

# Climatic Perspectives

April 3 to 9, 1989

A weekly review of Canadian climate

Vol. 11 No. 15

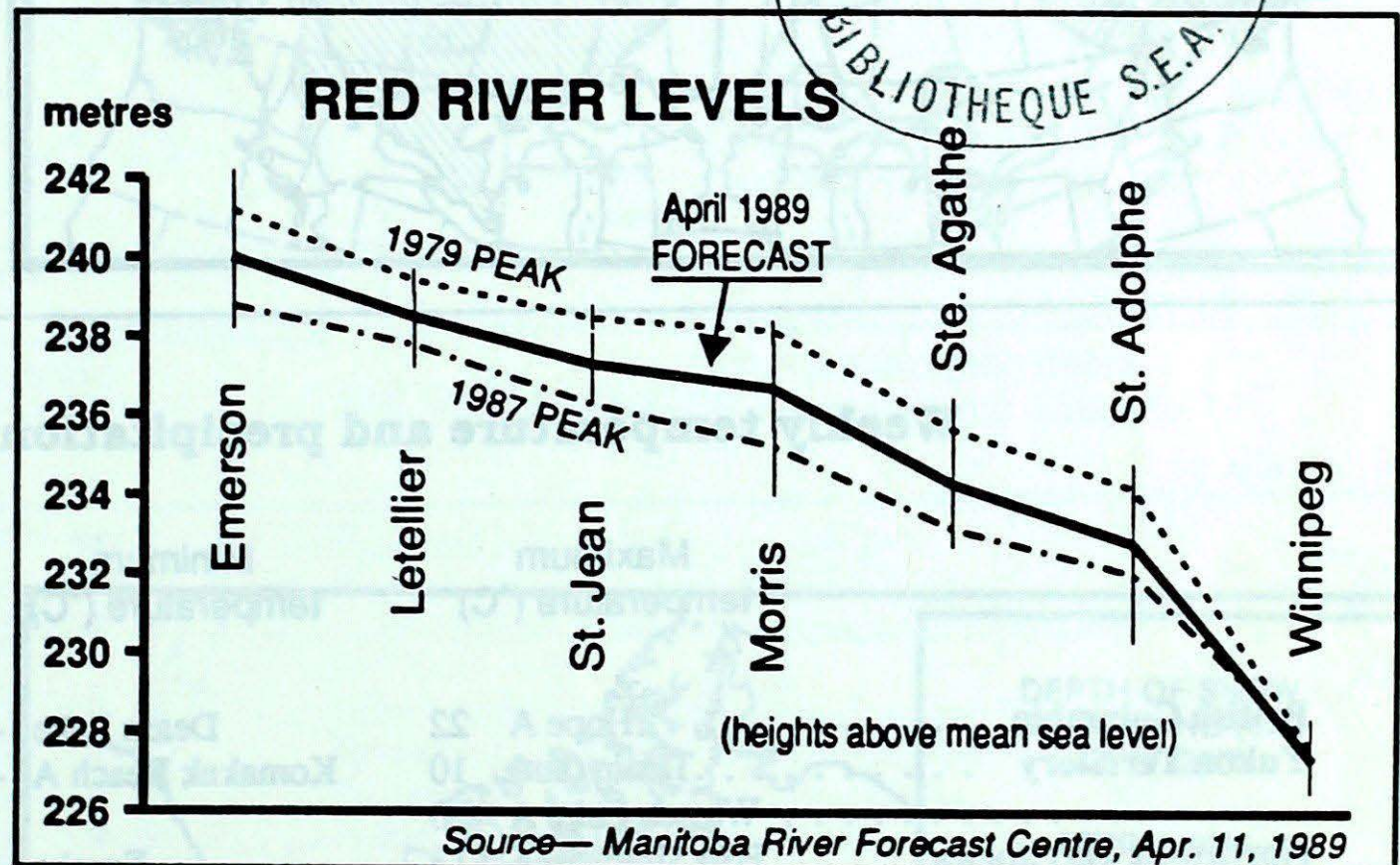
## Worst flooding in 10 years expected in Red River Valley

It appears that farmers along the Red River Valley should be prepared for possibly the worst flooding since 1979. The swollen crest of the Red River is moving northwards, and has already caused millions of dollars damage in Wahpeton and Breckenridge, Minnesota.

The River Forecast Centre of the Manitoba Department of Natural Resources has predicted that peak stages along the Red River from Emerson to Winnipeg are now likely to be about a metre higher than previously predicted, but at least a metre below 1979. In 1979 there was widespread flooding in rural areas, similar to that of 1950. Flooding will be most notable in areas where tributaries enter the Red River.

Communities along the Red River will not be threatened by the flood, since they are protected by ring dykes which have been enlarged or built since the disastrous 1979 flood. Major flood control works will be operated to reduce river levels in the city of Winnipeg.

Weather conditions during the next few weeks will play a very significant role in determining peak river stages. If a rapid melt develops and there is significant rainfall, peak stages would be even higher than predicted. Flooding is not anticipated on the Assiniboine River this spring.



### Winter persists in Ontario

Following Ontario's spring-like winter, the winter-like spring continues to provide very cold temperatures as well as snow to many parts of Ontario. Heaviest snowfalls occurred in the Geraldton area. On April 8-9, 14 to 18 cm fell. London received 8 cm of snow on the 9th. Snowfall may be unpopular in Ontario in April but it is not uncommon. London receives an average of 9.1 cm for the month with the record belonging to April 1975 when 32.3 cm fell.

