



Climatic Perspectives



Archives

Ref 1

February 18 to 24, 1991 A weekly review of Canadian climate and water

Vol. 13 No. 08



Mid-winter reigns in northern Canada

Although spring is fast approaching in southern Canada, winter still has a tight grip across Canada's north. Days are getting rapidly longer as the sun approaches the spring equinox, but it still continues to be bitterly cold.

Minimums in the Arctic have been frequently registering in the mid-minus forties. The temperature at Eureka registered -44°C on the 24th. Blinding blizzards have affected much of the Northwest Territories, especially the central and eastern portions. Ice roads into remote mining camps 200 to 400 kilometres out of Yellowknife are in good shape, but there have been earlier problems with blowing and drifting snow. The supply road between Inuvik and Tuktoyaktuk has been closed several times. On February 15, three Inuit women were found frozen to death in northern Quebec after being caught out in a blizzard. A ten year old boy survived the ordeal after he sought refuge under the snow. Another search for a group of five Inuit hunters, missing since February 21 in the Hall Beach area, is being hampered by blizzard conditions.

In the northern Yukon it has been extremely cold. The temperature at Old Crow registered -44°C on the 18th. In contrast, in the southern Yukon and Mackenzie Valley it has become quite balmy, with readings as high as 8°C . Water is flooding over some of the ice bridges, and the warm temperatures might hamper the an-

nual Yukon Quest, 1600 km dog sled race from Whitehorse in the Yukon to Fairbanks, Alaska, which began on the 24th.

Newfoundland hit by another storm

After last week's snow, heavy rain and resultant flooding, another disturbance brought 15 to 20 centimetres of snow over the weekend. Strong winds gusting in excess of 100 km/h were responsible for blizzards, which persisted throughout most of the weekend. A peak gust of 130 km/h was recorded at Twillingate.

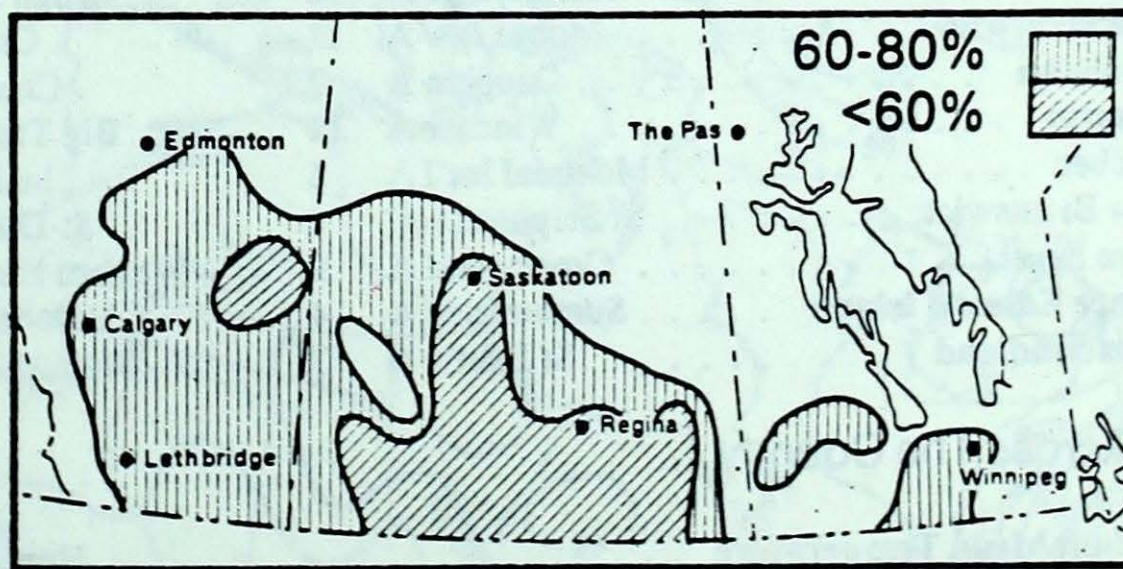
Dry winter on Prairies

A lack of winter precipitation is once again becoming a concern for the upcoming Prairie growing season. According to

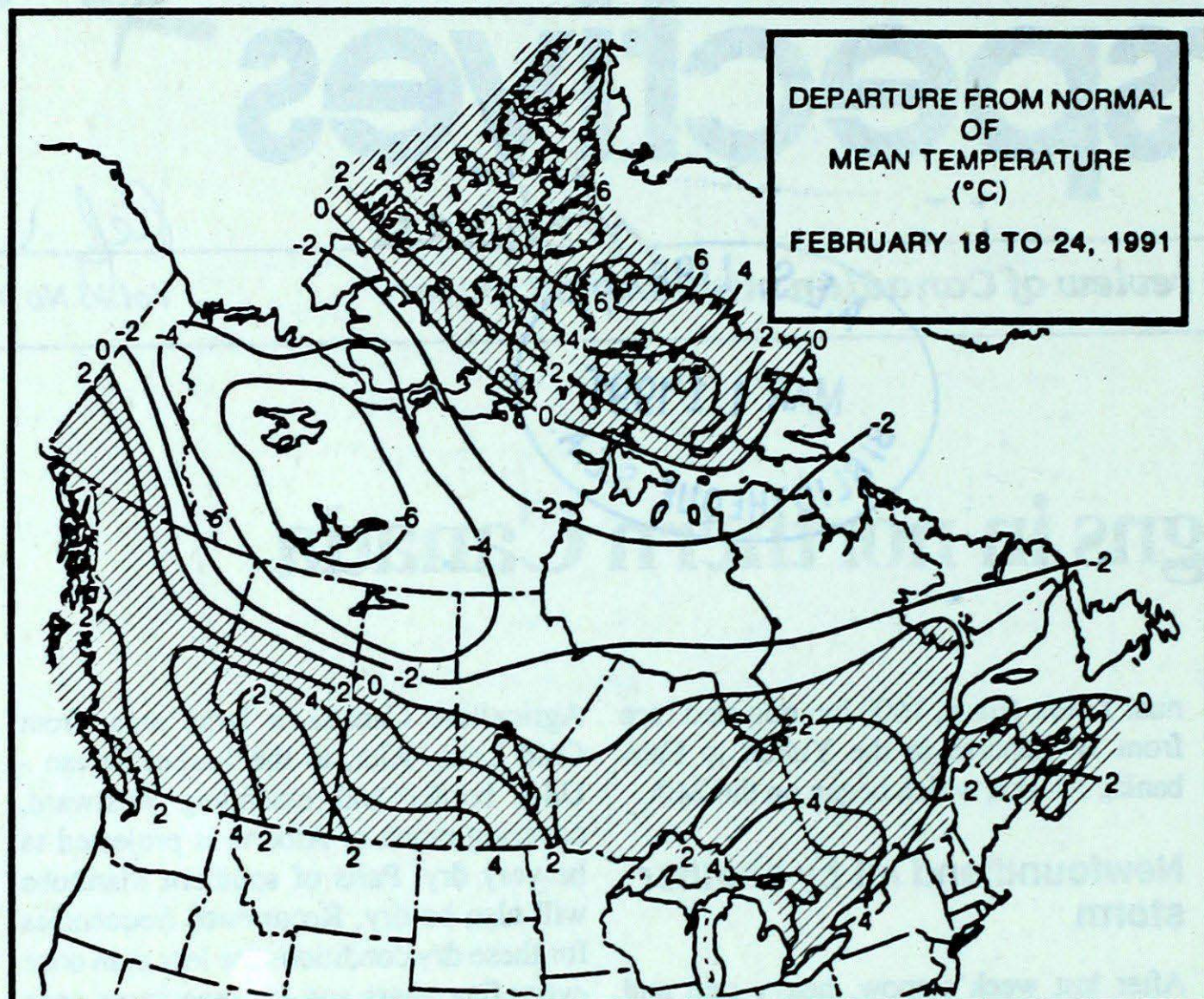
Agriculture Canada, a large area, from Cold Lake, Alta, to the Saskatchewan - USA border and extending westward, covering much of Alberta is projected to be very dry. Parts of southern Manitoba will also be dry. Recurrence frequencies for these dry conditions are less than once every five years and in some cases once every ten.

