



Climatic Perspectives

April 20 to 26, 1992

A weekly review of Canadian climate and water

Vol. 14 No. 17

Record wet weather poses flood threat

As the cold season comes to an end, the rising spring temperatures cause the snow to melt and the ground to thaw. Precipitation comes in the form of rain, heavy at times. These factors can combine with ice break-up to create the threat of flooding. Over the past few weeks, the soil moisture has been close to saturation throughout Ontario and Quebec, and record rainfalls have supplemented snow melt to bring a number of rivers to flood stage. Across western Canada, warm, dry weather has caused an increase in forest fires, particularly in Alberta and British Columbia.

This month, flooded basements, property damage and inaccessibility of roads resulted as copious amounts of rain fell in Ontario. A new precipitation record was set at Toronto's Pearson International Airport, when the old record of 115 mm, set in April 1991, was washed away by 126 mm of rain, reported so far this month. There was some concern over flooding of the Moose River watershed, as Kapuskasing, Moosonee and Geraldton recorded rainfalls of 59.4 mm, 16.6 mm and 45 mm, respectively; a flood watch is also being kept on the Ottawa River which is reaching its peak discharge. These wet conditions have also hampered farming and gardening work, as the soggy fields are virtually impossible to till.

In the Gatineau Park region of western Quebec, the opening of several beaver dams has caused significant damage to homes and hydro poles. On the La Pêche River, a three-kilometre stretch of dams are near bursting, threatening to inundate the village of Ste Cécile de Masham. Almost every year there is concern over

flooding of the shallow-bed rivers draining the Quebec south shore. Last year, there was considerable property damage to municipalities along the Chaudière and St François rivers, but this year, fortunately, the water rose only slightly above the banks at a few flood prone areas, such as downtown Sherbrooke. An ice jam near the village of Matapédia in the Gaspé region caused authorities to evacuate a few residents who were seen to be in danger. No particular flooding has been reported from the north shore rivers.

