

Climatic Perspectives

A WEEKLY REVIEW OF CANADIAN CLIMATE

Canadian Climate Centre

for the period February 5 to 11, 1985

Vol.7 NO.6

Heavy snows in British Columbia

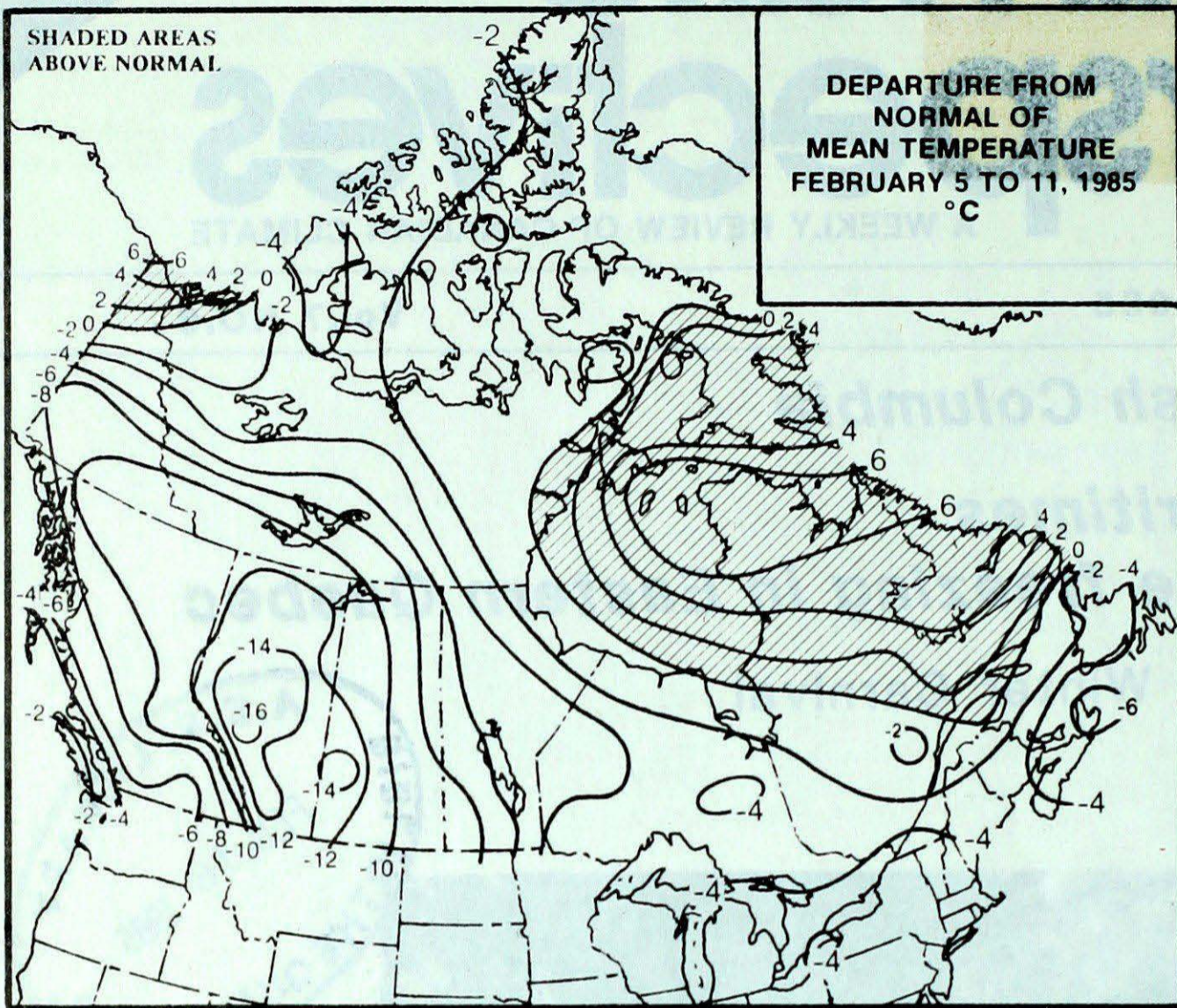
Bitter cold in the Maritimes

but above freezing in Eastern Quebec

Ideal weather for Quebec Winter Carnival



This NOAA 6 satellite image of February 11, 1985 shows the portrait of a major winter storm heading towards the Great Lakes. For more details see page 3.



ACROSS THE COUNTRY...

Yukon and Northwest Territories

Above normal temperatures plunged to below normal values by mid-week, as a cold Arctic airmass spilled southwards across the Northwest Territories. In many areas of the North minimum temperatures dropped to the minus forties, and in some localities readings plummeted to the minus fifties. Snowfalls were very light except in the southern Yukon, where 10 to 20 centimetres was reported. Air traffic was hampered by the extreme cold and persistent ice fog, which formed in the valleys. Weather warnings were issued because of the extremely low wind chill values.

British Columbia

A cold Arctic outflow resulted in predominantly sunny but cold weather conditions. Only after mid-week did temperatures show signs of moderation. Snowfalls were plentiful in the interior and many ski resorts report excellent powder skiing. The lower mainland, including Vancouver, received between 5 to 20 centimetres of snow this week. On February 11, freezing rain fell in many coastal valleys. Officials warn that with a return to milder conditions a potential avalanche hazard may exist.

Prairies

It was predominantly sunny and very cold especially in the West, where readings frequently dropped to the mid minus thirties. Many minimum temperature records were broken in Alberta between February 7-10. A vigorous and rapidly moving weather system on February 8-9 deposited significant amounts of new snow. Strong winds gusting to 55 km/h caused blizzard conditions in many southern and central districts. Dropping temperatures resulted in dangerous wind chills. Highway travel in rural areas was dangerous, and many roads were impassible due to whiteouts and snow drifts.