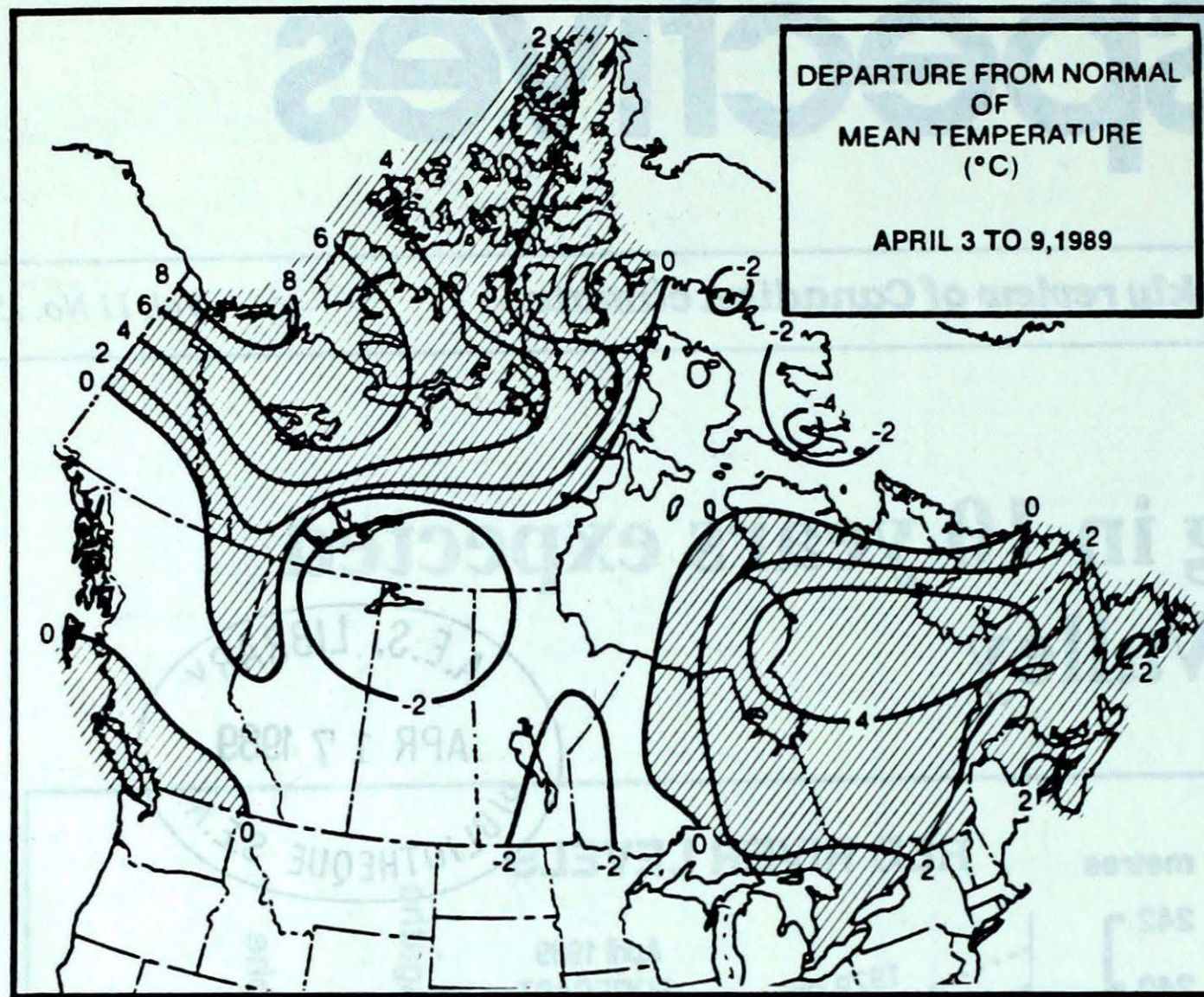
Brian Smith, Ontario Weather Centre

### Unspring-like temperatures to continue...

A stagnant dome of cold Arctic air over Hudson Bay will continue to bring below normal temperatures from northern Saskatchewan to the East Coast during the week of April 16. Milder than normal temperatures are expected over southern Alberta, British Columbia and the Yukon as a flow of air from the southwest becomes established over the West Coast.

A. Shabbar, Canadian Climate Centre





### Variety of Weather in Atlantic Provinces

The Maritimes experienced several disturbances during the week. One storm dropped 22.8 cm of snow at Fredericton, N.B. on Saturday causing very bad road conditions. Another on Friday caused strong winds with gusts reaching 117 km/h at Amherst, N.S. In some areas, trees were toppled on power lines, signs were knocked over and shingles ripped from rooftops.

The storm even played havoc with thousands of seabirds, who were either blown off course or moved inland to ride out the storm. Wetlands around Moncton, N.B. were dotted with the birds.

On Sunday, a deep low moving into the Labrador Sea brought cooler air and storm-force winds. La Scie, Nfld. reported gusts to 117 km/h.

