

# Climatic Perspectives

February 5 to 11, 1990

A weekly review of Canadian climate

Vol.12 No.6

## Prolonged mild spell over the Great Lakes

*Relatively mild temperatures have prevailed over Ontario and southwestern Quebec during the last six weeks. In contrast, a bitterly cold Arctic air mass spread across and now has a firm grip on the Yukon and Northwest Territories.*

A persistent southwesterly circulation has recurrently fed unseasonably mild air from the Gulf States towards the Great Lakes Basin. Since the beginning of the year, this pattern has resulted in a stretch of well-above-normal mean weekly temperatures. Numerous new daily high temperature records have been set in both Ontario and Quebec. On a number of occasions, daytime highs in southern Ontario have soared to the double digits.

The relatively mild, near-freezing temperatures benefitted attendance at the Québec Winter Carnival, but the warm spring-like weather during Ottawa's Winterlude, which occurred the same week, frustrated organizers and participants alike, as some outdoor events had to be restricted or cancelled because of the unusual thaw.

### Arctic cold

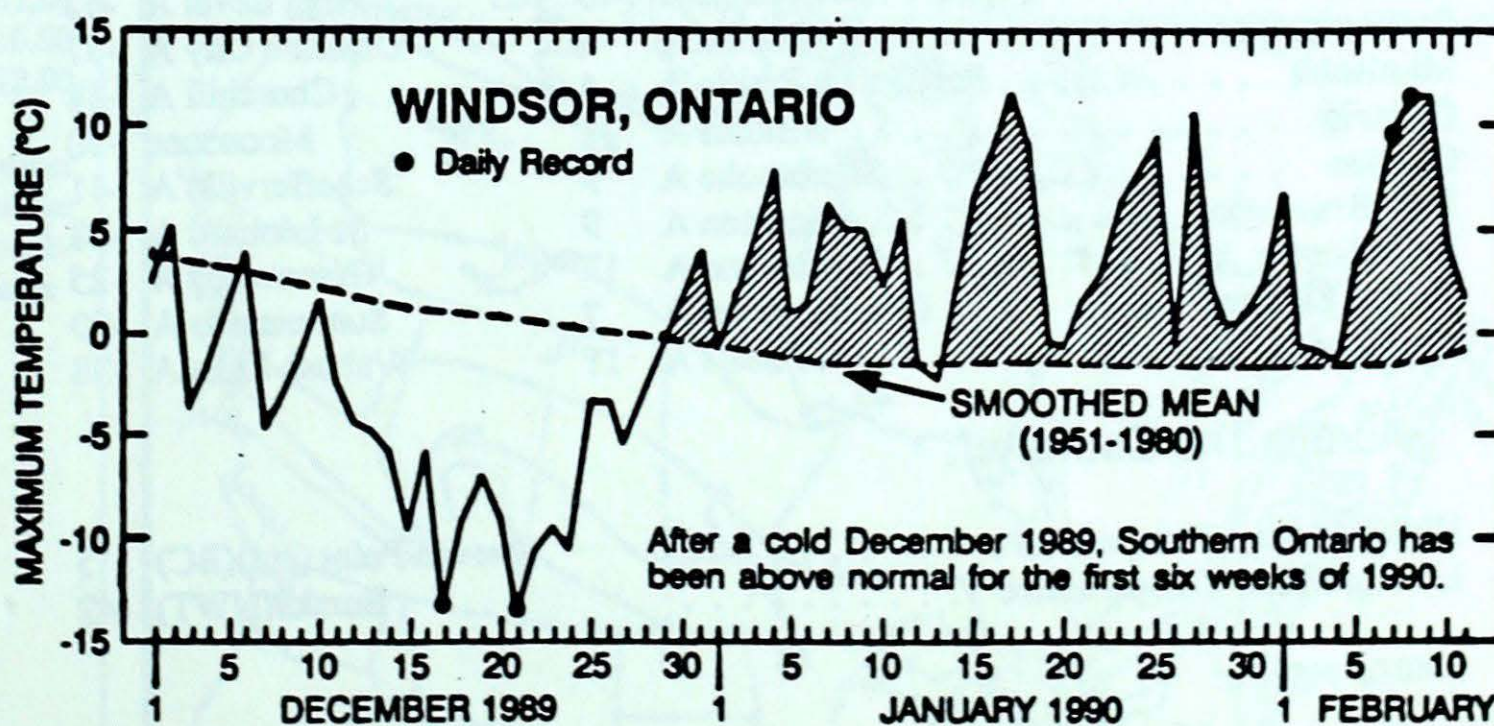
Inhabitants residing in north-western Canada are now making up for the nearly continuous stretch of warmer-than-normal months that they have enjoyed since April 1989. During this lengthy period, only November 1989 averaged below normal

across the Yukon and Mackenzie district. For the last two weeks, minimum temperatures have been bottoming out at the mid minus 50s. For twenty consecutive days the thermometer at Old Crow, in the central Yukon, did not rise above -40°C. In the Northwest Territories, north of Great Bear Lake, temperatures have been reported as low as minus sixty. At these extreme temperatures even the slightest breeze makes it very difficult and dangerous to work outdoors, and thawing frozen plumbing is a common pastime. Normally pliable objects become brittle, snap or even shatter, automobile components crack or break