WEEKLY TEMPERATURE EXTREMES (°C)

	MAXIMUM	MINIMUM
YUKON TERRITORY	- 6.6 Komakuk Beach	-48.1 Mayo
NORTHWEST TERRITORIES	- 9.0 Cape Dyer	-51.3 Gladman Point
BRITISH COLUMBIA	9.6 Vancouver	-39.3 Fort Nelson
ALBERTA	3.4 Lethbridge	-41.2 Fort Chipewyan
SASKATCHEWAN	-12.9 Kindersley	-40.4 Cree Lake
MANITOBA	- 8.5 Portage la Prairie	-38.0 Lynn Lake
ONTARIO	2.2 Muskoka	-40.1 Big Trout Lake
QUÉBEC	5.3 Sept-îles	-42.9 Kuujuaq
NEW BRUNSWICK	5.3 Fredericton	-29.8 Saint John
NOVA SCOTIA	5.1 Western Head	-27.3 Truro
PRINCE EDWARD ISLAND	1.4 Summerside	-26.1 Summerside
NEWFOUNDLAND	4.2 Port aux Basques	-37.4 Wabush Lake

ACROSS THE NATION

Warmest mean temperature	2.1	Victoria, BC
Coollest mean temperature	-40.0	Mould Bay, NWT

Ontario

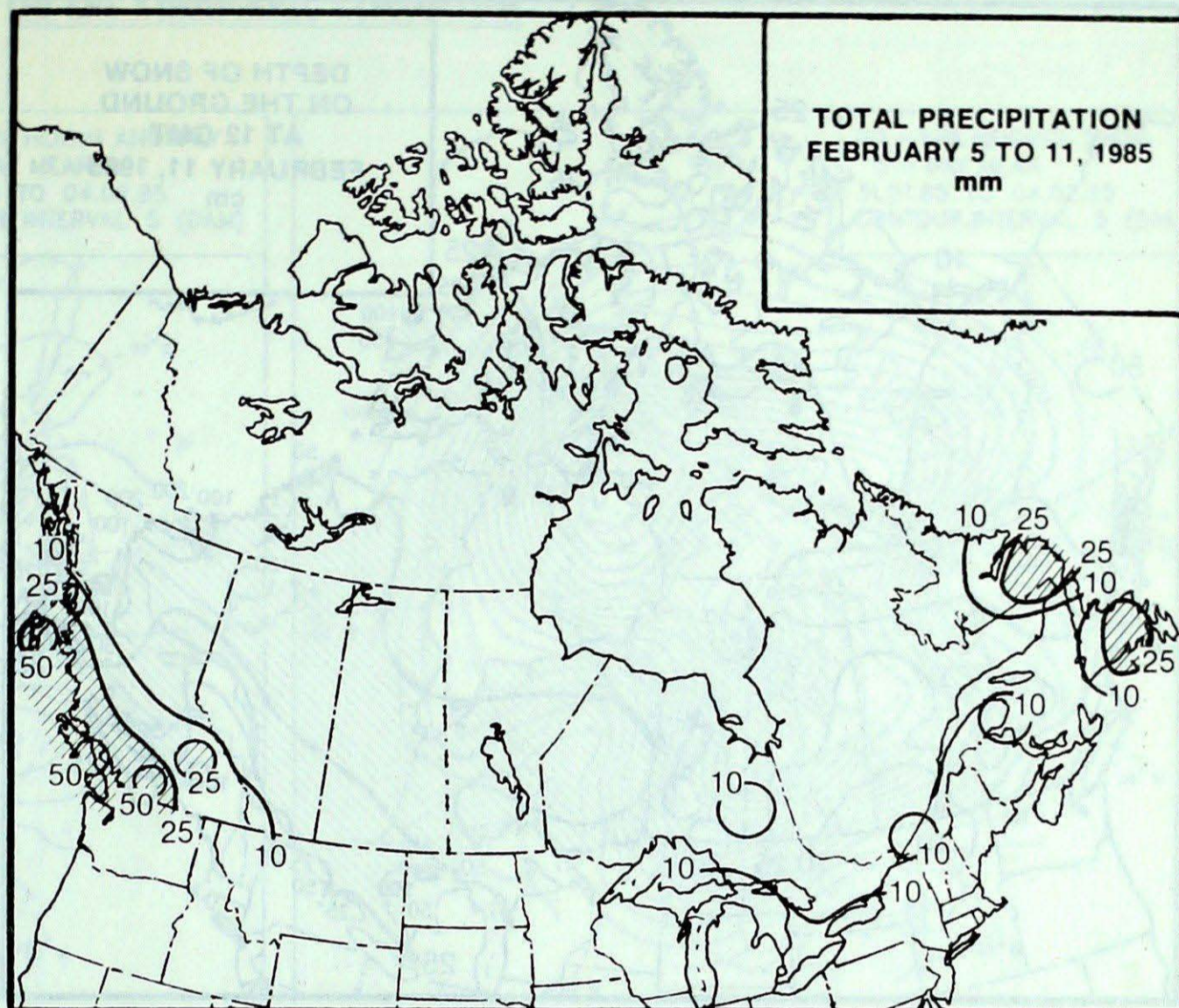
In the wake of a disturbance which gave 5 to 15 centimetres of snow early in the week, cold Arctic air encompassed the Province. Several new low temperature records were set in the North, but snowfalls were light. Temperatures moderated gradually through the latter half of the week and the weekend was predominantly sunny and pleasant. By the end of the period thickening cloud from a developing storm system approached from the west. The leading edge of a large area of snow and freezing rain reached southern Ontario on February 11; 5 to 10 cm of snow fell, with the bulk of precipitation yet to come.

Québec

Very cold weather conditions slowly moderated in time for the weekend, allowing temperatures to climb above freezing in the East. Many new daily high temperature records were set during the latter half of the week in the Gaspé and along the North Shore. At Sept-Îles and Natashquan, the mercury climbed to 5° on February 9 and 10, respectively. On the other hand, many areas in the southwest and along the St. Lawrence Valley have not experienced above freezing temperatures since December. Favourable temperatures boosted the attendance at the Quebec Winter Carnival, which commenced on February 6.