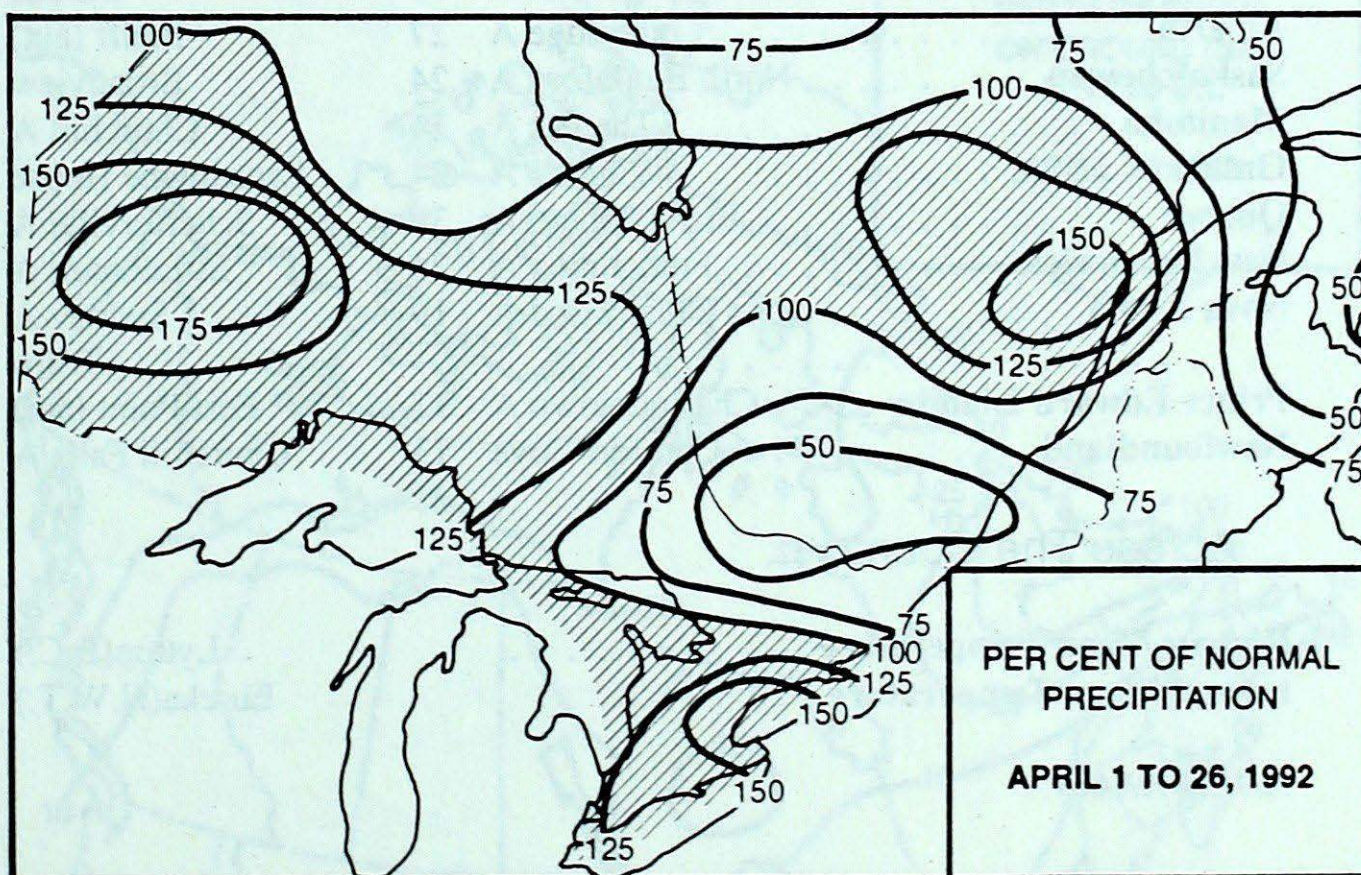
Forest fires get an early start

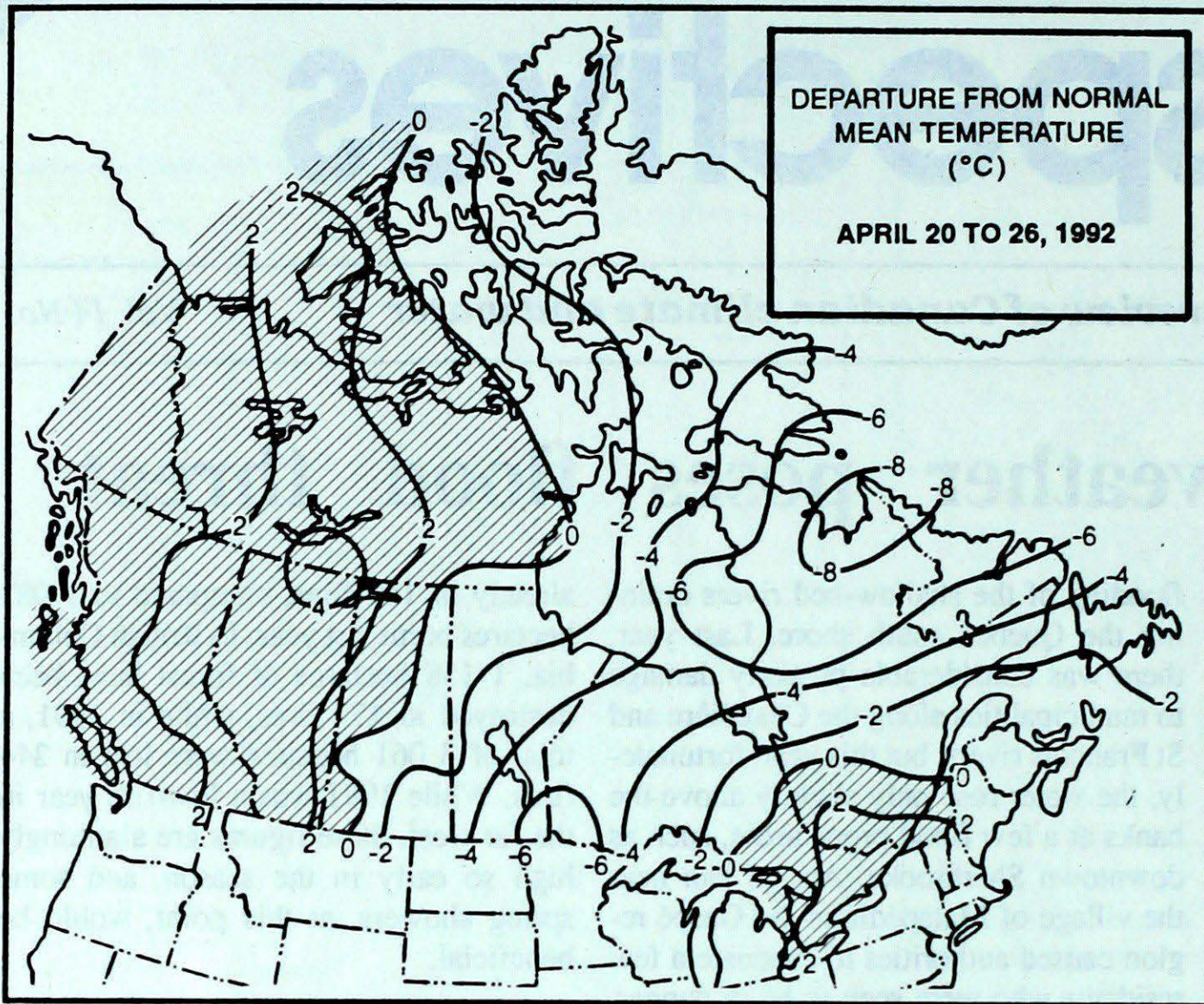
Traditionally, the forest fire season begins in May. This year, however, a persistent, warm, dry upper ridge over much of western Canada has set the stage for an accelerated forest fire situation. In Alberta, there have been 857 hectares of forest lost

already in 140 fires, compared to 1 082 hectares burnt last year. In British Columbia, 1 158 hectares of forest have been destroyed in 177 fires, while in 1991, a total of 3 061 hectares were lost in 244 fires. While 1991 was a low-fire year in the far west, these figures are alarmingly high so early in the season, and some spring showers, at this point, would be beneficial.

A look ahead...

For the week of May 4, below normal temperatures are expected east of Manitoba. Elsewhere, above normal temperatures are forecasted. The warm core of air will persist across the Prairies. Precipitation is likely across British Columbia, the Yukon, the Mackenzie District of the Northwest Territories, Ontario and Quebec as well as the Atlantic region.





Weekly normal temperatures (°C)

	max.	min.
Whitehorse A	7.3	-3.9
Iqaluit A	-6.9	-16.7
Yellowknife A	1.8	-9.1
Vancouver Int'l A	13.6	5.3
Victoria Int'l A	13.7	4.4
Calgary Int'l A	10.3	-2.1
Edmonton Int'l A	12.0	-1.1
Regina A	11.5	-1.3
Saskatoon A	11.1	-0.9
Winnipeg Int'l A	11.4	-0.3
Ottawa Int'l A	13.0	2.6
Toronto Int'l A	13.7	2.7
Montréal Int'l A	12.7	3.0
Québec A	10.3	0.6
Fredericton A	11.3	0.0
Saint John A	9.6	-0.1
Halifax (Shearwater)	9.4	1.0
Charlottetown A	7.8	-0.5
Goose A	4.3	-4.4
St John's A	5.3	-1.6

