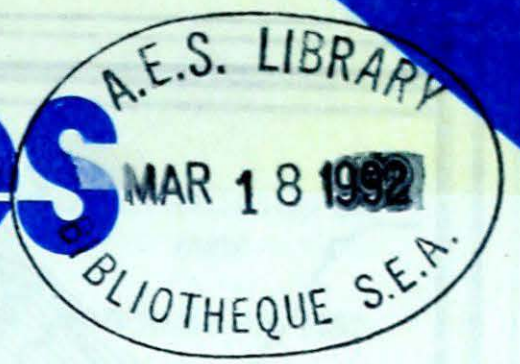




# Climatic Perspectives



March 2 to 8, 1992

A weekly review of Canadian climate and water

Vol. 14 No. 10

## Concern over moisture in the Prairies

*The southern parts of Alberta and Saskatchewan have been experiencing a dry winter. Long periods of above freezing temperatures, since late December, have caused an early loss of snow cover, and the general outlook is for temperatures to be above normal over the next few weeks. This could bring about an early spring run-off of even mountain-fed streams.*

The mountain snowpack in southern Alberta is below average to average, and the Prairie Farm Rehabilitation Administration has expressed concern over farm water supplies in the drainage basins of the Milk (Missouri) River, and many of the tributaries of the South Saskatchewan River, where precipitation, since November, has been about half of the long term average. So far, most major irrigation water storage reservoirs are close to normal.

By contrast, northwestern Alberta and southern Manitoba have been wet, though there exists a drier zone extending from Lake Winnipeg to The Pas, and west beyond Nipawin, Sask. Central and northeastern Alberta, and northern Saskatchewan and Manitoba have had a near normal winter precipitation. The headwaters of the North Saskatchewan, the Athabasca and the Peace Rivers have normal to above normal snow cover accumulations, but the timing of melt may be important. The Athabasca is expected to discharge more than the usual volume of water, and if, when the freshet peaks, there is warm weather, rain or ice jamming on this northeasterly-flowing system, there could be flooding, and perhaps less water available later in the season.

Some meagre moisture was made available to central and southern Alberta during the week: first as dense fog from

lingering warm, moist air over snow cover on the 4th and 5th, and then from flurries, as a cold front moved south. The fog caused numerous flight delays at Edmonton, and there were a number of road accidents.

### Distant storm influences Maritimes

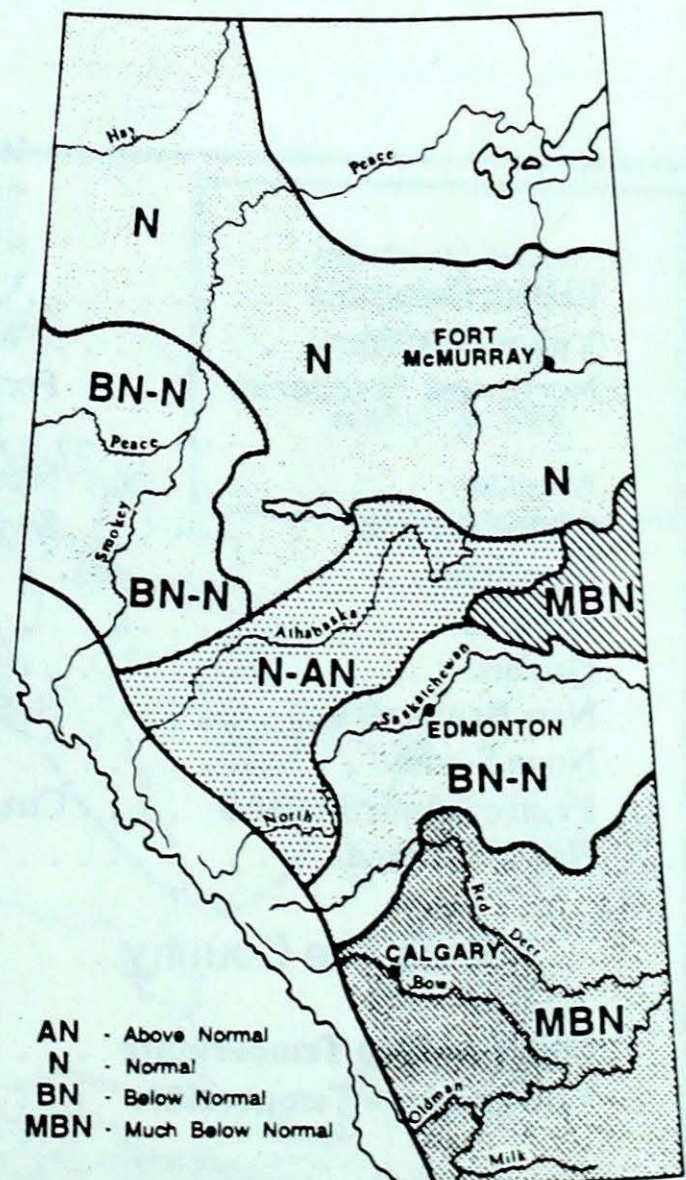
Albeit that the "eye" of the storm over Cape Cod, Mass. only reached the Atlantic shore of Nova Scotia on the 9th, there were massive downpours throughout the Atlantic region the previous day. Hart Island, near Canso, N.S., received 127 mm of rain on the 8th.