Atlantic Provinces

The first half of the week was sunny and very cold, with many new minimum temperature records set. On February 7, a reading of -27.7° at Truro broke the previous minimum temperature record of -27.2°, set in 1892. Both St. John and Summerside tied their previous minimum temperature records set in 1875 and 1905, respectively. Precipitation amounts were light, and in some areas of the Maritimes the lack of an adequate snow cover is beginning to cause concern. Temperatures in Newfoundland moderated over the weekend, and 20 to 30 centimetres of new snow covered the eastern portion of the Island.

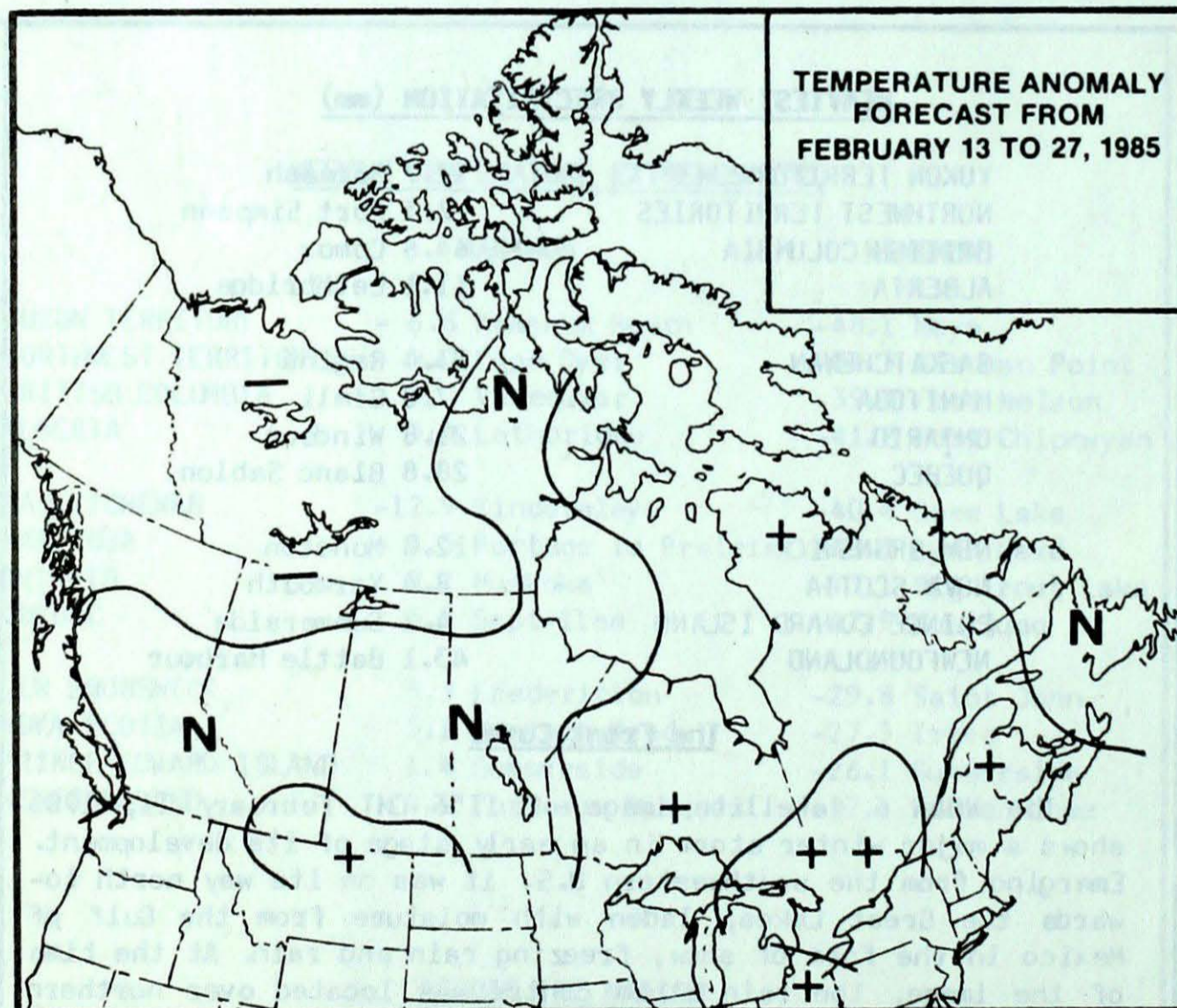
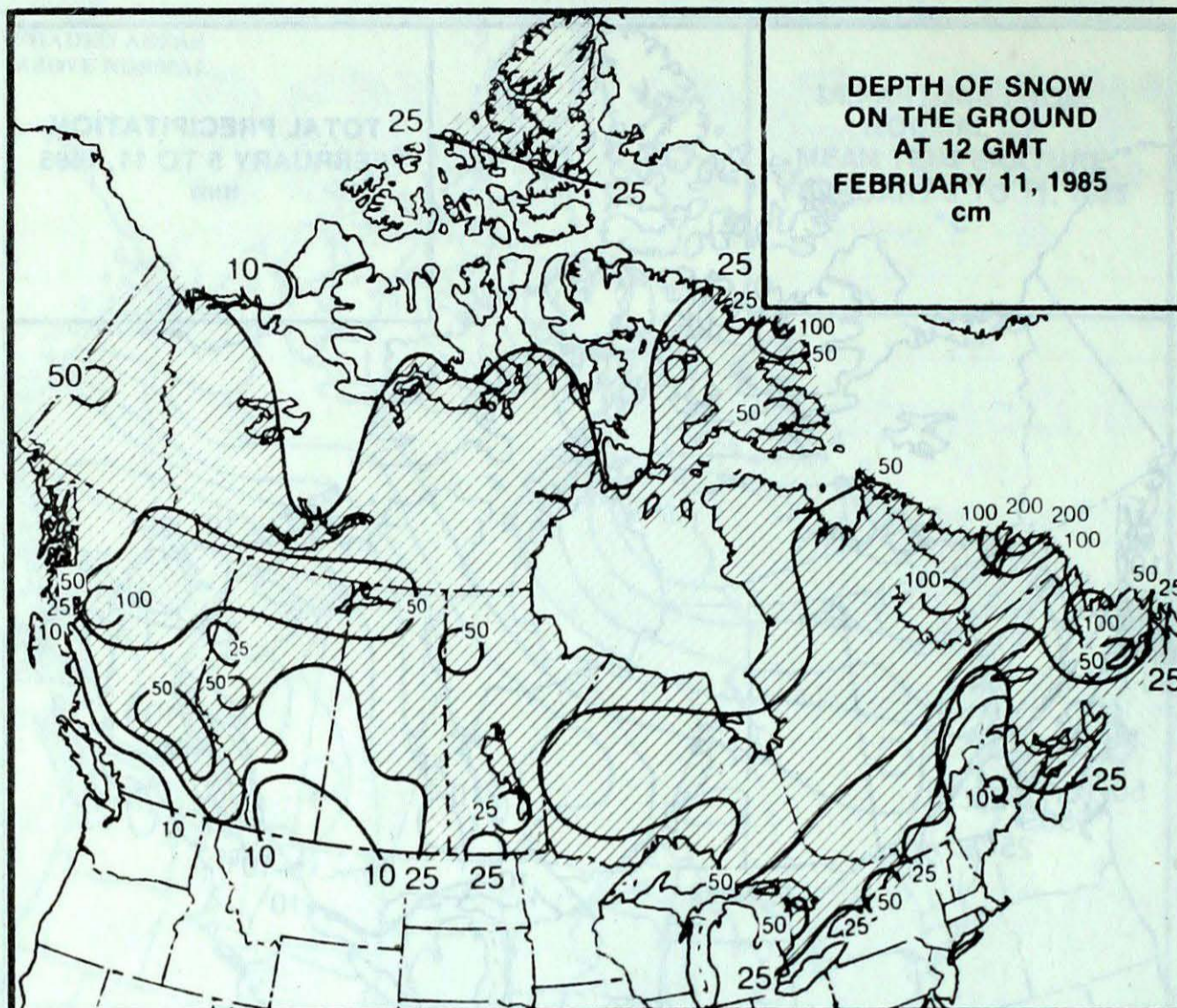


