Environment Canada Environnement Canada

Climatic Perspectives

Archives Ref 1

February 11 to 17, 1991 **A weekly review of Canadian climate and water** *Vol. 13 No 07*

Extensive pack ice along Canada's east coast

Records, which date back to 1958, indicate that the Labrador ice pack extends as far south as the maximum limit ever observed for this date. This is mainly due to the colder than normal air temperatures that have prevailed since the beginning of the year. The leading southern edge of ice is approximately 400 km southeast of Cape Race. The ice pack is extensive, but because of the predominantly west to northwest wind circulation, the pack remains well off the east coast of Newfoundland, and is not affecting coastal shipping. However, the ice could be a threat to trans-Atlantic shipping in that icebergs could be present. In retrospect, the winters of 1972 and 1973 had some of the worst ice conditions ever seen, while the mild winter of 1959 had the least ice.

The Gulf of St. Lawrence is extensively ice covered, with the thickness and extent of the ice being greater than normal for this time of year. Ice that is flowing out through Cabot Strait, extends 160 km east of Sydney, N.S. Five ice breakers are escorting ships across the Gulf in convoys of up to 12 vessels. Ice pressure due to winds is hampering operations, and a number of ships have been stuck in the ice at any one time. In fact, more vessels have been stuck in January this year than last year. Transit time across the Gulf ranges from 3 to 5 days. Several ships have received ice damage, while others have run low on food and fuel. Ferry services to Newfoundland have not been affected to any great extent.

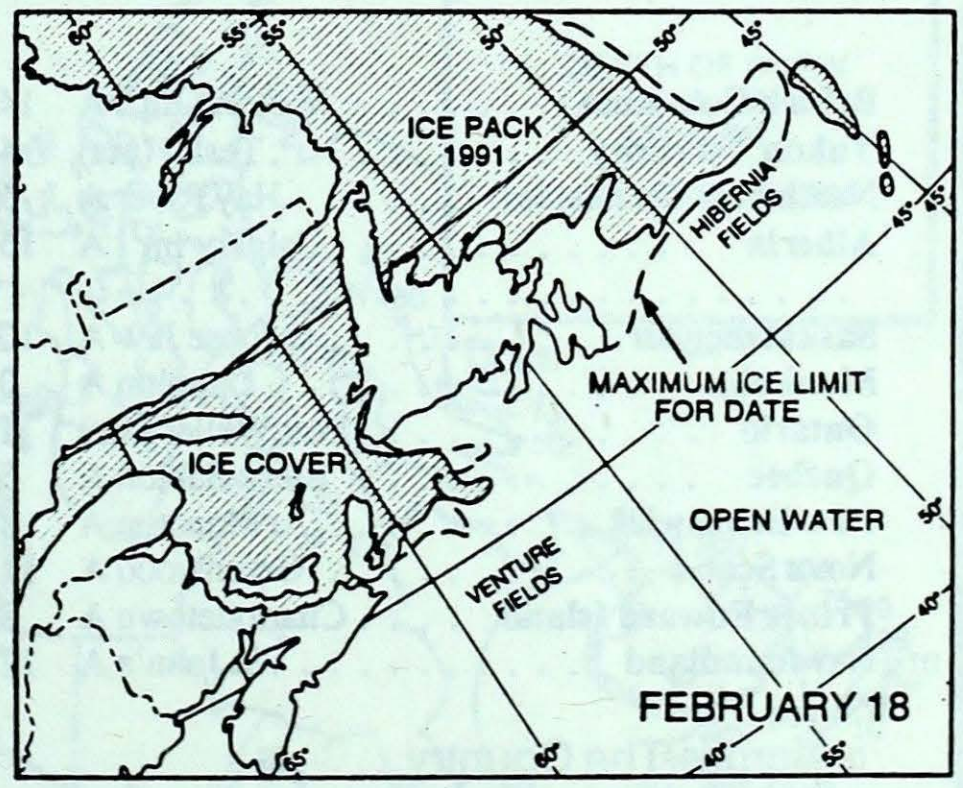
Flooding in Atlantic Canada

An intense low pressure system moved across Atlantic Canada during the middle of the week, which spread snow into New Brunswick, and a mixture of ice pellets, freezing rain and rain across Nova Scotia and P.E.I. Thunderstorms produced hail, frequent lightening and heavy downpours. The rainfalls flooded streets and basements, and lightening strikes caused power interruptions in southwestern Nova Scotia.

