Maritimes Monthly Weather & Climate Summary
April 2023

Overview

As was the case in March, temperatures were again relatively benign in April, with near to slightly above seasonal temperatures. In terms of precipitation, the month was extremely dry with just one notable event, a spell of freezing rain and mixed precipitation early in April. A few sites saw their driest April on record and this was the third consecutive month with below normal precipitation. Despite the dryness, melting of the heavy winter snowpack contributed to the spring freshet and high river levels in New Brunswick.

Temperature – Anomaly

Monthly average temperatures were near to slightly above normal across the Maritimes in April. Areas that saw near normal temperatures included northwestern NB, eastern PEI, eastern NS and Cape Breton. Regions that recorded above normal temperatures were southern and eastern NB, western PEI, and western NS. Some daily maximum temperature records were broken during a mild spell mid-month.

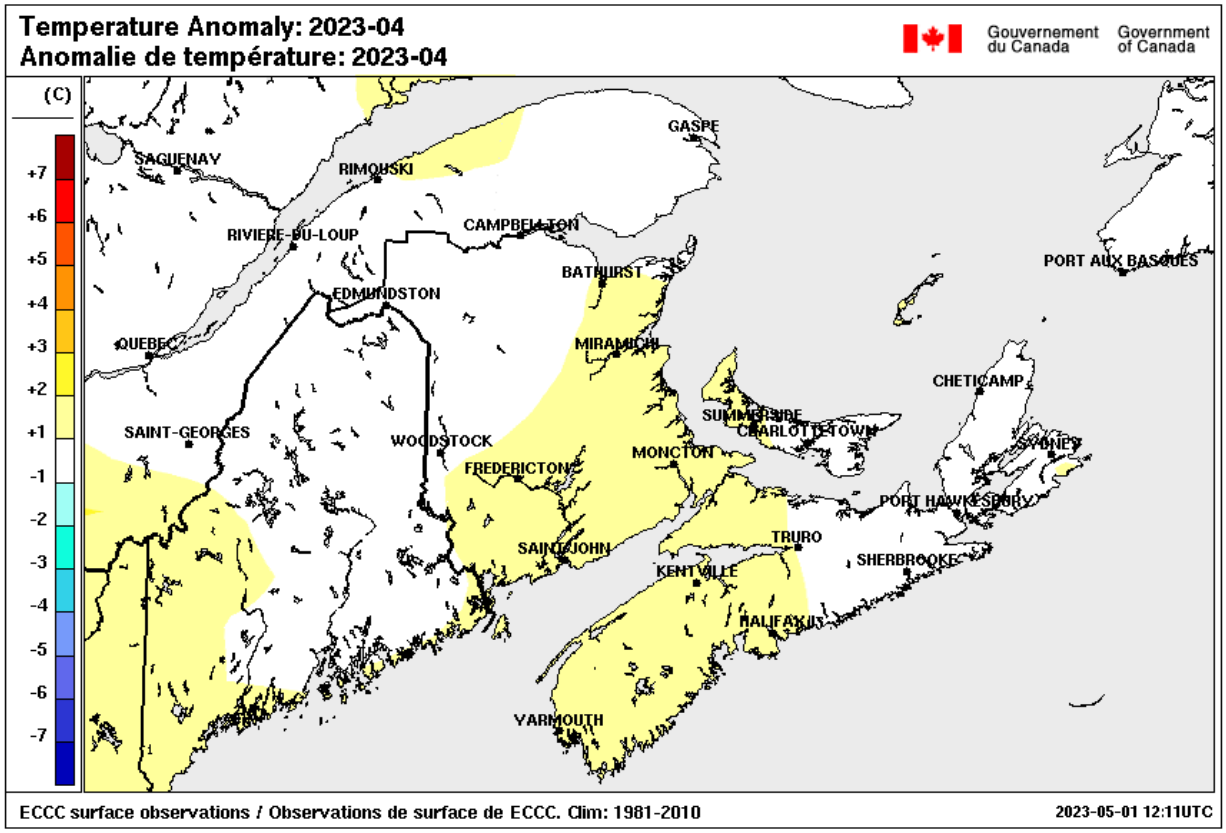


Figure 1: Monthly temperature anomaly map for April 2023 based on archived station data compared to 1981-2010 normals for the Maritimes.

Precipitation – Anomaly

Precipitation in April was much below normal across all areas. The driest conditions occurred over southeastern NB, PEI and Cape Breton with monthly total precipitation less than 25% of normal. This was the driest April on record for Moncton, NB; Sydney, NS; and Halifax (Airport), NS with several other sites recording their top 5 driest.

[Dry spring leaves N.B. fire departments responding to more grass fires | Global News]