The tempest delivered an extensive assortment of precipitation, typical when the temperature dances around the freezing mark, ranging from snow, rain then to freezing rain and ice pellets. This caused some awfully slippery conditions, resulting in 35 car accidents in the Saint John, N.B. area. There were no serious injuries reported, even as driving became a bit treacherous when water, draining from residential yards, flooded local streets in the towns and cities of New Brunswick.

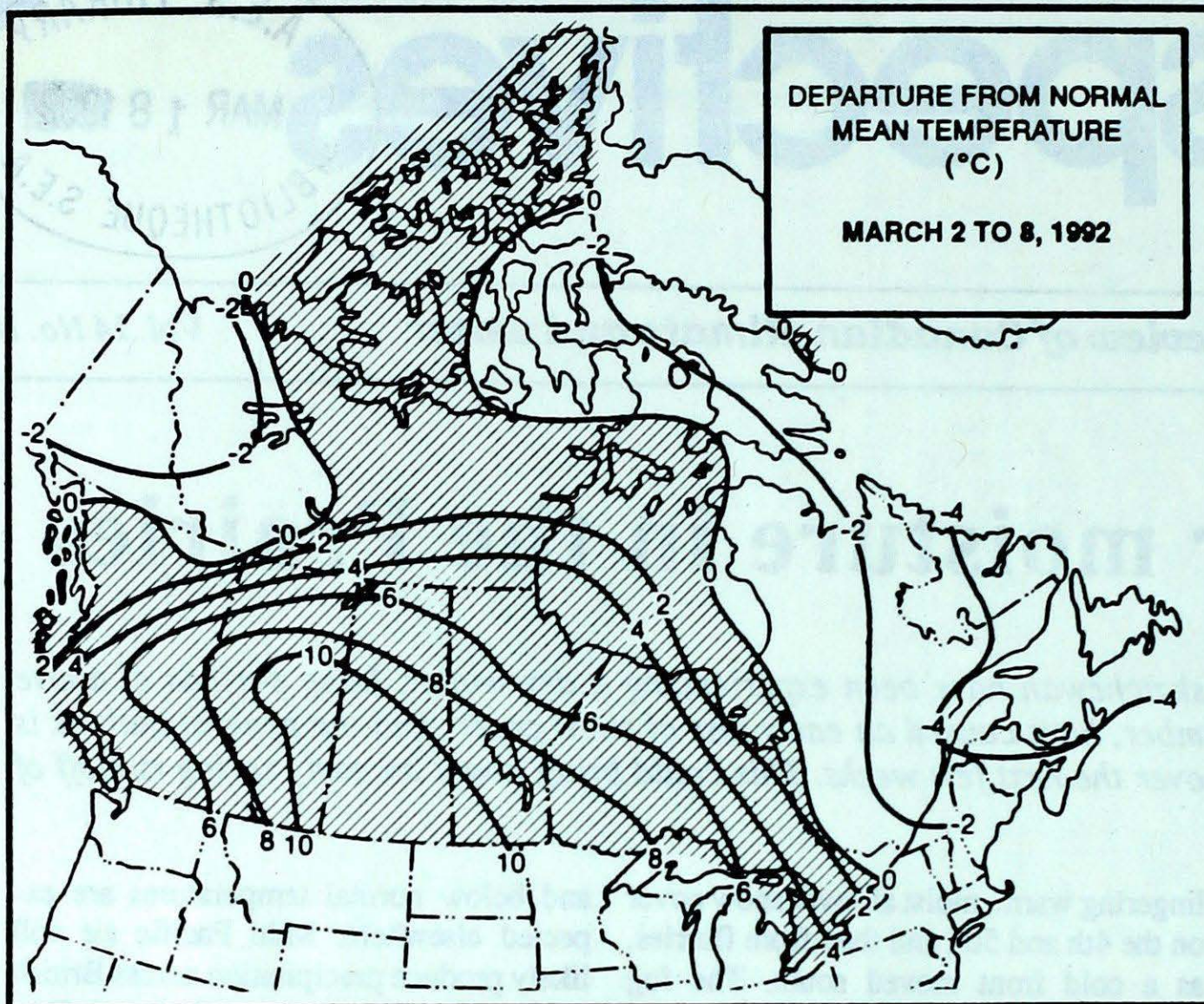
### A look ahead...

For the week of March 16, above normal temperatures are expected west of Ontario

and below normal temperatures are expected elsewhere. Mild Pacific air will likely produce precipitation across British Columbia, the Yukon, the Mackenzie District of the Northwest Territories and Alberta. As well, stormy weather is likely across the Atlantic provinces.



Spring runoff outlook, as of March 1, 1992. Map courtesy of Alberta Environment



**Weekly normal temperatures (°C)**

	max.	min.
Whitehorse A	-5.6	-16.7
Iqaluit A	-19.6	-29.0
Yellowknife A	-16.6	-27.3
Vancouver Int'l A	7.7	0.7
Victoria Int'l A	8.1	0.3
Calgary Int'l A	-1.3	-13.6
Edmonton Int'l A	-3.5	-16.4
Regina A	-6.4	-18.8
Saskatoon A	-7.3	-19.2
Winnipeg Int'l A	-6.8	-18.3
Ottawa Int'l A	-0.7	-9.1
Toronto (Pearson Int'l A)	1.3	-6.4
Montréal Int'l A	-0.4	-8.5
Québec A	-1.9	-10.6
Fredericton A	0.8	-9.0
Saint John A	0.6	-8.3
Halifax (Shearwater)	1.9	-5.5
Charlottetown A	-0.8	-8.0
Goose A	-5.3	-15.6
St John's A	0.3	-6.1

