

New Brunswick

December 2020 Review January 2021 and Winter Outlook

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Environment and Climate Change Canada
January 4, 2021

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
Min					-3.7	-7.9	2.6	108.1	79.6

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

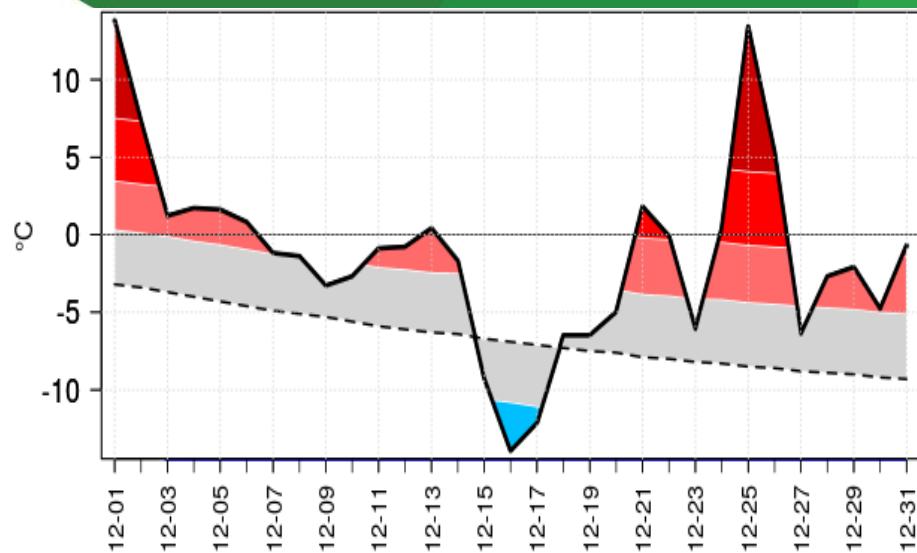
New Record (°C)	ECCC Station	Old Record (°C)	Date
17.3 (Dec. 25)	Fredericton	16.1	Dec. 1 2020
17.2 (tie) (Dec. 1)	Kouchibouguac	17.2	Dec. 11 1966
17.1 (Dec. 1)	Miramichi	15.6	Dec. 5 & 11 1950 Dec. 21 1957
17.0 (Dec. 1)	Fredericton	16.1	Dec. 4 1950
16.4 (Dec. 1)	Doaktown	15.0	Dec. 11 1966 Dec. 21 & 22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

December 2020; Provincial Climate Extremes

Parameter	Value	ECCC Station	Day of month
Daily Maximum Temperature	17.8°C	Gagetown	25
Daily Minimum Temperature*	-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

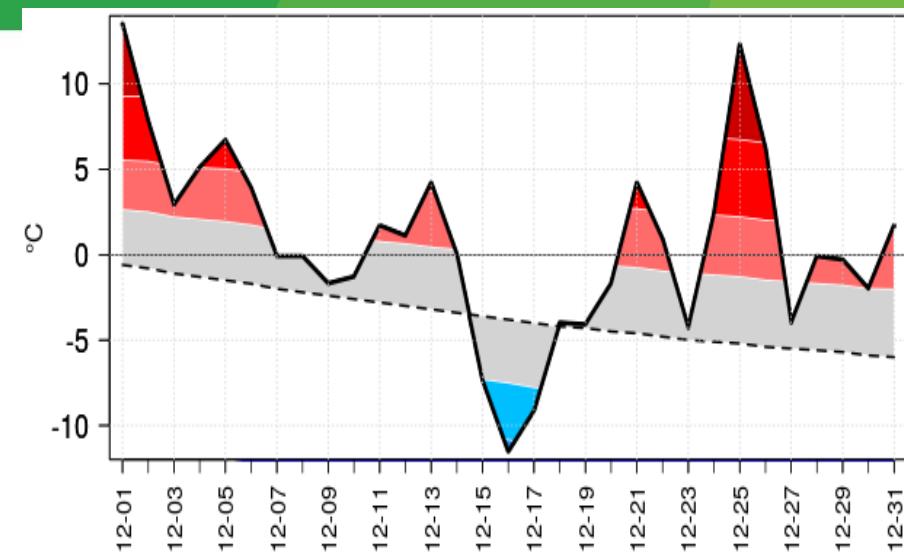
Daily Mean Temperature (line), Long-Term Mean (dashed line) Based on gridded observations / Climatology 1981-2010
and Categories based on Standard Deviations (blue and red) Std. dev. thresholds +/- 0.7, 1.3, 2.1



Fredericton

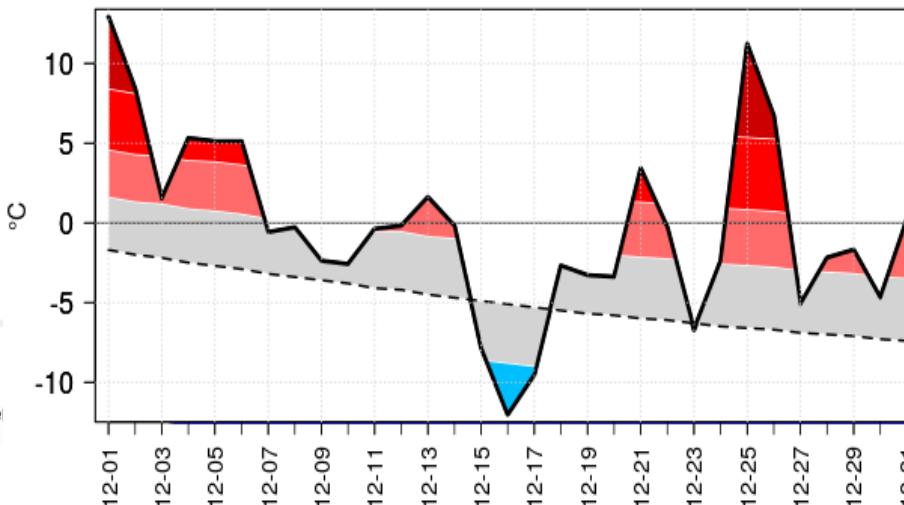
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Saint John



All sites were
above normal

Moncton



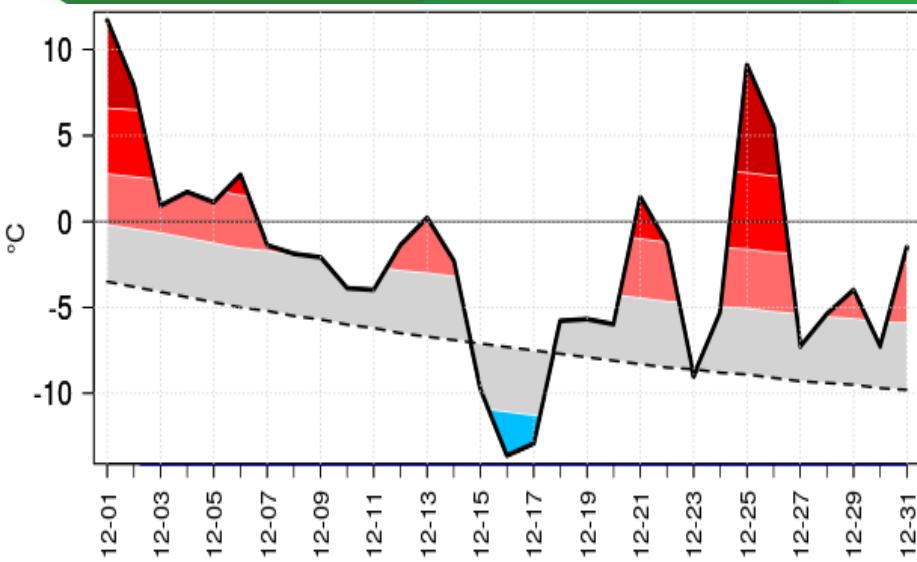
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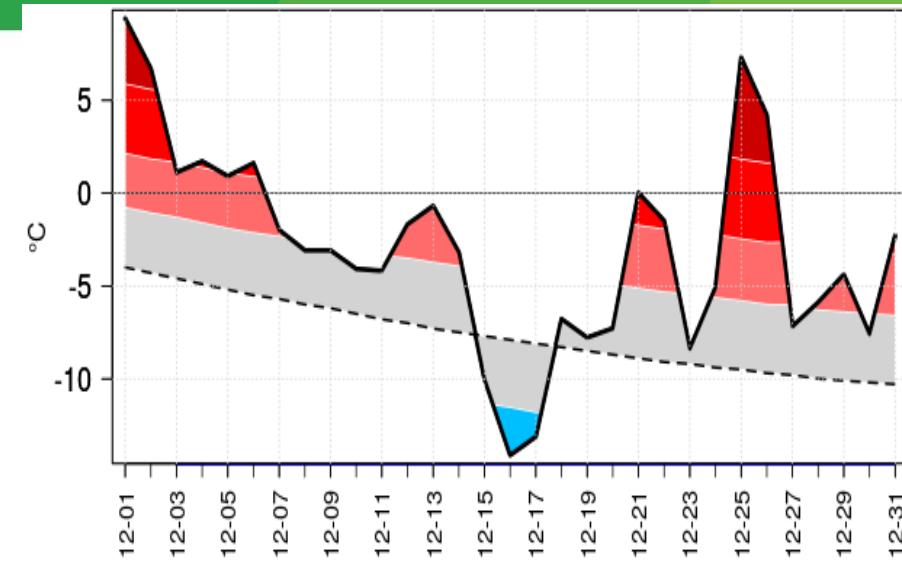
December 2020 - Temperature

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 +/- 0.7, 1.3, 2.1



Miramichi

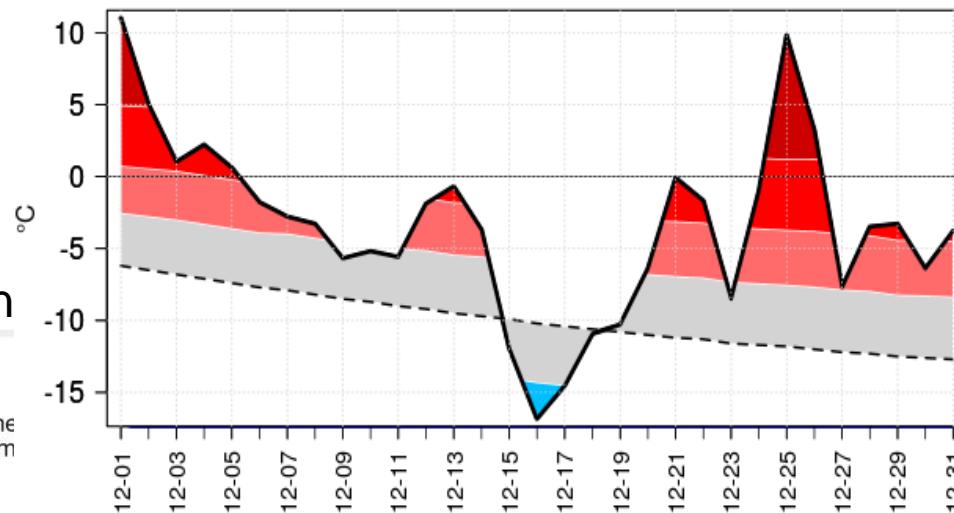
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Bathurst

