0°C

**Next 15 days; ending
January 18, 2021**

Generally suggesting much above normal until near January 8th then a lot of variability for the remainder of the period.



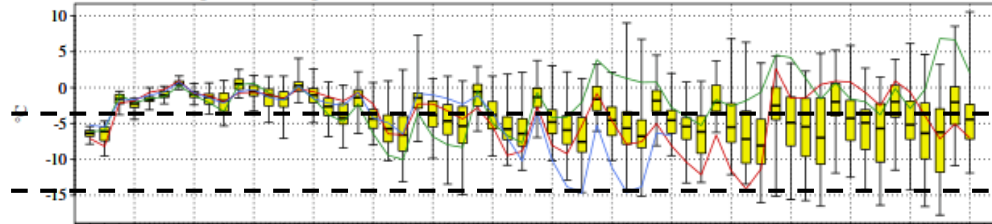
Ensemble and Deterministic Forecasts issued 4 January 2021 00 UTC
Prévision d'ensemble et déterministe émises le 4 Janvier 2021 00 UTC

for/pour

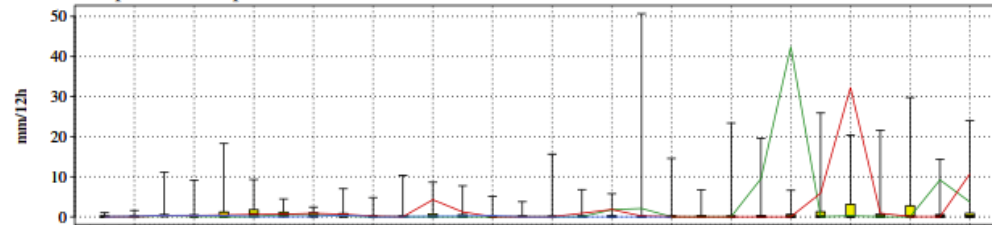
NAEFS / SPENA

FREDERICTON (YFC) 45.87 N 66.53 W/O

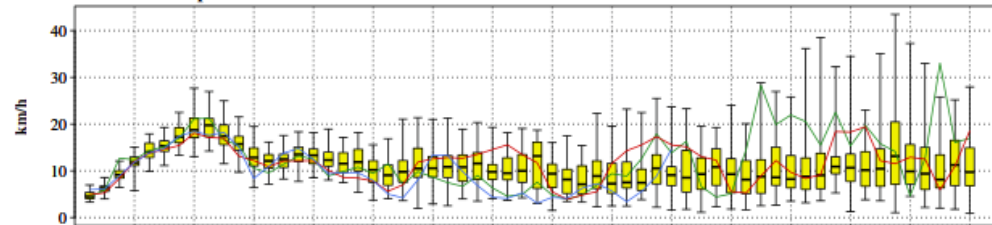
Surface air temperature/Température de l'air à la surface