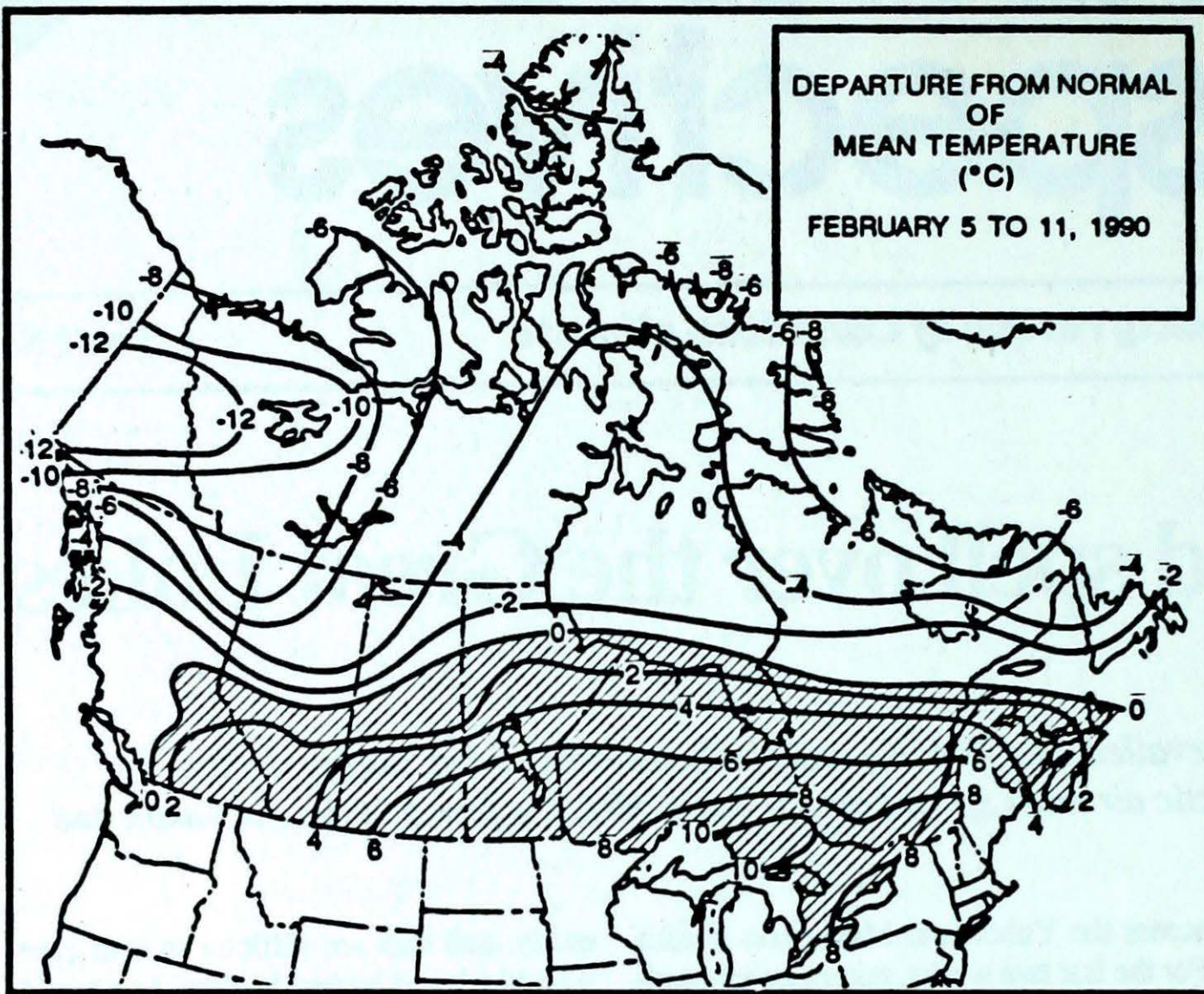
easily, and cars are difficult to start even with block and battery heaters. As a result, many vehicles are left running continuously all day.

### Most of Canada to remain below normal

For the week of February 19, below-normal temperatures are expected for all of the country except the southern half of Ontario and southwestern Quebec. The coldest parts of the country are likely to be the Yukon, Labrador and northern Quebec.







**Weekly normal temperatures (°C)**

	max.	min.
Whitehorse A	-8.6	-17.9
Iqaluit A	-20.6	-29.4
Yellowknife A	-20.6	-29.4
Vancouver Int'l A	7.5	1.4
Victoria Int'l A	8.1	1.5
Calgary Int'l A	-0.5	-11.9
Edmonton Int'l A	-4.0	-15.9
Regina A	-8.3	-18.8
Saskatoon A	-8.9	-19.6
Winnipeg Int'l A	-10.8	-21.2
Ottawa Int'l A	-5.7	-15.3
Toronto Int'l A	-2.3	-11.8
Montréal Int'l A	-5.2	-14.7
Québec A	-7.0	-16.7
Fredericton A	-3.3	-14.6
Saint John A	-2.8	-13.0
Halifax (Shearwater)	-0.8	-8.6
Charlottetown A	-3.7	-11.7
Goose A	-9.8	-19.9
St John's A	-1.0	-7.6

