

Climatic Perspectives

March 9 to 15, 1992

A weekly review of Canadian climate and water

Vol. 14 No. 11

Late winter blasts!

Regions of central Ontario and Quebec were battered by a ferocious, late winter storm for two days, beginning on March 9th.

Old Man Winter unleashed all legions in reserve, reviving a dying storm over Michigan, into a powerful blizzard to pelt the leeward side of Lake Huron with freezing rain, snow, gale force winds and plummeting temperatures. Nearly one-half metre of snow accumulated at Sudbury, Ont., mainly on the 10th with a record 38.8 cm, while Val d'Or and Chibougamau, Que. measured 25.8 cm and 24.8 cm, the same day.

At the peak of the storm, howling winds from the north gusted to 70 km/h, severely reducing visibility and forming heavy snowdrifts in -20°C temperatures. The stormy weather lasted for 15 hours in Sudbury, stranding traffic and keeping residents indoors. Rain and freezing rain were more common in southern regions. Temperatures dropped from 10°C to zero in one hour during the afternoon of the 10th at Kitchener, Ont., icing wet surfaces, making it difficult to open car doors and drive safely. Snow squalls left 10 cm to 30 cm of light snow on the lee of Lake Huron and Georgian Bay.

On the 11th, a storm from the Carolinas passed north into Quebec bringing numerous minor floodings in the Montreal region, followed that evening and the next day by strong winds and heavy snowfalls throughout eastern Ontario. Mild weather preceded the rain, melting the snow cover and filling ditches and low lying areas with water. However, many drains were frozen and roadways and the runway at Beloeil airport east of Montreal were in-

undated. The north-flowing St. Pierre river, south of Montreal had an ice jam, causing it to overflow its banks at St. Constant. Hundreds of families had to be evacuated until the ice dam was removed and the water receded late on the 11th, as temperatures fell.

The snow and wind on the 12th disrupted traffic on the Macdonald-Cartier freeway east of Belleville, Ont. During the week in southern Ontario, temperatures were as high as 14.4°C on the 9th at London, but plunged to -21.0°C at Trenton by the 14th. At least it wasn't as cold as Geraldton (-34.2°C on the 11th).

Unexceptional weather?

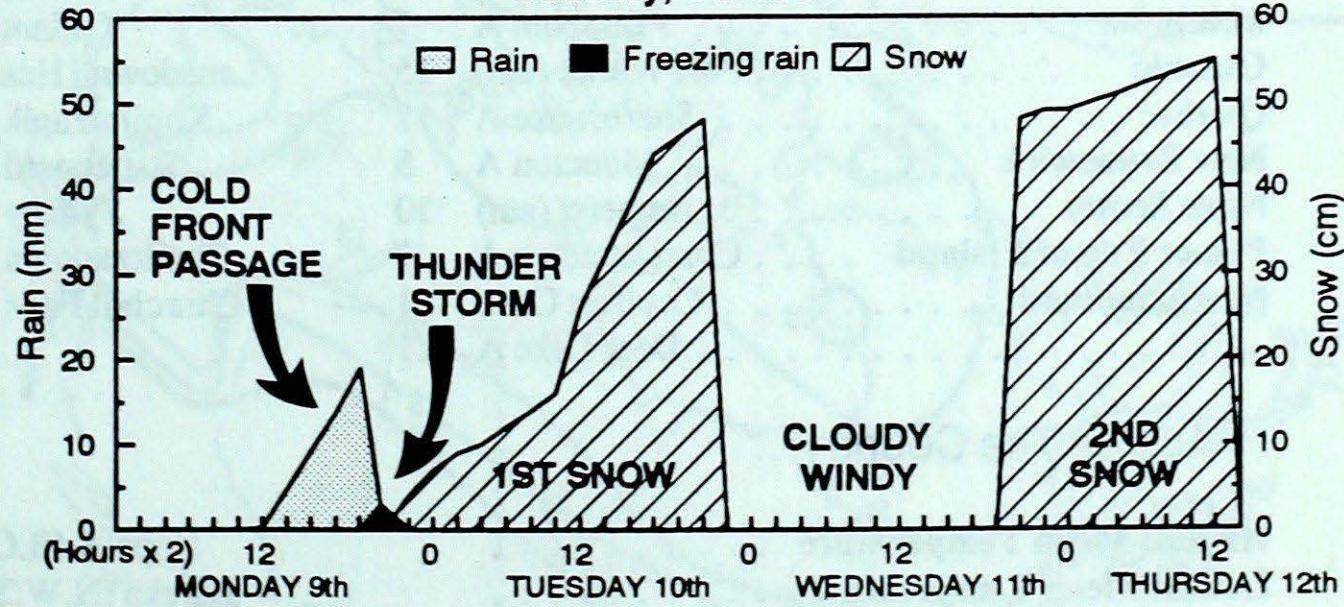
Our Maritime provinces correspondent writes: "With the exception of the heavy rain, slippery roads and flooding, caused by a storm that moved along Nova Scotia's Atlantic coast late Sunday, the 8th

and early Monday...it was an uneventful week". It would appear that the inclement weather of this winter has not dampened the spirits of Maritimers as they passionately cherished the mild spell this week, not being upset by a new record low minimum temperature for the 14th (14.7°C) at Halifax airport breaking the previous 13.9°C, set in 1972. After all, it's not spring yet, is it?!