Newfoundland received a mixture of snow and rain. The southern portions of the Island received over 60 mm of precipitation. The combination of warmer temperatures, melting snow and heavy precipitation falling on the frozen ground caused flash flooding in the southeastern areas of the Island. The city of St. John's, the Avalon and Shoal Harbour areas and the Burin Peninsula all had widespread flooding this week. Road washouts occurred in the Glovertown area.

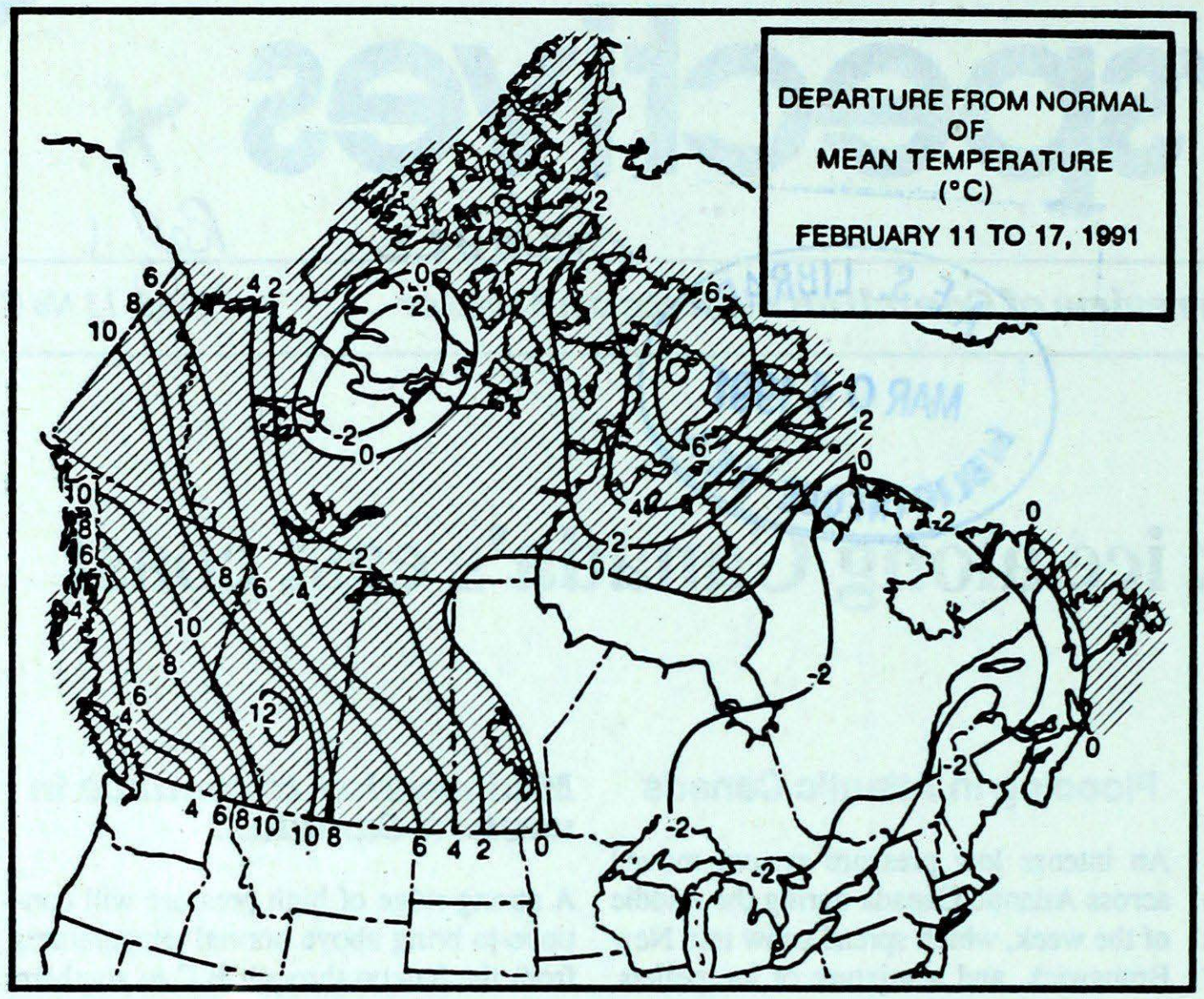
Mild weather to continue in western Canada...