Weekly temperature and precipitation extremes

	Maximum temperature (°C)	Minimum temperature (°C)	Heaviest precipitation (mm)
British Columbia	Cranbrook A 26	Puntzi Mountain (aut) -21	Estevan Point (aut) 78
Yukon Territory	Watson Lake A 11	Komakuk Beach A -21	Shingle Point A 7
Northwest Territories	Fort Smith A 19	Eureka -33	Ennadai Lake (aut) 27
Alberta	Lethbridge A 27	Banff (aut) -7	Peace River A 14
Saskatchewan	North Battleford A 24	Broadview -10	Nipawin A 2
Manitoba	The Pas A 14	Churchill A -27	Winnipeg Int'l A 6
Ontario	Windsor A 24	Lansdowne House -13	Kapuskasing A 59
Quebec	Blanc Sablon A 39	Schefferville A -29	Mont Joli A 71
New Brunswick	Fredericton A 24	St-Léonard A -6	St-Léonard A 34
Nova Scotia	Greenwood A 19	Sydney A -3	Yarmouth A 41
		Truro -3	
Prince Edward Island	Charlottetown A 17	East Point (aut) -3	Charlottetown A 24
Newfoundland	Comfort Cove 13	Churchill Falls A -22	Port Aux Basques 31

Across The Country...

Highest Mean Temperature	Lytton(B.C.) 13
Lowest Mean Temperature	Eureka(N.W.T.) -28

