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New Brunswick

Integrated Climate Bulletin Summer Review Fall 2018 Outlook

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**Meteorological Service of Canada
Environment and Climate Change
Canada**

September 6, 2018

June 2018; Climate Summary

Station Name	TC ID	Station Type	Mean Temperature (°C)			Total Precip (mm)			
			Monthly Mean	Normal Mean	Departure from Normal	Monthly Total	Normal Total	Total as % of Normal	Departure from Normal as % of Normal
BAS CARAQUET	WXS	AU8	12.9	14.3	-1.4	73.6	76.8	96	-4
BAS CARAQUET		DAILY				63.4	76.8	83	-17
BATHURST A	ZBF	NCH	13.2	15.9	-2.6	68.8	96.9	71	-29
CHARLO AUTO	ZCR	AU8	13.1	14.6	-1.5	51.6	85.1	61	-39
MIRAMICHI RCS	ACQ	AU8	14.0	15.7	-1.7	56.8	86.3	66	-34
DOAKTOWN AUTO RCS	ADN	AU8	13.4	16.0	-2.6	71.7	95.4	75	-25
EDMUNDSTON	ERM	AU8	12.4	15.2	-2.8	59.9	97.4	62	-38
FREDERICTON	YFC	NCA	14.4	16.2	-1.8	100.4	82.4	122	22
FREDERICTON CDA CS	AFC	AU8	14.6	16.4	-1.8	141.4	86.3	164	64
FUNDY PARK (ALMA) CS	AFY	AU8	12.5	13.8	-1.4	177.1	110.0	161	61
GAGETOWN AWOS A	YCX	AU5	14.5	16.4	-1.9	112.5	86.1	131	31
GRAND MANAN SAR CS	XGM	AU8	12.7			144.3			
MECHANIC SETTLEMENT	AMS	AU8	12.5			188.8			
MISCOU ISLAND (AUT)	WMI	AU8	12.0			67.7			
MONCTON INTLA	YQM	NCH	13.5	15.2	-1.7	154.0	94.6	163	63
OAK POINT		DAILY	14.4	16.4	-2.0	170.8	86.1	198	98
POINT LEPREAU CS	WPE	AU8	12.5	12.8	-0.3	119.5	111.0	108	8
RED PINES	ARP	AU8	12.4	15.4	-3.0	60.8	83.6	73	-27
SAINT JOHN A	YSJ	NCH	12.3	14.0	-1.7	204.5	101.0	203	103
ST. STEPHEN	WSS	AU8	14.6			106.0			
SUSSEX FOUR CORNERS	ASF	AU8	13.5	16.0	-2.4	142.5	88.4	161	61
WOODSTOCK		DAILY	14.3	16.3	-2.0	107.4	91.0	118	18
WOODSTOCK NEWBRIDGE	EWD	AU8	13.4	16.3	-2.8	78.3	91.0	86	-14
Average			13.3	15.4	-2.0	109.6	90.8	116	16
Max			14.6	16.4	-0.3	204.5	111.0	203	103
Min			12.0	12.8	-3.0	51.6	76.8	61	-39



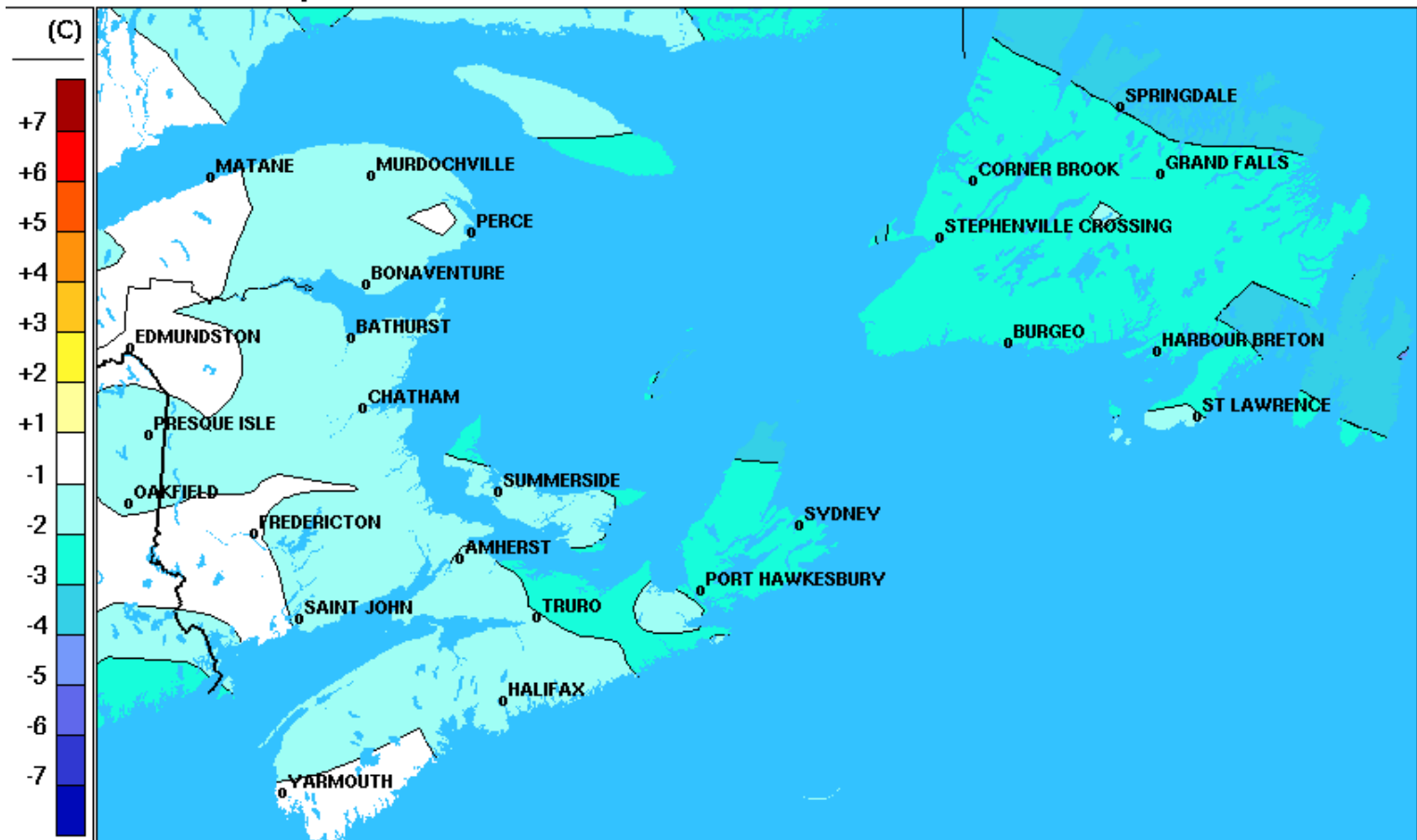
June 2018 Temperature departure from 1981-2010 mean.

Monthly Temperature Anomaly: 2018/06
Anomalie de la température mensuelle: 2018/06



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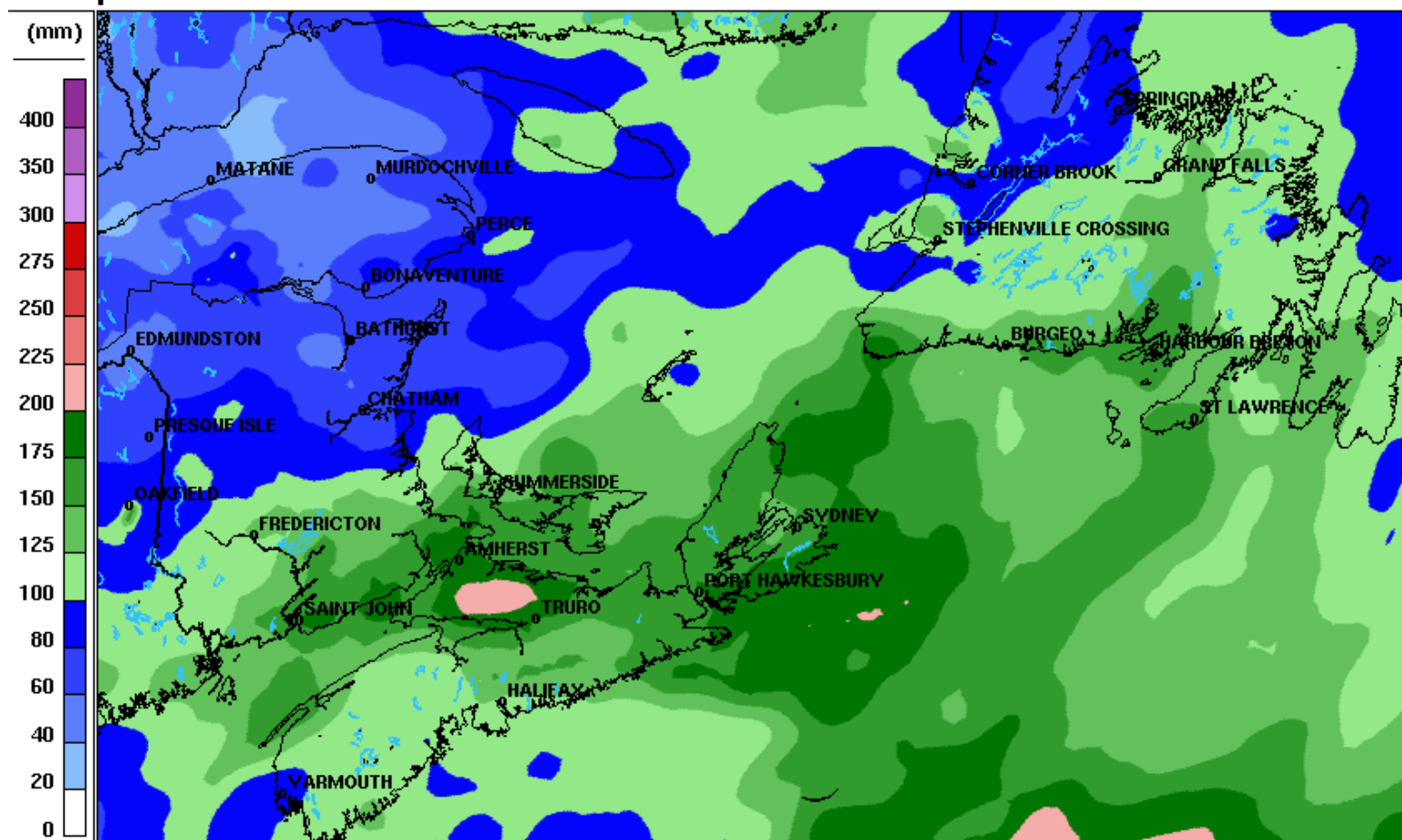
June 2018 Total Precipitation

Total precipitation: 201806
Précipitation totale: 201806



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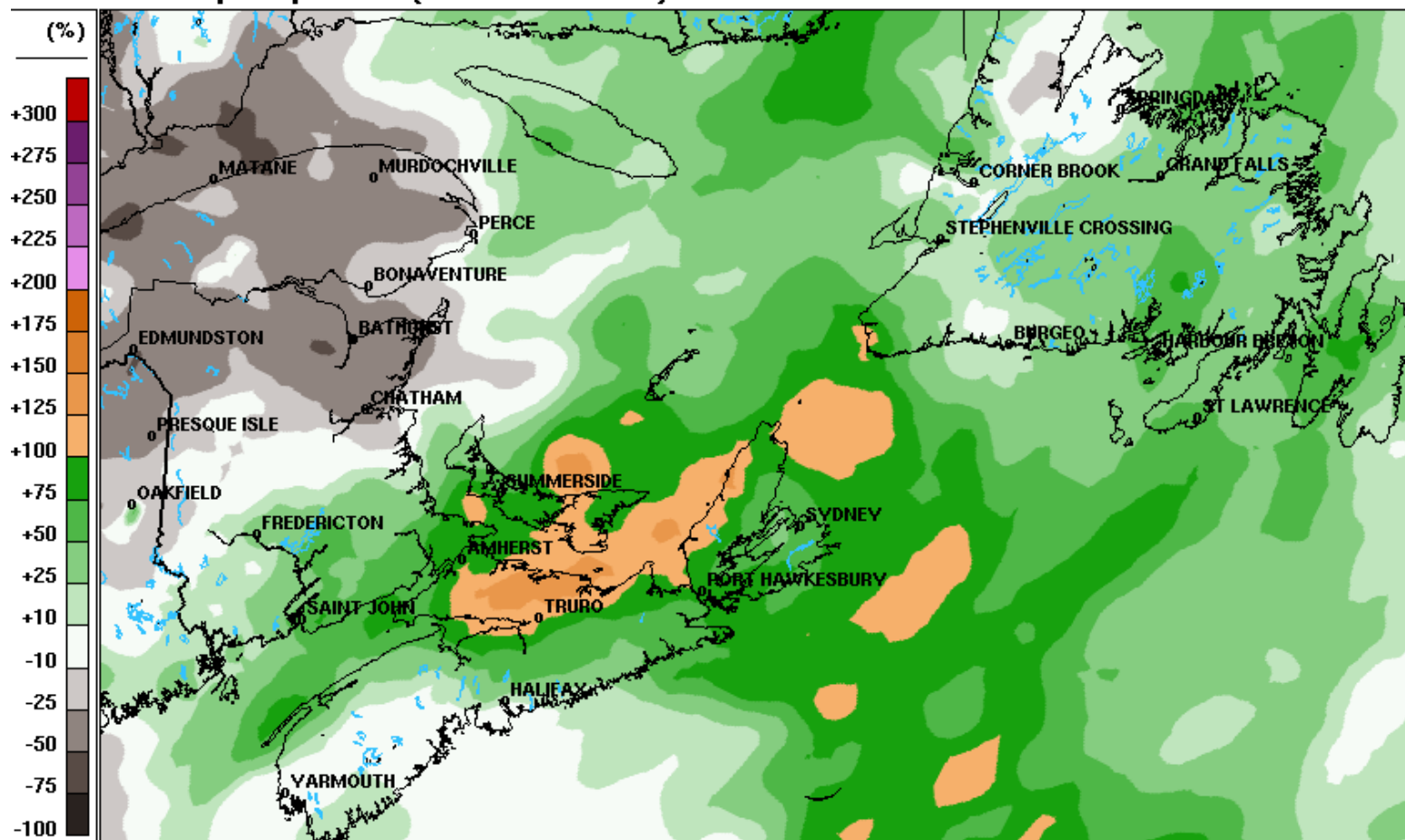
June 2018 Precipitation departure from 1981-2010 mean.