A look ahead . . .

The week of March 4, will see the high pressure system over western Canada weaken, resulting in a change to slightly below normal temperatures in the Yukon and most of B.C. Cold Arctic air will persist over the northern Prairies. The lower Great Lakes Basin, the St. Lawrence Valley and the Maritimes should experience near to above normal temperature.



This chart identifies possible drought stricken areas, by depicting projected soil moisture reserves under pasture by May 31, 1991, expressed as a percent of normal. Source: Forage Drought Early Warning System, Agriculture Canada.



**Weekly normal
temperatures (°C)**

	max.	min.
Whitehorse A	-6.4	-16.4
Iqaluit A	-21.5	-30.3
Yellowknife A	-18.8	-29.4
Vancouver Int'l A	8.5	1.5
Victoria Int'l A	8.6	1.3
Calgary Int'l A	-1.1	-12.9
Edmonton Int'l A	-4.3	-16.5
Regina A	-7.5	-18.8
Saskatoon A	-8.5	-19.7
Winnipeg Int'l A	-9.4	-20.8
Ottawa Int'l A	-3.6	-12.3
Toronto (Pearson Int'l A)	-0.4	-9.1
Montréal Int'l A	-3.3	-11.8
Québec A	-4.9	-14.1
Fredericton A	-2.0	-13.3
Saint John A	-1.7	-12.1
Halifax (Shearwater)	-0.1	-7.8
Charlottetown A	-3.0	-11.2
Goose A	-9.1	-19.5
St John's A	-1.3	-8.2

Weekly temperature and precipitation extremes

	Maximum temperature (°C)	Minimum temperature (°C)	Heaviest precipitation (mm)
British Columbia	Kamloops A 17	Fort Nelson A -31	Hope A 100
Yukon Territory	Whitehorse A 4	Komakuk Beach A -39	Whitehorse A 9
Northwest Territories	Fort Simpson A -7	Eureka -46	Hay River A 7
Alberta	Lethbridge A 12	High Level A -28	Jasper 17
Saskatchewan	Moose Jaw A 11	Cree Lake -41	Moose Jaw A 11
Manitoba	Dauphin A 2	Churchill A -34	Winnipeg Int'l A 6
Ontario	Windsor A 11	Big Trout Lake -33	North Bay A 28
Québec	Montréal Int'l A 5	Inukjuak A -35	Ste Agathe Des Monts 32
New Brunswick	St Stephen (aut) 6	St-Léonard A -25	St-Léonard A 17
Nova Scotia	Greenwood A 9	Western Head (aut) -16	Sable Island 26
Prince Edward Island	Summerside A 4	Charlottetown A -17	Summerside A 19
Newfoundland	St John's A 3	Wabush Lake A -37	Daniels Harbour 32

Across The Country...

Highest Mean Temperature	Hope A(BC)	7
Lowest Mean Temperature	Cambridge Bay A(NWT)	-36

