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Climatic Perspectives

Archives

Ref 1

MONTHLY SUPPLEMENT INCLUDED

April 8 to 14, 1991

A weekly review of Canadian climate and water

Vol.13 No.15

Heavy rainfalls promote spring flooding in Eastern Canada

Rapid snow melt, initiated by the very warm temperatures recorded earlier this month, and the significant amount of rain that has recently fallen across eastern parts of the country all have contributed to the swelling of rivers and waterways.

Central and eastern Ontario

Heavy rainfalls and melting snow contributed to some serious flooding in the Haliburton and Kawartha cottage districts northeast of Toronto, where more than 80 mm of rain has fallen this week. The Burnt River peaked at an all-time record high of 218 m³/sec on the 11th, causing some of the worst flooding in 60 years. Flooding was also evident along the Trent-Severn waterway.

Southwestern Quebec and the Eastern Townships

Thirty to 70 millimetres of rain drenched southern Quebec this week. A new daily April rainfall record of 34.6 mm was set at Sherbrooke on the 9th, surpassing the previous record of 33.8 mm set in 1974. In the Ottawa Valley and Montreal region, a number of rivers overflowed their banks. Lac St. Pierre on the St. Lawrence River flooded dozens of houses in Louiseville near Trois-Rivières. At Saint-Raymond-de-Portneuf, northwest of Quebec City, the Sainte-Anne River rose to flood stage.

The most significant flooding occurred in the Beauce region, south of Quebec City, where hundreds of people had to be evacuated. The rapidly rising waters of the Chaudière River, caused the worst flooding since 1957. On April 7, flooding began in the town of Beauceville. On April 10, the peak flow reach 2224 m³/sec, then dropped to 1754 m³/sec, 24-hours later. The flood crest later affected other towns downstream. Water damage is estimated at several million dollars.