Precipitation Anomaly (% of normal): 201806
Anomalie de précipitation (% de la normale): 201806



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ECCC NWP model gridded data / Données sur grille de modèle de PNT de ECCC. Normal: 2002-2016



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July 2018; Climate Summary

						Mean Temperature (°C)			Total Precip (mm)			
				Monthly Avg of Daily Max Temp	Monthly Avg of Daily Min Temp							Departure from Normal as % of
Station Name	Prov	TC ID	Station Type			Monthly Mean	Normal Mean	Departure from Normal	Monthly Total	Normal Total	Total as % of Normal	Normal as % of Normal
BAS CARAQUET	NB	WXS	AU8	26.2	15.2	20.7	18.3	2.4	69.6	92.3	75	-25
BAS CARAQUET	NB		DAILY						62.4	92.3	68	-32
BATHURST A	NB	ZBF	NCH	28.0	14.4	21.2	19.1	2.1	83.6	100.8	83	-17
BUCTOUCHE CDA CS	NB	ABT	AU8	27.3	15.2	21.2	19.2	2.1	87.5	99.1	88	-12
CHARLO AUTO	NB	ZCR	AU8	26.7	14.3	20.5	17.9	2.6	62.9	102.1	62	-38
MIRAMICHI RCS	NB	ACQ	AU8	28.8	15.5	22.1	19.1	3.0	41.3	99.9	41	-59
DOAKTOWN AUTO RCS	NB	ADN	AU8	28.5	13.8	21.1	19.1	2.0	28.7	105.8	27	-73
EDMUNDSTON	NB	ERM	AU8	27.6	11.5	19.5	18.2	1.4	94.2	113.8	83	-17
FREDERICTON	NB	YFC	NCA	28.2	14.4	21.4	19.3	2.1	68.4	88.3	77	-23
FREDERICTON CDA CS	NB	AFC	AU8	27.9	14.8	21.3	19.4	2.0	94.8	89.0	107	7
FUNDY PARK (ALMA) CS	NB	AFY	AU8	24.6	13.3	18.9	17.1	1.9	76.7	99.4	77	-23
GAGETOWN AWOS A	NB	YCX	AU5	28.0	14.5	21.3	19.5	1.8	75.5	96.9	78	-22
GRAND MANAN SAR CS	NB	XGM	AU8	23.5	12.5	18.0			15.9			
KOUCHIBOUGUAC	NB	AKC	AU8	28.2	14.3	21.3	19.2	2.1	54.4	110.4	49	-51
MACTAQUAC PROV PARK	NB		DAILY	27.8	14.7	21.3	18.8	2.5	76.9	98.2	78	-22
MECHANIC SETTLEMENT	NB	AMS	AU8	24.5	14.7	19.6			68.2			
MISCOU ISLAND (AUT)	NB	WMI	AU8	24.9	15.0	20.0			26.9			
MONCTON INTL A	NB	YQM	NCH	27.8	14.8	21.4	18.8	2.6	63.0	92.1	68	-32
OAK POINT	NB		DAILY	25.9	14.2	20.1	19.5	0.5	23.5	96.9	24	-76
RED PINES	NB	ARP	AU8	27.9	13.4	20.7	18.6	2.1	75.0	105.8	71	-29
SAINT JOHN A	NB	YSJ	NCH	24.8	11.5	18.3	17.1	1.2	19.6	88.4	22	-78
ST. STEPHEN	NB	WSS	AU8	27.7	13.3	20.5			36.5			
SUSSEX FOUR CORNERS	NB	ASF	AU8	27.0	14.1	20.5	19.2	1.3	50.5	84.0	60	-40
WOODSTOCK	NB		DAILY	27.2	14.9	21.1	19.0	2.1	97.2	100.2	97	-3
WOODSTOCK NEWBRIDGE	NB	EWD	AU8	27.5	13.5	20.5	19.0	1.5	38.7	100.2	39	-61
Average				26.9	14.1	20.5	18.8	2.0	59.7	97.9	65	-35
Max				28.8	15.5	22.1	19.5	3.0	97.2	113.8	107	7
Min				23.5	11.5	18.0	17.1	0.5	15.9	84.0	22	-78



July 2018 Temperature departure from 1981-2010 mean.

Monthly Temperature Anomaly: 2018/07
Anomalie de la température mensuelle: 2018/07



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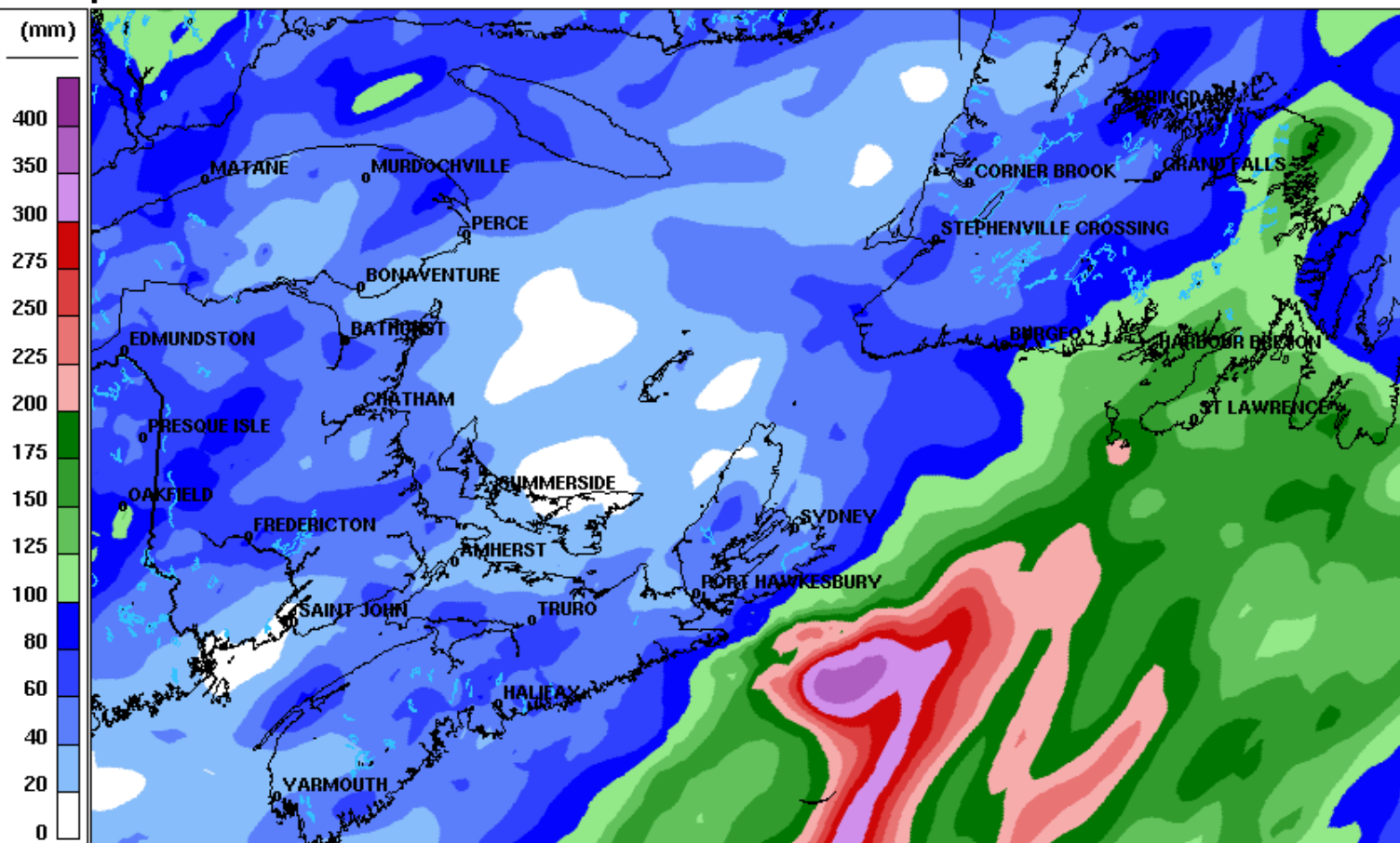
July 2018 Total Precipitation

Total precipitation: 201807
Précipitation totale: 201807



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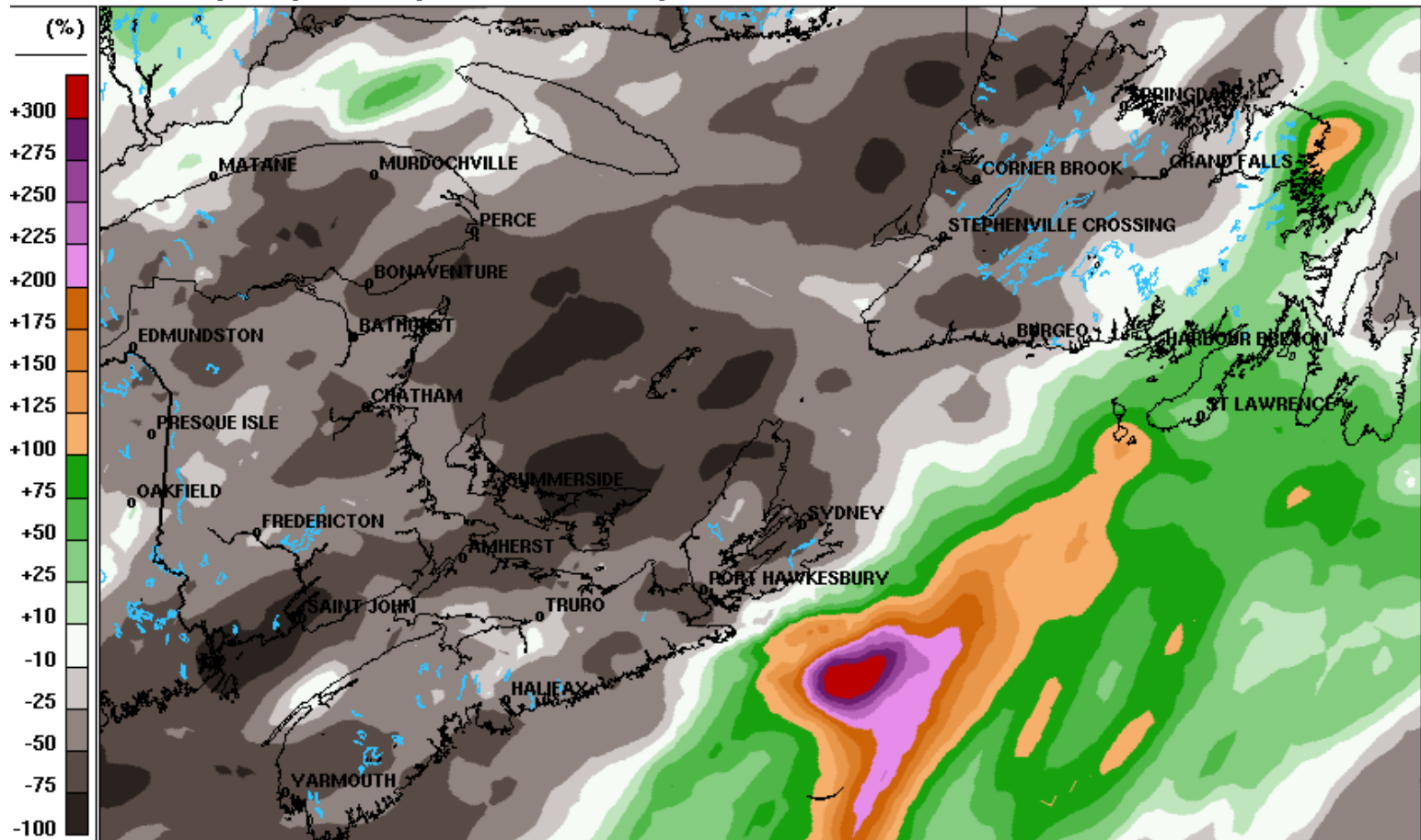
July 2018 Precipitation departure from 1981-2010 mean.

Precipitation Anomaly (% of normal): 201807
Anomalie de précipitation (% de la normale): 201807



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ECCC NWP model gridded data / Données sur grille de modèle de PNT de ECCC. Normal: 2002-2016



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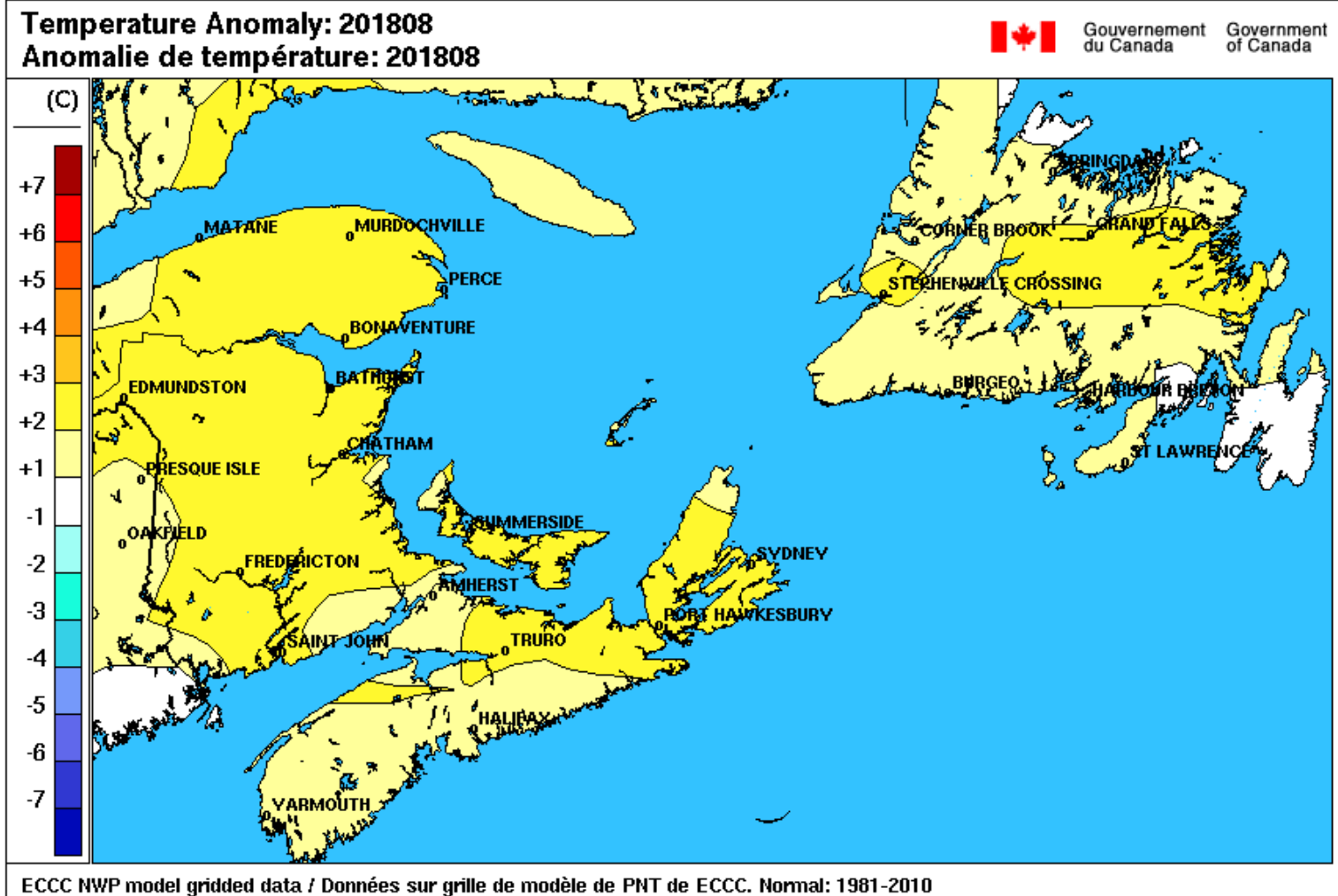
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August 2018; Climate Summary

