Environment Canada Environnement Canada

Climatic Perspectives

March 19 to 25, 1990 ***A weekly review of Canadian climate*** *Vol.12 No.12*

Near-normal spring run-off expected across southern Canada

In the past few weeks the snow cover across the extreme southern portions of the country has disappeared due to abnormally warm temperatures but significant amounts of snow still remain in central and northern Canada.

It is too early in the year to predict potential flooding in northern Canada. In the Northwest Territories, snow courses have not yet been done and will not be compiled until at least mid-April. Spring break-up along the Hay, Mackenzie and Liard Rivers normally occurs from the beginning to middle of May.

At the present, above-normal run-off is expected in northern British Columbia, and the High Level and Sousa Creek areas of Alberta. Much-above normal run-off is expected in the Fort Chipewyan area of northern Alberta. Flooding could occur in the Swan River and Interlake regions of Manitoba. On the North Shore along the St. Lawrence, there is the potential for flooding of rivers that flow into the St. Lawrence. In Ontario and Quebec the flood potential is from heavy rainfalls and rapidly-melting snow particularly for areas with less than 15 cm of compacted snow cover. The Maritimes have mostly ice-free streams and rivers with no reports of flooding. Newfoundland's snowpack is above normal only in western regions and there have been no reports of flooding.

Prairies still dry

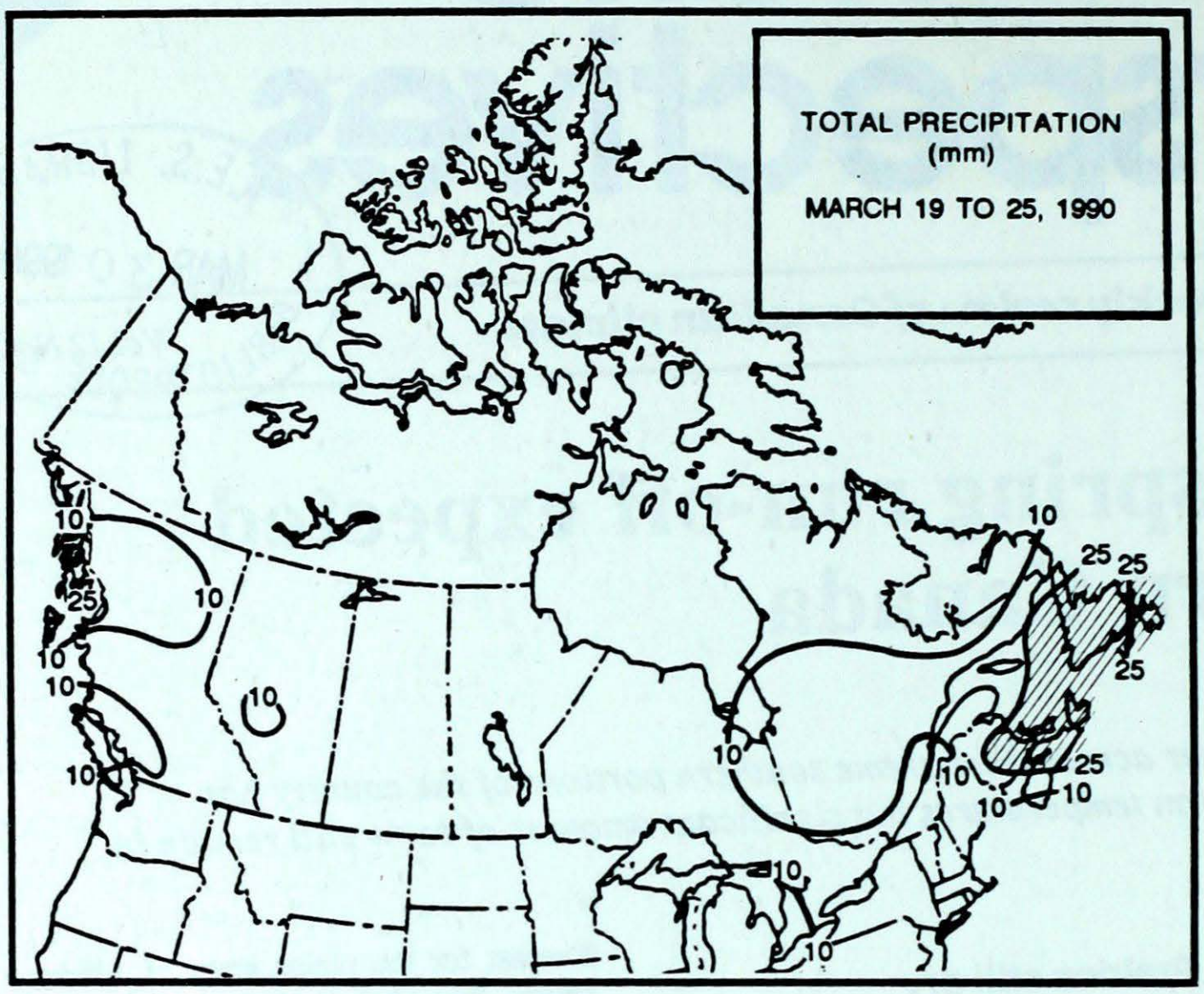
The Prairie Provinces are constantly being reminded of how critical soil moisture is due to their generally-dry climate. This spring is no exception. The spring run-off forecast for the plains areas of Alberta ranges from below normal to normal. Very little run-off is expected for Coronation, Brooks and Empress districts. Heavy rain and snow during the second week of March has somewhat improved the water supply situation in southern Manitoba and Saskatchewan. Some dugouts and reservoirs in Saskatchewan will be better off because of the recent precipitation, however, much more precipitation is needed to adequately replenish surface and ground water supplies. South-eastern Saskatchewan and south-western Manitoba are well below their spring run-off potential. The threat of spring flooding is minimal in southern regions, but flooding could occur in the Swan River and Interlake regions of Manitoba.