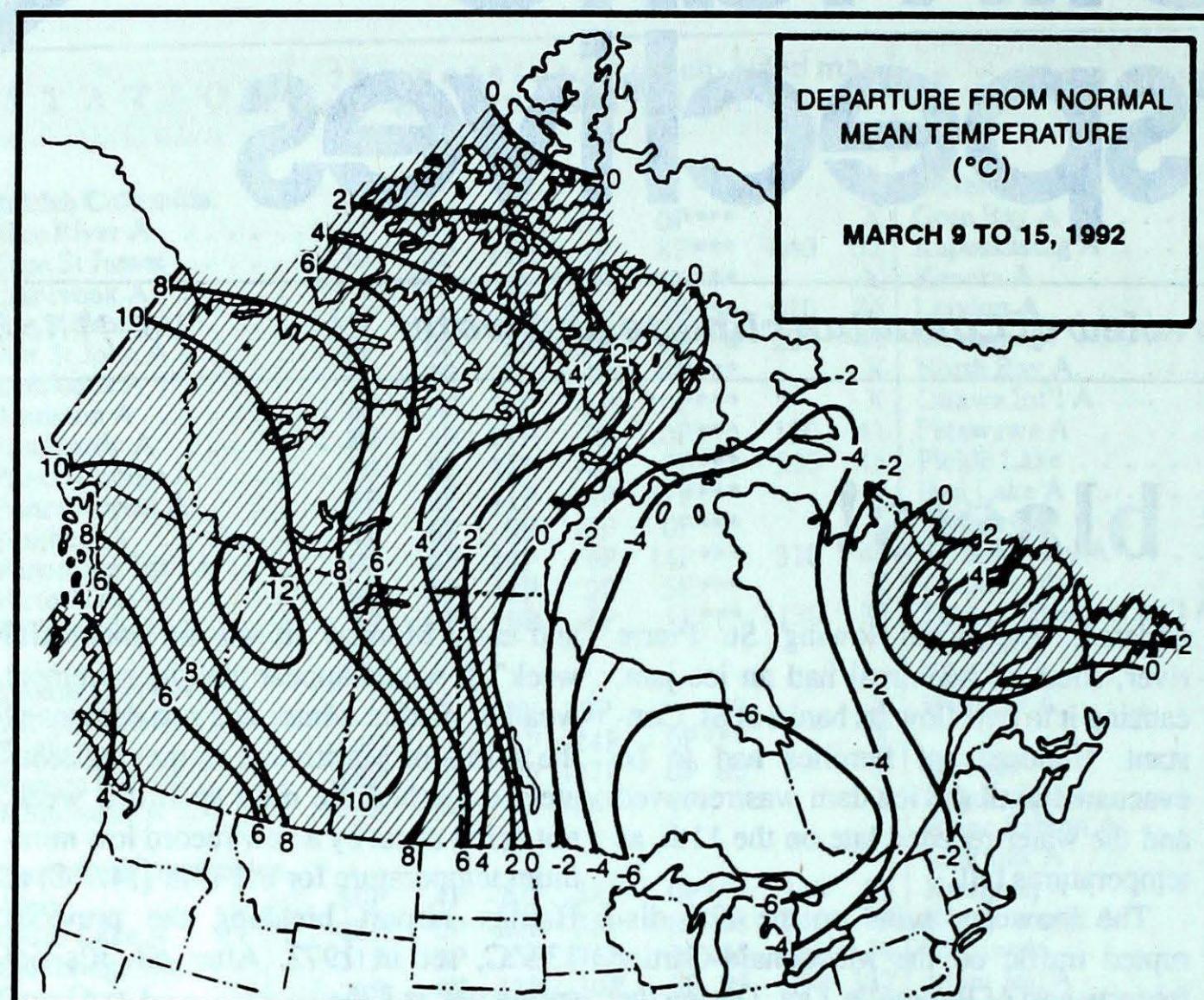
A look ahead...

For the week of March 23, near normal temperatures are expected across Canada. Mild Pacific air will likely produce precipitation across British Columbia, the Yukon, the Mackenzie District of the Northwest Territories, and Alberta. Also, stormy weather is likely across southern Ontario and Quebec, and the Atlantic provinces.

Winter storms - March 9-12, 1992
Sudbury, Ontario



Courtesy of Alain Boisvert
Environment Canada
Sudbury Weather Office



Weekly normal temperatures (°C)

	max.	min.
Whitehorse A	-3.6	-15.4
Iqaluit A	-19.8	-29.0
Yellowknife A	-14.4	-25.8
Vancouver Int'l A	9.0	1.9
Victoria Int'l A	9.3	1.5
Calgary Int'l A	0.7	-10.3
Edmonton Int'l A	-1.5	-13.3
Regina A	-3.4	-14.0
Saskatoon A	-4.5	-15.4
Winnipeg Int'l A	-3.9	-14.7
Ottawa Int'l A	0.3	-8.8
Toronto (Pearson Int'l A)	2.4	-6.1
Montréal Int'l A	0.4	-8.4
Québec A	-1.2	-11.2
Fredericton A	1.3	-9.2
Saint John A	1.0	-8.5
Halifax (Shearwater)	2.1	-5.6
Charlottetown A	-0.4	-8.0
Goose A	-4.6	-16.3
St John's A	0.0	-6.9

Weekly temperature and precipitation extremes

	Maximum temperature (°C)	Minimum temperature (°C)	Heaviest precipitation (mm)
British Columbia	Abbotsford A 21	Fort Nelson A -12	Prince Rupert A 58
Yukon Territory	Whitehorse A 7	Komakuk Beach A -27	Shingle Point A 5
Northwest Territories	Fort Simpson A 11	Shepherd Bay A -44	Yellowknife A 17
Alberta	Lethbridge A 20	Cold Lake A -17	Edmonton Municipal A 2
Saskatchewan	Moose Jaw A 17	Cree Lake -35	La Ronge A 4
Manitoba	Dauphin A 7	Gillam A -35	Lynn Lake A 19
Ontario	Port Weller (aut) 15	Lansdowne House -39	Sudbury A 71
Quebec	Sherbrooke A 11	Kuujjuarapik A -39	Val-d'Or 66
New Brunswick	Moncton A 8	St-Léonard A -20	Saint John A 17
Nova Scotia	Amherst (aut) 10	Sydney A -15	Yarmouth A 13
Prince Edward Island	Charlottetown A 7	Charlottetown A -16	Charlottetown A 5
Newfoundland	Comfort Cove 11	Churchill Falls A -28	Stephenville A 34
	Deer Lake A 11		

Across The Country...