Station Name	TC ID	Station Type	Monthly Avg of Daily Max Temp	Monthly Avg of Daily Min Temp	Mean Temperature (°C)			Total Precip (mm)			
					Monthly Mean	Normal Mean	Departure from Normal	Monthly Total	Normal Total	Total as % of Normal	Departure from Normal as % of Normal
AROOSTOOK		DAILY	26.9	13.6	20.3	17.9	2.4	111.6	102.4	109	9
BAS CARAQUET	WXS	AU8	24.7	14.3	19.5	17.9	1.6	104.7	120.9	87	-13
BAS CARAQUET		DAILY						85.0	120.9	70	-30
BATHURST A	ZBF	NCH	25.7	13.3	19.6	18.2	1.4	88.4	82.0	108	8
BOUCTOUCHE CDA CS	ABT	AU8	26.0	14.6	20.3	18.5	1.9	88.4	85.2	104	4
CHARLO AUTO	ZCR	AU8	24.9	13.6	19.3	17.2	2.1	56.9	90.1	63	-37
MIRAMICHI RCS	ACQ	AU8	26.4	14.7	20.5	18.5	2.1	84.9	93.1	91	-9
DOAKTOWN AUTO RCS	ADN	AU8	26.2	13.2	19.7	18.4	1.3	128.4	94.4	136	36
EDMUNDSTON	ERM	AU8	26.0	10.4	18.2	17.1	1.1	133.3	93.4	143	43
FREDERICTON	YFC	NCA	26.7	13.8	20.2	18.4	1.8				
FREDERICTON CDA CS	AFC	AU8	26.3	14.6	20.4	18.6	1.9	112.8	85.9	131	31
FUNDY PARK (ALMA) CS	AFY	AU8	24.0	14.1	19.0	17.2	1.8	98.2	93.9	105	5
GAGETOWN AWOS A	YCX	AU5	26.4	14.5	20.5	19.2	1.3				
GRAND MANAN SAR CS	XGM	AU8	24.7	13.1	18.9			52.5			
KOUCHIBOUGUAC	AKC	AU8	26.2	13.7	19.9	18.5	1.5	122.2	86.7	141	41
MECHANIC SETTLEMENT	AMS	AU8	23.7	14.9	19.3			151.6			
MISCOU ISLAND (AUT)	WMI	AU8	23.8	14.8	19.3			79.7			
MONCTON INTL A	YQM	NCH	26.2	14.6	20.4	18.2	2.3	100.6	80.8	124	24
OAK POINT		DAILY	25.9	14.9	20.4	19.2	1.2	132.6	86.5	153	53
POINT LEPREAU CS	WPE	AU8	22.7	13.7	18.2	15.6	2.5	100.3	98.0	102	2
RED PINES	ARP	AU8	25.6	12.7	19.2	17.9	1.3	100.1	93.6	107	7
SAINT JOHN A	YSJ	NCH	24.9	12.5	18.8	16.8	1.9	110.7	81.7	135	35
ST. STEPHEN	WSS	AU8	27.3	13.5	20.4			83.2			
SUSSEX FOUR CORNERS	ASF	AU8	26.9	14.3	20.6	18.8	1.8	141.0	74.3	190	90
WOODSTOCK		DAILY	25.5	14.0	19.8	18.4	1.4	109.6	100.6	109	9
WOODSTOCK NEWBRIDGE	EWD	AU8	25.6	12.7	19.1	18.4	0.8	97.4	100.6	97	-3
Average			25.6	13.8	19.7	18.0	1.7	103.1	93.3	115	15
Max			27.3	14.9	20.6	19.2	2.5	151.6	120.9	190	90
Min			22.7	10.4	18.2	15.6	0.8	52.5	74.3	63	-37



August 2018 Temperature departure from 1981-2010 mean.



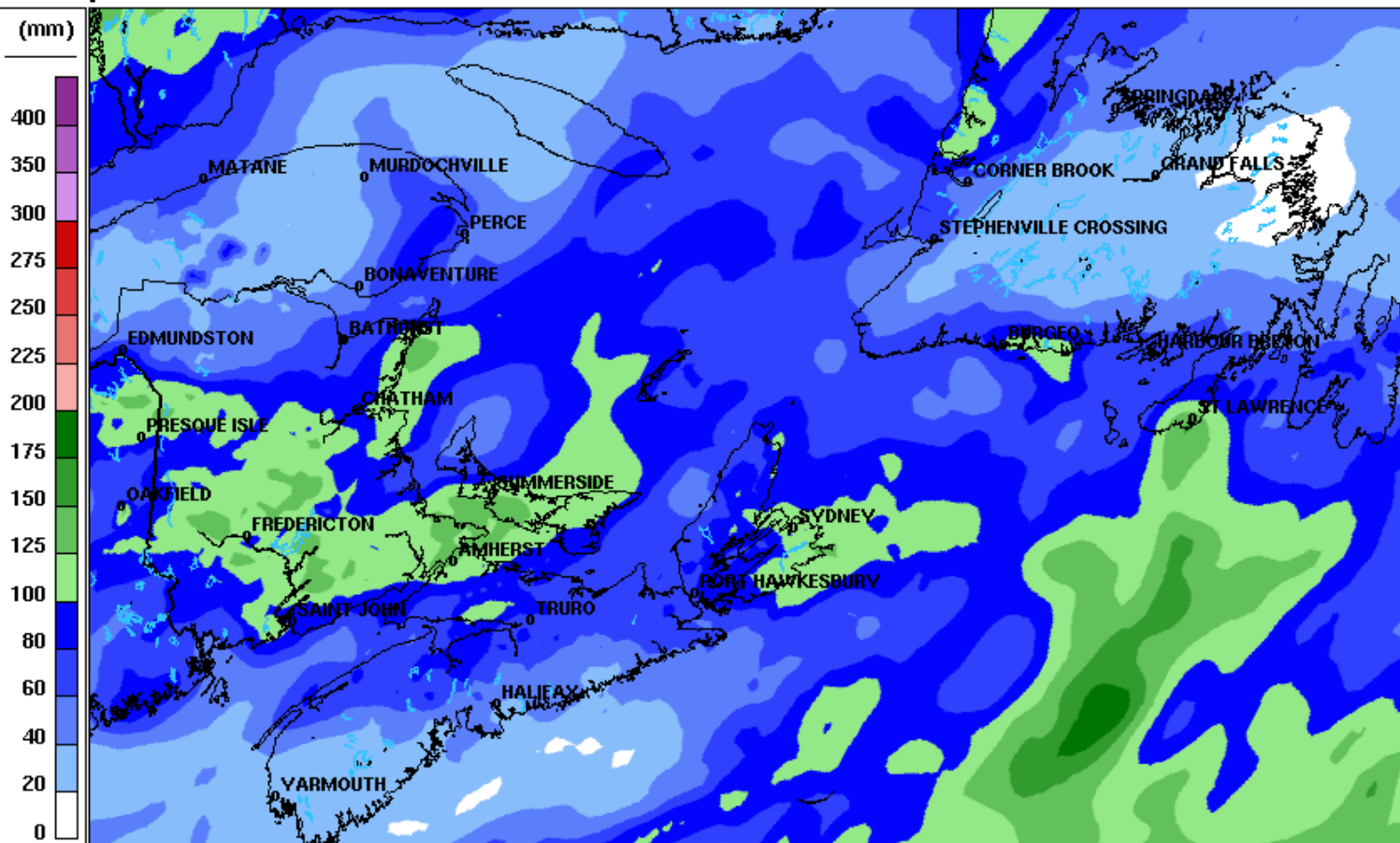
August 2018 Total Precipitation

Total precipitation: 201808
Précipitation totale: 201808



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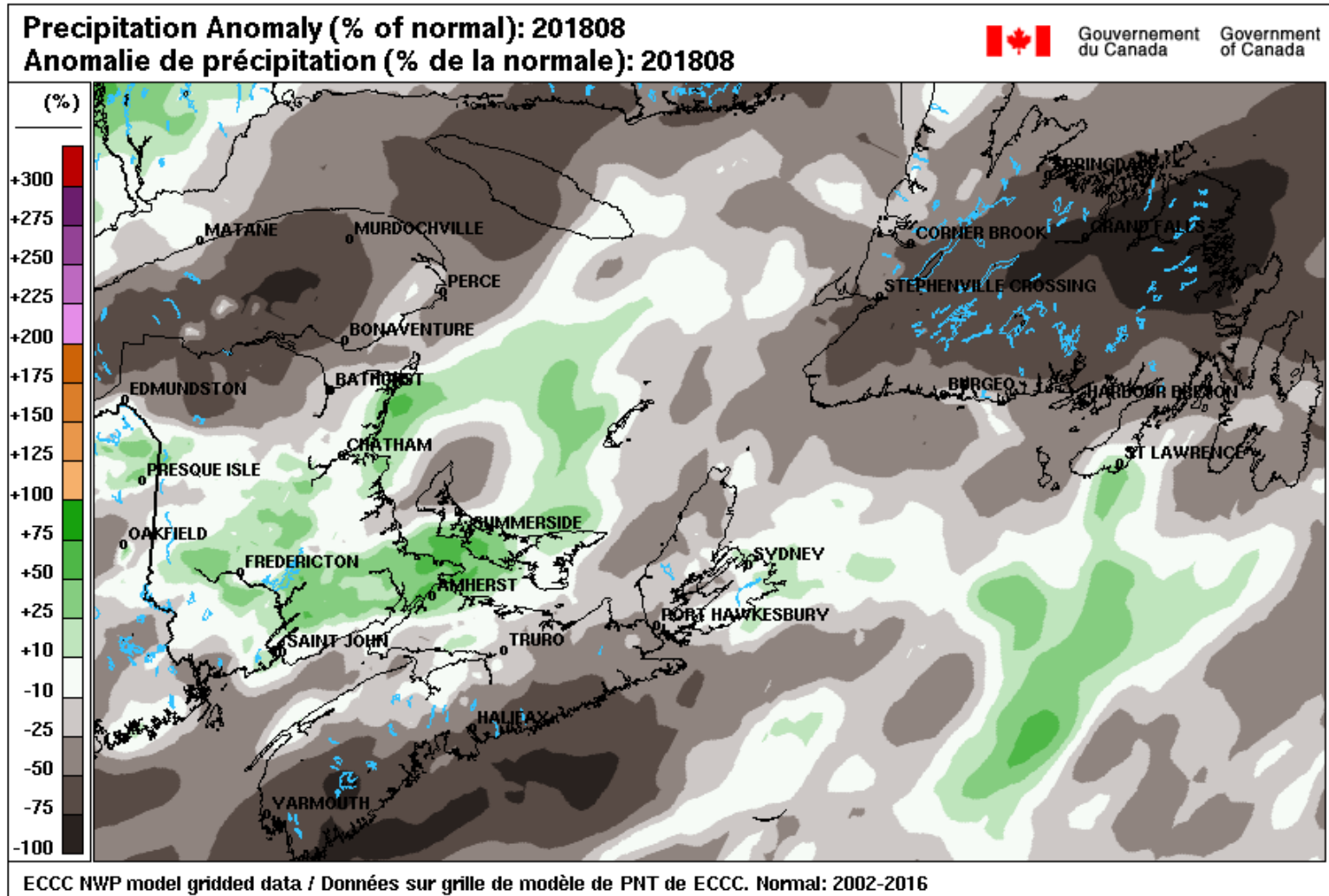


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August 2018 Precipitation departure from 1981-2010 mean.