A strong ridge of high pressure will continue to bring above normal temperatures from the Yukon through B.C to southern Alberta for the week of Feb. 25. A flow from the north will push cold Arctic air over the central areas of the country from Saskatchewan to Labrador. The lower Great Lakes Basin, the St. Lawrence Valley and the Maritimes will experience above normal readings for the same week.



Ice conditions are close to the maximum limit for this date.

Canada



Weekly normal temperatures (°C)

	max.	min.
Whitehorse A	-9.8	-19.7
Iqaluit A	-21.8	-30.5
Yellowknife A	-21.7	-31.1
Vancouver Int'l A	7.6	1.5
Victoria Int'l A	8.0	1.3
Calgary Int'l A	-3.2	-13.9
Edmonton Int'l A	-7.3	-17.6
Regina A	-8.9	-19.9
Saskatoon A	-10.0	-20.9
Winnipeg Int'l A	-10.1	-21.2
Ottawa Int'l A	-5.5	-15.3
Toronto Int'l A	-2.3	-11.0
Montréal Int'l A	-5.1	-14.4
Québec A	-6.6	-16.7
Fredericton A	-2.9	-14.6
Saint John A	-2.5	-13.5
Halifax (Shearwater)	-0.7	-9.1
Charlottetown A	-3.5	-12.1
Goose A	-9.4	-19.5
St John's A	-0.9	-7.5

Weekly temperature and precipitation extremes

	Maximum temperature (°C)		Minimum temperature (°C)		Heaviest precipitation (mm)	
British Columbia	Victoria Int'l A	14	Fort Nelson A	-19	Abbotsford A	71
Yukon Territory	Teslin (aut)	4	Komakuk Beach A	-37	Shingle Point A	5
Northwest Territories	Hay River A	-5	Eureka	-45	Cape Dyer A	45
Alberta	Calgary Int'l A	15	Cold Lake A	-31	High Level A	10
					Medicine Hat A	10
Saskatchewan	Moose Jaw A	10	Uranium City A	-35	North Battleford A	19
Manitoba	Dauphin A	0	Lynn Lake A	-36	Brandon A	11
Ontario	Port Weller (aut)	1	Geraldton A	-34	London A	36
Québec	Blanc Sablon A	5	Kuujjuaq A	-37	Blanc Sablon A	28
New Brunswick	Moncton A	8	St-Léonard A	-30	St-Léonard A	25
Nova Scotia	Greenwood A	11	Amherst (aut)	-21	Sable Island	49
Prince Edward Island	Charlottetown A	8	Summerside A	-23	Charlottetown A	26
Newfoundland	St John's A	12	Churchill Falls A	-40	Burgeo	66

Across The Country...

