

Climatic Perspectives



March 26 to April 1, 1990

A weekly review of Canadian climate

Vol.12 No.13

Abnormally warm in western Canada but winter hangs on in the East

Above-normal mean weekly temperatures have been evident in Canada's northwest for five successive weeks, while Newfoundland residents have had to endure below normal mean weekly temperatures for the last 15 consecutive weeks.

Winter operations wind down in the Northwest

Temperatures in northern B.C. and the southern Mackenzie District have soared to the mid-teens this week, rapidly melting the snow pack. Fort Nelson has just recorded its 2nd warmest March ever. The oil and forestry industry is now concerned about getting their equipment out of the field before the ground thaws. In the Mackenzie District, a number of "winter roads" leading into isolated posts have been closed. There was minor flooding on the southern portions of the Dempster highway. Some airlines are starting to limit the use of ski planes out of Yellowknife.

Heavy ice on the East Coast

Usually by the first week of April there is an open water route into the Gulf of St. Lawrence, but this certainly is not the case this year. Although ice conditions have improved significantly in the western portions of the Gulf, predominantly westerly winds have been funnelling the pack ice eastwards towards Cabot Strait. Heavy ice congestion between Newfoundland and Cape Breton Island has kept the Coast Guard very busy trying to keep the ship-

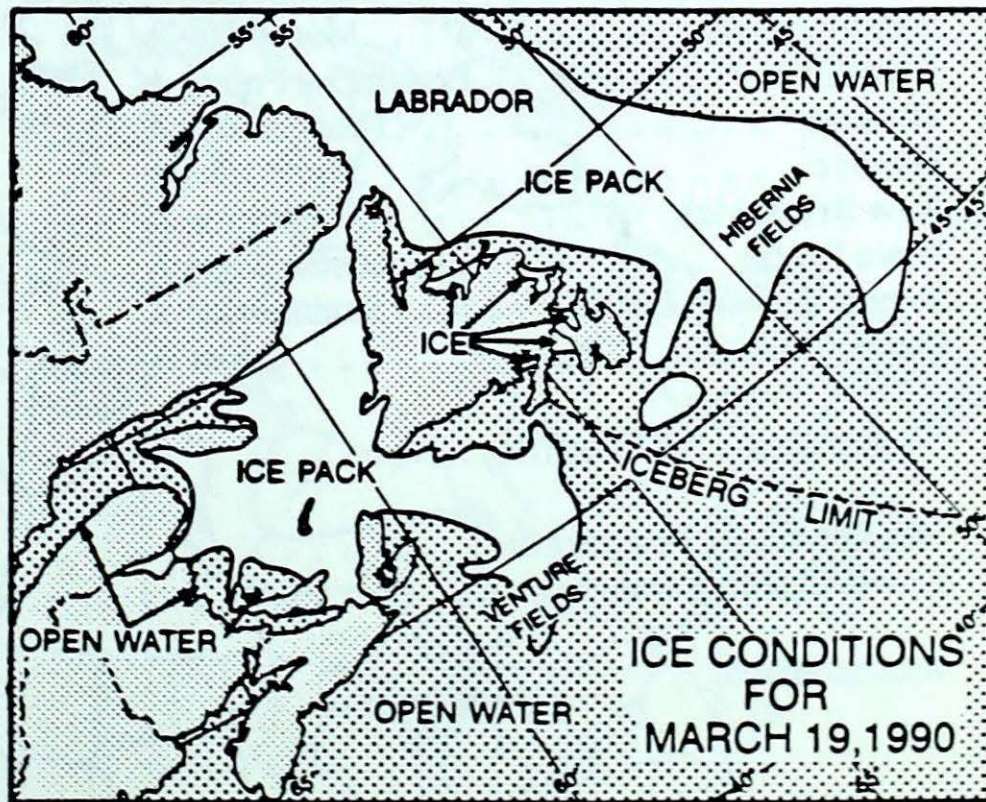
ping route from the Atlantic open, where there are currently 21 ships stuck in the heavy outflow of ice. Although a few leads have opened up, ships are still finding it very difficult to reach ports along Newfoundland's west coast. The Coast Guard has started the routine chore of breaking up the ice in many of the coastal harbours.

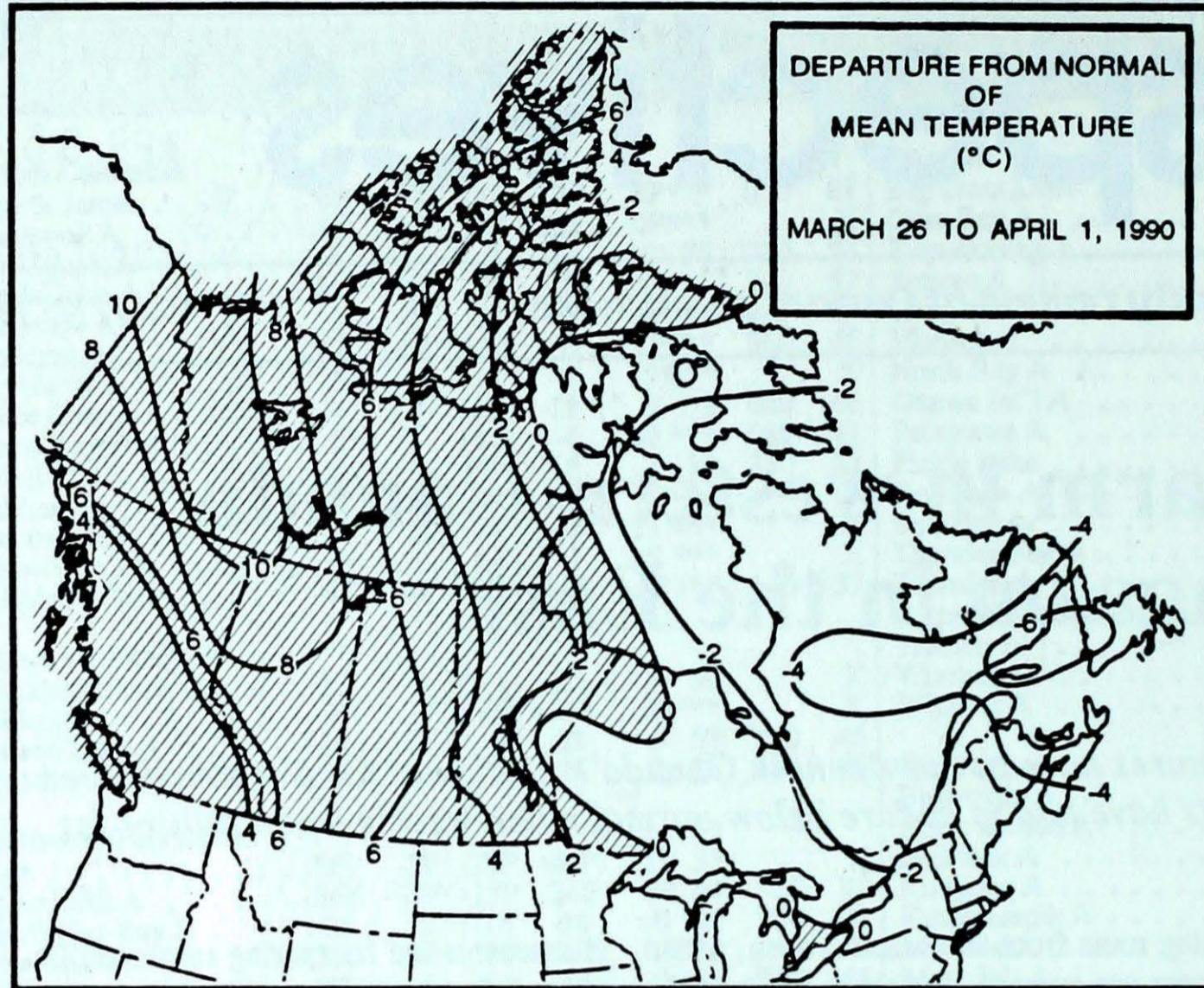
The overall distribution of the Labrador ice pack that extends down the east coast of Newfoundland is now close to the climatological maximum. The southern limit extends to the warmer waters of the Gulf Stream, where rapid ice-melt occurs. Because of the predominantly off-shore winds this season, the ice pack has remained well off Newfoundland's east coast, and so far it has been a fairly routine season for the Coast Guard. One area of concern has been Placentia Bay, where because of the unusually cold winter, there