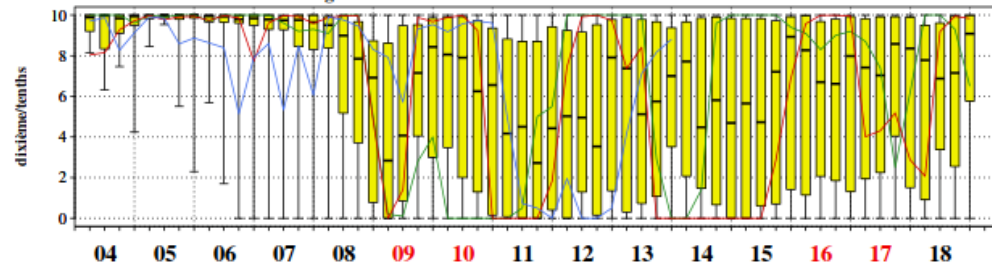
Précipitations/Precipitation



Surface wind speed/Vitesse du vent à la surface



Total cloud cover/Couvert nuageux



January/Janvier 2021

max
75%
median/médiane
25%
min

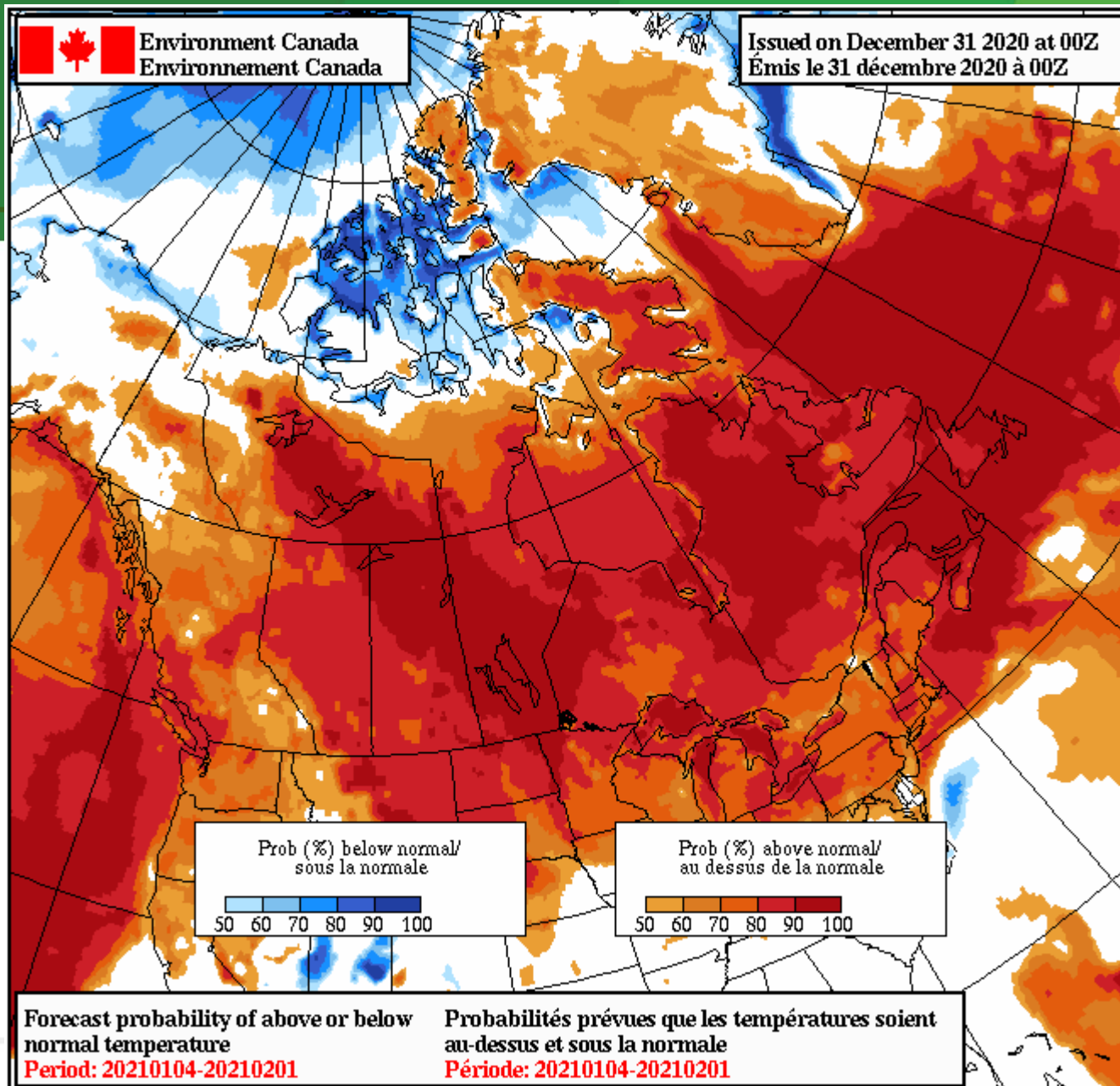