Depth of snow on ground (cm) as of March 25

	1990	Normal (1955-80)
Whitehorse, YT.	36	27
Fort Smith, NWT.	47	46
Hay River, NWT.	60	53
Dease Lake, BC.	84	54
Fort McMurray, Alta.	29	30
Yorkton, Sask.	25	34
Dauphin, Man.	19	24
Québec, P.Q.	49	58
Chatham, NB.	19	18
Cartwright, Nfld.	228	115

Mild weather for the Prairies...

For the week of April 2, above-normal temperatures are expected across the Yukon, Northwest Territories, British Columbia, the Prairies and Ontario. Southern Saskatchewan and Manitoba could experience temperatures 2 to 4°C above normal. Quebec and the Atlantic Provinces are forecast to be below normal, with northern Quebec 2 to 4° C below normal.



Weekly normal temperatures (°C)

	max.	min.
Whitehorse A	-0.8	-12.8
Iqaluit A	-16.6	-26.6
Yellowknife A	-11.8	-24.0
Vancouver Int'l A	10.3	2.7
Victoria Int'l A	10.4	2.3
Calgary Int'l A	3.0	-7.8
Edmonton Int'l A	0.2	-10.7
Regina A	-0.6	-11.0
Saskatoon A	-1.3	-11.7
Winnipeg Int'l A	-1.1	-11.4
Ottawa Int'l A	2.7	-5.6
Toronto (Pearson Int'l A)	4.4	-4.2
Montréal Int'l A	3.1	-5.1
Québec A	1.7	-7.2
Fredericton A	4.4	-6.0
Saint John A	3.6	-5.7
Halifax (Shearwater)	3.9	-3.5
Charlottetown A	2.0	-5.6
Goose A	-1.2	-12.1
St John's A	1.4	-4.8

Weekly temperature and precipitation extremes

	Maximum temperature (°C)		Minimum temperature (°C)		Heaviest precipitation (mm)	
British Columbia	Hope A	16	Dease Lake	-28	Prince Rupert A	30
Yukon Territory	Whitehorse A	7	Faro (aut)	-31		
Northwest Territories	Fort Simpson A	7	Clyde A	-45	Cape Dyer A	9
Alberta	Lethbridge A	14	High Level A	-25	Edson A	14
Saskatchewan	Moose Jaw A	8	Cree Lake	-31	Saskatoon A	8
Manitoba	Brandon A	6	Lynn Lake A	-30	Dauphin	5
Ontario	Ottawa Int'l A	13	Big Trout Lake	-25	London A	15
Quebec	Montréal Int'l A	11	Inukjuak A	-33	Natashquan A	23
New Brunswick	Moncton A	12	Charlo A	-19	Fredericton A	27
Nova Scotia	Greenwood A	16	Sydney A	-10	Sydney A	32
Prince Edward Island	Charlottetown A	10	Charlottetown A	-10	Charlottetown A	29
Newfoundland	St John's A	12	Wabush Lake A	-29	Port Aux Basques	42

Across The Country...

Highest Mean Temperature	Abbotsford A(BC)	8
Lowest Mean Temperature	Eureka(NWT)	-38

90/03/19-90/03/25

CLIMATIC PERSPECTIVES
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The data in this publication are based on unverified reports from approximately 225 Canadian synoptic weather stations. Information concerning climatic impacts is gathered from AES contacts with the public and from the media. Articles do not necessarily reflect the views of the Atmospheric Environment Service.