is extensive ice hampering tanker traffic to and from the Come-by-Chance refinery. Ice has also been threatening the Hibernia oil fields, where drilling has been suspended since February.

Warm in the West, cold in the East

For the week of April 9, mild temperatures are expected west of Manitoba, with readings 3 to 7° C above normal. From Manitoba and eastwards temperatures are expected to be 2 to 5° C below normal.





Weekly normal temperatures (°C)

	max.	min.
Whitehorse A	1.7	-9.7
Iqaluit A	-14.5	-24.4
Yellowknife A	-8.2	-20.6
Vancouver Int'l A	10.8	3.3
Victoria Int'l A	11.0	2.7
Calgary Int'l A	4.8	-6.3
Edmonton Int'l A	2.2	-8.9
Regina A	1.9	-8.6
Saskatoon A	1.3	-9.1
Winnipeg Int'l A	1.5	-8.3
Ottawa Int'l A	4.6	-4.5
Toronto (Pearson Int'l A)	6.4	-2.9
Montréal Int'l A	4.9	-3.7
Québec A	2.5	-6.2
Fredericton A	5.4	-4.8
Saint John A	4.3	-4.8
Halifax (Shearwater)	4.6	-2.7
Charlottetown A	2.6	-4.6
Goose A	-0.2	-10.6
St John's A	2.4	-3.8

Weekly temperature and precipitation extremes

	Maximum temperature (°C)	Minimum temperature (°C)	Heaviest precipitation (mm)
British Columbia	Hope A 21	Blue River A -10	Prince Rupert A 66
Yukon Territory	Drury Creek 10	Ogilvie -25	Klondike Camp 23
Northwest Territories	Fort Simpson A 14	Shepherd Bay A -40	Cape Dyer A 29
Alberta	Lethbridge A 20	Fort McMurray A -14	Edson A 3
Saskatchewan	Moose Jaw A 16	Cree Lake -29	Broadview 5
Manitoba	Portage La Prairie A 15	Grand Rapids (aut) -31	Brandon A 7
Ontario	Thunder Bay A 18	Armstrong (aut) -28	London A 18
Quebec	Sherbrooke A 12	La Grande IV A -33	Montréal Int'l A 11
New Brunswick	Fredericton A 8	St-Léonard A -21	Moncton A 16
Nova Scotia	Greenwood A 9	Sydney A -14	Yarmouth A 18
Prince Edward Island	Summerside A 5	Summerside A -13	Summerside A 13
Newfoundland	Goose A 8	Wabush Lake A -30	Burgeo 11

Across The Country...

Highest Mean Temperature	Hope A(BC) 11
Lowest Mean Temperature	Shepherd Bay A(NWT) -31