All site were
above normal

Edmundston



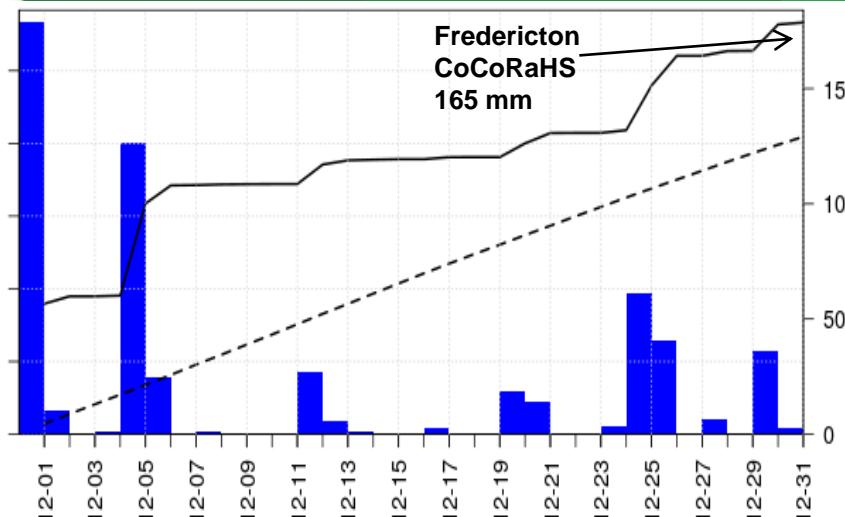
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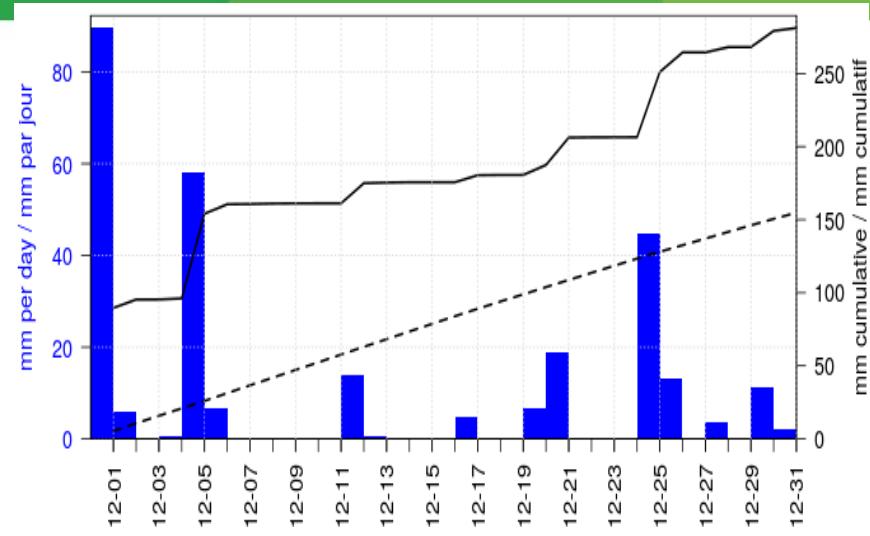
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December 2020 - Precipitation

Daily Total Precipitation (bars), Cumulative (line) and Cumulative Long-Term Mean (dashed line) Based on ECCC gridded precipitation analysis
Climatology 2002-2019



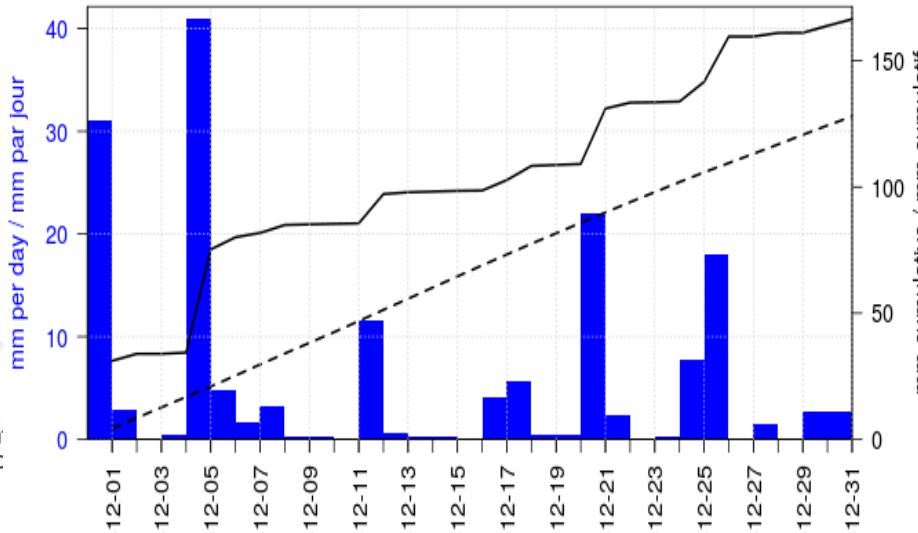
Fredericton (and area)



Saint John

All sites were
above normal

Moncton



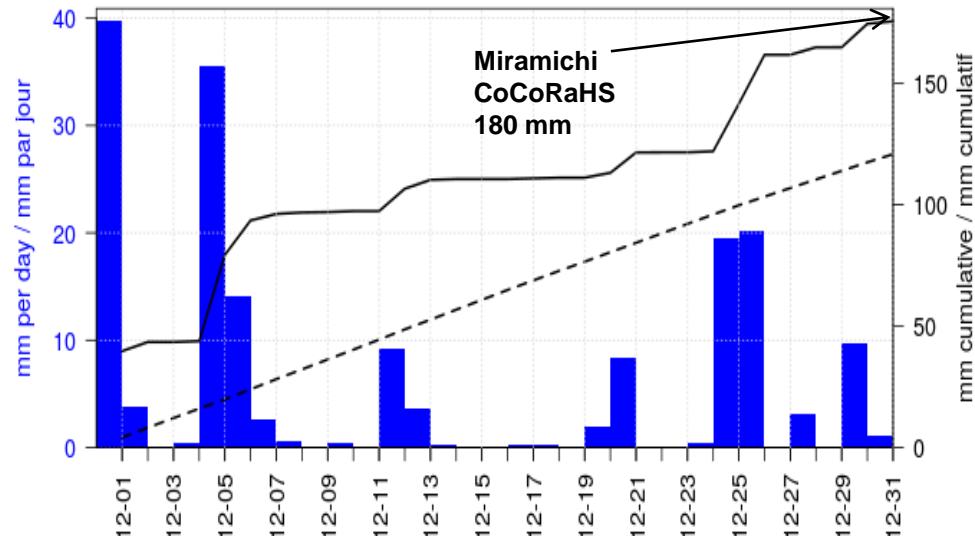
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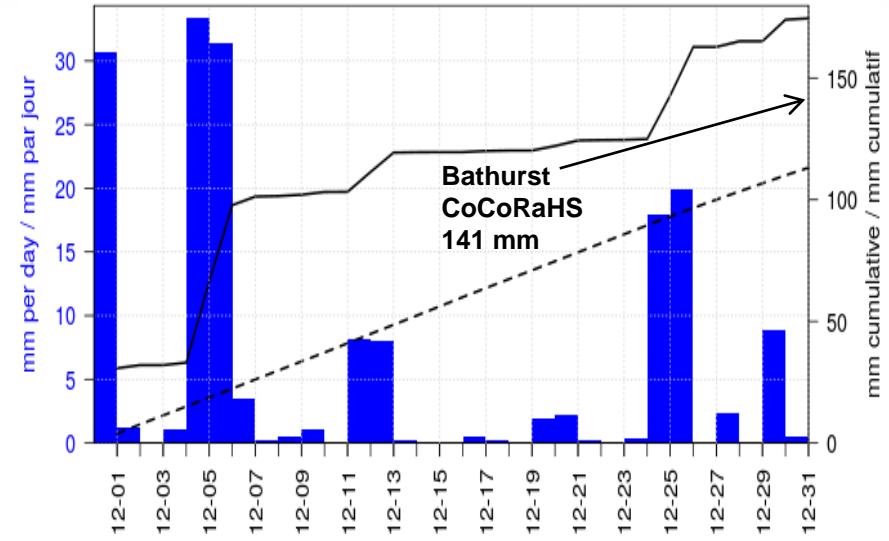
December 2020 - Precipitation

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Miramichi

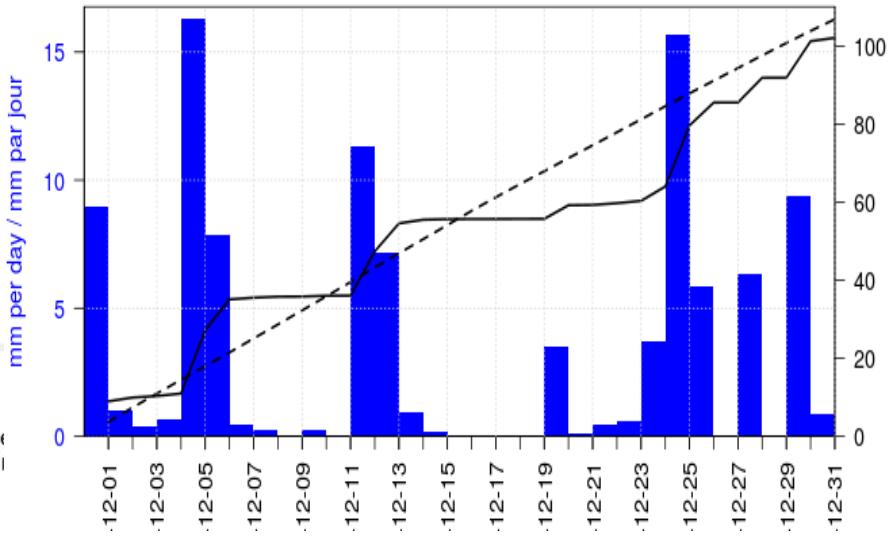
Miramichi and
Bathurst were
above normal