Global Model / Modèle global

Control Member / Membre contrôle CMC

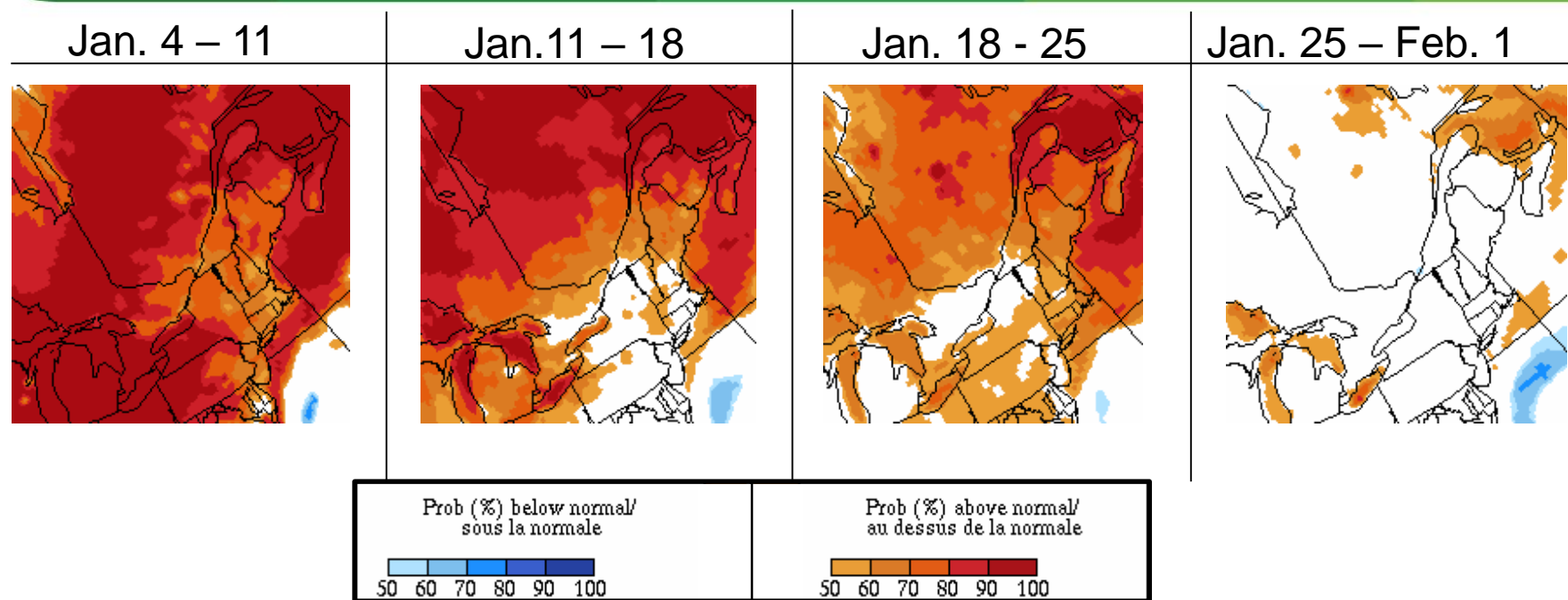
Control Member / Membre contrôle NCEP

Temperature January 4 to February 1

CMC
Monthly
Forecast
Product
using GEPS