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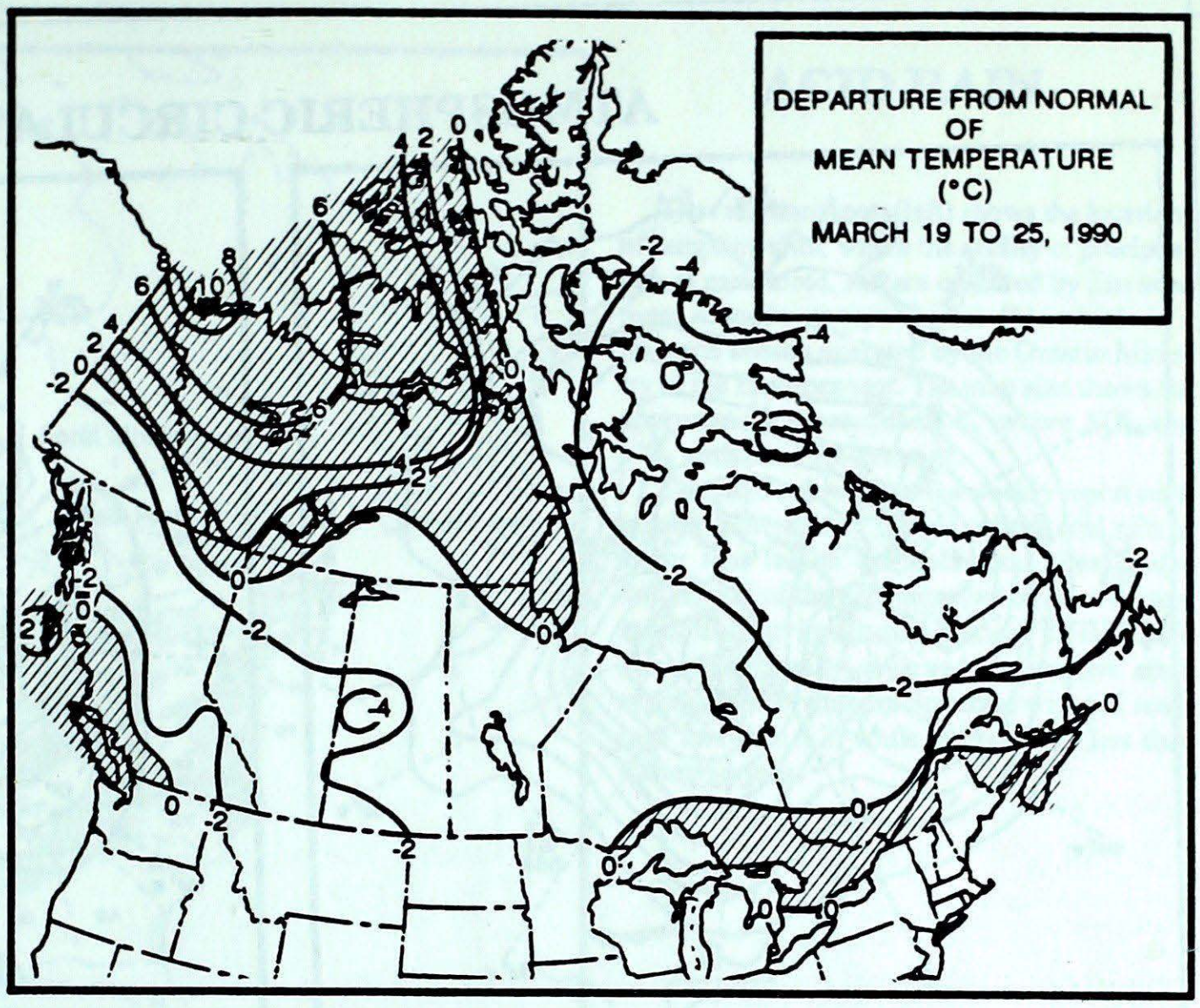