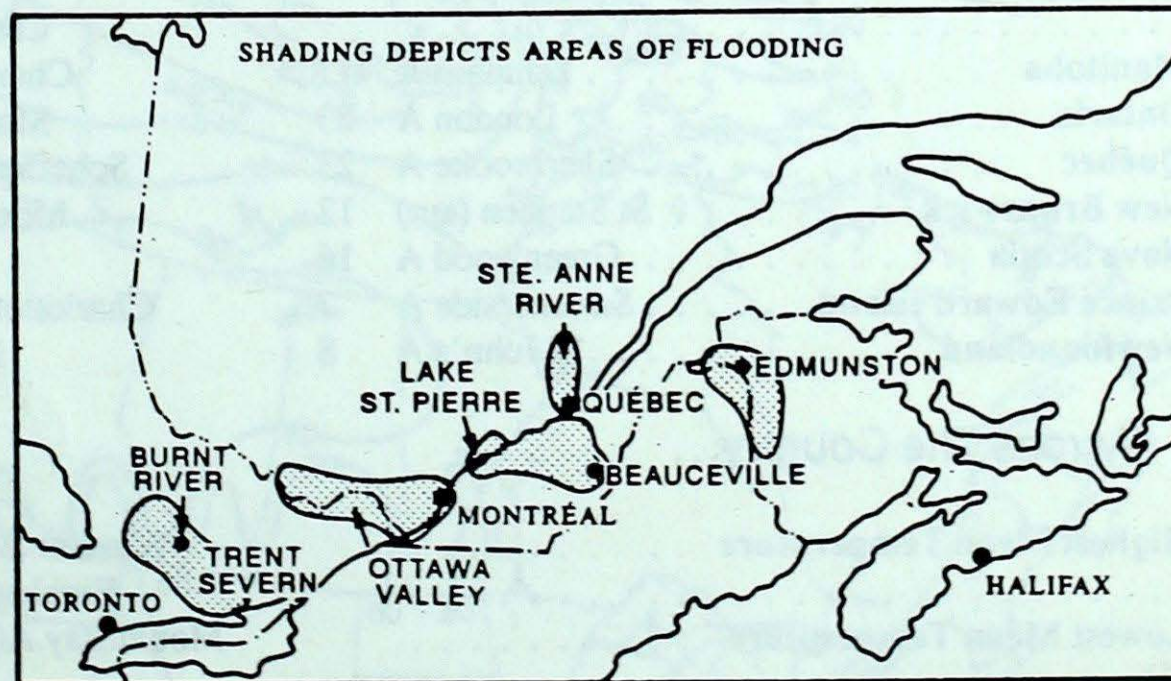
New Brunswick

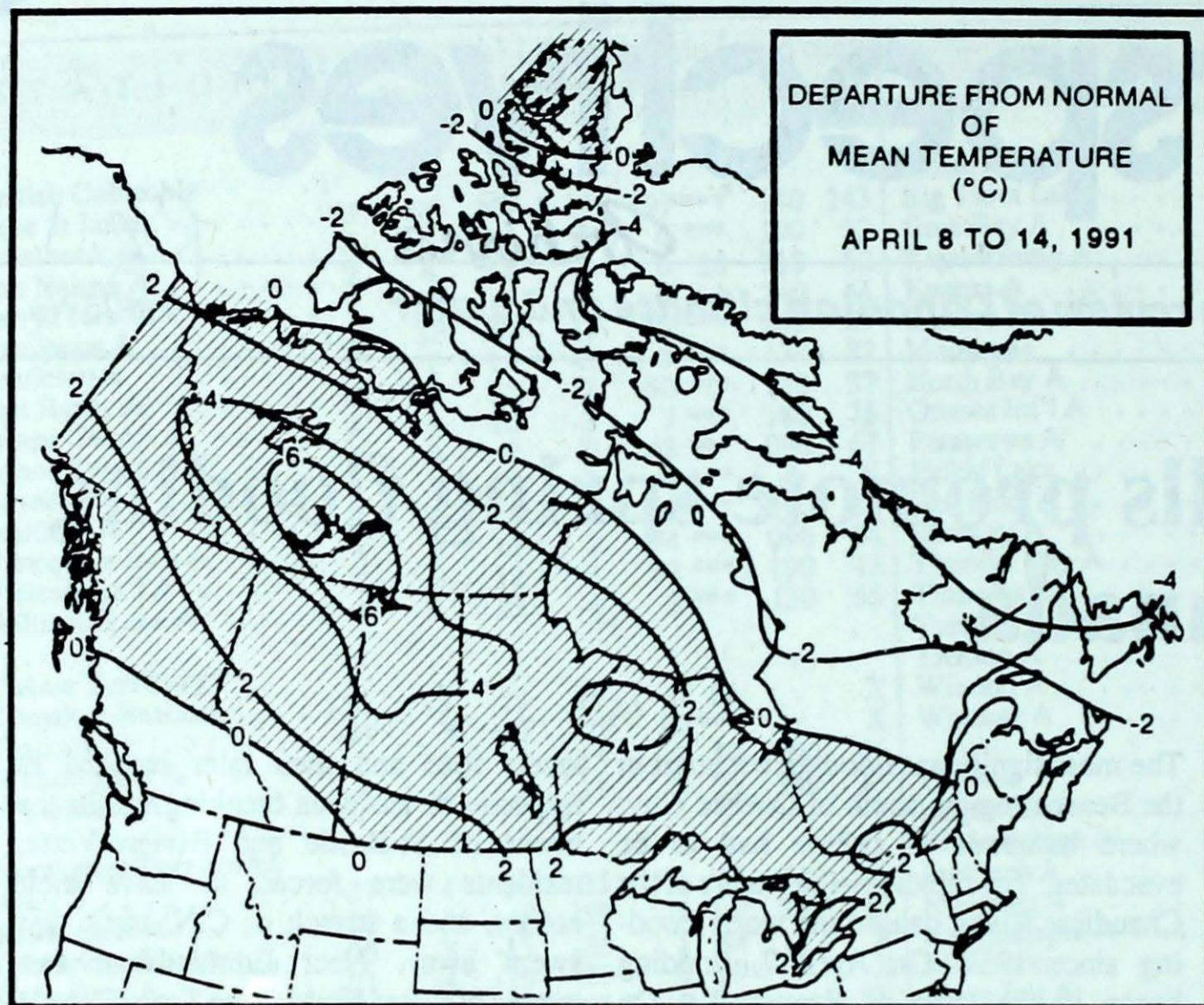
It was a tense week in some parts of New Brunswick, as the ice-choked waters of the Saint John River overflowed their banks. In northwestern New Brunswick, towns were put on alert and highways and bridges were closed as threatening water

levels rose and then later receded in response to ice jams breaking up. In the towns of St-Basile and Rivière-Verte, residents were forced to leave their homes, and a stretch of C.N. track was swept away. Near Edmundston, two metres of water covered the Trans Canada Highway. Luckily, precipitation in the Maritimes has not been excessive these last two weeks

A look ahead ...

The week of April 22, will see a high pressure area building over the Arctic and extending its influence to western Canada. A southerly flow of Pacific air will bring mild temperatures to the provinces west of Ontario, particularly to B.C. and the Yukon. Near to below normal temperatures are expected elsewhere.





Weekly normal temperatures (°C)

	max.	min.
Whitehorse A	4.3	-5.8
Iqaluit A	-11.4	-20.9
Yellowknife A	-2.8	-14.1
Vancouver Int'l A	12.3	4.5
Victoria Int'l A	12.5	3.6
Calgary Int'l A	9.5	-2.9
Edmonton Int'l A	8.2	-3.3
Regina A	9.0	-3.0
Saskatoon A	8.6	-2.6
Winnipeg Int'l A	8.3	-2.8
Ottawa Int'l A	9.1	-1.2
Toronto (Pearson Int'l A)	10.0	-0.6
Montréal Int'l A	8.8	-0.8
Québec A	6.2	-2.7
Fredericton A	7.6	-2.3
Saint John A	6.3	-2.5
Halifax (Shearwater)	6.4	-0.8
Charlottetown A	4.8	-2.4
Goose A	1.4	-7.6
St John's A	4.0	-2.4

Weekly temperature and precipitation extremes

	Maximum temperature (°C)	Minimum temperature (°C)	Heaviest precipitation (mm)
British Columbia	Hope A 21	Dease Lake -11	Prince Rupert A 44
Yukon Territory	Watson Lake A 11	Komakuk Beach A -30	Whitehorse A 2
Northwest Territories	Fort Smith A 15	Mould Bay A -39	Hay River A 17
Alberta	Fort McMurray A 20	Edson A -8	Whitecourt A 11
Saskatchewan	Buffalo Narrows A 18	Collins Bay -8	Estevan A 9
		Cree Lake -8	
Manitoba	Dauphin A 17	Churchill A -18	Winnipeg Int'l A 24
Ontario	London A 23	Moosonee -16	Toronto(Pearson Int'l A) 59
Québec	Sherbrooke A 23	Schefferville A -27	Sherbrooke A 66
New Brunswick	St Stephen (aut) 12	Moncton A -9	Saint John A 52
Nova Scotia	Greenwood A 16	Truro -8	Truro 36
Prince Edward Island	Summerside A 7	Charlottetown A -8	Charlottetown A 35
Newfoundland	St John's A 8	Nain A -26	Gander Int'l A 42

Across The Country...

