

New Brunswick

**Integrated Climate Bulletin
Fall 2019 Review
& Winter Outlook**

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**Meteorological Service of Canada
Environment and Climate Change Canada
December 3, 2019**



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September 2019; 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	Diff from Normal as % of Normal
AROOSTOOK	NB		DAILY	12.5	13.2	-0.7				
BAS CARAQUET	NB	WXS	AU8	12.5	14.2	-1.7				
BAS CARAQUET	NB		DAILY				141.0	73.8	191	91
BATHURST A	NB	ZBF	NCA	11.9	13.5	-1.6	140.6	84.2	167	67
BOUCTOUCHE CDA CS	NB	ABT	AU8	12.7	13.8	-1.1	201.9	86.3	234	134
CHARLO AUTO	NB	ZCR	AU8	11.7	12.1	-0.3				
MIRAMICHI RCS	NB	ACQ	AU8	12.9	13.5	-0.6				
DOAKTOWN AUTO RCS	NB	ADN	AU8	12.2	13.5	-1.2	180.2	100.2	180	80
EDMUNDSTON	NB	ERM	AU8	10.0	12.2	-2.2	102.6	94.6	108	8
FREDERICTON INTL A	NB	YFC	NCA	12.7	13.6	-0.9	161.3	87.5	184	84
FREDERICTON CDA CS	NB	AFC	AU8	13.3	14.0	-0.7	168.8	94.7	178	78
GAGETOWN AWOS A	NB	YCX	AU5	12.9	14.7	-1.9	124.5	86.1	145	45
GRAND MANAN SAR CS	NB	XGM	AU8	11.9						
KOUCHIBOUGUAC	NB	AKC	AU8	12.4	13.3	-1.0				
MECHANIC SETTLEMENT	NB	AMS	AU8	12.1			201.9			
MISCOU ISLAND (AUT)	NB	WMI	AU8	12.4						
MONCTON INTL A	NB	YQM	NCH	13.1	13.6	-0.5	187.5	93.5	201	101
OAK POINT	NB		DAILY	13.5	14.7	-1.2	150.8	86.1	175	75
POINT LEPREAU CS	NB	WPE	AU8	12.7	12.4	0.2				
RED PINES	NB	ARP	AU8	11.0	13.1	-2.1	148.7	76.5	195	95
SAINT JOHN A	NB	YSJ	NCH	11.9	13.0	-1.1	123.5	105.6	117	17
ST. STEPHEN	NB	WSS	AU8	13.2						
SUSSEX FOUR CORNERS	NB	ASF	AU8	12.9	14.3	-1.3	158.0	99.9	158	58
WOODSTOCK	NB		DAILY	12.3	13.2	-0.9	97.0	95.7	101	1
WOODSTOCK NEWBRIDGE	NB	EWD	AU8	11.8	13.2	-1.5	99.5	95.7	104	4
Average				12.4	13.5	-1.1	149.2	90.7	163	63
Max				13.5	14.7	0.2	201.9	105.6	234	134
Min				10.0	12.1	-2.2	97.0	73.8	101	1



October 2019; 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	Diff from Normal as % of Normal
BAS CARAQUET	NB	WXS	AU8	8.3	7.6	0.7				
BAS CARAQUET	NB		DAILY				130.4	108.0	121	21
BATHURST A	NB	ZBF	NCA	7.5	6.8	0.7	117.1	122.9	95	-5
BOUCTOUCHE CDA CS	NB	ABT	AU8	8.2	7.9	0.3	110.4	95.4	116	16
CHARLO AUTO	NB	ZCR	AU8	7.3	5.7	1.6	136.4	84.0	162	62
MIRAMICHI RCS	NB	ACQ	AU8	8.3	6.9	1.4	111.4	89.7	124	24
DOAKTOWN AUTO RCS	NB	ADN	AU8	7.7	7.0	0.7	114.3	100.8	113	13
EDMUNDSTON	NB	ERM	AU8	6.1	5.8	0.3				
FREDERICTON INTL A	NB	YFC	NCA	8.2	7.5	0.7	105.1	89.1	118	18
FREDERICTON CDA CS	NB	AFC	AU8	8.9	7.8	1.1	112.5	89.7	125	25
GRAND MANAN SAR CS	NB	XGM	AU8	8.6						
KOUCHIBOUGUAC	NB	AKC	AU8	7.8	7.6	0.2				
MECHANIC SETTLEMENT	NB	AMS	AU8	7.7			164.7			
MISCOU ISLAND (AUT)	NB	WMI	AU8	8.7						
MONCTON INTL A	NB	YQM	NCH	8.3	7.6	0.7	102.7	113.4	91	-9
OAK POINT	NB		DAILY	9.2	8.6	0.5	130.0	105.7	123	23
POINT LEPREAU CS	NB	WPE	AU8	9.8	7.6	2.2				
RED PINES	NB	ARP	AU8	7.3	6.5	0.7				
SAINT JOHN A	NB	YSJ	NCH	8.3	7.6	0.8	176.0	116.4	151	51
ST. STEPHEN	NB	WSS	AU8	8.8						
SUSSEX FOUR CORNERS	NB	ASF	AU8	8.3	8.1	0.2	98.2	106.5	92	-8
WOODSTOCK	NB		DAILY	7.9	6.6	1.3	112.8	95.3	118	18
WOODSTOCK NEWBRIDGE	NB	EWD	AU8	7.1	6.6	0.6	110.9	95.3	116	16
Average				8.1	7.2	0.8	122.2	100.9	119	19
Max				9.8	8.6	2.2	176.0	122.9	162	62
Min				6.1	5.7	0.2	98.2	84.0	91	-9



November 2019; 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	Diff from Normal as % of Normal
AROOSTOOK	NB		DAILY	-1.9	0.2	-2.1	85.2	93.5	91	-9
BAS CARAQUET	NB	WXS	AU8	0.3	1.3	-0.9				
BAS CARAQUET	NB		DAILY				84.2	102.4	82	-18
BATHURST A	NB	ZBF	NCA	-1.5	0.8	-2.2	75.4	103.8	73	-27
BOUCTOUCHE CDA CS	NB	ABT	AU8	0.4	1.7	-1.3	118.1	102.9	115	15
CHARLO AUTO	NB	ZCR	AU8	-1.7	-0.7	-1.0	59.2	92.3	64	-36
MIRAMICHI RCS	NB	ACQ	AU8	-0.8	0.7	-1.5				
DOAKTOWN AUTO RCS	NB	ADN	AU8	-1.4	0.7	-2.1				
EDMUNDSTON	NB	ERM	AU8	-4.2	-0.6	-3.6	101.2	91.2	111	11
FREDERICTON INTL A	NB	YFC	NCA	-0.6	1.5	-2.1	118.1	106.3	111	11
FREDERICTON CDA CS	NB	AFC	AU8	-0.3	1.8	-2.1	128.2	109.9	117	17
GAGETOWN AWOS A	NB	YCX	AU5	-0.2	2.5	-2.7	100.5	101.8	99	-1
GRAND MANAN SAR CS	NB	XGM	AU8	2.0						
KOUCHIBOUGUAC	NB	AKC	AU8	-0.1	1.2	-1.3				
MECHANIC SETTLEMENT	NB	AMS	AU8	-0.9			237.7			
MISCOU ISLAND (AUT)	NB	WMI	AU8	0.9						
MONCTON INTL A	NB	YQM	NCH	0.3	1.9	-1.6	95.7	107.2	89	-11
MONCTON A	NB	YQM	NCA	0.5	1.9	-1.4				
OAK POINT	NB		DAILY	0.7	2.5	-1.8	170.5	101.8	168	68
POINT LEPREAU CS	NB	WPE	AU8				168.4	140.4	120	20
RED PINES	NB	ARP	AU8	-1.9	-0.1	-1.9	103.5	89.4	116	16
SAINT JOHN A	NB	YSJ	NCH				191.0	134.1	142	42
ST. STEPHEN	NB	WSS	AU8	0.0						
SUSSEX FOUR CORNERS	NB	ASF	AU8	0.5	2.4	-1.8	147.0	110.0	134	34
WOODSTOCK	NB		DAILY	-1.7	0.3	-2.0	123.8	103.2	120	20
WOODSTOCK NEWBRIDGE	NB	EWD	AU8	-1.8	0.3	-2.1	126.9	103.2	123	23
Average				-0.6	1.1	-1.9	124.1	105.5	116	10
Max				2.0	2.5	-0.9	237.7	140.4	168	68
Min				-4.2	-0.7	-3.6	59.2	89.4	64	-36



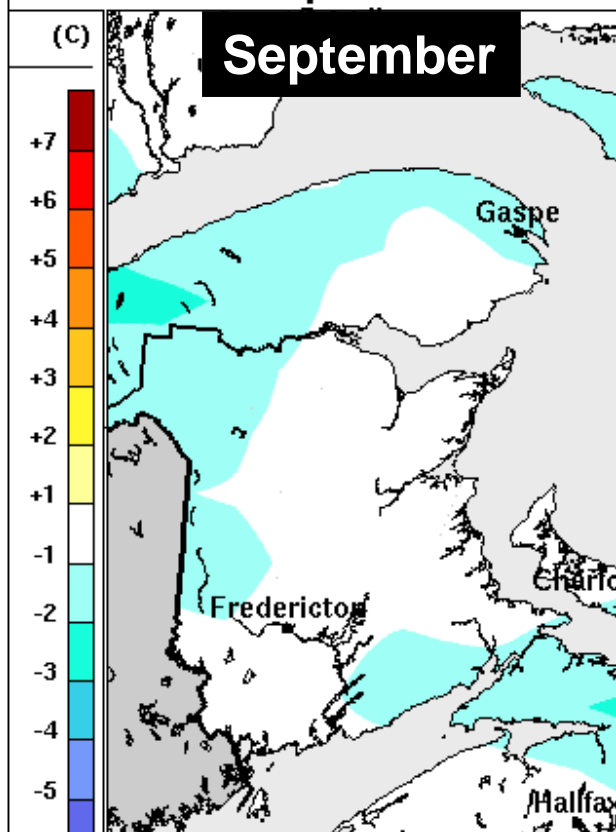
Sep.-Oct.-Nov. 2019; Temperature departure from 1981-2010 mean

below normal (+0.2 to -2.2C)

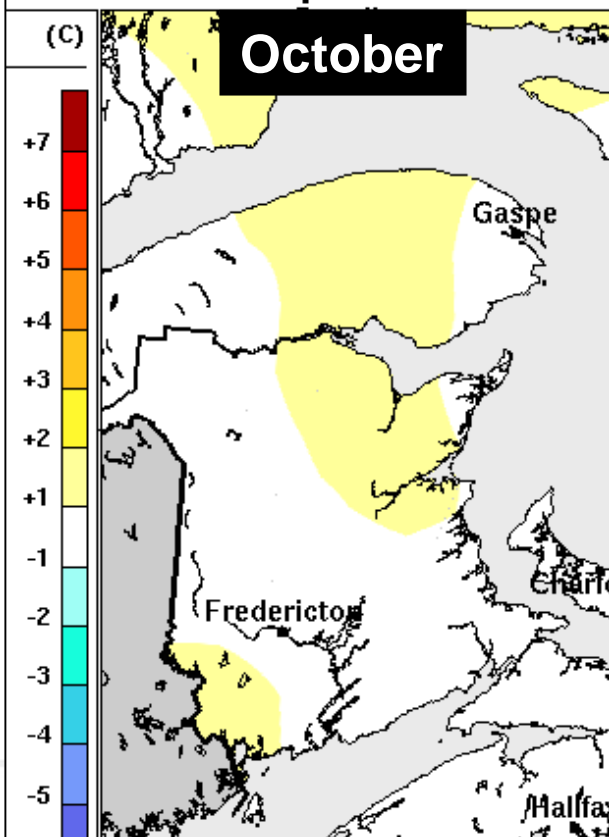
above normal (+0.2 to +2.2C)

below normal (-0.9 to -3.6C)