**CLIMATIC PERSPECTIVES
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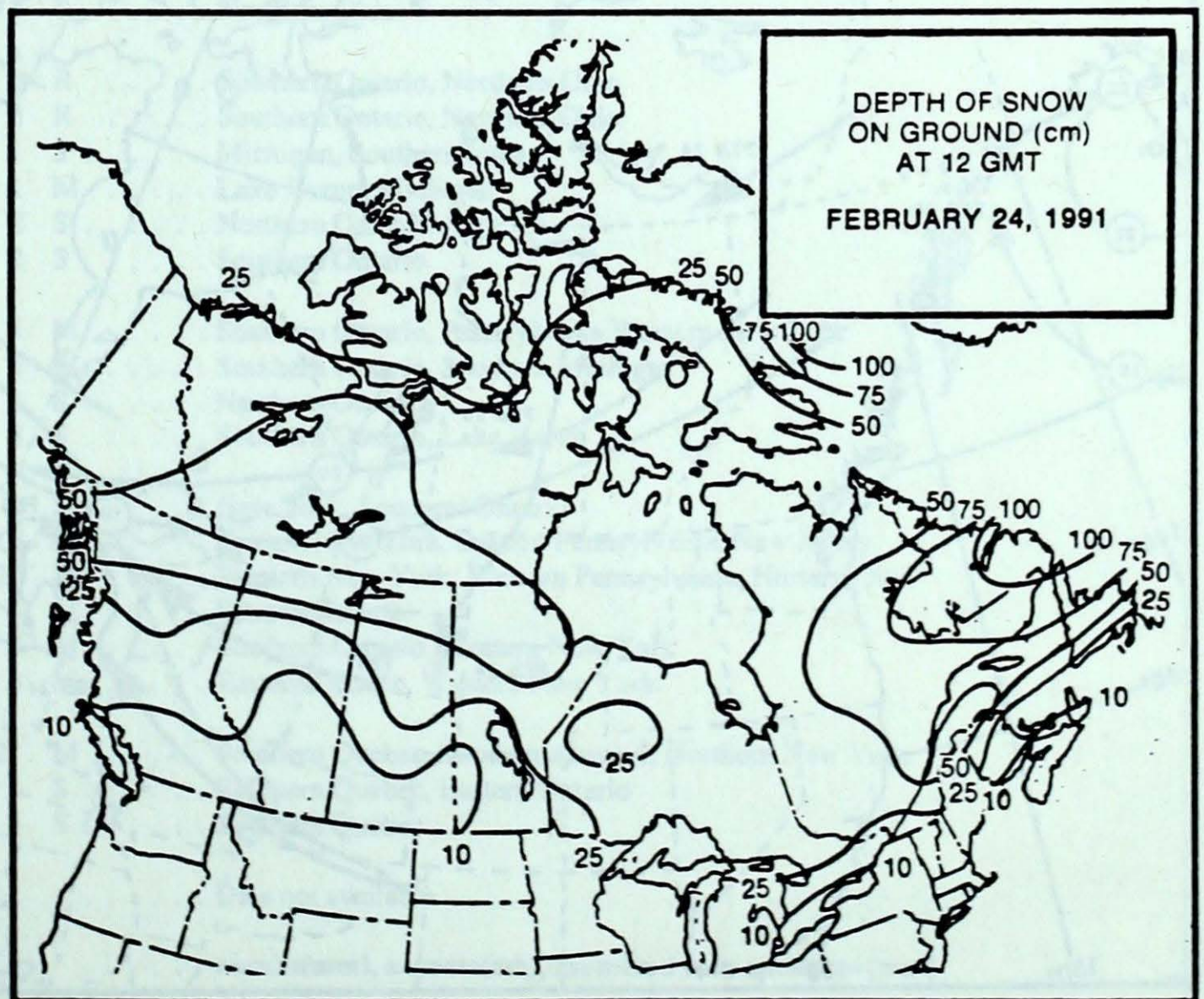
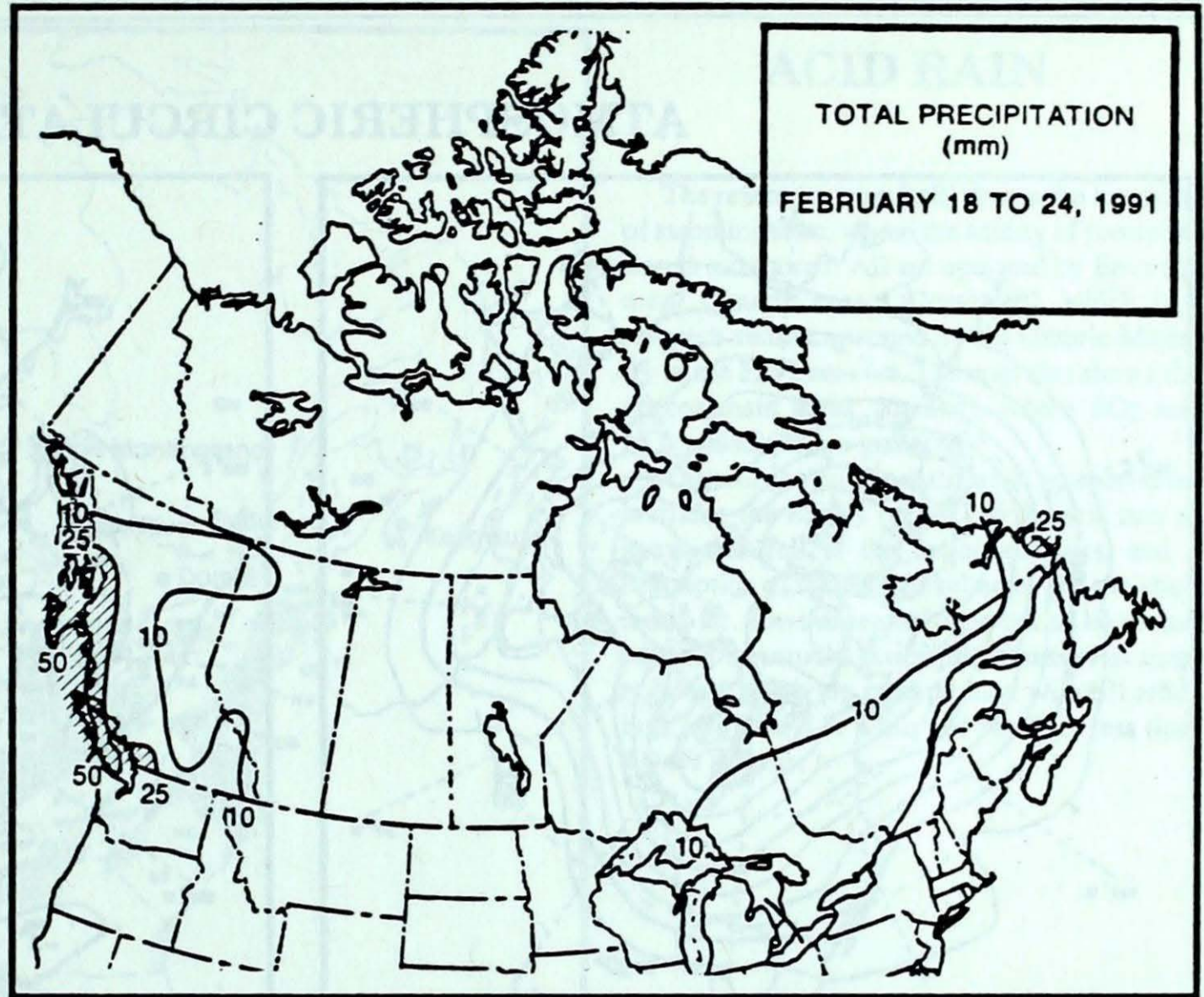