CLIMATIC PERSPECTIVES
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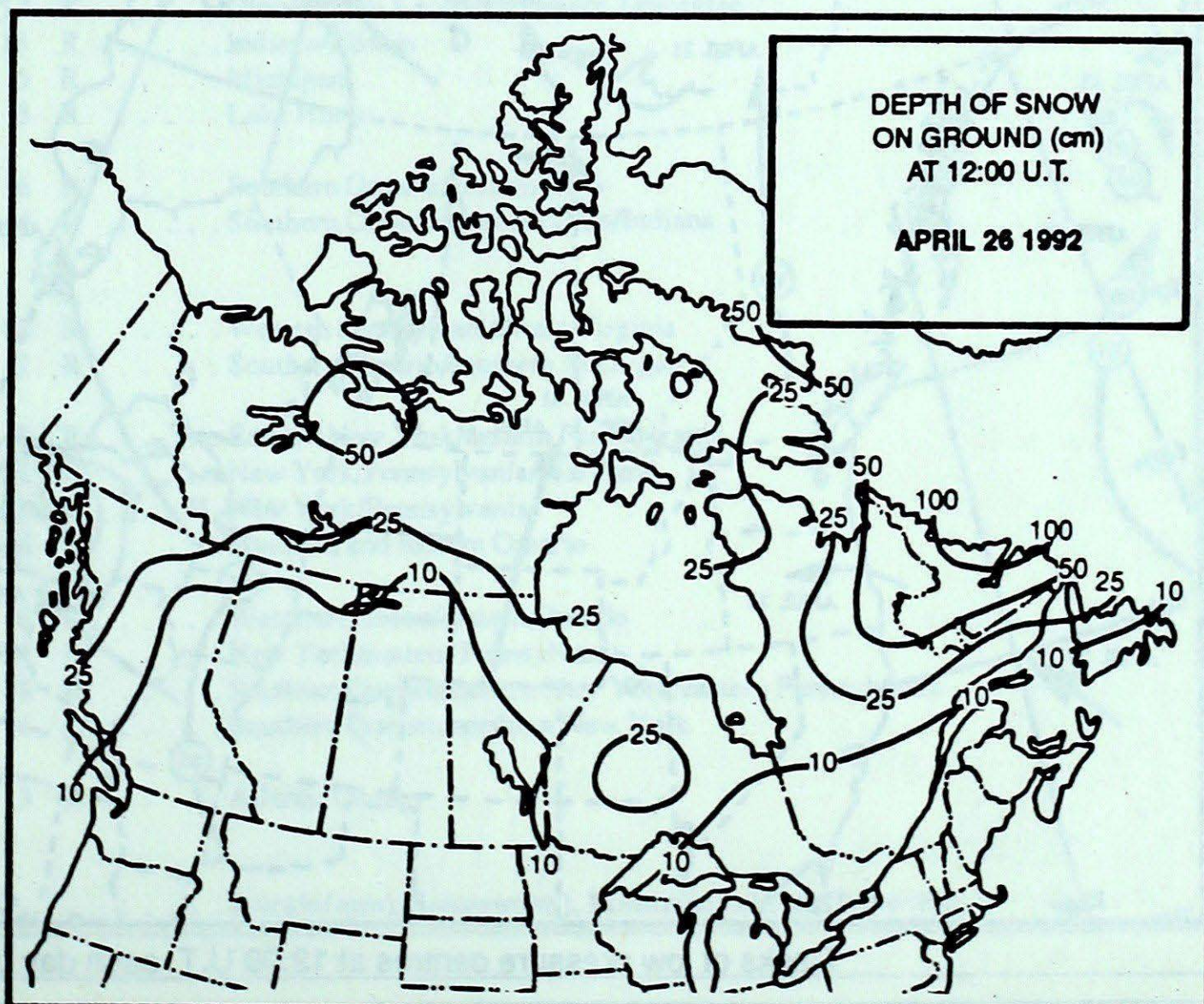
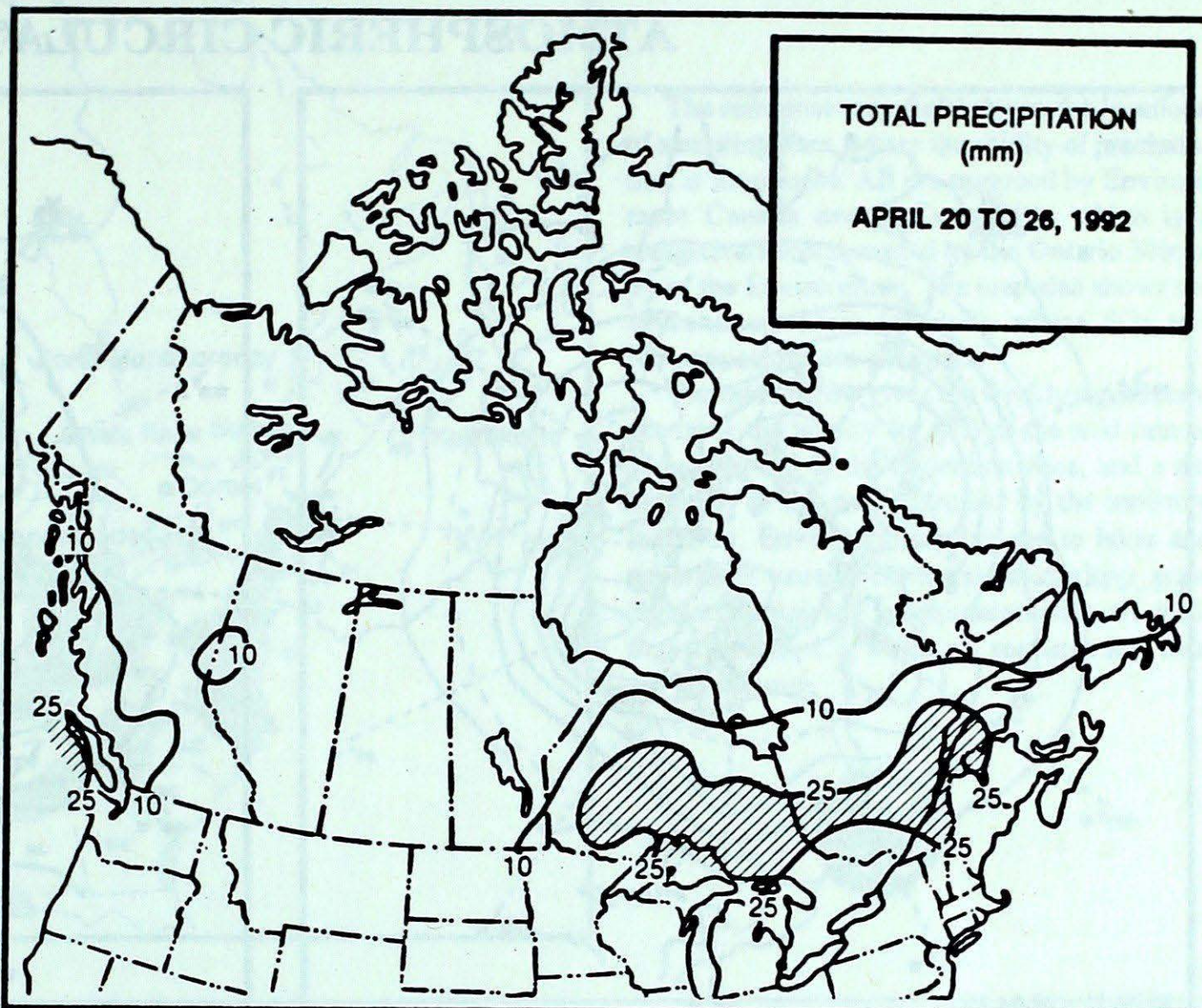
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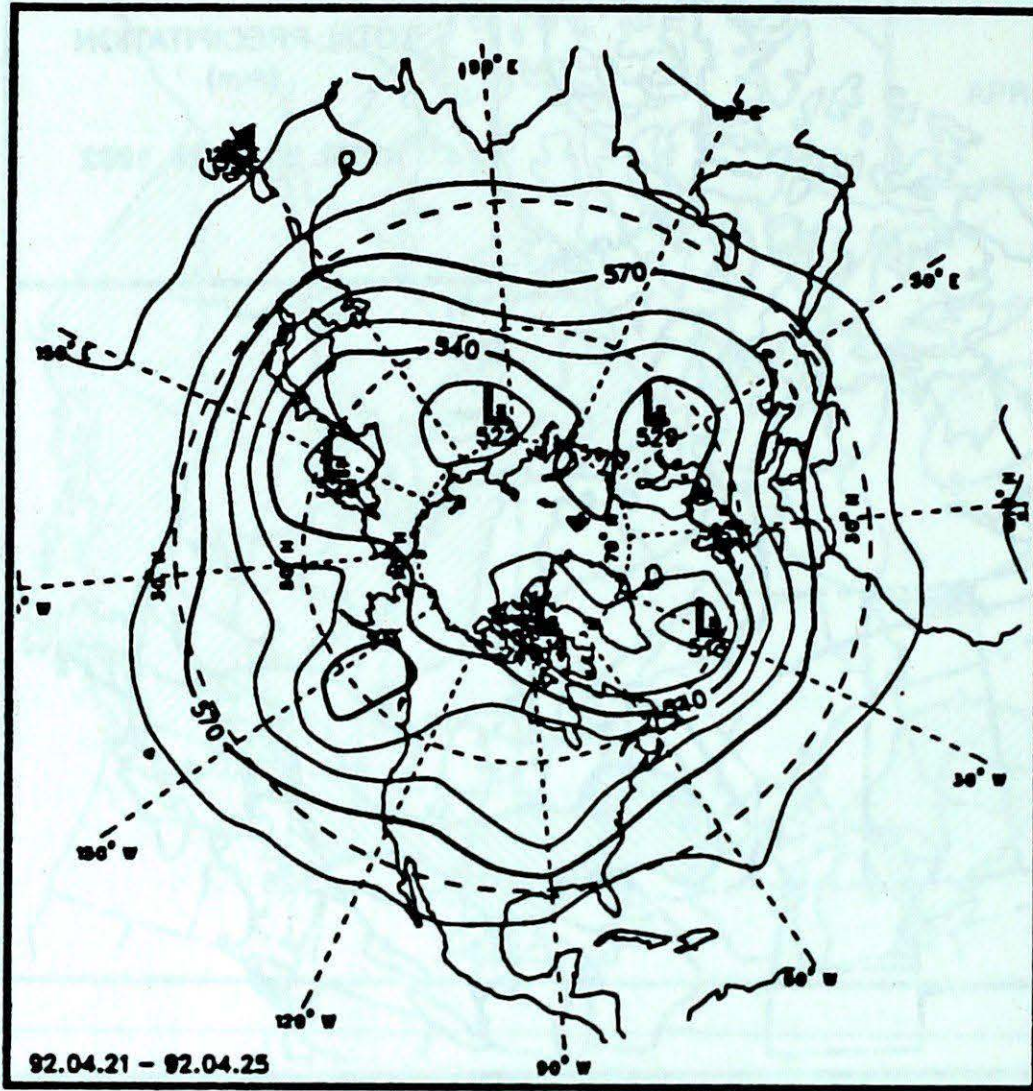