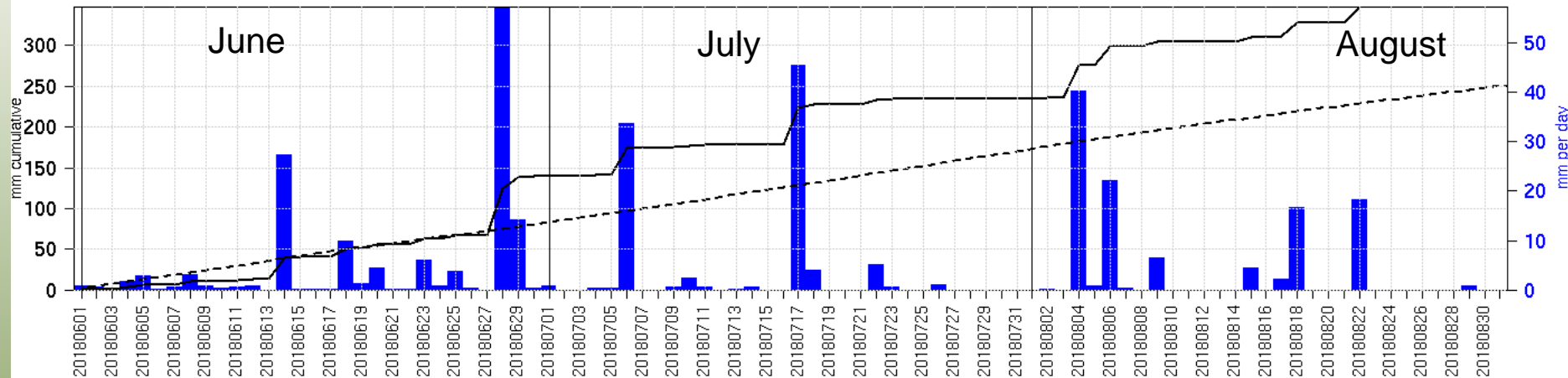
Summer 2018; Climate Summary Table

Station Name	Average Temperature				Average Temperature Departure from Normal				Total Precipitation (mm)				Precipitation as % of Normal			
	Seasonal	Jun	Jul	Aug	Seasonal	Jun	Jul	Aug	Seasonal	Jun	Jul	Aug	Seasonal	Jun	Jul	Aug
AROOSTOOK			21.4	20.3			2.5	2.4			105.4	111.6			100	109
BAS CARAQUET	17.7	12.9	20.7	19.5	0.9	-1.4	2.4	1.6	247.9	73.6	69.6	104.7	85	96	75	87
BAS CARAQUET									210.8	63.4	62.4	85.0	73	83	68	70
BATHURST A	18.0	13.2	21.2	19.6	0.3	-2.6	2.1	1.4	241.0	68.8	83.8	88.4	86	71	83	108
BOUCTOUCHE CDA CS			21.2	20.3			2.1	1.9			87.5	88.4			88	104
CHARLO AUTO	17.6	13.1	20.5	19.3	1.1	-1.5	2.6	2.1	171.4	51.6	62.9	56.9	62	61	62	63
MIRAMICHI RCS	18.9	14.0	22.1	20.5	1.1	-1.7	3.0	2.1	183.0	56.8	41.3	84.9	66	66	41	91
DOAKTOWN AUTO RCS	18.1	13.4	21.1	19.7	0.2	-2.6	2.0	1.3	228.8	71.7	28.7	128.4	77	75	27	136
EDMUNDSTON	16.7	12.4	19.5	18.2	-0.1	-2.8	1.4	1.1	287.4	59.9	94.2	133.3	94	62	83	143
FREDERICTON	18.7	14.4	21.4	20.2	0.7	-1.8	2.1	1.8		100.4	68.7			122	78	
FREDERICTON CDA CS	18.8	14.6	21.3	20.4	0.7	-1.8	2.0	1.9	349.0	141.4	94.8	112.8	134	164	107	131
FUNDY PARK (ALMA) CS	16.8	12.5	18.9	19.0	0.8	-1.4	1.9	1.8	352.0	177.1	76.7	98.2	116	161	77	105
GAGETOWN AWOS A	18.8	14.5	21.3	20.5	0.4	-1.9	1.8	1.3		112.5	75.5			131	78	
GRAND MANAN SAR CS	16.5	12.7	18.0	18.9					212.7	144.3	15.9	52.5				
KOUCHIBOUGUAC			21.3	19.9			2.1	1.5			54.4	122.2			49	141
MACTAQUAC PROV PARK			21.3				2.5				76.9			78		
MECHANIC SETTLEMENT	17.2	12.5	19.6	19.3					408.6	188.8	68.2	151.6				
MISCOU ISLAND (AUT)	17.1	12.0	20.0	19.3					174.3	67.7	26.9	79.7				
MONCTON INTL A	18.4	13.5	21.4	20.4	1.0	-1.7	2.6	2.3	317.8	154.0	63.2	100.6	119	163	69	124
OAK POINT	18.3	14.4	20.1	20.4	-0.1	-2.0	0.5	1.2	326.9	170.8	23.5	132.6	121	198	24	153
POINT LEPREAU CS		12.5		18.2		-0.3		2.5		119.5		100.3		108		102
RED PINES	17.4	12.4	20.7	19.2	0.2	-3.0	2.1	1.3	235.9	60.8	75.0	100.1	83	73	71	107
SAINT JOHN A	16.4	12.3	18.3	18.8	0.5	-1.7	1.2	1.9	334.8	204.5	19.6	110.7	123	203	22	135
ST. STEPHEN	18.5	14.6	20.5	20.4					243.9	106.0	54.7	83.2				
SUSSEX FOUR CORNERS	18.2	13.5	20.5	20.6	0.2	-2.4	1.3	1.8	334.0	142.5	50.5	141.0	135	161	60	190
WOODSTOCK	18.4	14.3	21.1	19.8	0.5	-2.0	2.1	1.4	314.2	107.4	97.2	109.6	108	118	97	109
WOODSTOCK NEWBRIDGE	17.7	13.4	20.5	19.1	-0.2	-2.8	1.5	0.8	256.8	78.3	81.1	97.4	88	86	81	97
Average	17.8	13.3	20.6	19.7	0.5	-2.0	2.0	1.7	271.6	109.6	63.8	103.1	98	116	69	115
Max	18.9	14.6	22.1	20.6	1.1	-0.3	3.0	2.5	408.6	204.5	105.4	151.6	135	203	107	190
Min	16.4	12.0	18.0	18.2	-0.2	-3.0	0.5	0.8	171.4	51.6	15.9	52.5	62	61	22	63

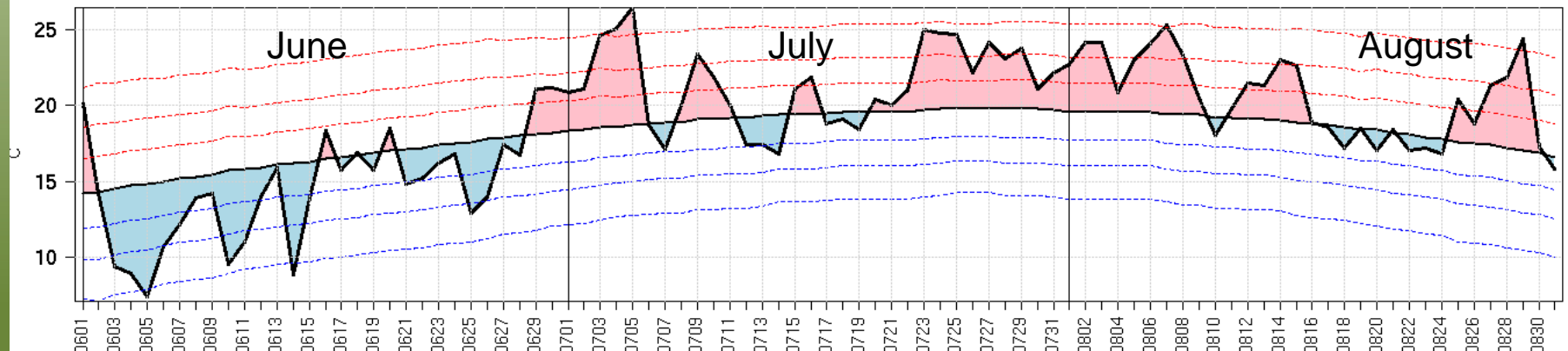


2018 Temperature and precipitation – (J,J,A) for Fredericton

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



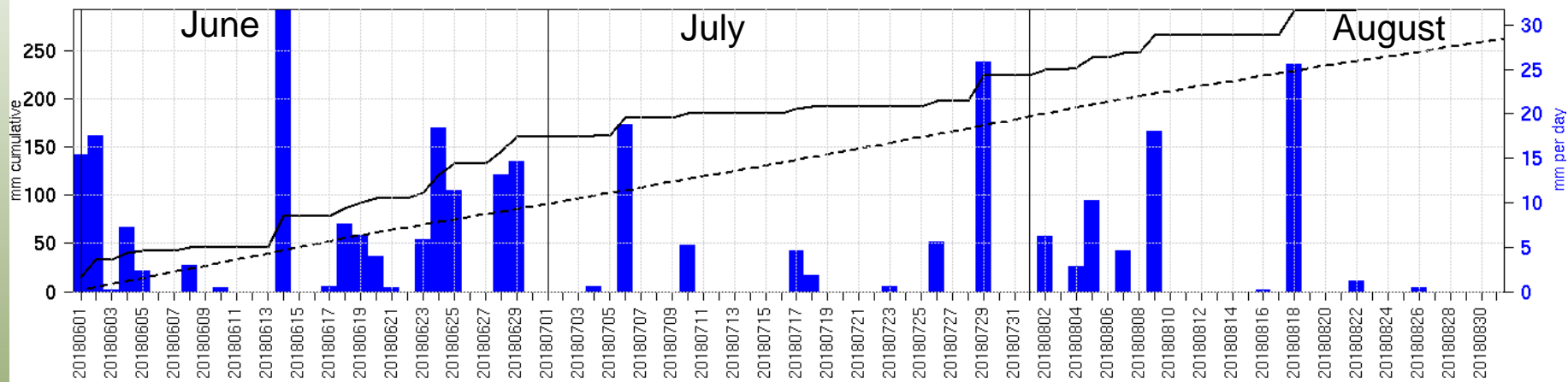
Daily Mean Temperature (bold line) versus Normal (thin line) and $\pm 0.7, 1.3, 2.1$ SD (red/blue dashes) for Fredericton, NB (45.94N 66.63W)



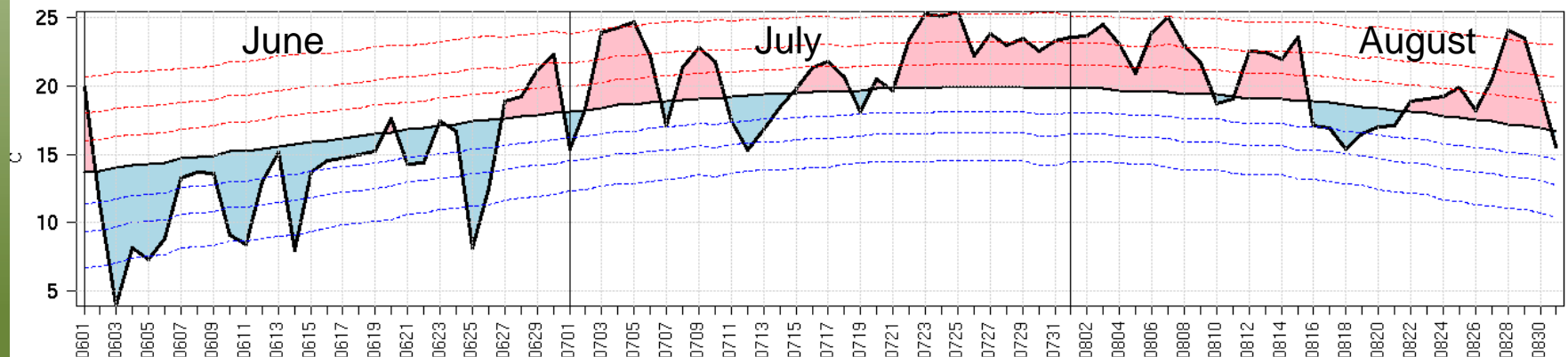
2018 Temperature and precipitation – (J,J,A) for Moncton*

*Precipitation on August 18th should be 55mm, this value was corrected and included in the monthly records

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)



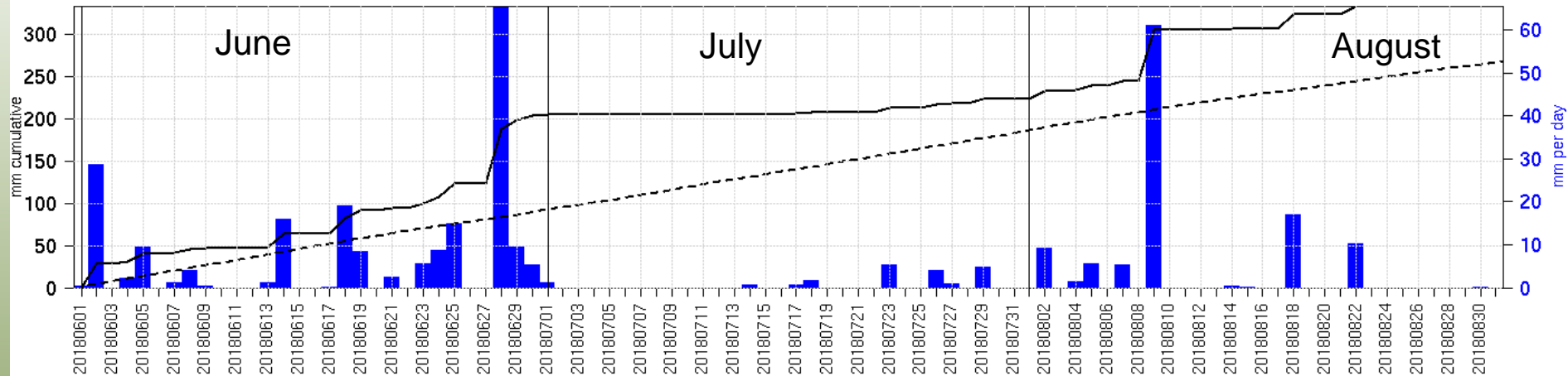
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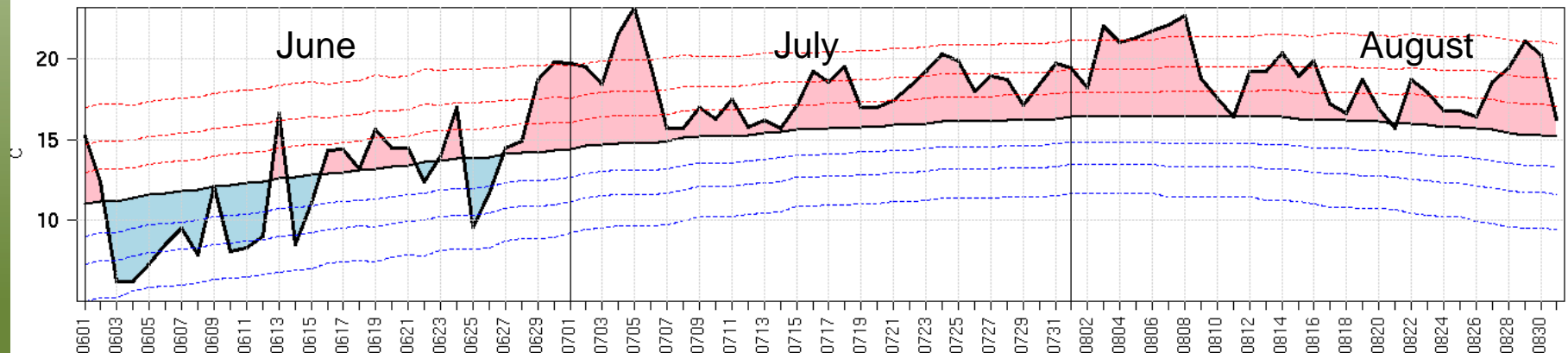
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2018 Temperature and precipitation – (J,J,A) for Saint John

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

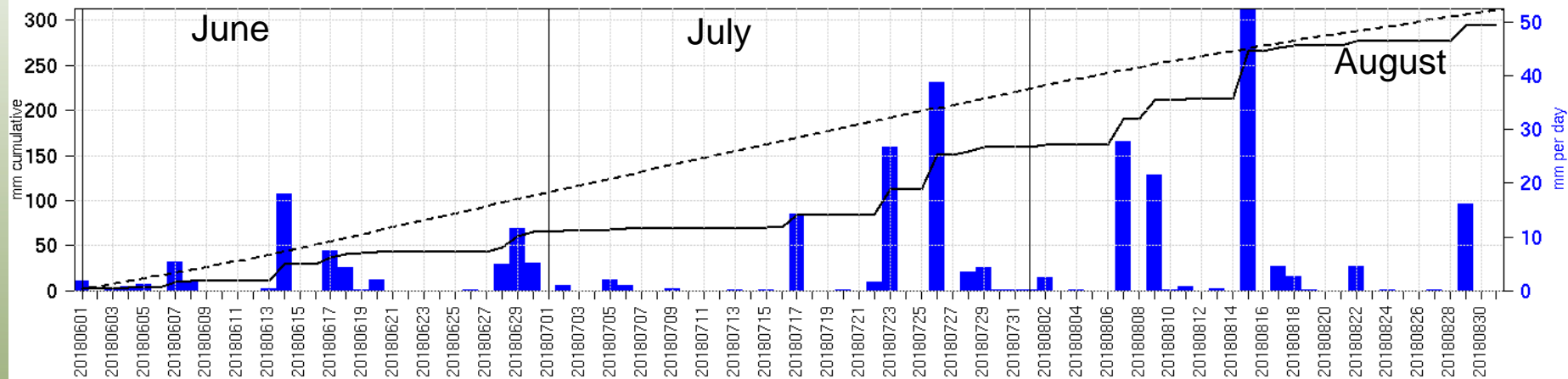


Daily Mean Temperature (bold line) versus Normal (thin line) and $\pm 0.7, 1.3, 2.1$ SD (red/blue dashes) for Saint John, NB (45.26N 66.07W)