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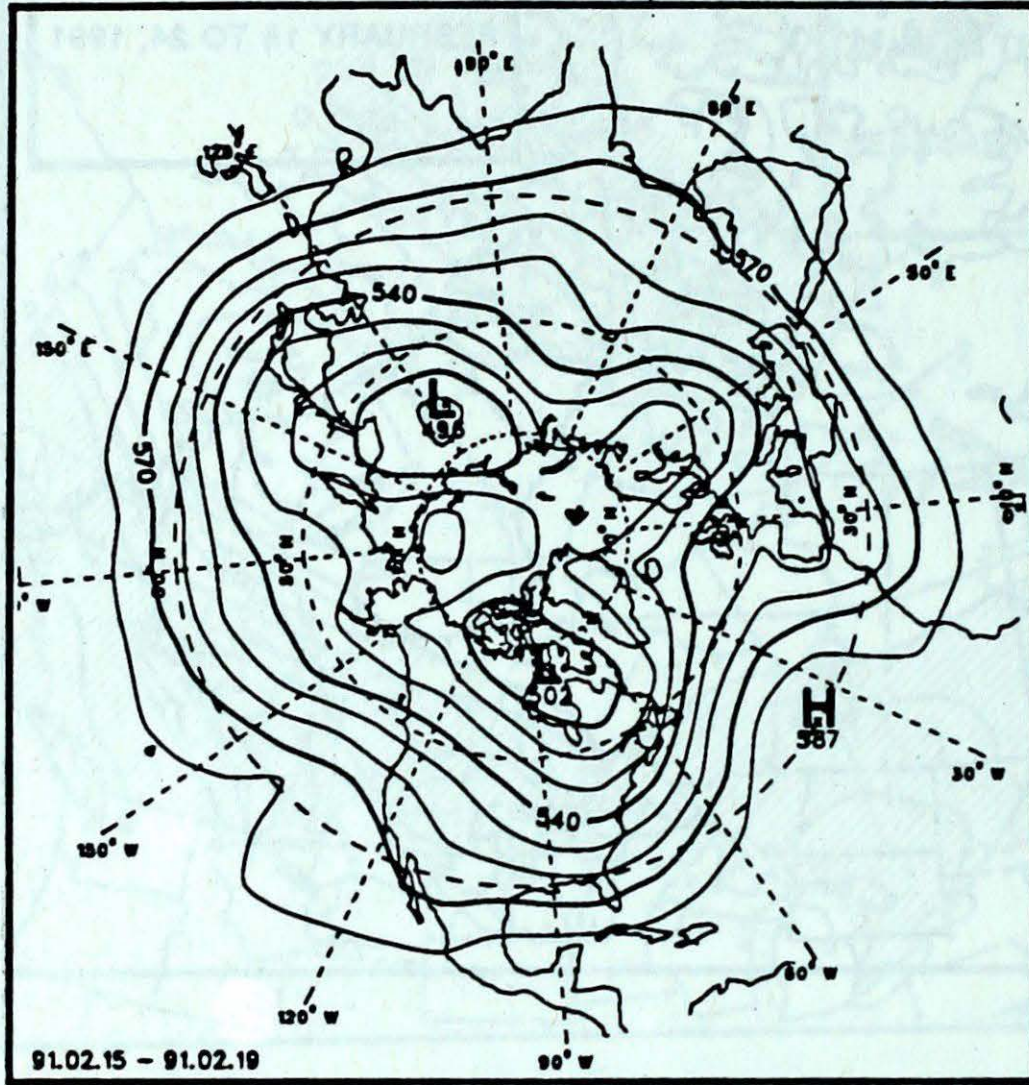
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