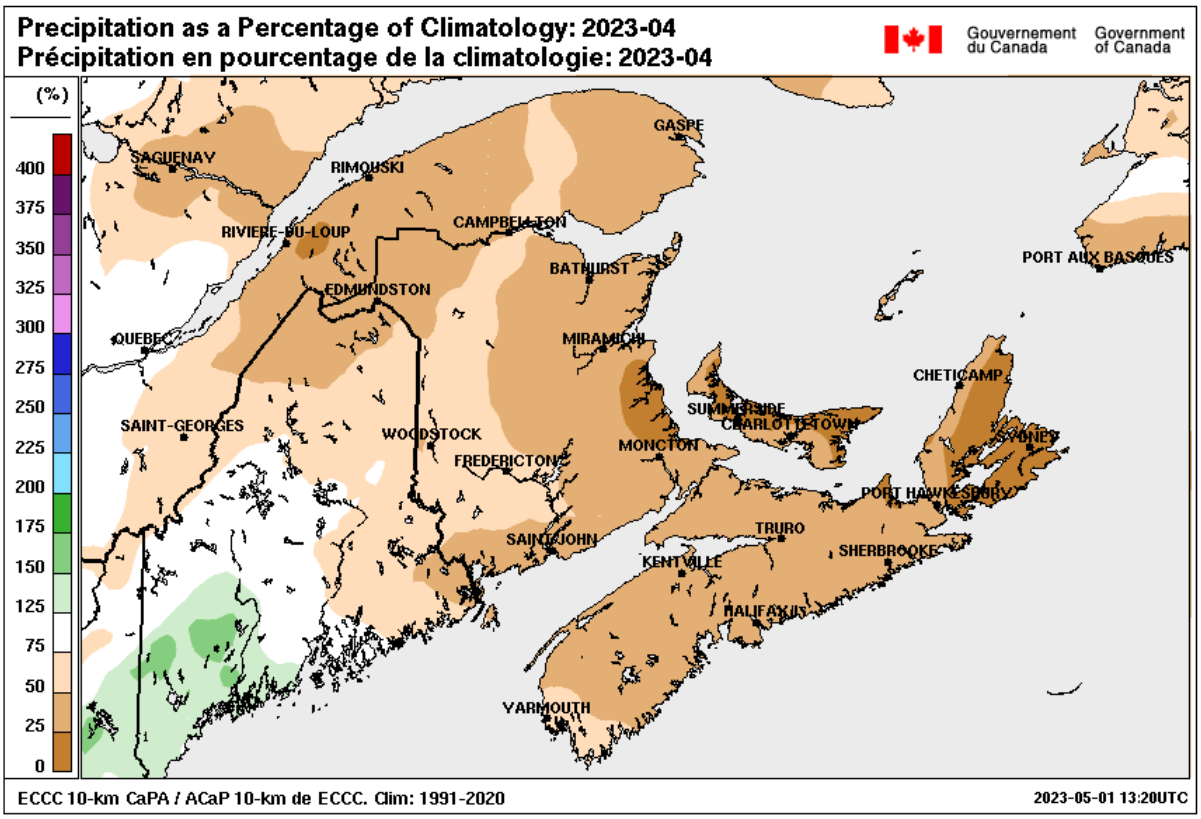


Figure 2: Monthly precipitation anomaly for April 2023 based on ECCC Canadian Precipitation Analysis (CaPA) a gridded blend of model, radar, and station data, compared to 1991-2020 normals for the Maritimes. (Anomaly: Precipitation as a percentage of the average).

Table 1: Monthly average temperature and total precipitation for April 2023 for selected locations in the Maritimes compared to 1981-2010 Canadian Climate Normals (for the same or a nearby station). Temperature difference from normal: cells shaded pink if ≥ 1 °C, blue if ≤ -1°C. Precipitation as a percent of normal: cells shaded green if ≥ 125% of normal, yellow if ≤ 75% of normal. Rank (if included) provides a ranking of mean temperature (eg. 1 warmest, 2 second warmest etc.) for the month against long-term data for the month).

	Mean Temperature (°C)				Total Precipitation (mm)		
Location	Monthly Mean	Normal Mean	Diff. from Normal	Rank (Warmest)	Monthly Total	Normal Total	Total as % of Normal
Bas Caraquet	2.2	1.9	0.3	>10	29.8	82.6	36
Charlo	3.0	1.9	1.1	10	28.1	71.7	39
Fredericton	5.7	4.8	0.9	>10	46.1	81.6	56
Moncton	5.0	3.5	1.4	>10	24.8	97.6	25
Saint John	5.4	3.7	1.7	>10	43.9	105.3	42
Woodstock	4.9	3.7	1.2	>10	46.8	80.4	58
Amherst (Nappan)	5.6	4.1	1.4	7	45.7	91.6	50
Greenwood	6.9	5.3	1.6	7	44.3	83.2	53
Halifax (Airport)	5.6	4.4	1.2	8	29.7	114.5	26
Halifax (Shearwater)	6.1	4.3	1.8	6	45.8	117.7	39
Sydney	3.1	2.5	0.6	>10	19.6	133.3	15
Truro (Debert)	5.2	4.3	0.9	>10	47.2	87.7	54
Yarmouth	6.6	5.1	1.5	9	47.1	101.4	46
Charlottetown	4.0	3.1	0.9	>10	28.9	83.7	35
Summerside	4.2	3.0	1.3	>10	17.4	84.2	21

Snowfall

Total snowfall amounts for April were highest in Cape Breton and northwestern NB (10-20+ cm). East central NB, northeast NS, and most of PEI saw trace-10+ cm with all other areas seeing no snow. Snowfall totals compared to 1981-2010 normals were below to much below normal (0 to 75 %) across the region.

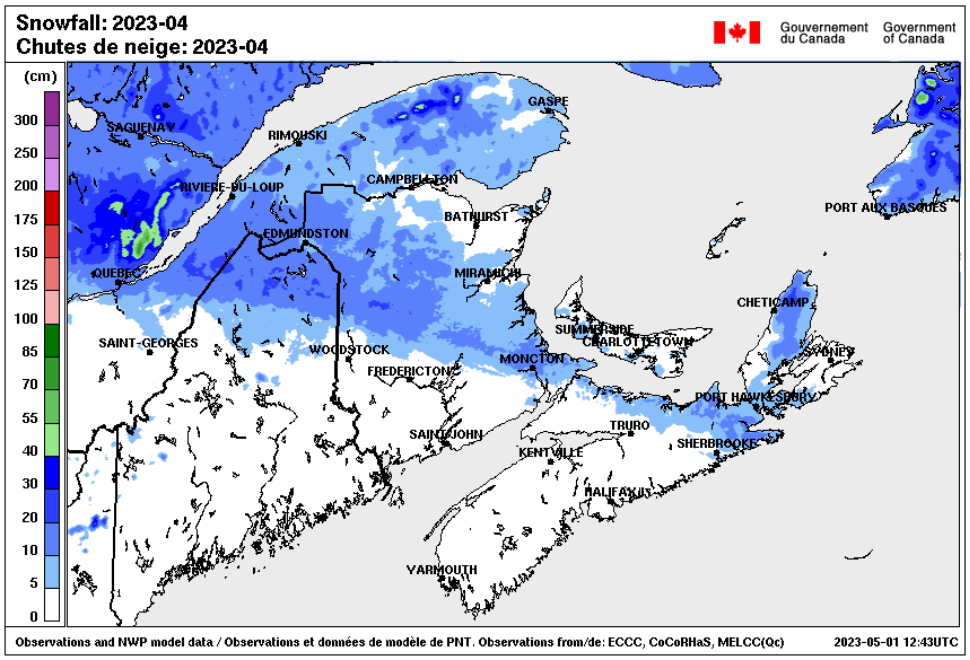


Figure 3: Monthly total snowfall for April 2023 based on a blend of observations and modelled data.

Snow Depth

The map of snow depth at the beginning of April (left) shows a large area of depths greater than 60 cm over northern NB, including more than 140 cm in some interior locations. This was unusually deep for the time of year. The map on the right shows that by the end of April much of the snowpack had melted. According to a combination of observations and modeled data, snow depth at the end of the month was confined to elevated terrain in northwest NB with 5-20+ cm. All other areas had either zero or trace snow depth. In terms of end of month snow depth in comparison to climate normals, all areas had much less snow on the ground than normal (0 to 25 % of normal) for the end of April.