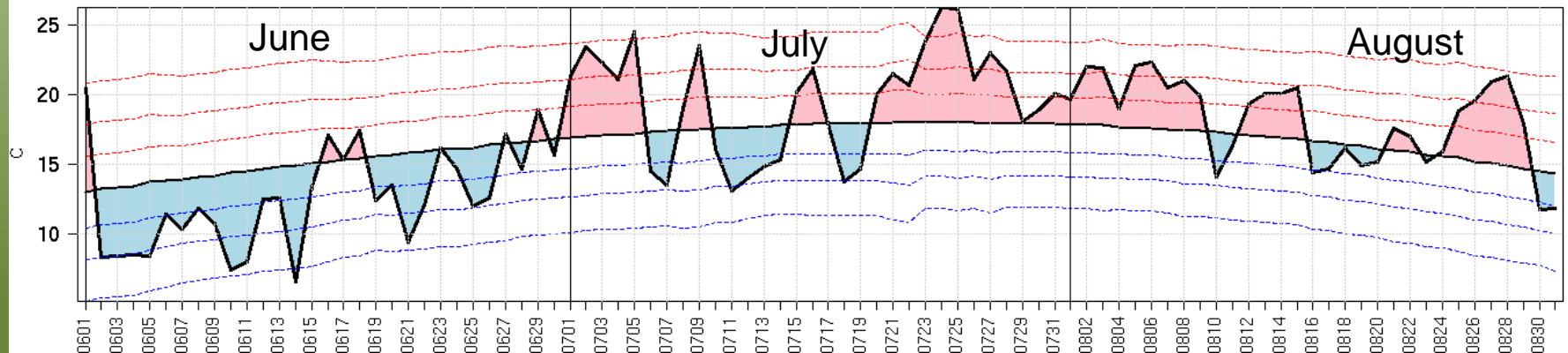


2018 Temperature and precipitation – (J,J,A) for Edmundston

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

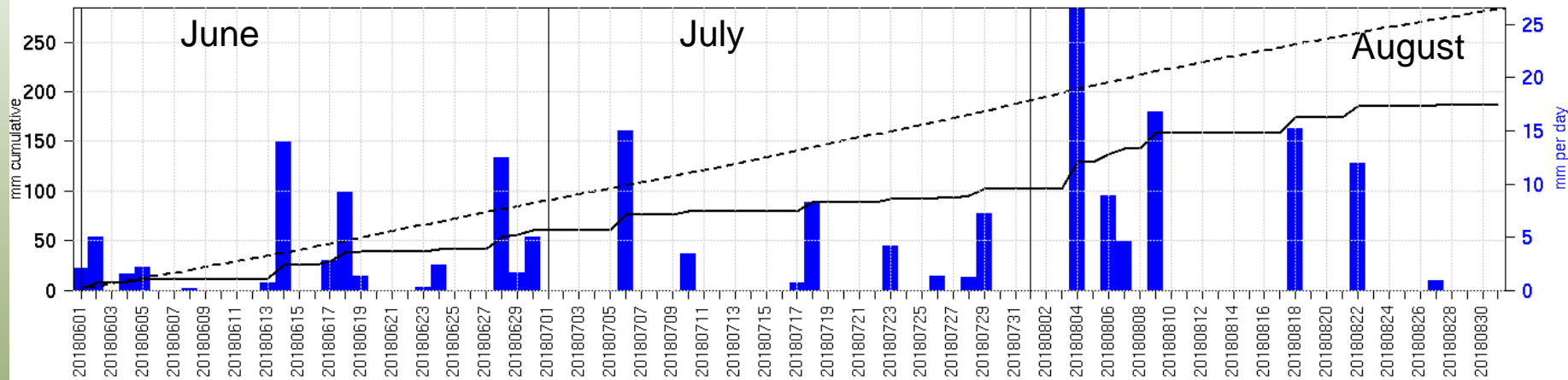


Daily Mean Temperature (bold line) versus Normal (thin line) and $\pm 0.7, 1.3, 2.1$ SD (red/blue dashes) for Edmundston, NB (47.37N 68.33W)

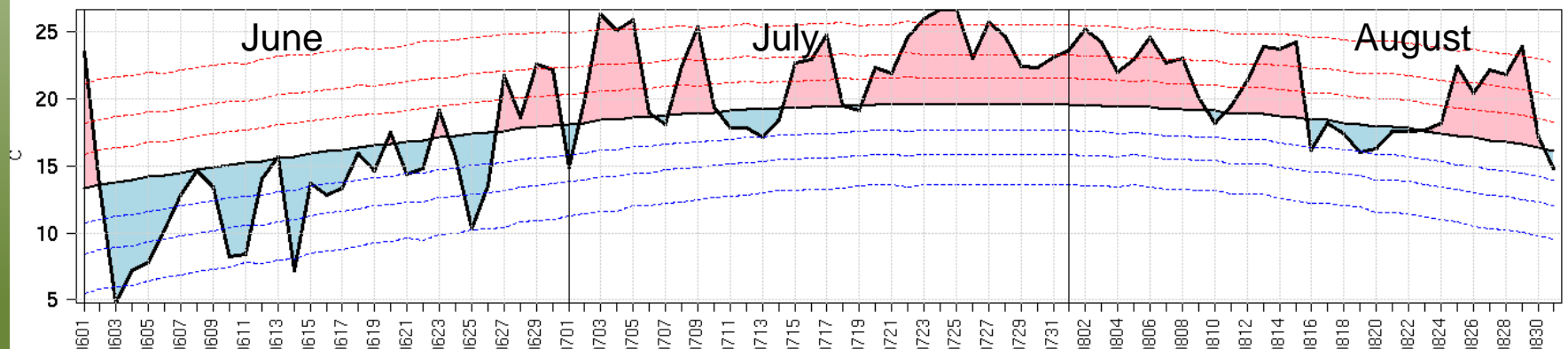


2018 Temperature and precipitation – (J,J,A) for Miramichi

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

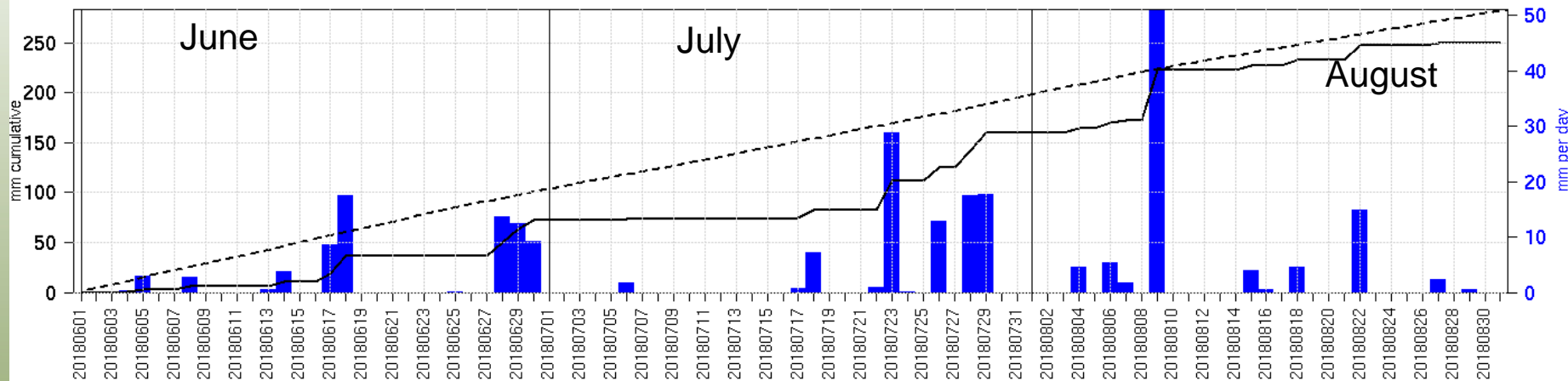


Daily Mean Temperature (bold line) versus Normal (thin line) and $\pm 0.7, 1.3, 2.1$ SD (red/blue dashes) for Miramichi, NB (47.02N 65.50W)

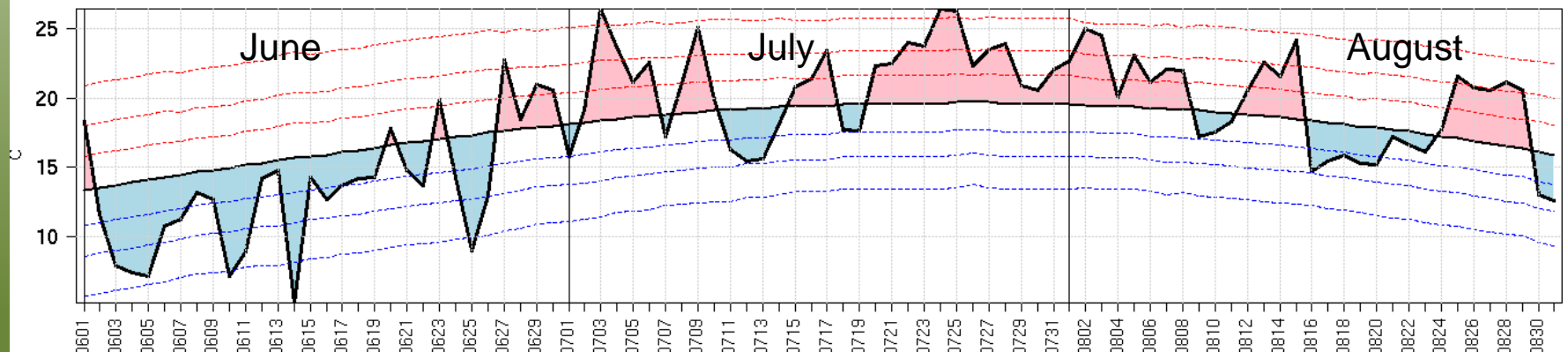


2018 Temperature and precipitation – (J,J,A) for Bathurst

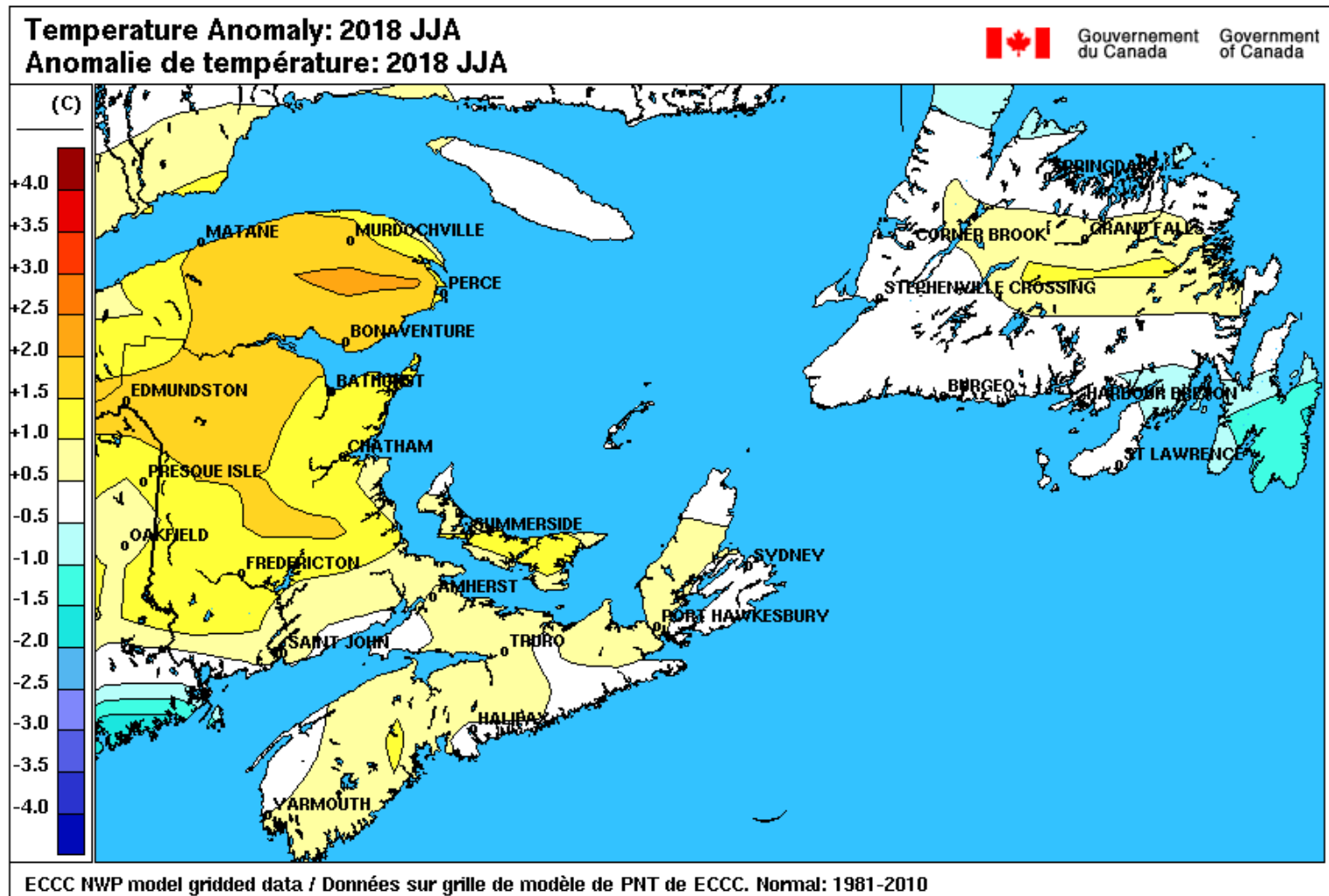
Observed Cumulative Precipitation (line) versus Normal (dashed line) and Daily Amounts (bars) for Bathurst, NB (47.59N 65.64W)