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

CLIMATIC PERSPECTIVES
VOLUME 14

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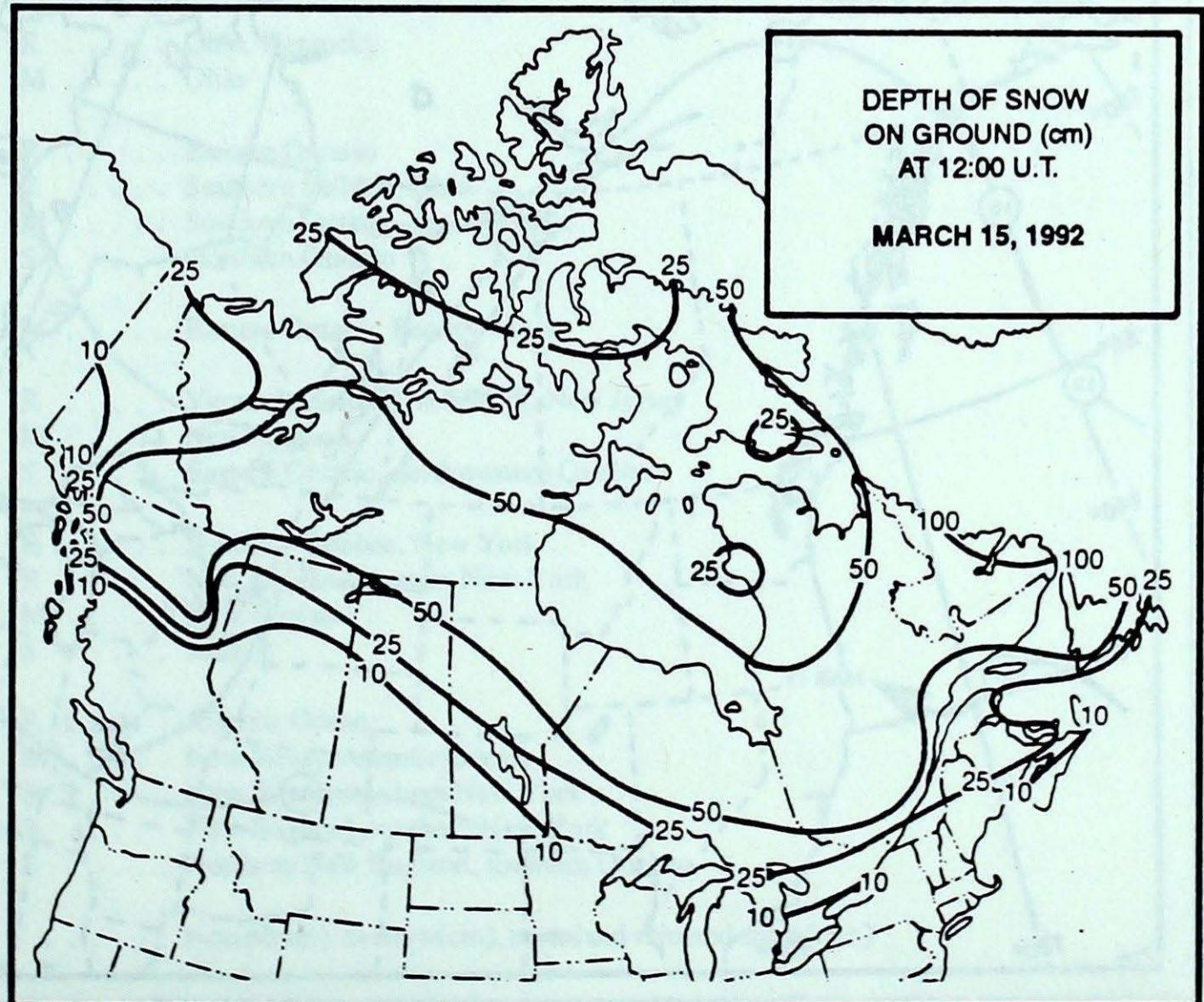