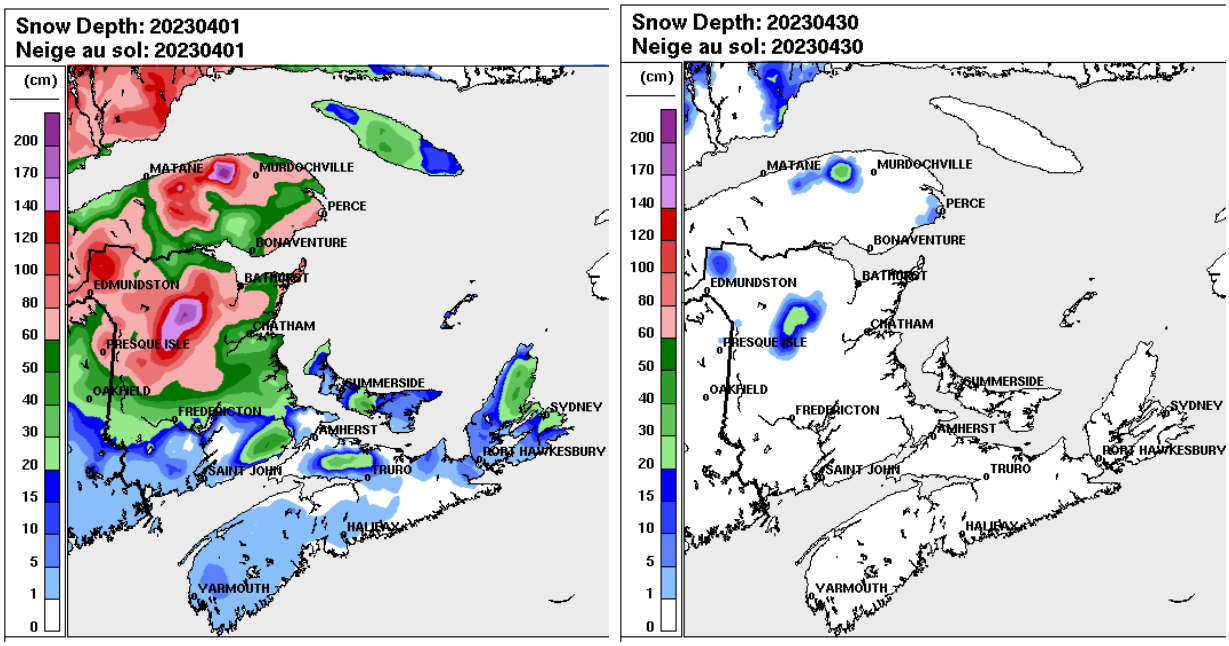


Figure 4: Snow depth for April 1 (left) and month-end snow depth (right) for April 2023 based on a blend of observations and modelled data.

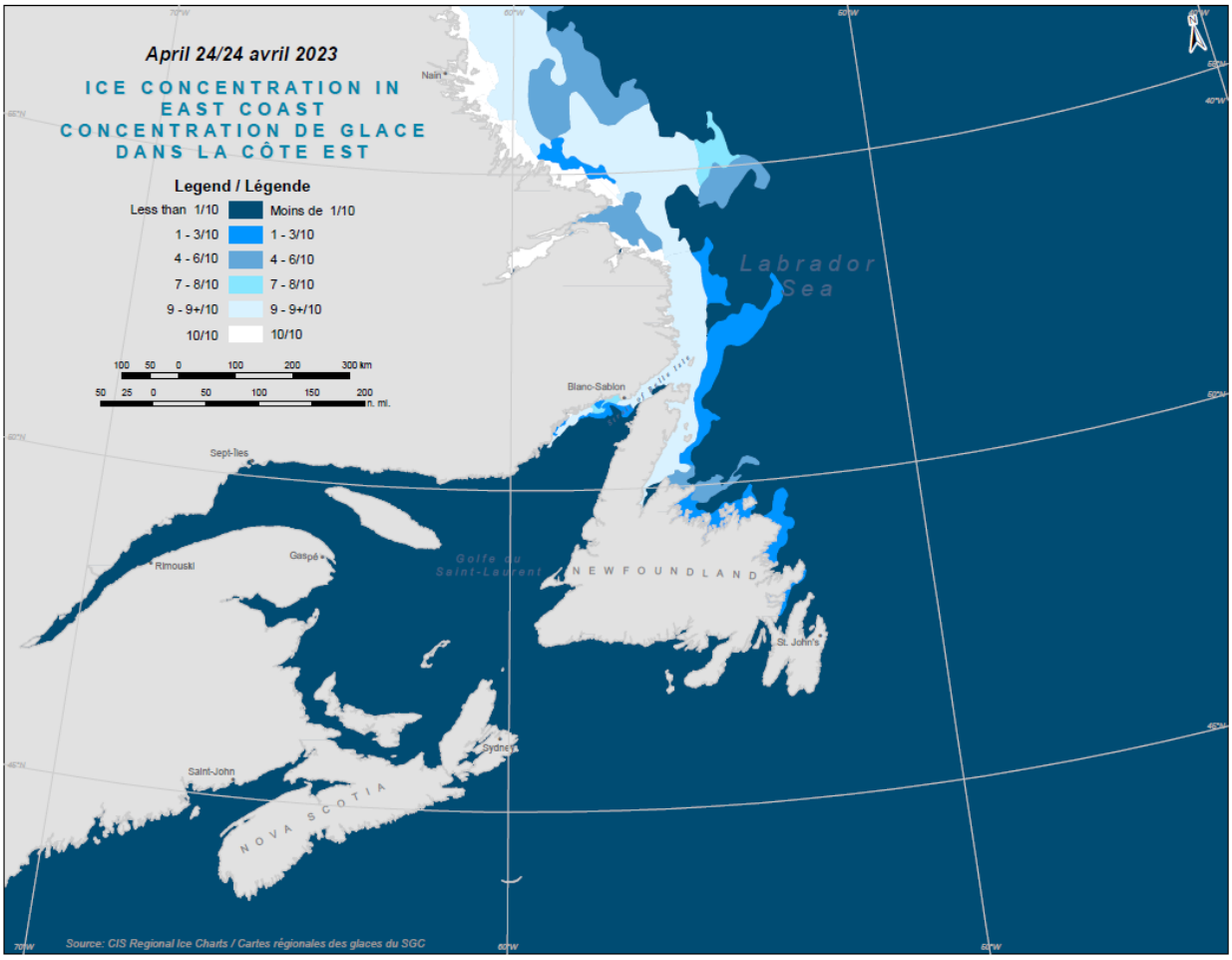
Sea ice

Gulf of St. Lawrence:

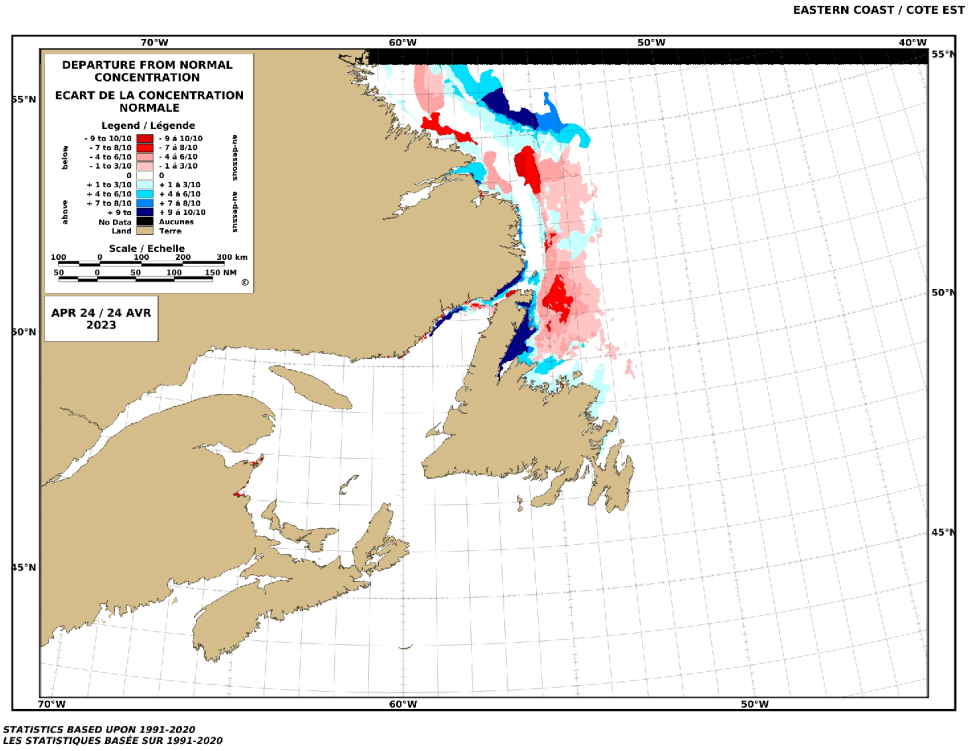
As can be seen from the single season ice coverage chart below this year has been well below the average amount of ice coverage for almost the entire winter. April usually has very little ice to no ice by the end of the month and this is shown by the average concentration dipping to match the current very low ice concentration. What little ice does exist in the Gulf is located in the Strait of Belle Isle and this ice represents a greater amount of ice coverage in the Strait than is expected looking at climatology. This is clearly shown by the dark blue on the departure from normal chart below. This ice in the Strait is ice that drifted southwards along the Labrador Coast and subsequently moved westwards into the Strait and is thick, being about 120 centimeters or more.

A strong, persistent northerly flow near mid month caused any remaining ice in the Gulf to pile up on the northern shores of Cape Breton. This resulted in boats needing to be freed from the ice by the Canadian Coast Guard for the opening of the snow crab fishery in the region.

[Coast Guard icebreaker frees snow crab boats stuck in ice off Chéticamp | CBC News]
['It's a rough ride': Ice woes persist for snow crab boats in Chéticamp | CBC News]



Departure from normal concentration showing areas with greater and less ice coverage than normal



Gulf Ice coverage this season, green line is the Median (green line) expected averaging 1990-2020

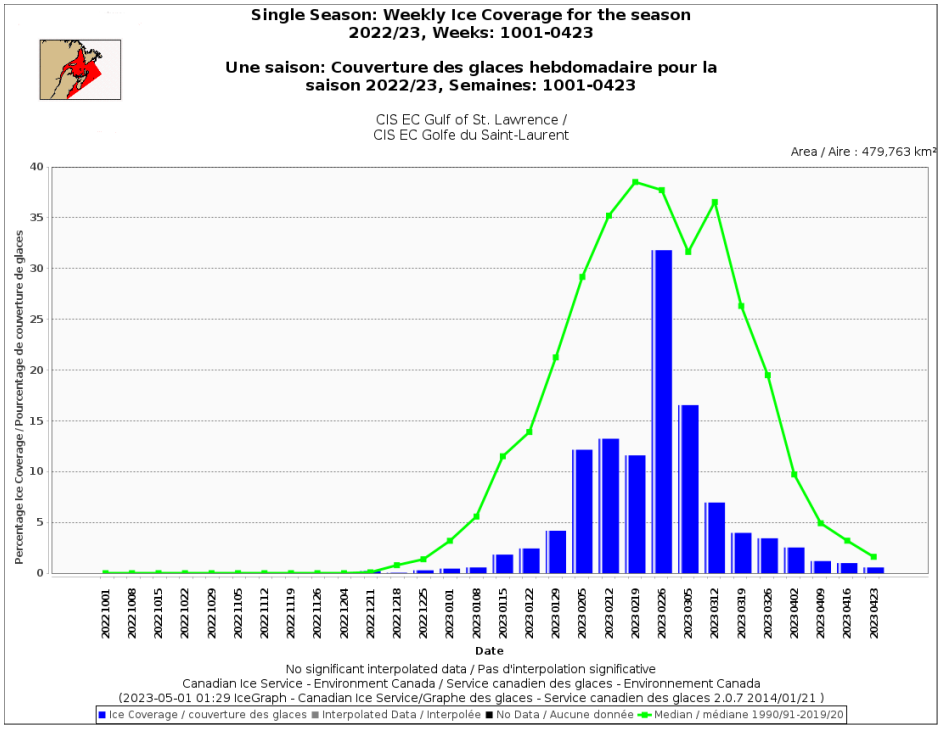


Figure 5, 6, & 7: Sea ice analyses charts Concentration (top), Departure from Normal (middle) and Ice Coverage compared to normal (bottom) for April 24, 2023.
Source: https://iceweb1.cis.ec.gc.ca/Prod/page2.xhtml?subID=2004

Significant Weather Events & Impacts

April 5-6 – A complex low-pressure system brought a messy mix of precipitation to mostly southern regions of the Maritimes along with a prolonged period of freezing rain. The Saint John area reported up to 12 hours of freezing rain and there were reports of up to 1 cm of ice accretion on surfaces in the Millville, NB area.

Freezing rain forces some Nova Scotia schools to close, others delay opening | CBC News
Some schools closed after freezing rain falls over much of N.B. | CBC News
Weather delays opening of P.E.I. schools | CBC News

Daily Temperature and Precipitation Time Series

The temperature time series are similar for the three provincial capitals for April as it began and ended with generally near normal temperatures and a period of above normal temperatures occurring during the middle of the month. The precipitation time series for all three sites indicate only three events of light to moderate precipitation throughout the month. Precipitation totals were much below normal at all sites.