Highest Mean Temperature	Vancouver Int'l A(BC)	9
Lowest Mean Temperature	Shepherd Bay A(NWT)	-36

91/02/11-91/02/17

CLIMATIC PERSPECTIVES
VOLUME 13

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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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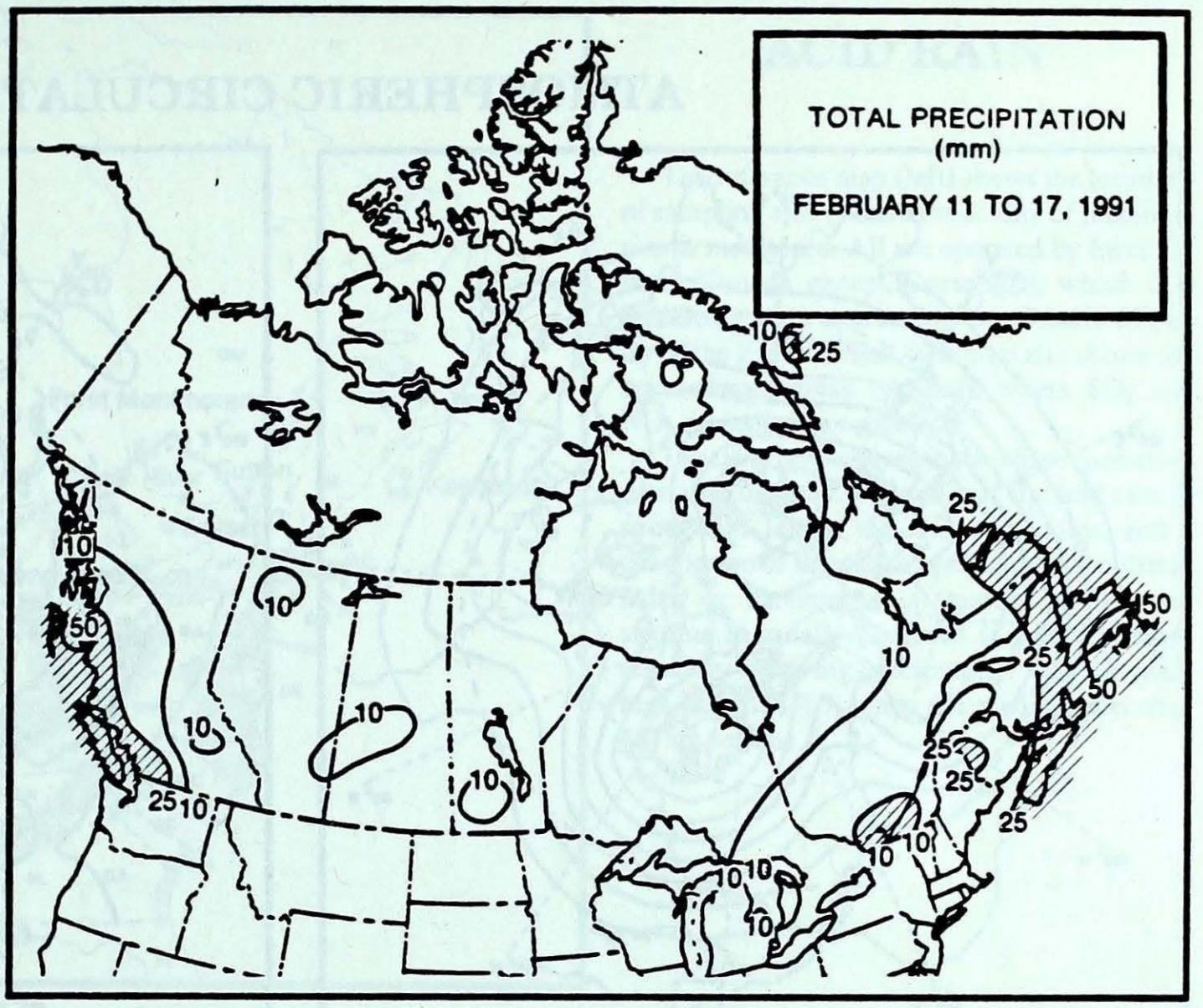