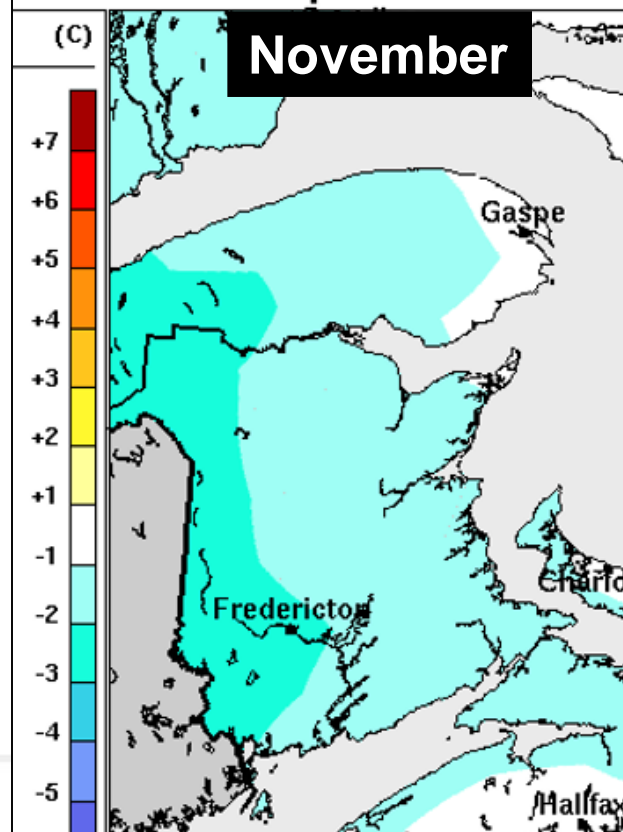
Temperature Anomaly: 201909
Anomalie de température: 201909



Temperature Anomaly: 201910
Anomalie de température: 201910



Temperature Anomaly: 201911
Anomalie de température: 201911



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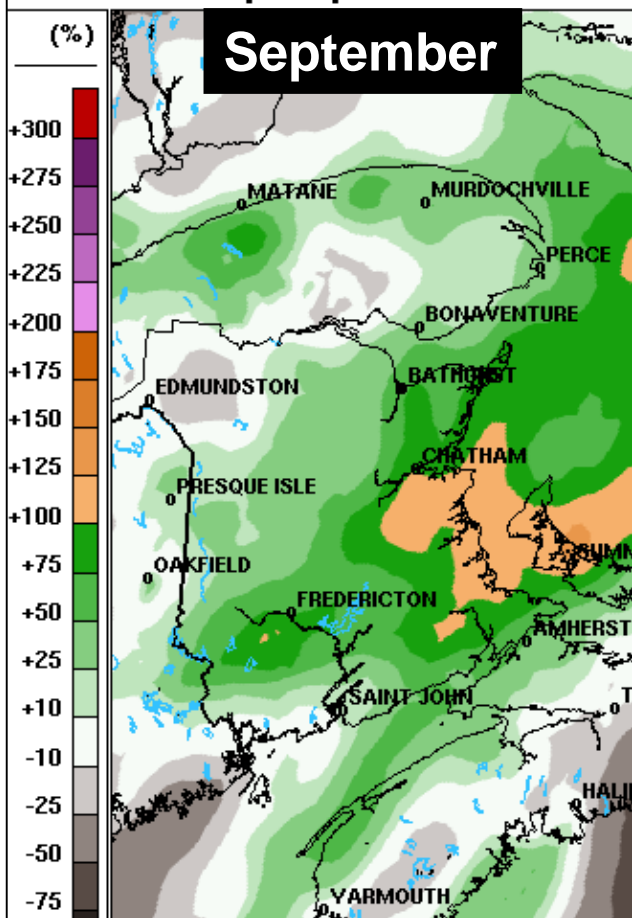
Sep.-Oct.-Nov. 2019; Precipitation departure from 1981-2010 mean

Above normal,
Near normal northwest

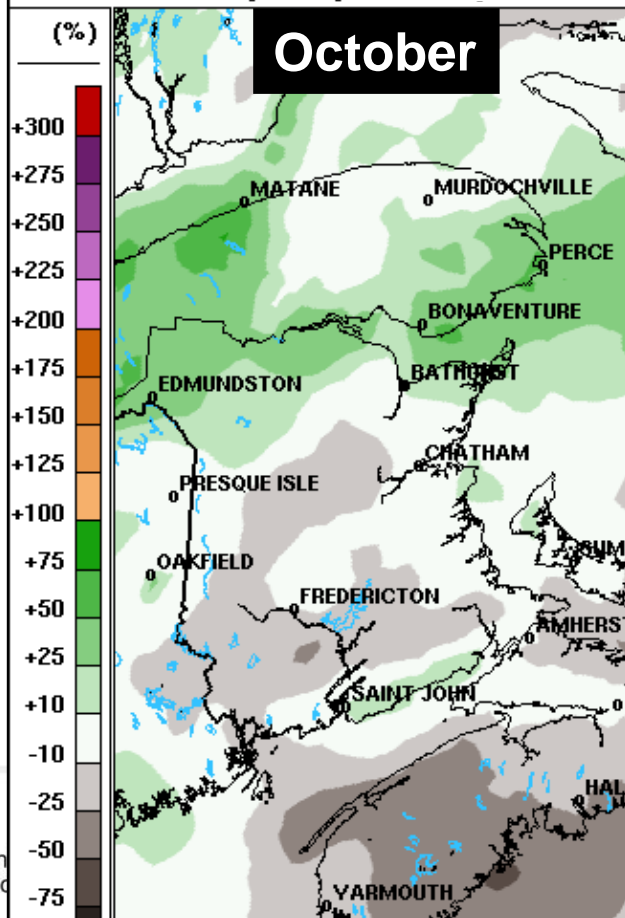
Above normal north,
Near normal elsewhere

Slightly below normal north,
slightly above normal south

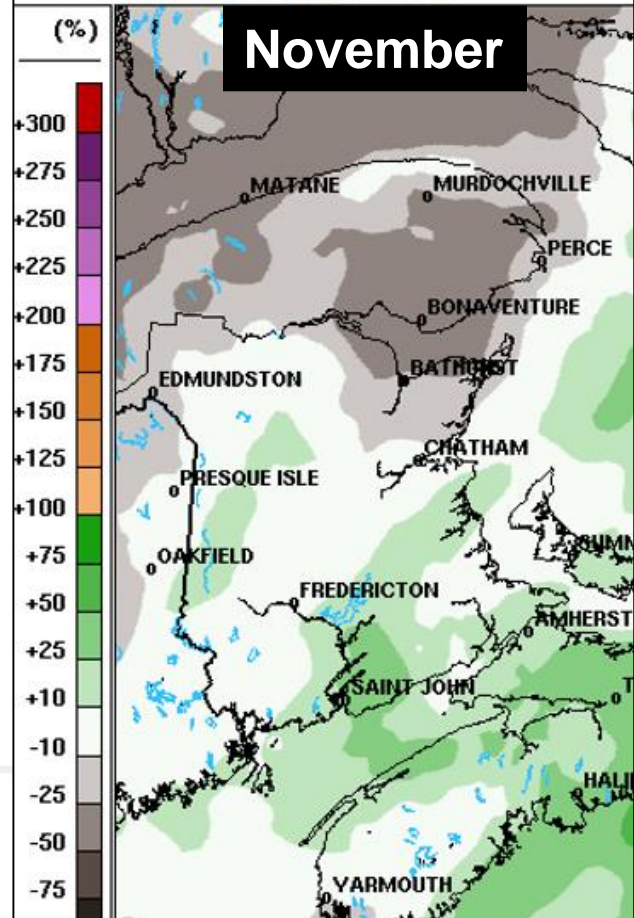
Precipitation Anomaly (% of normal)
Anomalie de précipitation : 201909