Bathurst

Edmundston
was near
normal

Edmundston

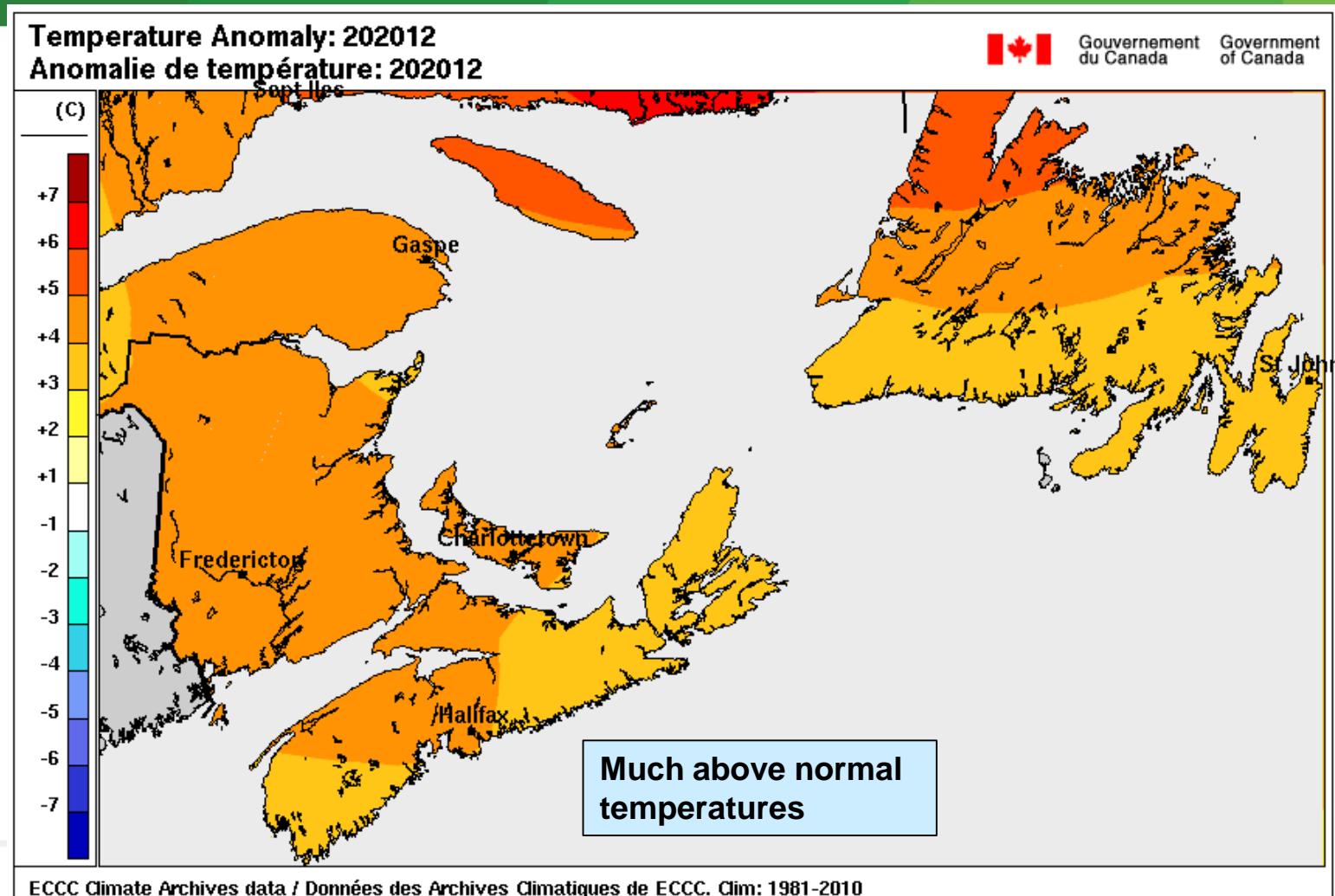


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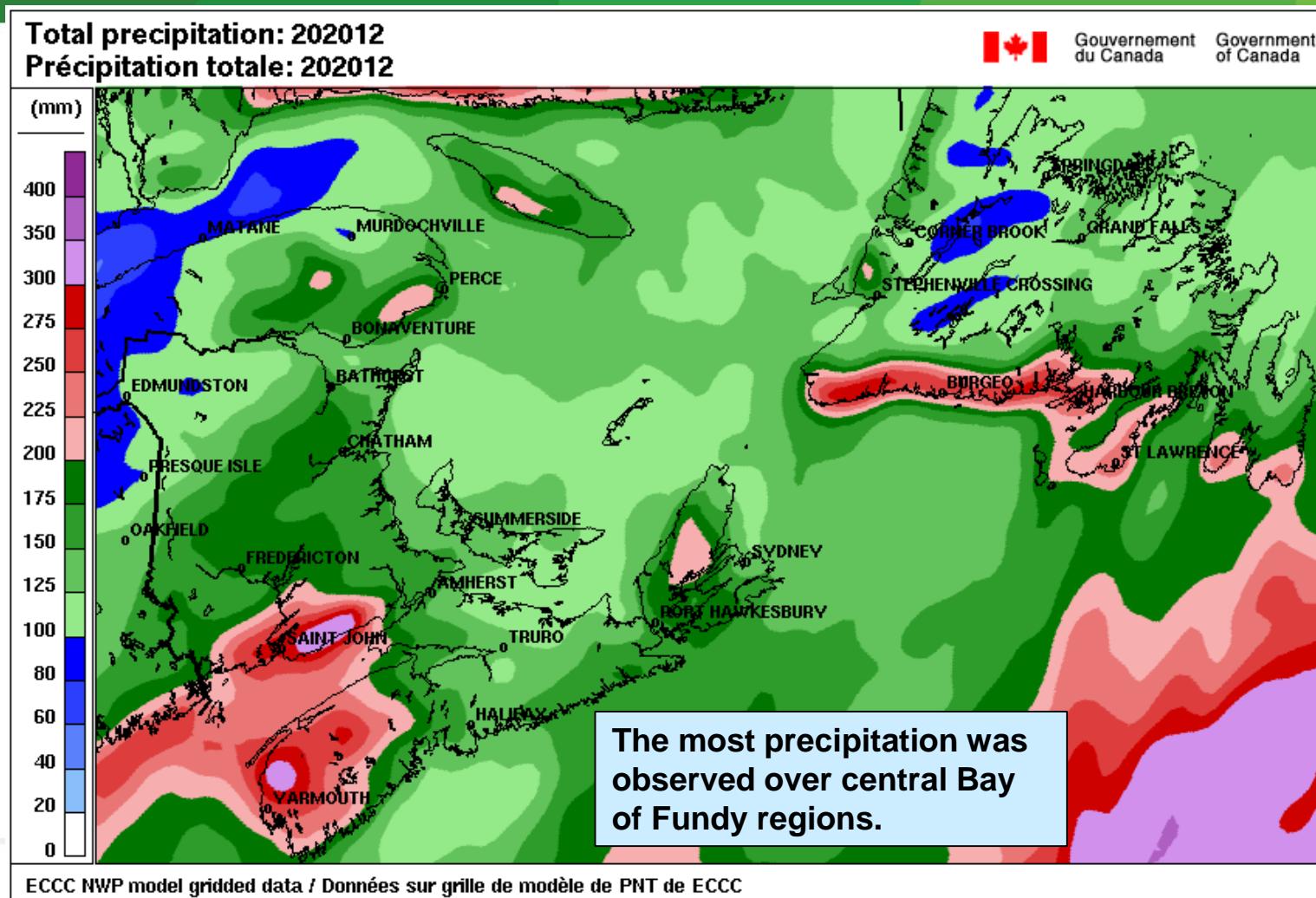
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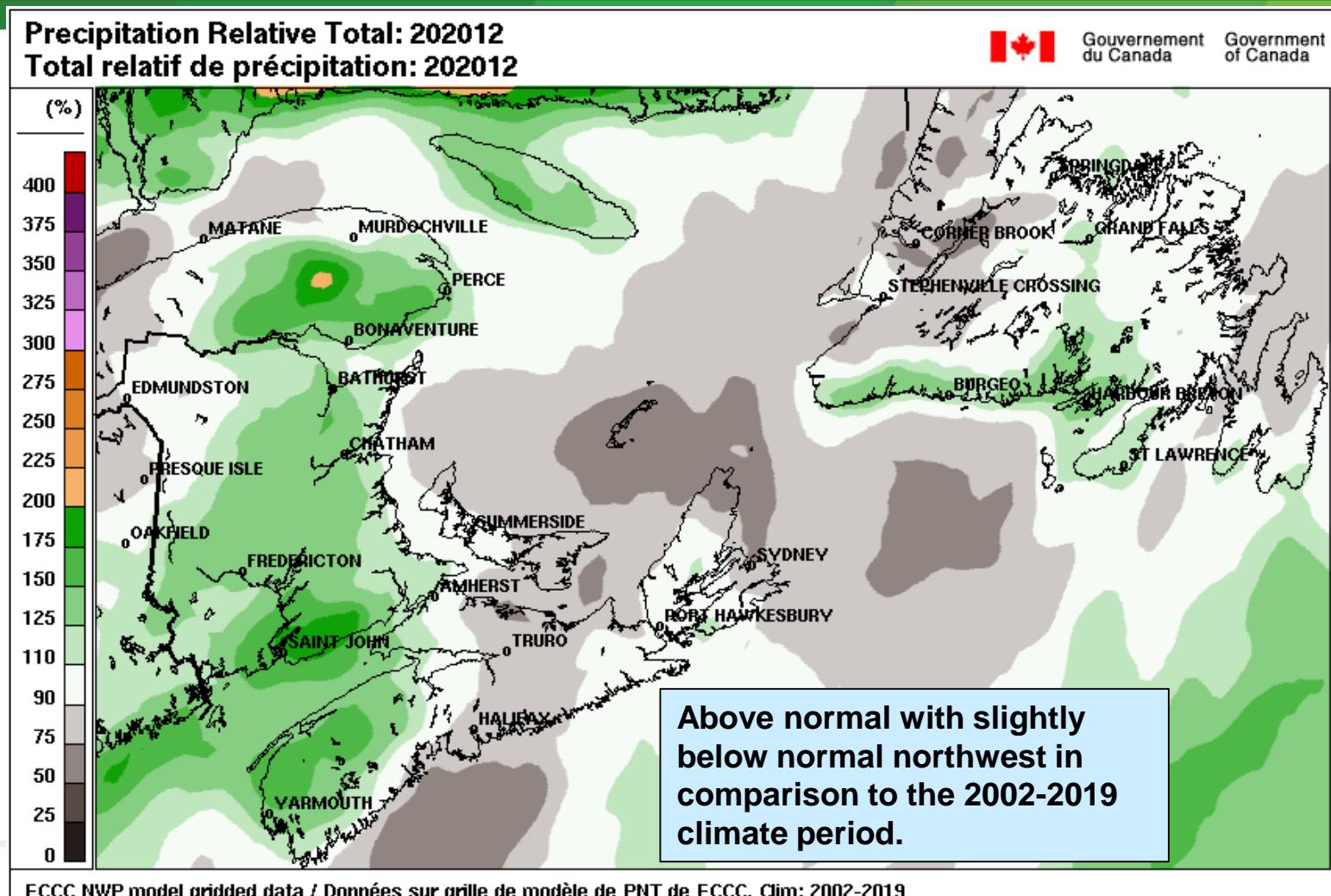
December 2020 – Temperature departure from 1981-2010 mean