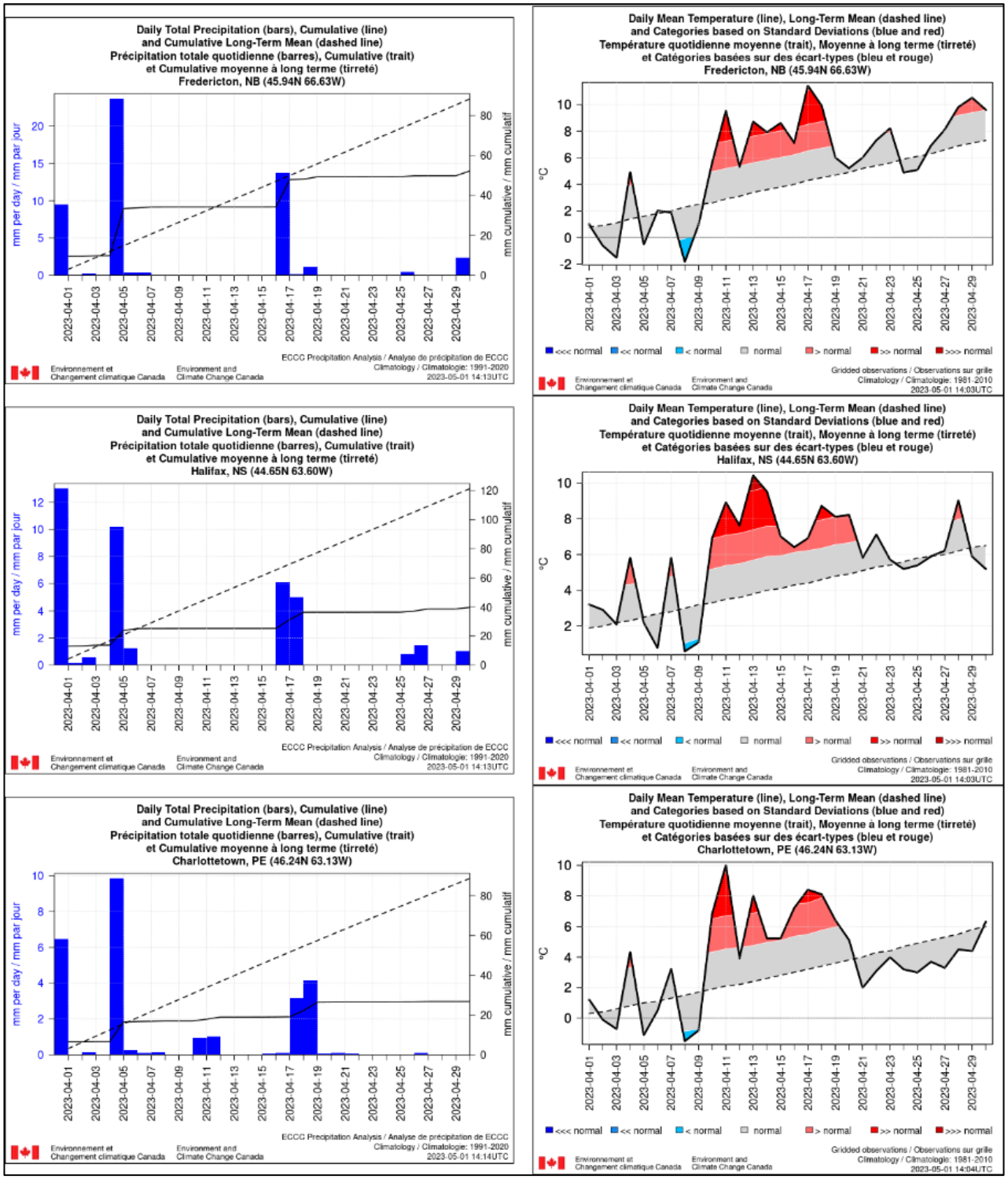


Figure 8: Daily total precipitation (Canadian Precipitation Analysis (CaPA) data) and mean temperature for Fredericton, NB (top), Halifax, NS (middle), and Charlottetown, PEI (bottom), for April 2023 based on gridded data, compared to long-term means (Canadian Precipitation Analysis (CaPA) data, 1991-2020, and temperature data, 1981 to 2010).

Sea Surface Temperature - Departure from Normal

The sea surface temperature (SST) departure from normal map during the week of April 24 to 30, 2023 indicates near to slightly above normal conditions for most areas. Exceptions include the Northumberland Strait, eastern Bay of Fundy, and parts of offshore NS where anomalies of 5 degrees or more above normal occurred. In addition, below normal temperatures were observed well south of NS.

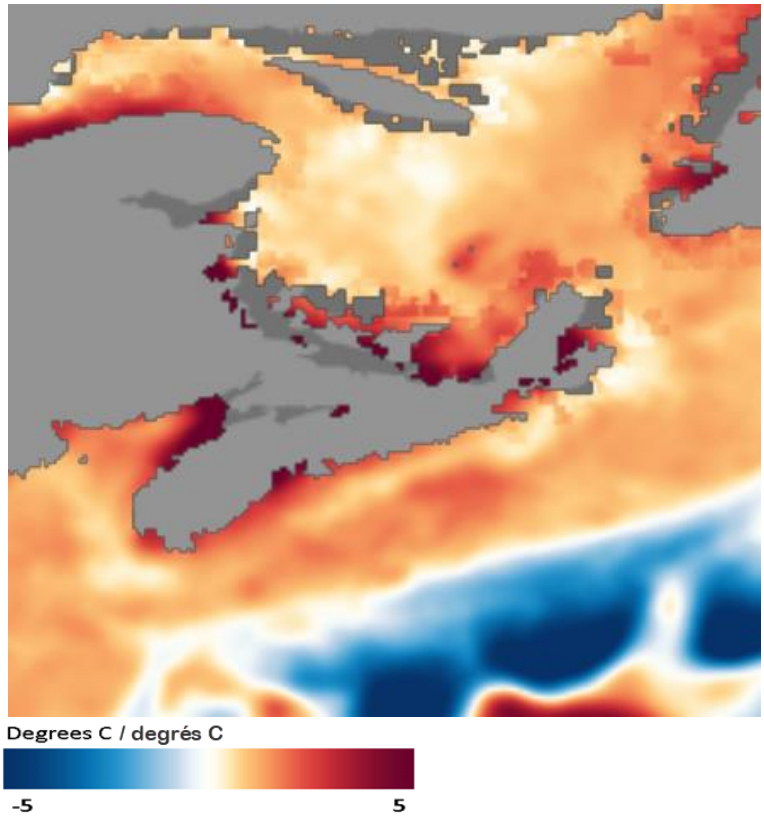


Figure 9: Sea surface temperature (SST) anomaly map for April 24 to 30, 2023. Data based on 1981-present. Source: https://www.nnvl.noaa.gov/view/#SSTA

Spring Freshet in New Brunswick

NB EMO began advising the public about possible spring flooding along the Saint John River by April 14th due to milder temperatures melting the snowpack. Flooding along the Saint John River caused a few road closures and parking lots to become inundated beginning around April 19th. Ice jam flooding was not an issue as jams broke and cleared before water levels began to crest. Flood levels were reached at five sites along the river with most of the other remaining sites reaching either warning, watch or advisory levels. Although water levels paled in comparison to records achieved in 2018 & 2019, levels in Fredericton reached 7.466 m making it the tenth highest flood since 1968 when records began.