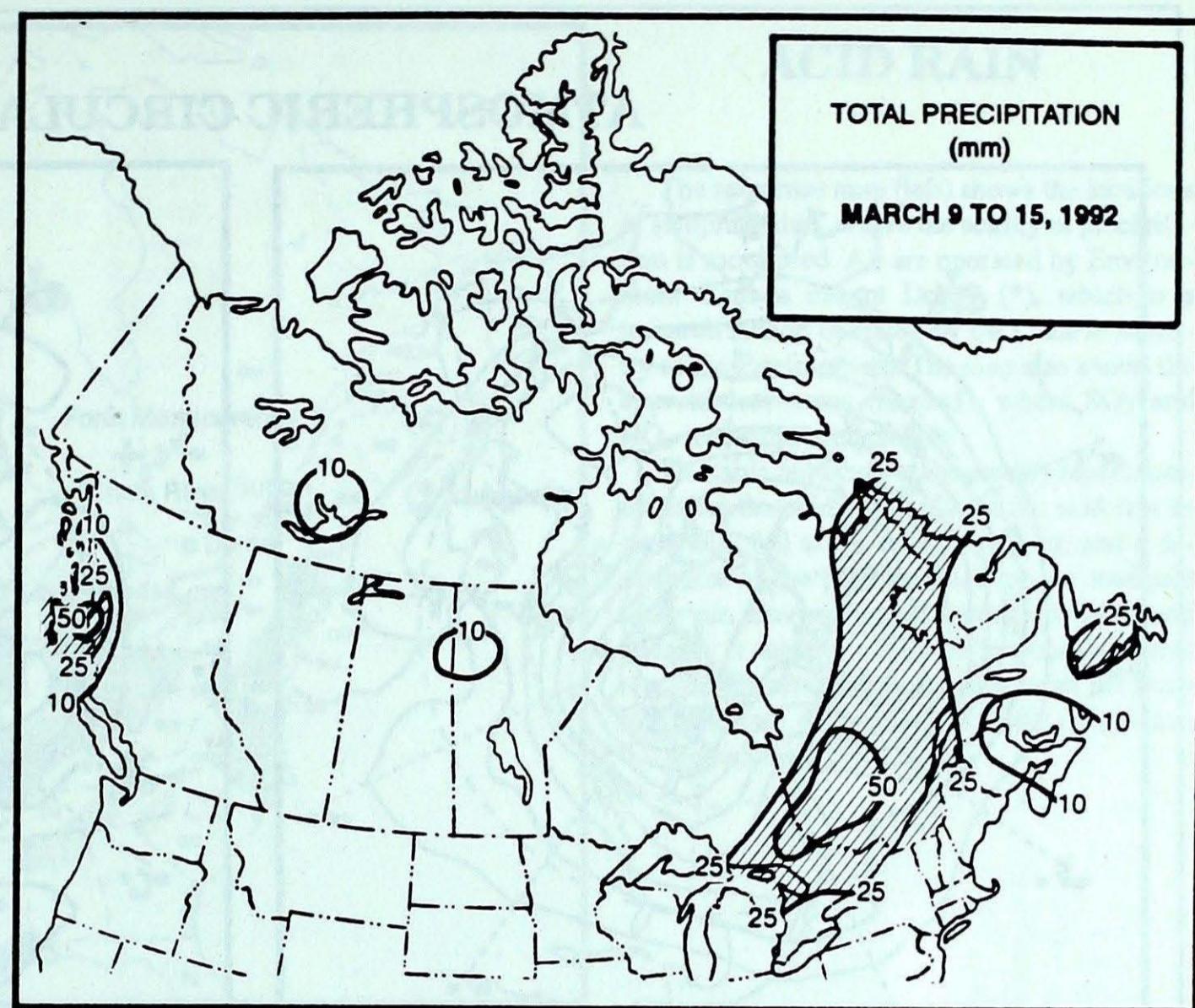
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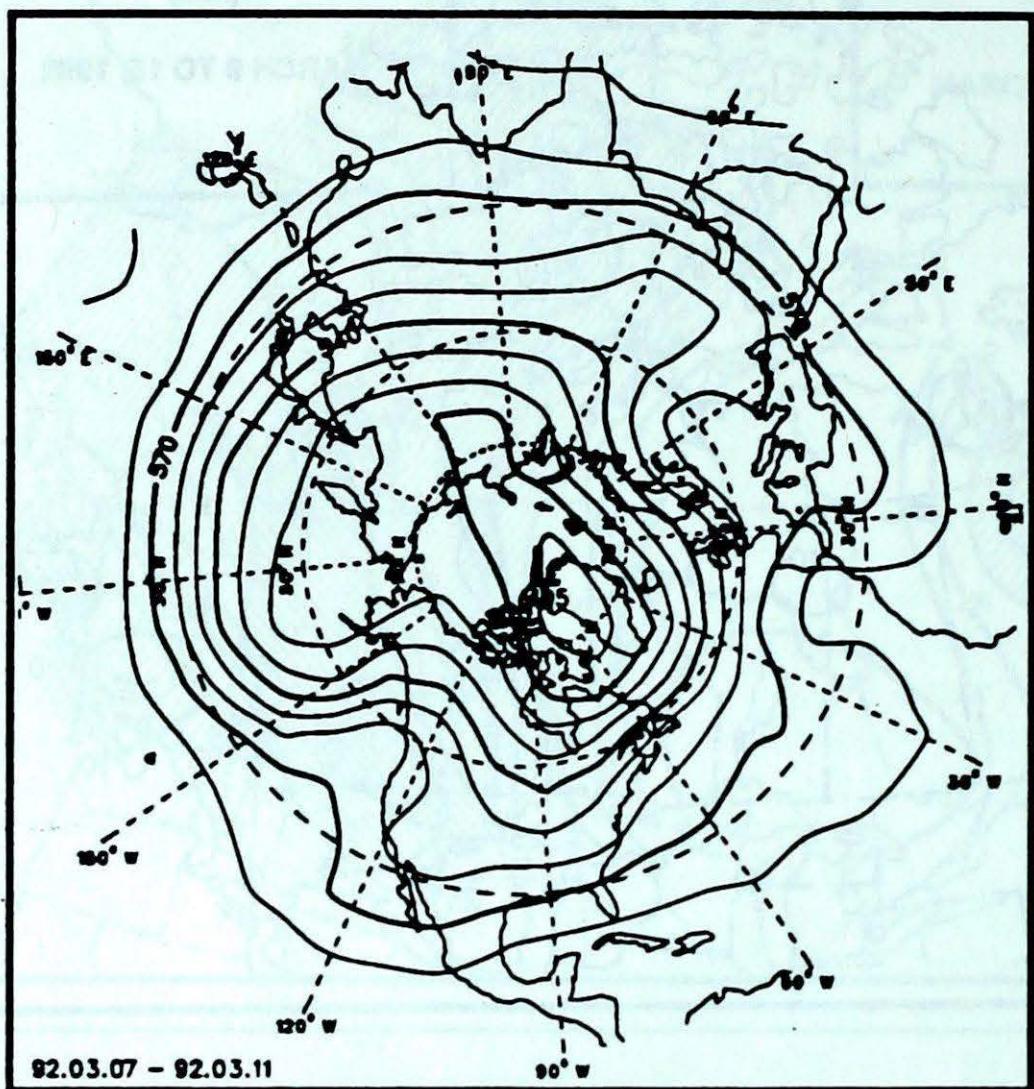
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