Highest Mean Temperature	Windsor A(ONT) 9
Lowest Mean Temperature	Eureka(NWT) -30
	Mould Bay A(NWT) -30

CLIMATIC PERSPECTIVES
VOLUME 13

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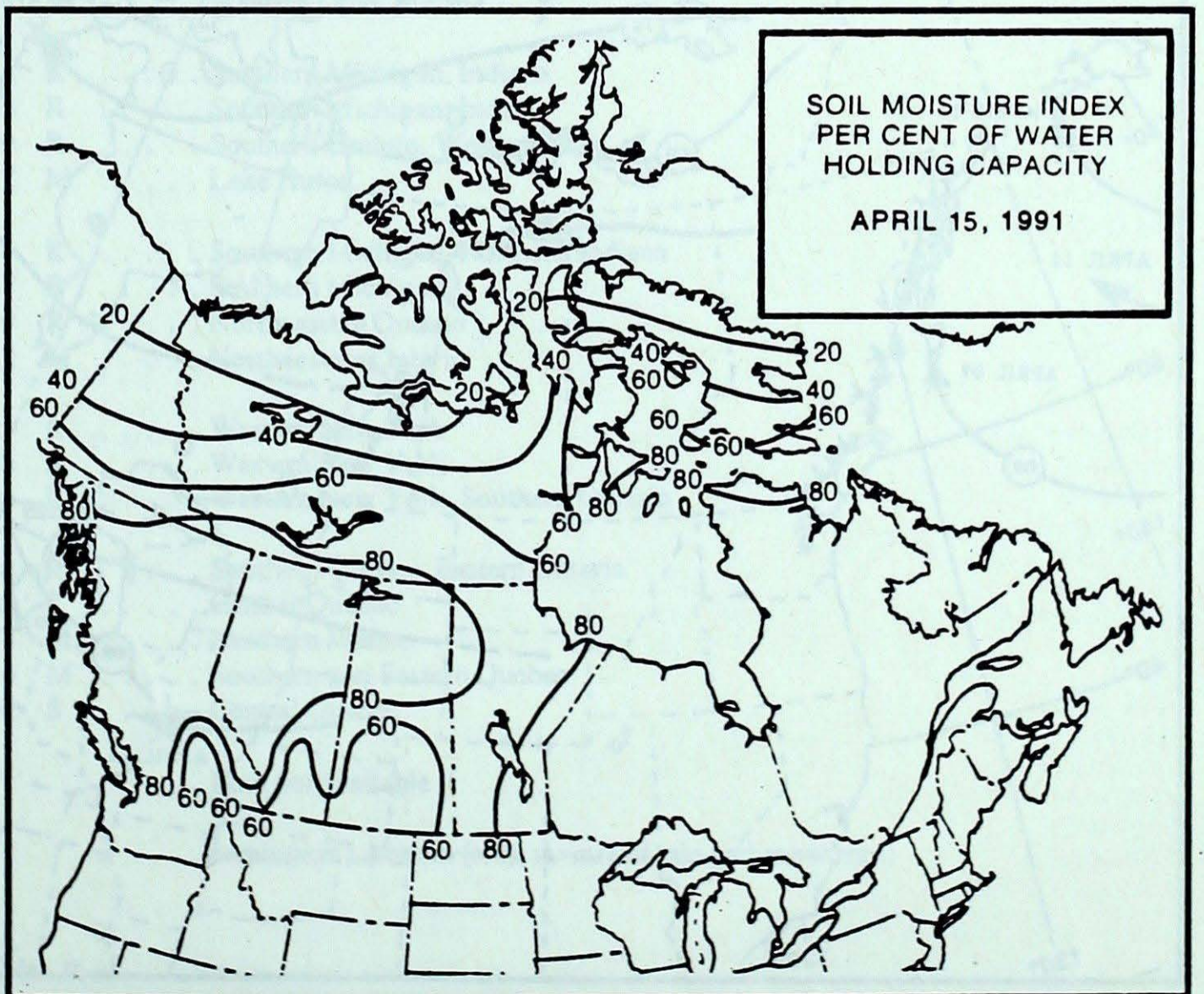
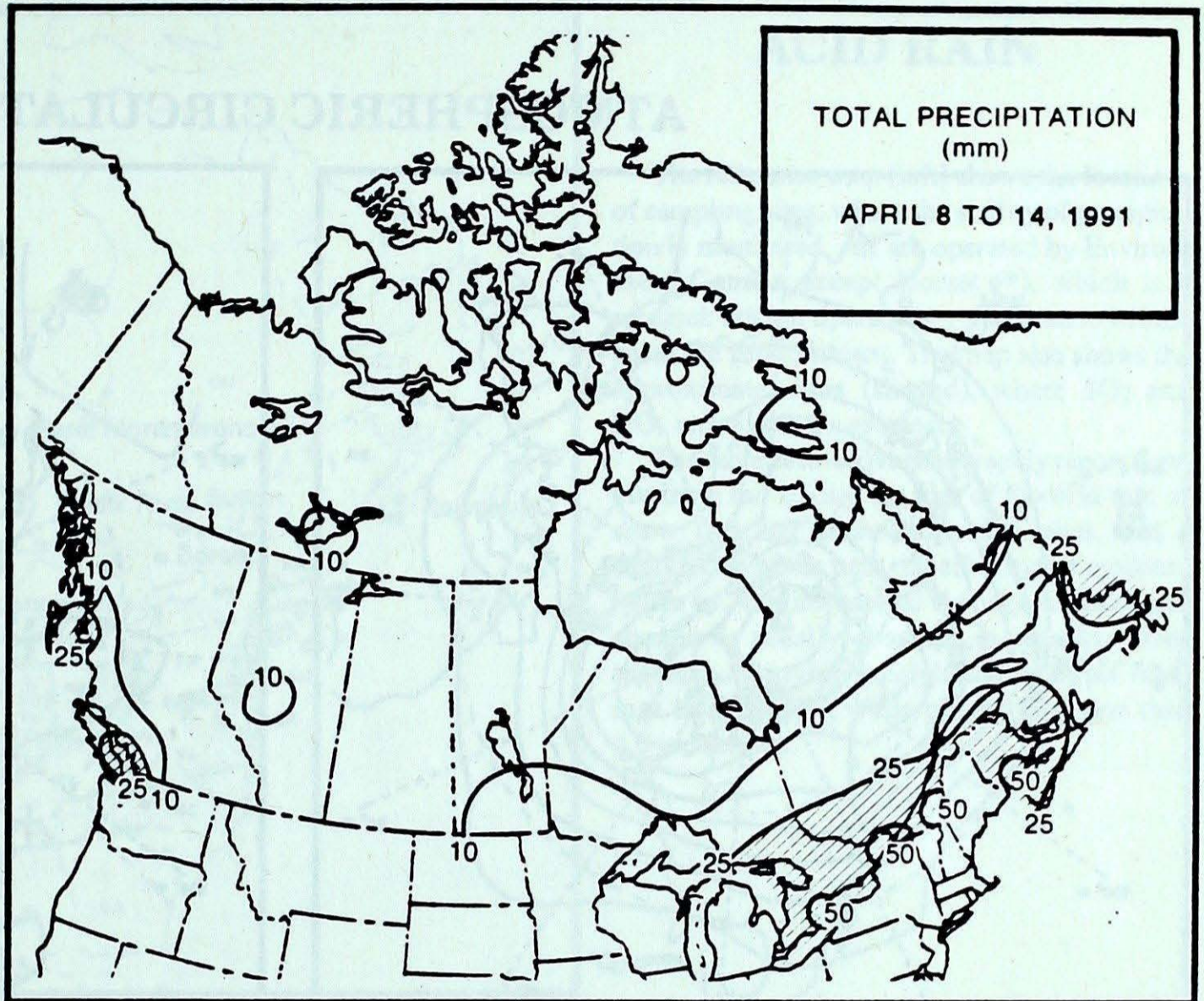
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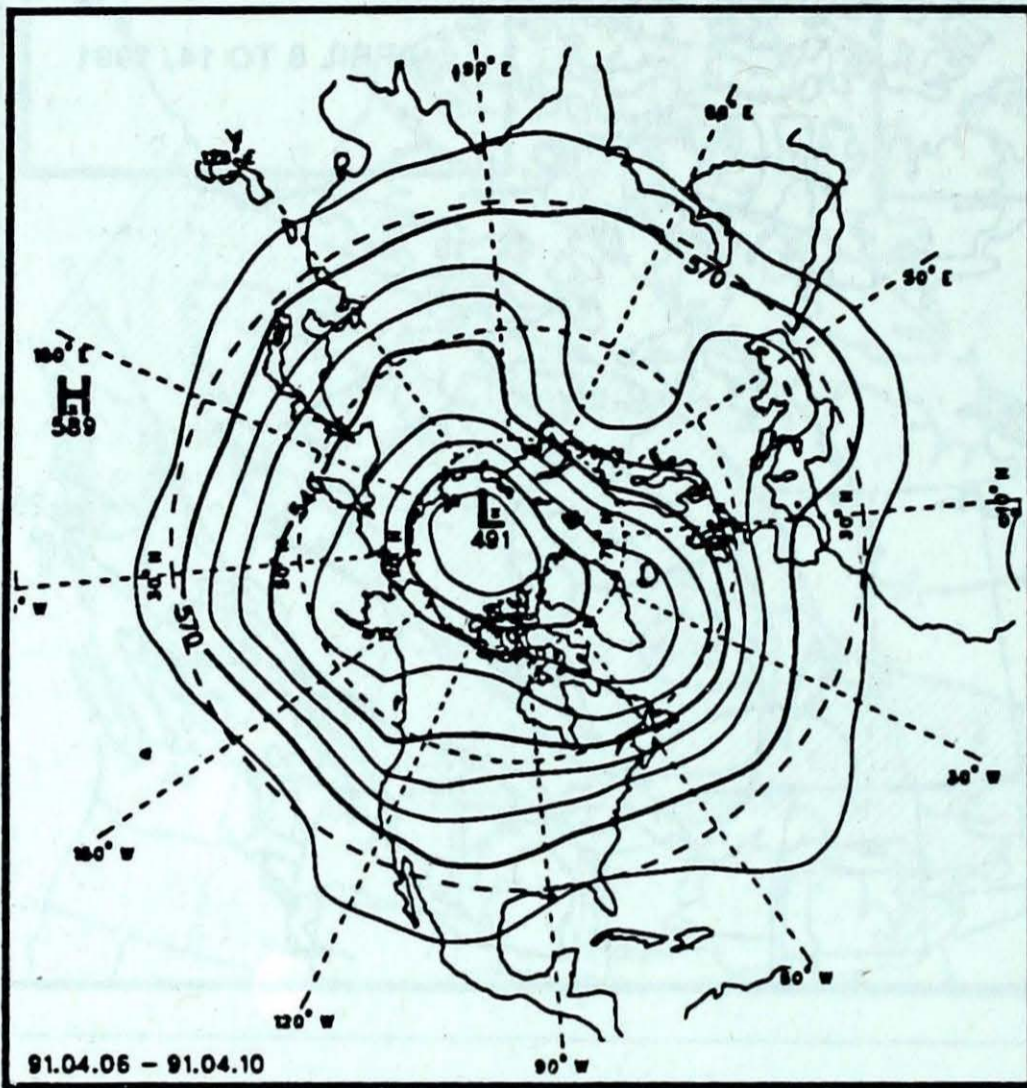