Frank Amirault, Atlantic Weather Centre

### Weekly temperature and precipitation extremes

	Maximum temperature (°C)	Minimum temperature (°C)	Heaviest precipitation (mm)
British Columbia	Hope A 22	Dease Lake -16	Estevan Point (aut) 97
Yukon Territory	Teslin (aut) 10	Komakuk Beach A -30	Whitehorse A 1
	Watson Lake A 10		
Northwest Territories	Fort Simpson A 13	Eureka -41	Robertson Lake (aut) 15
Alberta	Lethbridge A 14	High Level A -17	Whitecourt A 16
Saskatchewan	Moose Jaw A 11	Cree Lake -27	Swift Current A 25
	Saskatoon A 11		
Manitoba	Dauphin A 11	Gillam A -24	Gimli 8
Ontario	Windsor A 17	Big Trout Lake -21	Gore Bay A 30
Québec	Montréal Int'l A 16	Kuujuuaq A -28	Roberval A 39
New Brunswick	Moncton A 18	Charlo A -9	Fredericton A 77
Nova Scotia	Greenwood A 21	Sydney A -5	Shearwater A 36
Prince Edward Island	Charlottetown A 15	Summerside A -4	Charlottetown A 30
Newfoundland	St John's A 18	Wabush Lake A -19	Nain A 83

#### Across The Country...

Warmest Mean Temperature	Victoria (BC) 10
Coollest Mean Temperature	Eureka (NWT) -31