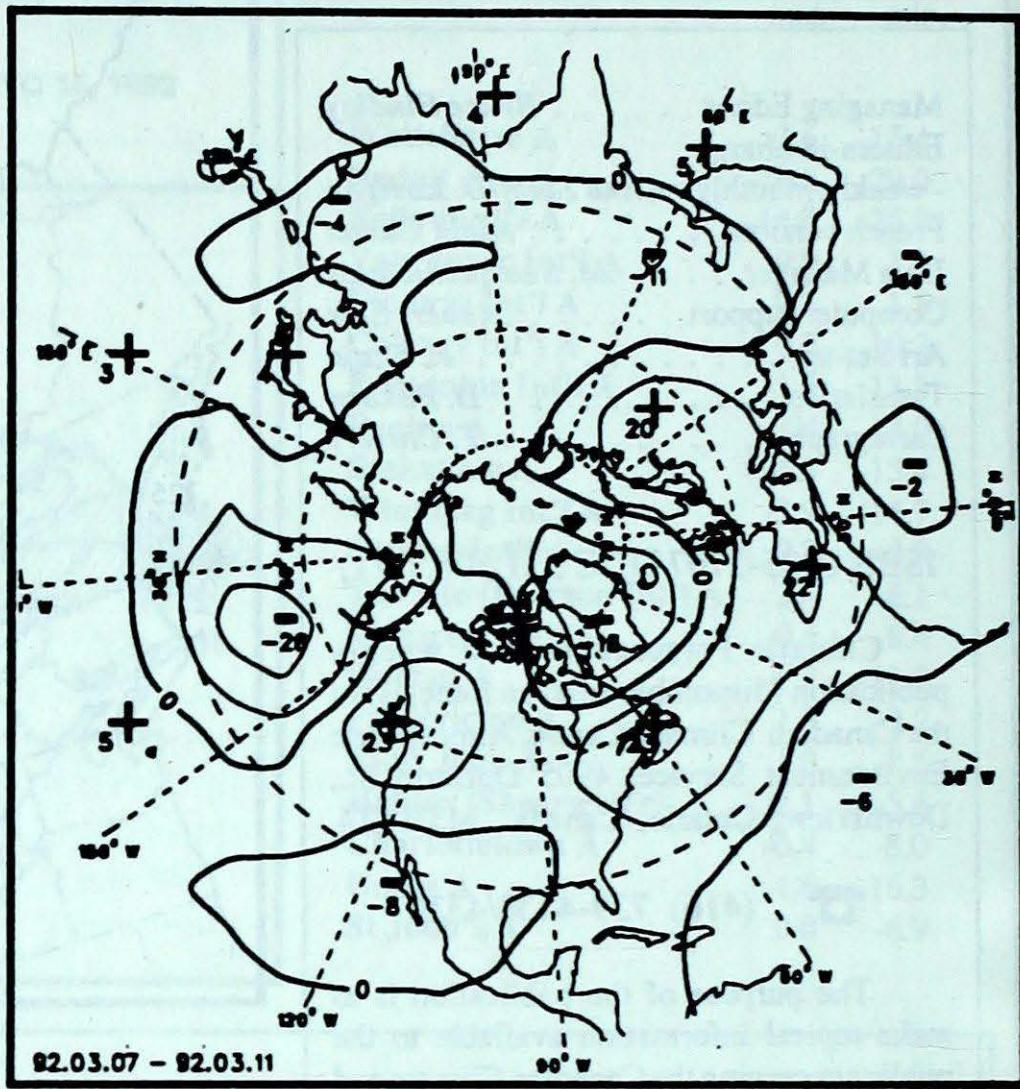
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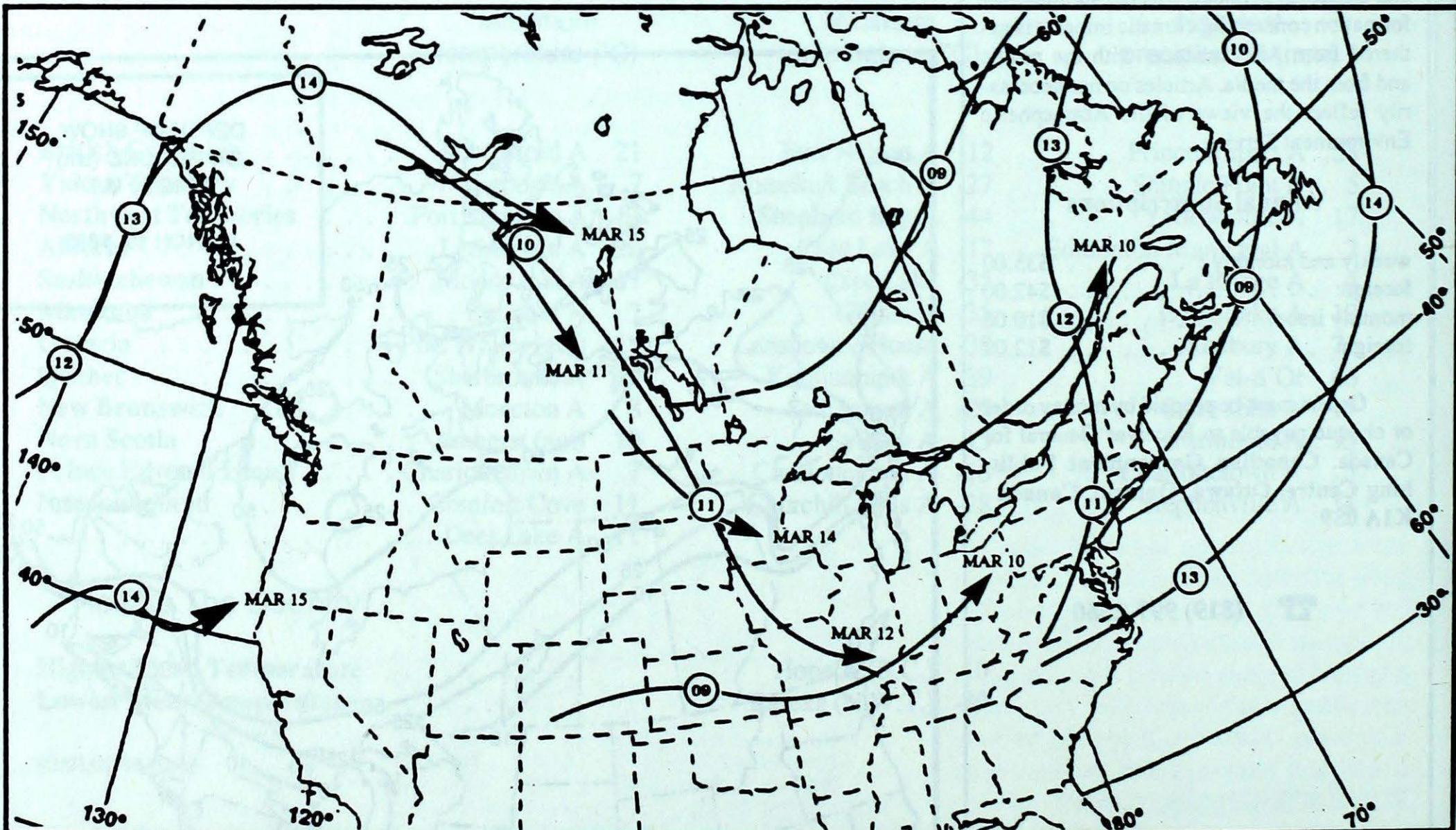
ATMOSPHERIC CIRCULATION