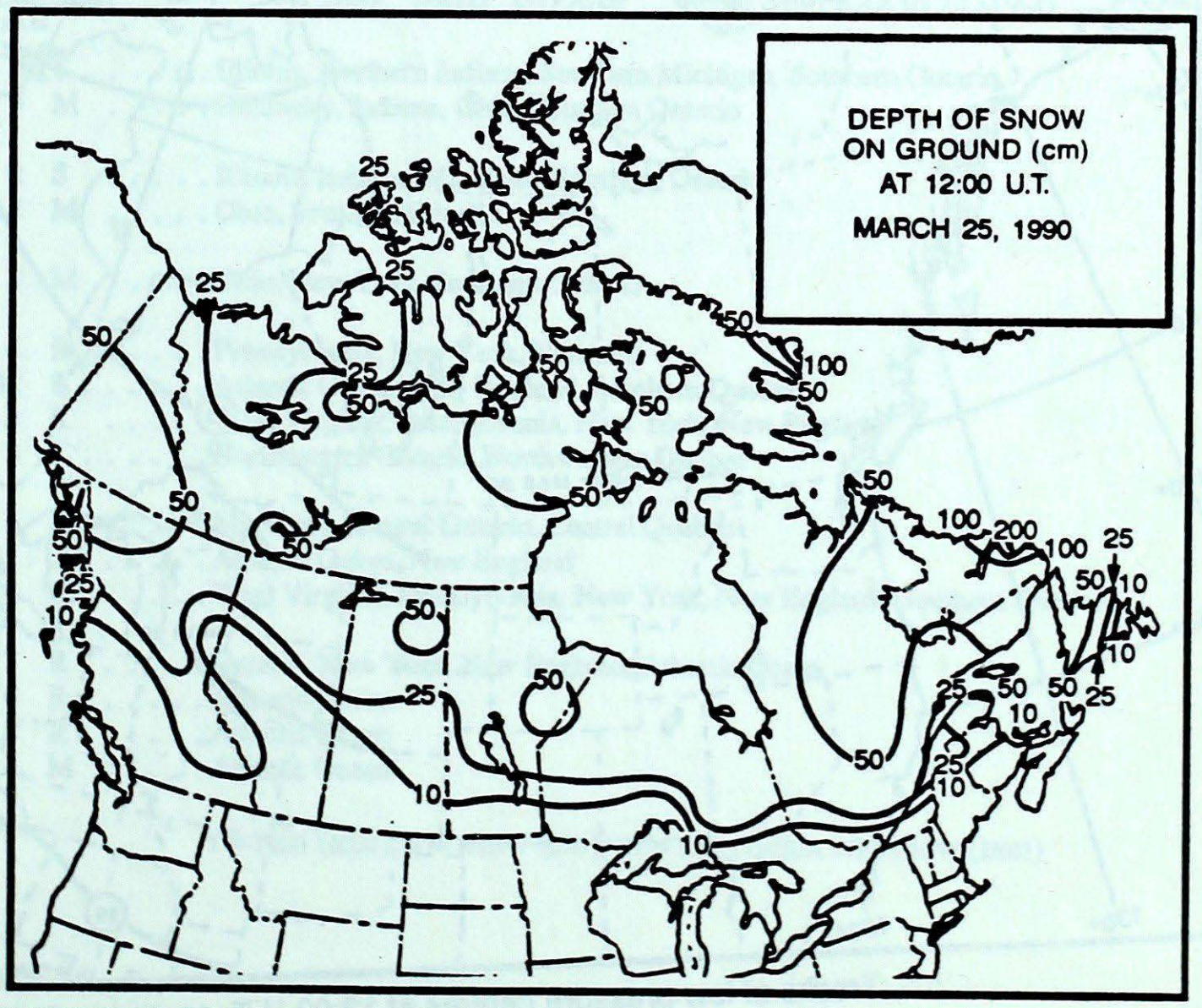

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