50km res.



Weekly signature from GEPS 50km resolution



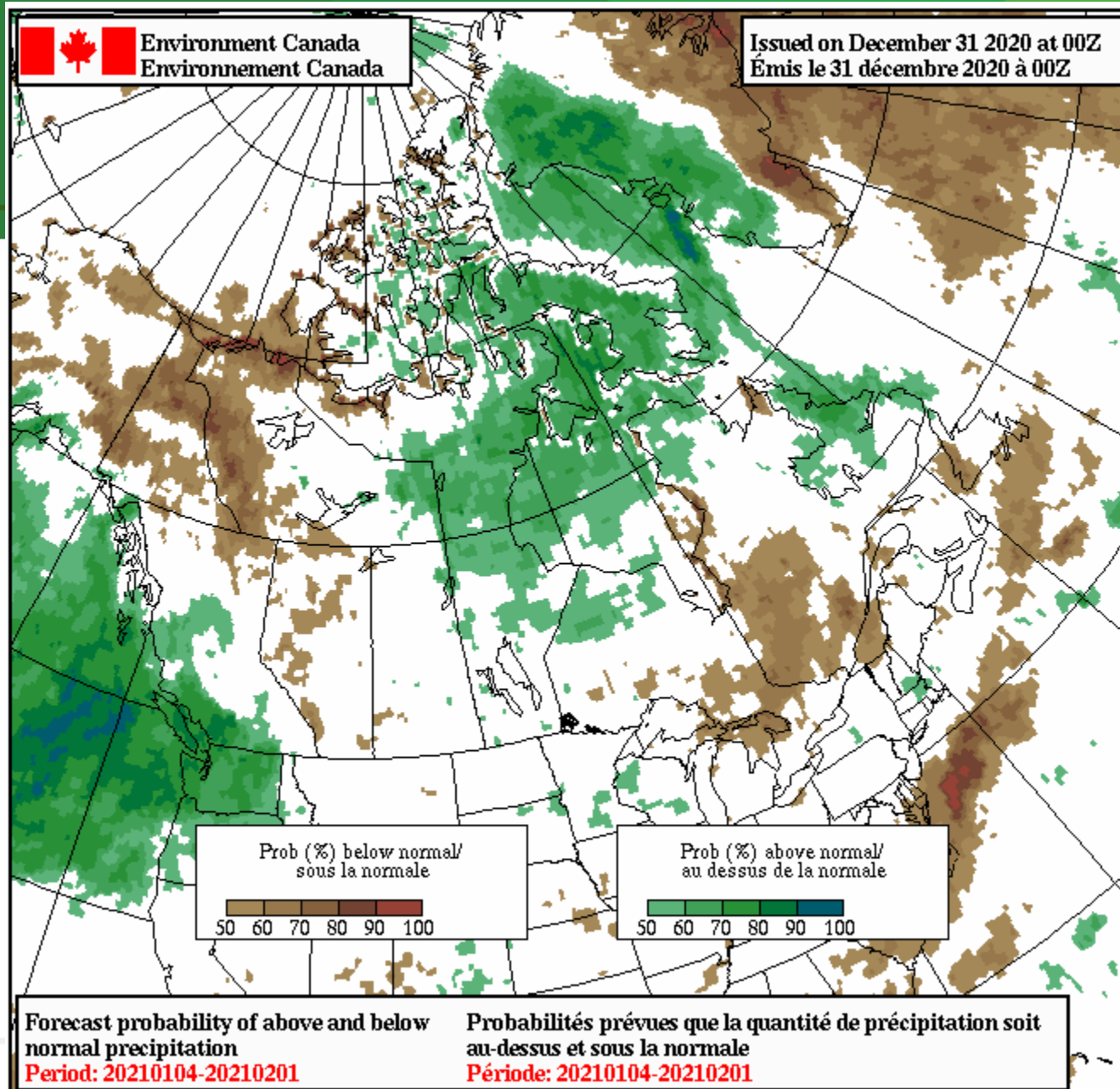
A moderate to strong signal of above normal for the first three weeks then no signal (near normal) for the remainder of the period.