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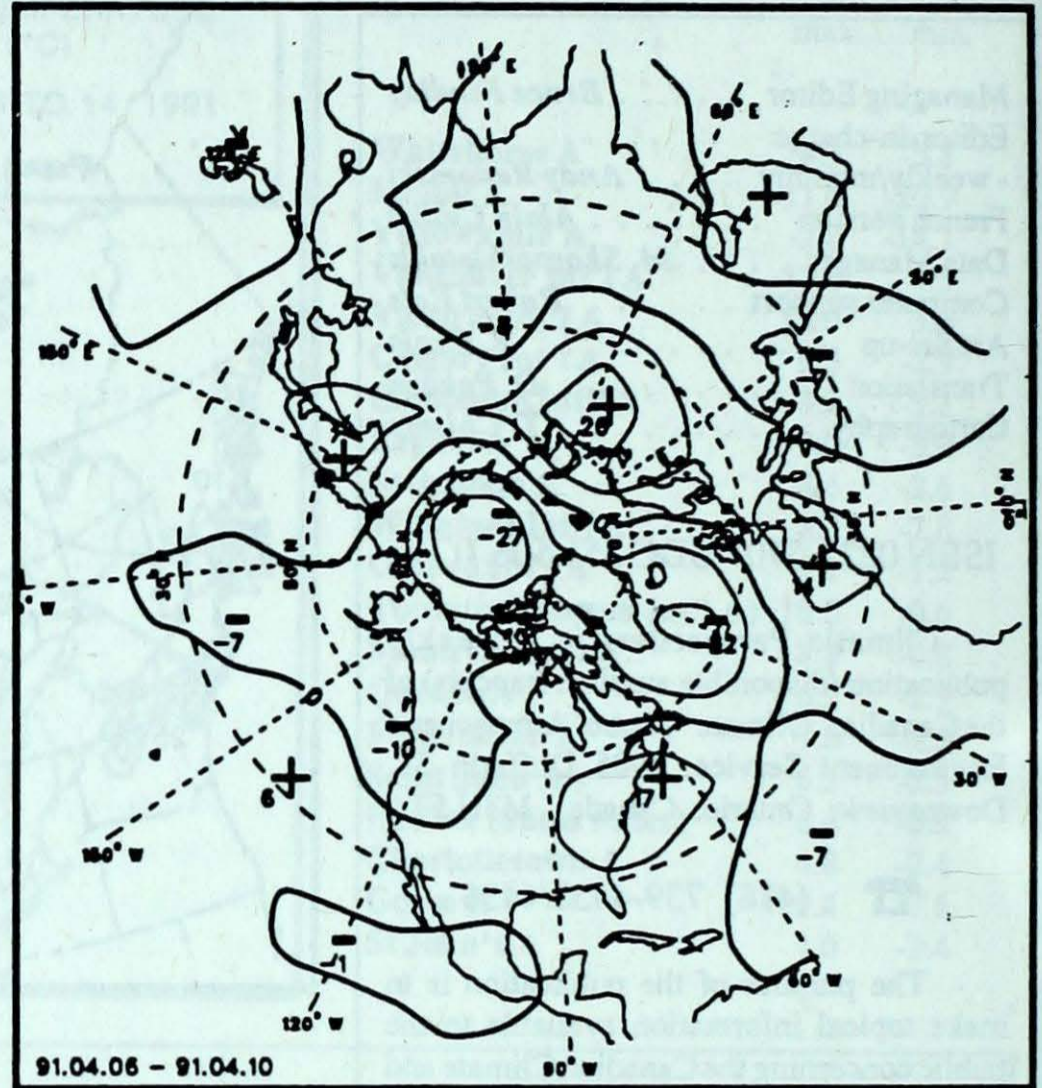
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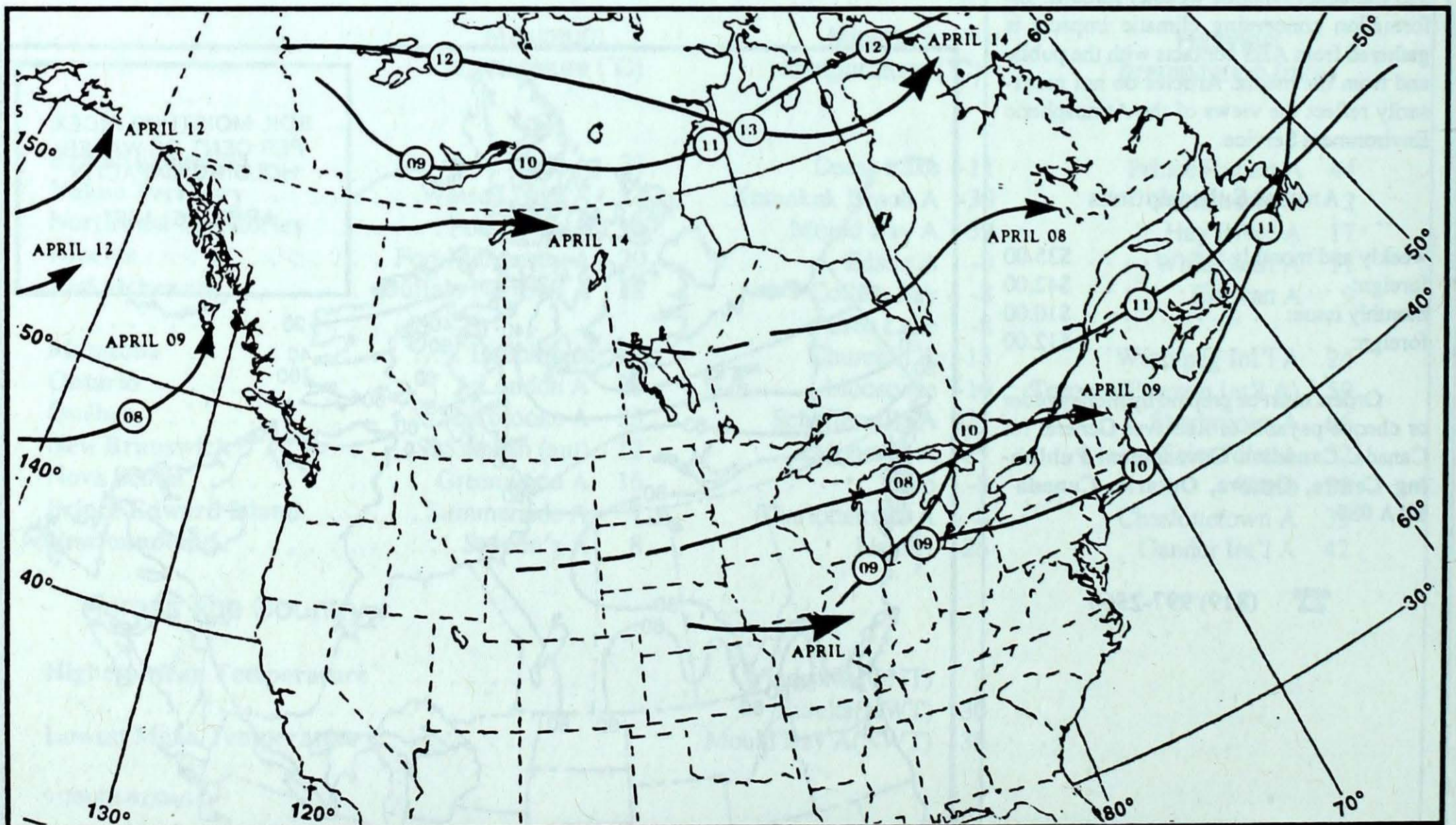
ATMOSPHERIC CIRCULATION