HEAVIEST WEEKLY PRECIPITATION (mm)

YUKON TERRITORY	9.7 Burwash
NORTHWEST TERRITORIES	2.3 Fort Simpson
BRITISH COLUMBIA	64.6 Comox
ALBERTA	11.1 Lethbridge
SASKATCHEWAN	13.4 Regina
MANITOBA	7.8 Gimli
ONTARIO	21.8 Windsor
QUÉBEC	28.8 Blanc Sablon
NEW BRUNSWICK	12.8 Moncton
NOVA SCOTIA	8.4 Yarmouth
PRINCE EDWARD ISLAND	4.2 Summerside
NEWFOUNDLAND	43.1 Battle Harbour

The Front Cover

The NOAA 6 satellite image of 1156 GMT February 11, 1985 shows a major winter storm in an early stage of its development. Emerging from the southwestern U.S. it was on its way north towards the Great Lakes, laden with moisture from the Gulf of Mexico in the form of snow, freezing rain and rain. At the time of the image, the rain storm centre was located over northern Mississippi (at C). The smooth curve of cloud along the western and northern boundary of the storm system was the result of high level jet stream winds. The track taken by this storm was a departure from those of previous storms (see the map page 5), which have generally developed to the lee of the Canadian Rockies and then moved southeastwards. The change in storm tracks signals a re-organization of the general atmospheric circulation over North America.



Temperature Anomaly Forecast

- ++ much above normal
- + above normal
- N normal
- below normal
- much below normal

This forecast is prepared by searching historical weather maps to find cases similar to the present. The historical outcome during the 15 days subsequent to the chosen analogues is assumed to be a forecast for the next 15 days from now.

CLIMATIC PERSPECTIVES VOLUME 7

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ISSN 0225-5707

UDC 551.506.1(71)

Climatic Perspectives is a weekly bilingual publication of the Canadian Climate Centre, Atmospheric Environment Service, 4905 Dufferin St., Downsview, Ont. Canada M3H 5T4. **Phone (416)667-4711/4906.**

It began in 1978 and in 1983 was expanded to include a monthly supplement (formerly known as the *Canadian Weather Review*). The purpose of the publication is to make topical information available to the public concerning the Canadian Climate and its socioeconomic impact.

Unsolicited articles are welcome but should be at maximum about 1500 words in length. They will be subject to editorial change without notice due to publishing time constraints. Black and white photographs can be used, but not colour. The contents may be reprinted freely with proper credit.