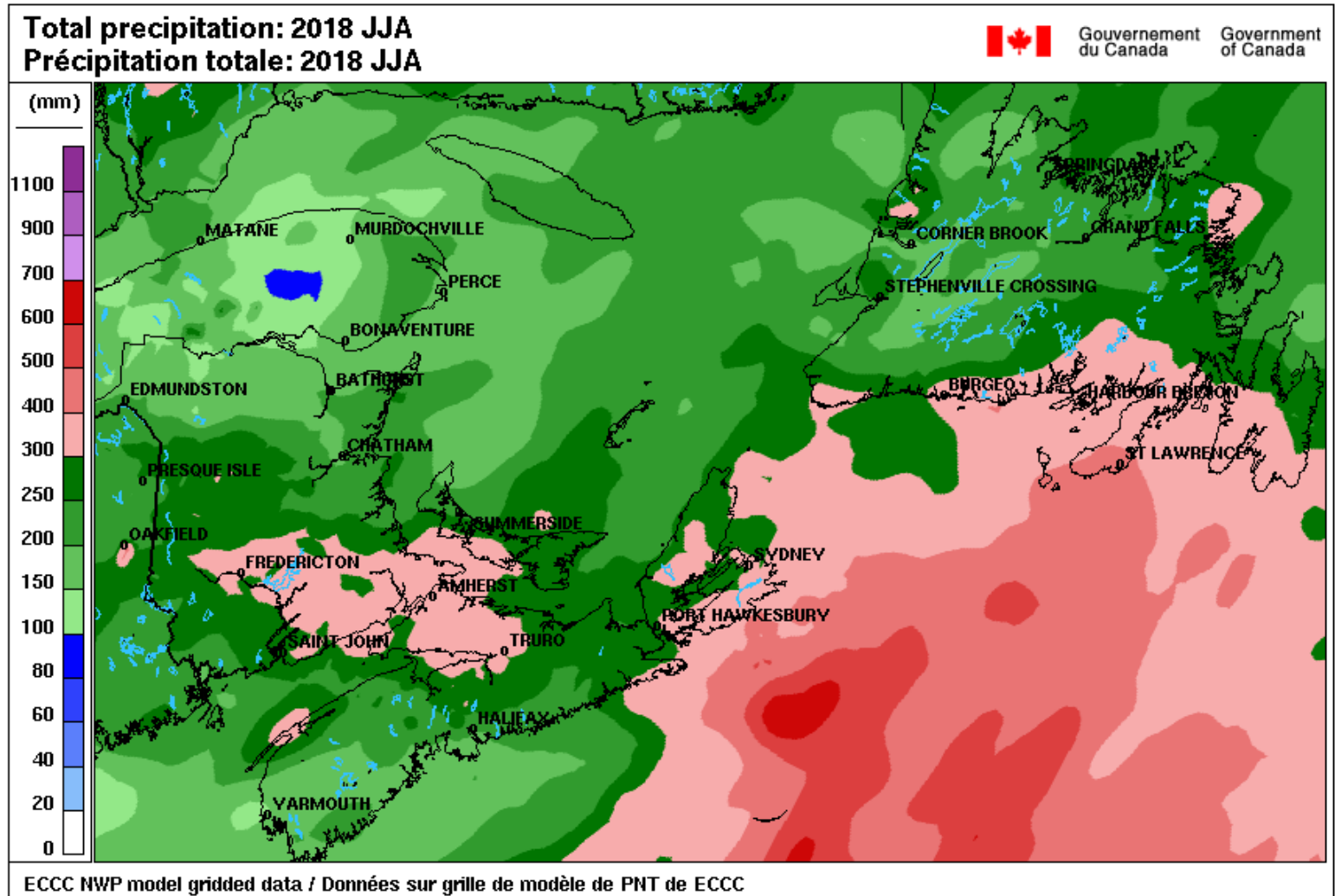
Daily Mean Temperature (bold line) versus Normal (thin line) and $\pm 0.7, 1.3, 2.1$ SD (red/blue dashes) for Bathurst, NB (47.59N 65.64W)



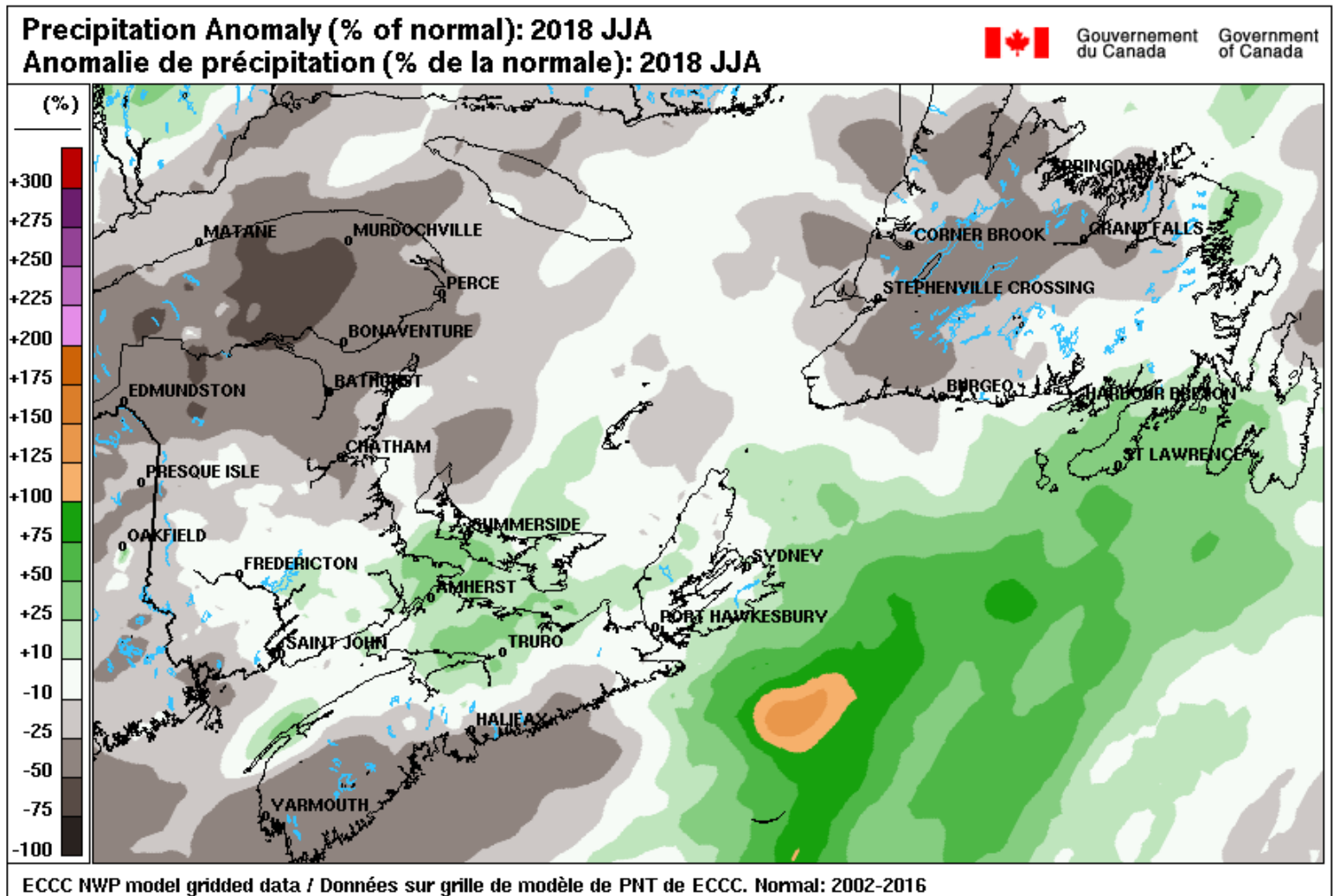
Summer 2018 (J, J, A) Temperature departure from 1981-2010 mean



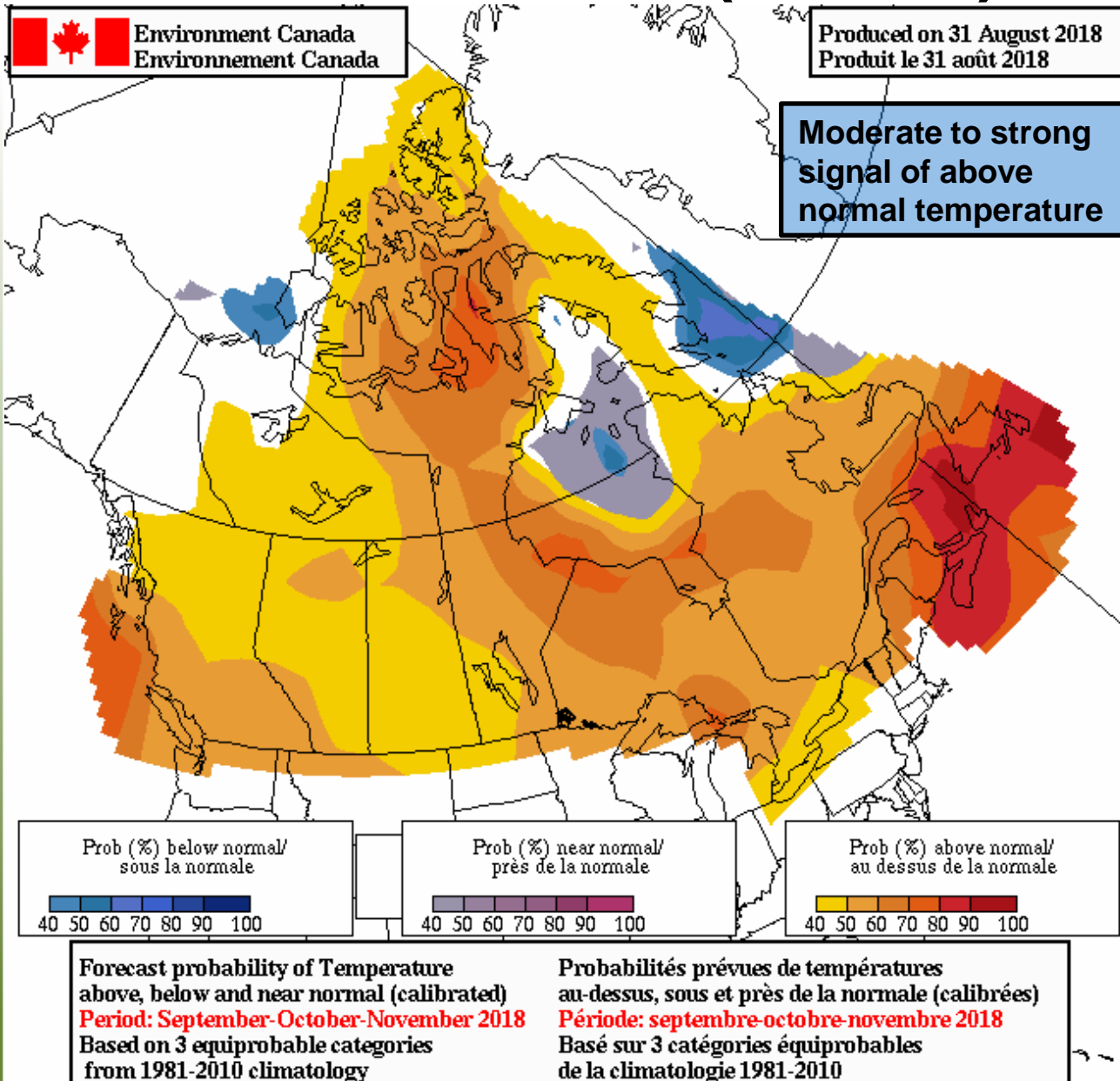
Summer 2018 (J, J, A) Total Precipitation



Summer 2018 (J, J, A) Precipitation departure from 1981-2010 mean



Outlook - Fall 2018 (S, O, N)

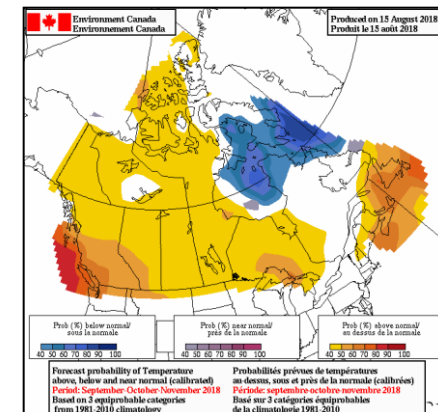


Temperature

September
October
November
2018

NB (S., O., N.)
Normal; 11.9/1.8

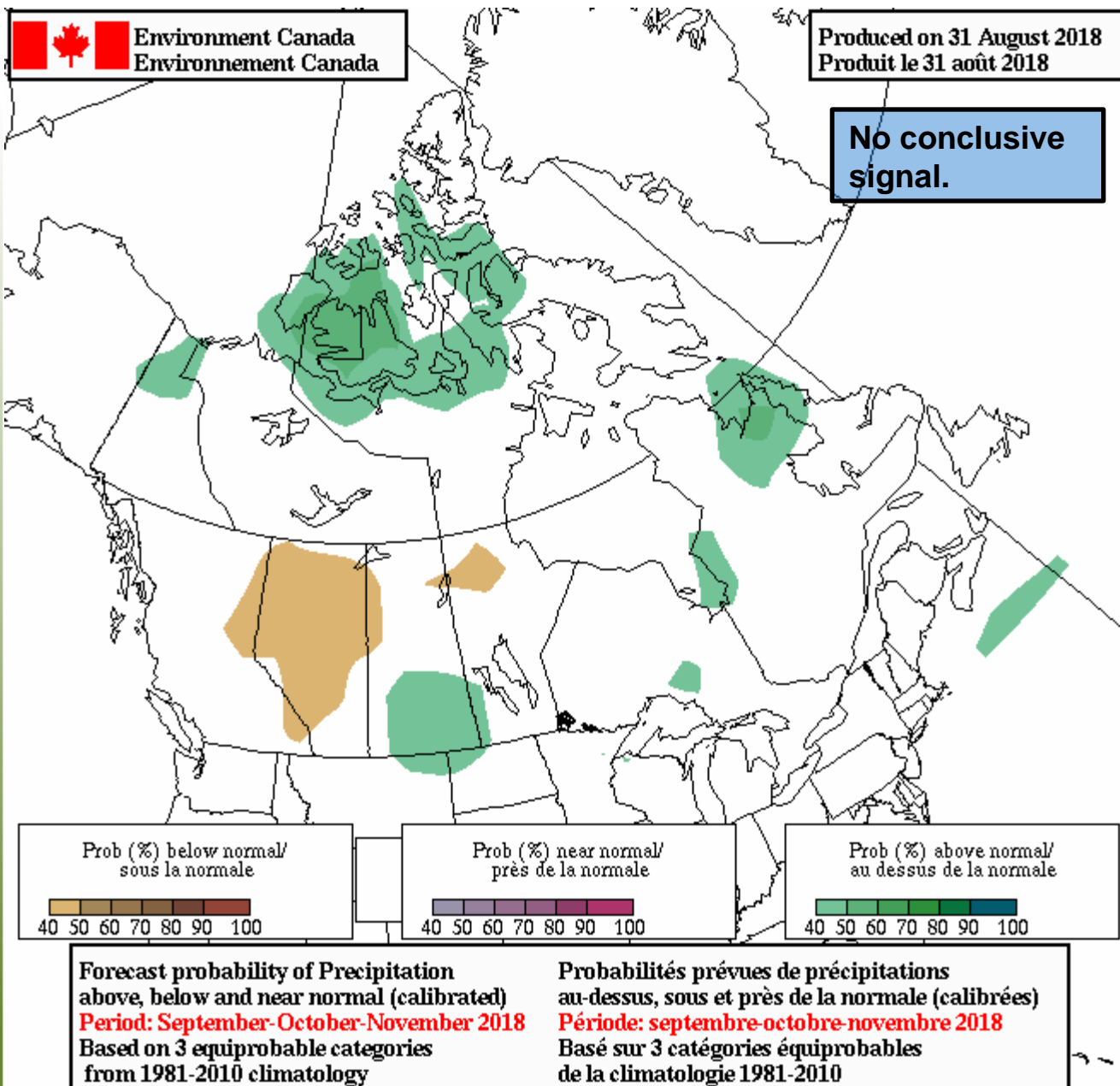
Produced August 15



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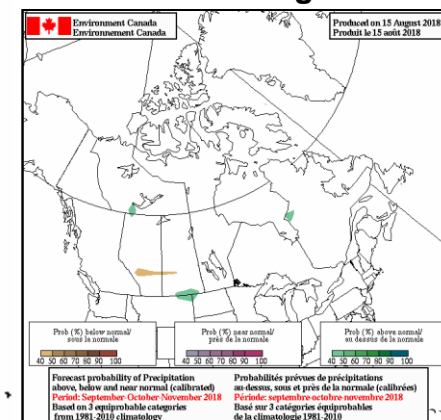