CLIMATIC PERSPECTIVES  
VOLUME 11

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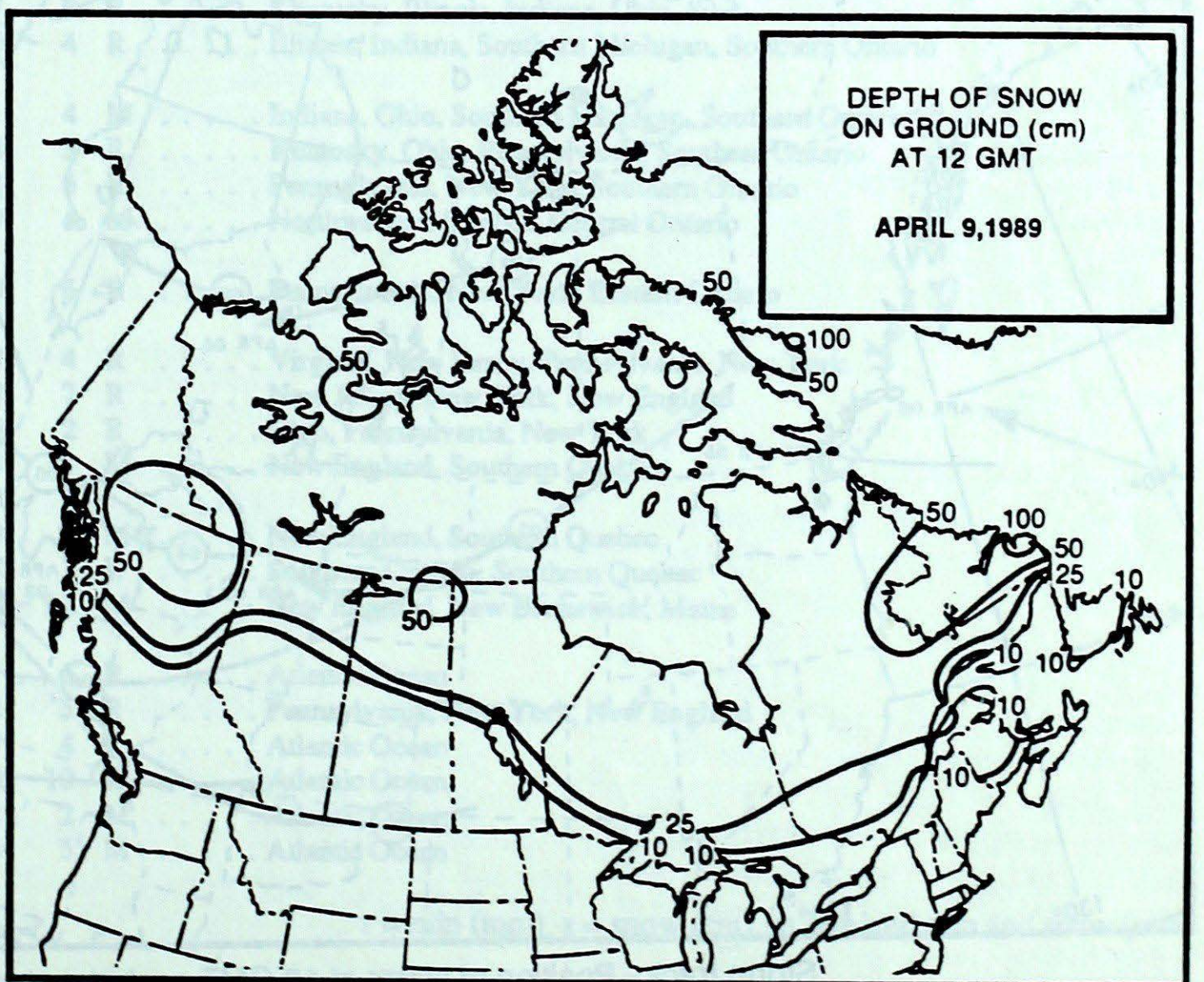
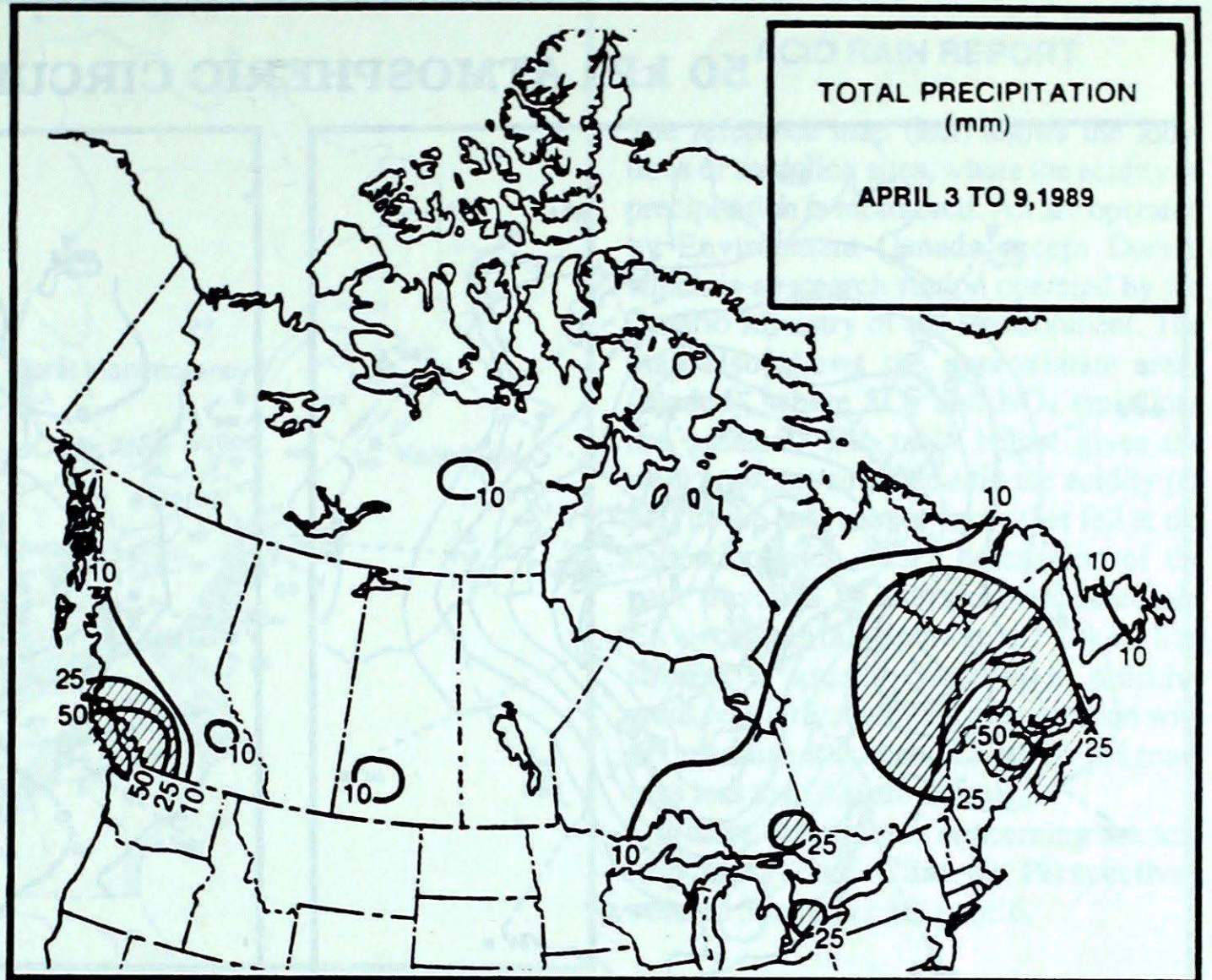