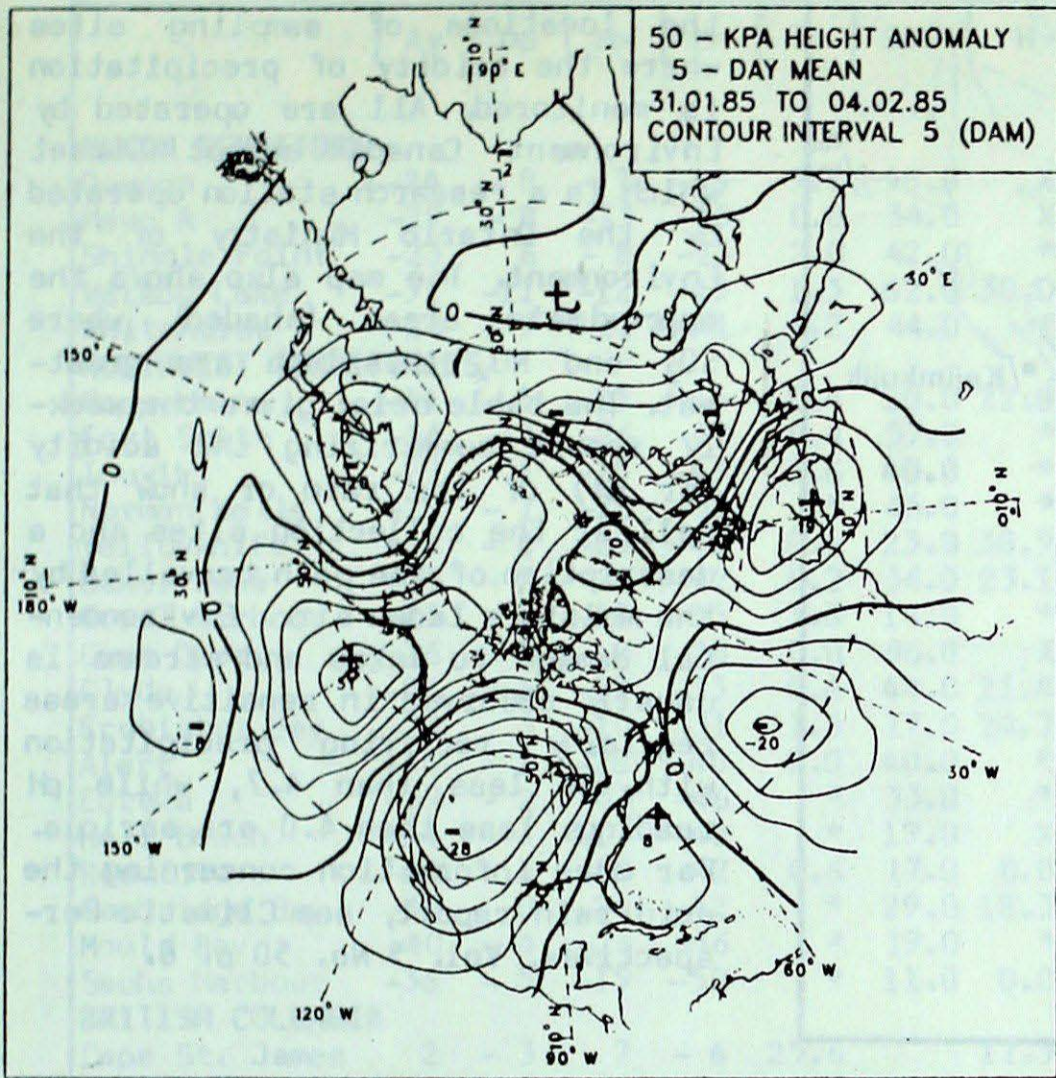
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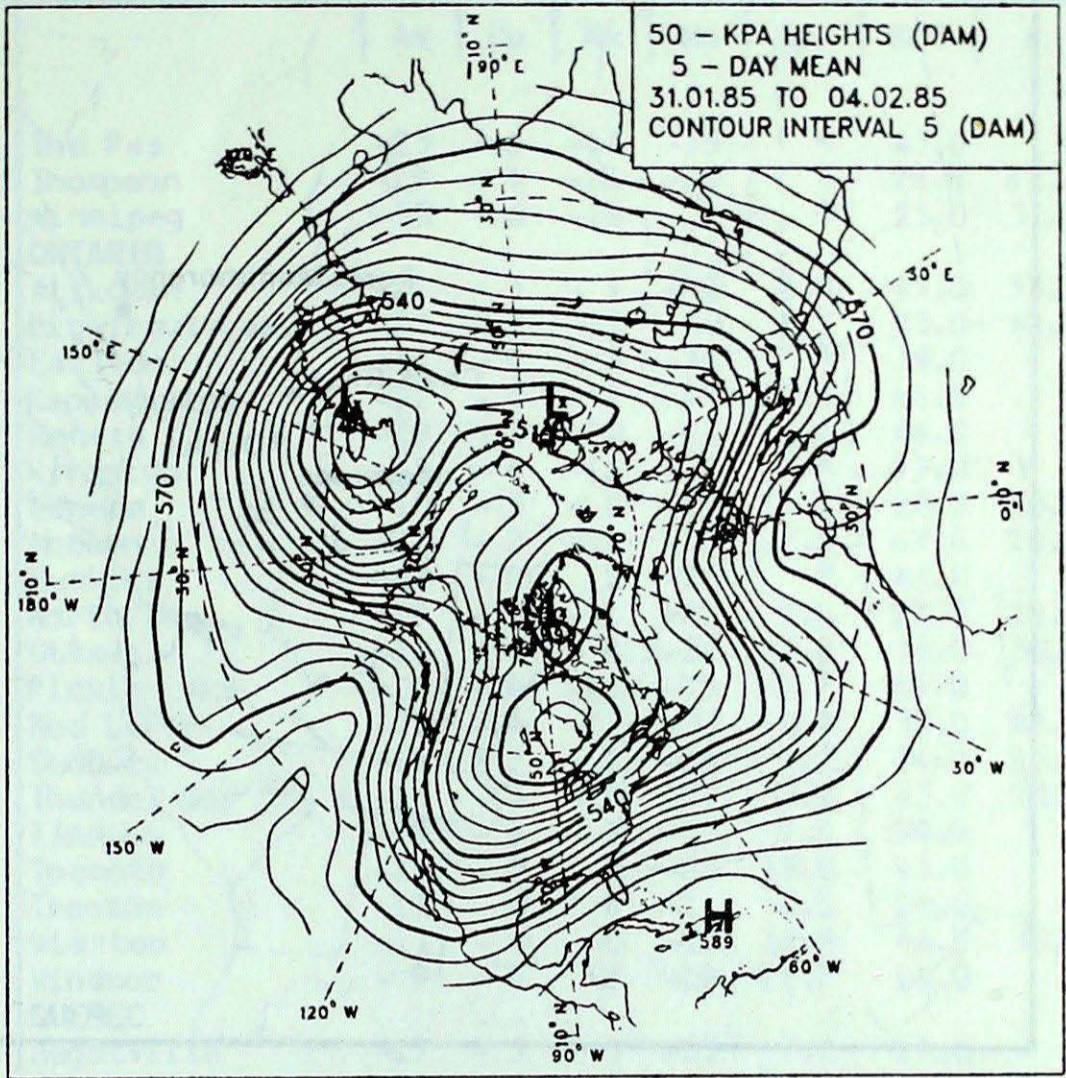
Weekly issue including
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 Monthly issue only: \$10.00