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Issued on December 31 2020 at 00Z
Émis le 31 décembre 2020 à 00Z



Prob (%) below normal/
sous la normale

50 60 70 80 90 100

Prob (%) above normal/
au dessus de la normale

50 60 70 80 90 100

Forecast probability of above and below
normal precipitation

Period: 20210104-20210201

Probabilités prévues que la quantité de précipitation soit
au-dessus et sous la normale

Période: 20210104-20210201

Precipitation
January 4
to
February 1

CMC
Monthly
Forecast
Product
using GEPS
50km res.

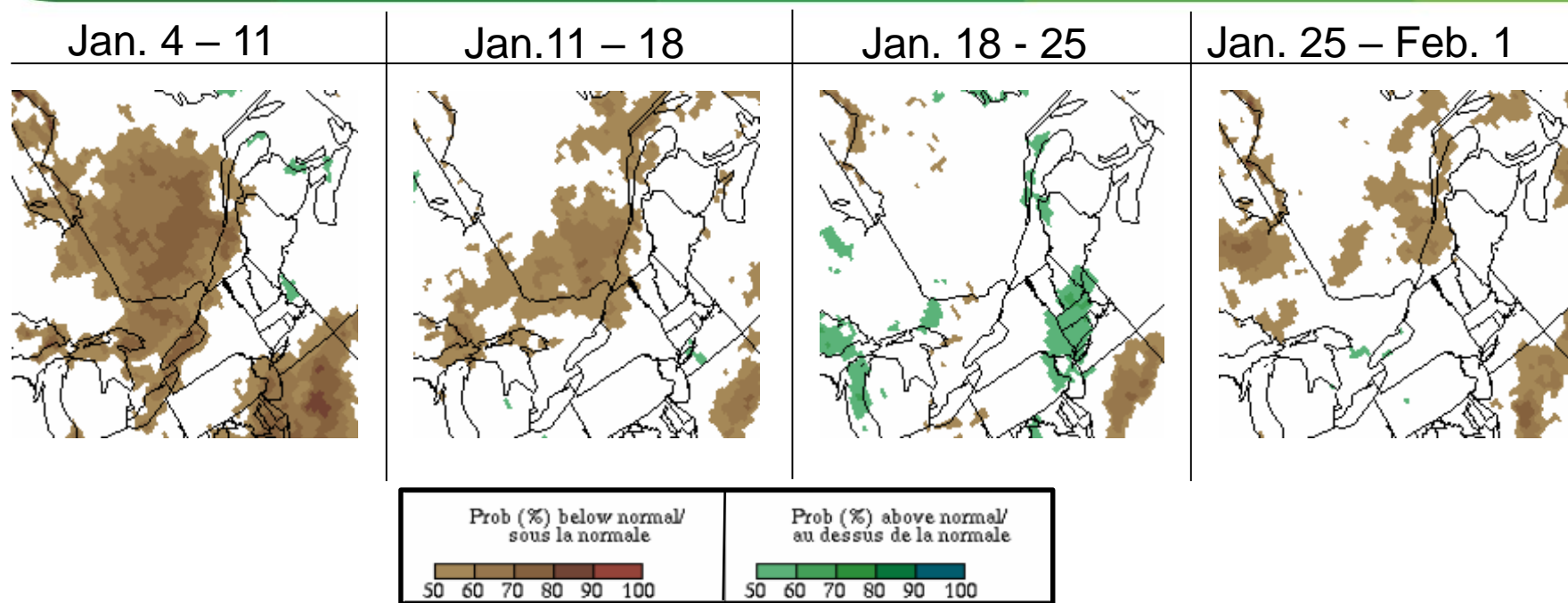


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Weekly signature from GEPS 50km resolution

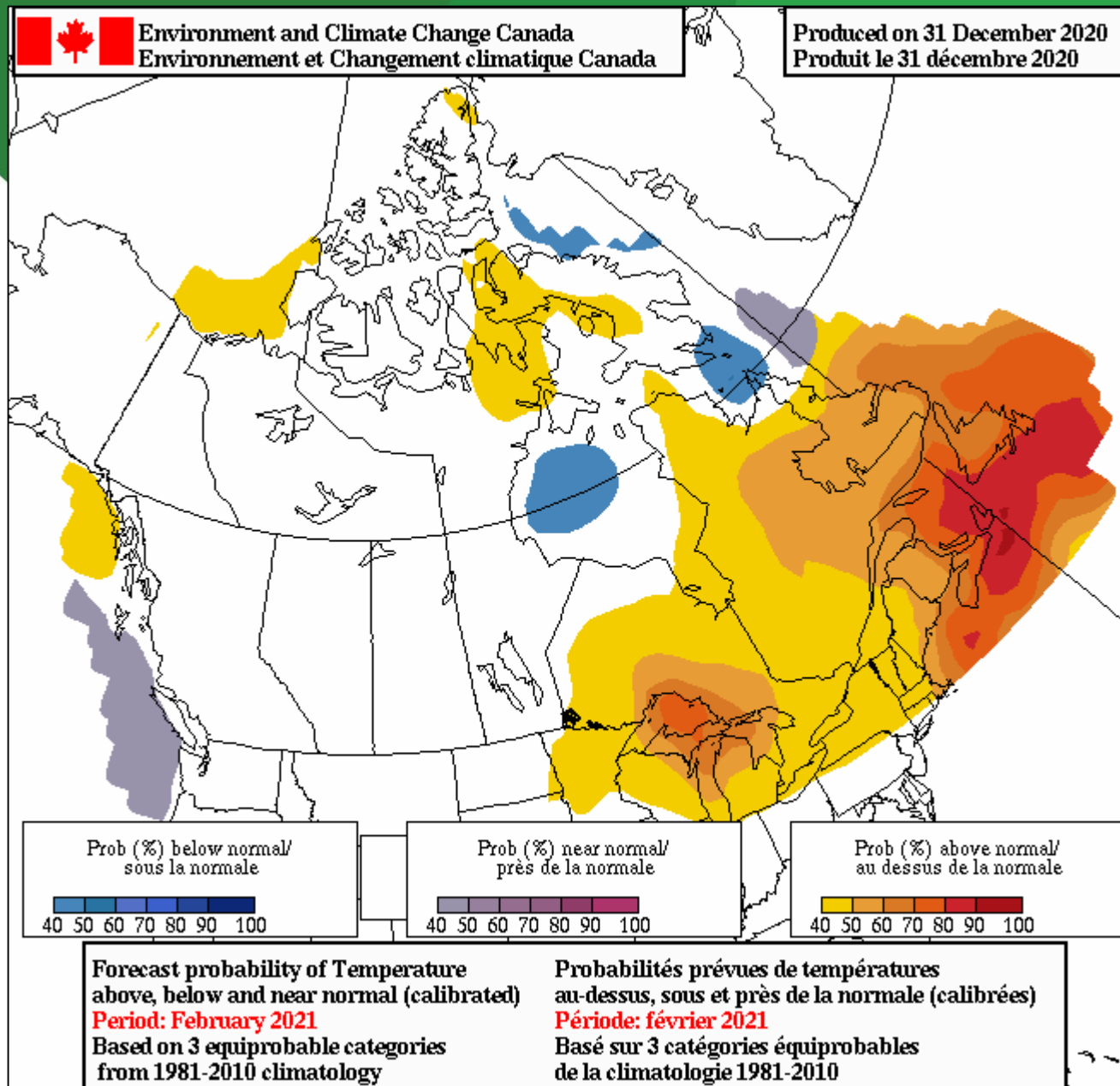


No conclusive signal (near normal) throughout the period.