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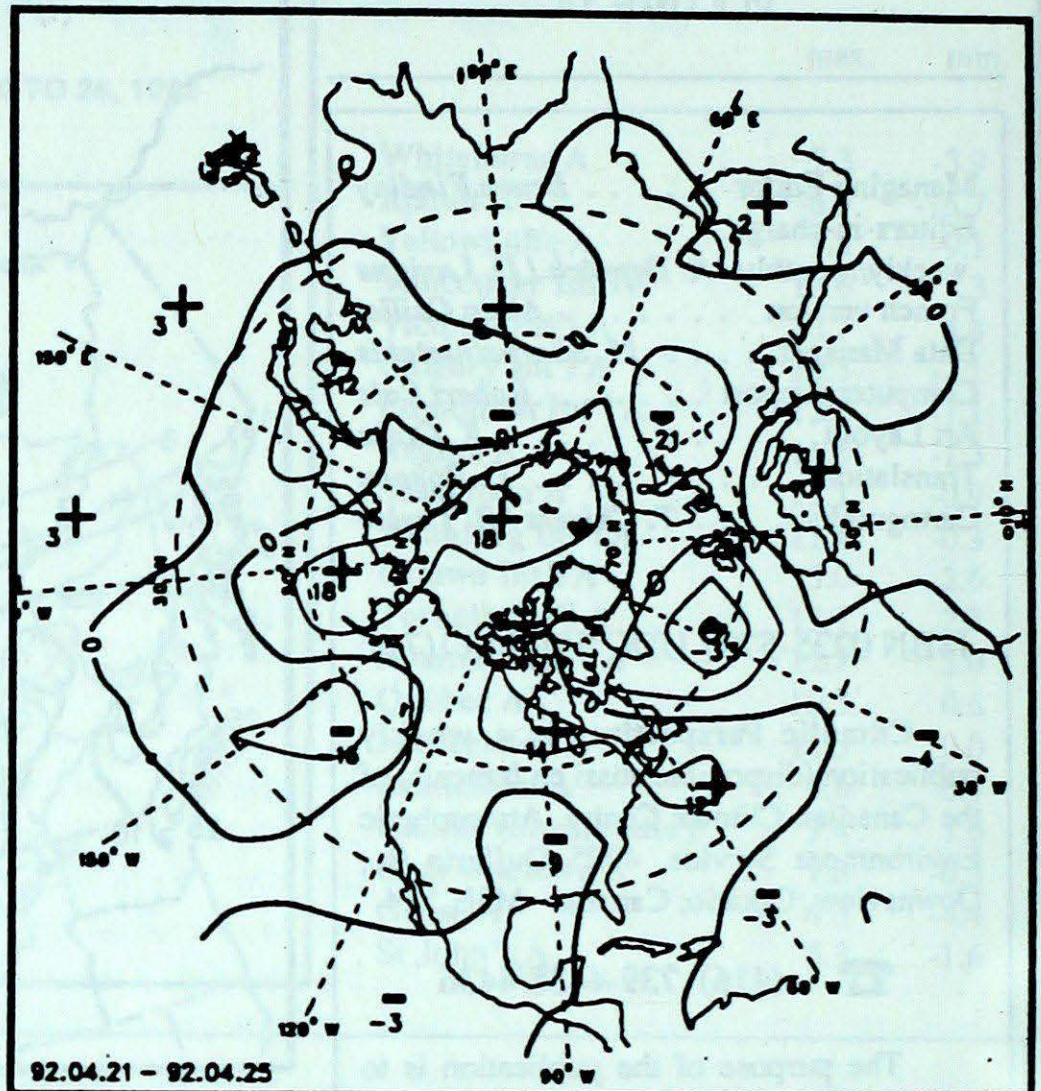
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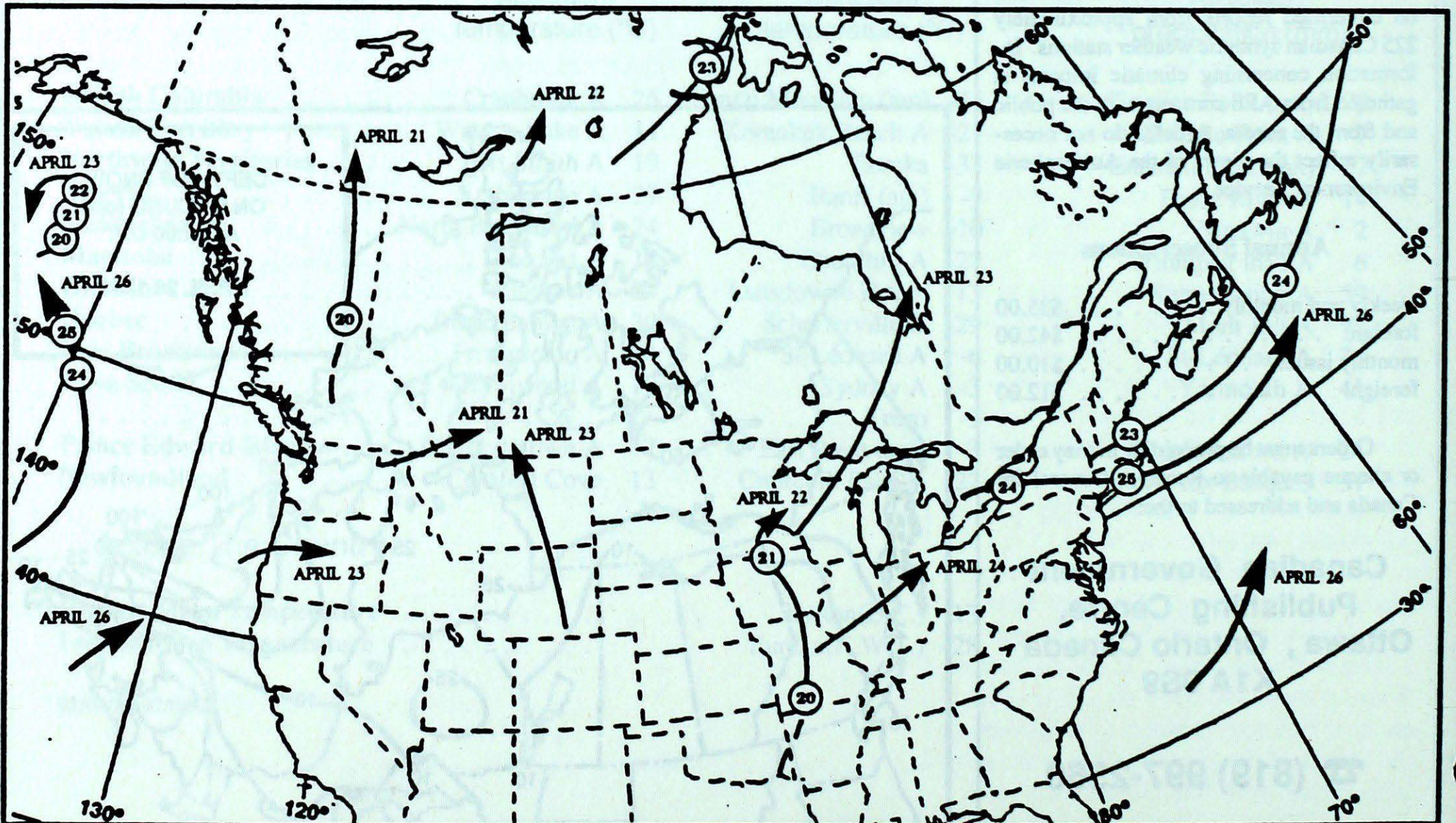
ATMOSPHERIC CIRCULATION