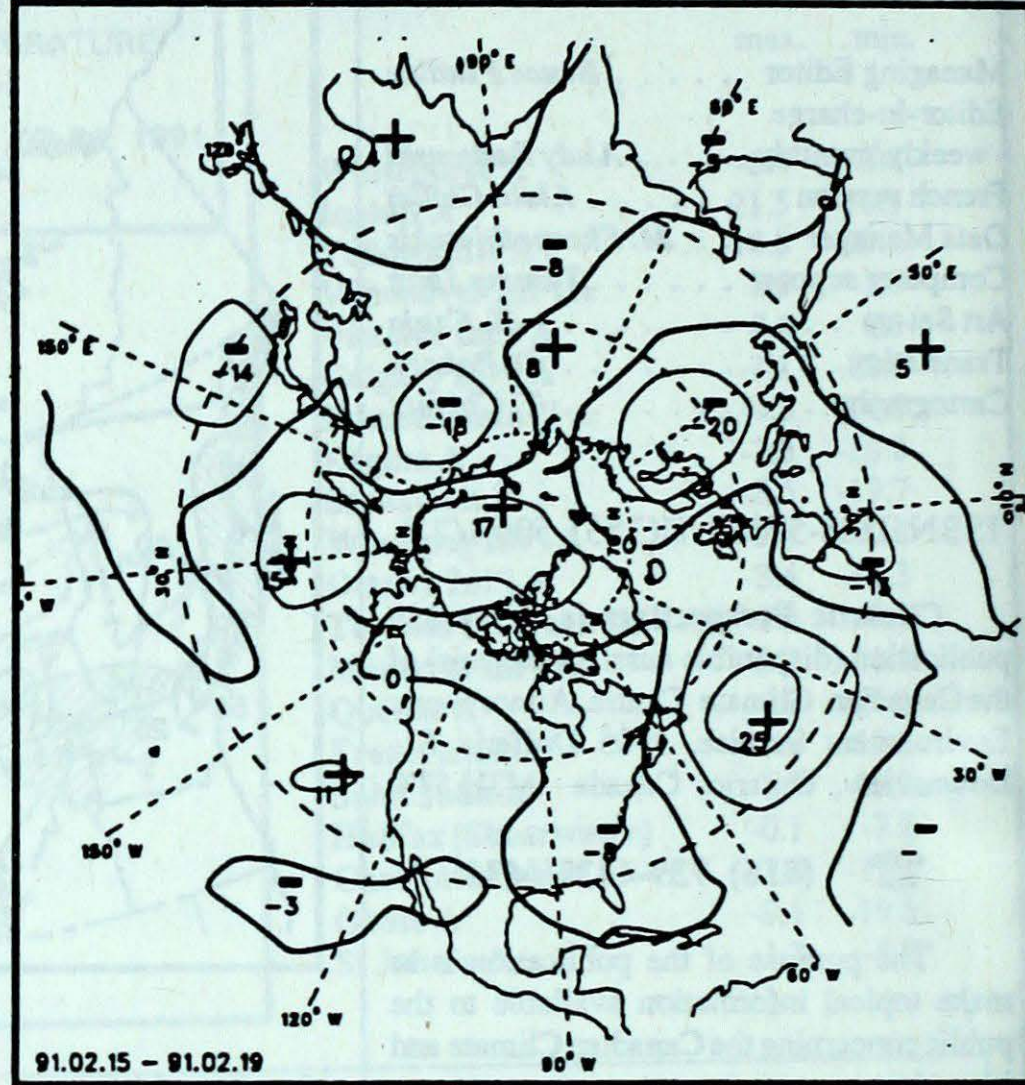
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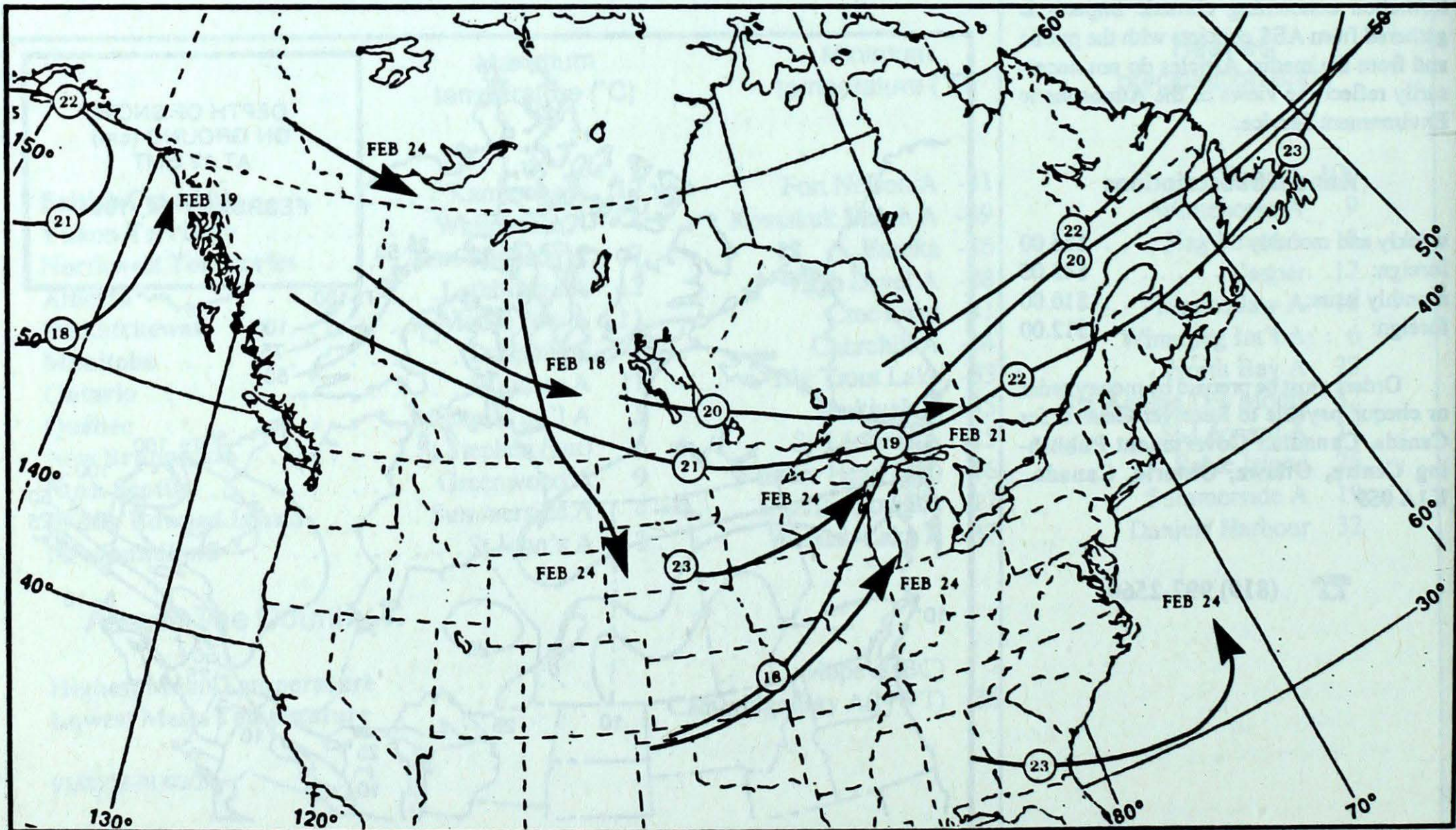
ATMOSPHERIC CIRCULATION