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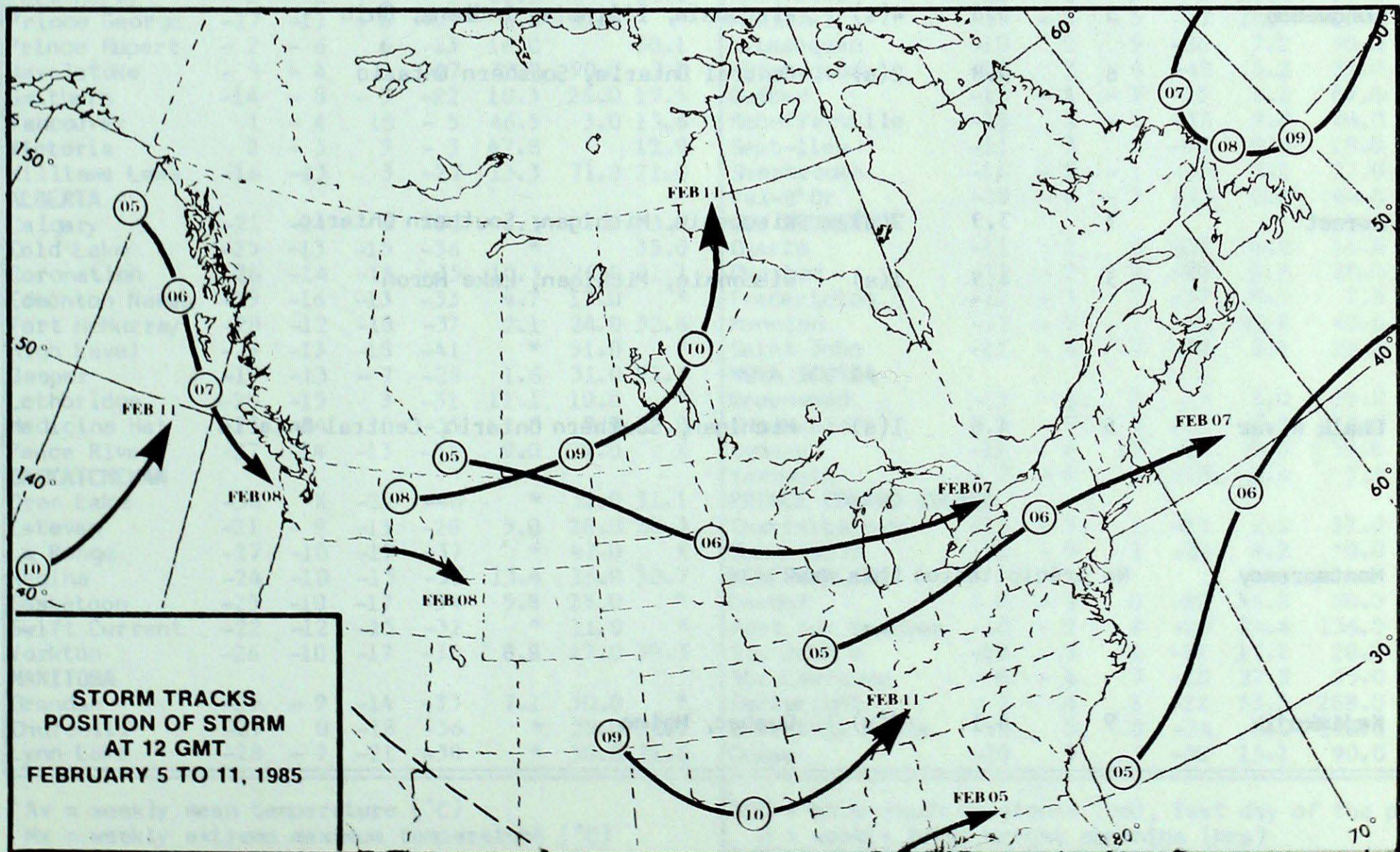
50 KPa ATMOSPHERIC CIRCULATION



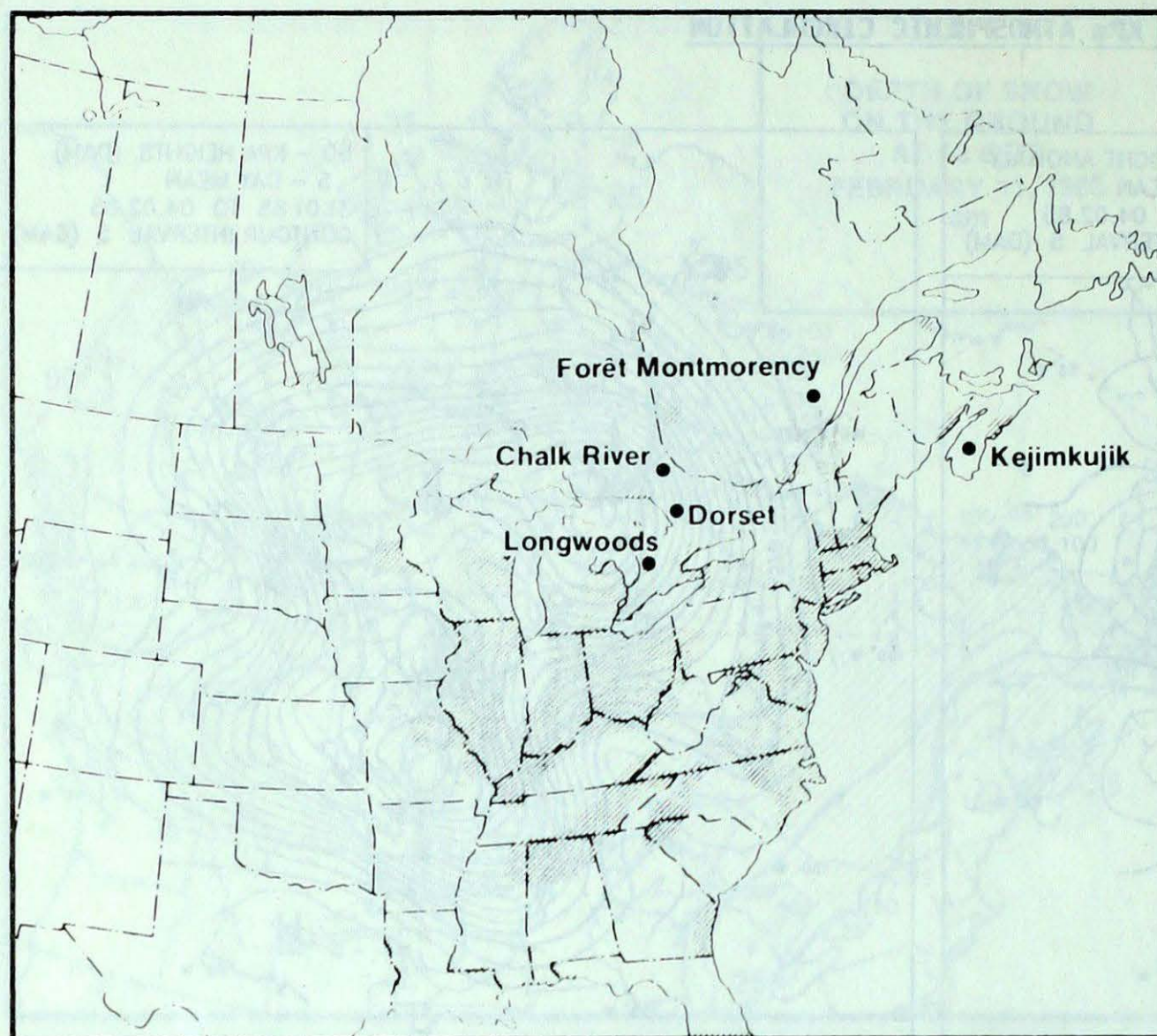
MEAN 50 KPa HEIGHT ANOMALY (dam)
January 31 to February 4, 1985