**Weekly temperature and precipitation extremes**

	Maximum temperature (°C)	Minimum temperature (°C)	Heaviest precipitation (mm)
British Columbia	Penticton A 14	Fort Nelson A -35	Hope A 253
Yukon Territory	Teslin (aut) -15	Old Crow -52	Watson Lake A 6
Northwest Territories	Fort Smith A -17	Eureka -50	Fort Smith A 11
	Cape Dorset A -17	Clyde A -50	
Alberta	Lethbridge A 10	High Level A -42	Jasper 16
Saskatchewan	Swift Current A 8	Uranium City A -37	Collins Bay 7
Manitoba	Portage La Prairie A 4	Churchill A -38	Norway House A 10
Ontario	Windsor A 11	Moosonee -30	Wawa A 15
Québec	Sherbrooke A 9	Schefferville A -41	Sept-Îles A 33
New Brunswick	Moncton A 9	St-Léonard A -28	Saint John A 37
Nova Scotia	Greenwood A 13	Greenwood A -25	Shearwater A 60
Prince Edward Island	Charlottetown A 7	Summerside A -20	Charlottetown A 30
Newfoundland	St John's A 11	Wabush Lake A -38	St Lawrence 71

**Across The Country...**

Highest Mean Temperature	Estevan Point (aut)(BC) 5
Lowest Mean Temperature	Eureka(NWT) -42