Precipitation Anomaly (% of normal)
Anomalie de précipitation : 201910

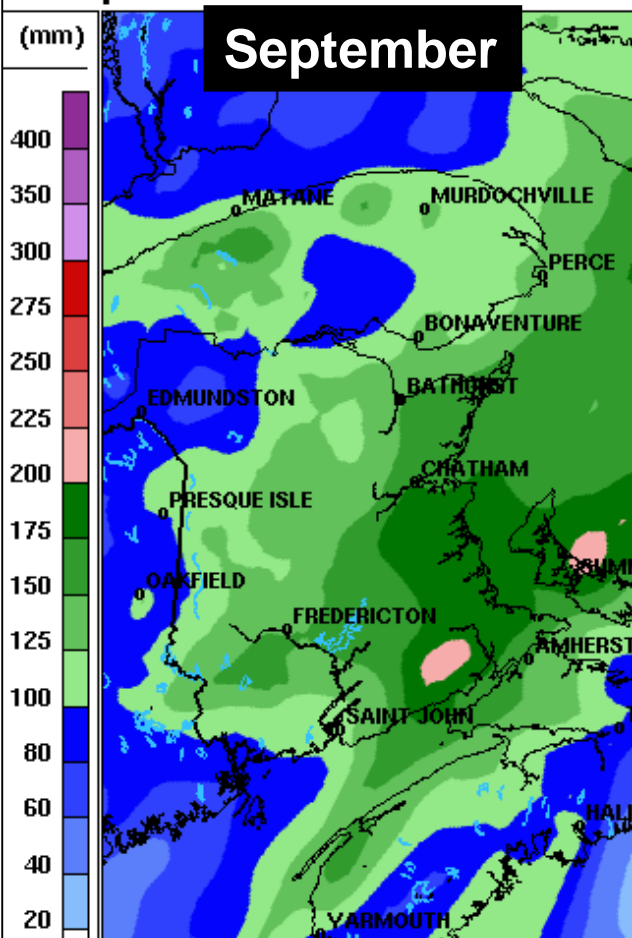


Precipitation Anomaly (% of normal)
Anomalie de précipitation : 201911

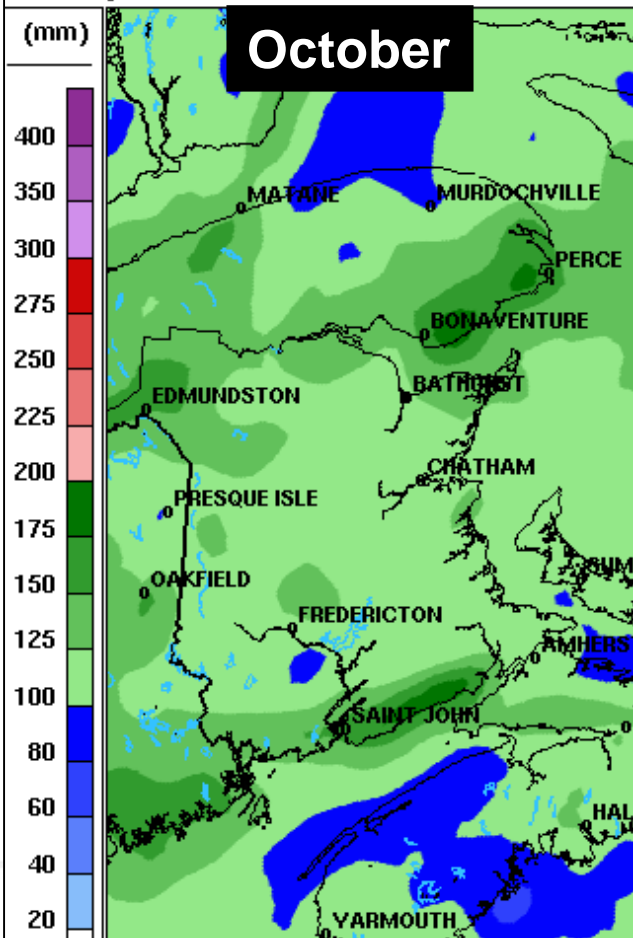


Sep.-Oct.-Nov. 2019; Total precipitation

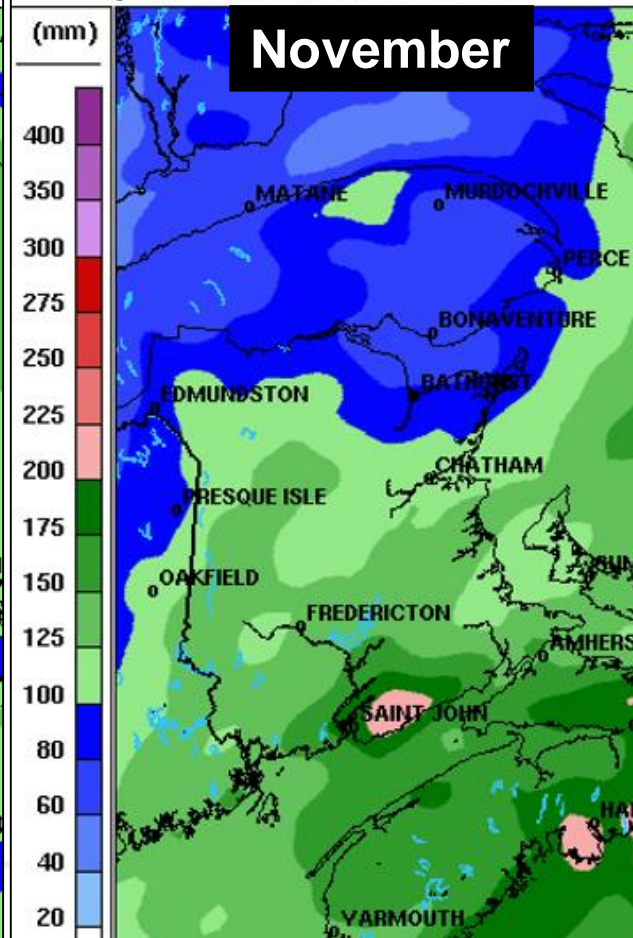
Total precipitation: 201909
Précipitation totale: 201909



Total precipitation: 201910
Précipitation totale: 201910



Total precipitation: 201911
Précipitation totale: 201911



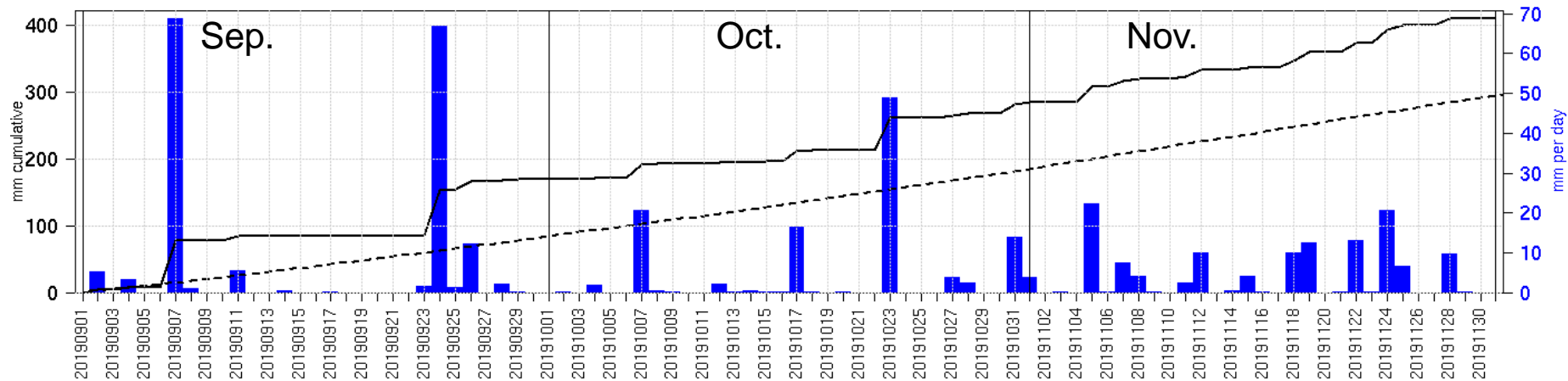
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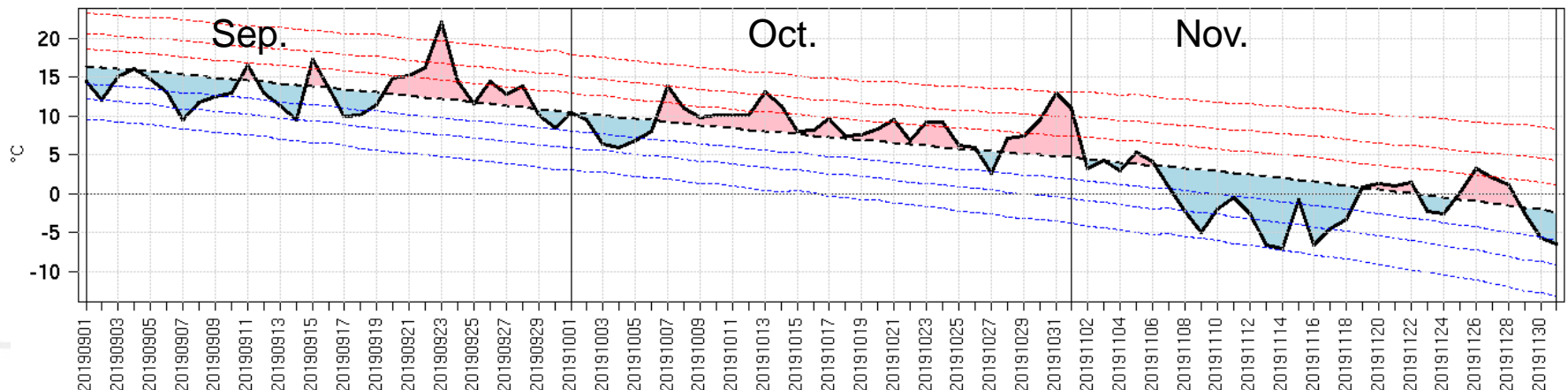
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2019 Temperature and precipitation – (S,O,N) for Fredericton

Observed Cumulative Precipitation (line) versus Normal (dashed line) and Daily Amounts (bars) for Fredericton, NB (45.94N 66.63W)

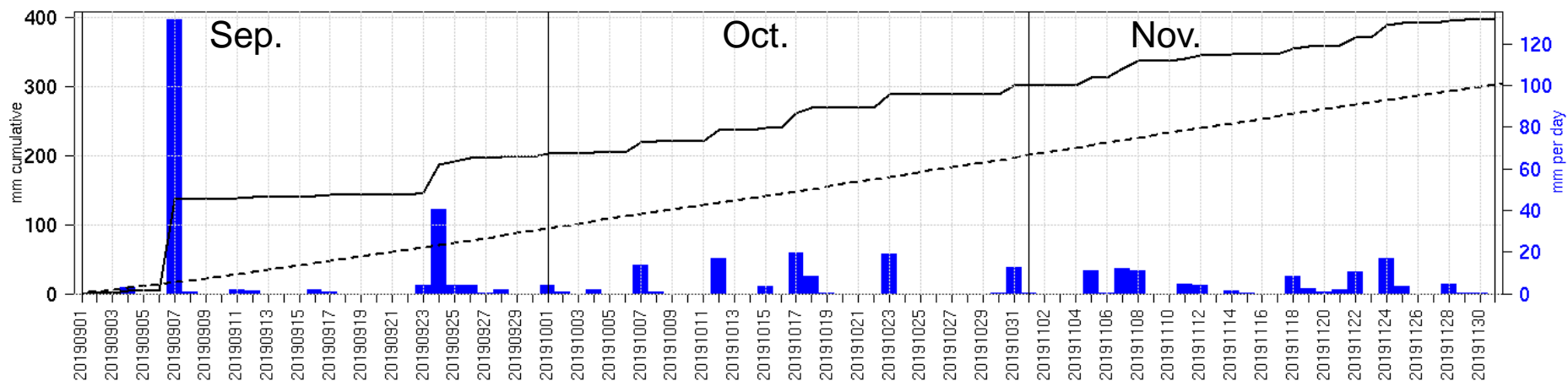


Daily Mean Temperature (bold line) versus Normal (thin line) and $\pm 0.7, 1.3, 2.1$ SD (red/blue dashes) for Fredericton, NB (45.94N 66.63W)

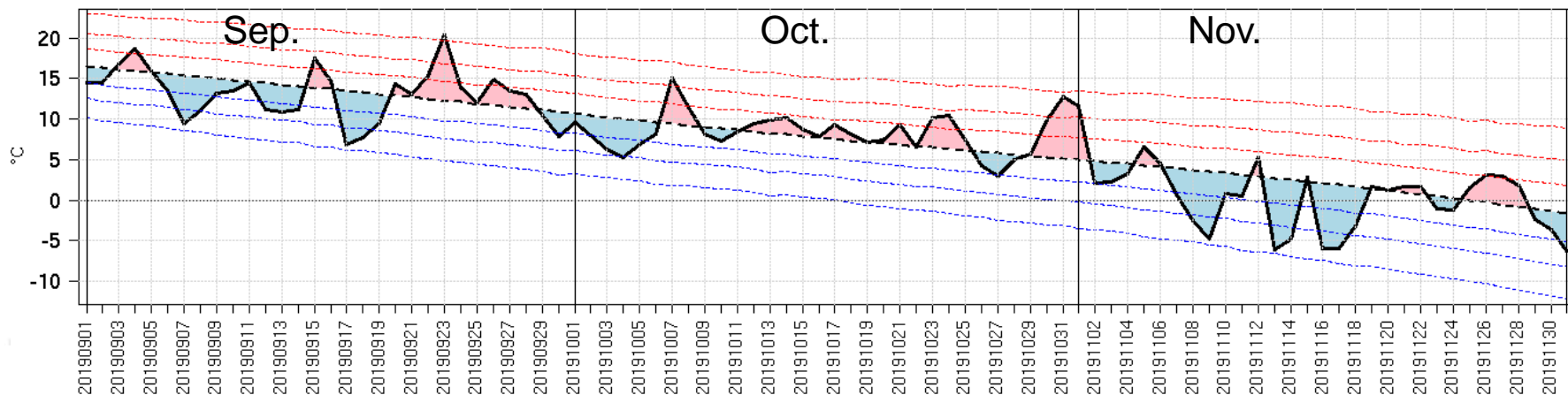


2019 Temperature and precipitation – (S,O,N) for Moncton

Observed Cumulative Precipitation (line) versus Normal (dashed line) and Daily Amounts (bars) for Moncton, NB (46.08N 64.76W)

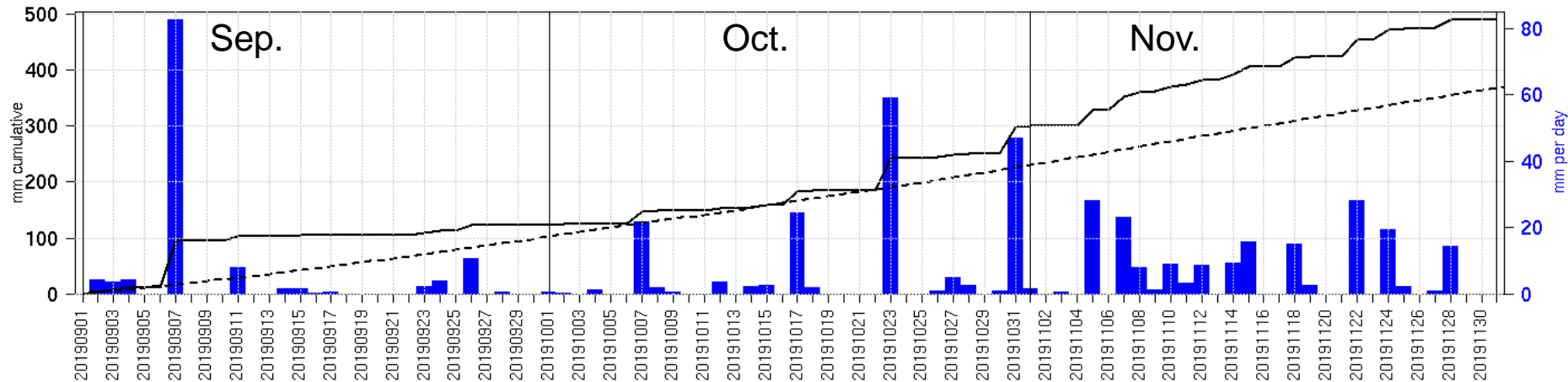


Daily Mean Temperature (bold line) versus Normal (thin line) and $\pm 0.7, 1.3, 2.1$ SD (red/blue dashes) for Moncton, NB (46.08N 64.76W)