CLIMATIC PERSPECTIVES
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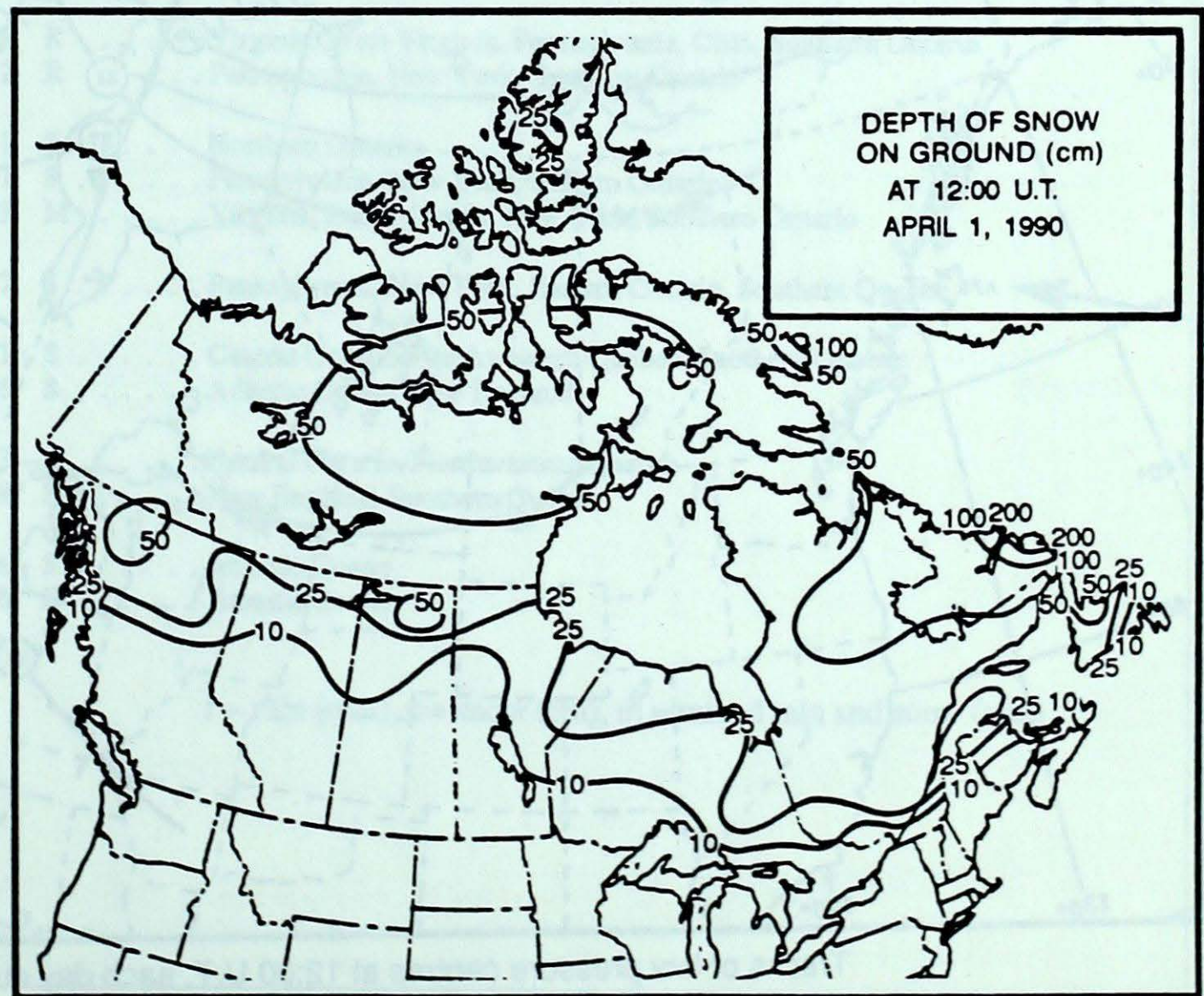
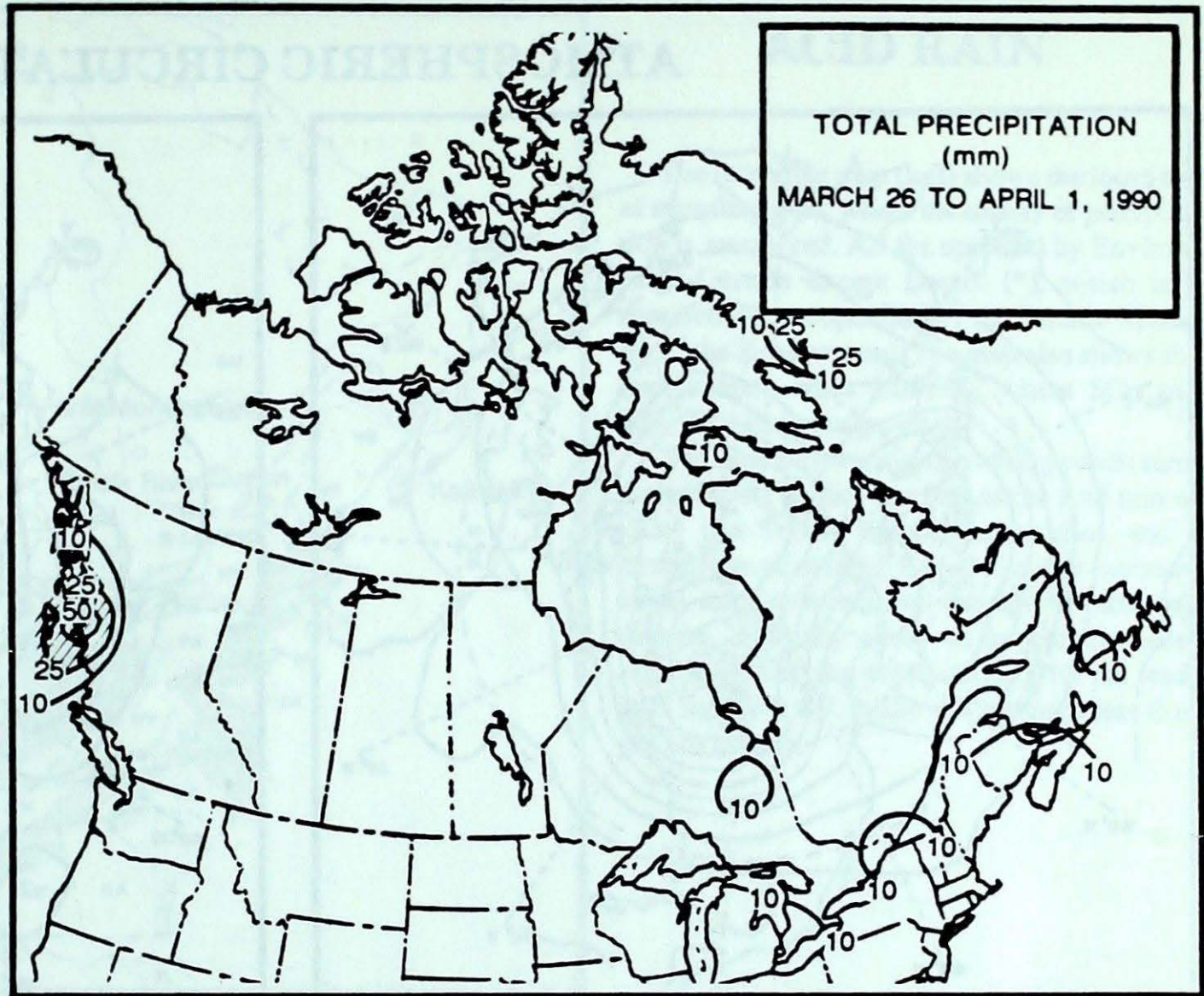
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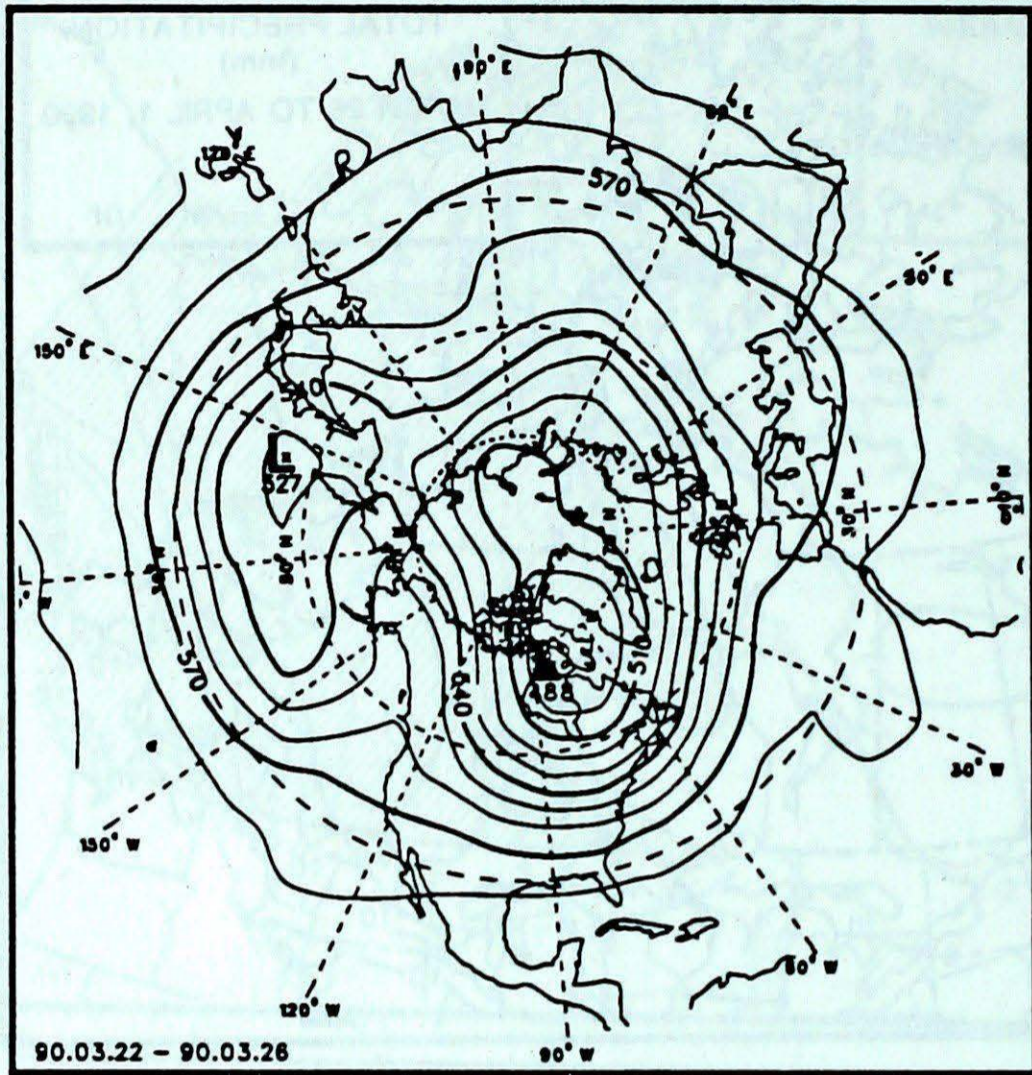