CLIMATIC PERSPECTIVES  
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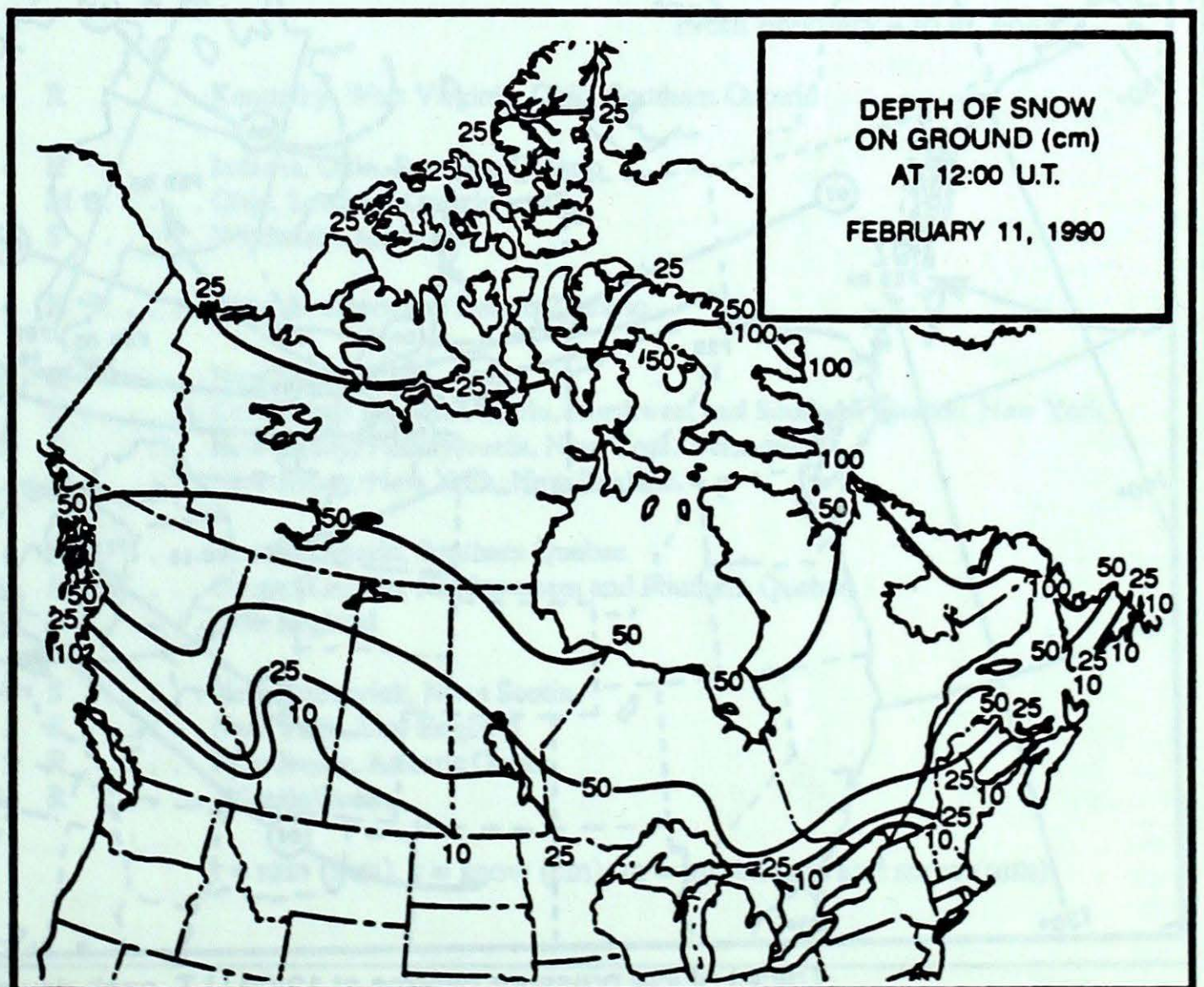
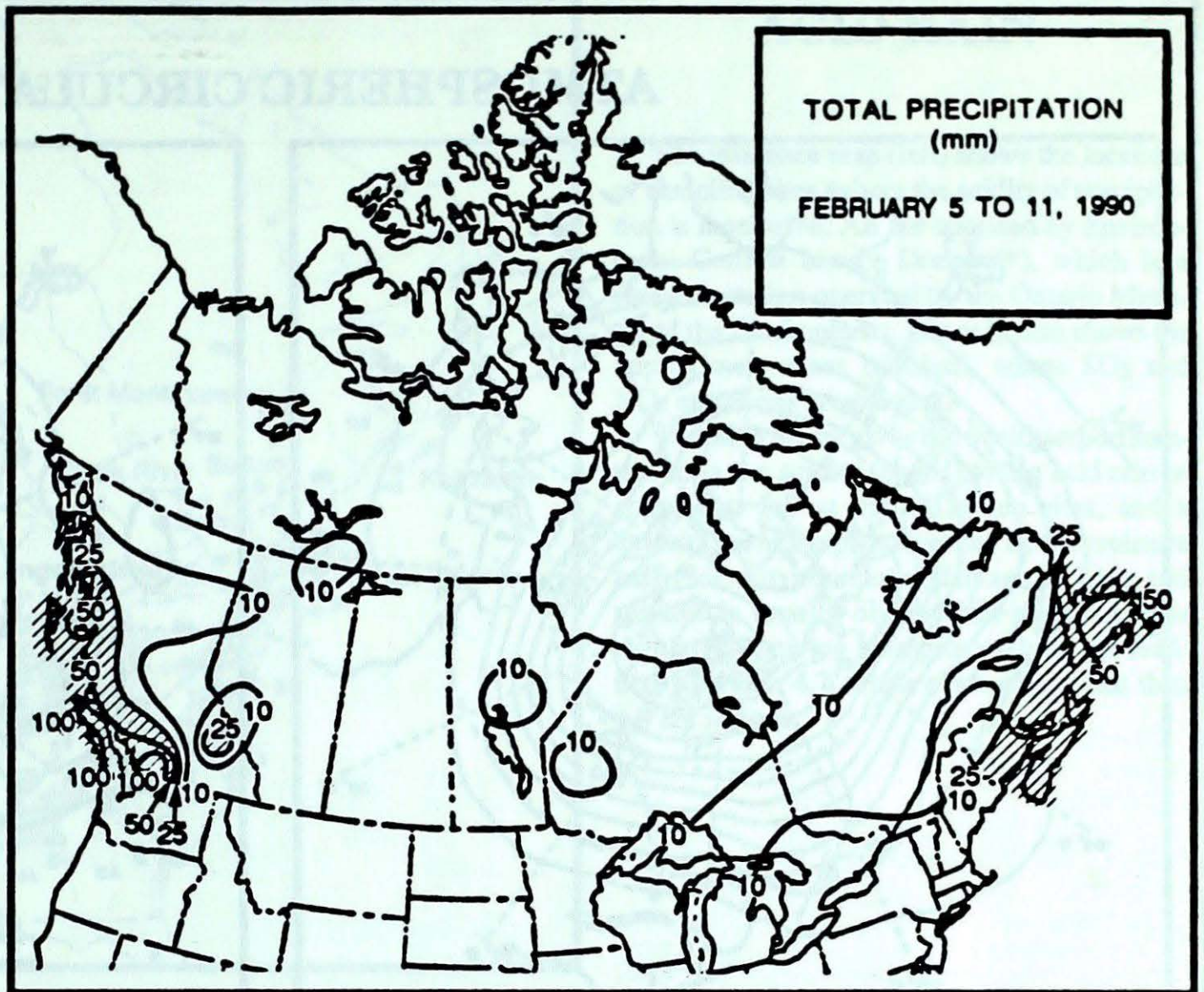