Spring brings rising water levels for some N.B. communities | CBC News
Flood stage reached in Fredericton, Gagetown, Hartland as St. John River breaches banks | CBC News
Water levels expected to reach flood stage Wednesday in Gagetown, Fredericton | CTV News
Water levels expected to stay high over coming days with more road closures | CBC News
Water levels in some N.B. communities to stay above flood stage for several days | CTV News
Parts of New Brunswick reach flood stage as Saint John River swells | Global News
Before and after: see how flooding changed Gagetown | CBC News

Other Climate Related Information

[What the decline of mountain snow cover means for Canada | CBC News]
[N.S., N.B. urged to apply for federal cash to protect land link from rising seas | CBC News]
[Aboiteau Beach searching for climate-responsive plan for destroyed boardwalks | CBC News]
[Coastal adaptation toolkit offers help with 'what's next' after Fiona | CBC News]
[2022 was one of the warmest on record for the Maritimes and the planet, says global report | CBC News]
[N.B. maple production on the rocks after low yields this year | CBC News]

Temperature & Precipitation Outlook

The four-week outlook for temperature and precipitation from the Canadian Global Ensemble Prediction System (GEPS) for May 1 to 29, 2023 indicates a weak to moderate probability of above normal temperatures for the region. In terms of precipitation, there is no signal in relation to normal and therefore, near normal precipitation can be expected.

The previous four-week outlook, from March 30th, the outlook performed well as near to above normal temperatures occurred across the region as predicted. The precipitation outlook did not perform as well as all regions reported below normal precipitation when near normal was forecast. Cape Breton was the exception as drier conditions prevailed as forecast.

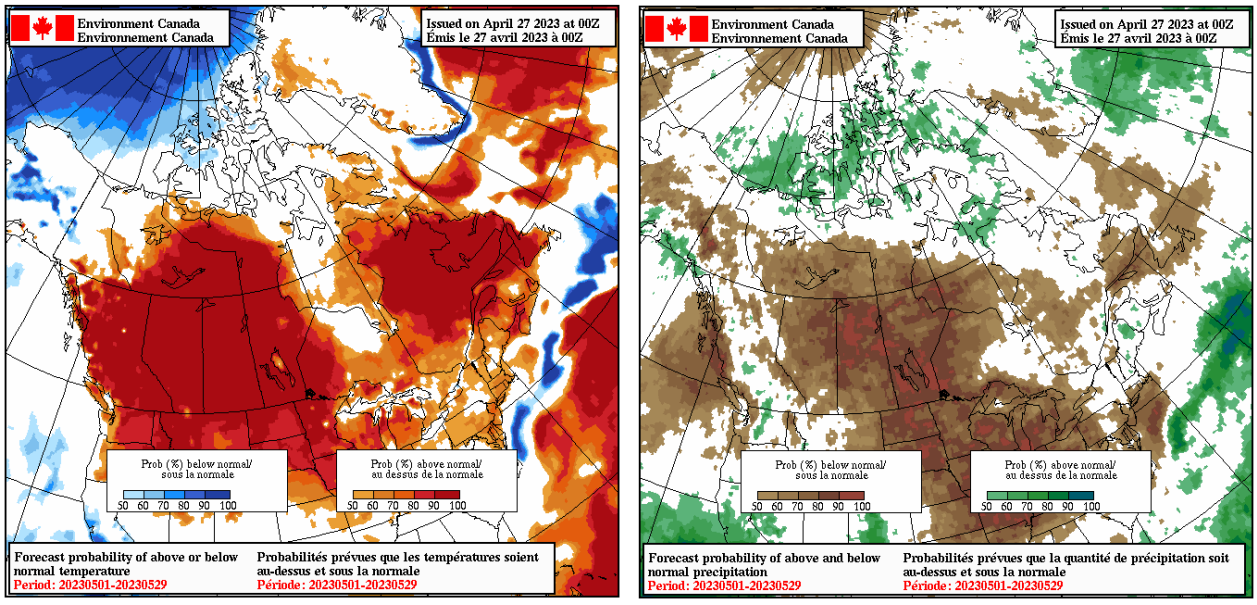


Figure 10: Temperature and Precipitation Anomaly Forecasts from the MSC Global Ensemble Prediction System issued April 27, 2023 for May 1 to 29, 2023.
Source: http://collaboration.cmc.ec.gc.ca/cmc/ensemble/monthly/prev_mens_geps.html

Contact

Environment and Climate Change Canada, Meteorological Service of Canada,
Prediction Services Operations – Atlantic and Ice, Applied Climatology Services
Email address: climatatlantique-climateatlantic@ec.gc.ca

Appendix

Table A1: Station metadata for the selected locations in Table 1.

Location/ Emplacement	Station Name/ Nom de la station	Climate ID/ ID climat	Station Operator/ Opérateur de station[1]	Type[2]	Normals Station Name /Nom de la station normals	Normals Station Climate ID / ID climat station normals
Bas Caraquet	BAS CARAQUET (temps)	8100467	ECCC-MSC	A	BAS CARAQUET	8100468
	BAS CARAQUET (precip)	8100468	CCN	H		
Charlo	CHARLO AUTO	8100885	ECCC-MSC	A	CHARLO A	8100880
Fredericton	FREDERICTON CDA CS	8101605	ECCC-MSC	A	FREDERICTON CDA	8101600
Moncton	MONCTON/GREATER MONCTON ROMEO LEBLANC INTL A	8103201	NavCan	H	MONCTON A	8103200
Saint John	SAINT JOHN A	8104901	NavCan	H	SAINT JOHN A	8104900
Woodstock	WOODSTOCK NEWBRIDGE	8105603	ECCC-MSC	A	WOODSTOCK	8105600
Amherst (Nappan)	NAPPAN AUTO	8203702	ECCC-MSC	A	NAPPAN CDA	8203700
Greenwood	GREENWOOD A	8202000	DND	H	GREENWOOD A	8202000
Halifax (Airport)	HALIFAX STANFIELD INT'L A	8202251	NavCan	H	HALIFAX STANFIELD INT'L A	8202250
Halifax (Shearwater)	SHEARWATER RCS	8205092	ECCC-MSC	A	SHEARWATER A	8205090
Sydney	SYDNEY A	8205701	NavCan	H	SYDNEY A	8205700
Truro (Debert)	DEBERT	8201390	ECCC-MSC	A	DEBERT	8201380
Yarmouth	YARMOUTH A	8206495	NavCan	H	YARMOUTH A	8206500
Charlottetown	CHARLOTTETOWN A	8300301	NavCan	H	CHARLOTTETOWN A	8300300
Summerside	SUMMERSIDE	8300596	ECCC-MSC	A	SUMMERSIDE A	8300700