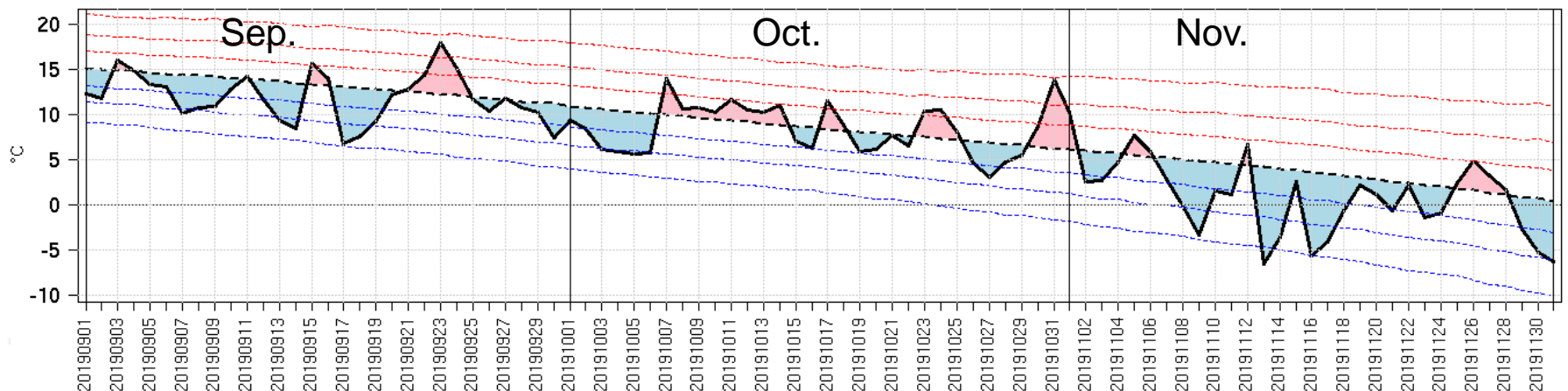


2019 Temperature and precipitation – (S,O,N) for Saint John

Observed Cumulative Precipitation (line) versus Normal (dashed line) and Daily Amounts (bars) for Saint John, NB (45.26N 66.07W)

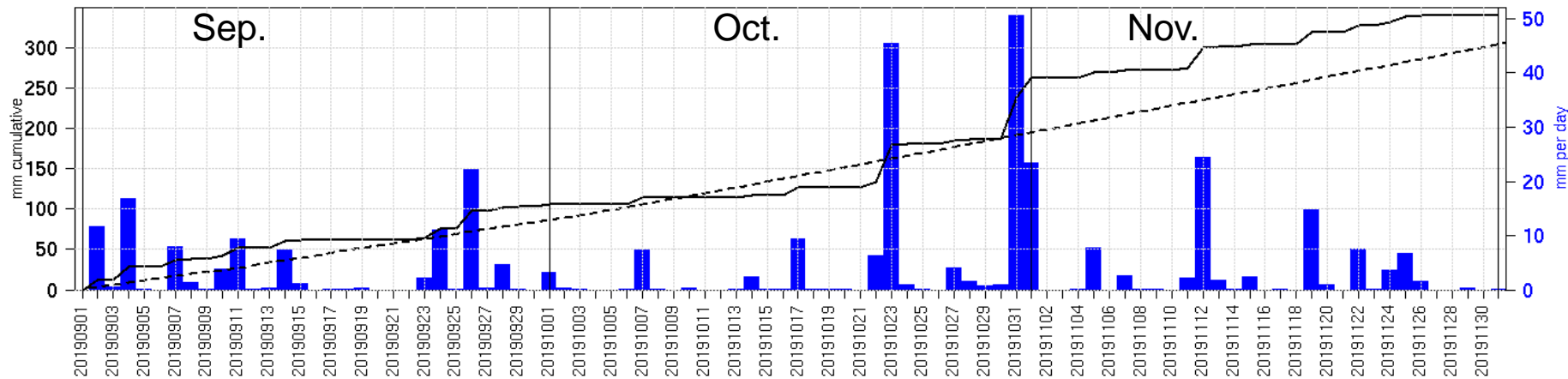


Daily Mean Temperature (bold line) versus Normal (thin line) and $\pm 0.7, 1.3, 2.1$ SD (red/blue dashes) for Saint John, NB (45.26N 66.07W)

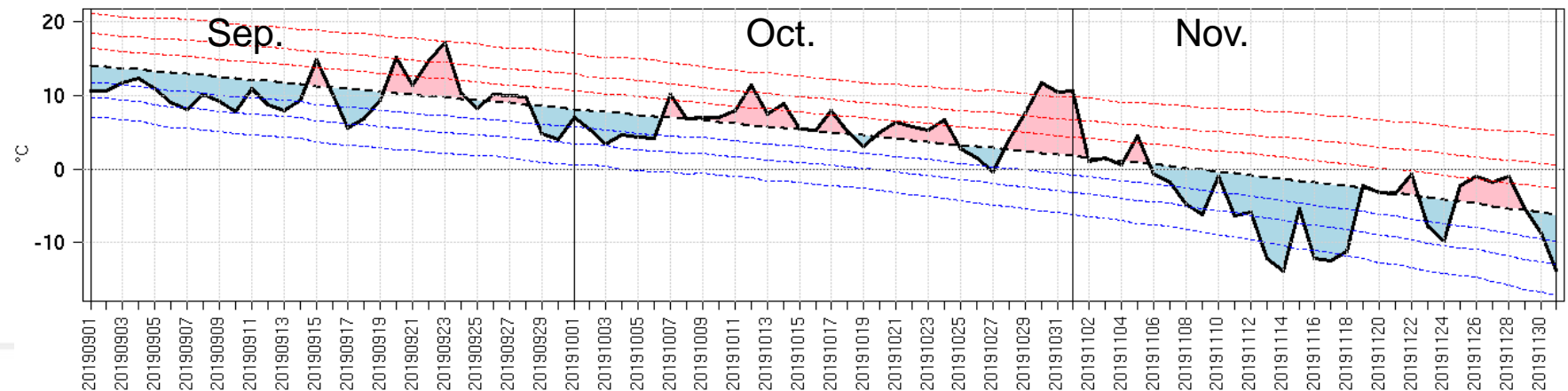


2019 Temperature and precipitation – (S,O,N) for Edmundston

Observed Cumulative Precipitation (line) versus Normal (dashed line) and Daily Amounts (bars) for Edmundston, NB (47.37N 68.33W)



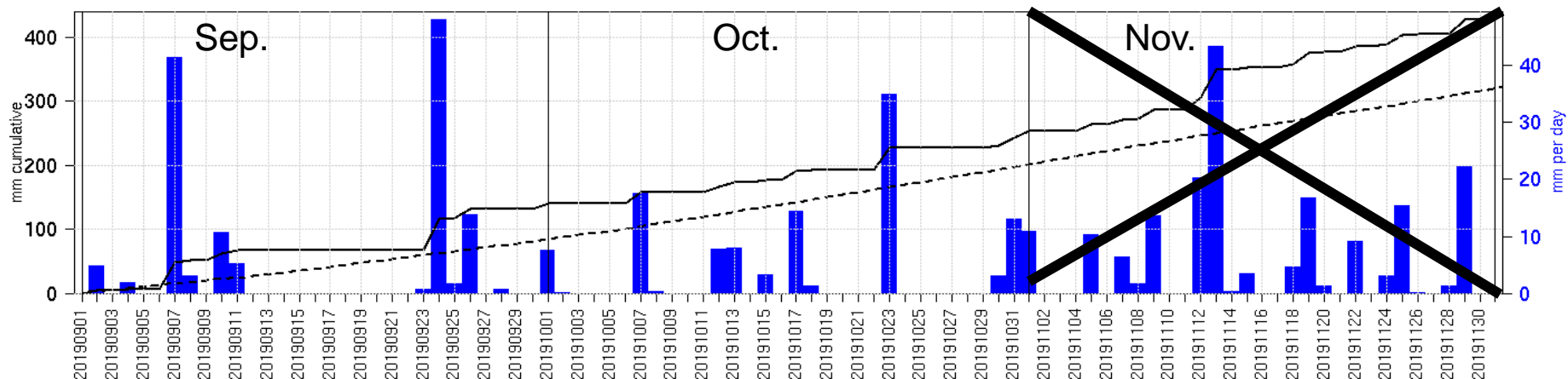
Daily Mean Temperature (bold line) versus Normal (thin line) and $\pm 0.7, 1.3, 2.1$ SD (red/blue dashes) for Edmundston, NB (47.37N 68.33W)



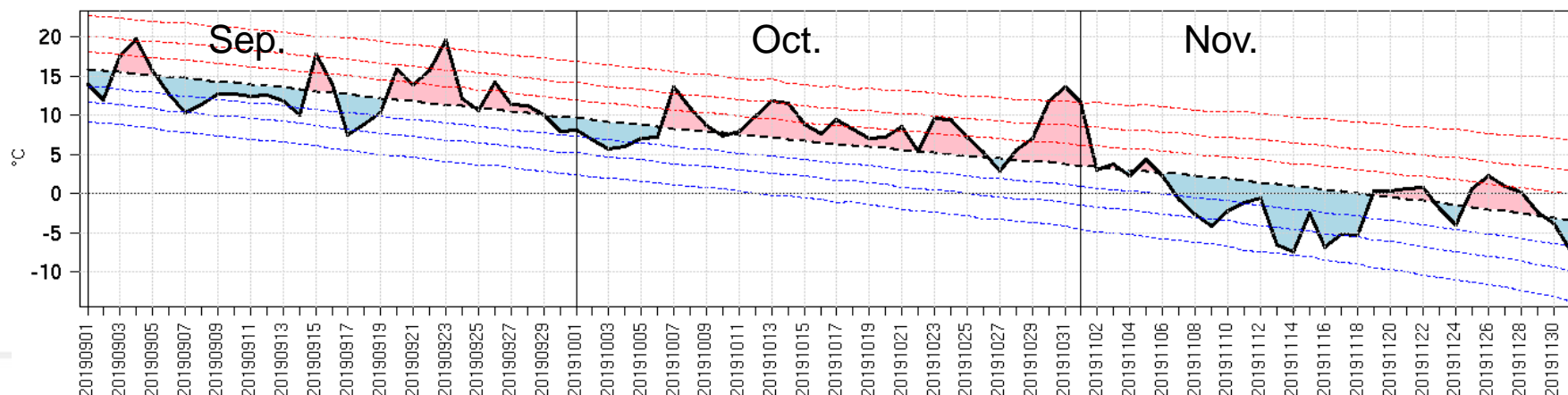
2019 Temperature and precipitation – (S,O,N) for Miramichi

Note: Precipitation graph for November contains erroneous data

Observed Cumulative Precipitation (line) versus Normal (dashed line) and Daily Amounts (bars) for Miramichi, NB (47.02N 65.50W)



Daily Mean Temperature (bold line) versus Normal (thin line) and $\pm 0.7, 1.3, 2.1$ SD (red/blue dashes) for Miramichi, NB (47.02N 65.50W)