Precipitation

**September
October
November
2018**

**NB (S., O., N.)
Normal; ~298 mm**

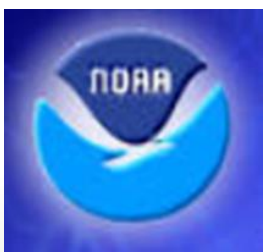
Produced August 15



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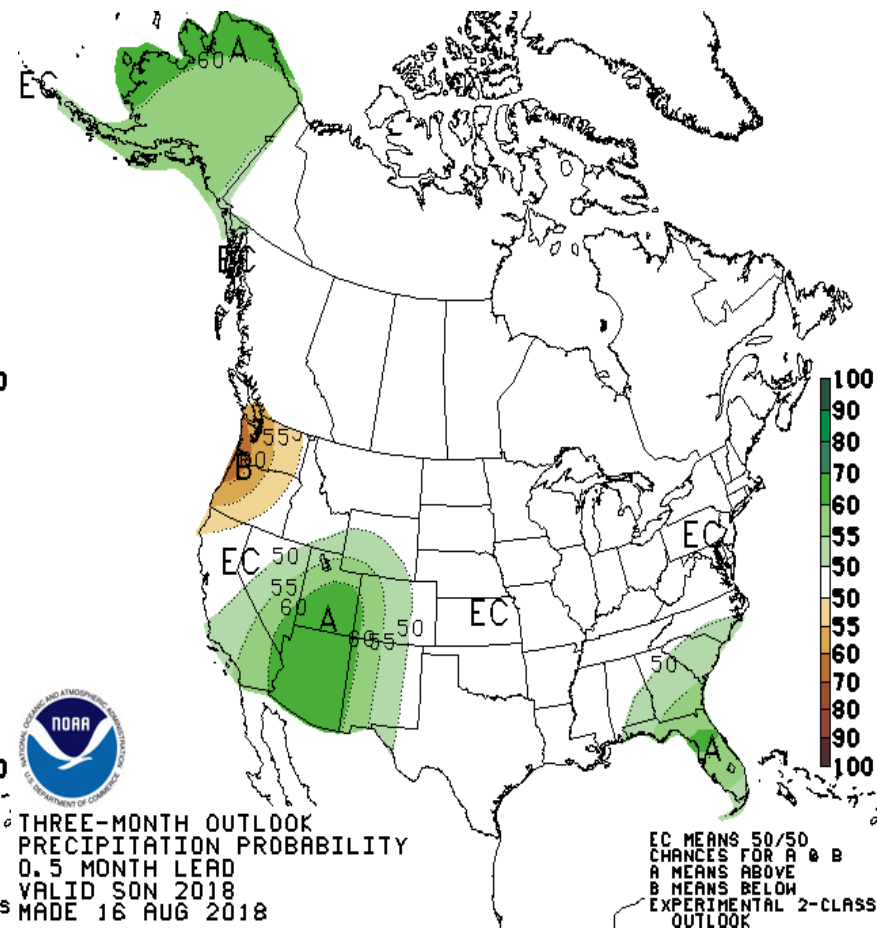
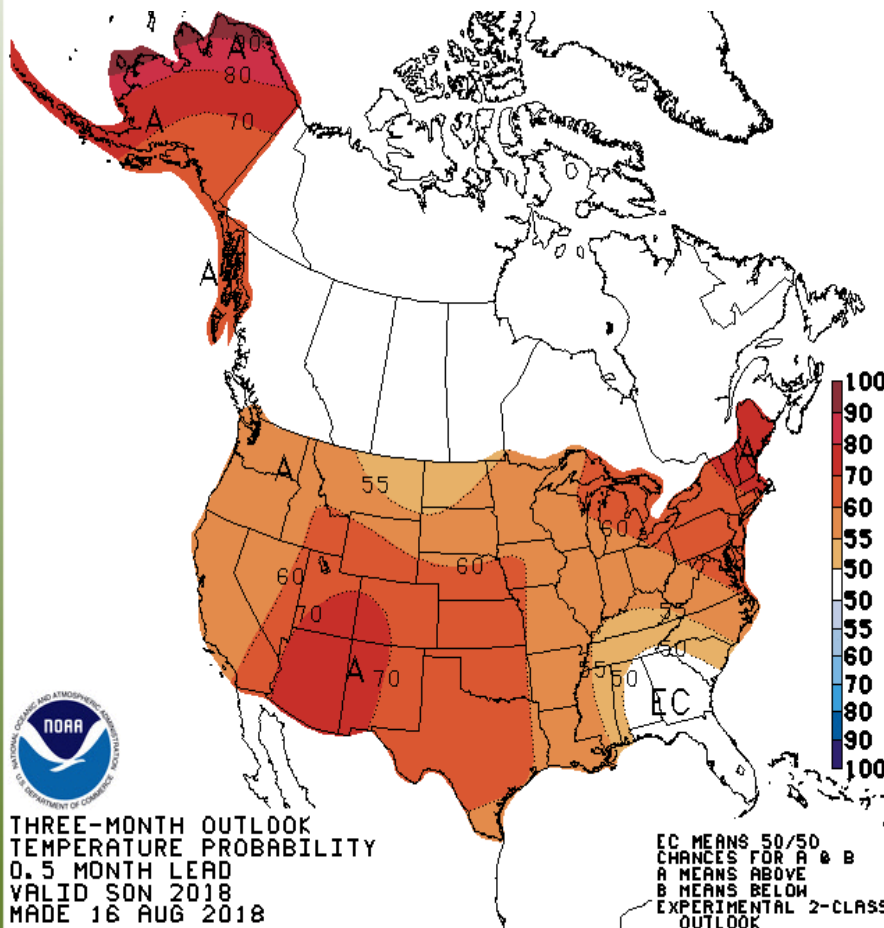
Canada



September - October - November 2018

Temperature

Precipitation



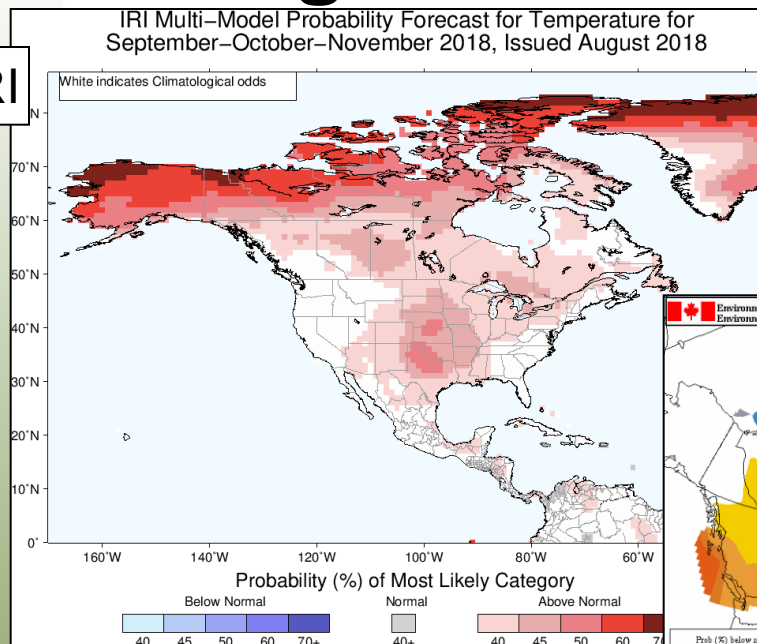
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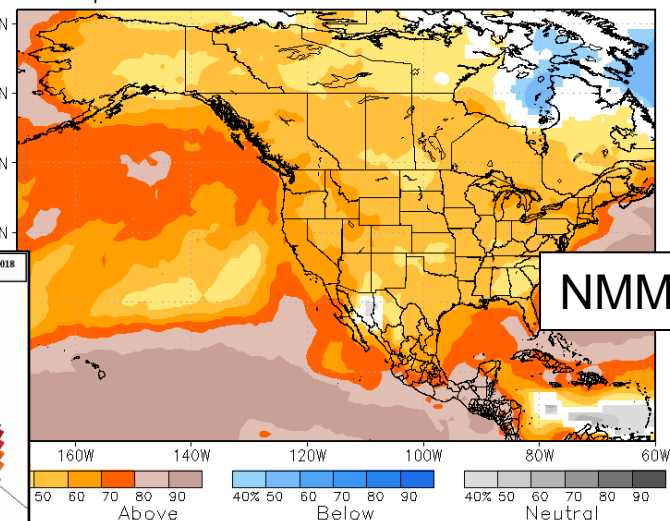
Canada

Fall 2018 Probabilistic Forecast from Foreign models (Temperature)

IRI

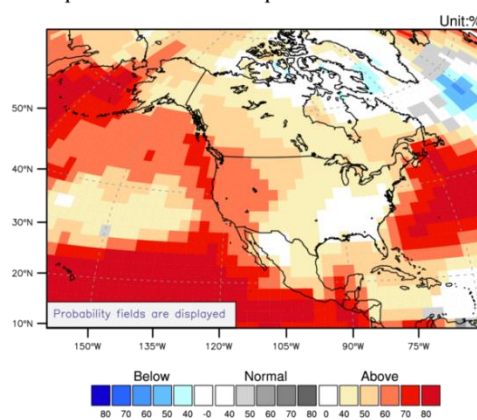


NMME prob fcst TMP2m IC=201808 for lead 1 2018 SON



NMME

Temperature at 2m for September–November 2018



APEC

© APEC Climate Center

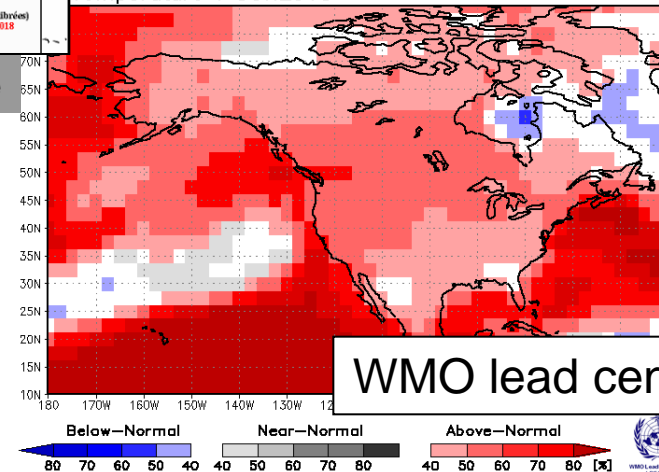
Has shorter lead time

Multi-Model Ensemble Forecast

GPC_washington/GPC_tokyo/GPC_exeter/GPC_moscow/GPC_beijing/GPC_bourne/GPC_cpcc/GPC_pretoria/GPC_montreal/GPC_ecmwf/GPC_offenbach

Temperature : SON2018

(issued on Aug2018)

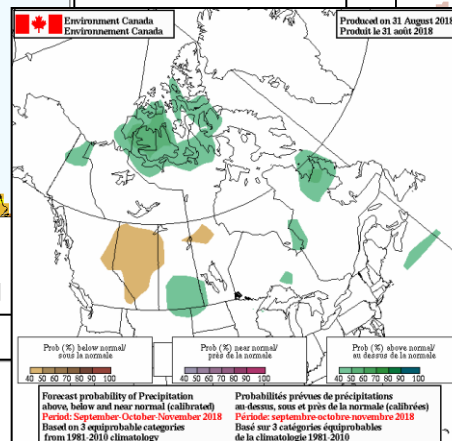
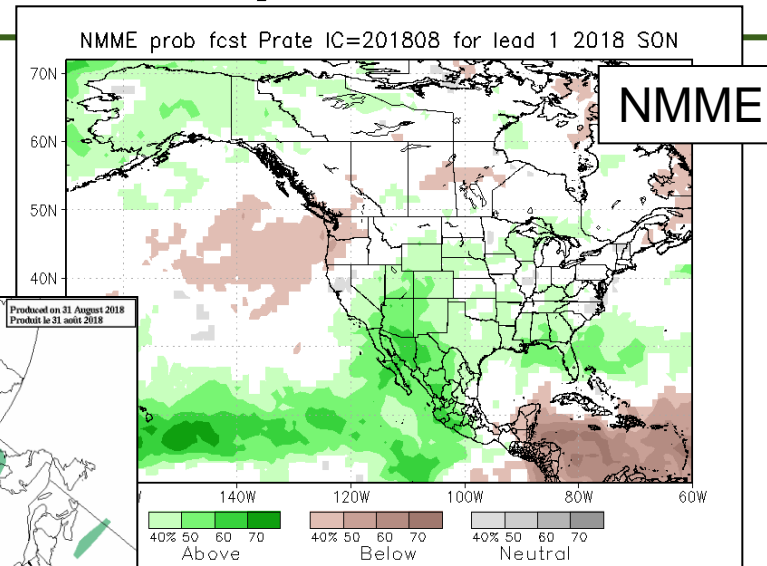
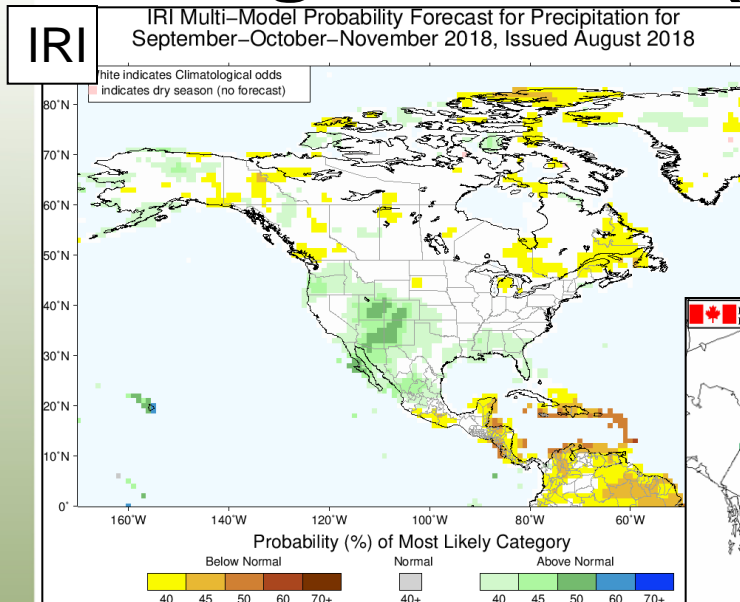