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



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

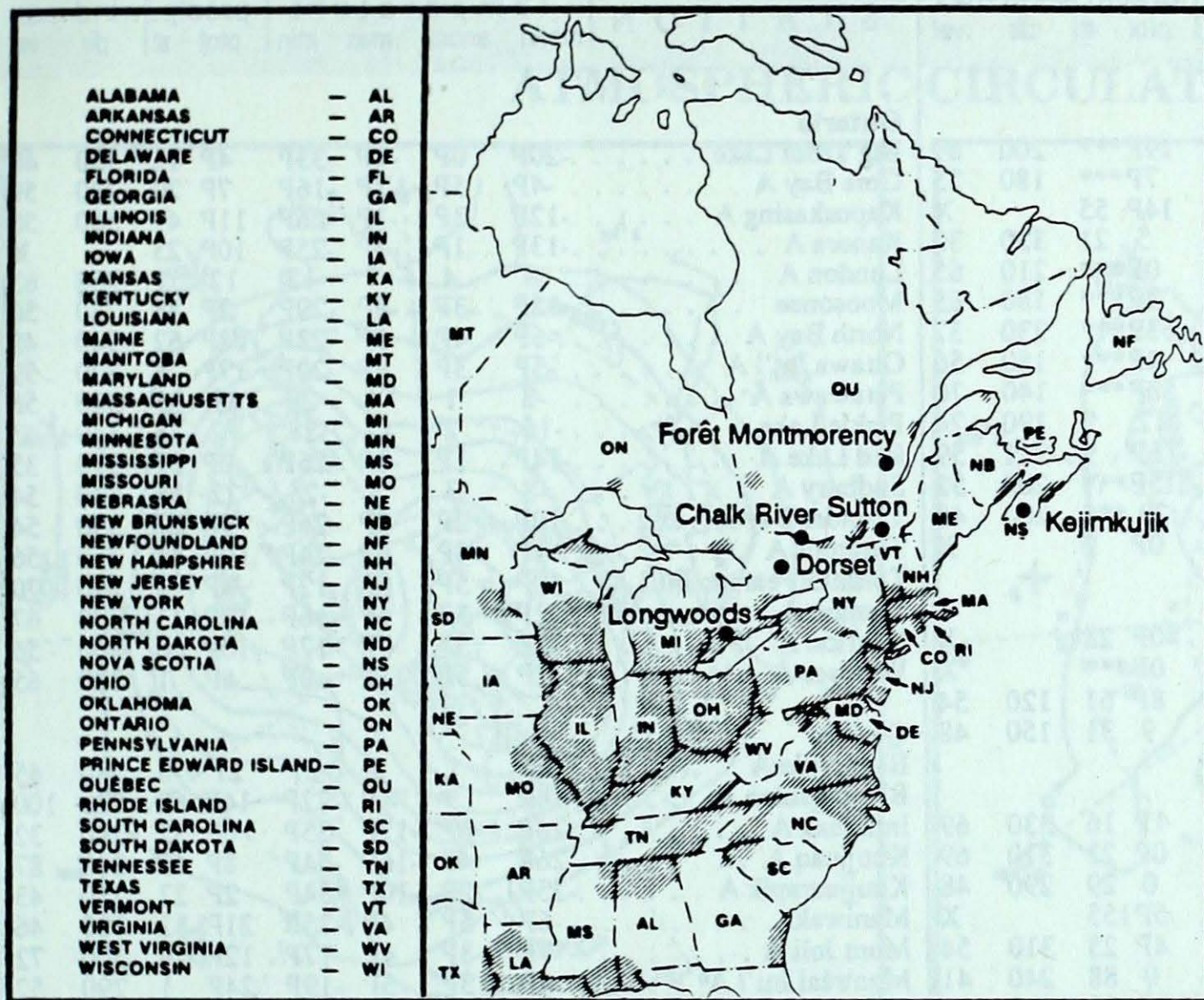


Tracks of low pressure centres at 12:00 U.T. each day during the period.

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.



Site	day	pH	amount	air path to site
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February 17 to 23, 1991

Longwoods	18	3.7	4 R	Ohio, Eastern Kentucky
	19	3.5	2 R	Ohio, Indiana, Southern Illinois
	23	4.5	2 S	Northern Ohio
Dorset*	18	4.2	6 R	Southern Ontario, Northern Ohio
	19	4.2	8 R	Southern Ontario, Northern Ohio
	20	3.9	1 S	Michigan, Southern Iowa
	21	4.2	1 M	Lake Huron, Michigan
	22	4.5	2 S	Northern Ontario
	23	4.5	2 S	Southern Ontario
Chalk River	18	4.1	8 M	Southern Ontario, Pennsylvania, Western New York
	19	4.2	6 S	Southern Ontario, Southern Michigan
	20	3.7	1 S	Northern Ontario
	21	4.2	8 S	Southern Ontario, Lake Huron
Sutton	17	4.0	2 S	New York, Southern Ontario
	18	4.4	2 S	Eastern New York, Eastern Pennsylvania, New Jersey
	19	4.1	20 M	Western New York, Western Pennsylvania, Northern Ohio
	20	3.9	4 M	Eastern Ontario
	21	4.0	4 M	Southern Ontario, Western New York
	22	4.3	8 M	Eastern Ontario, Western New York
Montmorency	19	4.4	21 M	Southern Quebec, Southern Ontario, Northern New York
	21	4.3	5 S	Southern Quebec, Eastern Ontario
	22	4.0	3 S	Southern Quebec
Kejimikujik				Data not available