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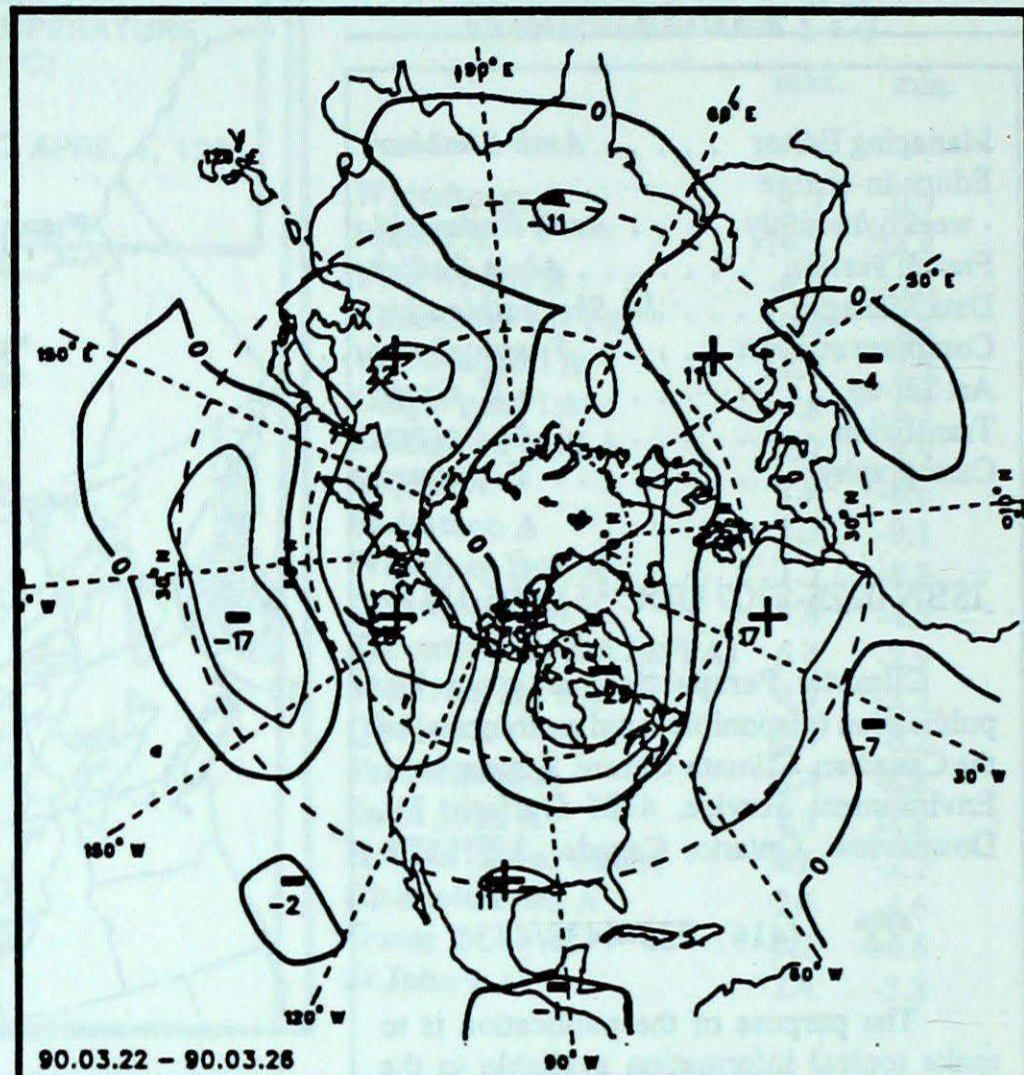
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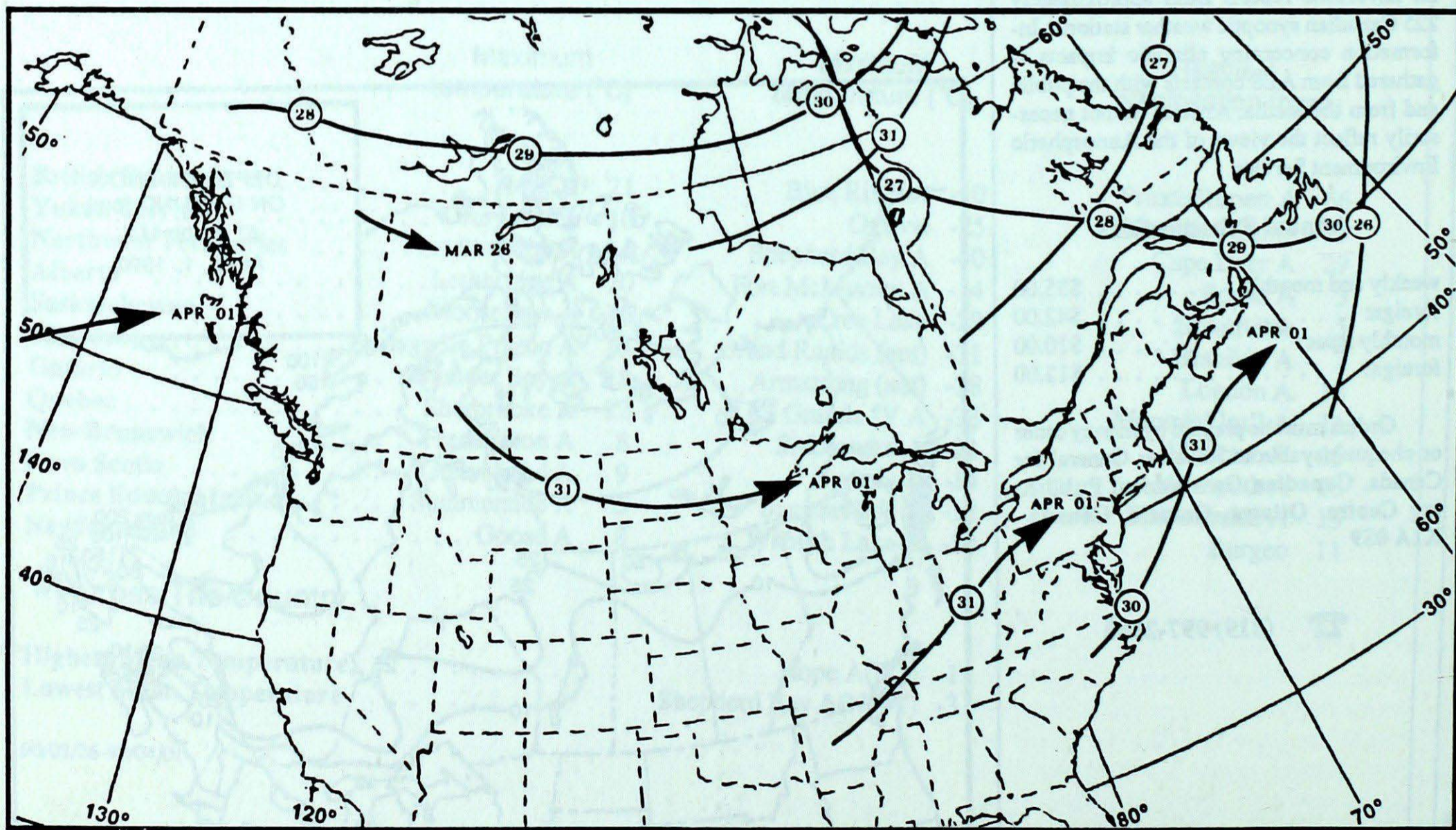
ATMOSPHERIC CIRCULATION