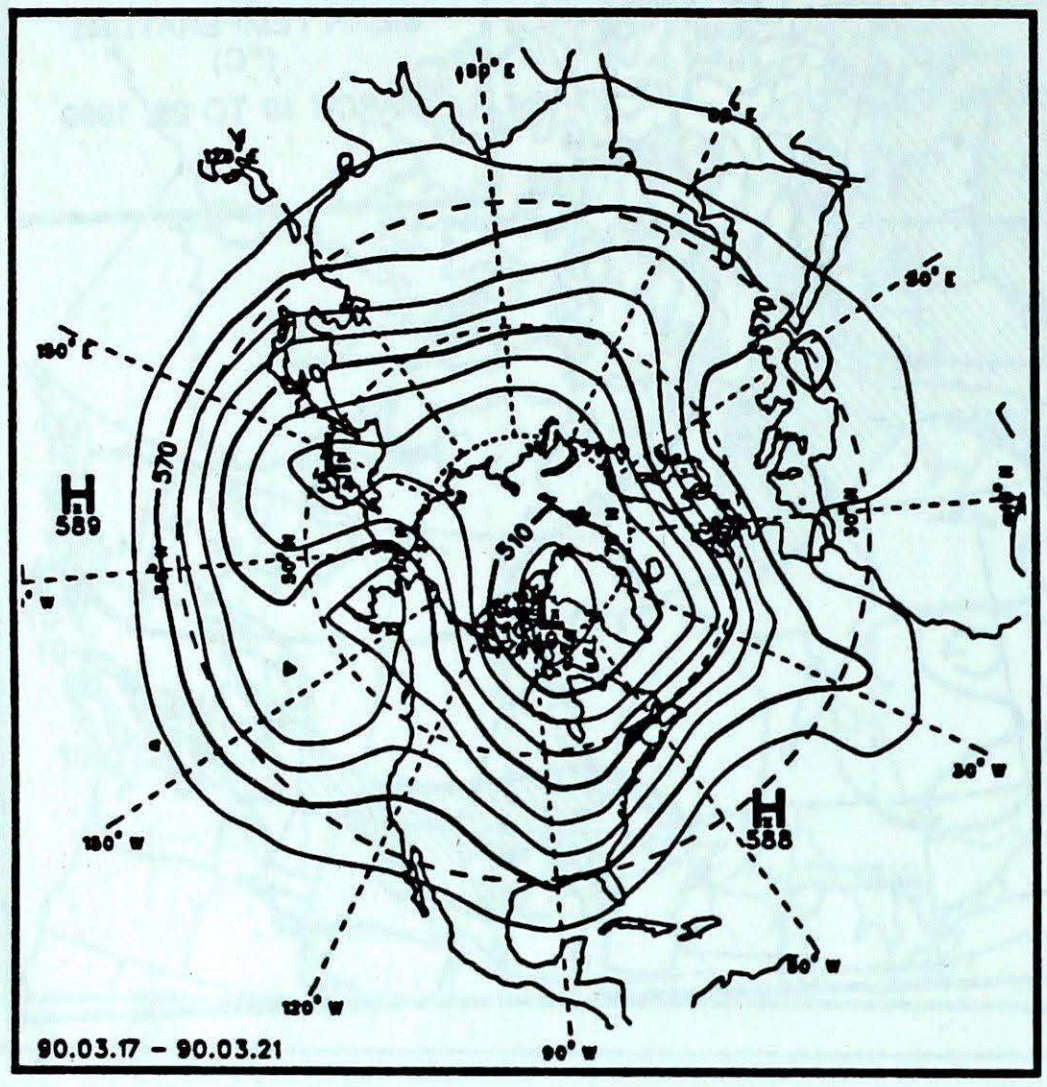
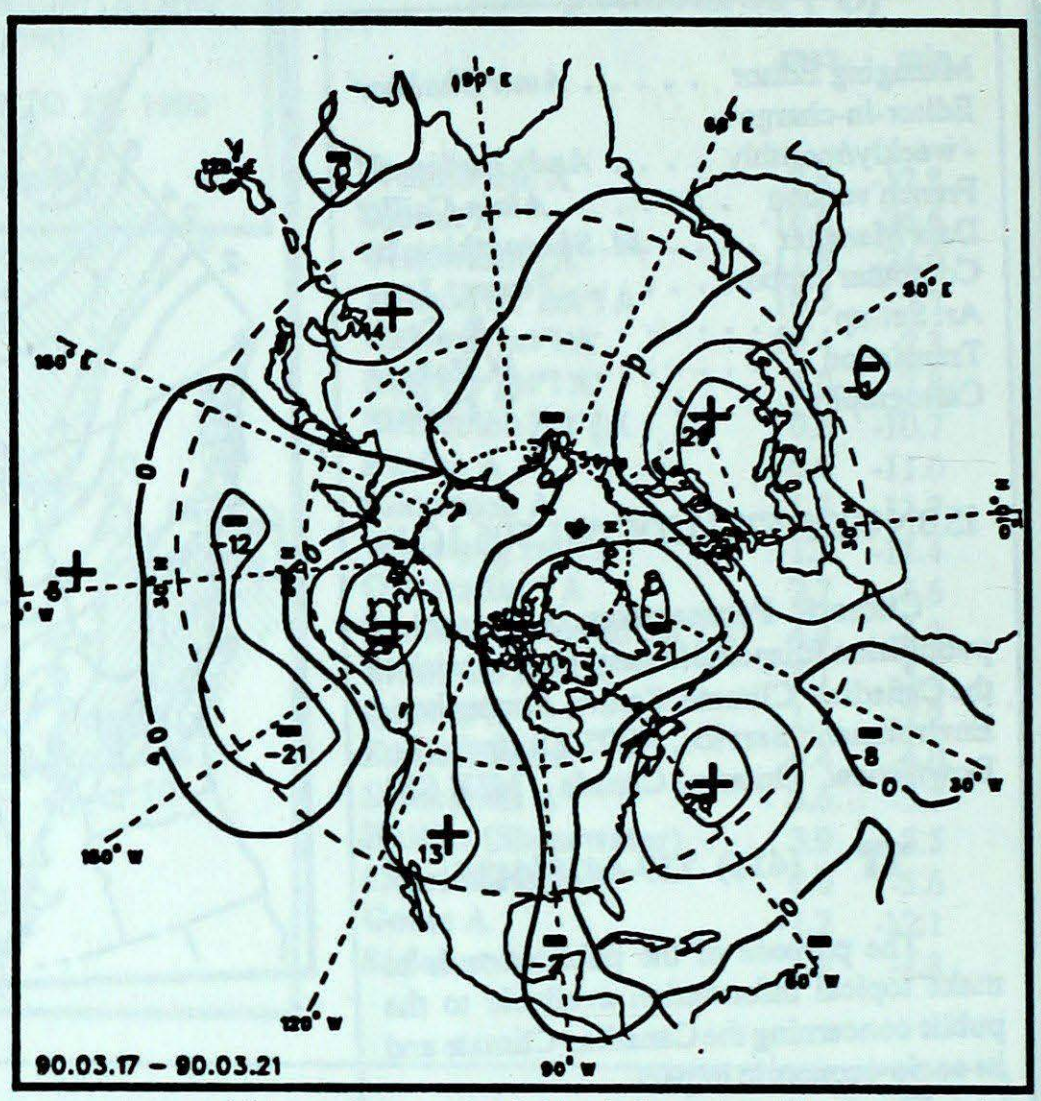
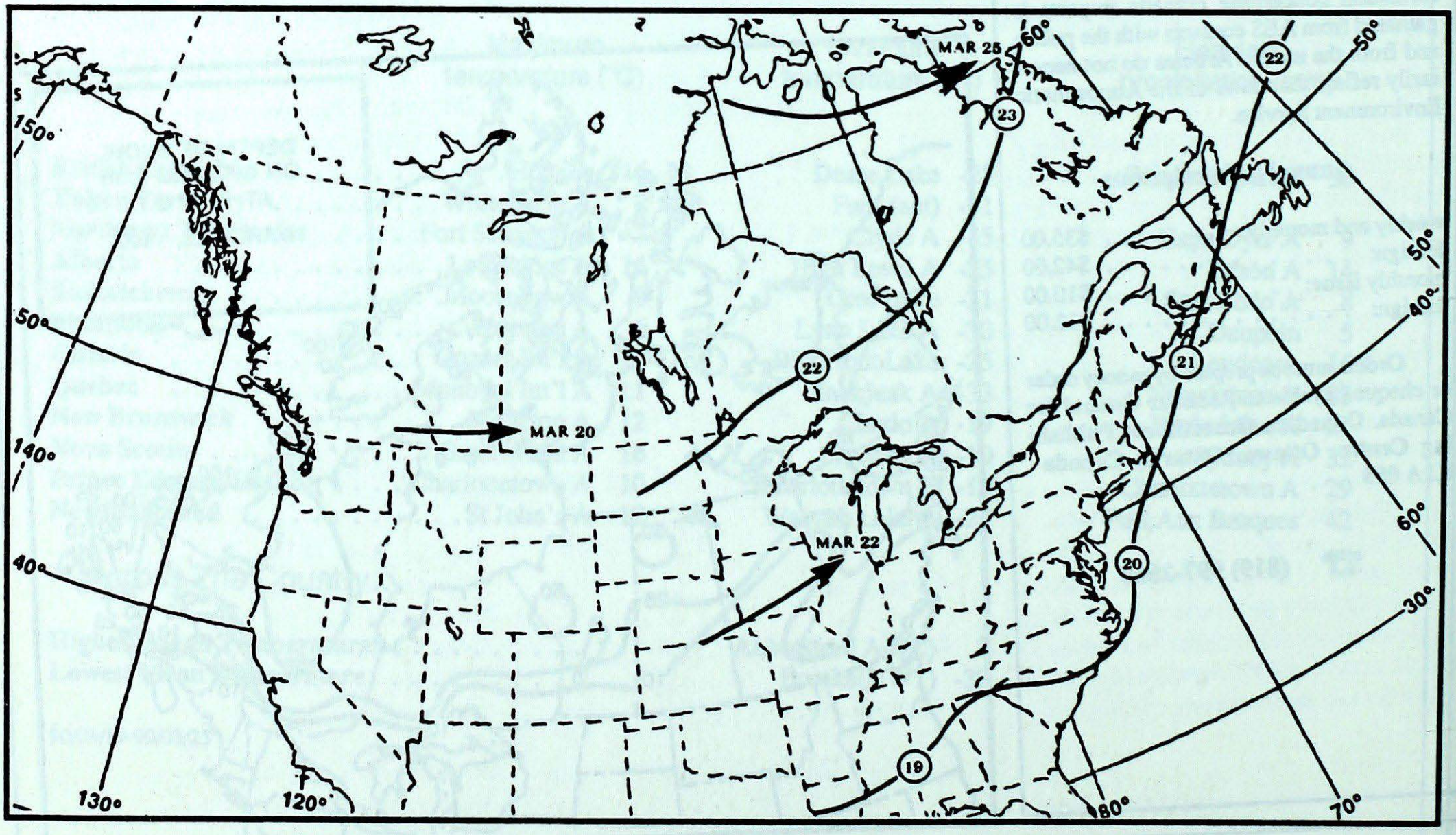