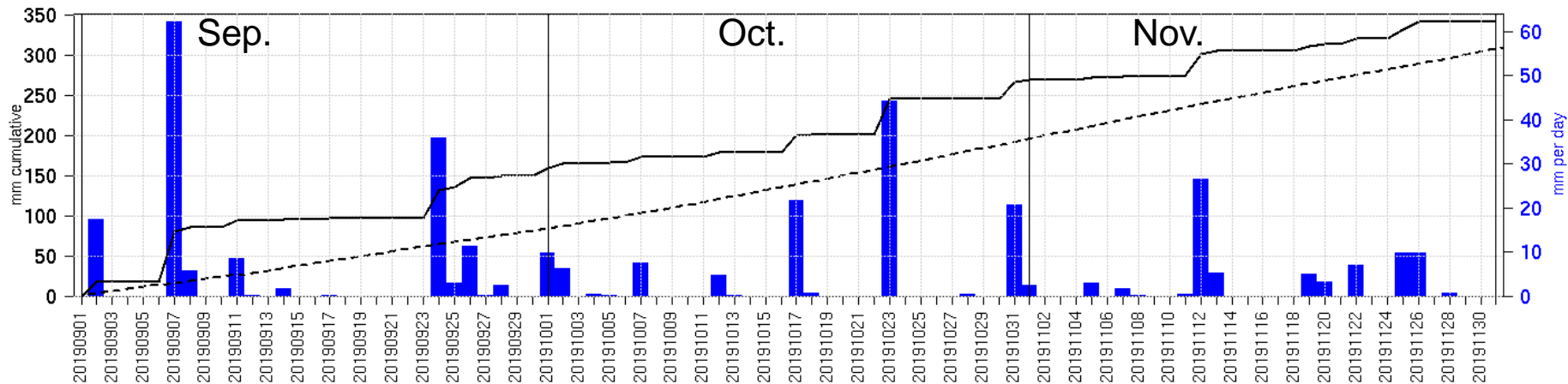
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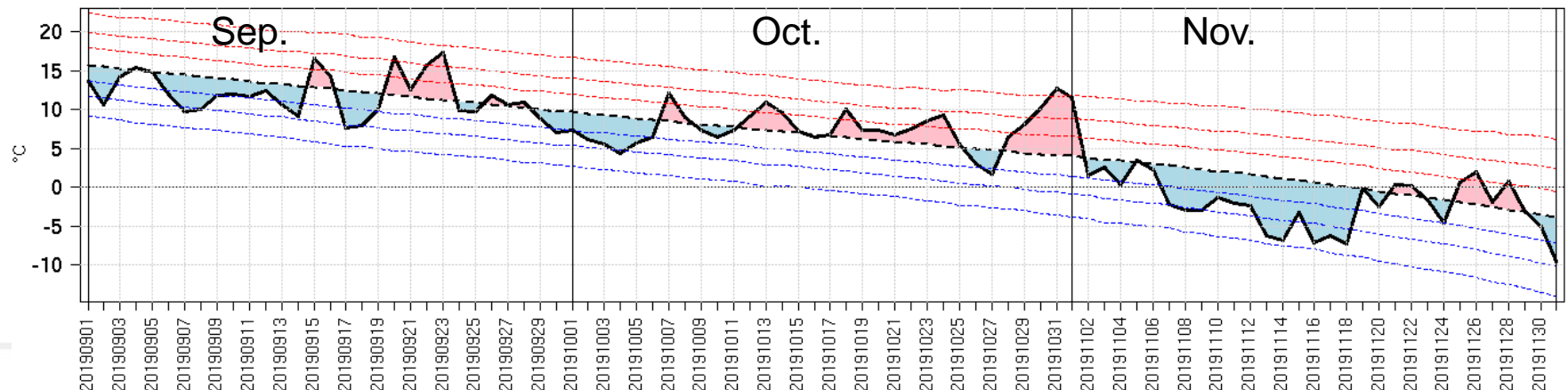
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2019 Temperature and precipitation – (S,O,N) for Bathurst

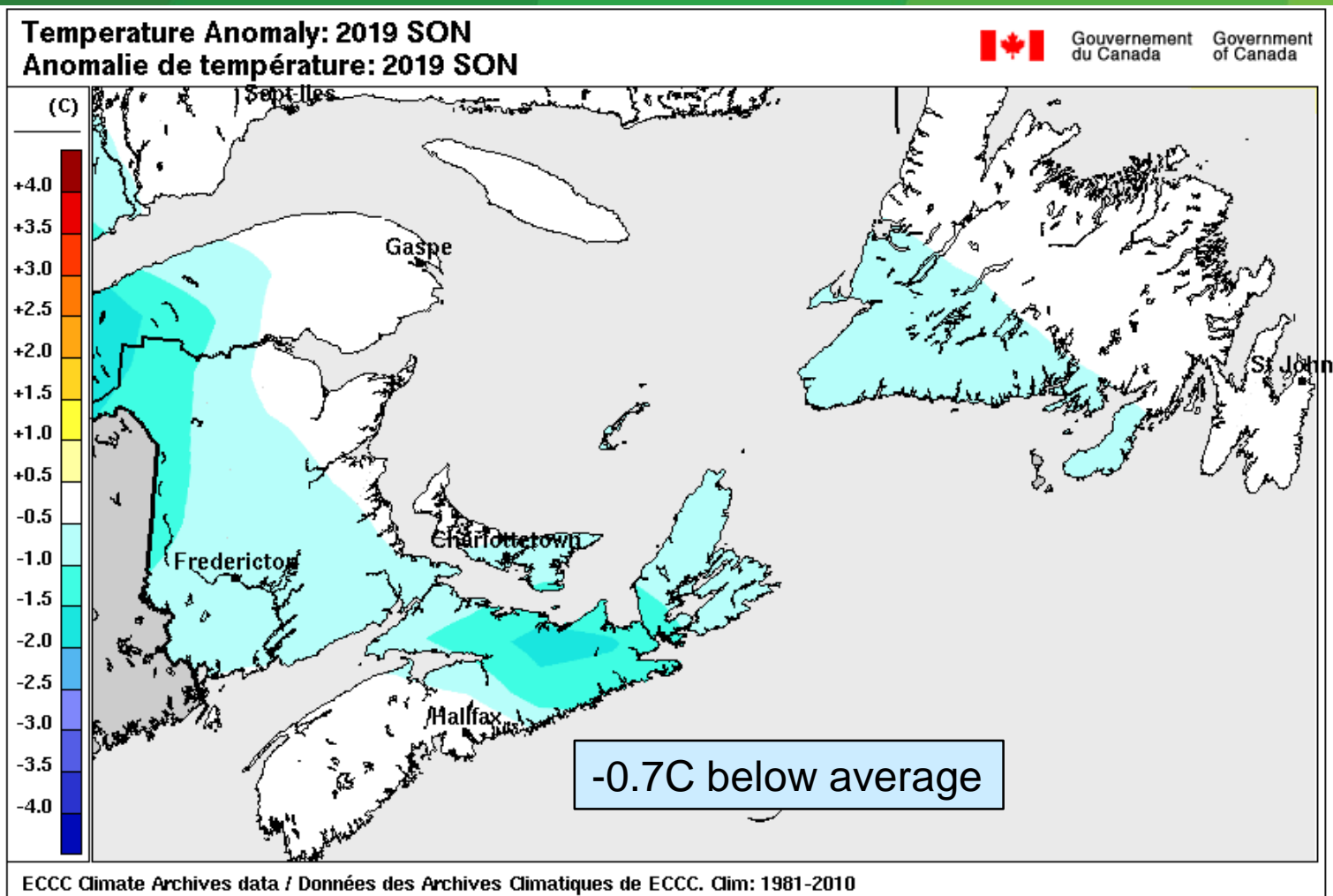
Observed Cumulative Precipitation (line) versus Normal (dashed line) and Daily Amounts (bars) for Bathurst, NB (47.59N 65.64W)



Daily Mean Temperature (bold line) versus Normal (thin line) and $\pm 0.7, 1.3, 2.1$ SD (red/blue dashes) for Bathurst, NB (47.59N 65.64W)



Fall 2019 (S,O,N) Temperature Departure from 1981-2010 mean

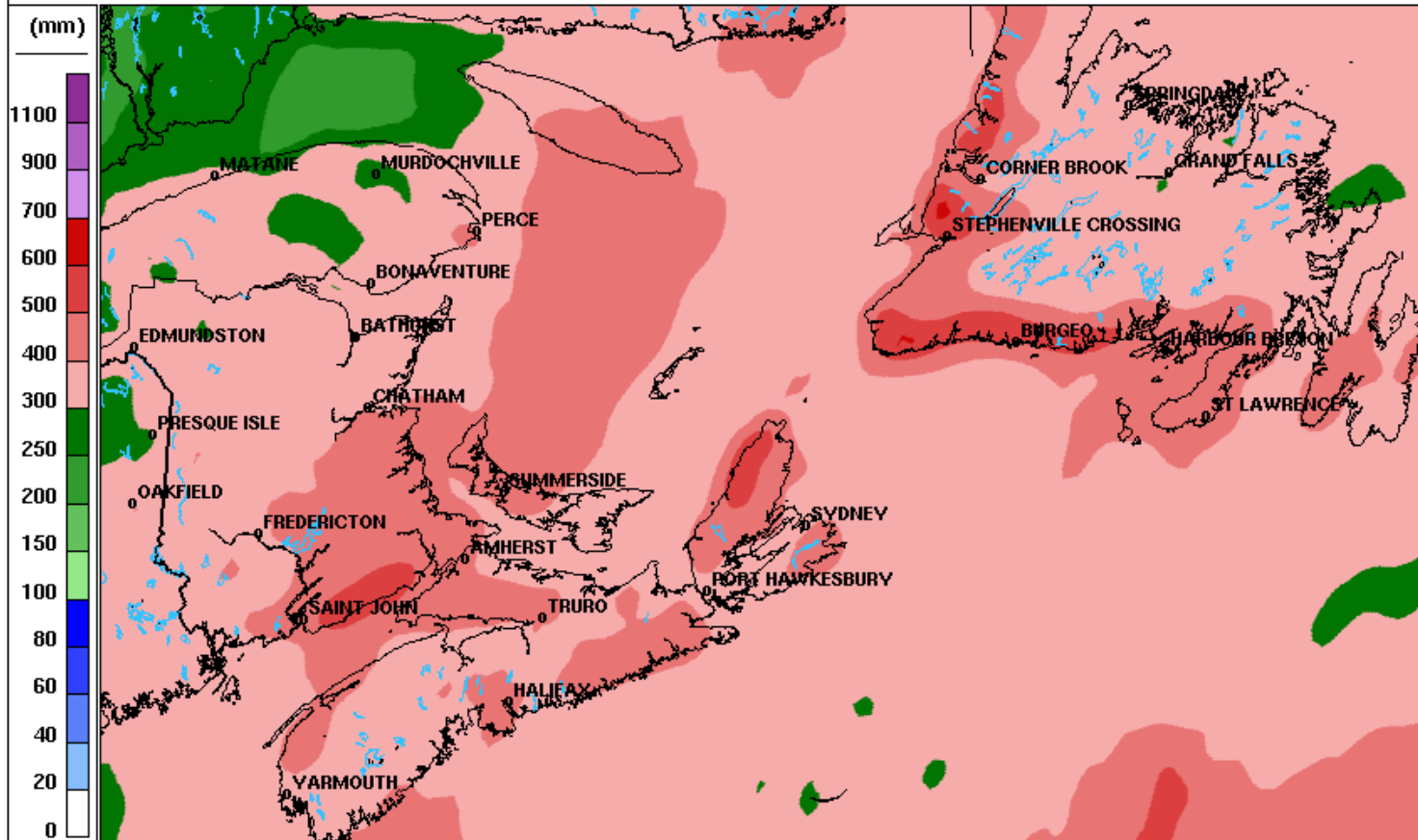


Fall 2019 (S,O,N) Total precipitation

Total precipitation: 2019 SON
Précipitation totale: 2019 SON



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ECCC NWP model gridded data / Données sur grille de modèle de PNT de ECCC