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



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

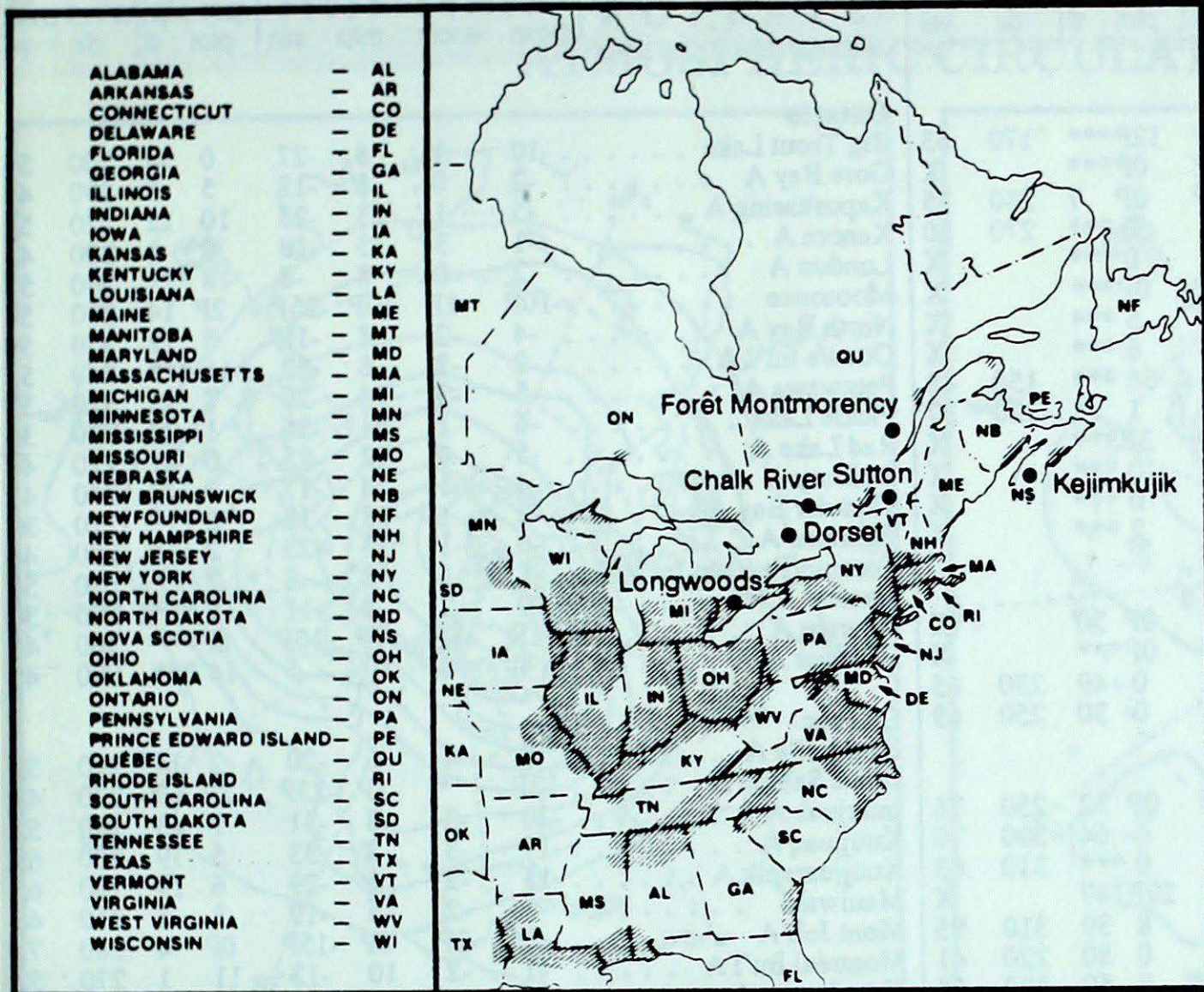


Tracks of low pressure centres at 12:00 U.T. each day during the period.