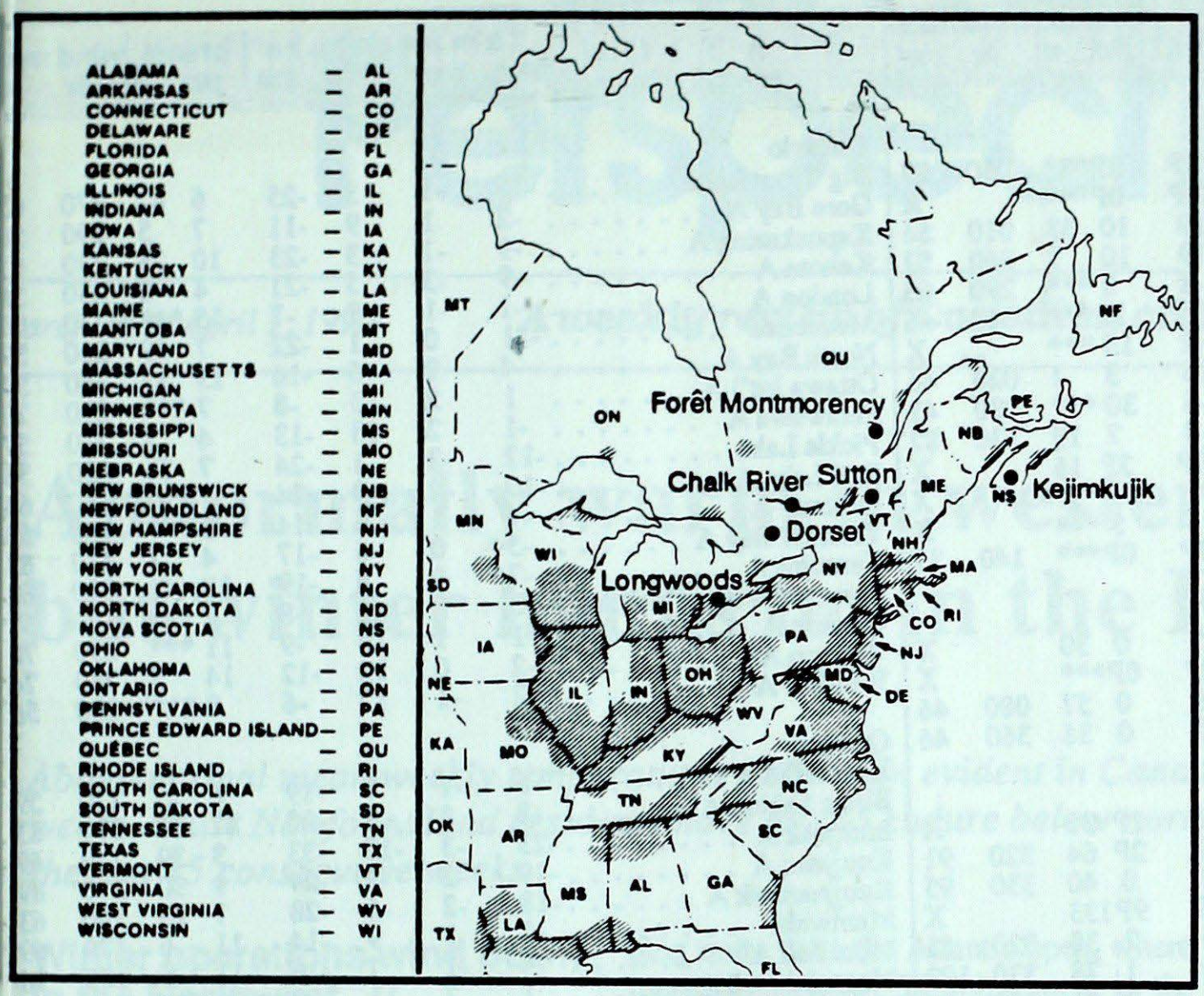
Mean geopotential height
50-kPa level (10-decametre intervals)