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

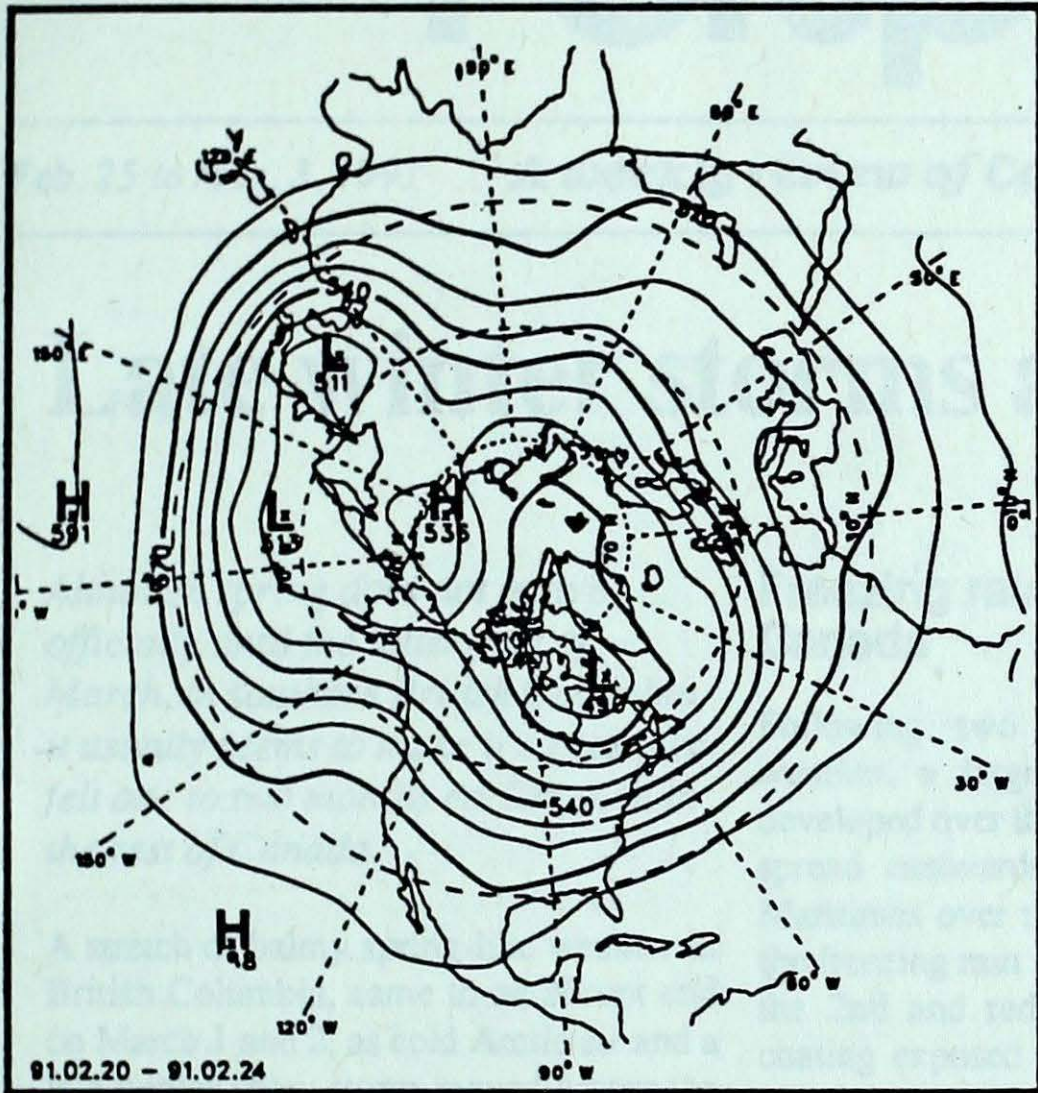
STATION	temperature				precip. ptot st	wind max		STATION	temperature				precip. ptot st	wind max		
	mean	anom	max	min		dir	vel		mean	anom	max	min		dir	vel	
British Columbia								Ontario								
Cape St James	5P	0P	8P	1P	19P***	200	89	Big Trout Lake	-20P	0P	-4P	-33P	4P	11	350	48
Cranbrook A	2P	4P	7P	-4P	7P***	180	35	Gore Bay A	-4P	5P	3P	-16P	7P	20	290	59
Fort Nelson A	-19P	-4P	7P	-31P	14P 55		X	Kapusking A	-12P	3P	-1P	-26P	11P	47	360	50
Fort St John A	-8	2	6	-24	5 21	330	32	Kenora A	-13P	1P	-3P	-25P	10P	23		X
Kamloops A	4P	4P	17P	-5P	0P***	210	65	London A	-1	4	7	-12	12	2	300	63
Penticton A	5P	4P	16P	-4P	2P***	180	65	Moosonee	-15P	3P	-4P	-29P	2P	35	260	50
Port Hardy A	5P	0P	8P	1P	53P***	230	37	North Bay A	-6P	4P	5P	-22P	28P	62	340	48
Prince George A	1P	6P	8P	-5P	4P***	180	56	Ottawa Int'l A	-5P	3P	4P	-20P	17P	6	320	59
Prince Rupert A	4P	0P	9P	0P	50P***	140	70	Petawawa A	-8	1	4	-28	19	35	340	56
Revelstoke A	2	3	7	-4	12 9	190	74	Pickle Lake	-16	2	-2	-28	2	36	340	43
Smithers A	-1P	3P	7P	-6P	6P 9	241	59	Red Lake A	-14P	1P	-1P	-26P	0P	37	310	35
Vancouver Int'l A	6P	1P	11P	-1P	15P***	200	52	Sudbury A	-8	3	2	-26	22	36	330	54
Victoria Int'l A	6	1	12	0	29 ***	200	48	Thunder Bay A	-10P	2P	0P	-26P	9P	27	350	54
Williams Lake A	0P	3P	9P	-8P	0P 2		X	Timmins A	-9P	6P	0P	-24P	10P	42	350	56
Yukon Territory								Toronto(Pearson Int'l A)								
Komakuk Beach A	-29P	-2P	-22P	-39P	0P 28		X	Trenton A	-2P	3P	6P	-16P	11P	1	300	67
Teslin (aut)	-8P	*	3P	-26P	0P***		X	Warton A	-2P	5P	7P	-17P	10P	6	300	56
Watson Lake A	-17P	0P	-1P	-35P	8P 61	120	54	Windsor A	2P	5P	11P	-8P	6P	1	320	65
Whitehorse A	-8	3	4	-29	9 31	150	48	Québec								
Northwest Territories								Bagotville A								
Alert	-31P	3P	-20P	-42P	1P 16	330	69	Blanc Sablon A	-14P	*	-4P	-22P	14P	68	020	100
Baker Lake A	-34P	-2P	-29P	-40P	0P 21	310	69	Inukjuak A	-28P	-3P	-17P	-35P	0P	32	290	32
Cambridge Bay A	-36	-1	-32	-44	0 29	290	48	Kuujuuaq A	-26P	-4P	-16P	-34P	8P	42	240	87
Cape Dyer A	-24P	-1P	-16P	-35P	5P155		X	Kuujuarapik A	-25P	-2P	-10P	-34P	2P	27	230	43
Clyde A	-24P	4P	-16P	-38P	4P 23	310	54	Maniwaki	-6P	5P	4P	-25P	21P	32	300	46
Coppermine A	-35	-7	-27	-42	0 88	240	41	Mont Joli A	-7P	3P	4P	-17P	12P	29	300	72
Coral Harbour A	-31P	-2P	-23P	-37P	0P 28	010	61	Montréal Int'l A	-4P	3P	5P	-19P	24P	1	290	52
Eureka	-34P	5P	-17P	-46P	1P 7		X	Natashquan A	-12P	-1P	-3P	-24P	14P	95	320	65
Fort Smith A	-25P	-5P	-12P	-36P	6P 65		X	Québec A	-9	0	3	-23	29	87	320	63
Hall Beach A	-30P	3P	-20P	-36P	0P 30	340	56	Schefferville A	-23P	-2P	-12P	-34P	4P	80	270	46
Inuvik A	-31	-3	-11	-41	2 45	300	33	Sept-Îles A	-13P	-2P	-2P	-27P	12P	60	330	76
Iqaluit A	-28P	-2P	-16P	-38P	1P 27	280	41	Sherbrooke A	-6P	4P	5P	-24P	22P	28	270	54
Mould Bay A	-32P	4P	-24P	-39P	0P 19	360	37	Val-d'Or A	-10P	4P	2P	-25P	14P	45	330	59
Norman Wells A	-33P	-7P	-12P	-42P	0P 35		X	New Brunswick								
Resolute A	-29P	5P	-17P	-43P	0P 18	340	87	Charlo A	-8P	3P	4P	-20P	15P103	280	61	
Yellowknife A	-31P	-7P	-19P	-42P	1P 52		X	Chatham A	-7P	2P	6P	-21P	12P	13	300	56
Alberta								Fredericton A								
Calgary Int'l A	-1	6	11	-12	1 1	270	67	Moncton A	-6	1	6	-20	11	13	310	69
Cold Lake A	-9	5	6	-22	5 19	330	48	Saint John A	-4P	3P	5P	-18P	16P	7	330	59
Edmonton Namao A	-4	6	7	-15	7 8	300	48	Nova Scotia								
Fort McMurray A	-16	-2	-4	-26	7 18	330	37	Greenwood A	-3P	2P	9P	-14P	20P	1	260	93
High Level A	-20P	-5P	1P	-28P	15P 55	350	39	Shearwater A	-2P	2P	7P	-14P	12P	1	300	63
Jasper	-1	5	6	-9	17 12		X	Sydney A	-5	0	5	-15	14	1	290	95
Lethbridge A	1P	7P	12P	-14P	0P 1	250	93	Yarmouth A	0P	3P	7P	-10P	17P***	310	78	
Medicine Hat A	0P	8P	11P	-11P	1P 1	260	83	Prince Edward Island								
Peace River A	-12P	1P	6P	-26P	4P 9	310	43	Charlottetown A	-5P	2P	4P	-17P	14P	11	310	67
Saskatchewan								Summerside A								
Cree Lake	-22P	-6P	-6P	-41P	7P 52	030	37	-5P	2P	4P	-15P	19P	11	300	78	
Estevan A	-7	4	11	-20	8 10	320	52	Newfoundland								
La Ronge A	-17P	-2P	-1P	-31P	1P 48	310	37	Cartwright	-15	-2	-7	-23	29	216	320	83
Regina A	-9	4	8	-22	5 6	330	48	Churchill Falls A	-20P	1P	-9P	-34P	7P	99	310	63
Saskatoon A	-10	4	4	-26	6 5	360	33	Gander Int'l A	-9P	-2P	0P	-17P	12P	48	270	74
Swift Current A	-4P	6P	10P	-12P	6P 9	340	50	Goose A	-16P	-2P	-6P	-27P	4P102	250	52	
Yorkton A	-11P	4P	2P	-27P	5P 22	140	44	Port Aux Basques	-6P	0P	1P	-16P	31P	58	300	104
Manitoba								St John's A								
Brandon A	-11P	5P	1P	-27P	4P 23	280	48	-6P	-1P	3P	-13P	10P	10	270	82	
Churchill A	-29P	-3P	-19P	-34P	3P 19	290	52	St Lawrence	-5P	1P	2P	-13P	20P	16		X
Lynn Lake A	-22P	-4P	-5P	-33P	2P 36	320	44	Wabush Lake A	-19P	2P	-6P	-37P	8P	74	230	56
The Pas A	-16P	2P	-5P	-29P	0P 11	310	41	91/02/18-91/02/24								
Thompson A	-20P	-1P	-4P	-32P	3P 68	340	39									
Winnipeg Int'l A	-14P	1P	-1P	-24P	6P 9	170	43									