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 — 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

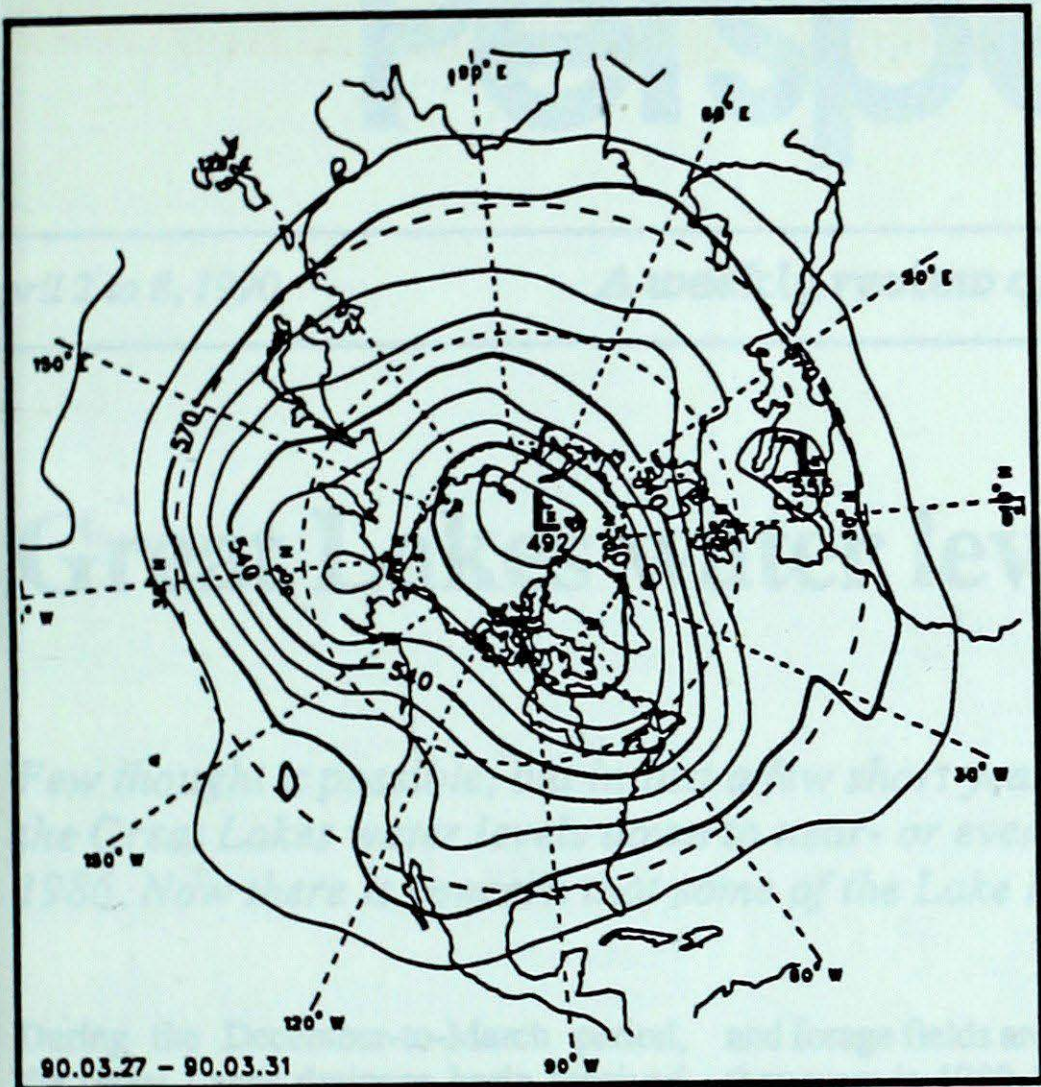
Site	day	pH	amount	air path to site	From March 25 to 31, 1990
Longwoods	29	3.4	9 R	Virginia, West Virginia, Pennsylvania, Ohio, Southern Ontario	
	31	3.5	2 R	Pennsylvania, New York, Southern Ontario	
Dorset *	25	5.6	1 S	Northern Ontario	
	29	4.2	1 S	Pennsylvania, New York, Eastern Ontario	
	31	4.0	3 M	Virginia, Pennsylvania, New York, Southern Ontario	
Chalk River	30	3.9	7 S	Pennsylvania, New York, Eastern Ontario, Southern Quebec	
Sutton	26	4.1	1 S	Central Ontario, Northwestern Quebec, Southern Quebec	
	30	4.3	5 S	Atlantic Ocean, New England	
Montmorency	25	4.3	3 S	Central Ontario, Northwestern Quebec	
	30	4.0	2 S	New England, Southern Quebec	
Kejimikujik	30	5.4	16 S	Atlantic Ocean	
	31	5.0	6 R	Atlantic Ocean	