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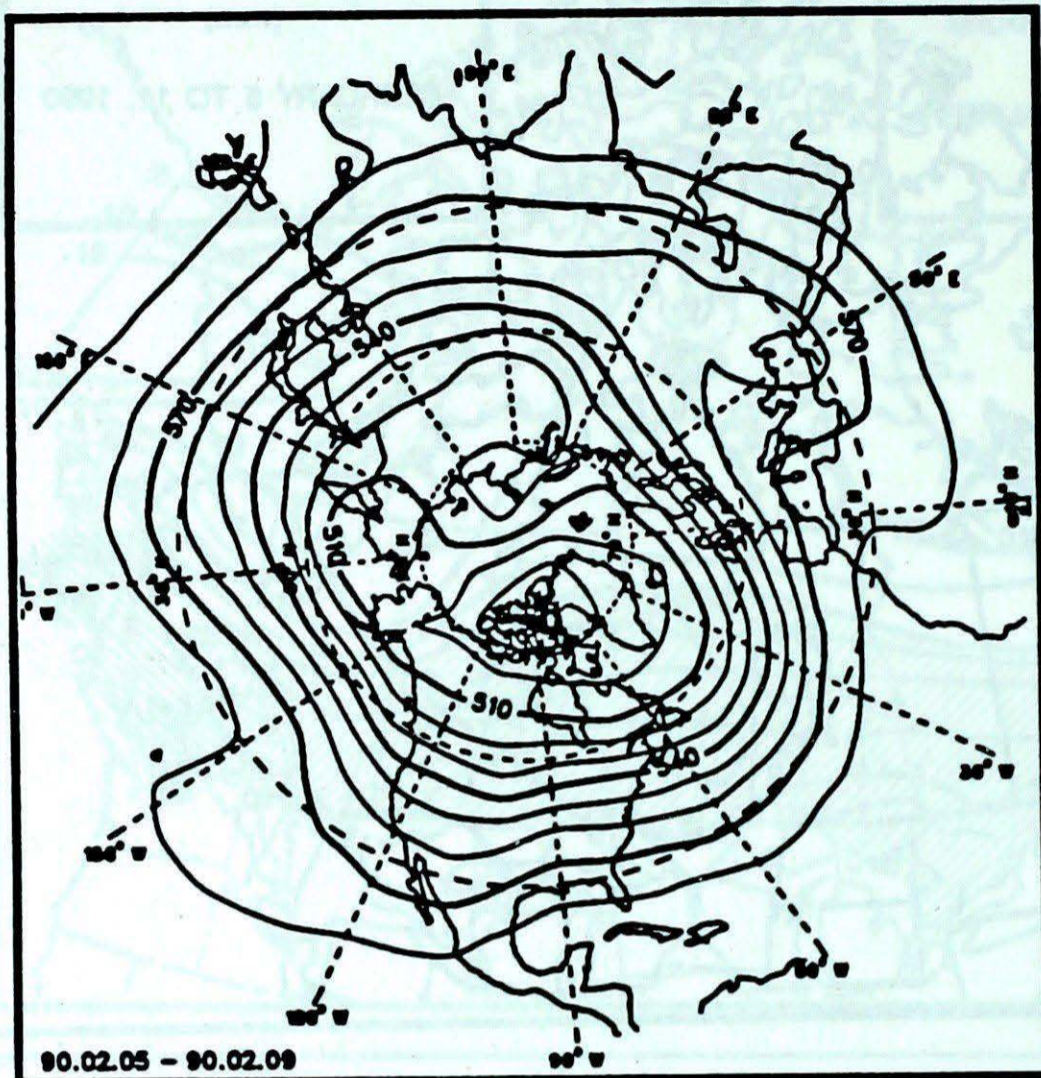
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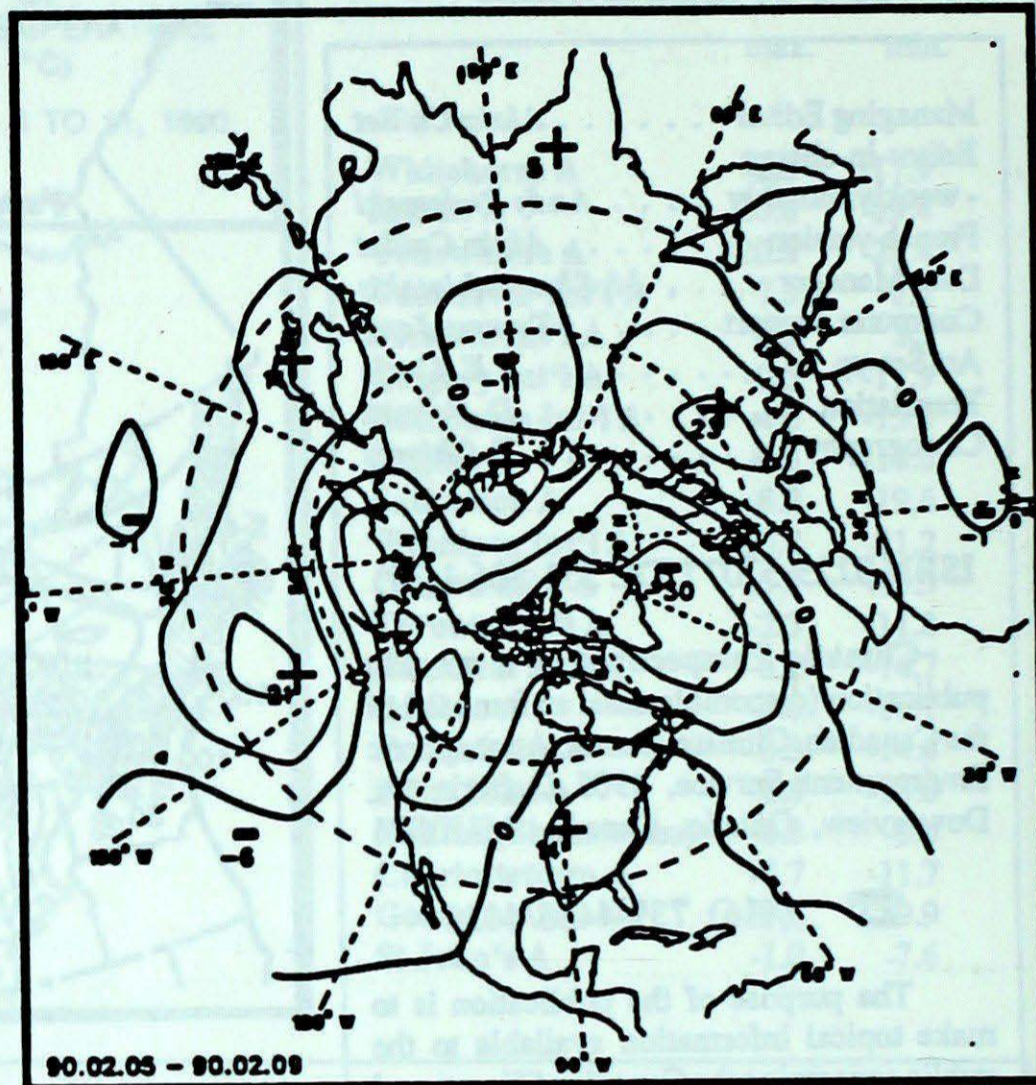