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



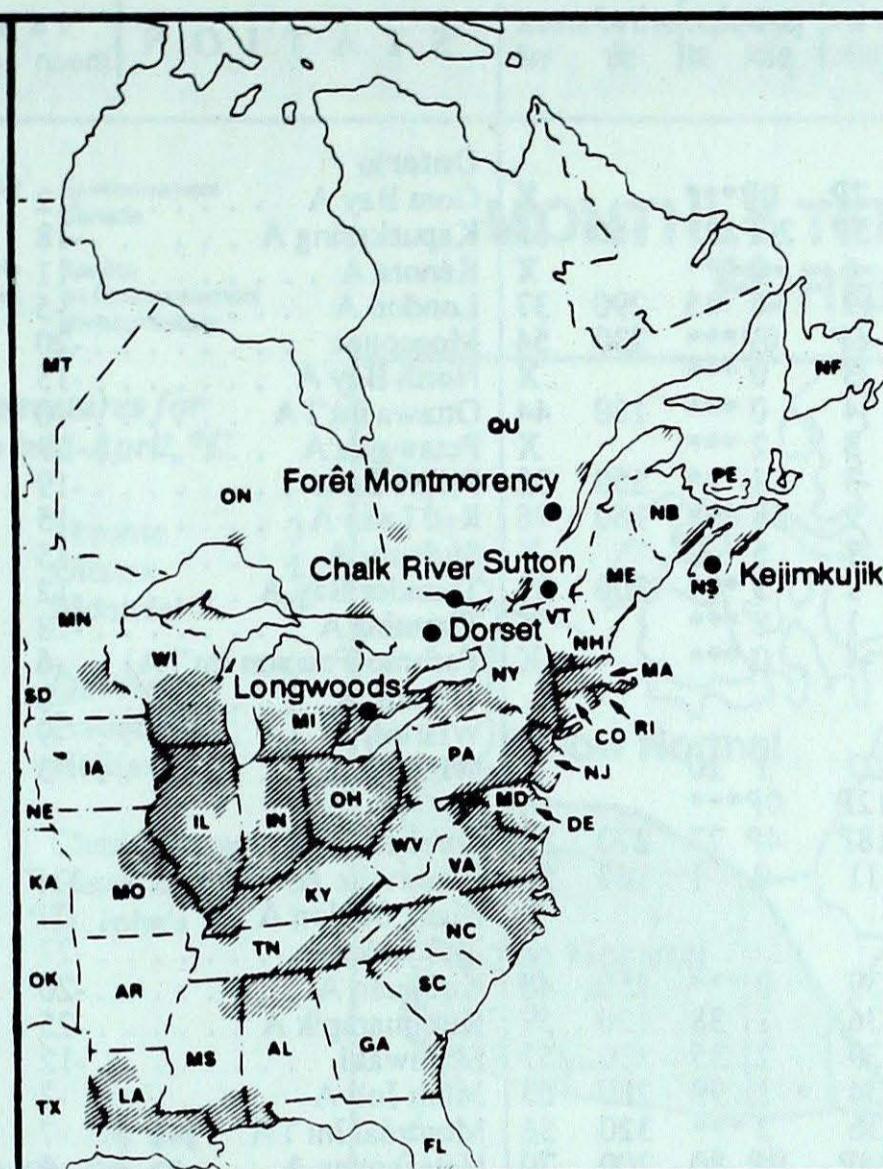
Mean geopotential height anomaly
50-kPa level (10-decametre intervals)



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

ALABAMA
ARKANSAS
CONNECTICUT
DELAWARE
FLORIDA
GEORGIA
ILLINOIS
INDIANA
IOWA
KANSAS
KENTUCKY
LOUISIANA
MAINE
MANITOBA
MARYLAND
MASSACHUSETTS
MICHIGAN
MINNESOTA
MISSISSIPPI
MISSOURI
NEBRASKA
NEW BRUNSWICK
NEWFOUNDLAND
NEW HAMPSHIRE
NEW JERSEY
NEW YORK
NORTH CAROLINA
NORTH DAKOTA
NOVA SCOTIA
OHIO
OKLAHOMA
ONTARIO
PENNSYLVANIA
PRINCE EDWARD ISLAND
QUÉBEC
RHODE ISLAND
SOUTH CAROLINA
SOUTH DAKOTA
TENNESSEE
TEXAS
VERMONT
VIRGINIA
WEST VIRGINIA
WISCONSIN

— AL
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— MD
— MA
— MI
— MN
— MS
— MO
— NE
— NB
— NF
— NH
— NJ
— NY
— NC
— ND
— NS
— OH
— OK
— ON
— PA
— PE
— QU
— RI
— SC
— SD
— TN
— TX
— VT
— VA
— WV
— WI



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.