**Weekly temperature and precipitation extremes**

	Maximum temperature (°C)	Minimum temperature (°C)	Heaviest precipitation (mm)
British Columbia	Hope A 16	Fort Nelson A -29	Prince Rupert A 31
Yukon Territory	Whitehorse A -1	Shingle Point A -38	Whitehorse A 1
Northwest Territories	Fort Simpson A 2	Eureka -42	Hay River A 10
	Hay River A 2		
Alberta	Medicine Hat A 17	High Level A -19	Grande Prairie A 12
Saskatchewan	Swift Current A 14	Cree Lake -29	Broadview 16
Manitoba	The Pas A 5	Thompson A -29	Portage La Prairie A 13
Ontario	Windsor A 13	Moosonee -36	Windsor A 31
Quebec	Québec A 7	La Grande Iv A -36	Blanc Sablon A 12
New Brunswick	St Stephen (aut) 8	St-Léonard A -22	Moncton A 45
Nova Scotia	Yarmouth A 8	Sydney A -20	Sydney A 79
Prince Edward Island	Charlottetown A 3	Charlottetown A -21	Charlottetown A 53
Newfoundland	St Lawrence 2	Badger (aut) -30	Burgeo 59

**Across The Country...**

Highest Mean Temperature	Abbotsford A (B.C.) 10
Lowest Mean Temperature	Eureka (N.W.T.) -39