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



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

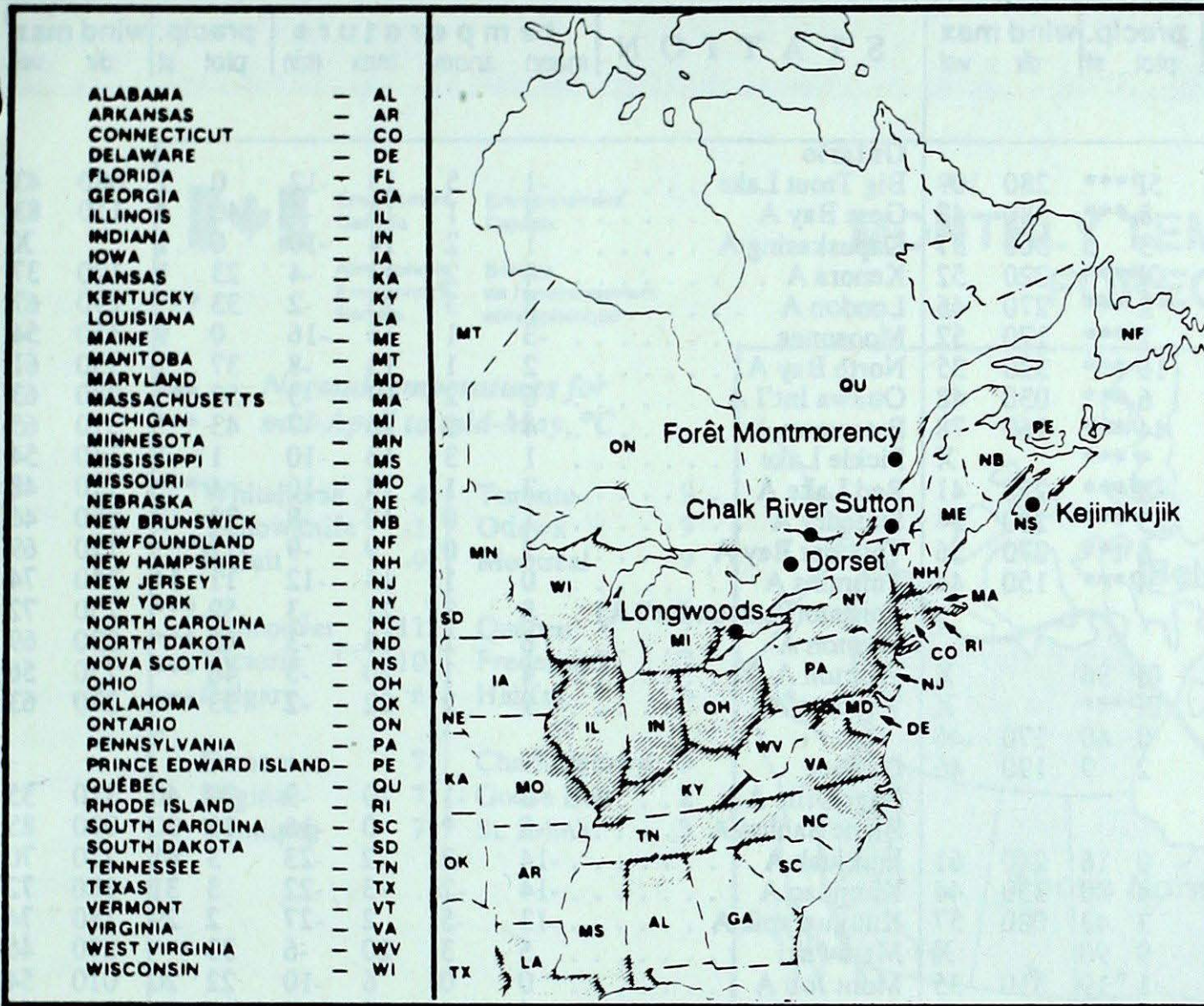


Tracks of low pressure centres at 12:00 U.T. each day during the period.