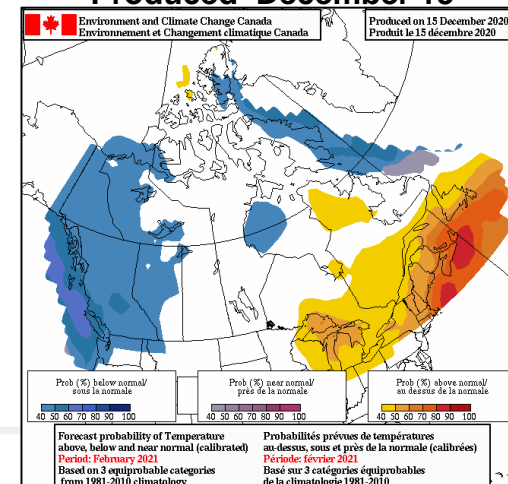


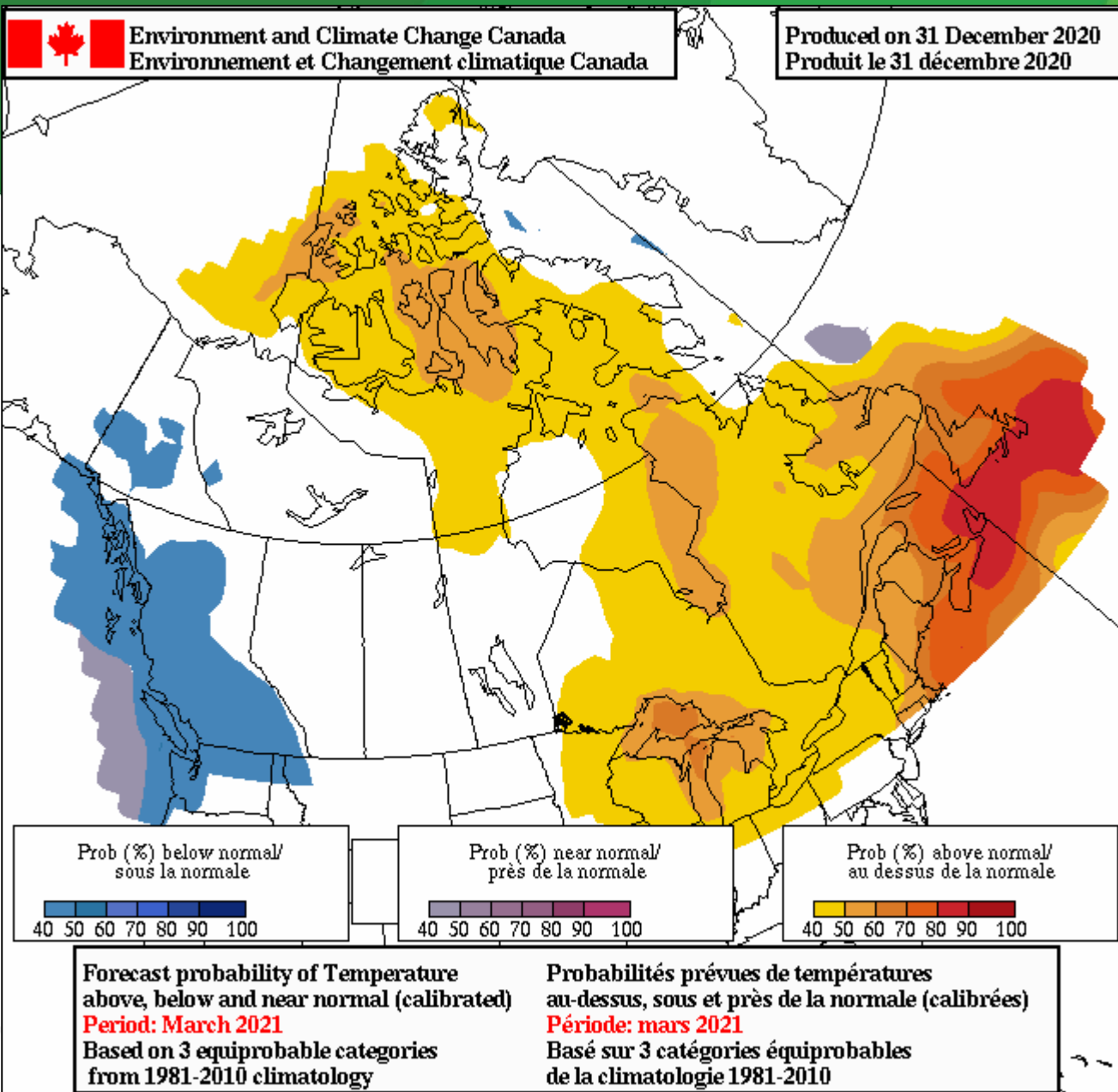
Temperature February 2021

CanSIPS
 (Canadian Seasonal and
 Interannual Prediction
 System)
 CanAM3
 CanAM4
 +
 CanOM4



Produced December 15





Temperature March 2021

CanSIPS
(Canadian Seasonal and
Interannual Prediction
System)