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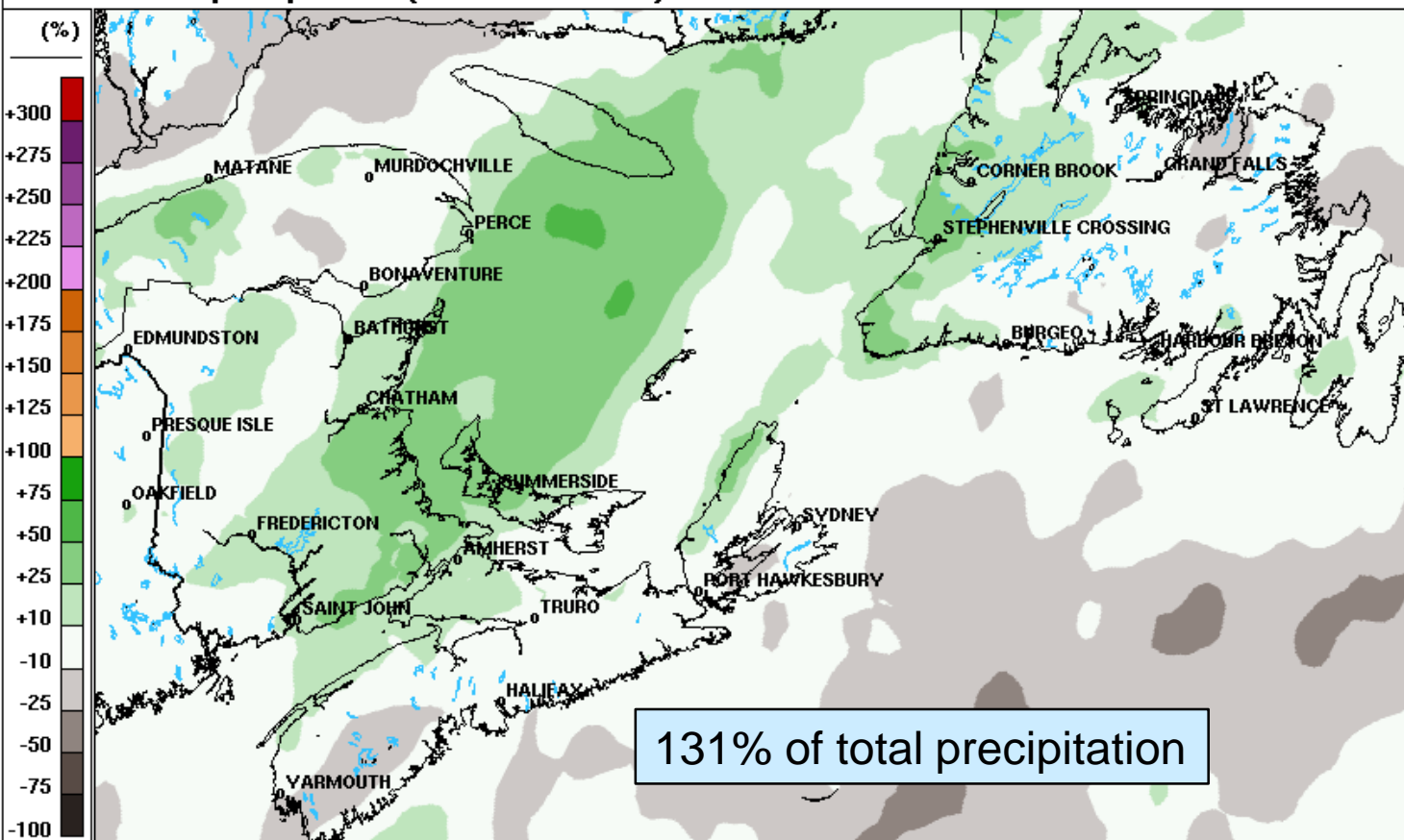
Fall 2019 (S,O,N) Precipitation departure from 1981-2010 mean

Precipitation Anomaly (% of normal): 2019 SON
Anomalie de précipitation (% de la normale): 2019 SON



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ECCC NWP model gridded data / Données sur grille de modèle de PNT de ECCC. Normal: 2002-2018

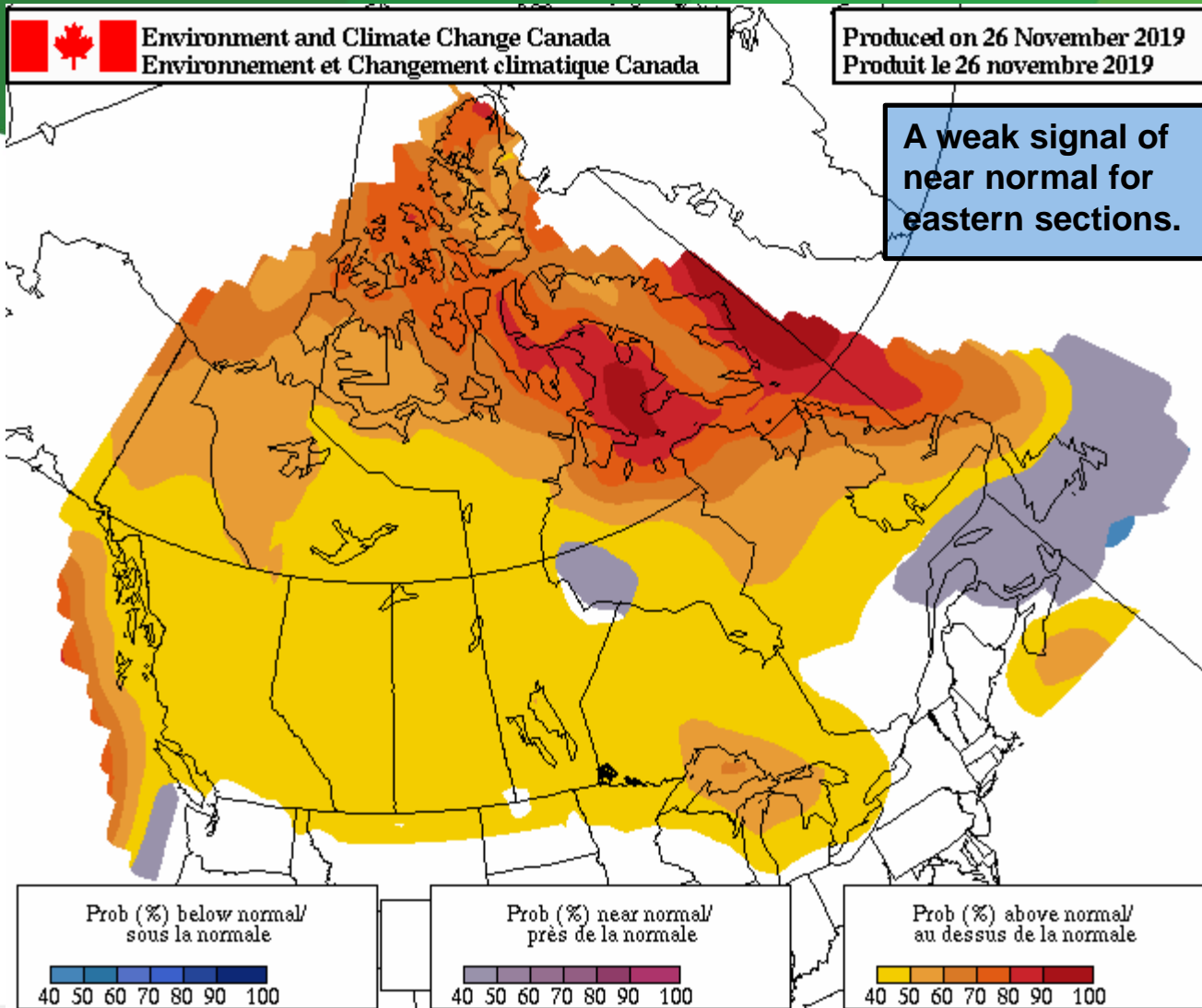


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Outlook – Winter 2019/20 (D,J,F)



Forecast probability of Temperature
above, below and near normal (calibrated)

Period: December 2019 January-February 2020

Based on 3 equiprobable categories
from 1981-2010 climatology

Probabilités prévues de températures
au-dessus, sous et près de la normale (calibrées)

Période: décembre 2019 janvier-février 2020

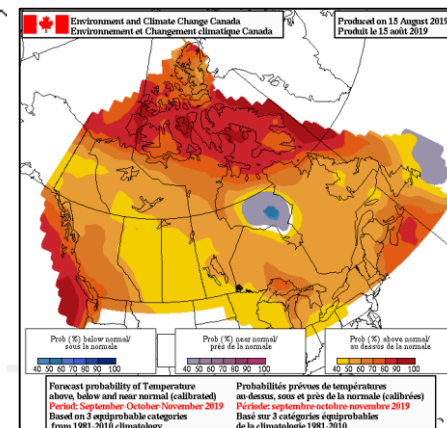
Basé sur 3 catégories équiprobables
de la climatologie 1981-2010

Temperature

December 2019
January 2020
February 2020

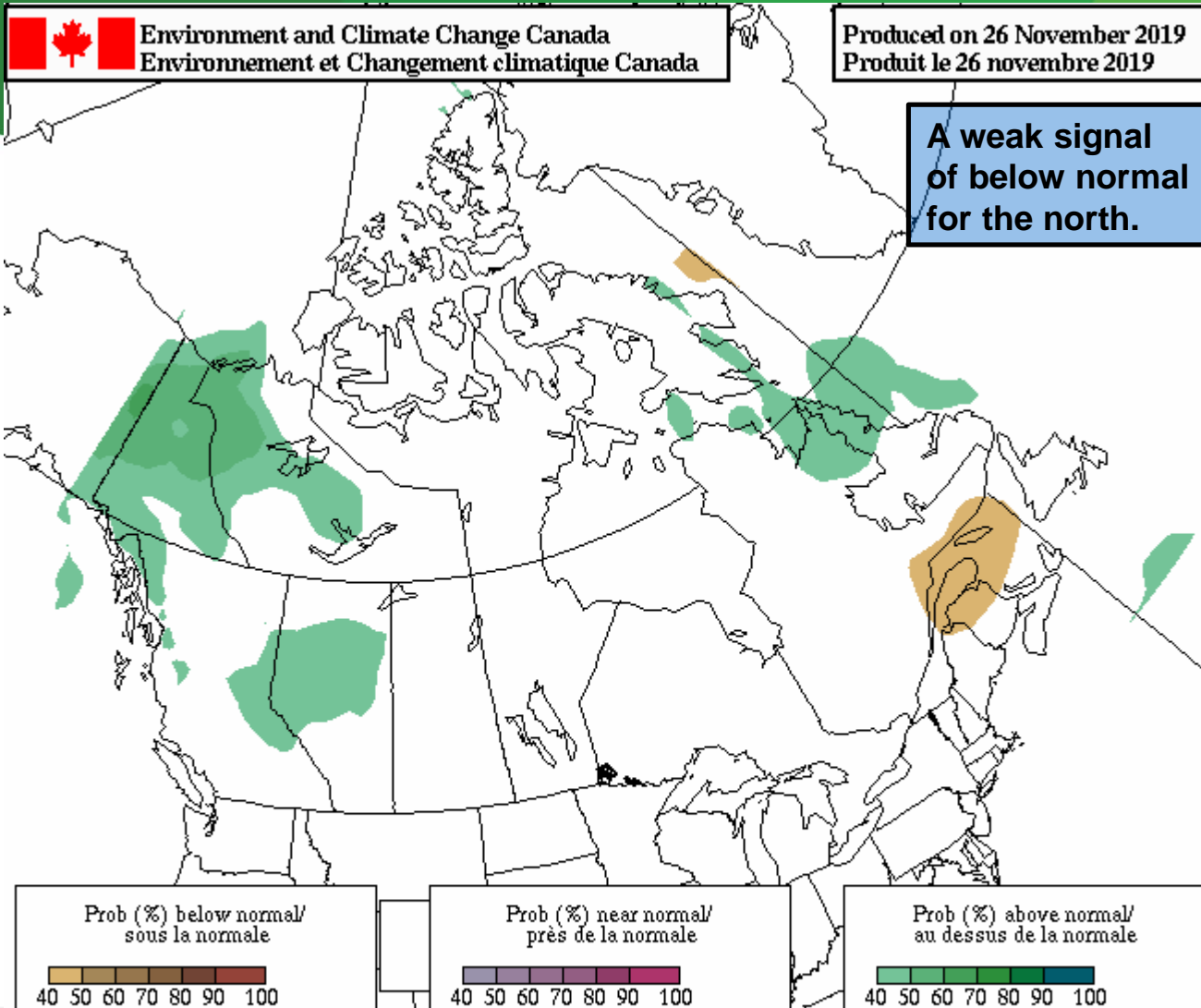
NB (D, J, F)
Normal; -2/-13C


Produced November 15



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Outlook – Winter 2019/20 (D,J,F)