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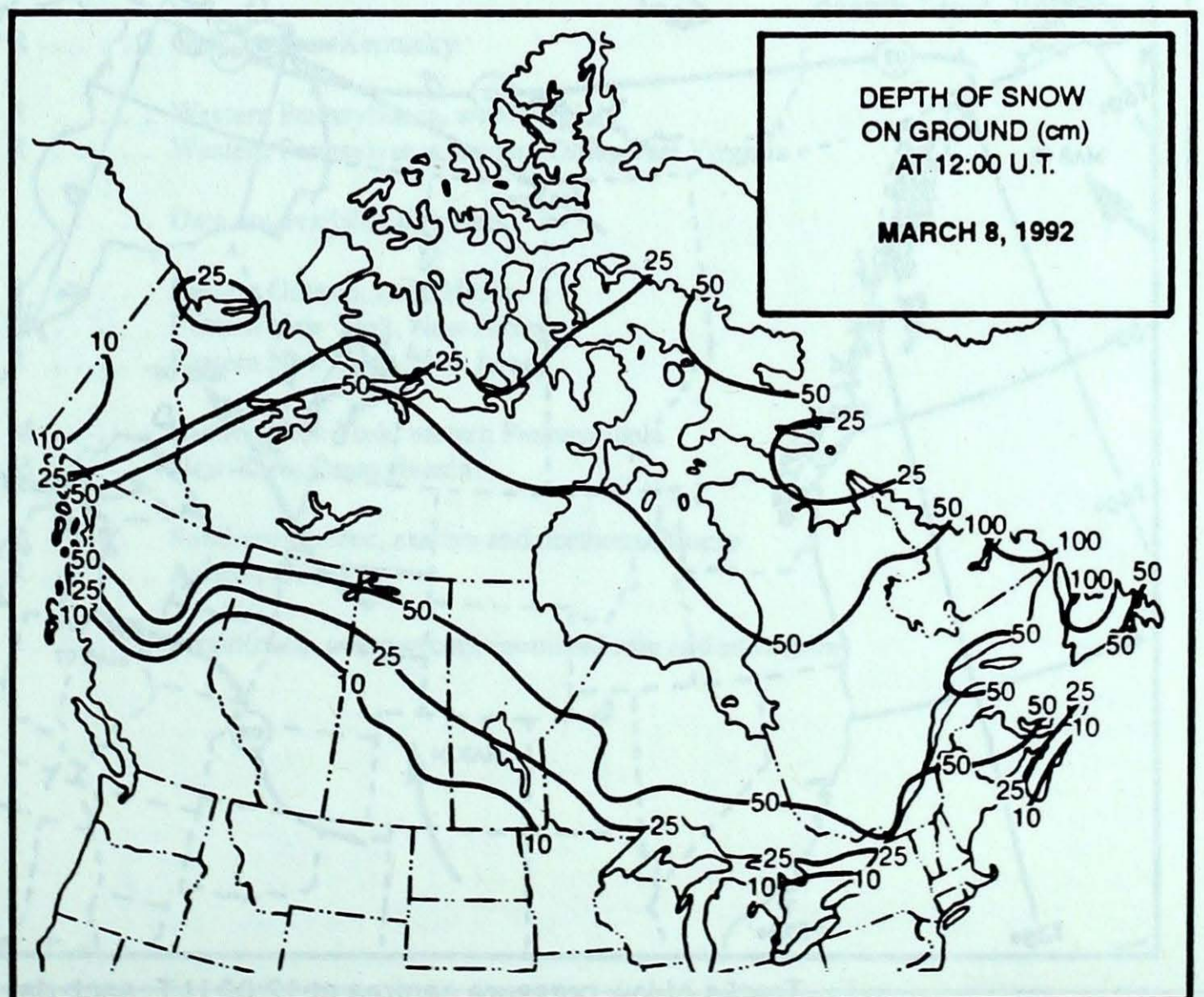
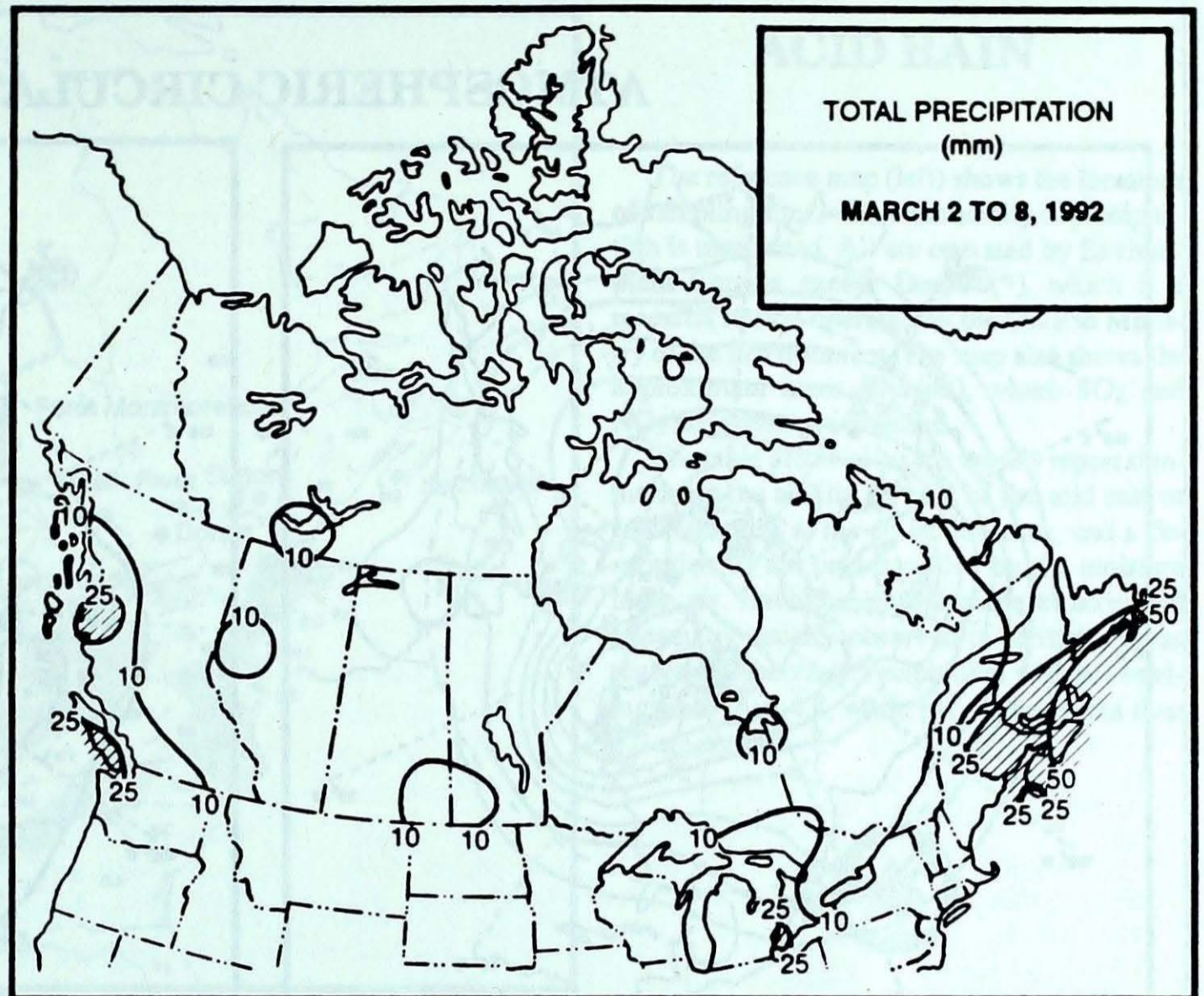