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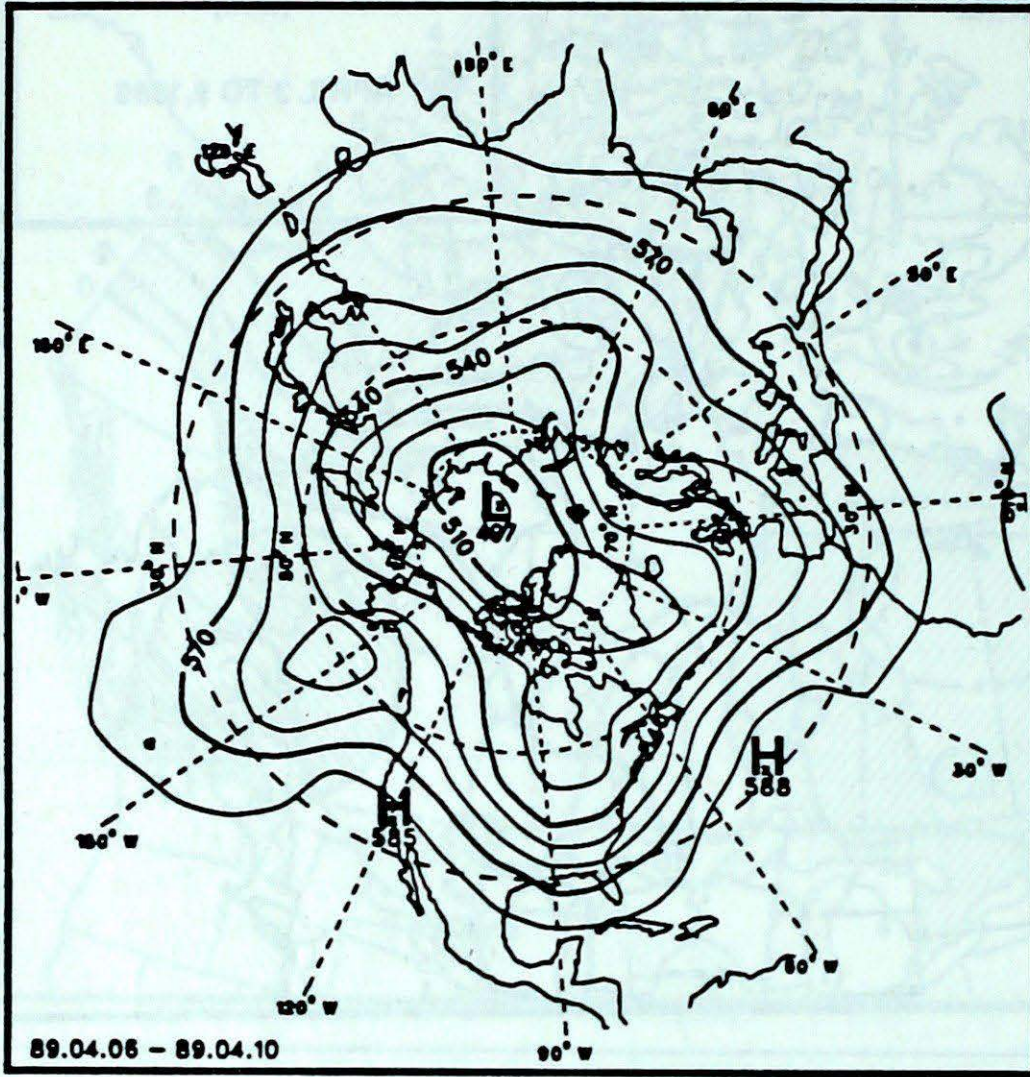
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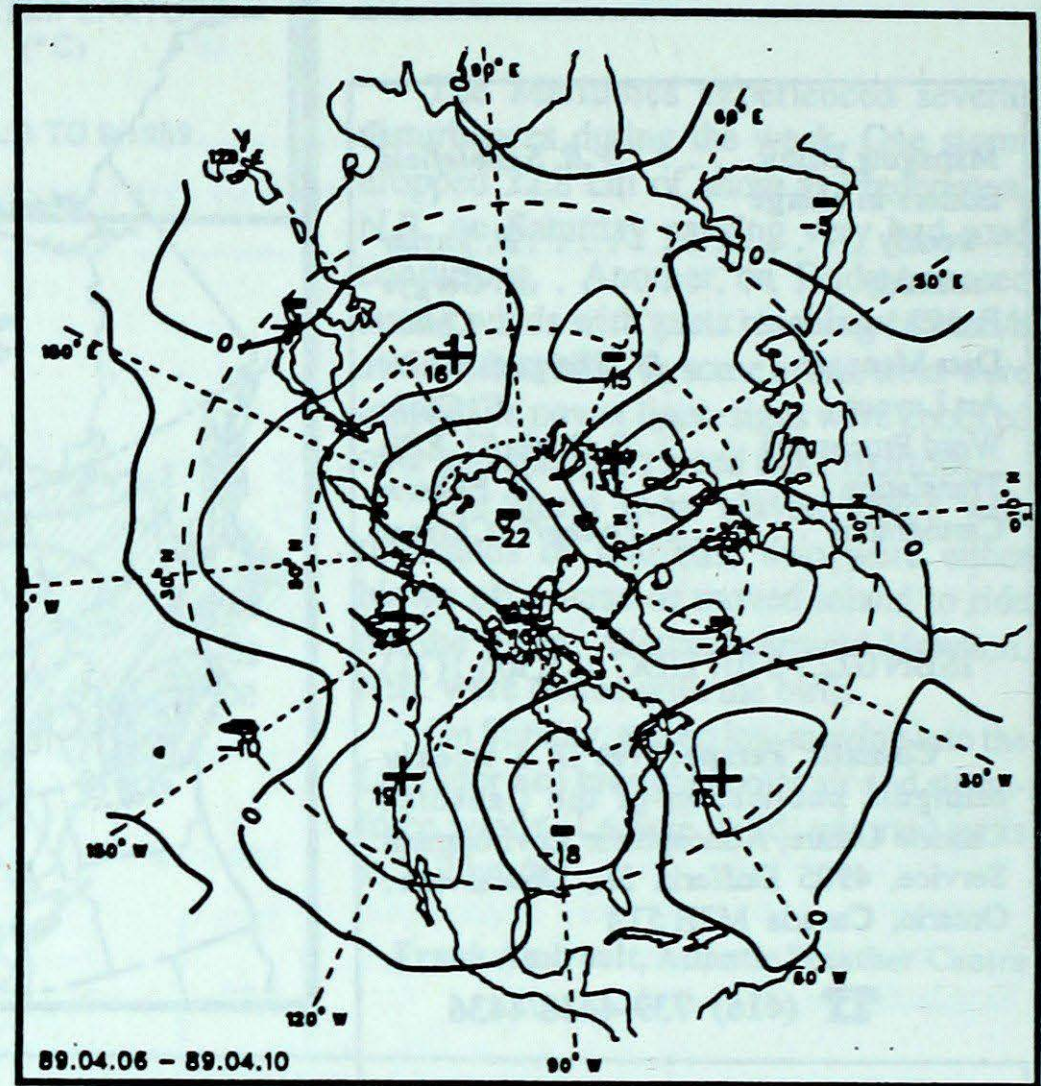