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

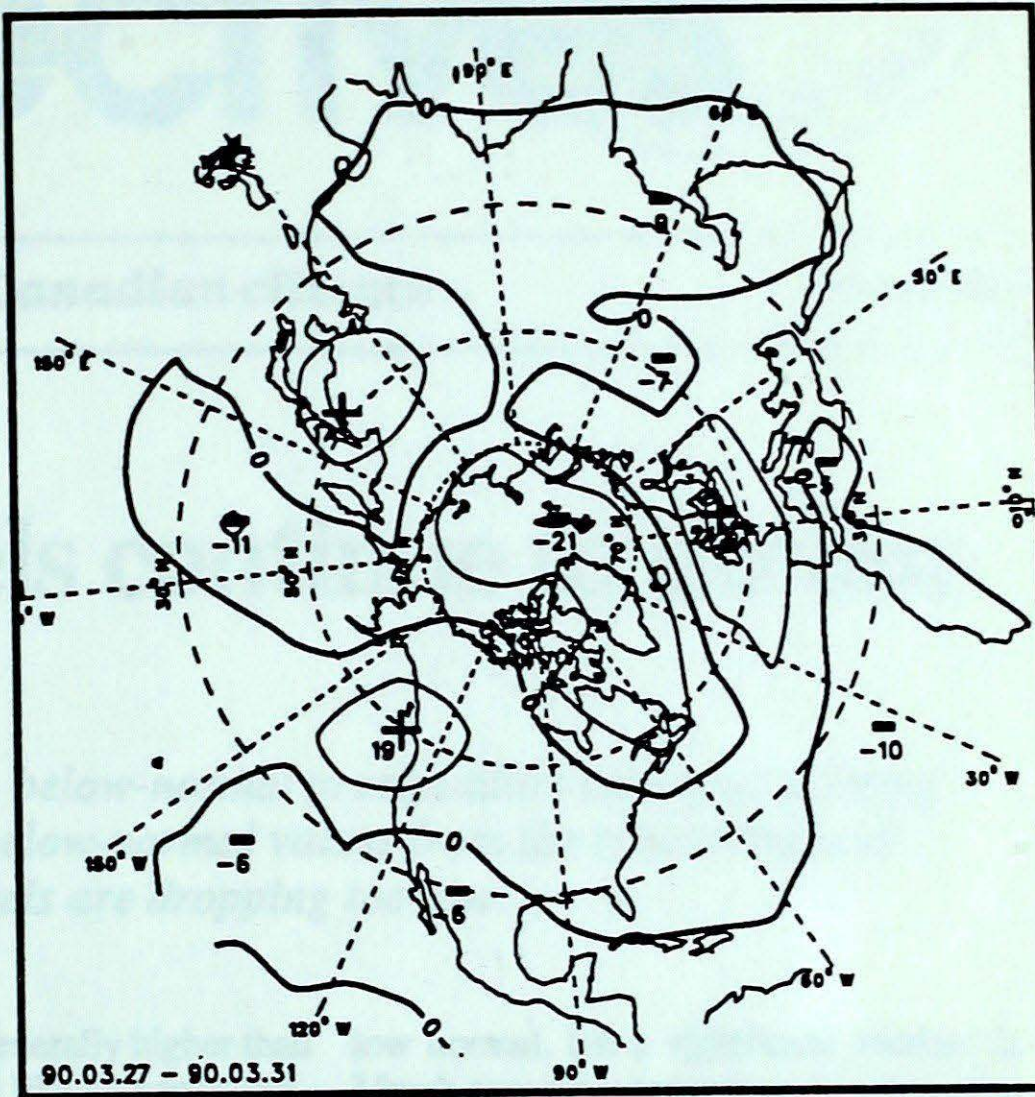
STATION	temperature				precip.		wind max		STATION	temperature				precip.		wind max	
	mean	anom	max	min	ptot	st	dir	vel		mean	anom	max	min	ptot	st	dir	vel
British Columbia								Ontario									
Cape St James	7P	1P	12P	5P	12P***		170	63	Big Trout Lake	-10	1	8	-27	0	34	300	56
Cranbrook A	7P	4P	19P	-6P	0P***			X	Gore Bay A	-2	0	8	-12	5	5	290	48
Fort Nelson A	5P	10P	15P	-7P	0P 7		280	65	Kapuskasing A	-5	1	13	-23	10	12	220	54
Fort St John A	6	8	12	-2	0 ***		270	80	Kenora A	-1	3	13	-18	0	1	200	43
Kamloops A	9	3	19	-6	0 ***			X	London A	2	0	8	-8	18 ***		340	52
Penticton A	9P	3P	20P	-6P	0P***			X	Moosonee	-10P	-1P	10P	-25P	2P 14		230	56
Port Hardy A	7	2	12	0	5 ***			X	North Bay A	-4	-2	8	-16	5	12	350	59
Prince George A	5	3	14	-5	6 ***			X	Ottawa Int'l A	-2	-2	6	-12	11 ***		340	56
Prince Rupert A	6	2	10	-1	66 ***		150	48	Petawawa A	-5	-3	4	-20	7	1	320	52
Revelstoke A	6	3	17	-6	1 1		320	37	Pickle Lake	-6	1	11	-25	1	22	220	35
Smithers A	4P	3P	12P	-3P	3P***			X	Red Lake A	-5	0	12	-25	0	11	220	44
Vancouver Int'l A	8	1	14	0	0 ***			X	Sudbury A	-4	-1	8	-17	7	2	240	41
Victoria Int'l A	8	2	18	-1	0 ***			X	Thunder Bay A	-2	1	18	-18	8 ***		220	39
Williams Lake A	5	4	15	-8	2 ***			X	Timmins A	-6	-1	13	-23	2	34	280	46
Yukon Territory								Toronto(Pearson Int'l A)									
Komakuk Beach A	-16P	9P	-8P	-23P	0P 30			X	Trenton A	0	-2	8	-11	5 ***		300	50
Teslin (aut)	0P	*	6P	-7P	0P***			X	Warton A	-1P	-1P	7P	-10P	8P***		360	41
Watson Lake A	1	7	9	-10	0 49		230	65	Windsor A	4	0	10	-5	14 ***		090	48
Whitehorse A	2	6	7	-5	0 30		250	69	Quebec								
Northwest Territories								Bagotville A									
Alert	-25P	7P	-17P	-34P	0P 32		250	76	Blanc Sablon A	-12P	*	-1P	-23P	2P 60		270	48
Baker Lake A	-24	1	-14	-33	4 64		310	70	Inukjuak A	-20	-3	-3	-31	7 43		190	52
Cambridge Bay A	-26	3	-14	-36	0 ***		310	63	Kuujuuaq A	-17	-3	3	-33	5 19		200	63
Cape Dyer A	-20P	0P	-5P	-30P	29P 147			X	Kuujuuarapik A	-15	-2	5	-29	6 19		180	65
Clyde A	-24	0	-5	-39	8 39		310	95	Maniwaki	-5	-2	5	-19	3 3		310	46
Coppermine A	-18	7	-7	-27	0 80		220	41	Mont Joli A	-4P	-2P	6P	-15P	0P 4		280	72
Coral Harbour A	-25	-3	-16	-35	8 59		320	65	Montréal Int'l A	-1	-2	10	-13	11 1		270	52
Eureka	-30	6	-19	-38	0 14		180	91	Natashquan A	-10P	-7P	1P	-23P	4P***		300	56
Fort Smith A	-3P	7P	9P	-20P	0P 34			X	Québec A	0P	2P	5P	-13P	4P 47			X
Hall Beach A	-27P	0P	-16P	-38P	0P 45		010	54	Schefferville A	-14	-2	3	-31	6 67		210	69
Inuvik A	-10	13	5	-25	0 43		330	37	Sept-Îles A	-12P	-8P	0P	-21P	8P 28		330	61
Iqaluit A	-23	-4	-5	-33	7 31		140	83	Sherbrooke A	-6P	-5P	12P	-22P	6P 1		270	54
Mould Bay A	-22P	8P	-15P	-30P	1P 25		300	65	Val-d'Or A	-8	-3	6	-24	3 17		340	57
Norman Wells A	-4	12	7	-18	2 7		300	46	New Brunswick								
Resolute A	-28	1	-21	-34	3 29		190	50	Charlo A	-8	-5	4	-20	4 40		300	56
Yellowknife A	-8	6	4	-23	7 40		160	41	Chatham A	-5	-5	6	-17	10 18		320	63
Alberta								Fredericton A									
Calgary Int'l A	6	7	18	-7	0 ***		340	48	Moncton A	-5P	-4P	7P	-15P	16P 2		260	56
Cold Lake A	2	6	11	-13	0 1		240	37	Saint John A	-5	-4	5	-16	10 5		330	67
Edmonton Namao A	6	8	16	-5	0 ***		340	56	Nova Scotia								
Fort McMurray A	2	7	13	-14	0 9		280	43	Greenwood A	-3	-4	9	-13	11 4		200	76
High Level A	0	7	13	-13	0 26		330	46	Shearwater A	-3	-4	3	-12	14 4		070	65
Jasper	4	4	14	-6	0 1			X	Sydney A	-5	-4	1	-14	2 1		310	67
Lethbridge A	7	6	20	-4	0 ***		280	57	Yarmouth A	-2	-4	7	-9	18 ***		310	63
Medicine Hat A	6	5	18	-5	0 ***		150	46	Prince Edward Island								
Peace River A	4P	8P	11P	-5P	0P***		230	46	Charlottetown A	-5P	-4P	5P	-13P	10P 1		300	46
Saskatchewan								Summerside A									
Cree Lake	-5	5	9	-29	0 19		320	52	-4	-4	5	-13	13 2		240	65	
Estevan A	3P	4P	14P	-12P	3P 1		020	44	Newfoundland								
La Ronge A	-1	7	14	-23	0 20		300	41	Cartwright	-9	-3	5	-24	5 230		220	63
Regina A	3	6	16	-11	3 ***		220	43	Churchill Falls A	-12	-2	5	-28	5 86		300	56
Saskatoon A	3	7	14	-10	0 ***		290	39	Gander Int'l A	-7	-6	3	-17	1 9		270	74
Swift Current A	4	6	16	-7	1 ***		360	44	Goose A	-9	-3	8	-25	4 73		270	56
Yorkton A	-3	2	8	-20	0 1			X	Port Aux Basques	-7	-5	-1	-14	9 29		310	85
Manitoba								St John's A									
Brandon A	1P	5P	15P	-8P	7P***		070	35	St Lawrence	-6	-6	3	-13	1 1		240	57
Churchill A	-13	4	5	-26	5 20		310	65	Wabush Lake A	-13	-3	3	-30	9 33		320	50
Lynn Lake A	-7	4	9	-27	0 10		290	46	90/03/26-90/04/01								
The Pas A	-4	3	12	-22	0 1		200	41									
Thompson A	-7	4	11	-26	1 6		210	59									
Winnipeg Int'l A	-1	3	13	-16	0 1		360	41									