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



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

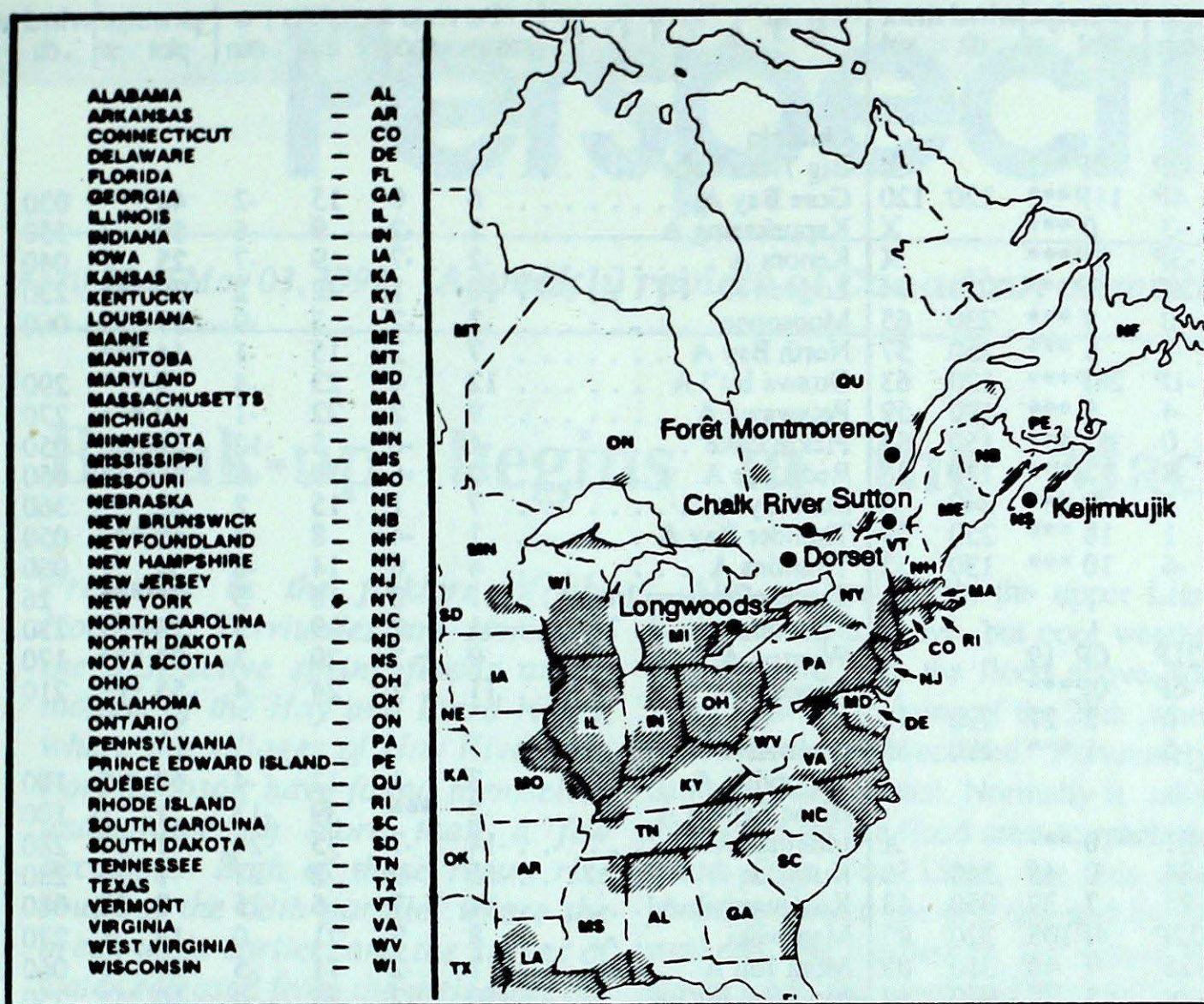
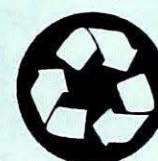