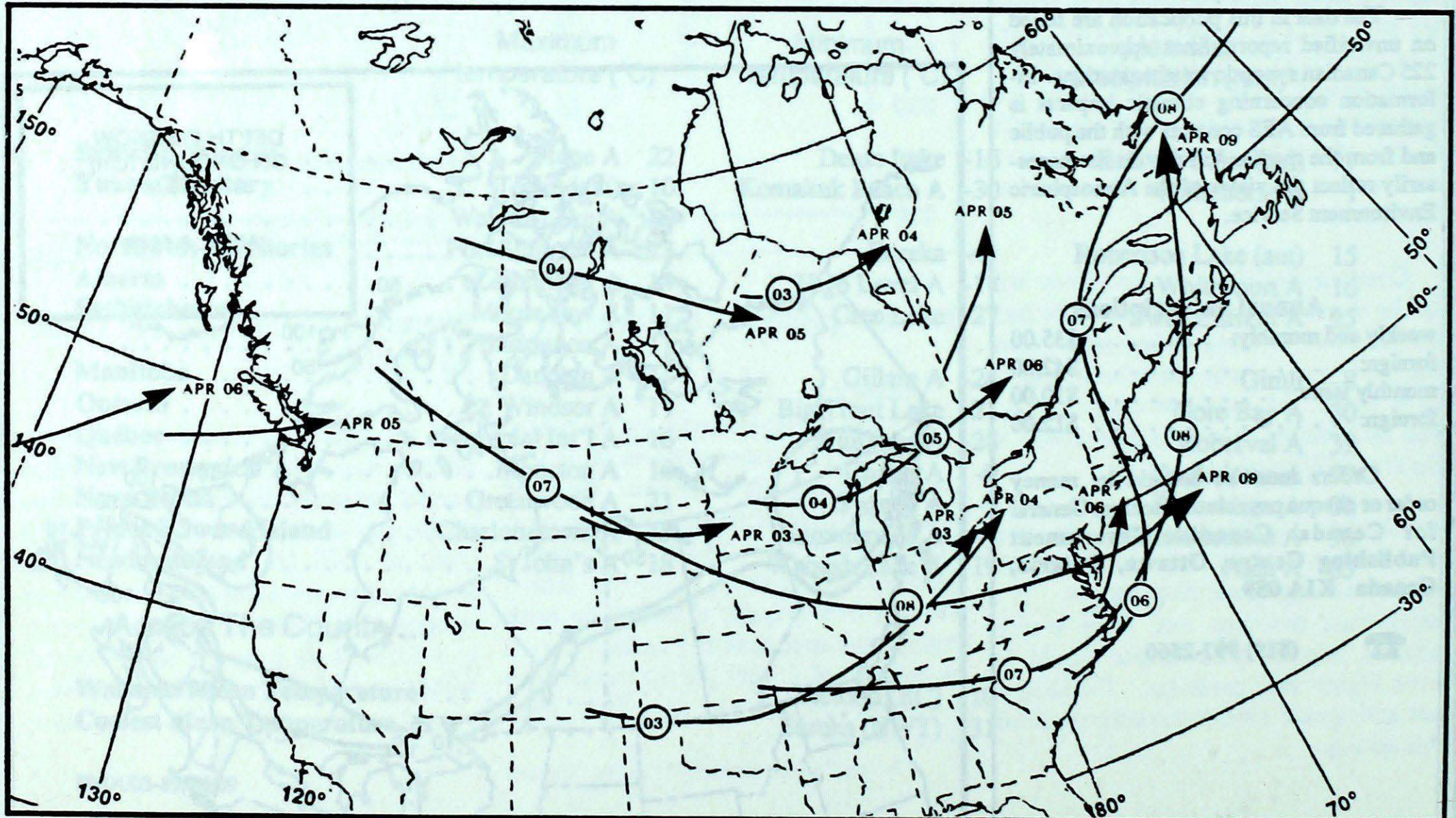
### 50 kPa ATMOSPHERIC CIRCULATION



Mean geopotential height  
50 kPa level (10 decameter intervals)