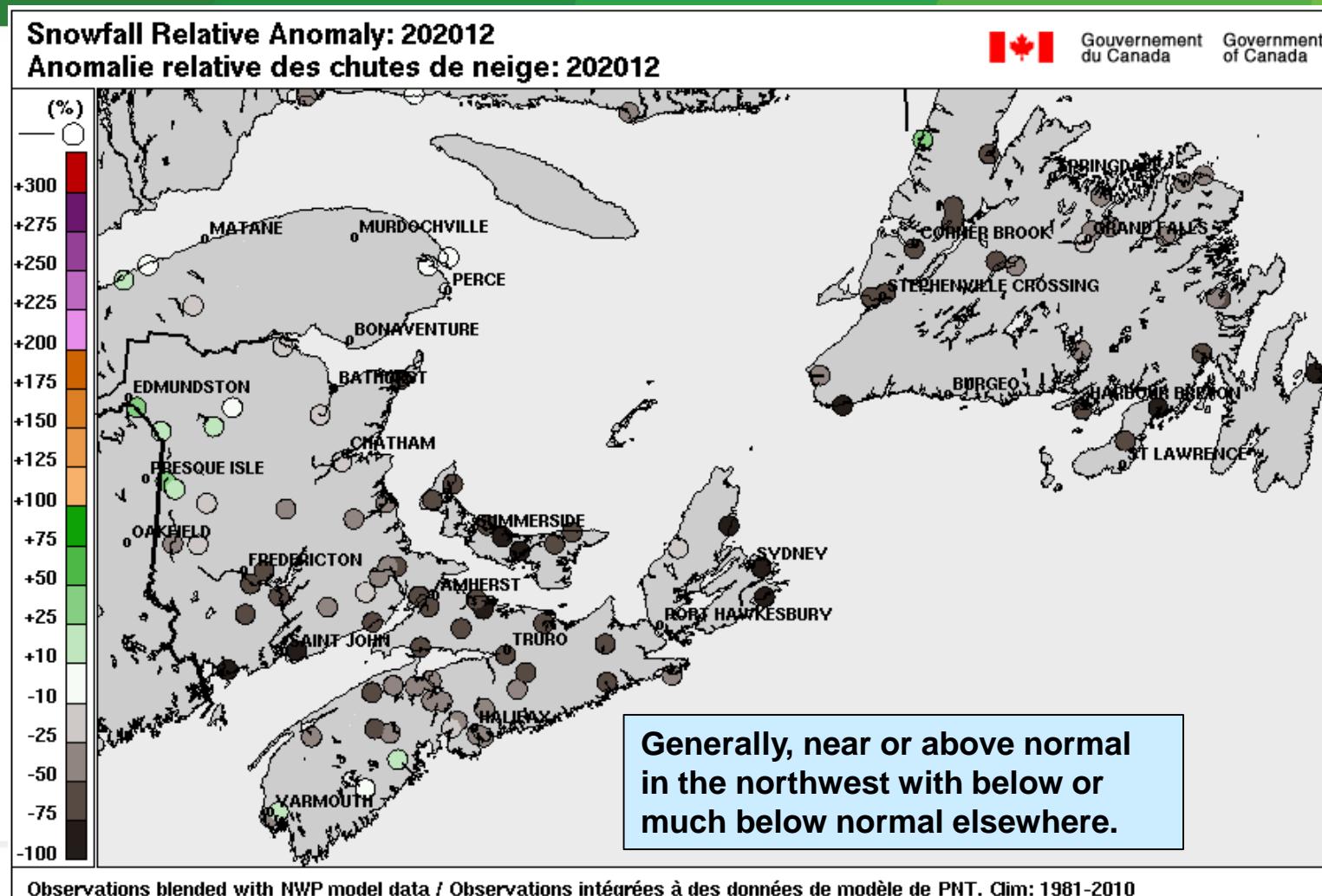
December 2020 – Total precipitation



December 2020 – Precipitation departure from 2002-2019 mean

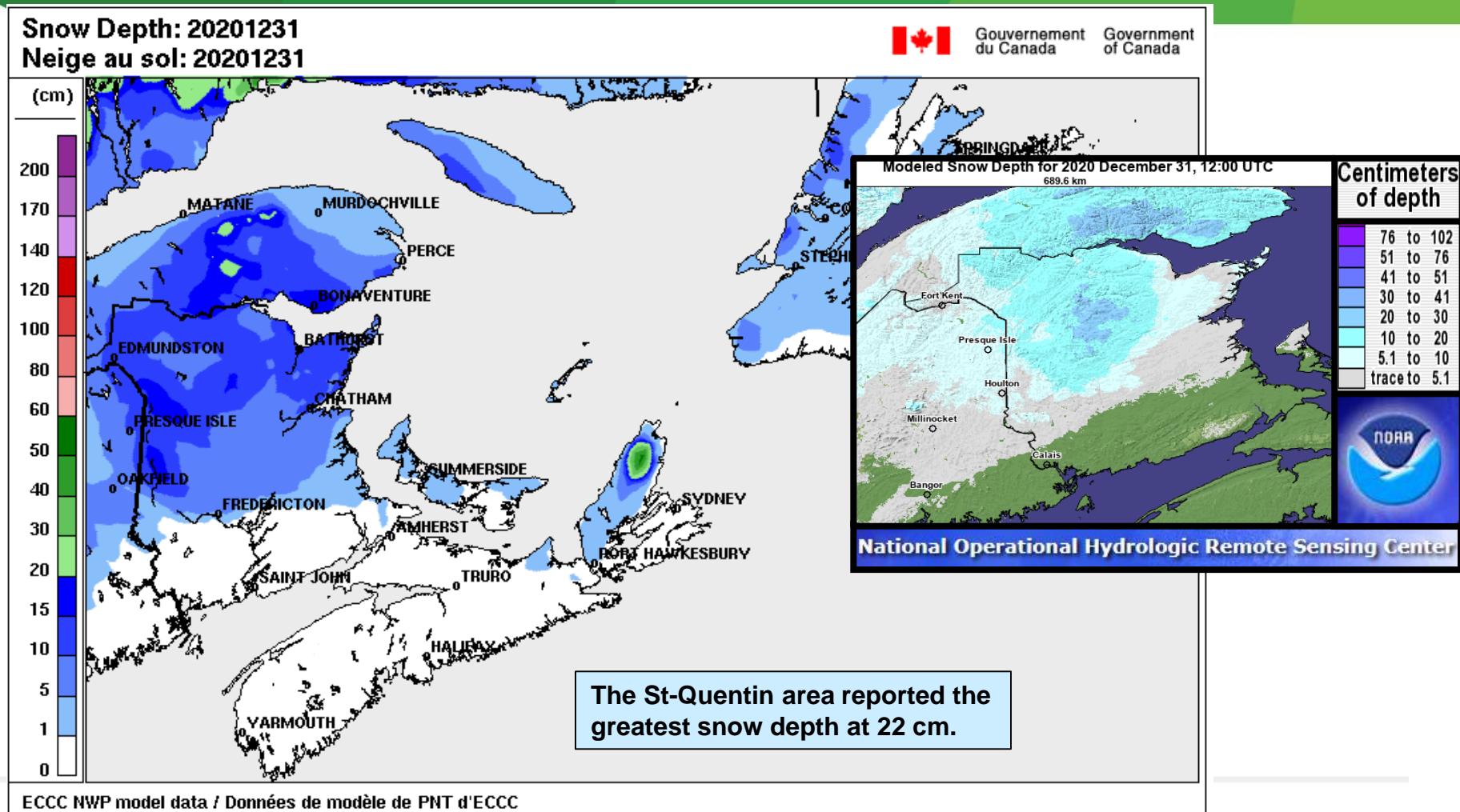


December 2020 – Snowfall departure from 1981-2010 mean

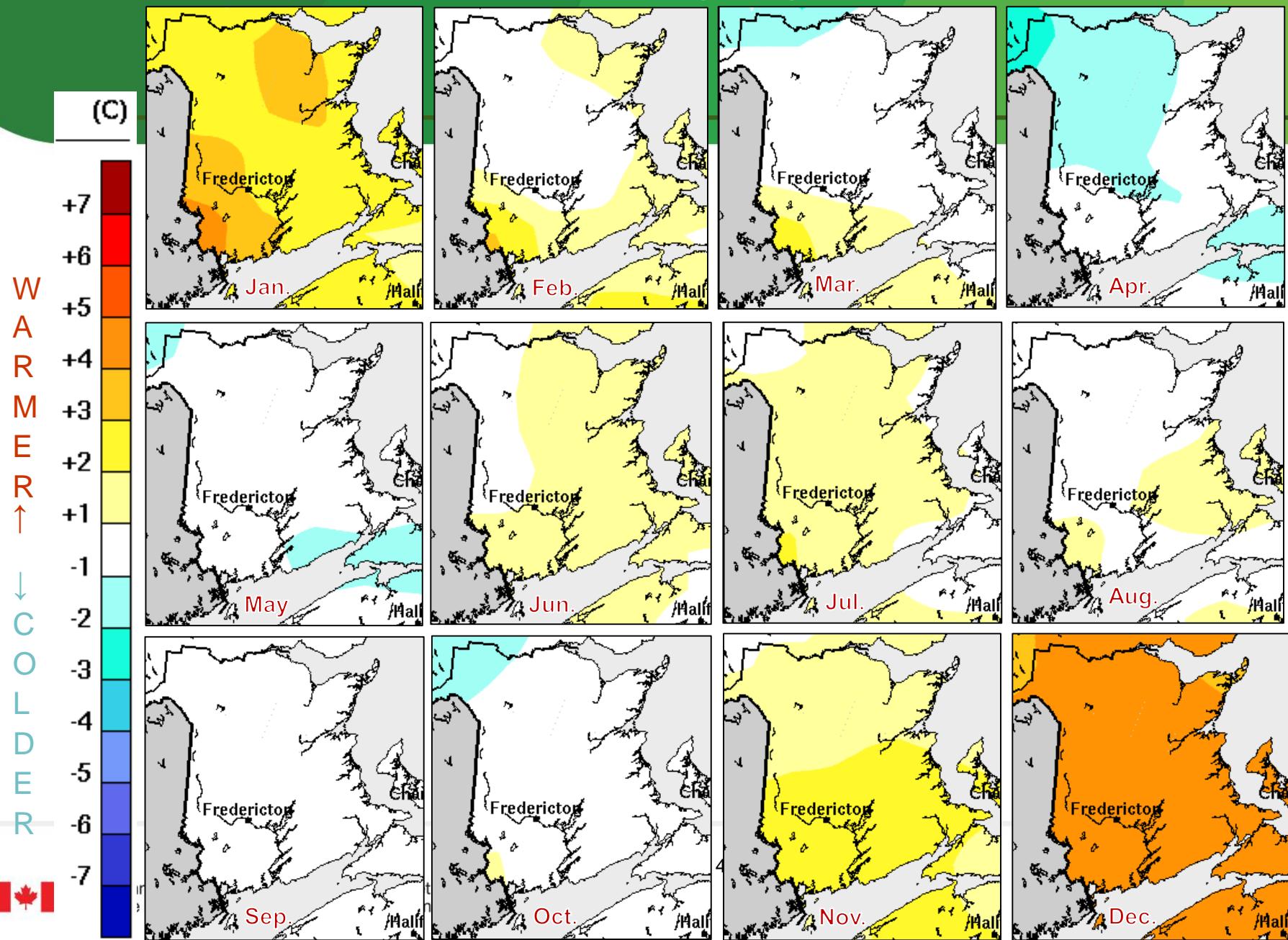


December 2020 – Snow depth at month end

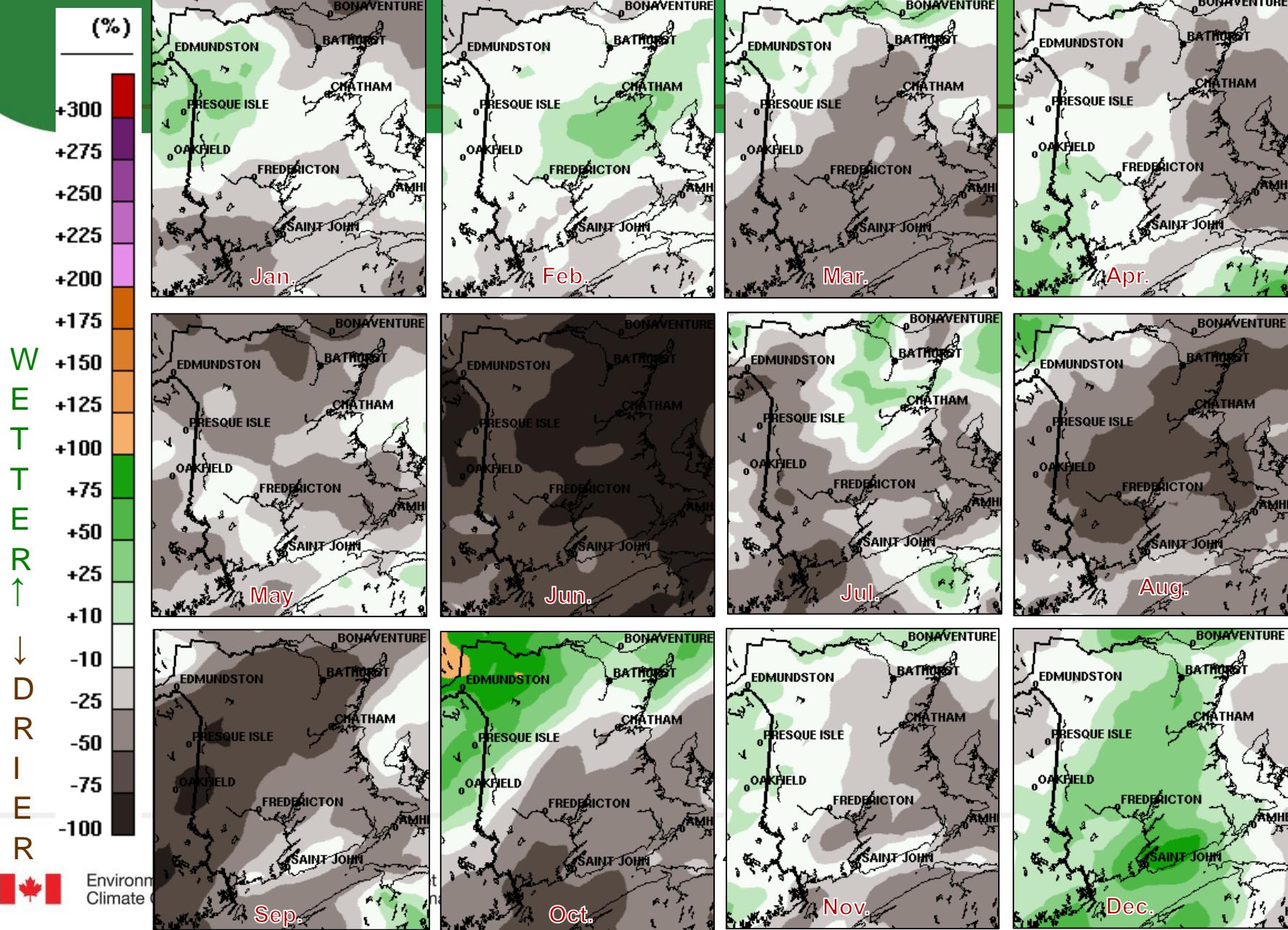
Extracted from Canadian computer model