MEAN 50 KPa HEIGHTS (dam)
January 31 to February 4, 1985



STORM TRACKS
POSITION OF STORM
AT 12 GMT
FEBRUARY 5 TO 11, 1985

ACID RAIN REPORT

The reference map (left) shows the locations of sampling sites where the acidity of precipitation is monitored. All are operated by Environment Canada except Dorset which is a research station operated by the Ontario Ministry of the Environment. The map also shows the approximate areas (shaded) where SO₂ and NO_x emissions are greatest. The table below gives the weekly report summarizing the acidity (or pH) of the rain or snow that fell at the collection sites and a description of the path travelled by the moisture laden air. Environmental damage to lakes and streams is usually observed in sensitive areas regularly receiving precipitation with pH less than 4.7, while pH readings less than 4.0 are serious. For more information concerning the acid rain report, see Climatic Perspectives, Vol. 5 No. 50 p. 6.

FEBRUARY 3 to FEBRUARY 9, 1985

SITE	DAY	pH	AMOUNT	AIR PATH TO SITE
Longwoods	5	3.8	4(s)	Wisconsin, Illinois, Indiana, Ohio
	6	3.8	2(s)	Central Ontario, Southern Ontario
Dorset	3	3.9	2(s)	Wisconsin, Michigan, Southern Ontario
	5	4.5	1(s)	Wisconsin, Michigan, Lake Huron
Chalk River	5	4.6	1(s)	Michigan, Southern Ontario, Central Ontario
Montmorency	No precipitation this week			
Kejimikujik	9	4.1	2(s)	Quebec, Maine

r = rain (mm), s = snow (cm), m = mixed rain and snow (mm).