 Forecast probability of Precipitation
above, below and near normal (calibrated)
Period: December 2019 January-February 2020
Based on 3 equiprobable categories
from 1981-2010 climatology

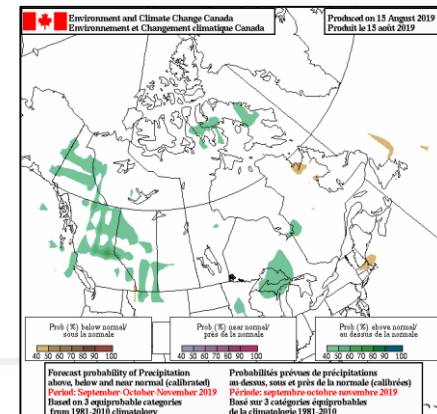
Probabilités prévues de précipitations
au-dessus, sous et près de la normale (calibrées)
Période: décembre 2019 janvier-février 2020
Basé sur 3 catégories équiprobables
de la climatologie 1981-2010

Precipitation

December 2019
January 2020
February 2020

NB (D, J, F)
Normal; ~263 mm

Produced November 15

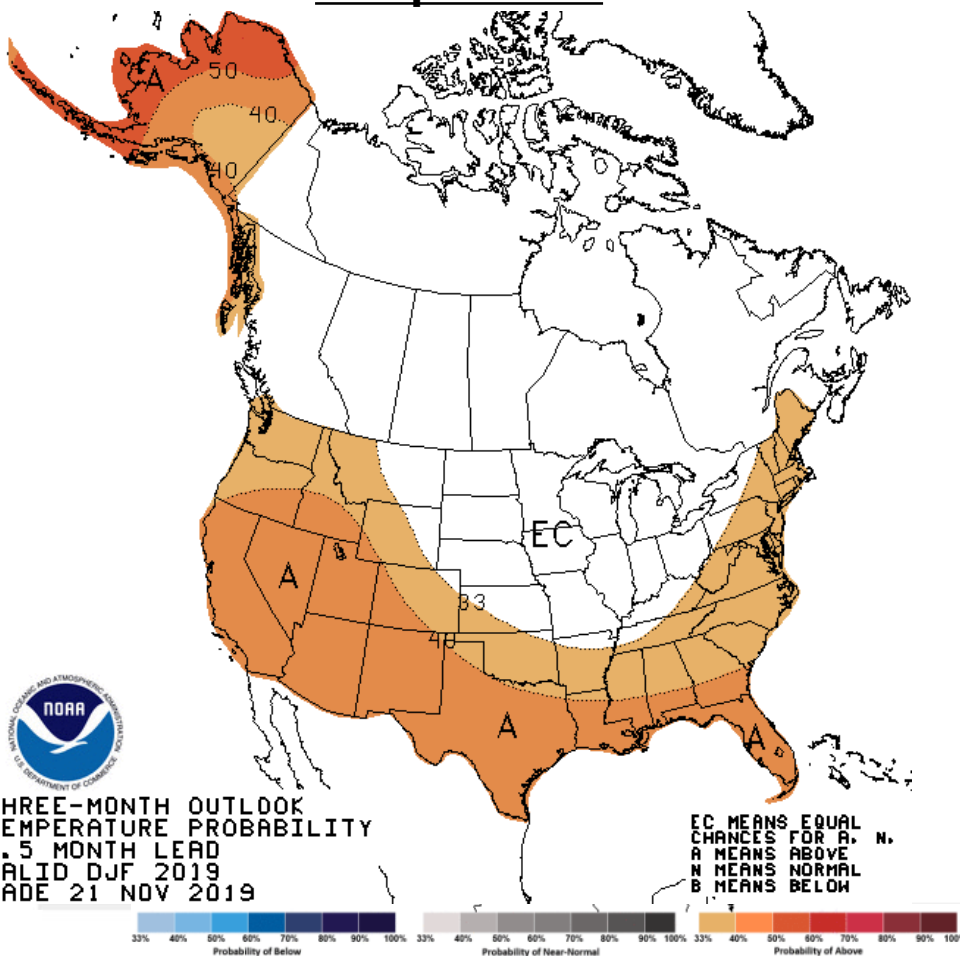


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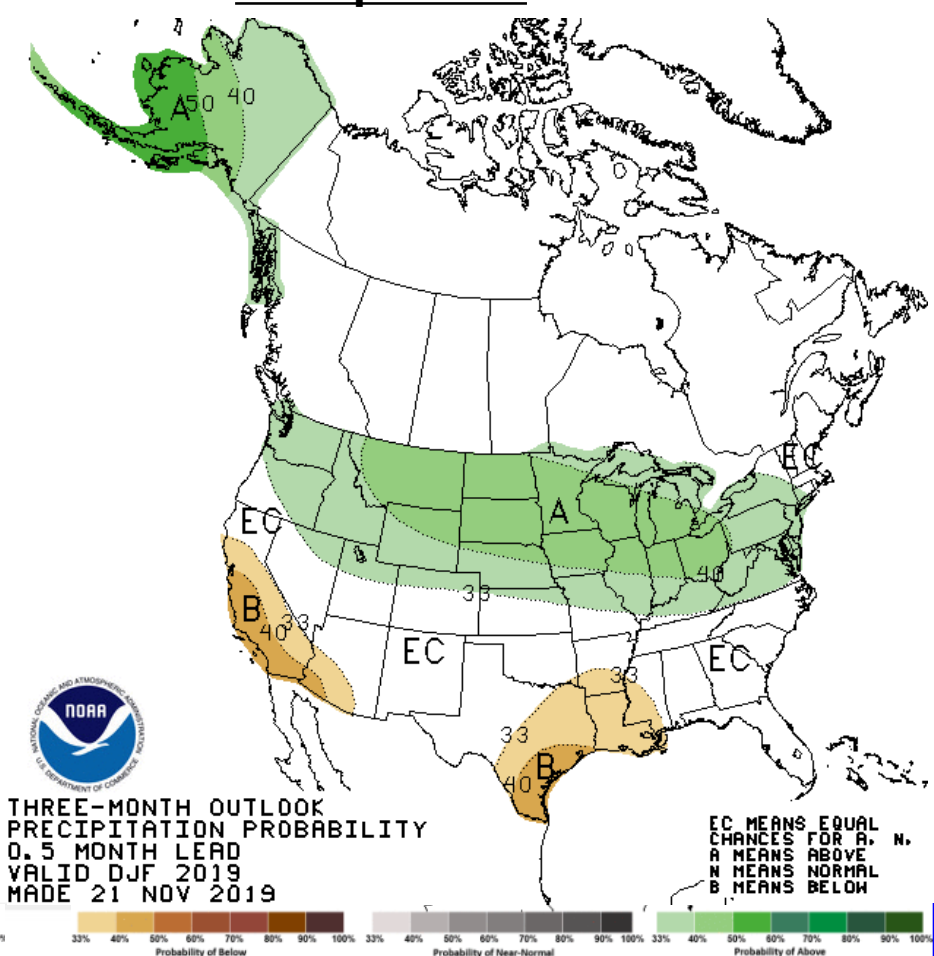


December – January - February

Temperature



Precipitation

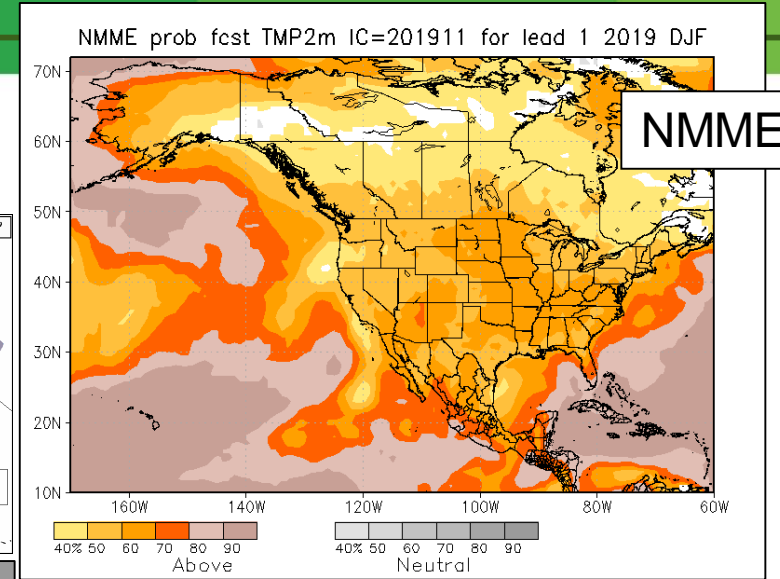
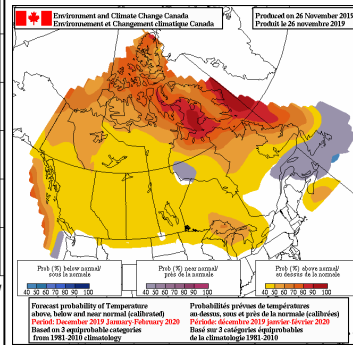
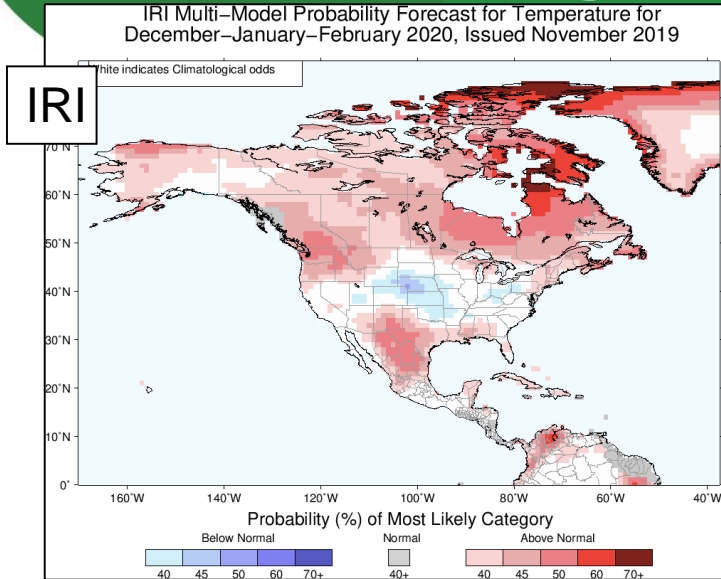


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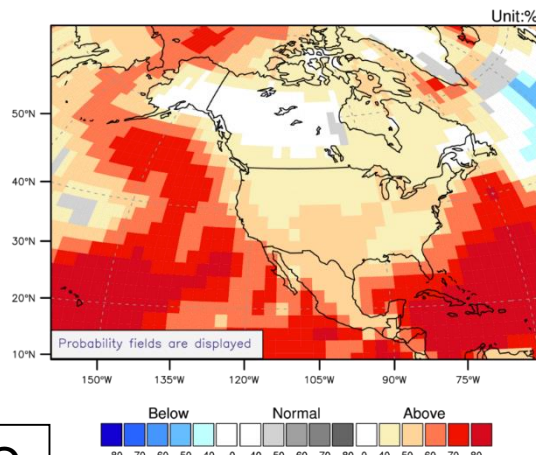
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Winter 2019-20 Probabilistic Forecast from foreign models (temperature)