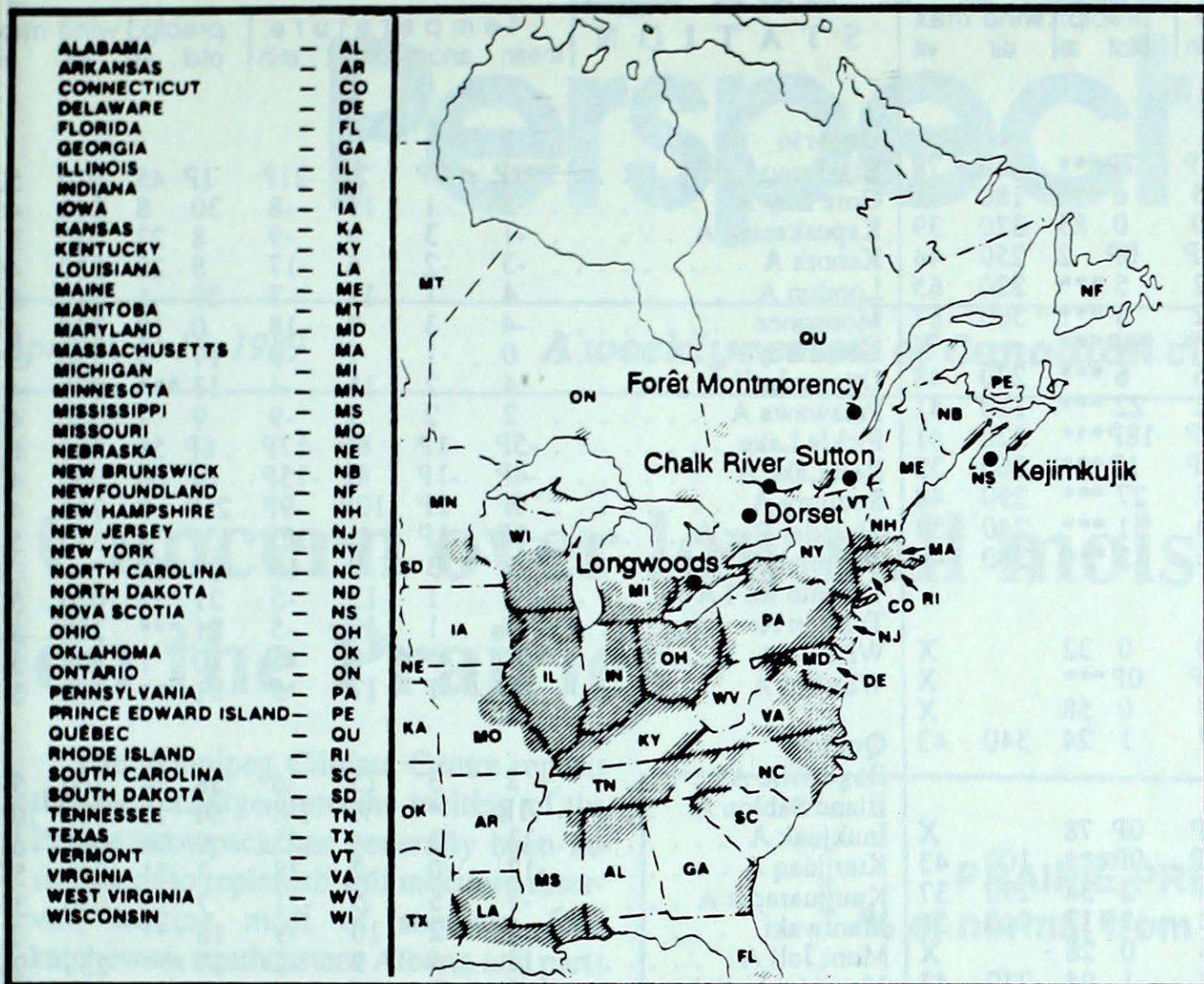


Mean geopotential height anomaly  
50 kPa level (10 decameter intervals)



Storm track - Position of storm at 12 GMT each day during the period.





**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 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. For more information concerning the acid rain report, see *Climatic Perspectives*, volume 5, number 50, page 6.

SITE	day	pH	amount	AIR PATH TO SITE
				April 2 to 8, 1989
Longwoods	2	3.7	14 R	Kentucky, Indiana, Ohio
	3	3.7	9 R	Kentucky, Illinois, Indiana, Ohio
	5	4.0	4 R	Illinois, Indiana, Southern Michigan, Southern Ontario
Dorset *	2	4.1	4 M	Indiana, Ohio, Southern Michigan, Southern Ontario
	3	4.4	3 R	Kentucky, Ohio, Pennsylvania, Southern Ontario
	4	4.3	6 R	Pennsylvania, New York, Southern Ontario
	6	3.9	4 M	Northwestern Quebec, Central Ontario
Chalk River	4	4.0	6 R	Pennsylvania, New York, Eastern Ontario
Sutton	3	3.8	4 R	Virginia, New Jersey, Pennsylvania, New York
	4	3.8	7 R	New Jersey, New York, New England
	5	4.0	2 R	Ohio, Pennsylvania, New York
	6	4.3	34 M	New England, Southern Quebec
Montmorency	4	4.0	4 M	New England, Southern Quebec
	5	3.8	1 R	Southern Ontario, Southern Quebec
	6	3.5	24 M	New England, New Brunswick, Maine
Kejimikujik	3	4.7	6 R	Atlantic Ocean
	4	4.2	5 R	Pennsylvania, New York, New England
	5	4.7	4 R	Atlantic Ocean
	6	5.0	10 R	Atlantic Ocean
	7	4.2	2 M	Atlantic Ocean
	8	4.4	5 M	Atlantic Ocean