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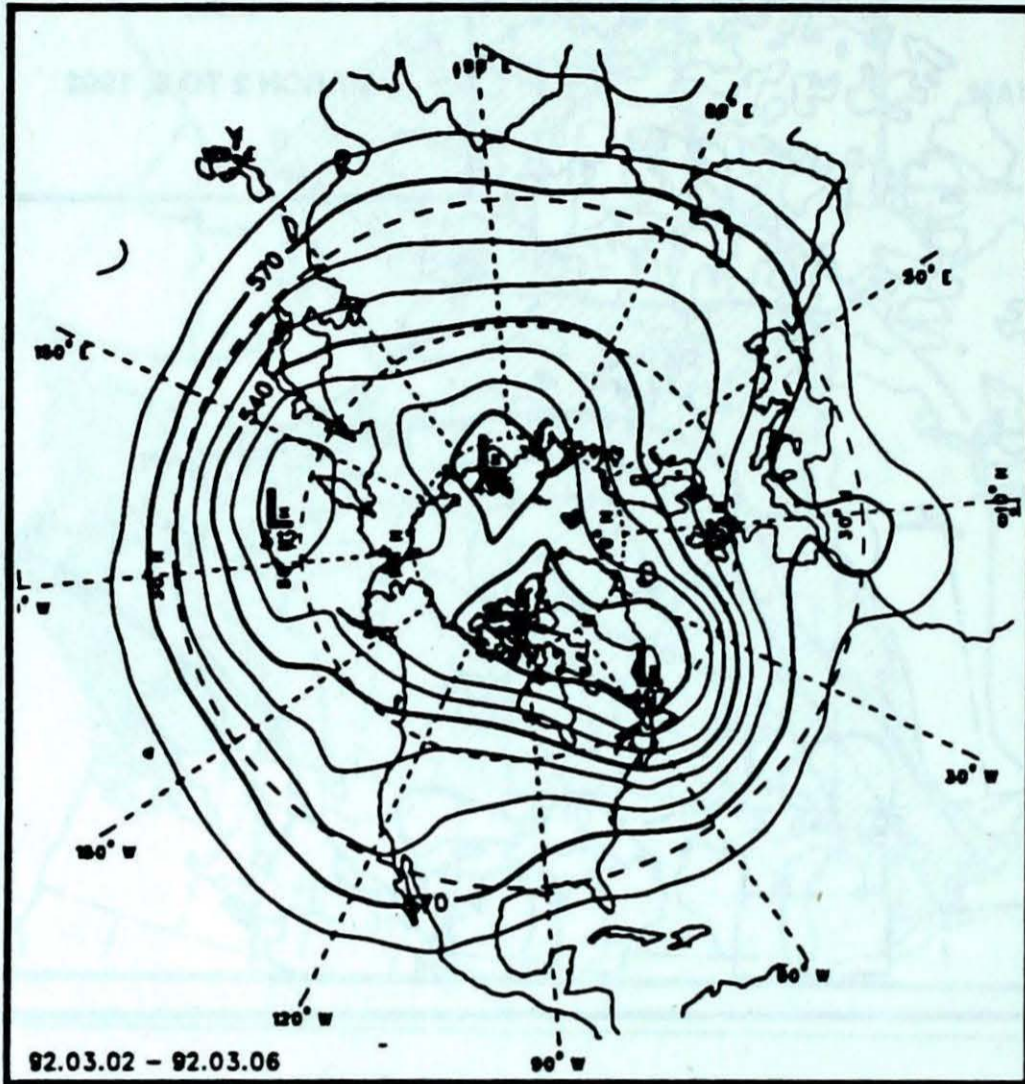
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