Site	day	pH	amount	air path to site
March 8 to 14, 1992				
Longwoods	09	4.1	2	R Ohio, Kentucky
	10	4.7	5	M Ohio
Dorset*	08	3.8	1	R Eastern Ontario
	09	3.9	18	R Southern Ontario, Ohio
	10	4.2	34	M Southern Ontario, Pennsylvania
	12	5.1	3	S Northern Ontario
Chalk River	10	4.0	10	M Eastern Ontario, Pennsylvania
Sutton	10	4.6	15	R Vermont, eastern New York, New Jersey
	11	4.4	5	M New England
	12	4.7	5	S Eastern Ontario, northwestern Quebec
Montmorency	09	4.0	1	R Southern Quebec, New York
	10	4.3	24	R New England, eastern New York
	11	5.1	38	M New England
	12	4.8	4	S Maine
Kejimkujik	08	4.8	5	R Atlantic Ocean
	11	4.7	14	M New Jersey, Atlantic Ocean
	12	3.9	2	S New Jersey, southern New York
	13	4.2	1	S New England, southern New York
	14	4.4	1	S Northern New England, southern Quebec

. 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																		
Blue River A	5P	5P	15P	-7P	0P***	X			Gore Bay A	. . . . .	-12	-6	6	-19	34	38	190	65
Cape St James	8P	3P	10P	5P	20P***	160	65		Kapuskasing A	. . . . .	-18	-7	0	-29	1	84	320	61
Cranbrook A	7	6	17	-6	0 ***	X			Kenora A	. . . . .	-11	-3	-2	-22	1	19	200	44
Fort Nelson A	1	13	12	-12	0 45	290	37		London A	. . . . .	-5	-4	14	-15	15	3	300	72
Fort St John A	5P	13P	12P	-6P	0P***	230	54		Moosonee	. . . . .	-20	-6	-5	-29	1	45	320	74
Kamloops A	7	4	18	-3	0 ***	X			North Bay A	. . . . .	-15	-9	7	-27	38	79	010	61
Penticton A	6	3	15	-4	0 ***	180	44		Ottawa Int'l A	. . . . .	-10	-5	9	-19	24	45	290	59
Port Hardy A	8	4	17	3	2 ***	X			Petawawa A	. . . . .	-13	-7	4	-27	27	40	320	48
Prince George A	6	8	16	-3	3 ***	250	32		Pickle Lake	. . . . .	-19	-6	-3	-32	0	55	220	41
Prince Rupert A	7	4	14	2	58 ***	160	46		Red Lake A	. . . . .	-15	-5	-1	-30	0	36	210	44
Smithers A	4	6	11	-3	5 2	X			Sudbury A	. . . . .	-15	-8	4	-25	71	83	010	63
Vancouver Int'l A	8	2	13	1	3 ***	300	32		Thunder Bay A	. . . . .	-12	-5	-1	-23	0	15	350	43
Victoria Int'l A	8	3	18	1	8 ***	X			Timmins A	. . . . .	-18	-8	1	-28	14	75	320	69
Williams Lake A	6	7	17	-4	0 ***	X			Toronto(Pearson Int'l A)	. -6	-4	12	-15	7	1	330	59	
Yukon Territory																		
Komakuk Beach A	-19	8	-15	-27	1 20	X			Trenton A	. . . . .	-8	-6	12	-21	39	22	230	61
Teslin (aut)	0P	*	5P	-12P	0P***	X			Wiarton A	. . . . .	-9	-6	9	-18	40	24	170	56
Watson Lake A	-3P	10P	7P	-18P	4P 77	270	52		Windsor A	. . . . .	-3	-4	15	-12	20	1	270	41
Whitehorse A	1	11	7	-11	0 1	160	59											
Northwest Territories																		
Alert	-30	4	-19	-39	0 ***	250	48		Bagotville A	. . . . .	-11P	-3P	6P	-22P	10P	67	280	35
Baker Lake A	-28	1	-20	-36	1 38	320	59		Blanc Sablon A	. . . . .	-7P	*	7P	-18P	13P	10	220	52
Cambridge Bay A	-28	5	-17	-39	2 35	330	57		Inukjuak A	. . . . .	-27	-5	-19	-36	6	15	050	61
Cape Dyer A	-24	0	-13	-34	1 99	280	63		Kuujuaq A	. . . . .	-20	-1	-6	-30	27	30	040	87
Clyde A	-28	-1	-22	-36	2 ***	320	56		Kuujuarapik A	. . . . .	-25	-6	-8	-39	8	32	360	70
Coppermine A	-21P	11P	-5P	-34P	9P 80	200	70		Maniwaki	. . . . .	-12	-5	6	-26	53	54	360	46
Coral Harbour A	-30	-3	-18	-37	0 38	330	43		Mont Joli A	. . . . .	-7	-1	8	-17	25	15	160	72
Eureka	-39	-1	-34	-43	1 18	X			Montréal Int'l A	. . . . .	-7	-3	8	-17	18	2	230	56
Fort Smith A	-9	7	6	-21	3 55	140	48		Natashquan A	. . . . .	-5	2	4	-17	12	43	260	65
Hall Beach A	-31	0	-18	-41	1 34	310	35		Québec A	. . . . .	-8	-2	9	-19	52	68	240	69
Inuvik A	-15	12	-2	-24	8 50	X			Schefferville A	. . . . .	-17	0	-4	-25	31	89	330	46
Iqaluit A	-30	-6	-21	-36	1 15	340	32		Sept-Îles A	. . . . .	-7	1	4	-15	17	40	080	70
Mould Bay A	-32	2	-24	-39	2 18	X			Sherbrooke A	. . . . .	-7	-1	11	-19	20	10	110	41
Norman Wells A	-9	12	-2	-17	1 12	300	50		Val-d'Or A	. . . . .	-17	-7	2	-27	66	69	350	72
Resolute A	-28	4	-19	-37	6 14	350	69											
Yellowknife A	-14	7	-2	-27	17 70	310	65											
Alberta																		
Calgary Int'l A	6	10	19	-8	0 ***	320	56		Nova Scotia									
Cold Lake A	2	11	12	-17	1 ***	280	41		Greenwood A	. . . . .	-4	-1	10	-12	9	5	230	72
Edmonton Namao A	4	11	12	-7	0 1	X			Shearwater A	. . . . .	-3	-1	6	-12	4	3	230	67
Fort McMurray A	1	12	11	-16	0 8	260	50		Sydney A	. . . . .	-4	0	7	-15	11	12	230	72
High Level A	1	12	10	-12	0 18	110	39		Yarmouth A	. . . . .	-2	-2	10	-10	13	2	140	74
Jasper	6	9	17	-7	0 ***	X												
Lethbridge A	7	9	20	-8	0 ***	270	50											
Medicine Hat A	6	10	18	-8	0 ***	160	37											
Peace River A	3	13	11	-12	0 ***	280	44											
Saskatchewan																		
Cree Lake	-9	4	7	-35	4 45	200	63											
Estevan A	0	7	15	-13	0 ***	330	50											
La Ronge A	-5	7	7	-19	4 42	290	37											
Regina A	0	9	15	-13	0 ***	320	43											
Saskatoon A	-1	9	7	-17	0 1	190	32											
Swift Current A	3	10	16	-11	1 ***	310	44											
Yorkton A	-6	5	6	-21	0 9	310	39											
Manitoba																		