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 -- CO
- DELAWARE -- DE
- FLORIDA -- FL
- GEORGIA -- GA
- ILLINOIS -- IL
- INDIANA -- IN
- IOWA -- IA
- KANSAS -- KA
- KENTUCKY -- KY
- LOUISIANA -- LA
- MAINE -- ME
- MANITOBA -- MT
- 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 -- QU
- 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
Longwoods	08	3.3	6 R	Western Ohio, Indiana, Western Kentucky
	09	3.4	8 R	Western Ohio, Indiana
Dorset*	07	4.5	6 R	Southern Michigan, Indiana
	08	4.7	26 R	Southern Michigan, Indiana
	09	4.4	9 R	Southern Ontario, Western Ohio
	10	4.5	2 M	Lake Huron
Chalk River	07	4.4	4 R	Southern Michigan, Northern Indiana
	08	5.0	17 R	Southern Michigan
	09	4.7	9 R	Northeastern Ontario
	10	4.2	2 M	Northeastern Ontario
Sutton	08	4.9	21 R	Western New York
	09	4.7	44 R	Western New York
	10	4.0	6 R	Western New York, Southern Ontario
Montmorency	07	4.9	4 R	Southern Quebec, Eastern Ontario
	08	4.8	10 R	Central Quebec
	09	4.9	15 M	Northern Maine
	10	4.4	6 M	Southern and Eastern Quebec
	11	5.0	2 S	Central Quebec
Kejimikujik				Data not available

April 7 to 13, 1991

..... 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
British Columbia								Ontario									
Cape St James	7P	1P	12P	3P	5P***		280	109	Big Trout Lake	-1	5	13	-12	0	1	080	43
Cranbrook A	4	-1	16	-4	8 ***		180	48	Gore Bay A	3	1	13	-4	40	4	110	83
Fort Nelson A	4	4	13	-6	3 5		300	37	Kapuskasing A	1	2	14	-10	0	1		X
Fort St John A	6P	4P	14P	-3P	0P***		220	52	Kenora A	4	2	13	-4	23	1	120	37
Kamloops A	8	0	20	-3	2 ***		270	46	London A	8	3	23	-2	33 ***		290	67
Penticton A	7	-1	20	-4	1 ***		170	52	Moosonee	-3	1	15	-16	0	9	350	54
Port Hardy A	6	0	16	-1	16 ***		320	35	North Bay A	2	1	13	-8	37	1	330	61
Prince George A	5	1	15	-5	6 ***		030	48	Ottawa Int'l A	6	2	17	-3	52 ***		280	63
Prince Rupert A	6	1	12	1	44 ***		160	78	Petawawa A	4	2	16	-7	43 ***		310	65
Revelstoke A	*	*	*	*	* ***			X	Pickle Lake	1	3	13	-10	1	1	140	54
Smithers A	4P	1P	13P	-5P	0P***		220	41	Red Lake A	3	1	14	-10	4 ***		110	48
Vancouver Int'l A	7	-1	15	0	25 ***		280	54	Sudbury A	1	0	12	-8	32	3	050	46
Victoria Int'l A	8	-1	16	0	6 ***		270	56	Thunder Bay A	2	0	9	-9	12 ***		120	69
Williams Lake A	3P	0P	16P	-7P	3P***		150	44	Timmins A	0	1	13	-12	11	14	350	74
Yukon Territory								Québec									
Komakuk Beach A	-20P	0P	-6P	-30P	0P	36		X	Bagotville A	0	-1	10	-9	20	40	310	35
Teslin (aut)	0P	*	7P	-12P	0P***			X	Blanc Sablon A	-8	*	0	-16	16	30	020	85
Watson Lake A	0	2	11	-14	0	40	170	46	Inukjuak A	-14	-2	-2	-23	3	41	210	70
Whitehorse A	1	2	10	-12	2	9	190	46	Kuujuuaq A	-14	-2	-3	-22	3	31	280	72
Northwest Territories								New Brunswick									
Alert	-26	1	-13	-34	0	16	240	61	Charlo A	-1	0	8	-9	17	29	080	50
Baker Lake A	-17	2	-3	-30	4	40	330	44	Chatham A	0	-1	9	-9	29	2	350	37
Cambridge Bay A	-25	-1	-18	-35	3	43	080	57	Fredericton A	2	-1	11	-6	38 ***		330	54
Cape Dyer A	-22	-5	-11	-34	9	90		X	Moncton A	0	-2	10	-9	29	1	360	56
Clyde A	-25	-6	-15	-32	1	19	310	35	Saint John A	2	0	9	-7	52 ***		310	57
Coppermine A	-17	2	-10	-24	0	107		X	Nova Scotia								
Coral Harbour A	-20	-2	-9	-31	7	45	050	72	Greenwood A	3	0	16	-6	31 ***		260	56
Eureka	-30P	1P	-20P	-37P	0P	7	140	52	Shearwater A	2	-1	7	-6	19 ***		280	63
Fort Smith A	4	7	15	-7	0	17	320	33	Sydney A	-1	-2	4	-7	18 ***		340	63
Hall Beach A	-26P	-3P	-16P	-35P	1P	34	300	39	Yarmouth A	4	0	13	-5	13 ***		010	56
Inuvik A	-12	4	3	-22	0	48		X	Prince Edward Island								
Iqaluit A	-20	-4	-8	-28	12	51	330	82	Charlottetown A	-1	-2	7	-8	35	1	350	52
Mould Bay A	-30	-4	-21	-39	0	18		X	Summerside A	-1	-2	7	-7	31	1	360	56
Norman Wells A	-4	5	6	-19	0	20		X	Newfoundland								
Resolute A	-29	-4	-17	-37	1	16	100	46	Cartwright	-10	-6	0	-19	24	228	340	78
Yellowknife A	-2	7	9	-16	4	42	150	46	Churchill Falls A	-10	-2	-1	-22	8	93	040	48
Alberta								91/04/08-91/04/14									
Calgary Int'l A	3	0	16	-8	1 ***		350	54	Gander Int'l A	-5	-5	1	-13	42	20	140	83
Cold Lake A	6	4	17	-3	1 ***		210	41	Goose A	-8	-5	2	-17	8	47	040	56
Edmonton Namao A	6	3	17	-3	0 ***		180	44	Port Aux Basques	-2	-2	3	-9	21	3	090	69
Fort McMurray A	7	5	20	-4	0	1	220	52	St John's A	-2	-3	8	-6	24	1	330	80
High Level A	4	2	17	-6	0	3	310	37	St Lawrence	-1	-2	3	-8	13	1		X
Jasper	4	1	16	-5	4	1		X	Wabush Lake A	-9	-2	3	-21	7	30	270	56
Lethbridge A	5	0	14	-6	5 ***		250	59									
Medicine Hat A	5	-1	14	-5	1 ***		050	52									
Peace River A	5	4	18	-5	0 ***		250	46									
Saskatchewan																	
Cree Lake	3	4	15	-8	0	6	210	59									
Estevan A	5	1	16	-3	9	1	060	63									
La Ronge A	4	3	17	-6	0 ***		200	46									
Regina A	6	3	15	-5	3 ***		110	52									
Saskatoon A	6P	3P	14P	-2P	1P***		030	32									
Swift Current A	4	0	13	-6	2	1	030	46									
Yorkton A	5	3	15	-3	7 ***		100	35									
Manitoba																	
Brandon A	5	3	16	-2	20 ***		081	59									
Churchill A	-7	4	5	-18	1	10	210	63									
Lynn Lake A	3	4	15	-7	0	3	200	46									
The Pas A	4	5	14	-3	0 ***		340	39									
Thompson A	1	3	14	-11	0	16	220	50									
Winnipeg Int'l A	6	3	16	-4	24 ***		140	35									