Temperature anomaly by month in 2020

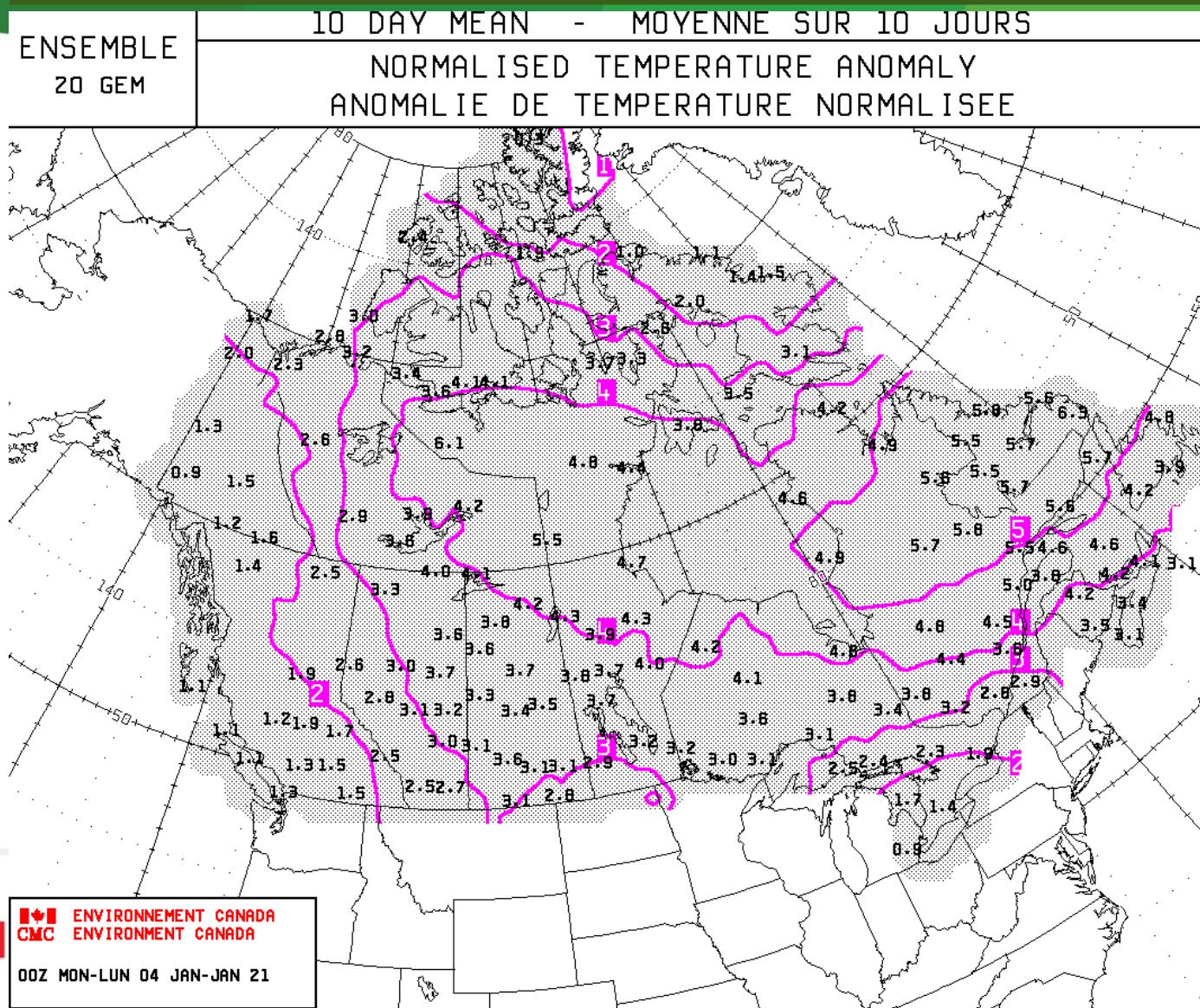


Precipitation anomaly by month in 2020



Outlook – 10 day mean temperature

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

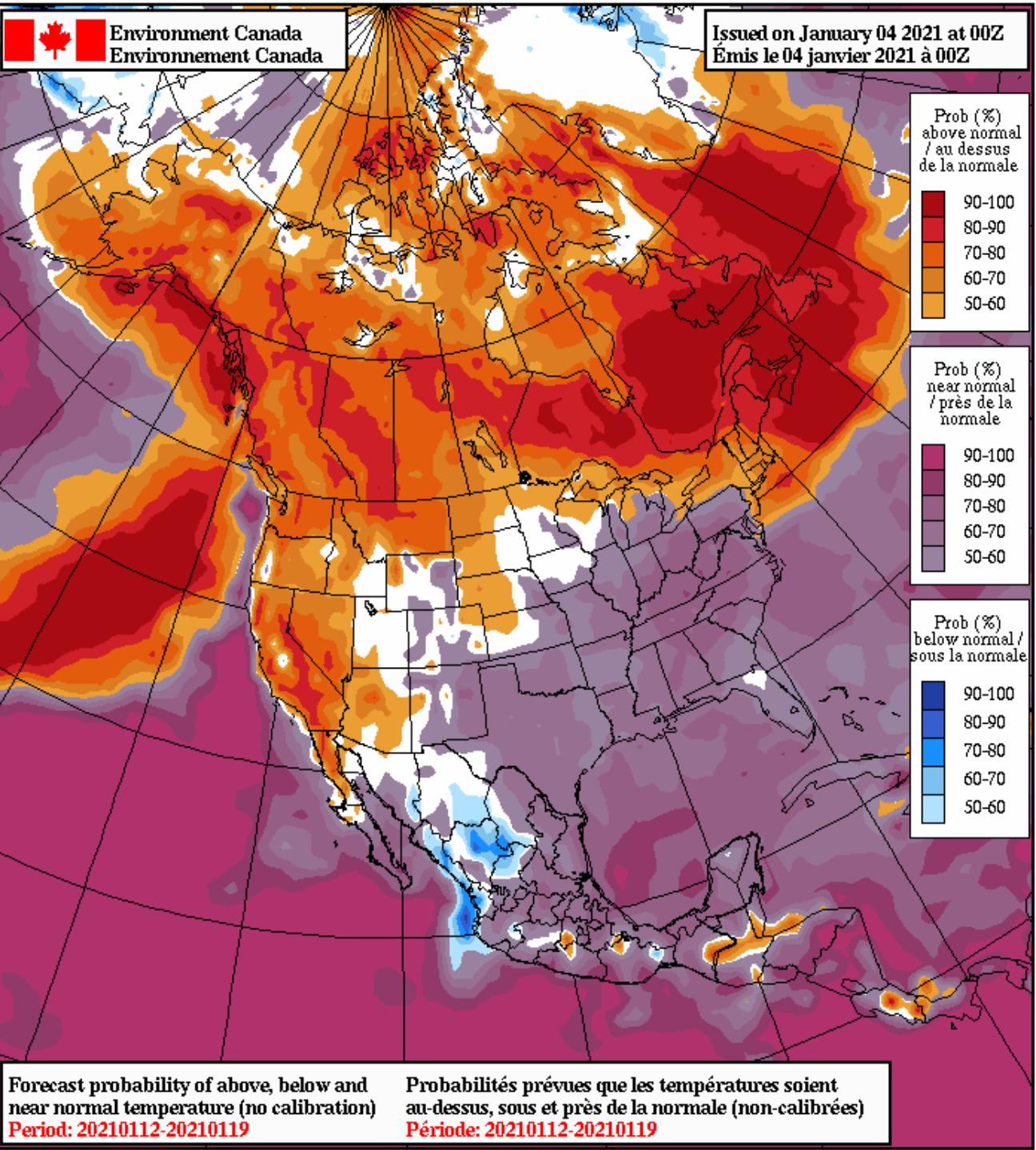


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Day 8 to 14 Forecast

Period ending
January 19, 2021

Suggesting a strong
signal of above normal.