[1] Station Operator: CCN = Cooperative Climate Network, ECCC-MSC = Environment and Climate Change Canada, Meteorological Service of Canada, DND = Department of National Defence, NavCan = Nav Canada

[2] Type: A = Automatic observation, H = Human observation

Table A2: Monthly totals for April 2023 for New Brunswick stations compared to 1981-2010 Canadian Climate Normals (if available for same or nearby station). Temperature difference from normal: cells shaded pink if ≥ 1 °C, blue if ≤ -1° C. Precipitation as a percent of normal: cells shaded green if ≥ 125% of normal, yellow if ≤ 75% of normal.

				Mean Temperature / Température moyenne (°C)			Total Precipitation / Précipitations totales (mm)		
Station Name / Nom de la station	Prov	TC ID / ID de TC	Station Type / Type de station	Monthly Mean / Moyenne mensuelle	Normal Mean / Moyenne Normale	Diff from Normal / Écart avec la normale	Monthly Total / Total mensuel	Normal Total / Total normal	Total as % of Normal / Total en % de la normale
BAS CARAQUET	NB	WXS	AU8	2.2	1.9	0.3	30.1	82.6	36
BAS CARAQUET	NB		DAILY				29.8	82.6	36
BATHURST A	NB	ZBF	NCA	3.5	3.2	0.3			
CHARLO AUTO	NB	ZCR	AU8	3.0	1.9	1.1	28.1	71.7	39
DOAKTOWN AUTO RCS	NB	ADN	AU8	4.5	3.7	0.8	39.9	83.4	48
EDMUNDSTON	NB	ERM	AU8	3.5			26.4	58.2	45
FREDERICTON CDA CS	NB	AFC	AU8	5.7	4.8	0.9	46.1	81.6	56
FREDERICTON INTL A	NB	YFC	NCA	5.7	4.5	1.2			
FUNDY PARK (ALMA) CS	NB	AFY	AU8	5.8	4.1	1.8	56.9	120.7	47
GARNETT SETTLEMENT	NB	AJH	AU8	5.6	3.7	1.9	48.9	105.3	46
GRAND MANAN SAR CS	NB	XGM	AU8	5.8			48.4		
KOUCHIBOUGUAC	NB	AKC	AU8	4.0	3.3	0.7	19.7	106.9	18
MECHANIC SETTLEMENT	NB	AMS	AU8	4.3			45.2		
MIRAMICHI RCS	NB	ACQ	AU8	4.4	3.2	1.2	20.0	84.9	24
MISCOU ISLAND (AUT)	NB	WMI	AU8	1.8			26.3		
MONCTON/GREATER MONCTON ROMEO LEBLANC INTL A	NB	YQM	NCH	5.0	3.5	1.4	24.8	97.6	25
POINT LEPREAU CS	NB	WPE	AU8	5.8			46.0	116.0	40
RED PINES	NB	ARP	AU8	3.3	2.8	0.5	22.0	75.6	29
SAINT JOHN A	NB	YSJ	NCH	5.4	3.7	1.7	43.9	105.3	42
ST. STEPHEN	NB	WSS	AU8	6.1			44.6		
SUSSEX FOUR CORNERS	NB	ASF	AU8	6.6	4.8	1.8	35.9	89.7	40
WOODSTOCK NEWBRIDGE	NB	EWD	AU8	4.9	3.7	1.2	46.8	80.4	58
Average				**4.6**	**3.5**	**1.1**	**36.5**	**90.1**	**39**
Max				**6.6**	**4.8**	**1.9**	**56.9**	**120.7**	**58**
Min				**1.8**	**1.9**	**0.3**	**19.7**	**58.2**	**18**