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.



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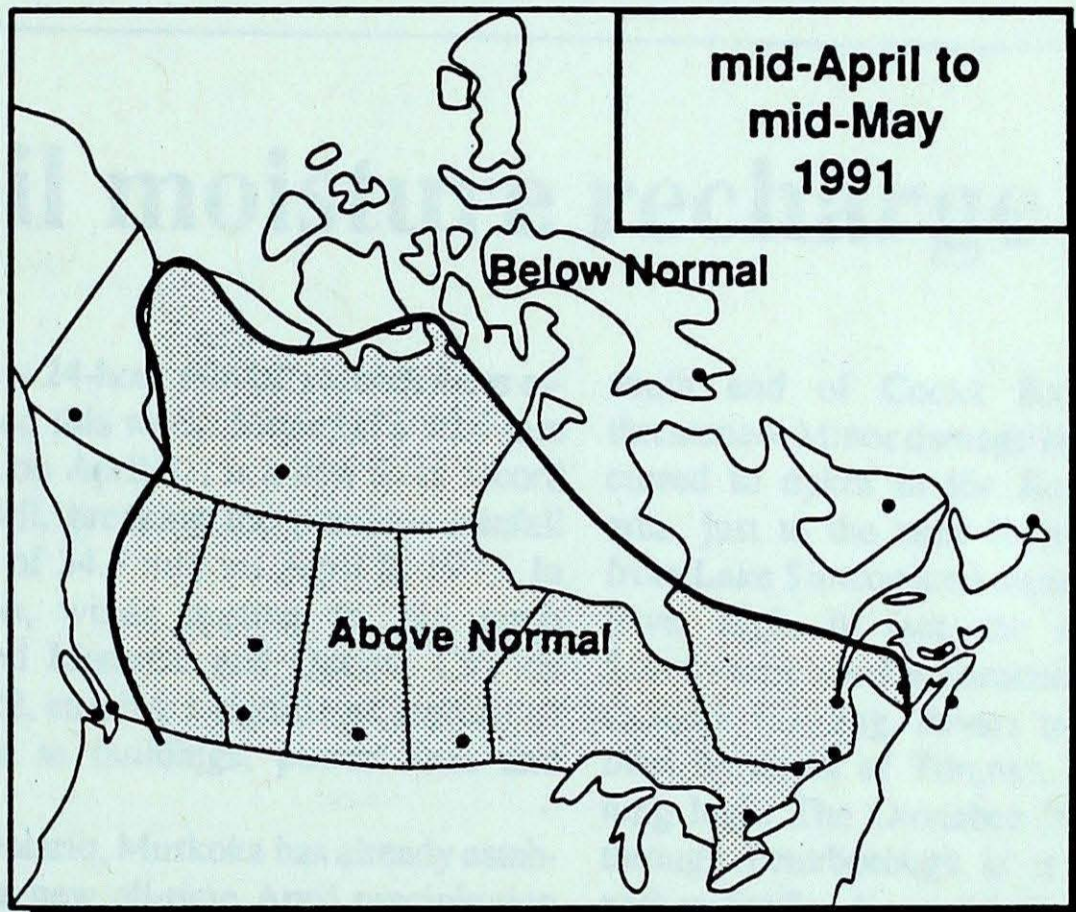
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MONTHLY TEMPERATURE FORECAST

*Normal temperatures for
mid-April to mid-May, °C*

Whitehorse	4	Toronto	9
Yellowknife	-1	Ottawa	9
Iqaluit	-9	Montréal	9
Vancouver	11	Québec	7
Victoria	10	Fredericton	7
Calgary	6	Halifax	6
Edmonton	7	Charlottetown	5
Regina	7	Goose Bay	2
Winnipeg	7	St. John's	3



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