Fredericton

January

Normal high: -3.8C

Normal low: -15.0C

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.

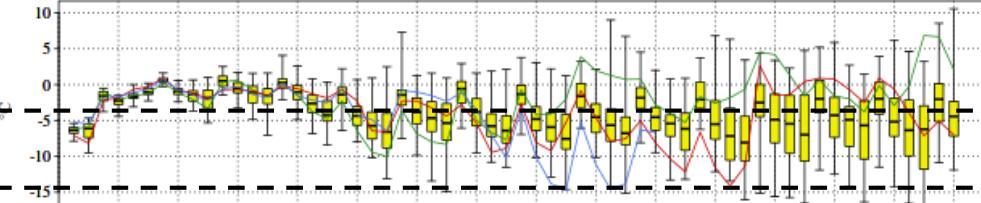


Ensemble and Deterministic Forecasts issued 4 January 2021 00 UTC
Prévision d'ensemble et déterministe émises le 4 Janvier 2021 00 UTC
for/pour

NAEFS / SPENA

FREDERICTON (YFC) 45.87 N 66.53 W/O

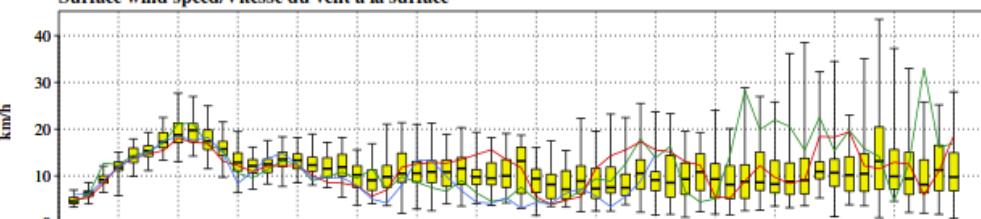
Surface air temperature/Temperature de l'air à la surface



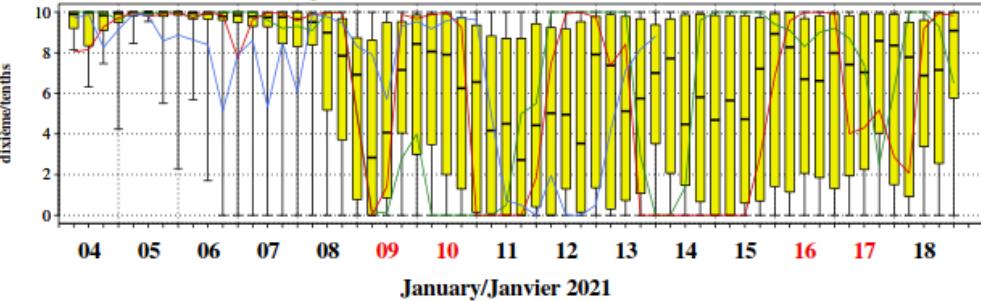
Précipitations/Precipitation



Surface wind speed/Vitesse du vent à la surface



Total cloud cover/Couvert nuageux

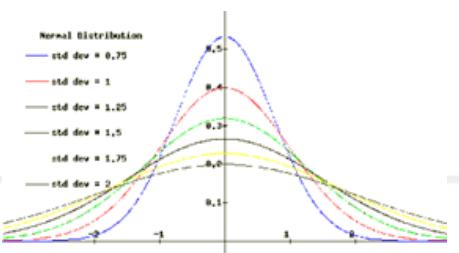


January/Janvier 2021



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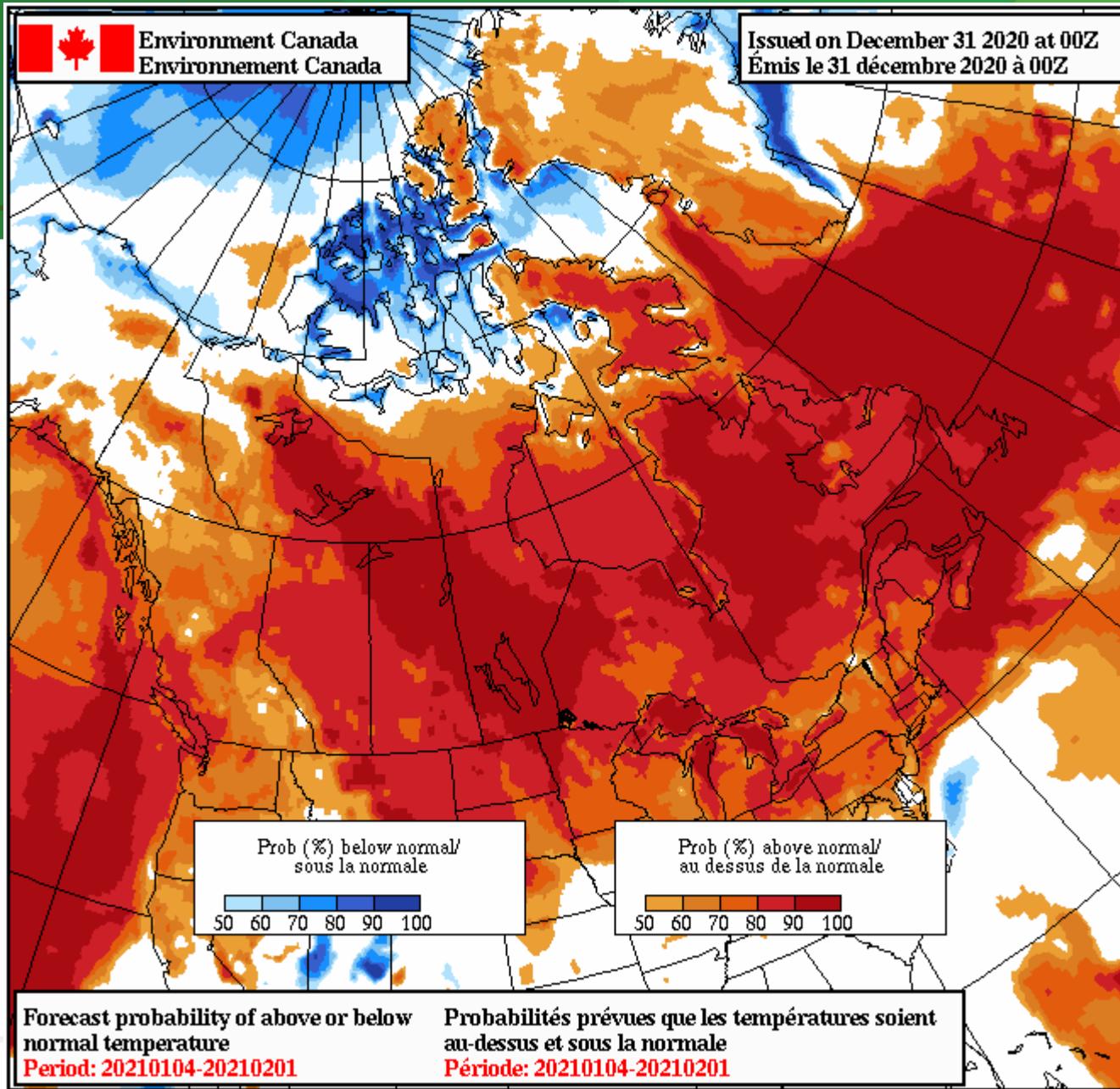
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T_{max}
 75%
 median/médiane
 25%
 min

Global Model / Modèle global
 Control Member / Membre contrôle CMC
 Control Member / Membre contrôle NCEP