mean = mean weekly temperature, °C
 max = maximum weekly temperature, °C
 min = minimum weekly temperature, °C
 anom = mean temperature anomaly, °C

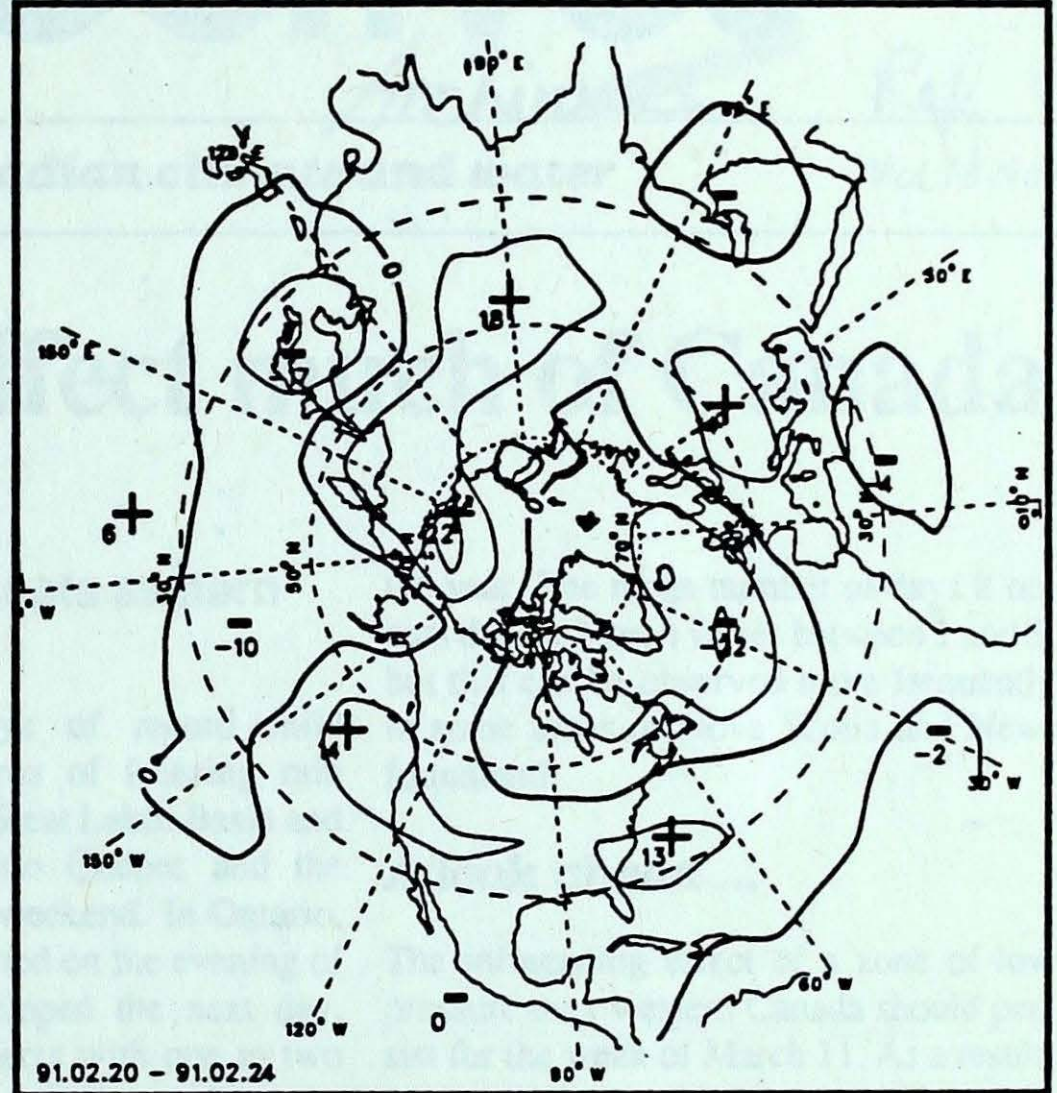
ptot = weekly precipitation total in mm
 st = snow thickness on the ground in cm
 dir = direction of max wind, deg. from north.
 vel = wind speed in km/h

— Annotations —
 X = no observation
 P = less than 7 days of data
 * = missing data when going to printing.

ATMOSPHERIC CIRCULATION



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



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

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