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 SO_2 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.

From March 18 to 24, 1990

Site	day	pH	amount		air path to site
Longwoods	18	3.9	4	S	Illinois, Northern Indiana, Southern Michigan, Southern Ontario
	22	3.7	7	M	Kentucky, Indiana, Ohio, Southern Ontario
Dorset *	18	4.7	2	S	Illinois, Indiana, Michigan, Southern Ontario
	22	4.4	14	M	Ohio, Southern Ontario
Chalk River	22	4.0	4	M	Ohio, New York, Southern Ontario
Sutton	19	4.2	4	R	Pennsylvania, New York, Vermont
	20	4.5	32	S	Atlantic Ocean, New England, Southern Quebec
	22	3.8	3	R	West Virginia, Pennsylvania, New York, New England
	23	4.4	3	S	Northeastern Ontario, Northwestern Quebec
Montmorency	18	4.8	6	S	Michigan, Central Ontario, Central Quebec
	20	4.4	11	S	Atlantic Ocean, New England
	22	3.7	13	M	West Virginia, Pennsylvania, New York, New England, Southern Quebec
Kejimkujik	18	4.9	7	R	Ontario, New York, New England, Atlantic Ocean
	20	4.9	6	R	Atlantic Ocean
	21	4.2	6	R	Atlantic Ocean
	22	3.9	4	M	Atlantic Ocean

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

STATION	temperature mean	anom	max	min	precip. ptot	st	wind max dir	vel
British Columbia								
Cape St James	6P	1P	13P	2P	8P***		050	87
Cranbrook A	-1P	-3P	12P	-12P	0P***			X
Fort Nelson A	-7	1	7	-19	10	38	010	56
Fort St John A	-8	-2	6	-19	10	7	360	57
Kamloops A	4	-1	16	-8	0	***	290	65
Penticton A	4P	-1P	15P	-7P	1P***		360	46
Port Hardy A	6	1	13	-2	15	***		X
Prince George A	-4	-3	11	-16	3	1	020	46
Prince Rupert A	5	1	11	-6	30	***	080	41
Revelstoke A	2	0	9	-8	7	19	330	82
Smithers A	-2P	-2P	8P	-13P	2P	16		X
Vancouver Int'l A	7	0	14	-1	11	***		X
Victoria Int'l A	7	1	14	-1	5	***		X
Williams Lake A	-4P	-4P	10P	-18P	0P***		140	37
Yukon Territory								
Komakuk Beach A	-16	9	-1	-25	0	30		X
Teslin (aut)	-9P	*	6P	-22P	0P***			X
Watson Lake A	-12	-2	5	-28	0	57	080	46
Whitehorse A	-9	-2	7	-25	0	36	360	46
Northwest Territories								
Alert	-36P	-3P	-27P	-40P	1P	35		X
Baker Lake A	-26P	1P	-15P	-34P	2P	64	320	91
Cambridge Bay A	-25	5	-14	-34	0	40	330	95
Cape Dyer A	-25P	-3P	-19P	-34P	9P	133		X
Clyde A	-31	-6	-19	-45	2	38	320	63
Coppermine A	-20	6	-5	-29	1	78	330	102
Coral Harbour A	-28	-4	-17	-35	2	51	320	69
Eureka	-38	-2	-27	-44	0	14	280	44
Fort Smith A	-14	0	4	-26	0	47	310	63
Hall Beach A	-31	-3	-18	-42	***	45	320	65
Inuvik A	-15	9	2	-31	0	46	300	52
Iqaluit A	-23	-1	-13	-34	7	32	330	65
Mould Bay A	-27	5	-15	-37	0	24	340	56
Norman Wells A	-12	6	4	-28	0	8	310	70
Resolute A	-31	0	-22	-38	1	27	330	83
Yellowknife A	-17	1	2	-30	0	39	320	69
Alberta								
Calgary Int'l A	-4	-2	13	-18	1	197	360	57
Cold Lake A	-8	-2	5	-23	7	12	350	52
Edmonton Namao A	-5	-1	11	-18	5	1	330	52
Fort McMurray A	-8P	0P	6P	-19P	4P	29	320	56
High Level A	-11P	-1P	5P	-25P	5P	37	330	67
Jasper	-5	-3	11	-22	8	17		X
Lethbridge A	-2	-2	14	-15	2	***	280	50
Medicine Hat A	-3	-3	12	-17	2	1	230	46
Peace River A	-9	-1	5	-21	7	4	340	61
Saskatchewan								
Cree Lake	-14	-1	2	-31	1	36	320	74
Estevan A	-6	-2	8	-16	5	2	300	70
La Ronge A	-10	-1	2	-23	5	46	320	57
Regina A	-5P	1P	8P	-16P	4P	2	320	69
Saskatoon A	-7	-1	8	-19	8	***	250	54
Swift Current A	-6	-2	7	-17	2	3	330	57
Yorkton A	-10	-2	4	-20	6	25	260	61
Manitoba								
Brandon A	-8	-1	6	-17	4	9	270	78
Churchill A	-19	1	-6	-30	3	19	310	72
Lynn Lake A	-16	-2	0	-30	*	19	340	69
The Pas A	-10	0	4	-22	5	8	320	61
Thompson A	-16P	-2P	1P	-26P	0P	29	320	63
Winnipeg Int'l A	-8	-2	0	-18	3	3	320	63