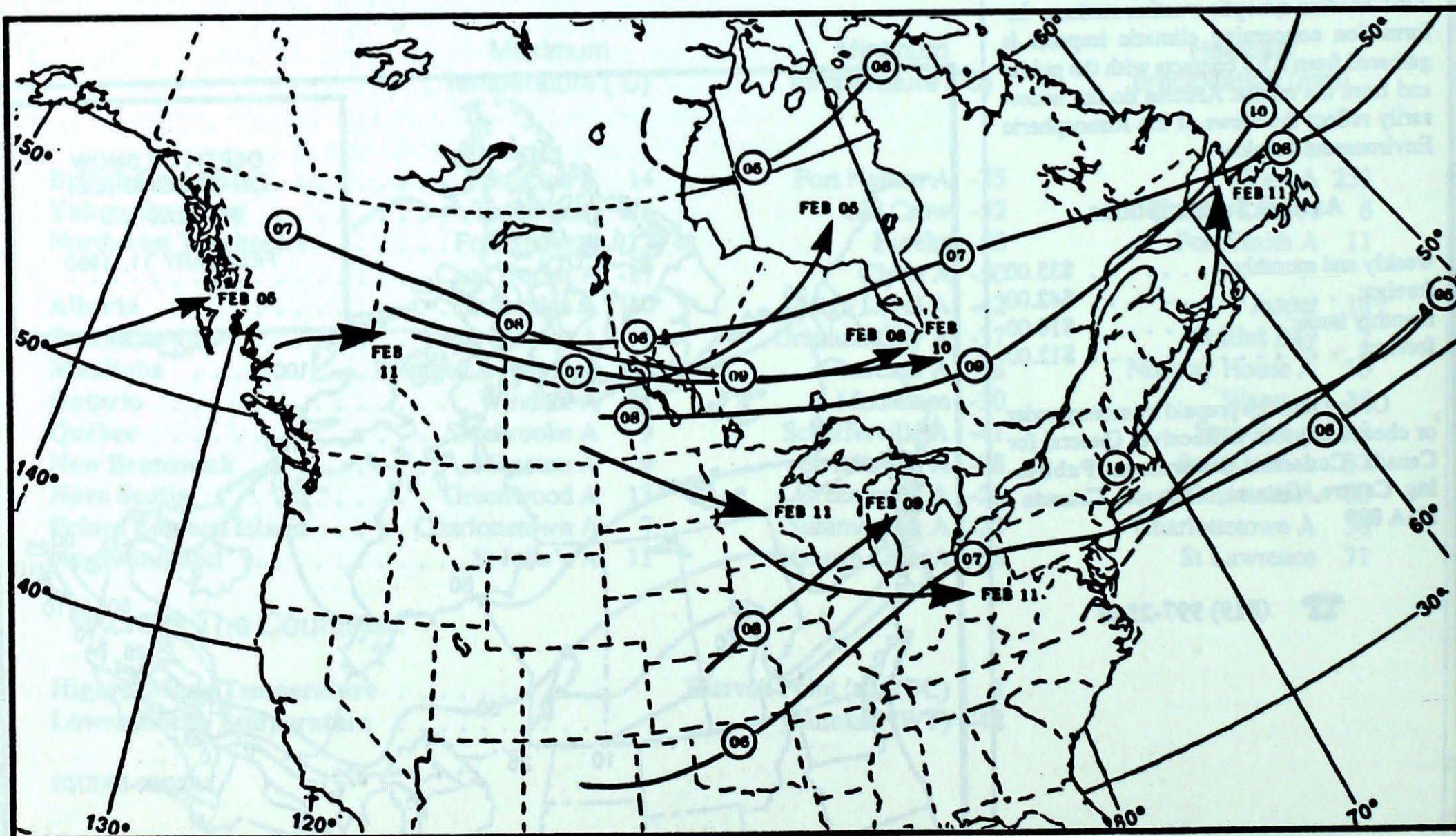
### ATMOSPHERIC CIRCULATION



Mean geopotential height  
50-kPa level (10-decametre intervals)