Tracks of low pressure centres at 12:00 U.T. each day during the period.

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 SO₂ and NO_x 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.



- ALABAMA -- AL
- ARKANSAS -- AR
- CONNECTICUT -- CT
- DELAWARE -- DE
- FLORIDA -- FL
- GEORGIA -- GA
- ILLINOIS -- IL
- INDIANA -- IN
- IOWA -- IA
- KANSAS -- KA
- KENTUCKY -- KY
- LOUISIANA -- LA
- MAINE -- ME
- MANITOBA -- MB
- MARYLAND -- MD
- MASSACHUSETTS -- MA
- MICHIGAN -- MI
- MINNESOTA -- MN
- MISSISSIPPI -- MS
- MISSOURI -- MO
- NEBRASKA -- NE
- NEW BRUNSWICK -- NB
- NEWFOUNDLAND -- NF
- NEW HAMPSHIRE -- NH
- NEW JERSEY -- NJ
- NEW YORK -- NY
- NORTH CAROLINA -- NC
- NORTH DAKOTA -- ND
- NOVA SCOTIA -- NS
- OHIO -- OH
- OKLAHOMA -- OK
- ONTARIO -- ON
- PENNSYLVANIA -- PA
- PRINCE EDWARD ISLAND -- PE
- QUÉBEC -- QC
- RHODE ISLAND -- RI
- SOUTH CAROLINA -- SC
- SOUTH DAKOTA -- SD
- TENNESSEE -- TN
- TEXAS -- TX
- VERMONT -- VT
- VIRGINIA -- VA
- WEST VIRGINIA -- WV
- WISCONSIN -- WI

Site day pH amount air path to site

April 19 to 25, 1992

Longwoods (near London, Ontario)	20	4.4	3	R	..... Ohio/eastern Kentucky
	21	4.2	12	R	..... Ohio/eastern Kentucky/eastern Tennessee
	23	4.0	16	R	..... Indiana/Illinois
	24	4.4	5	R	..... Michigan
	25	4.3	3	R	..... Lake Huron
Dorset* Muskoka, Ontario	21	3.9	6	R	..... Southern Ontario/eastern Ohio
	22	3.8	4	R	..... Southern Ontario/western Ohio/Indiana
Chalk River Ottawa Valley	21	4.3	12	R	..... Western Pennsylvania/west Virginia
	22	3.9	2	R	..... Southern Ontario/southern Michigan
Sutton Quebec, QC	21	4.6	9	R	..... Eastern New York/eastern Pennsylvania
	22	4.3	21	R	..... New York/Pennsylvania/Maryland
	23	3.8	3	R	..... New York/Pennsylvania
	24	5.6	4	R	..... Southern and eastern Ontario
Montmorency (near Quebec) Québec	20	3.9	6	R	..... Western Quebec/eastern Ontario
	21	4.5	24	R	..... New York/eastern Pennsylvania
	22	4.3	18	R	..... Southern Quebec/eastern New York/eastern Pennsylvania
	23	4.2	6	R	..... Southern Quebec/northern New York
Kejimikujik (Southwestern Nova Scotia)	22	4.7	3	R	..... Atlantic Ocean

..... R=rain(mm), S=snow(cm), M=mixed rain and snow(mm)