Temperature
January 4
to
February 1

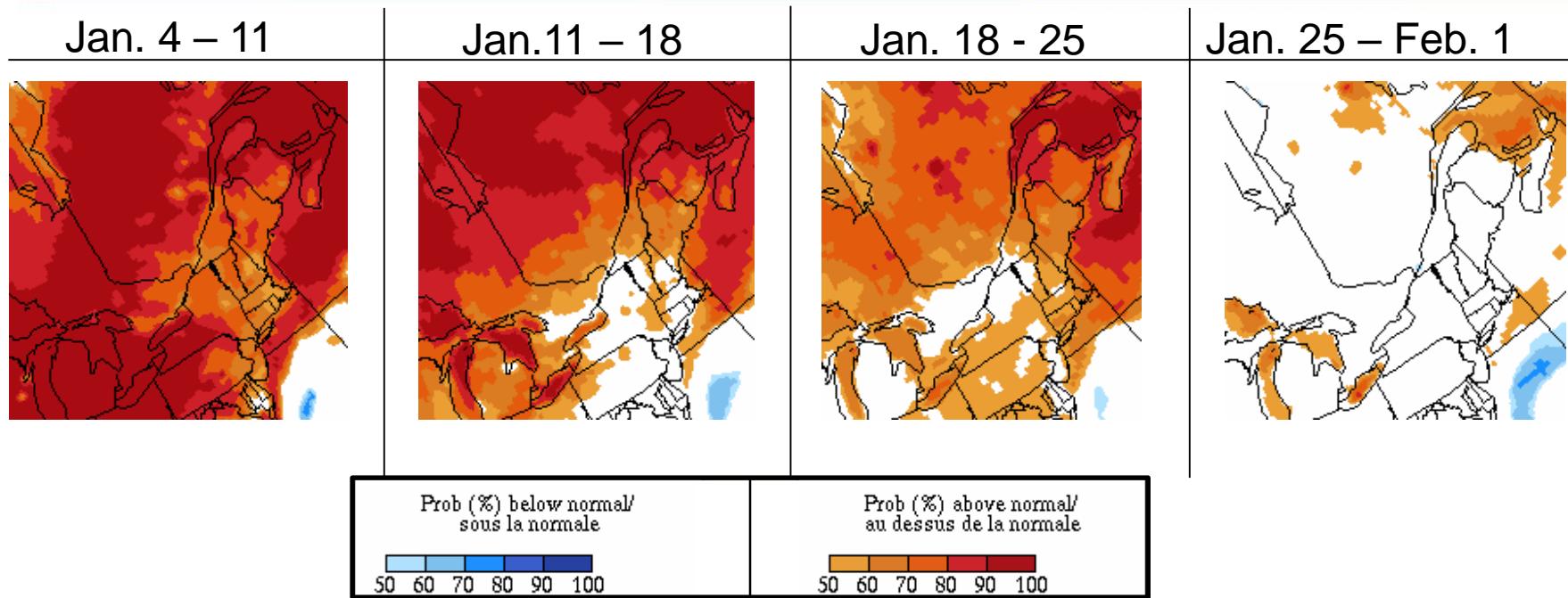


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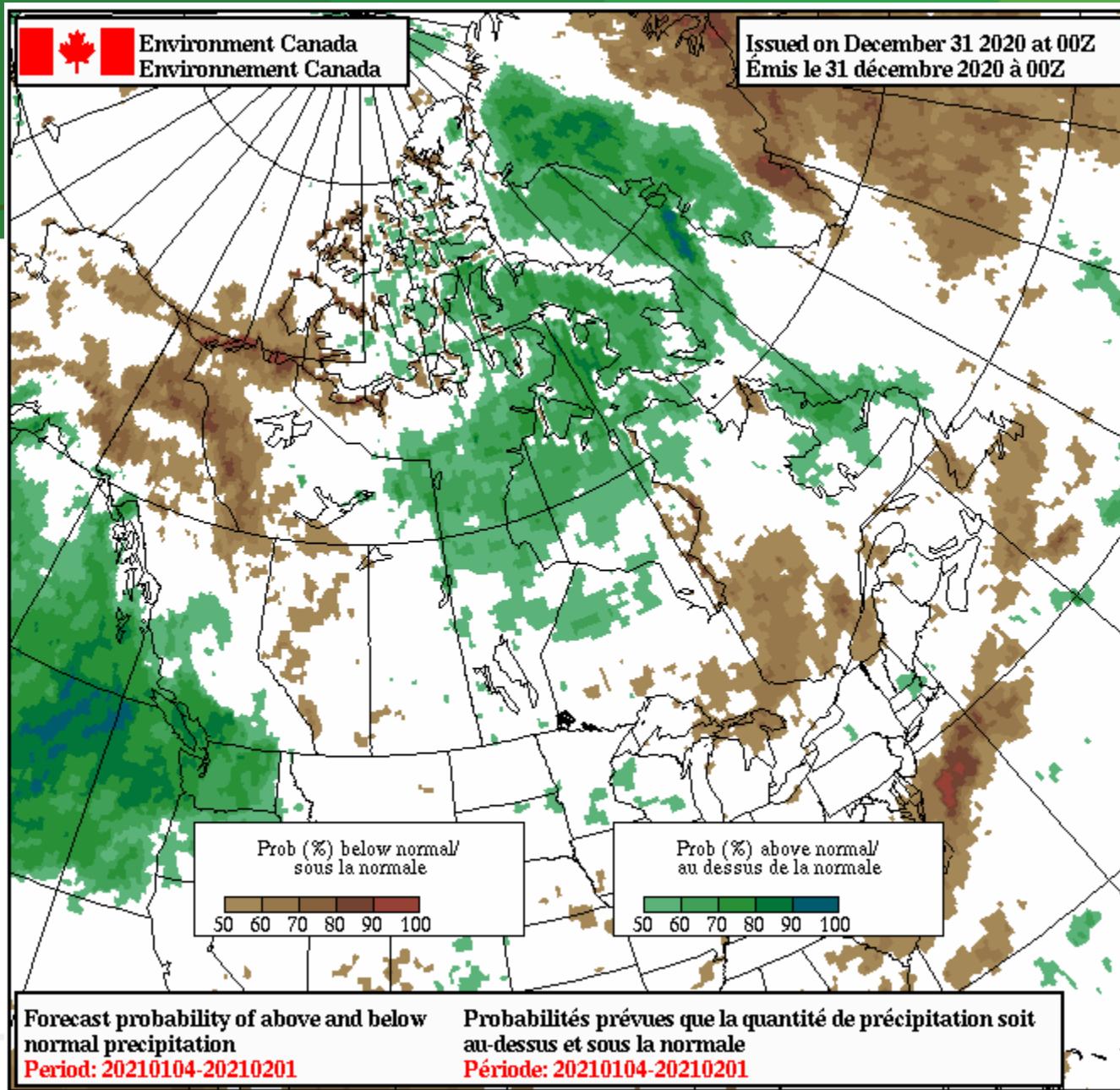
Weekly signature from GEPS 50km resolution



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

Precipitation
January 4
to
February 1

CMC
Monthly
Forecast
Product
using GEPS
50km res.

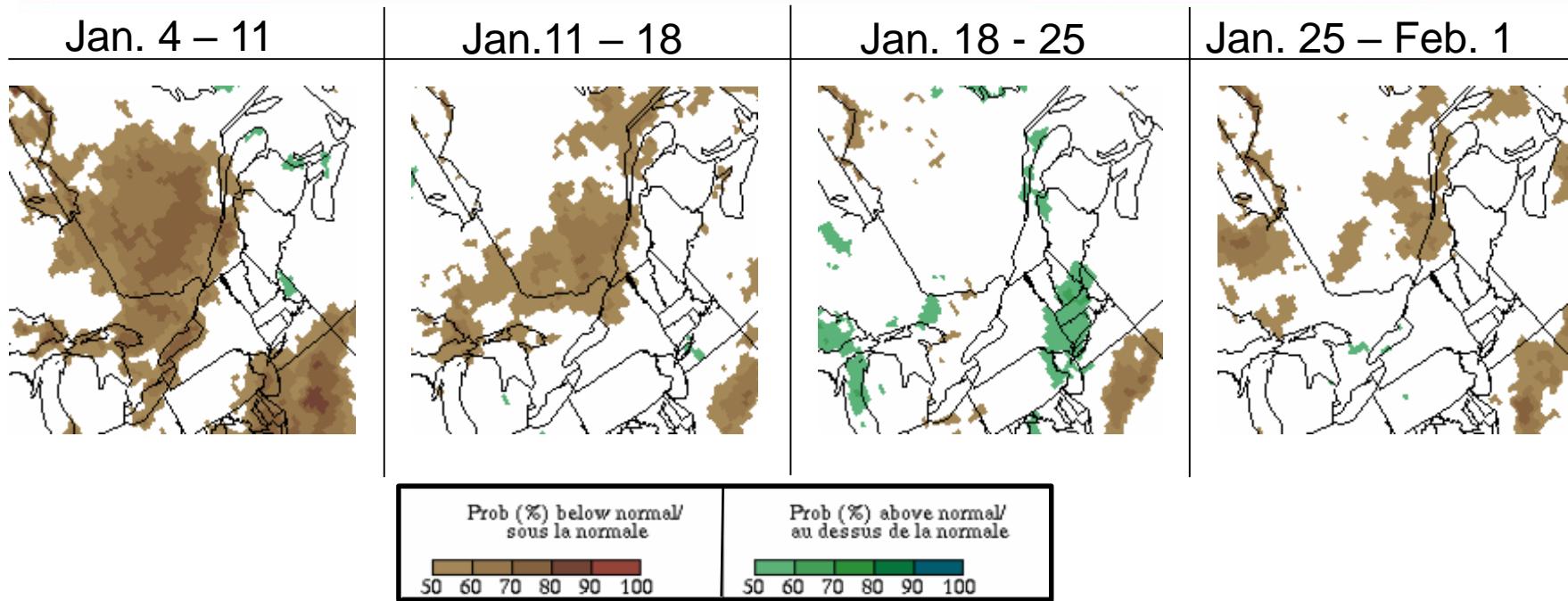


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Weekly signature from GEPS 50km resolution

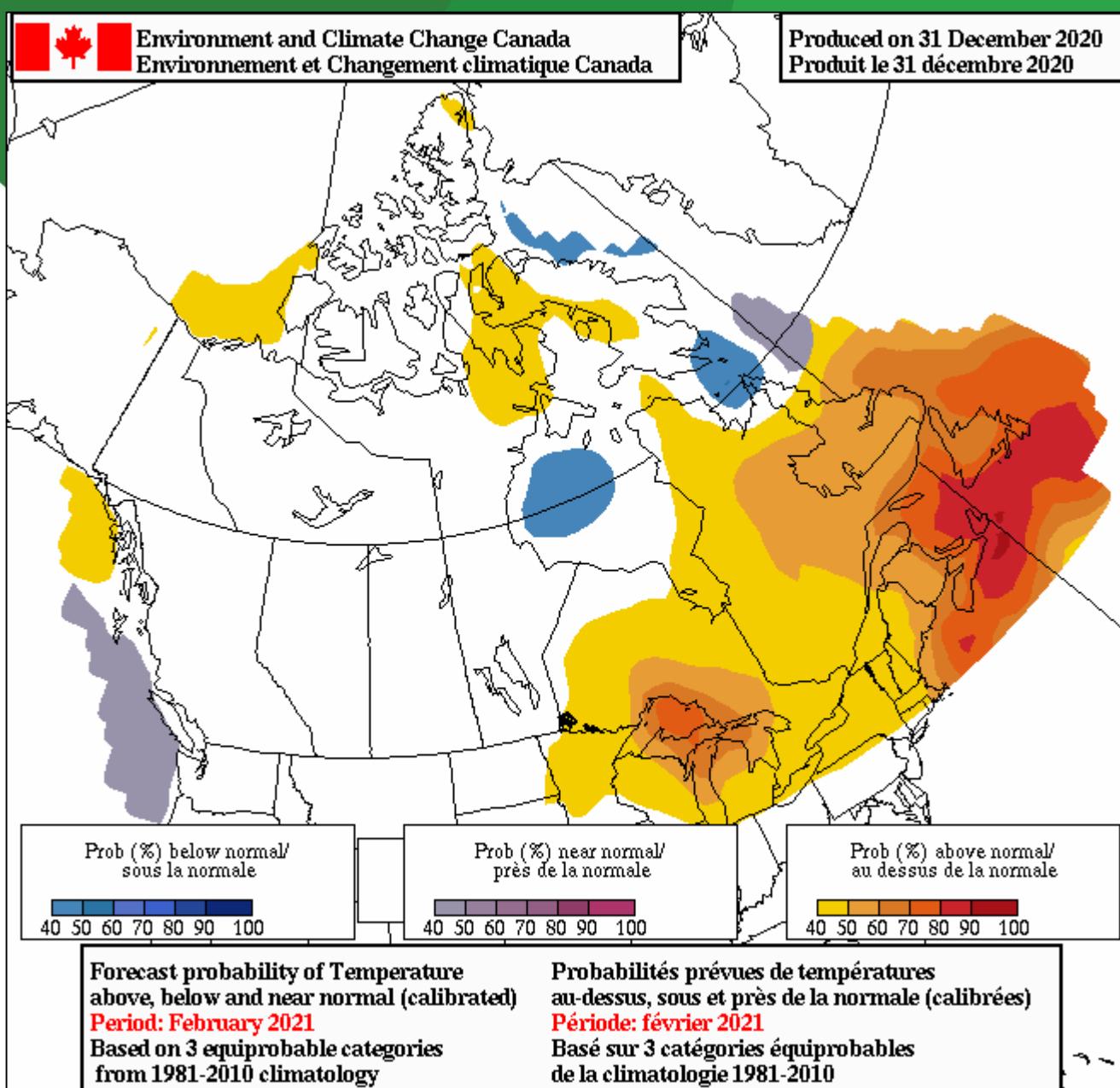


No conclusive signal (near normal) throughout the period.