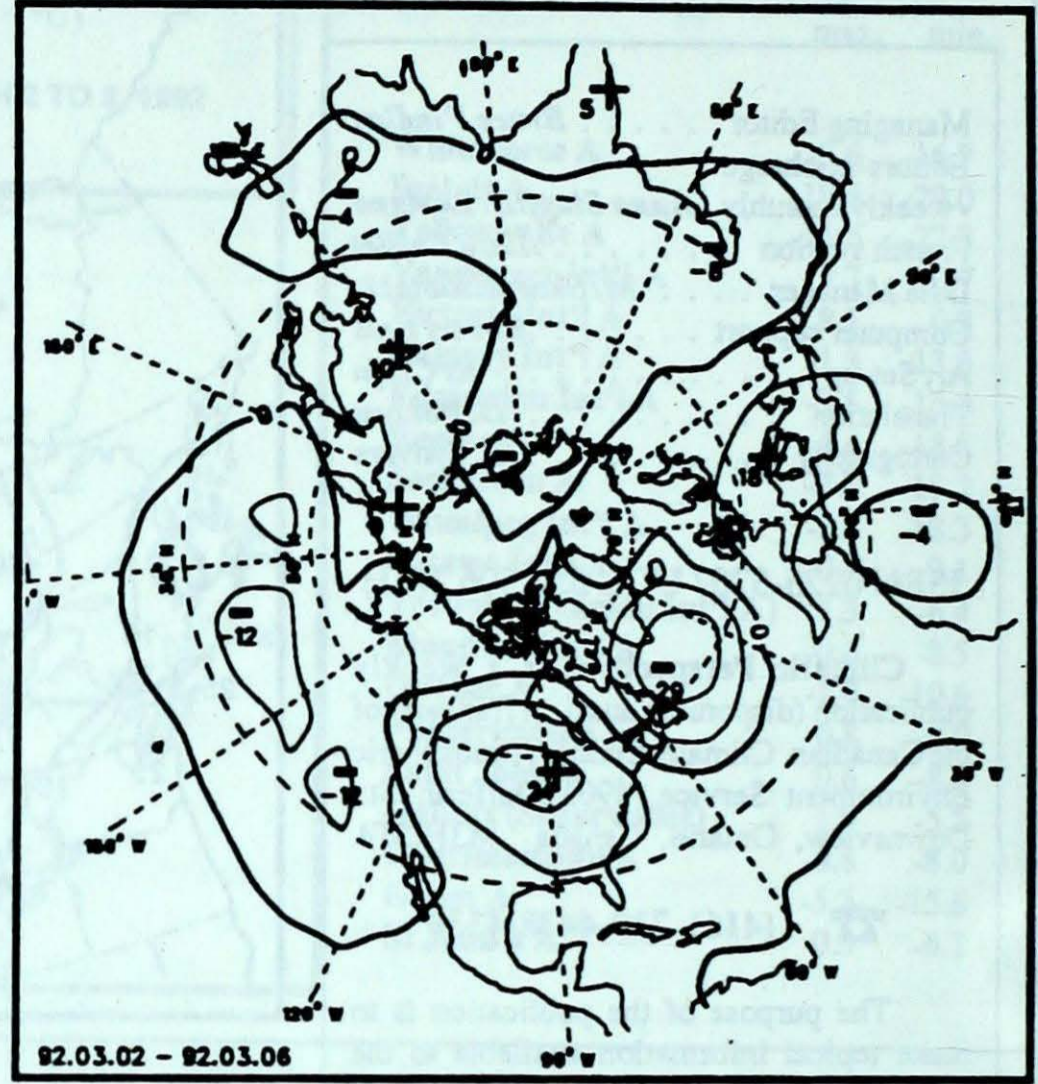
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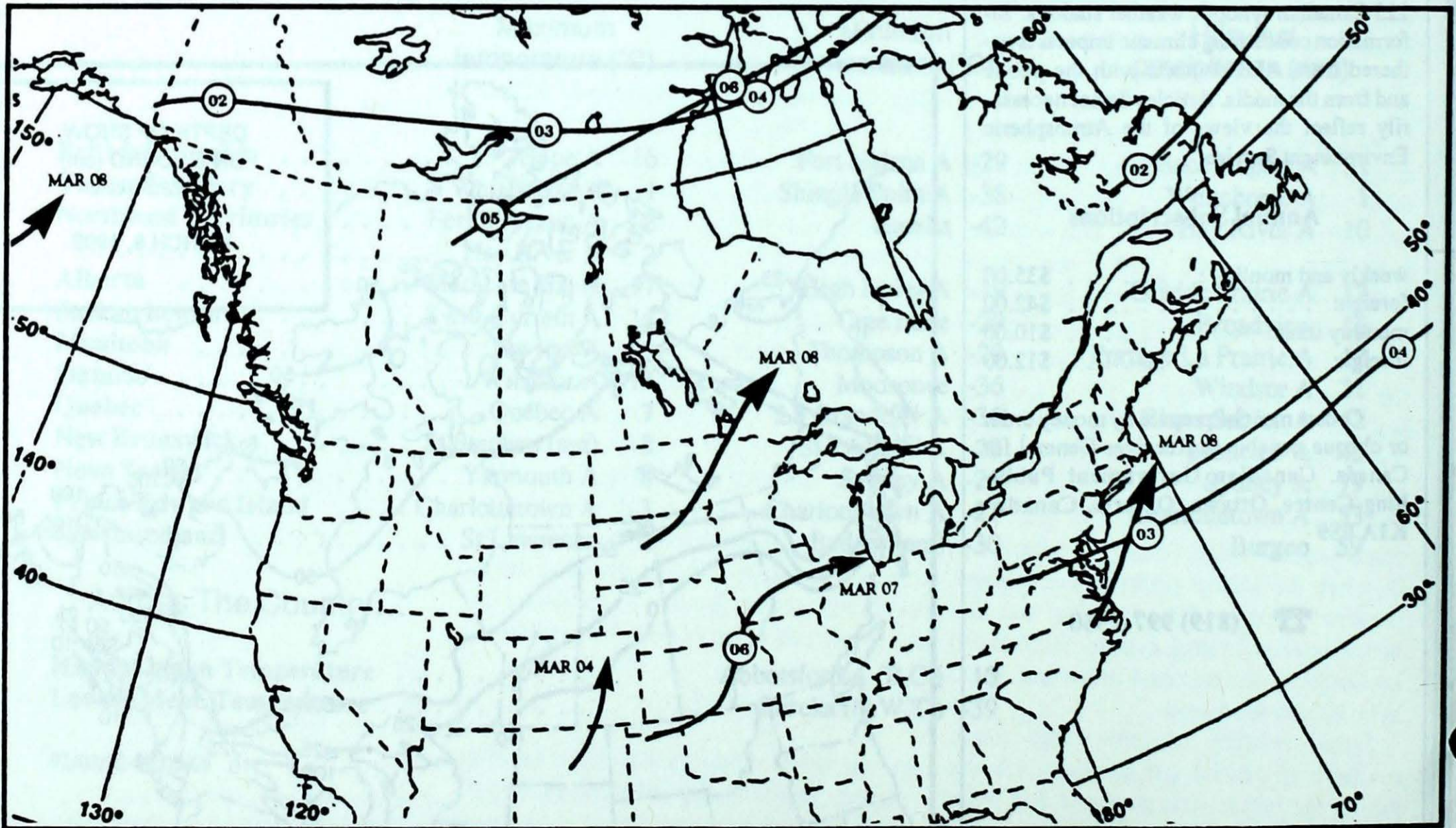