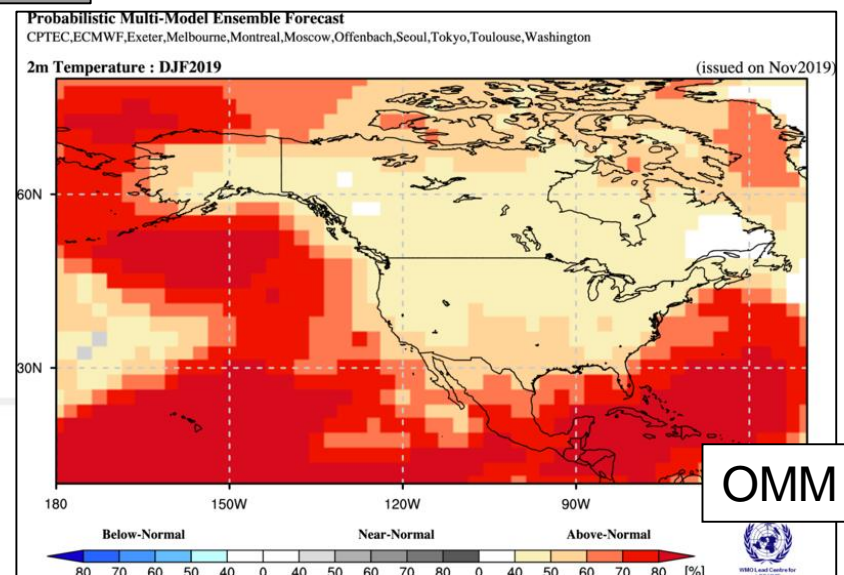
The most recent

Temperature at 2m for December 2019-February 2020



APEC

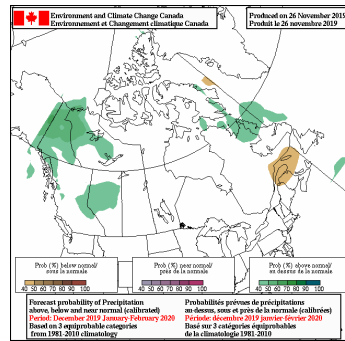
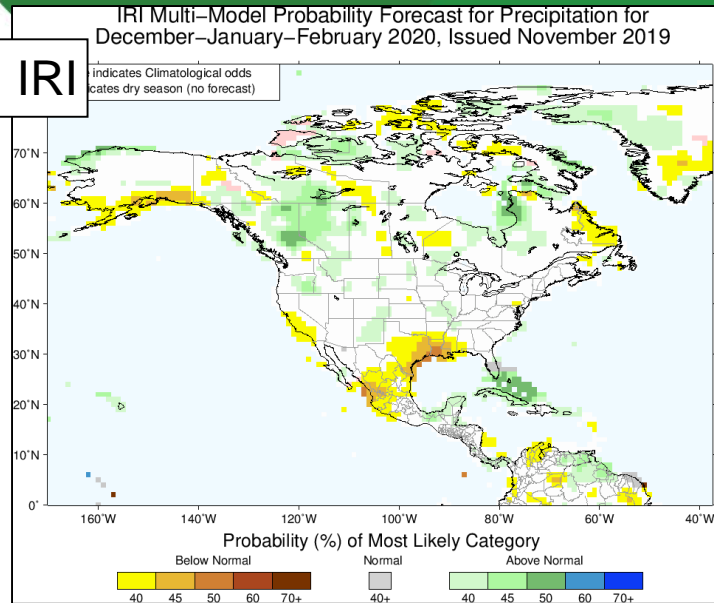
© APEC Climate Center



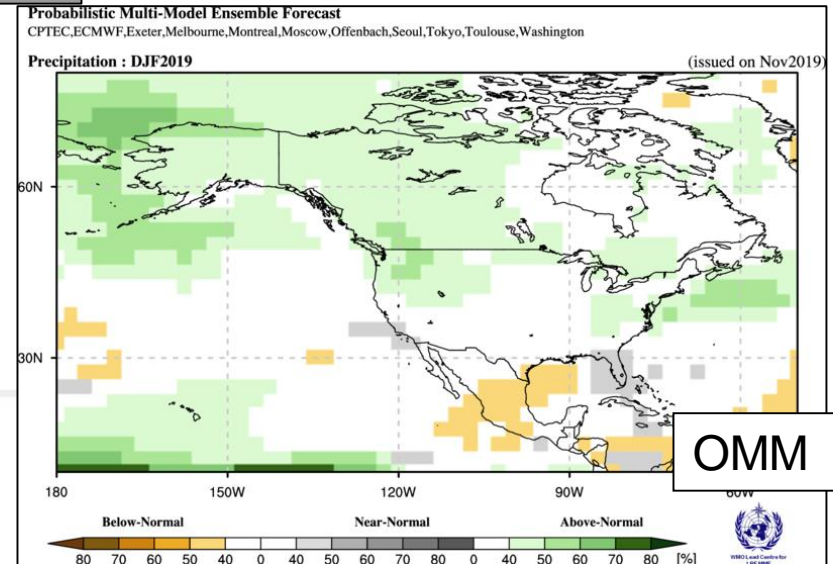
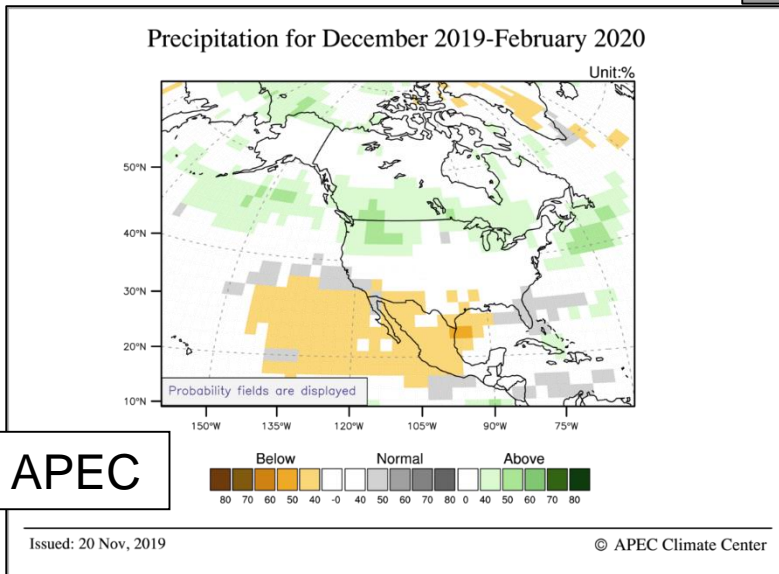
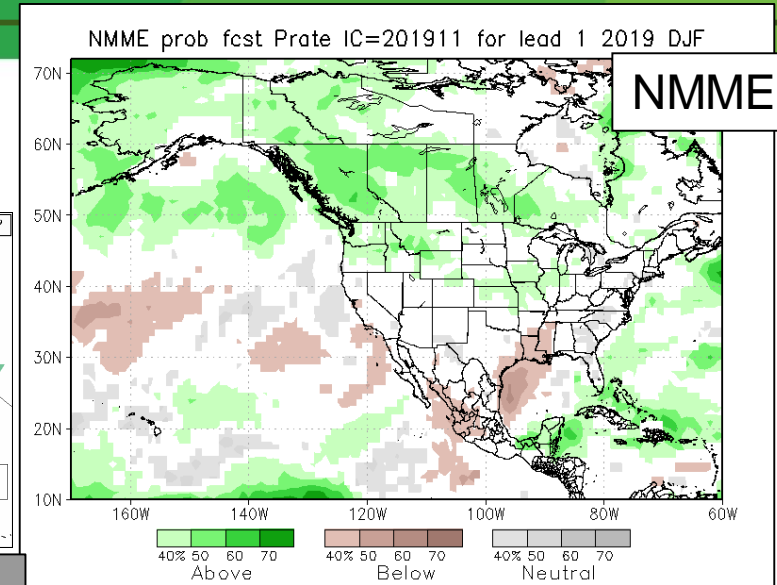
OMM



Winter 2019-20 Probabilistic Forecast from foreign models (precipitation)



The most recent



2019 Atlantic Tropical Season Summary



NATIONAL HURRICANE CENTER
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION



2019 Atlantic Tropical Cyclone Names *

~~Andrea~~
~~Barry~~
~~Chantal~~
~~Dorian~~
~~Erin~~
~~Fernand~~
~~Gabrielle~~

~~Humberto~~
~~Imelda~~
~~Jerry~~
~~Karen~~
~~Lorenzo~~
~~Melissa~~
~~Nester~~

~~Olga~~
~~Pablo~~
~~Rebekah~~
~~Sebastian~~
Tanya
Van
Wendy

*Names selected by the World Meteorological Organization

The 2019 Atlantic hurricane season compared to the average and the forecast. The season was above average.

	STORMS	HURRICANES	MAJOR
NORMAL	12	6	3
FORECAST	10-17	5-9	2-4
2019	18	6	3



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Tropical Season Summary 2019

(preliminary as of December 1 2019)



NATIONAL HURRICANE CENTER
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U.S. DEPARTMENT OF COMMERCE, NATIONAL WEATHER SERVICE
NORTH ATLANTIC HURRICANE TRACKING CHART

2019

NUMBER	TYPE	NAME	DATE
1	STS	ANDREA*	MAY 20-21
2	H	BARRY*	JUL 11-15
3	TS	CHANTAL*	AUG 21-23
4	MH	DORIAN	AUG 24-SEP 7
5	TS	ERIN*	AUG 26-29
6	TS	FERNAND	SEP 3-4
7	TS	GABRIELLE	SEP 3-10
8	MH	HUMBERTO	SEP 13-19
9	TS	IMELDA	SEP 17-19
10	H	JERRY	SEP 17-25
11	TS	KAREN	SEP 22-27
12	MH	LORENZO	SEP 22-OCT 2
13	TS	MELISSA	OCT 11-14
14	TS	NESTOR	OCT 18-19
15	TS	OLGA	OCT 25
16	H	PABLO	OCT 25-28
17	STS	REBEKAH	OCT 30-NOV 1
18	TS	SEBASTIEN	NOV 19-24

* Post-storm analysis is complete

Name	Dates	Max Wind (mph)
STS Andrea	20-21 May	40*
H Barry	11-15 Jul	75*
TD Three	22-23 Jul	35*
TS Chantal	21-23 Aug	40*
MH Dorian	24 Aug- 7 Sep	185
TS Erin	26-29 Aug	40*
TS Fernand	3- 4 Sep	50
TS Gabrielle	3-10 Sep	60
MH Humberto	13-19 Sep	125
TS Imelda	17-19 Sep	40
H Jerry	17-25 Sep	105
TS Karen	22-27 Sep	45
MH Lorenzo	22 Sep- 2 Oct	160
TS Melissa	11-14 Oct	65
TD Fifteen	14-16 Oct	35*
TS Nestor	18-19 Oct	60
TS Olga	25 Oct	40
H Pablo	25-28 Oct	80
STS Rebekah	30 Oct- 1 Nov	45
TS Sebastien	19-24 Nov	55

* Denotes a storm for which the post-storm analysis is complete.

- Major Hurricane
- Hurricane
- Tropical Storm
- Tropical Depression
- Subtropical Storm
- Subtropical Depression
- Wave/Low
- Extratropical Storm
- Position at 0000 UTC
- Position/date at 1200 UTC
- Storm Number

Preliminary

LAMBERT CONFORMAL CONIC PROJECTION
STANDARD PARALLELS AT 30 AND 60
SCALE OF NAUTICAL MILES
0 250 500

Canada

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