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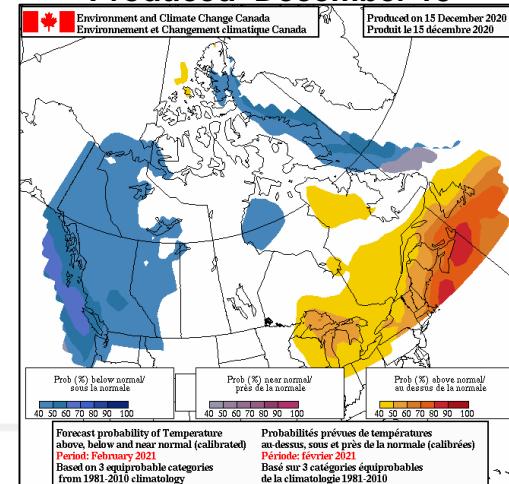
Produced on 31 December 2020
Produit le 31 décembre 2020



Temperature
February
2021

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

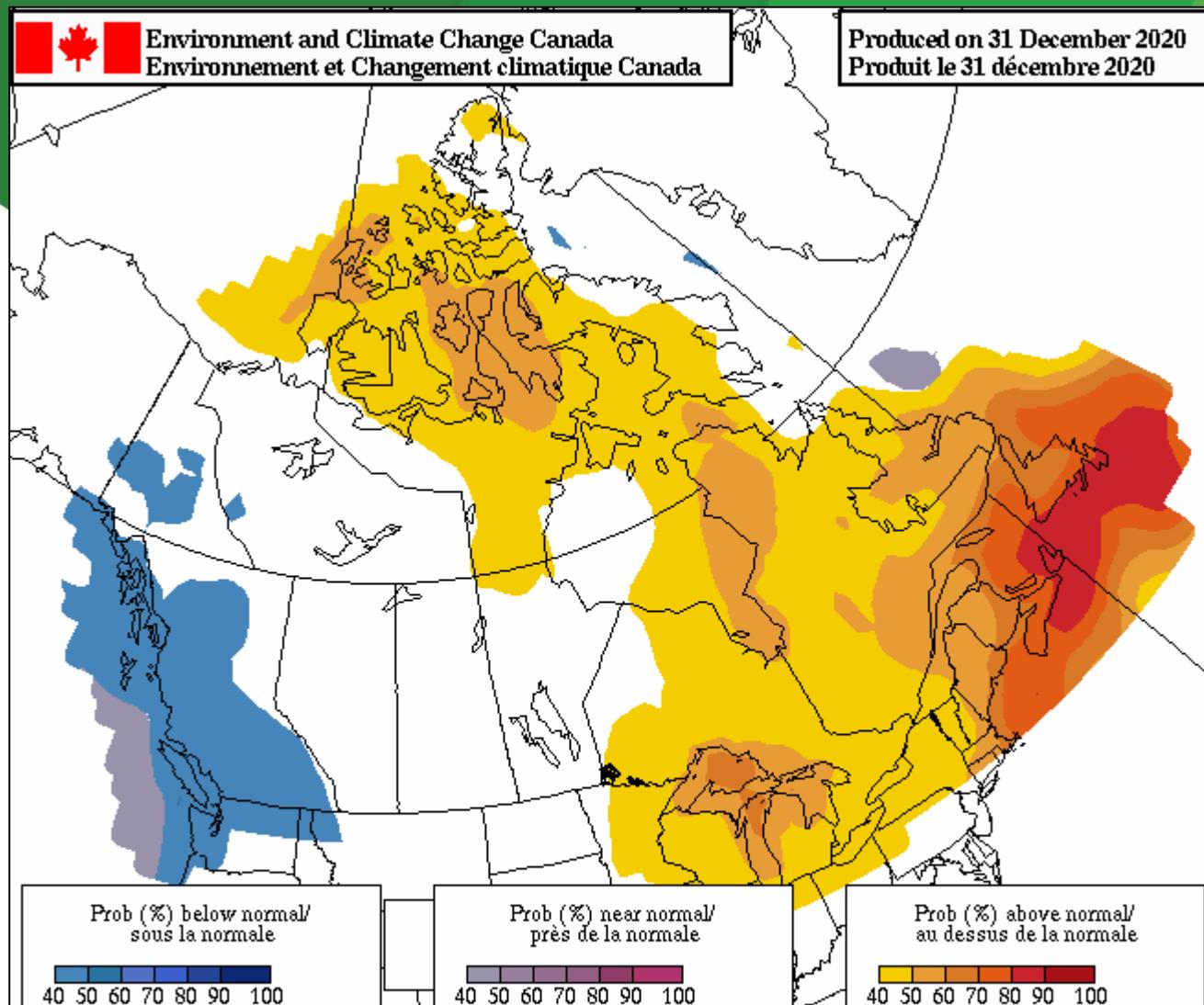
Produced December 15



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Forecast probability of Temperature
above, below and near normal (calibrated)
Period: March 2021
Based on 3 equiprobable categories
from 1981-2010 climatology

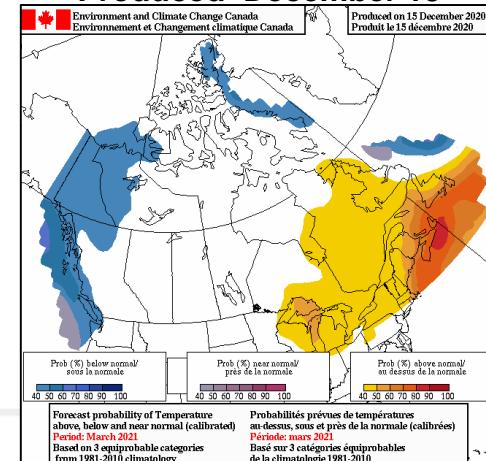
Probabilités prévues de températures
au-dessus, sous et près de la normale (calibrées)
Période: mars 2021
Basé sur 3 catégories équiprobables
de la climatologie 1981-2010



Temperature
March
2021

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

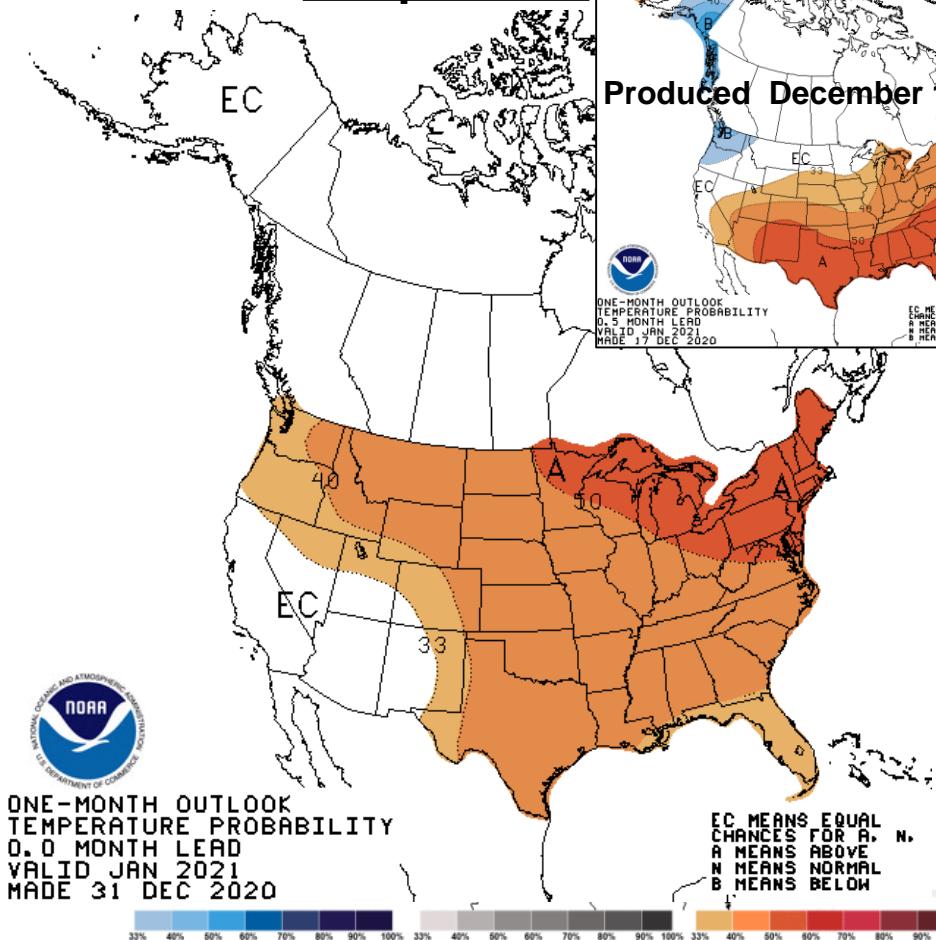
Produced December 15



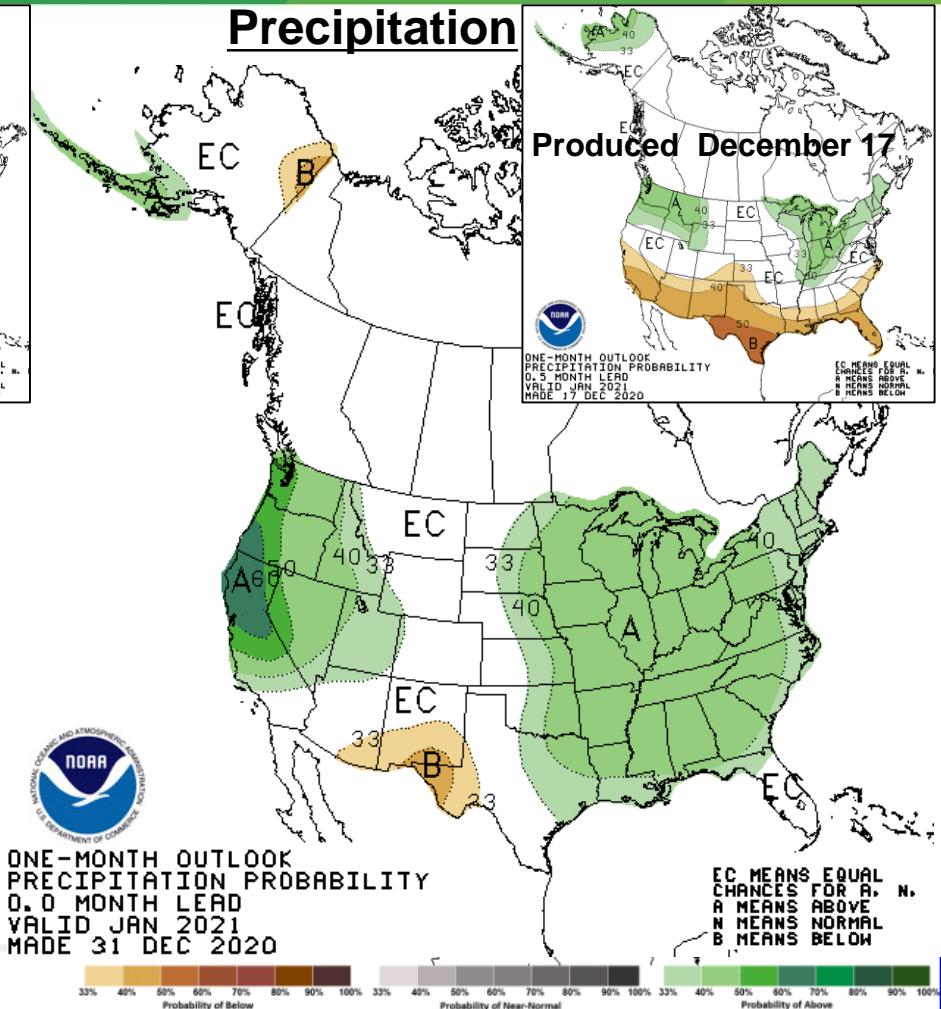


January 2021

Temperature



Precipitation



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Canada Weather Pages

www.weather.gc.ca



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