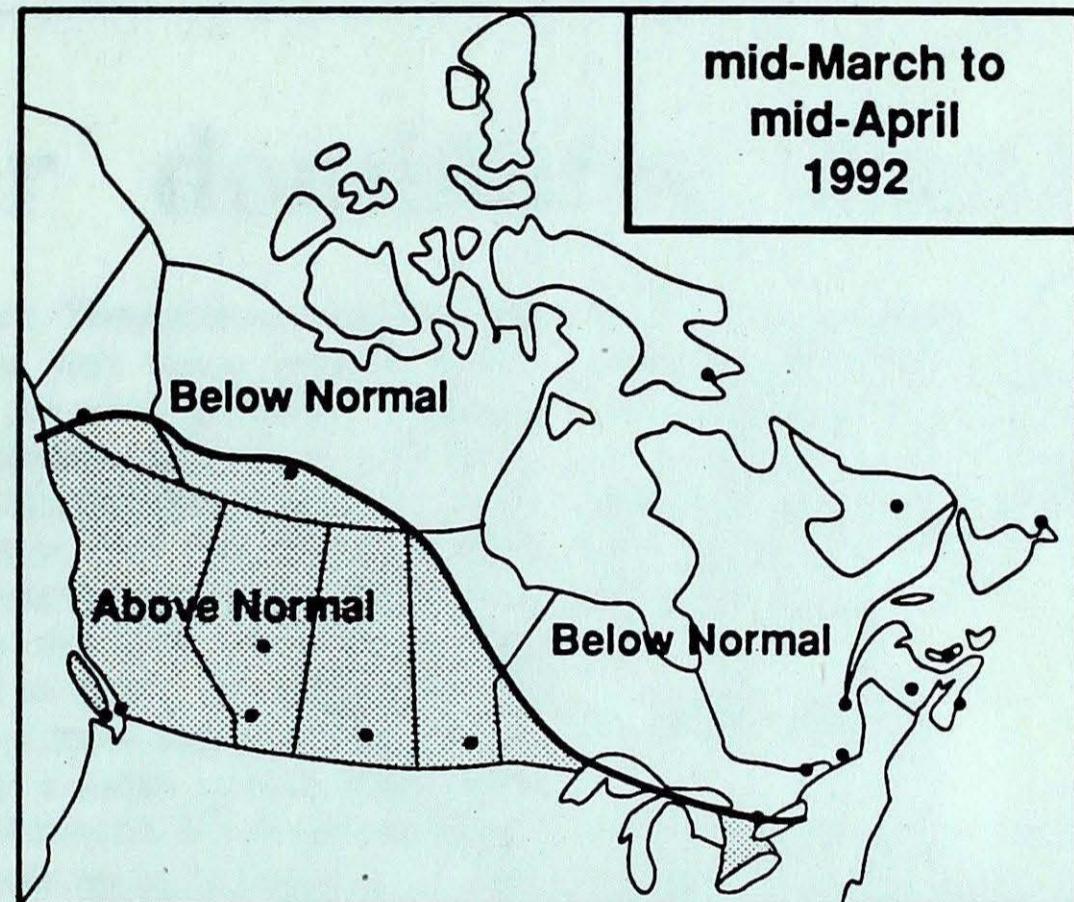
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MONTHLY TEMPERATURE FORECAST

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

Whitehorse	-4	Toronto	3
Yellowknife	-13	Ottawa	1
Iqaluit	-19	Montréal	0
Vancouver	7	Québec	-1
Victoria	7	Fredericton	1
Calgary	-1	Halifax	2
Edmonton	-1	Charlottetown	0
Regina	-2	Goose Bay	-5
Winnipeg	-2	St. John's	-1

mid-March to
mid-April
1992



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