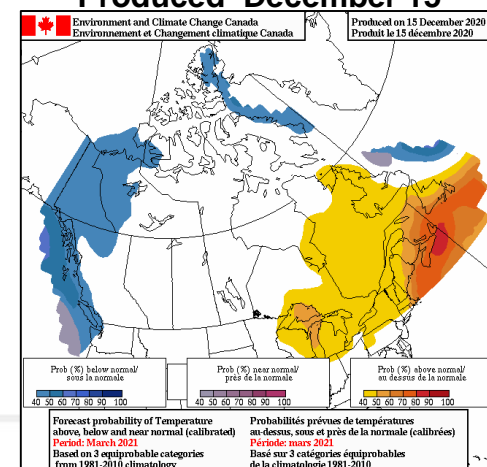
CanAM3

CanAM4

+

CanOM4

Produced December 15



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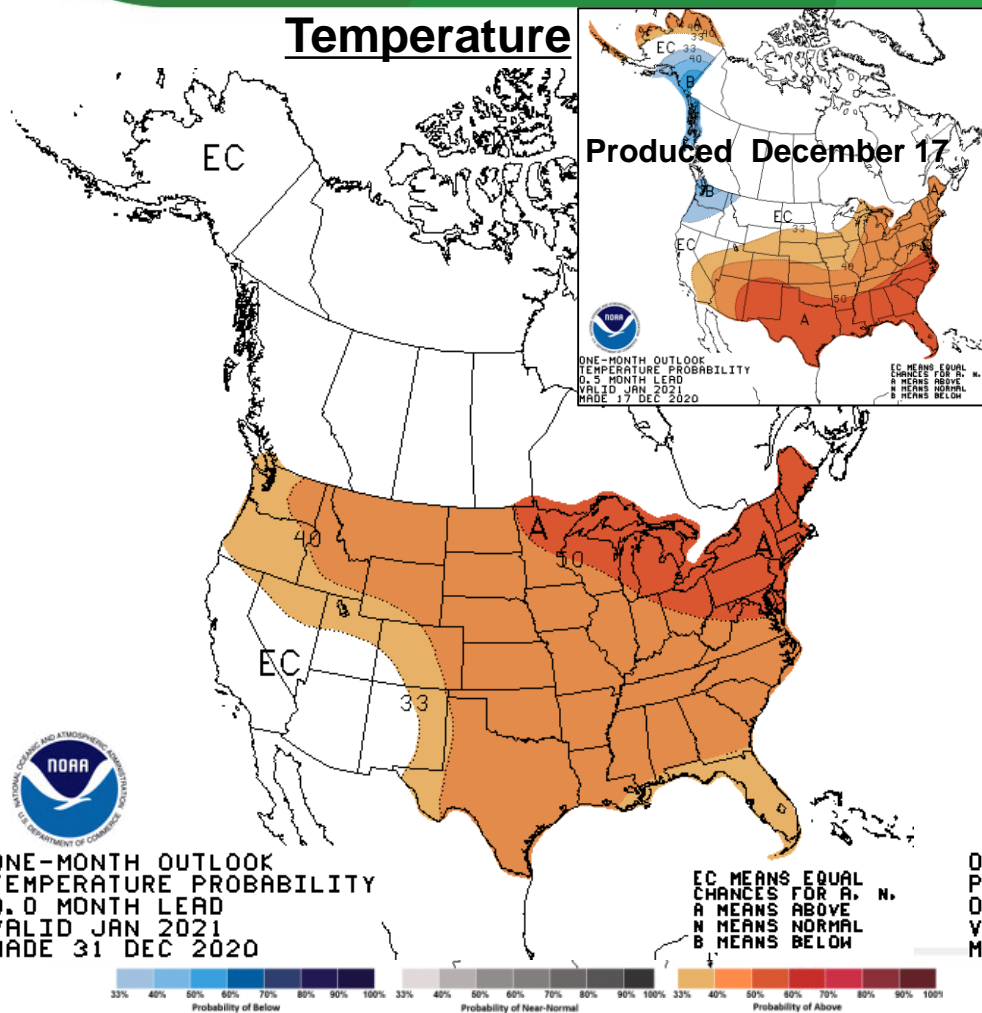
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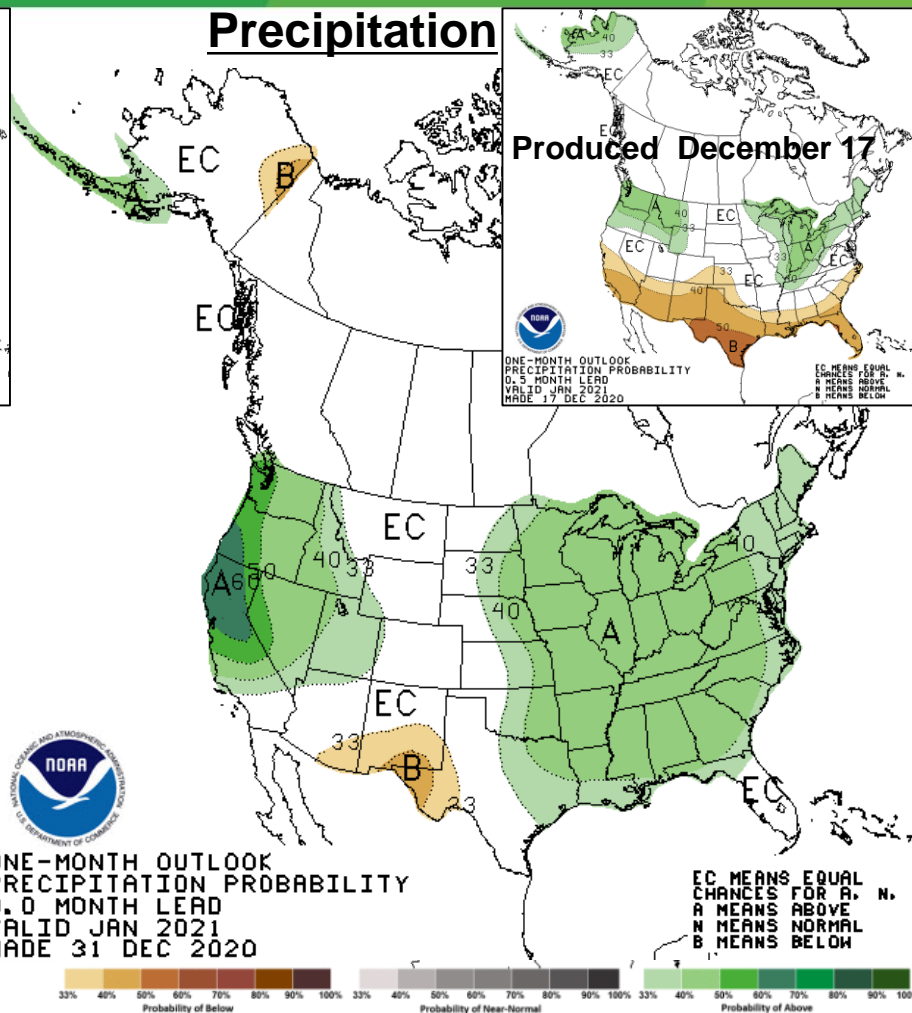


January 2021

Temperature



Precipitation



ONE-MONTH OUTLOOK
TEMPERATURE PROBABILITY
0.0 MONTH LEAD
VALID JAN 2021
MADE 31 DEC 2020

ONE-MONTH OUTLOOK
PRECIPITATION PROBABILITY
0.0 MONTH LEAD
VALID JAN 2021
MADE 31 DEC 2020



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Contact

Jill Maepea

Warning Preparedness Meteorologist

jill.maepea@canada.ca

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Canada Weather Pages

www.weather.gc.ca



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