STATION	temperature mean	anom	max	min	precip. ptot	st	wind max dir	vel
Ontario								
Big Trout Lake	-15	-1	3	-25	6	42	270	65
Gore Bay A	-2	1	9	-11	7	5	290	56
Kapuskasing A	-9	-1	3	-23	10	25	230	61
Kenora A	-9	-3	5	-21	4	5	230	56
London A	-1	-1	9	-7	15	***	230	69
Moosonee	-11	0	1	-22	7	19	210	59
North Bay A	-4	0	6	-16	13	17	340	57
Ottawa Int'l A	1	2	13	-8	7	***	210	70
Petawawa A	-1	2	13	-13	4	1	210	57
Pickle Lake	-12	-2	1	-24	7	31	250	56
Red Lake A	-10	-2	3	-24	7	22	240	63
Sudbury A	-4	1	6	-14	5	***	230	59
Thunder Bay A	-5	0	6	-17	4	1	310	63
Timmins A	-7	0	5	-19	10	46	320	63
Toronto(Pearson Int'l A)	0	0	13	-8	7	***	320	67
Trenton A	1	1	13	-9	11	***	230	78
Wiarton A	-2	0	12	-12	14	5	240	74
Windsor A	2	-1	12	-6	8	***	230	56
Quebec								
Bagotville A	-5	-1	7	-19	6	25	270	59
Blanc Sablon A	-8	*	3	-20	22	65	200	83
Inukjuak A	-23	-3	-10	-33	3	39	270	69
Kuujjuaq A	-19	-2	-9	-29	9	30	270	89
Kuujjuarapik A	-18	-2	-6	-28	7	23	190	63
Maniwaki	-2	1	9	-14	11	6	170	69
Mont Joli A	-4	-1	7	-16	11	5	180	96
Montréal Int'l A	1	2	11	-9	9	***	250	63
Natashquan A	-6	-2	1	-17	23	65	270	93
Québec A	-4P	-1P	7P	-15P	8P	49	220	41
Schefferville A	-17	-4	-6	-31	5	68	250	74
Sept-Îles A	-8	-3	2	-20	15	27	320	59
Sherbrooke A	-2P	0P	8P	-13P	1P	6	270	56
Val-d'Or A	-7	0	3	-20	16	21	330	69
New Brunswick								
Charlo A	-4	0	8	-19	3	20	290	61
Chatham A	-2	0	8	-14	16	19	290	69
Fredericton A	0	1	9	-10	27	***	290	67
Moncton A	-2P	0P	12P	-10P	14P	2	240	59
Saint John A	0P	2P	8P	-9P	17P	3	190	80
Nova Scotia								
Greenwood A	2	2	16	-7	26	***	260	106
Shearwater A	1	1	9	-8	31	***	180	72
Sydney A	-1	1	9	-10	32	1	210	56
Yarmouth A	2	1	10	-6	6	***	330	82
Prince Edward Island								
Charlottetown A	0P	2P	10P	-10P	29P	2	020	46
Summerside A	-1	1	9	-9	22	6	300	65
Newfoundland								
Cartwright	-9	-2	6	-22	8	228	230	63
Churchill Falls A	-14	-4	0	-29	8	87	290	69
Gander Int'l A	-4	-2	5	-16	26	11	190	102
Goose A	-9	-3	3	-23	3	78	270	67
Port Aux Basques	-4	-2	3	-14	42	39	190	83
St John's A	-1	1	12	-12	24	1	180	82
St Lawrence	-2	-1	8	-15	23	***		X
Wabush Lake A	-15	-3	-2	-29	9	35	230	56

90/03/19-90/03/25

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.