WMO lead centre



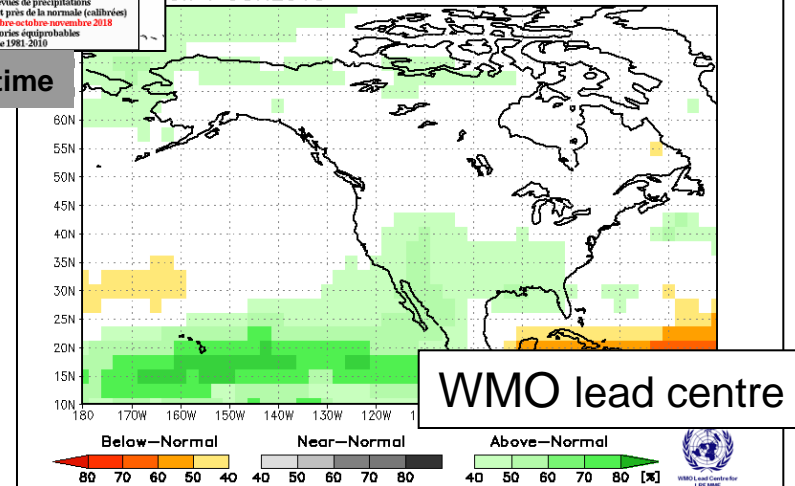
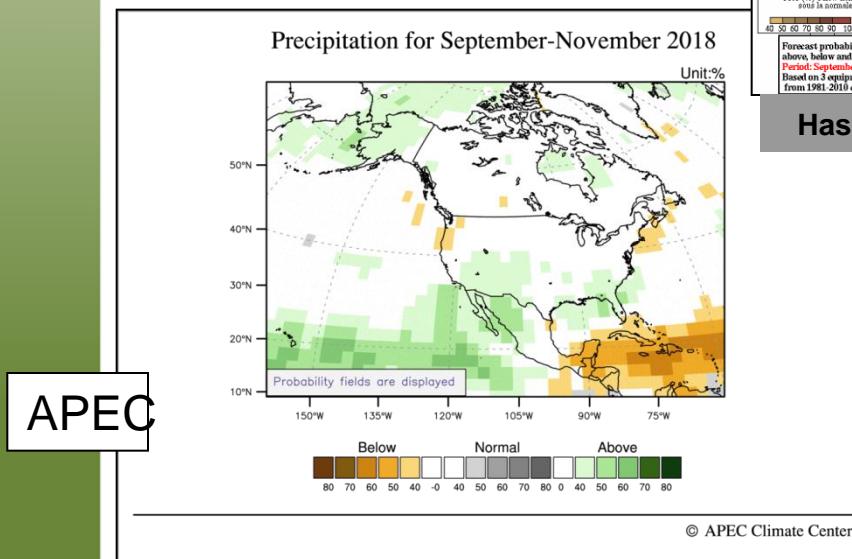
Canada

Fall 2018 Probabilistic Forecast from Foreign models (Precipitation)



Model Ensemble Forecast
ashington/GPC_tokyo/GPC_exeter/GPC_moscow/GPC_beijing
GPC_ptec/GPC_pretoria/GPC_montreal/GPC_ecmwf/GPC_offenbach
on : SON2018 (issued on Aug 2018)

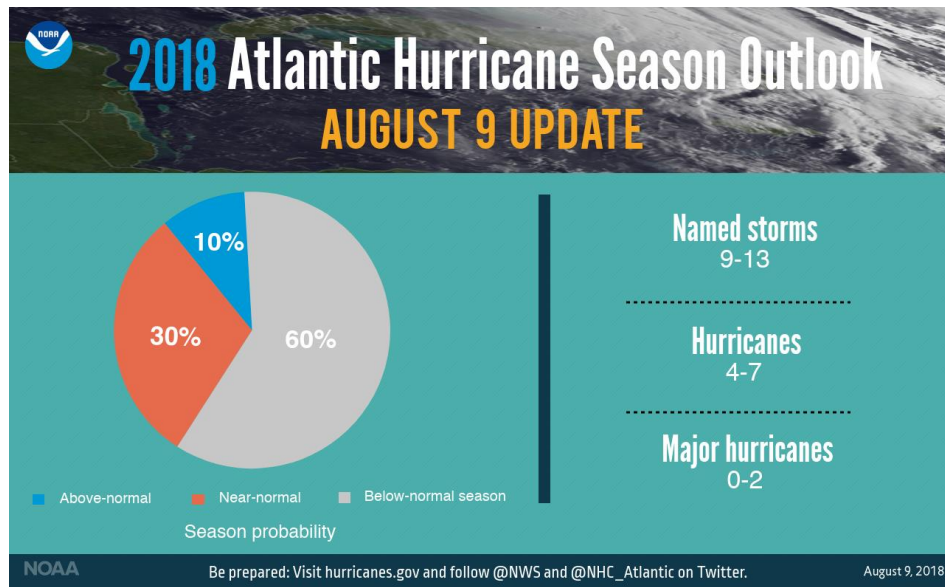
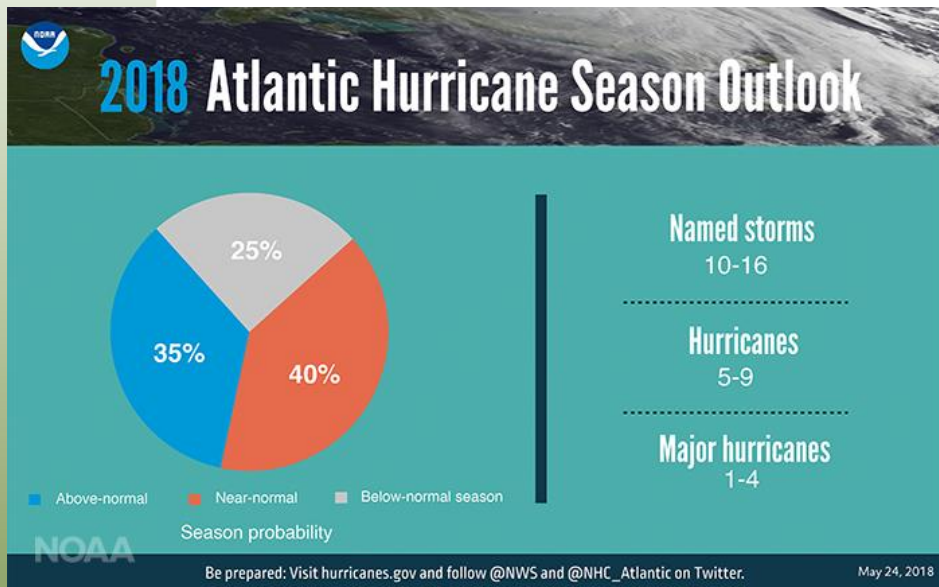
Has shorter lead time



2018 Atlantic Tropical Season Forecast

Forecast issued May 24th

Updated August 9th



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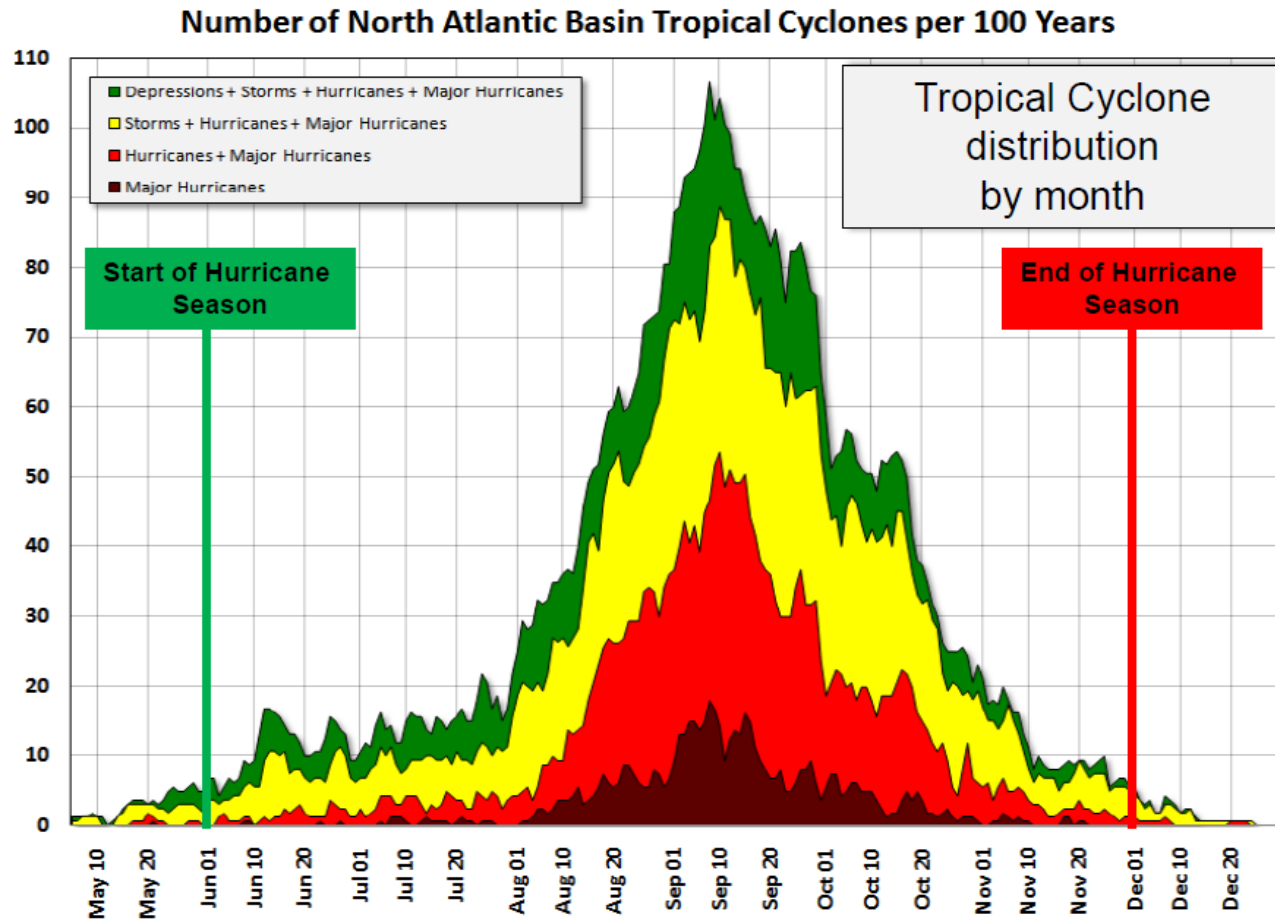
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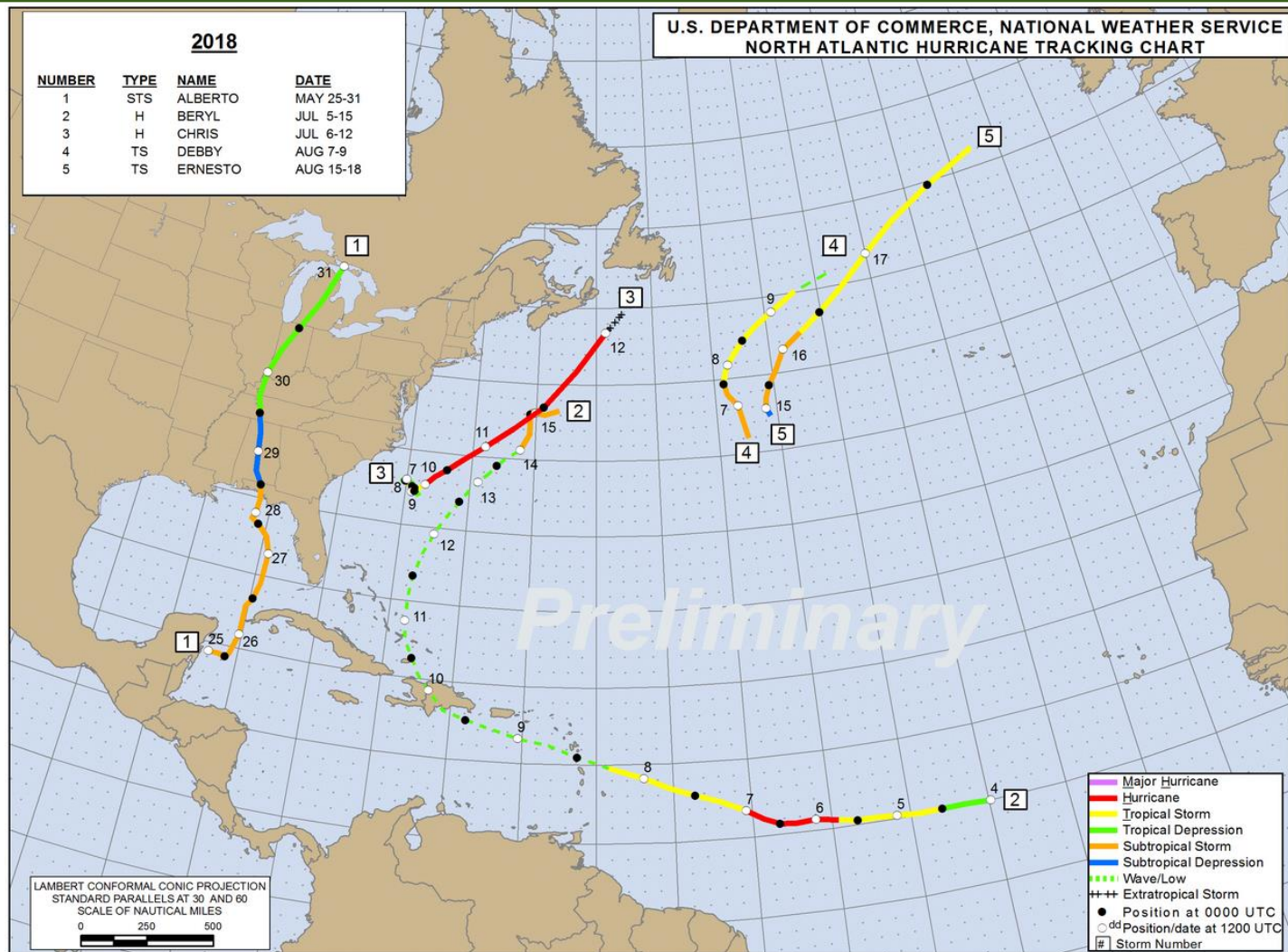
Tropical Season Atlantic Climatology

The peak of the hurricane season occurs around September 10th.



Preliminary Summary 2018 Season

(as of September 1 2018)



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