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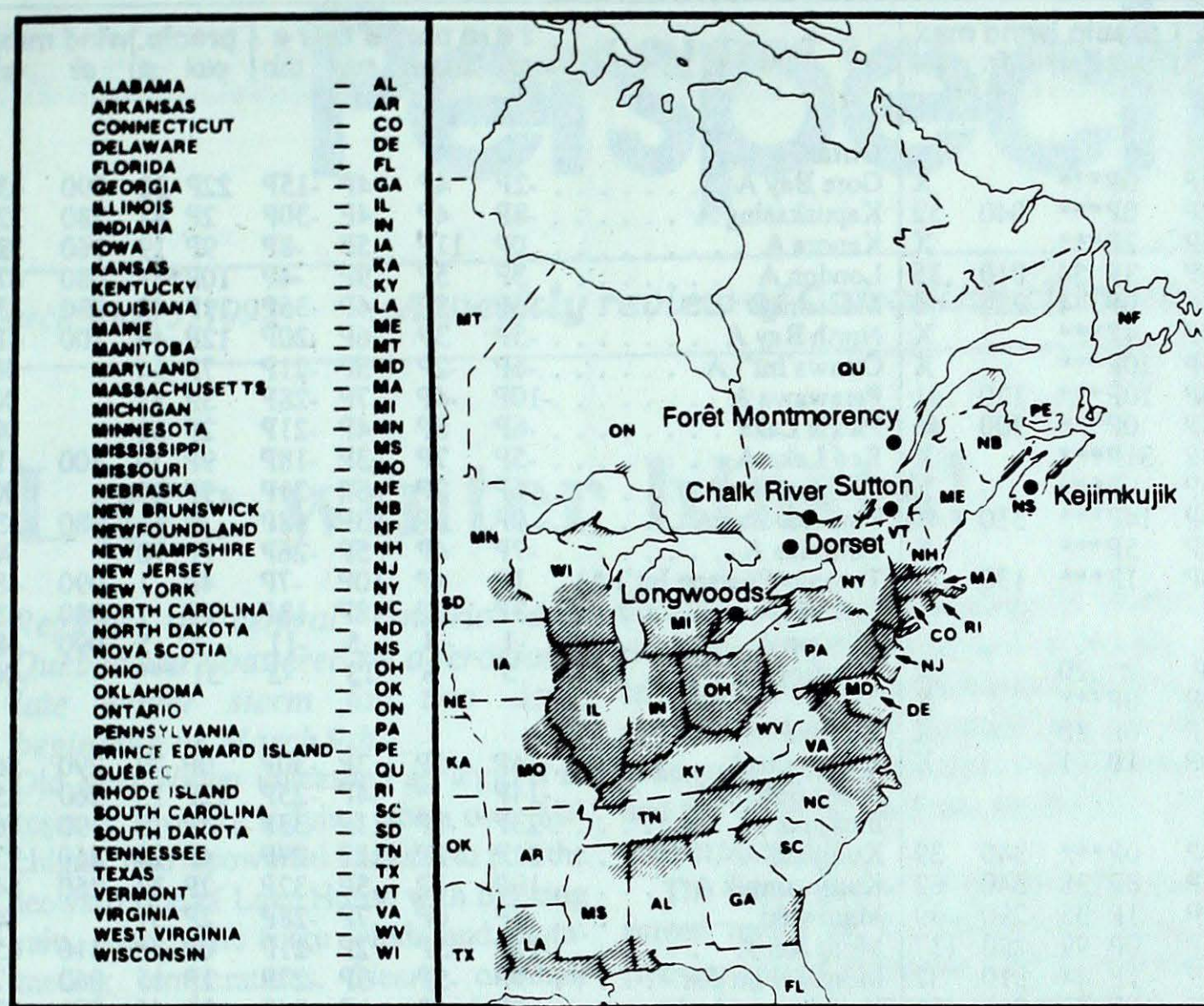
Mean geopotential height  
50-kPa level (10-decametre intervals)