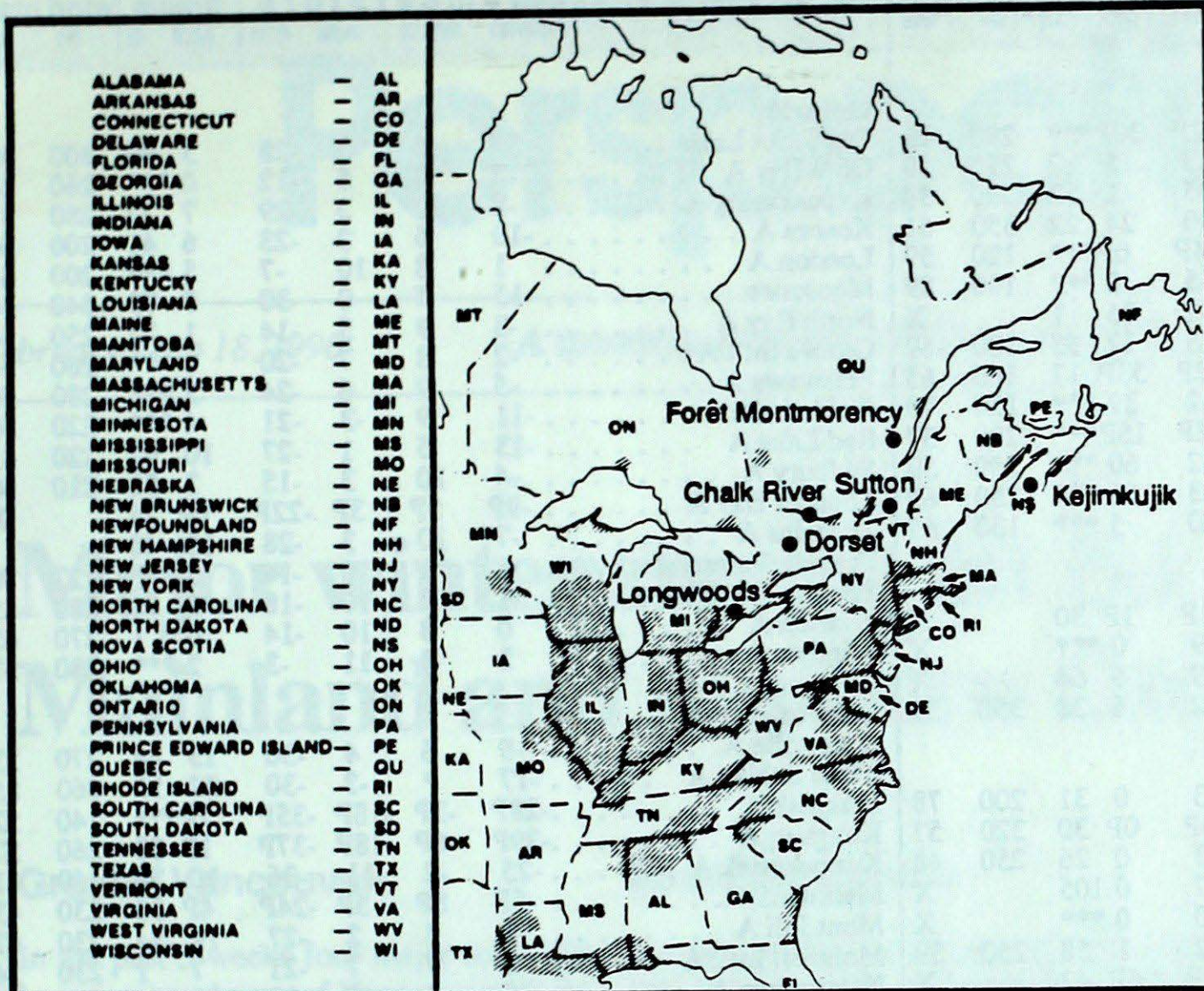
Mean geopotential height anomaly  
50-kPa level (10-decametre intervals)



Tracks of low pressure centres at 12:00 U.T. each day during the period.



## ACID RAIN



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 SO<sub>2</sub> and NO<sub>x</sub> emissions are greatest.

The table below gives the weekly report summarizing the acidity (or pH) of the acid 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 readings less than 4.7, while pH readings less than 4.0 are serious.

Site      day      pH      amount      air path to site

From February 4 to 10, 1990

Longwoods	9	3.7	4 R	..... Kentucky, West Virginia, Ohio, Southern Ontario
Dorset *	8	4.2	4 R	..... Indiana, Ohio, Southern Ontario
	9	4.0	1 M	..... Ohio, Southern Ontario
	10	5.2	1 S	..... Wisconsin, Michigan
Chalk River	9	3.8	4 R	..... Ohio, Southern and Eastern Ontario
Sutton	4	4.7	8 S	..... New England
	6	3.8	3 S	..... Central and Eastern Ontario, Northwest and Southern Quebec, New York
	9	4.0	20 R	..... New Jersey, Pennsylvania, New York, Vermont
	10	4.1	4 M	..... New Jersey, New York, New England
Montmorency	5	4.0	1 S	..... Central Ontario, Southern Quebec
	9	4.1	11 M	..... Central Ontario, Northwestern and Southern Quebec
	10	4.8	7 S	..... New England
Kejimikujik	4	5.1	8 S	..... New Brunswick, Nova Scotia
	6	4.3	1 S	..... New York, New England
	9	3.9	2 R	..... New Jersey, Atlantic Ocean
	10	4.9	26 R	..... Atlantic Ocean