Table A3: Same as Table A2, for Nova Scotia

				Mean Temperature / Température moyenne (°C)			Total Precipitation / Précipitations totales (mm)		
Station Name / Nom de la station	Prov	TC ID / ID de TC	Station Type / Type de station	Monthly Mean / Moyenne mensuelle	Normal Mean / Moyenne Normale	Diff from Normal / Écart avec la normale	Monthly Total / Total mensuel	Normal Total / Total normal	Total as % of Normal / Total en % de la normale
ALDERSVILLE	NS	ANR	AU8	5.6	4.7	0.9	39.2	107.8	36
BACCARO PT	NS	ACP	AU8	5.6			52.4	106.2	49
BEAVER ISLAND (AUT)	NS	WBV	AU8	4.0					
BEDFORD BASIN	NS	ABB	AU7	6.3	4.9	1.4			
BEDFORD RANGE	NS	ABR	AU7	5.7	4.1	1.6			
BRIER ISLAND	NS	WVU	AU8	6.6			44.8		
CHETICAMP (C.B. HIGHLANDS NATL PARK)	NS	AHT	AU8	3.1	3.6	-0.5	30.2	88.1	34
COLLEGEVILLE AUTO	NS	AGL	AU8	3.9	3.5	0.4	30.2	94.2	32
DEBERT	NS	ZDB	AU8	5.2	4.3	0.9	47.2	87.7	54
GRAND ETANG	NS	WZQ	AU8	3.1	3.6	-0.5			
GREENWOOD A	NS	YZX	WOD	6.9	5.3	1.6	44.3	83.2	53
HALIFAX DOCKYARD	NS	AHD	AU7	6.2	4.9	1.4			
HALIFAX KOOTENAY	NS	AHK	AU7	5.8	4.3	1.5			
HALIFAX STANFIELD INT'L A	NS	YHZ	NCH	5.6	4.4	1.2	29.7	114.5	26
HALIFAX WINDSOR PARK	NS	AHW	AU7	6.3	4.9	1.5			
HART ISLAND (AUT)	NS	WRN	AU8	3.9					
INGONISH BEACH RCS	NS	XIB	AU7	3.1	2.7	0.4	29.5	168.6	18
KEJIMKUJIK 1	NS	WKG	AU8	6.5	5.1	1.4	42.8	123.9	35
KENTVILLE CDA CS	NS	XKT	AU7	6.4	5.3	1.1	45.3	92.7	49
LOUISBOURG	NS	AUU	AU8	3.3	2.2	1.2	32.7	147.5	22
LUNENBURG	NS	XLB	AU8	6.1					
MALAY FALLS	NS	XMY	AU8	4.7	3.2	1.5	60.5	132.2	46
MCNABS ISLAND (AUT)	NS	XMI	AU8	5.7					
NAPPAN AUTO	NS	XNP	AU8	5.6	4.1	1.4	45.7	91.6	50
NORTH MOUNTAIN CS	NS	XNM	AU7	0.9	1.4	-0.5	24.6		
NORTHEAST MARGAREE (AUT)	NS	WNS	AU7	3.3	3.3	0.0	20.7	95.7	22
OSBORNE HEAD DND	NS	AOS	AU7	4.8	4.3	0.5			
PARRSBORO	NS	APR	AU8	5.3	4.2	1.1	45.2	103.6	44
POCKWOCK LAKE	NS		DAILY	6.0	4.1	1.9			
PORT HAWKESBURY	NS	YPD	NCA	3.0	2.7	0.3			
SABLE ISLAND	NS	ASB	AU8	4.6	4.0	0.5	74.4	114.8	65
SABLE ISLAND A	NS	WSA	NCA	4.5	4.0	0.5			
SHEARWATER JETTY	NS	WZU	AU7	5.8	4.3	1.6			
SHEARWATER RCS	NS	AAW	AU8	6.1	4.3	1.8	45.8	117.7	39
SHELBURNE SANDY POINT	NS	ESB	AU8	6.2			64.8		
ST PAUL ISLAND (AUT)	NS	WEF	AU8	1.7					
SYDNEY A	NS	YQY	NCH	3.1	2.5	0.6	19.6	133.3	15
SYDNEY CS	NS	AQY	AU8	3.3	2.5	0.8	19.6	133.3	15
TRACADIE	NS	XTD	AU8	3.5	3.5	0.0	22.3	94.2	24
UPPER STEWIACKE RCS	NS	AOH	AU8	5.2	4.2	0.9	46.9	101.5	46
WESTERN HEAD	NS	WWE	AU8	6.0			49.2		
YARMOUTH A	NS	YQI	NCH	6.6	5.1	1.5	47.1	101.4	46
YARMOUTH RCS	NS	EQI	AU8	6.7	5.1	1.6	45.7	101.4	45
Average				**4.9**	**4.0**	**0.9**	**40.8**	**110.2**	**38**
Max				**6.9**	**5.3**	**1.9**	**74.4**	**168.6**	**65**
Min				**0.9**	**1.4**	**-0.5**	**19.6**	**83.2**	**15**

Table A4: Same as Table A2, for Prince Edward Island.

				Mean Temperature / Température moyenne (°C)			Total Precipitation / Précipitations totales (mm)		
Station Name / Nom de la station	Prov	TC ID / ID de TC	Station Type / Type de station	Monthly Mean / Moyenne mensuelle	Normal Mean / Moyenne Normale	Diff from Normal / Écart avec la normale	Monthly Total / Total mensuel	Normal Total / Total normal	Total as % of Normal / Total en % de la normale
CHARLOTTETOWN A	PEI	YYG	NCH	4.0	3.1	0.9	28.9	83.7	35
EAST POINT (AUT)	PEI	WEP	AU8	2.5	2.4	0.1	14.9	92.7	16
HARRINGTON CDA CS	PEI	AHR	AU8	3.8	3.1	0.8	19.2	83.7	23
MAPLE PLAINS	PEI	XMP	AU8	4.0	3.1	0.9			
NORTH CAPE	PEI	WNE	AU8	2.7			16.7		
ST. PETERS	PEI	ZSP	AU8	3.2	2.4	0.8	13.9	86.8	16
STANHOPE	PEI	ANH	AU8	3.9			17.4		
SUMMERSIDE	PEI	WSD	AU8	4.2	3.0	1.3	17.4	84.2	21
Average				**3.5**	**2.8**	**0.8**	**18.3**	**86.2**	**22**
Max				**4.2**	**3.1**	**1.3**	**28.9**	**92.7**	**35**
Min				**2.5**	**2.4**	**0.1**	**13.9**	**83.7**	**16**

Table A5: Monthly totals of rainfall and snowfall and month end snow depth, for April 2023, for Maritimes stations, compared to 1981-2010 Canadian Climate Normals (if available for same or nearby station). Rainfall/snowfall as a % of normal: cells shaded green if >125% of normal, yellow if <75% of normal.

				Total Rainfall (mm)			Total Snowfall (cm)			End Month Snow on Ground		
Station Name	Prov	TC ID	Station Type	Monthly Total	Normal Total	Total as % of Normal	Monthly Total	Normal Total	Total as % of Normal	End Month SOG	Norm End Mo SOG	End Month as % Normal
BAS CARAQUET	NB		DAILY	22.4	48.1	47	7.4	34.5	21	0	6	0%
FREDERICTON 4.0 SSE (CAN-NB-1)	NB		CoCoRaHS				2.0	18.6	11	0	0	0%
MONCTON/GREATER MONCTON ROMEO LEBLANC INTL A	NB	YQM	NCH	16.4	62.3	26	9.0	31.2	29		1	
SAINT JOHN A	NB	YSJ	NCH	43.9	85.7	51	0.0	20.0	0		0	
GREENWOOD A	NS	YZX	WOD	41.9	67.8	62	2.4	15.1	16		0	
HALIFAX STANFIELD INT'L A	NS	YHZ	NCH	27.1	98.2	28	2.6	15.9	16		0	
SYDNEY A	NS	YQY	NCH	14.2	112.2	13	6.6	21.4	31		0	
YARMOUTH A	NS	YQI	NCH	43.7	92.0	47	3.4	9.8	35		0	
CHARLOTTETOWN A	PEI	YYG	NCH	17.1	59.7	29	12.8	24.4	53		1	

Glossary

CaPA: The Canadian Precipitation Analysis. Full details available here.

Standard Deviation: A statistical measure of how data compares to the mean (average) value. The standard deviation referenced in these monthly summaries is relative to the Canadian Climate Normals data set. The higher the standard deviation value, the further the data is from the normal value.

Temperature Anomaly: The deviation of temperature in a given region over a specified period from the long-term average value for the same region.

A more extensive glossary for weather and climate related terminology can be found here.

END