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
 dlr = 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.

ATMOSPHERIC CIRCULATION



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



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



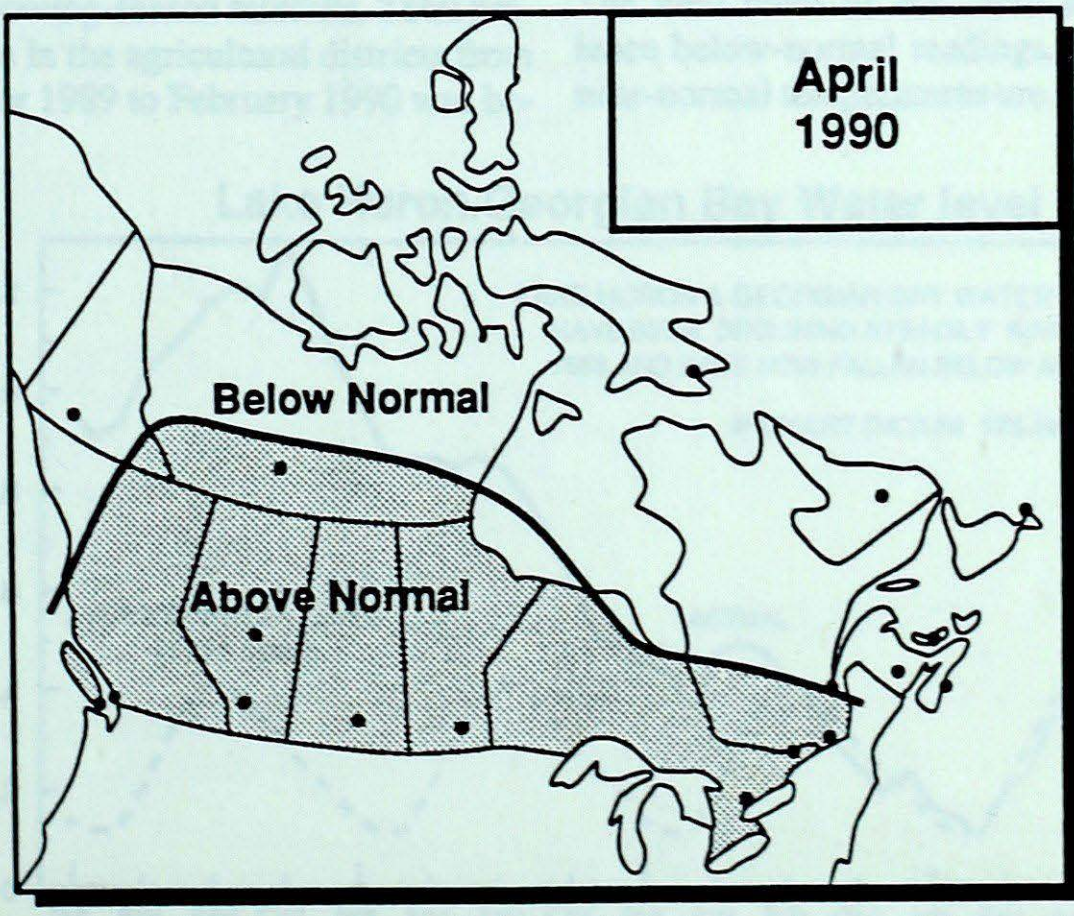
Environment Canada / Environnement Canada

Atmospheric Environment Service / Service de l'environnement atmosphérique

MONTHLY TEMPERATURE FORECAST

Normal temperatures for the month of April, °C

Whitehorse	0	Toronto	6
Yellowknife	-7	Ottawa	6
Iqaluit	-14	Montréal	6
Vancouver	9	Québec	3
Victoria	8	Fredericton	4
Calgary	3	Halifax	4
Edmonton	4	Charlottetown	2
Regina	3	Goose Bay	-2
Winnipeg	3	St. John's	1



Canada