STATION	temperature				precip. ptot st	wind max		STATION	temperature				precip. ptot st	wind max		
	mean	anom	max	min		dir	vel		mean	anom	max	min		dir	vel	
British Columbia								Ontario								
Blue River A	8P	2P	20P	0P	0P***		X	Big Trout Lake								
Cape St James	8P	1P	13P	4P	11P***	120	120	Gore Bay A	6	0	15	-2	44 ***	030	43	
Cranbrook A	9	2	26	-3	0 ***		X	Kapusking A	1	-2	9	-6	59 7	350	37	
Fort Nelson A	7P	3P	18P	-3P	2P***		X	Kenora A	-2	-7	9	-7	25 7	040	59	
Fort St John A	7P	3P	19P	1P	0P***	220	74	London A	10	1	22	2	30 ***	230	59	
Kamloops A	12	2	24	0	8 ***	230	65	Moosonee	-2	-2	3	-9	17 12	060	52	
Penticton A	9	0	20	-1	5 ***	250	57	North Bay A	7	2	15	-1	14 ***		X	
Port Hardy A	8P	1P	17P	-1P	28P***	120	63	Ottawa Int'l A	12	4	23	4	9 ***	290	41	
Prince George A	8	3	20	-4	5 ***	190	59	Petawawa A	9	2	22	-1	10 ***	270	43	
Prince Rupert A	8	2	18	0	17 ***	150	54	Pickle Lake	-4	-6	5	-12	56 50	050	46	
Smithers A	7	1	17	-4	2 ***	140	46	Red Lake A	-2	-6	10	-8	28 18	050	67	
Vancouver Int'l A	11	2	21	3	29 ***	240	4	Sudbury A	7	1	15	2	25 ***	360	32	
Victoria Int'l A	11	2	21	1	18 ***	250	39	Thunder Bay A	1	-4	8	-3	48 ***	050	35	
Williams Lake A	7	1	18	-6	10 ***	130	52	Timmins A	4	0	14	-6	54 1	060	37	
Yukon Territory								Toronto (Pearson Int'l A)								
Komakuk Beach A	-14P	2P	-7P	-21P	0P 19		X	Trenton A	11	2	19	3	26 ***	230	41	
Teslin (aut)	2P	***P	9P	-6P	0P***		X	Warton A	9	2	20	3	22 ***	170	37	
Watson Lake A	2	1	11	-9	2 27	290	48	Windsor A	11	1	24	4	55 ***	210	56	
Whitehorse A	3	2	10	-5	1 ***	190	32	Québec								
Northwest Territories								Bagotville A								
Alert	-25	-3	-18	-31	0 ***		X	Blanc Sablon A	-2	***	39	-13	1 1	100	44	
Baker Lake A	-13	2	0	-24	0 45	340	56	Inukjuak A	-14	-7	-5	-24	1 17	280	37	
Cambridge Bay A	-18	1	-12	-28	7 39	050	63	Kuujuuaq A	-15	-9	-2	-27	1 21	280	41	
Cape Dyer A	-15P	-1P	-7P	-22P	4P103	320	85	Kuujuarapik A	-11	-7	6	-25	0 20	080	32	
Clyde A	-17	-1	-11	-25	7 46	310	69	Maniwaki	8	2	21	0	18 1	270	41	
Coppermine A	-12	3	-2	-24	3 89	070	44	Mont Joli A	1	-2	11	-5	71 1	060	57	
Coral Harbour A	-16	-2	-4	-29	3 35	340	59	Montréal Int'l A	10	2	24	0	10 ***	250		
Eureka	-28	-4	-21	-33	0 18		X	Natashquan A	-1P	-1P	6P	-7P	5P***	020	32	
Fort Smith A	5	5	19	-6	0 11	150	50	Québec A	6	0	19	-1	27 ***	070	50	
Hall Beach A	-21	-2	-12	-29	2 37	320	65	Schefferville A	-14	-9	2	-29	3 64	350	35	
Inuvik A	-11	0	1	-19	14 55	340	37	Sept-Îles A	0	-2	6	-8	13 7	100	37	
Iqaluit A	-19	-7	-8	-27	5 11	320	65	Sherbrooke A	9	4	24	-2	26 ***			
Mould Bay A	-21	0	-15	-27	0 13		X	Val-d'Or A	6	3	16	-3	32 ***	350	35	
Norman Wells A	-2	1	6	-12	6 3	300	59	New Brunswick								
Resolute A	-24	-3	-14	-30	1 12	330	44	Chatham A								
Yellowknife A	0	4	8	-9	0 35	180	44	Fredericton A	4	-1	24	-3	7 ***	040	67	
Alberta								Miscou Island (aut)								
Calgary Int'l A	8	4	24	-1	11 ***	360	52	Moncton A	2	-2	18	-2	29 1	030	54	
Cold Lake A	7	2	25	-3	0 ***	160	50	Saint John A	2	-2	8	-2	24 1	020	56	
Edmonton Namao A	8	3	24	-1	4 ***	320	69	Nova Scotia								
Fort McMurray A	8	4	25	-2	0 ***	140	44	Greenwood A	6	0	19	-1	17 1	060	67	
High Level A	8P	2P	19P	-4P	0P 1	130	39	Shearwater A	4P	-2P	18P	-1P	11P 2	070	61	
Jasper	7	3	19	-3	13 ***		X	Sydney A	2	-1	16	-3	28 1	240	54	
Lethbridge A	10	4	27	-2	2 ***	250	57	Yarmouth A	5	-1	16	-2	41 10	220	48	
Medicine Hat A	10	4	27	-5	10 ***	180	44	Prince Edward Island								
Peace River A	8	4	21	-2	14 ***	250	78	Charlottetown A	3	-1	17	-3	24 1	210	52	
Saskatchewan								East Point (auto)								
Cree Lake	4	1	18	-6	0 1	210	61	1P	***P	9P	-3P	0P***				
Estevan A	2	-4	16	-6	1 ***	350	44	Newfoundland								
La Ronge A	5	1	20	-7	1 ***	180	43	Cartwright	-9	-8	-1	-18	3 277	310	54	
Regina A	4	-2	18	-8	0 ***	160	54	Churchill Falls A	-9	-6	3	-22	3 87	320	3	
Saskatoon A	6	0	22	-7	0 ***	170	54	Gander Int'l A	0	-2	13	-9	7 1	240	48	
Swift Current A	5	1	22	-9	0 ***	190	52	Goose A	-5	-5	4	-16	4 22	360	33	
Yorkton A	1	-3	15	-9	0 1	010	44	Port Aux Basques								
Manitoba								St John's A								
Brandon A	0	-5	13	-8	1 ***	040	59	St Lawrence	0	-2	7	-7	15 1		X	
Churchill A	-8	-1	4	-27	0 27	200	50	Wabush Lake A	-6	-3	5	-18	0 40	350	32	
Lynn Lake A	1	-1	14	-11	0 1	190	39	92/04/20-92/04/26								
The Pas A	2	0	14	-10	0 ***	150	44									
Thompson A	-1	-2	12	-17	0 1		X									
Winnipeg Int'l A	0	-6	11	-5	6 ***	020	59									

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.