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
March 1 to 7, 1992				
Longwoods	06	3.7	8 R	Ohio, eastern Kentucky
Dorset*	06	3.7	9 R	Western Pennsylvania, west Virginia
	07	3.8	1 R	Western Pennsylvania, eastern Ohio, west Virginia
Chalk River				Data not available this week
Sutton	01	4.2	3 S	Eastern Ontario, Lake Huron
	06	4.0	7 R	Eastern New York, New Jersey
	07	4.2	9 R	Eastern New York, New Jersey
Montmorency	06	4.8	6 M	Eastern New York, eastern Pennsylvania
	07	4.9	8 M	New York, Pennsylvania
Kejimkujik	01	4.3	1 S	Southern Quebec, eastern and northern Ontario
	07	4.7	17 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>								
Blue River A	2P	6P	8P	-3P	0P***			X	Gore Bay A	-2P	4P	4P	-15P	22P 30	090	43	
Cape St James	6P	2P	11P	2P	8P***	040	52		Kapuskasing A	-8P	4P	4P	-30P	2P 81	280	32	
Cranbrook A	***P	***P	13P	***P	2P***			X	Kenora A	0P	11P	5P	-8P	9P 19	160	33	
Fort Nelson A	-14P	-1P	3P	-29P	3P 54	010	35		London A	3P	5P	9P	-4P	10P***	080	67	
Fort St John A	-2P	8P	8P	-15P	0P 4	220	44		Moosonee	-13P	2P	4P	-36P	11P 49	030	33	
Kamloops A	7P	7P	14P	-4P	4P***			X	North Bay A	-5P	3P	6P	-20P	12P 49	100	41	
Penticton A	6P	5P	13P	-1P	10P***			X	Ottawa Int'l A	-6P	-2P	5P	-21P	7P 54		X	
Port Hardy A	8P	5P	11P	3P	10P***	120	41		Petawawa A	-10P	-4P	7P	-28P	3P 35		X	
Prince George A	3P	8P	11P	-4P	0P***	300	46		Pickle Lake	-6P	8P	4P	-21P	2P 56		X	
Prince Rupert A	4P	2P	11P	-3P	31P***			X	Red Lake A	-5P	7P	3P	-18P	9P 39	300	41	
Smithers A	2P	6P	9P	-3P	0P***			X	Sudbury A	-6P	2P	6P	-21P	9P 48		X	
Vancouver Int'l A	10P	5P	14P	6P	14P***	310	44		Thunder Bay A	0P	9P	3P	-8P	7P 16	080	33	
Victoria Int'l A	9P	5P	15P	2P	5P***			X	Timmins A	-7P	4P	5P	-26P	1P 70		X	
Williams Lake A	3P	7P	10P	-6P	1P***	130	37		Toronto(Pearson Int'l A)	1P	4P	10P	-7P	4P 1	090	48	
<b>Yukon Territory</b>									<b>Quebec</b>								
Shingle Point A	-28.5	-3	-23	-38P	*	20		X	Bagotville A	-14P	-5P	3P	-30P	0P 72	290	56	
Teslin (aut)	-14P	*	-2P	-24P	0P***			X	Blanc Sablon A	-14P	*	-4P	-25P	12P 15	260	85	
Watson Lake A	-14P	1P	-2P	-27P	0P 80			X	Inukjuak A	-23P	-1P	-11P	-33P	2P 15	190	76	
Whitehorse A	-14P	-3P	-1P	-26P	1P 1			X	Kuujuuaq A	-21P	-2P	-11P	-29P	4P 24	260	93	
<b>Northwest Territories</b>									<b>New Brunswick</b>								
Alert	-30P	4P	-20P	-38P	0P***	340	39		Fredericton A	-7P	-3P	8P	-20P	37P 28	030	63	
Baker Lake A	-28P	2P	-20P	-35P	8P 38	340	82		Miscou Island (aut)	-9P	-3P	3P	-21P	****			
Cambridge Bay A	-31P	2P	-25P	-36P	1P 35	290	39		Moncton A	-9P	-4P	5P	-21P	45P 94	280	59	
Cape Dyer A	-21P	4P	-13P	-30P	0P 99	290	137		Saint John A	-7P	-3P	6P	-19P	45P 32	310	59	
Clyde A	-32P	-4P	-26P	-38P	1P 44	310	32		<b>Nova Scotia</b>								
Coppermine A	-28P	1P	-18P	-37P	5P 66	260	52		Greenwood A	-5P	-2P	7P	-16P	27P 10	280	70	
Coral Harbour A	-26P	1P	-17P	-33P	7P 38	350	63		Shearwater A	-5P	-3P	6P	-16P	52P 7	310	63	
Eureka	-39P	1P	-33P	-42P	1P 18			X	Sydney A	-7P	-4P	5P	-20P	79P 24	270	76	
Fort Smith A	-13P	5P	1P	-26P	2P 60	300	52		Yarmouth A	-3P	-3P	8P	-11P	30P 1	310	46	
Hall Beach A	-33P	-2P	-26P	-39P	1P 34	310	46		<b>Prince Edward Island</b>								
Inuvik A	-29P	-3P	-23P	-39P	0P 48			X	Charlottetown A	-9P	-5P	3P	-21P	53 50	280	83	
Iqaluit A	-29P	-5P	-17P	-34P	2P 18	320	80		East Point (auto)	-12P	*	2P	-21P	****			
Mould Bay A	-32	3	-22	-39	3 17			X	<b>Newfoundland</b>								
Norman Wells A	-27P	-4P	-13P	-40P	1P 16	120	74		Cartwright	-15P	-5P	-1P	-24P	15P 203	300	102	
Resolute A	-33P	0P	-29P	-38P	1P 11	340	85		Churchill Falls A	-19P	-3P	-5P	-27P	2P 87	290	85	
Yellowknife A	-23	-1	-6	-34	6 66	320	59		Gander Int'l A	-11P	-7P	-1P	-22P	1 38	260	93	
<b>Alberta</b>									<b>92/03/02-92/03/08</b>								
Calgary Int'l A	3P	11P	15P	-6P	0P 1	280	54		Goose A	-15P	-4P	0P	-24P	14P 56	280	69	
Cold Lake A	2P	13P	9P	-5P	0P 1			X	St John's A	-8	-5	0	-17	22 39	290	106	
Edmonton Namao A	-2P	8P	7P	-11P	0P 7	350	33		St Lawrence	-7P	-4P	2P	-16P	54P 43		X	
Fort McMurray A	-4P	9P	10P	-16P	5P 12	360	35		Wabush Lake A	-18P	-2P	-5P	-28P	1P 60	330	59	
High Level A	-10P	7P	4P	-19P	9P 25	340	39										
Jasper	4P	10P	11P	-3P	1P***			X									
Lethbridge A	3P	9P	15P	-9P	0P 1	240	56										
Medicine Hat A	4P	12P	17P	-6P	0P***	200	37										
Peace River A	-3P	9P	5P	-12P	4P 3	010	43										
<b>Saskatchewan</b>																	
Cree Lake	-12P	6P	3P	-29P	1P 45	200	43										
Estevan A	2P	12P	12P	-4P	14P 1	120	48										
La Ronge A	-4P	10P	8P	-19P	2P 38	310	41										
Regina A	1P	13P	7P	-3P	6P 1	120	41										
Saskatoon A	-1P	12P	4P	-8P	2P 3	310	43										
Swift Current A	3P	13P	14P	-5P	0P***	160	35										
Yorkton A	-2P	12P	4P	-9P	1P 16			X									
<b>Manitoba</b>																	
Brandon A	-5P	8P	1P	-16P	2P 5	340	33										
Churchill A	-17P	6P	-2P	-27P	3P 48	310	69										
Lynn Lake A	-11	7	3	-27	4 46	160	48										
The Pas A	-4P	11P	5P	-18P	1P 26	310	50										
Thompson A	-12	5	2	-29	4 57	360	33										
Winnipeg Int'l A	-2P	11P	4P	-12P	6P 2	180	44										

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.