TEMPERATURE, PRECIPITATION AND BRIGHT SUNSHINE DATA FOR THE WEEK ENDING 0600 GMT FEBRUARY 12, 1985

STATION	TEMP				PRECIP		SUN	STATION	TEMP				PRECIP		SUN
	Av	Dp	Mx	Mn	Tp	SOG	H		Av	Dp	Mx	Mn	Tp	SOG	H
YUKON TERRITORY								The Pas	-25	-6	-16	-35	*	47.0	*
Dawson	-24	-8	-7	-46	9.7	58.0	X	Thompson	-27	-4	-18	-36	*	28.0	42.4
Mayo A	-29	-8	-13	-48	0.0	34.0	X	Winnipeg	-22	-6	-10	-31	*	25.0	31.2
Shingle Point	-23	6	-8	-35	2.0	42.0	*	ONTARIO							
Watson Lake	-31	-11	-12	-43	1.3	62.0	30.0	Atikokan	-21	-3	-7	-38	8.0	45.0	33.6
Whitehorse	-24	-9	-11	-41	1.2	44.0	*	Big Trout Lake	-25	-2	-12	-40	1.7	83.0	41.9
NORTHWEST TERRITORIES								Earlton	-17	-2	-3	-31	*	39.0	X
Coppermine	-34	-3	-23	-45	0.4	20.0	22.0	Kapusking	-21	-4	-8	-35	10.4	46.0	*
Fort Smith	-34	-11	-26	-42	0.4	57.0	*	Kenora	-19	-4	-10	-28	6.6	46.0	X
Inuvik	-29	1	-15	-43	1.6	40.0	*	Kingston	-13	-4	-1	-22	*	57.0	*
Norman Wells	-28	-1	-20	-39	*	45.0	*	London	-10	-5	0	-20	15.2	28.0	15.1
Yellowknife	-34	-8	-28	-43	0.4	23.0	38.9	Moosonee	-21	-2	-11	-35	7.2	67.0	20.3
Baker Lake	-35	-2	-22	-42	0.2	36.0	23.1	Muskoka	-11	-2	2	-20	*	42.0	X
Coral Harbour	-23	7	-13	-35	1.6	14.0	*	North Bay	-15	-3	-1	-25	2.0	27.0	20.5
Cape Dyer	-16	5	-9	-28	0.0	86.0	X	Ottawa	-14	-4	-4	-22	5.8	38.0	30.1
Clyde	-28	-1	-22	-33	0.6	44.0	21.4	Pickle Lake	-23	-4	-10	-35	2.2	68.0	X
Frobisher Bay	-23	3	-10	-31	1.8	17.0	24.7	Red Lake	-22	-4	-12	-37	6.0	59.0	42.5
Alert	-34	-2	-28	-40	0.0	40.0	*	Sudbury	-15	-2	-2	-25	7.9	44.0	28.5
Eureka	-39	-2	-33	-46	*	33.0	*	Thunder Bay	-16	-3	-4	-29	7.2	43.0	20.8
Hall Beach	-34	-3	-17	-40	*	19.0	X	Timmins	-18	-3	-5	-33	7.6	50.0	X
Resolute	-33	1	-25	-42	0.6	17.0	0.0	Toronto	-11	-5	2	-20	15.0	13.0	X
Cambridge Bay	-35	0	-24	-42	*	29.0	18.3	Trenton	-12	-6	0	-21	6.6	24.0	X
Mould Bay	-40	-4	-26	-46	*	19.0	*	Warton	-11	-4	0	-21	12.0	64.0	30.0
Sachs Harbour	-36	-5	-15	-50	*	11.0	0.0	Windsor	-9	-5	2	-18	21.8	14.0	X
BRITISH COLUMBIA								QUEBEC							
Cape St. James	2	-3	7	-6	25.6		12.5	Bagotville	-17	-3	-5	-35	7.2	25.0	X
Cranbrook	-13	-7	0	-24	12.3	41.0	18.2	Blanc-Sablon	-9	1	3	-26	28.8		12.6
Fort Nelson	-28	-10	-11	-39	2.8	57.0	30.5	Inukjuak	-18	8	-8	-35	5.4	48.0	9.1
Fort St. John	-24	-11	-8	-35	5.6	11.0	X	Kuujuuaq	-17	7	-7	-43	15.8	87.0	19.0
Kamloops	-10	-9	9	-19	19.1	19.0	12.7	Kuujuarapik	-19	3	-10	-42	7.2		*
Penticton	-6	-6	5	-13	8.2	6.0	5.8	Maniwaki	-15	-3	1	-32	3.2	38.0	21.8
Port Hardy	2	-2	8	-3	41.5		20.2	Mont-Joli	-12	-1	3	-30	10.4	12.0	28.6
Prince George	-17	-11	-6	-29	6.4	33.0	*	Montréal	-15	-5	-5	-27	10.0	13.0	31.2
Prince Rupert	-2	-6	6	-13	16.0		30.1	Natashquan	-10	2	5	-28	7.2	30.0	*
Revelstoke	-9	-4	1	-17	32.8	90.0	7.7	Nitchequon	-20	2	4	-42	5.2	81.0	16.2
Smithers	-14	-8	-3	-22	10.3	26.0	19.5	Québec	-13	-2	-3	-25	1.2	49.0	40.6
Vancouver	1	-4	10	-5	46.5	3.0	13.6	Schefferville	-18	5	-1	-35	9.0	44.0	8.1
Victoria	2	-3	9	-3	47.8		12.9	Sept-Iles	-11	3	5	-30	6.8	10.0	30.9
Williams Lake	-16	-13	3	-27	13.3	71.0	21.0	Sherbrooke	-16	-5	-1	-33	9.2	27.0	97.2
ALBERTA								Val-d'Or	-18	-4	-3	-33	2.2	44.0	19.2
Calgary	-21	-14	-5	-32	6.3	7.0	23.9	NEW BRUNSWICK							
Cold Lake	-25	-13	-15	-36	*		35.0	Charlo	-11	1	5	-28	6.2	16.0	*
Coronation	-26	-14	-15	-35	10.3	26.0	21.1	Chatham	-11	-2	4	-29	2.6	28.0	35.2
Edmonton Namao	-25	-16	-13	-33	4.7	17.0	*	Fredericton	-11	-3	5	-27	0.5	7.0	*
Fort McMurray	-28	-12	-18	-37	2.1	24.0	32.6	Moncton	-12	-5	1	-28	12.8	43.0	37.0
High Level	-29	-13	-18	-41	*	51.0	*	Saint John	-12	-4	4	-30	1.4	28.0	37.5
Jasper	-19	-13	-7	-28	1.6	31.0	21.3	NOVA SCOTIA							
Lethbridge	-20	-15	3	-31	11.1	10.0	*	Greenwood	-9	-4	3	-19	1.0	39.0	X
Medicine Hat	-21	-14	0	-35	*	9.0	32.0	Shearwater	-9	-5	3	-21	0.0	14.0	38.6
Peace River	-27	-14	-13	-35	9.0	29.0	X	Sydney	-12	-6	10	-24	3.8	33.0	40.0
SASKATCHEWAN								Yarmouth	-7	-4	3	-16	8.4	9.0	33.4
Cree Lake	-30	X	-21	-40	*	32.0	31.1	PRINCE EDWARD ISLAND							
Estevan	-21	-9	-13	-28	5.0	28.0	28.3	Charlottetown	-13	-5	1	-24	2.0	37.0	*
La Ronge	-27	-10	-19	-37	*	47.0	X	Summerside	-12	-5	1	-26	4.2	50.0	37.7
Regina	-24	-10	-15	-36	13.4	16.0	30.7	NEWFOUNDLAND							
Saskatoon	-25	-10	-17	-34	5.8	25.0	*	Gander	-9	-3	0	-22	36.8	60.0	25.5
Swift Current	-22	-12	-15	-32	*	11.0	*	Port aux Basques	-10	-5	4	-20	24.4	136.0	*
Yorkton	-26	-10	-17	-35	8.8	47.0	38.3	St. John's	-10	-5	1	-21	17.8	20.0	25.6
MANITOBA								St. Lawrence	-8	-4	3	-18	27.8	95.0	X
Brandon	-25	-9	-14	-33	7.1	30.0	*	Cartwright	-7	6	1	-22	33.5	288.0	X
Churchill	-27	0	-18	-36	*	29.0	12.7	Churchill Falls	-15	5	0	-34	6.0	126.0	X
Lynn Lake	-28	-7	-21	-38	*	50.0	31.6	Goose	-10	5	3	-32	15.1	90.0	7.3

Av = weekly mean temperature (°C)
Mx = weekly extreme maximum temperature (°C)
Mn = weekly extreme minimum temperature (°C)
Tp = weekly total precipitation (mm)
Dp = Departure of mean temperature from normal (°C)

SOG = snow depth on ground (cm), last day of the period
H = weekly total bright sunshine (hrs)
X = not observed
P = extreme value based on less than 7 days
* = missing