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



STATION	temperature				precip.		wind max		STATION	temperature				precip.		wind max	
	mean	anom	max	min	ptot	st	dir	vel		mean	anom	max	min	ptot	st	dir	vel
<b>British Columbia</b>								<b>Ontario</b>									
Cape St James	3P	-3P	7P	-2P	30P***		290	93	Big Trout Lake	-17	5	-2	-28	5	60	300	56
Cranbrook A	-2	4	9	-13	5	7	210	59	Gore Bay A	-2	8	5	-12	0	***	260	44
Fort Nelson A	-27	-10	-20	-35	1	52	330	33	Kapuskasing A	-8	10	3	-29	7	77	280	37
Fort St John A	-19	-8	-4	-30	24	22	350	61	Kenora A	-10	6	2	-23	6	41	200	50
Kamloops A	3P	5P	10P	-4P	0P***		120	59	London A	1	8	10	-7	5	***	200	61
Penticton A	3	3	14	-5	0	***	190	89	Moosonee	-15	5	0	-30	7	79	340	44
Port Hardy A	2	-2	6	-2	75	1		X	North Bay A	-3	9	5	-14	1	72	250	56
Prince George A	-5	1	3	-15	17	33	180	69	Ottawa Int'l A	-2	8	7	-20	1	***	260	56
Prince Rupert A	2P	-1P	5P	-2P	53P	17	160	65	Petawawa A	-5	9	6	-24	3	***	280	59
Revelstoke A	-2	2	6	-12	39	***	150	78	Pickle Lake	-11	9	-3	-21	4	***	220	50
Smithers A	-5P	0P	3P	-12P	15P***		200	37	Red Lake A	-13	5	1	-27	10	92	220	41
Vancouver Int'l A	4	-1	11	-2	60	***	280	59	Sudbury A	-4	10	3	-15	3	51	210	50
Victoria Int'l A	4	-1	12	-3	66	***	250	65	Thunder Bay A	-9P	5P	3P	-22P	0P	24		X
Williams Lake A	-5	-1	4	-20	5	***	130	67	Timmins A	-7	10	3	-28	15	48		
<b>Yukon Territory</b>								<b>Québec</b>									
Komakuk Beach A	-30P	-2P	-23P	-41P	1P	30		X	Bagotville A	-9	6	4	-30	15	48	270	33
Teslin (aut)	-25	*	-15	-39	0	***		X	Blanc Sablon A	-17	*	-3	-30	22	55	060	85
Watson Lake A	-27	-8	-17	-39	6	64		X	Inukjuak A	-28P	-3P	-18P	-35P	2P***	140	52	
Whitehorse A	-29	-16	-20	-42	6	38	350	39	Kuujuuaq A	-29P	-6P	-18P	-37P	1P	33	260	57
<b>Northwest Territories</b>								<b>New Brunswick</b>									
Alert	-36	-3	-29	-43	0	31	200	78	Charlo A	-8	5	4	-26	16	84	270	56
Baker Lake A	-35P	-3P	-25P	-40P	0P	30	320	57	Chatham A	-6	4	7	-22	20	58	220	54
Cambridge Bay A	-39	-5	-34	-43	0	26	250	48	Fredericton A	-5	4	8	-23	36	13	260	44
Cape Dyer A	-31	-10	-25	-37	0	105		X	Moncton A	-5P	3P	9P	-24P	30P	10	230	65
Clyde A	-39	-12	-29	-50	0	***		X	Saint John A	-5	3	7	-24	37	***	200	63
Coppermine A	-36	-13	-30	-42	1	58	250	39	<b>Nova Scotia</b>								
Coral Harbour A	-30P	-1P	-23P	-39P	6P	42		X	Greenwood A	-3	3	13	-25	32	1	210	69
Eureka	-42	-4	-32	-50	0	16	120	39	Shearwater A	-3	2	9	-22	60	1	210	83
Fort Smith A	-27	-6	-17	-40	11	85	310	48	Sydney A	-5	1	10	-23	42	3	220	61
Hall Beach A	-35	-4	-25	-43	1	***		X	Yarmouth A	-1	2	9	-15	28	1	210	70
Inuvik A	-40	-10	-29	-47	0	40		X	<b>Prince Edward Island</b>								
Iqaluit A	-32	-7	-23	-38	1	***	350	44	Charlottetown A	-5	3	7	-20	30	8	240	56
Mould Bay A	-39	-4	-22	-50	5	28	260	72	Summerside A	-5	2	7	-20	28	28	220	69
Norman Wells A	-38	-12	-30	-46	0	***		X	<b>Newfoundland</b>								
Resolute A	-39	-6	-31	-49	3	23	200	65	Cartwright	-19	-6	-5	-29	22	216	020	61
Yellowknife A	-31	-6	-23	-40	4	44		X	Churchill Falls A	-24	-4	-11	-35	14	74	290	46
<b>Alberta</b>								<b>90/02/05-90/02/11</b>									
Calgary Int'l A	-3	3	9	-16	1	1	350	91	Gander Int'l A	-9	-3	4	-26	36	***	260	72
Cold Lake A	-15	-2	-3	-30	12	24	290	43	Goose A	-21	-6	-12	-32	23	109	040	44
Edmonton Namao A	-8	2	3	-23	5	4	330	54	Port Aux Basques	-7P	-1P	4P	-22P	26P***	300	82	
Fort McMurray A	-19	-4	-7	-35	5	45	330	37	St John's A	-5	-1	11	-19	49	1	240	106
High Level A	-27	-8	-18	-42	8	59	340	50	St Lawrence	-5	-1	6	-20	71	***		X
Jasper	-5	1	3	-14	16	33		X	Wabush Lake A	-22	-1	-11	-38	18	65	300	44
Lethbridge A	-2	3	10	-11	2	***	260	82									
Medicine Hat A	-3	4	10	-18	1	4	240	72									
Peace River A	-21P	-8P	-3P	-32P	13P***		010	56									
<b>Saskatchewan</b>																	
Cree Lake	-21	-1	-11	-37	2	48	320	41									
Estevan A	-4	8	6	-18	0	1	300	69									
La Ronge A	-18	-1	-6	-33	2	48	300	46									
Regina A	-8	6	2	-23	0	14	310	57									
Saskatoon A	-11	3	0	-25	1	10	290	61									
Swift Current A	-4	6	8	-20	0	10	240	63									
Yorkton A	-12	4	-2	-27	2	30	290	65									
<b>Manitoba</b>																	
Brandon A	-12	4	-1	-26	3	25	280	57									
Churchill A	-27	-1	-18	-38	2	23	300	46									
Lynn Lake A	-21	1	-16	-26	6	66	300	32									
The Pas A	-17	1	-5	-29	3	***	300	43									
Thompson A	-21	2	-13	-32	6	64		X									
Winnipeg Int'l A	-10	6	2	-25	2	18	150	50									

mean = mean weekly temperature, °C  
 max = maximum weekly temperature, °C  
 min = minimum weekly temperature, °C  
 anom = mean temperature anomaly, °C

ptot = weekly precipitation total in mm  
 st = snow thickness on the ground in cm  
 dir = direction of max wind, deg. from north.  
 vel = wind speed in km/h

— Annotations —  
 X = no observation  
 P = less than 7 days of data  
 \* = missing data when going to printing.