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



STATION	temperature				precip. plot st	wind max		STATION	temperature				precip. plot st	wind max									
	mean	anom	max	min		dir	vit		mean	anom	max	min		dir	vit								
<b>British Columbia</b>								<b>Ontario</b>															
Cape St James	6P	0P	11P	3P	7P***	030	78	Big Trout Lake	-9P	0P	2P	-21P	1P	45	010	50							
Cranbrook A	4	-1	13	-5	6 ***	180	41	Gore Bay A	2	1	11	-8	30	8	310	46							
Fort Nelson A	1	2	13	-10	0 85	320	39	Kapusking A	-1	3	9	-9	8	27	030	37							
Fort St John A	3P	1P	10P	-5P	0P 2	250	44	Kenora A	-3	-2	6	-17	8	20	330	46							
Kamloops A	8	-1	19	-2	5 ***	220	65	London A	4	1	12	-7	29	1	270	52							
Penticton A	9	1	20	-2	3 ***	300	67	Moosonee	-4	3	9	-18	0	12	350	41							
Port Hardy A	7P	0P	14P	0P	28P***		X	North Bay A	0	1	7	-9	17	3	230	37							
Prince George A	2	-1	12	-6	6 ***	270	48	Ottawa Int'l A	4	2	15	-4	13 ***		270	46							
Prince Rupert A	5	0	13	-2	22 ***	160	41	Petawawa A	2	2	9	-9	9	1	340	43							
Revelstoke A	5P	0P	15P	-3P	18P***	320	41	Pickle Lake	-5P	-1P	8P	-17P	6P	58	030	61							
Smithers A	2P	-1P	12P	-6P	1P***	160	32	Red Lake A	-4P	-1P	8P	-15P	0P	60	350	46							
Vancouver Int'l A	8	0	15	2	27 ***	290	48	Sudbury A	0P	2P	10P	-9P	25P	2	360	41							
Victoria Int'l A	10	2	19	3	31 ***	240	54	Thunder Bay A	-2P	-1P	9P	-17P	13P	4	310	52							
Williams Lake A	3	-1	13	-5	15 ***	300	44	Timmins A	-1	3	9	-10	24	10		X							
<b>Yukon Territory</b>								Toronto Int'l A								4	1	13	-5	21 ***	070	54	
Komakuk Beach A	-12	10	5	-30	0 32		X	Trenton A	4	1	12	-5	21 ***		260	50							
Teslin (aut)	-3P	*	10P	-15P	0P***		X	Warton A	2	1	8	-5	10	1	290	52							
Watson Lake A	-4	-1	10	-18	0 58		X	Windsor A	6	1	17	-5	21 ***		270	54							
Whitehorse A	-2	-1	8	-17	1 24	340	43	<b>Québec</b>															
<b>Northwest Territories</b>								Bagotville A								2	3	15	-6	38	24	260	59
Alert	-30P	-1P	-18P	-38P	0P 78		X	Blanc Sablon A	-1P	*	7P	-14P	9P	10	070	102							
Baker Lake A	-20P	2P	-12P	-25P	0P***	100	43	Inukjuak A	-13	3	-4	-25	0	34	080	63							
Cambridge Bay A	-23	4	-11	-32	2 34	290	37	Kuujuuaq A	-12	0	-2	-28	3	31	030	54							
Cape Dyer A	-21	-4	-12	-32	1 117	010	56	Kuujuarapik A	-7	5	5	-21	7	23	030	35							
Clyde A	-24	-3	-13	-36	0 28		X	Maniwaki	1	2	10	-9	16 ***			X							
Coppermine A	-16	9	-3	-32	1 94	230	43	Mont Joli A	3	4	9	-2	27 ***		230	95							
Coral Harbour A	-20	0	-10	-32	0 26	330	37	Montréal Int'l A	5	3	16	-4	26 ***		250	56							
Eureka	-31	2	-20	-41	0 19	170	87	Natashquan A	-1	2	4	-14	32	27	160	69							
Fort Smith A	-8	-1	6	-23	0 23		X	Québec A	3	3	13	-5	39	8	250	72							
Hall Beach A	-25	-1	-14	-36	0 35	320	43	Schefferville A	-6	4	4	-19	37	84	070	70							
Inuvik A	-11	8	9	-30	1 28		X	Sept-Iles A	0	2	5	-10	37	6	180	72							
Iqaluit A	-22	-6	-12	-30	0 18	340	48	Sherbrooke A	4	4	15	-7	28	2	250	48							
Mould Bay A	-25	4	-11	-34	2 18	240	74	Val D'or A	-2	2	8	-14	12	22	340	46							
Norman Wells A	-7	5	10	-21	1 11	280	48	<b>New Brunswick</b>															
Resolute A	-26P	1P	-16P	-33P	2P 26	210	56	Charlo A	1	3	9	-9	37	14	220	80							
Yellowknife A	-11	0	5	-28	0 29		X	Chatham A	3	2	12	-6	47	10	250	98							
<b>Alberta</b>								Fredericton A								4	2	13	-5	77	20	240	95
Calgary Int'l A	1	-1	10	-6	3 1	360	50	Moncton A	4	3	18	-5	31	5	200	104							
Cold Lake A	1P	0P	9P	-10P	1P 1	350	33	Saint John A	3	2	13	-6	49	8	190	82							
Edmonton Namao A	2	0	9	-7	1 ***	280	35	<b>Nova Scotia</b>															
Fort McMurray A	-2P	-2P	8P	-11P	1P 18		X	Greenwood A	7	4	21	-5	29	1	200	130							
High Level A	-5P	-2P	10P	-17P	6P 44		X	Shearwater A	5	3	10	-2	36 ***		300	74							
Jasper	1P	-1P	10P	-11P	0P 1		X	Sydney A	4P	3P	12P	-5P	13P	1	260	72							
Lethbridge A	4	-1	14	-6	7 ***	270	89	Yarmouth A	6P	3P	12P	1P	36P***		300	78							
Medicine Hat A	3	-2	12	-6	8 1	220	43	<b>Prince Edward Island</b>															
Peace River A	0	0	7	-8	0 4	350	37	Charlottetown A	4	4	15	-4	30	1	210	70							
<b>Saskatchewan</b>								Summerside A								4	3	14	-4	18	1	210	106
Cree Lake	-11P	-5P	2P	-27P	1P 48	340	35	<b>Newfoundland</b>															
Estevan A	2	0	11	-8	4 2	300	50	Cartwright	-3P	1P	4P	-17P	15P	143	330	69							
La Ronge A	-4	-1	5	-16	2 25		X	Churchill Falls A	-3	6	6	-18	31	96	090	69							
Regina A	1	0	10	-8	8 ***	300	50	Gander Int'l A	4	4	12	-5	1	1	200	102							
Saskatoon A	1P	0P	11P	-8P	1P***	350	37	Goose A	-1P	2P	9P	-17P	22P***		040	63							
Swift Current A	1	-1	8	-10	25 1	250	50	Port Aux Basques	0	1	5	-4	18	4	090	100							
Yorkton A	0	1	9	-9	4 ***	300	50	St John's A	3	3	18	-4	4 ***		240	96							
<b>Manitoba</b>								St Lawrence								1P	1P	8P	-4P	6P	2		X
Brandon A	0	0	10	-10	4 1	270	54	Wabush Lake A	-4	5	5	-19	47	64	020	48							
Churchill A	-16P	-1P	-2P	-23P	4P 36	310	50	<b>89/4/3--89/4/9</b>															
Lynn Lake A	-11	-4	-1	-23	1 39	240	43																
The Pas A	-4	-1	9	-14	0 1	290	52																
Thompson A	-10	-1	6	-24	2 32	300	48																
Winnipeg Int'l A	-3P	-3P	7P	-12P	4P 1	360	52																

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.  
 vit = wind speed in km/h

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