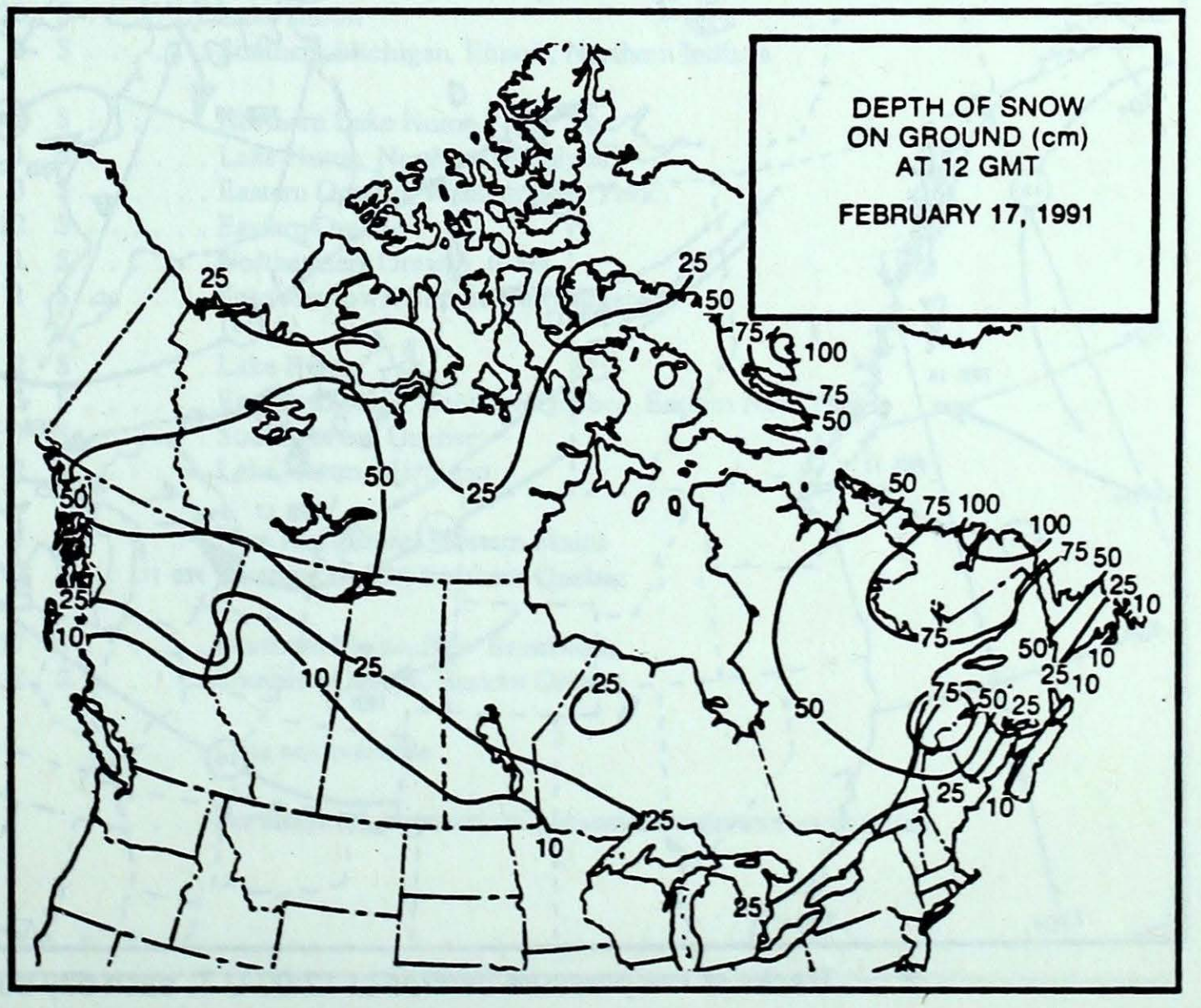
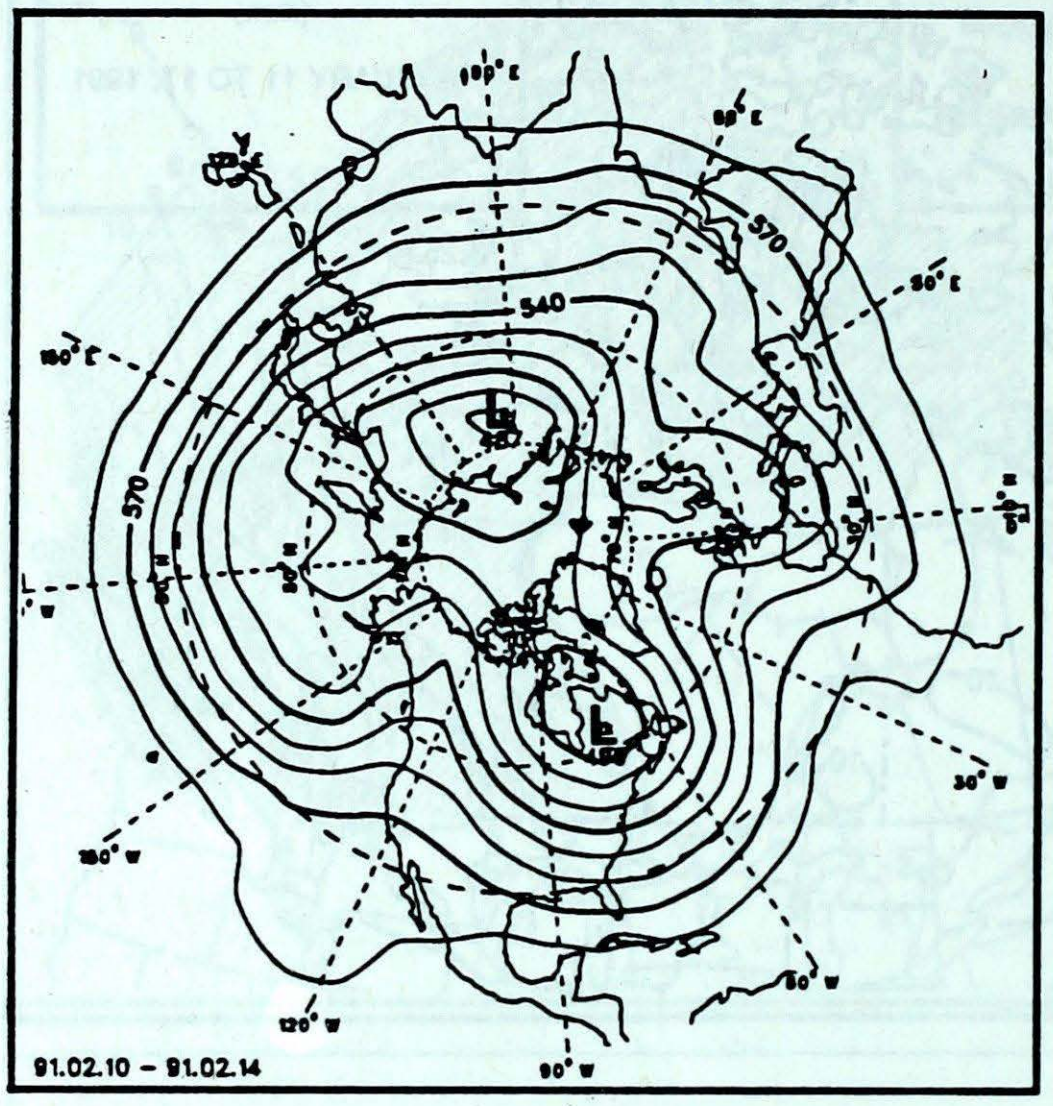
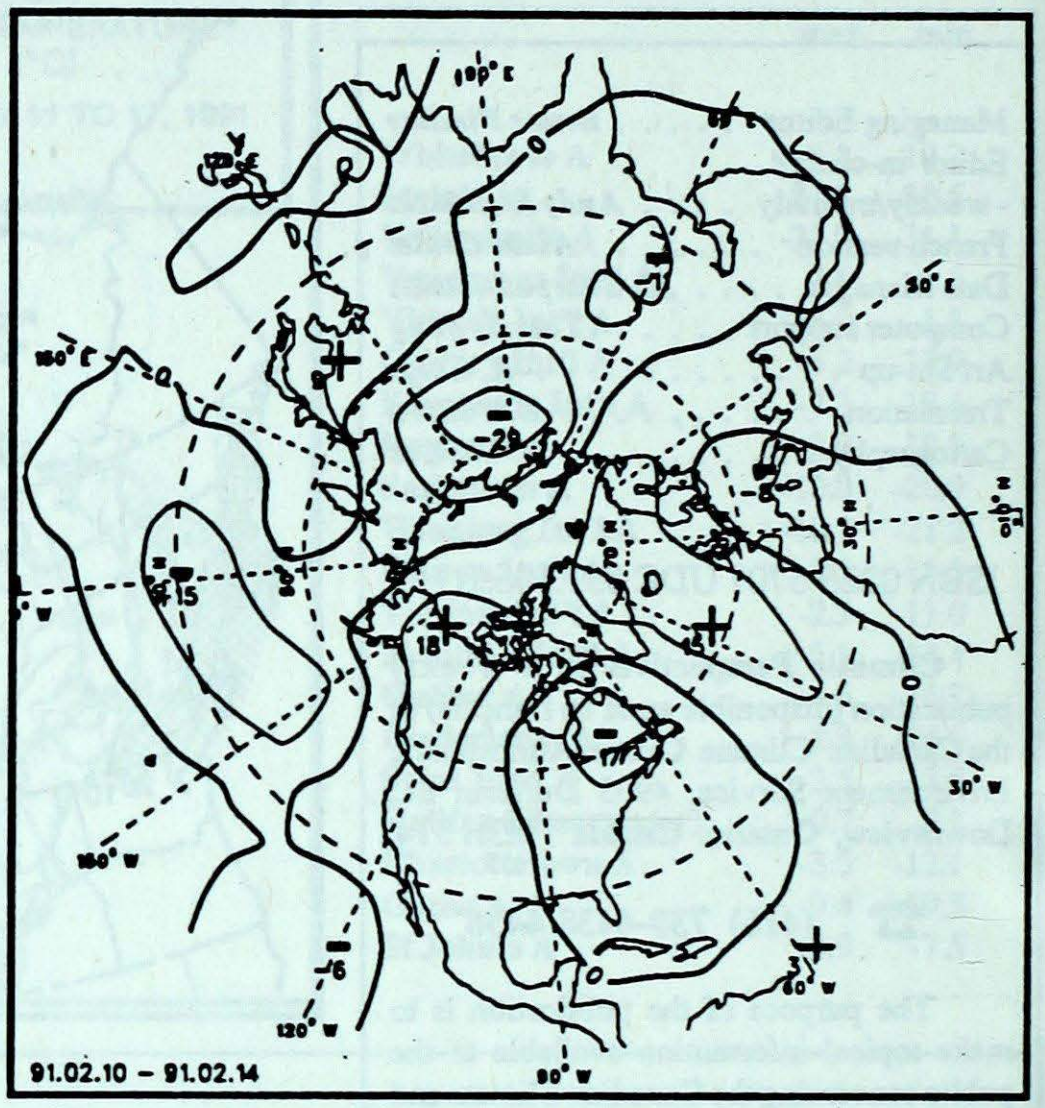




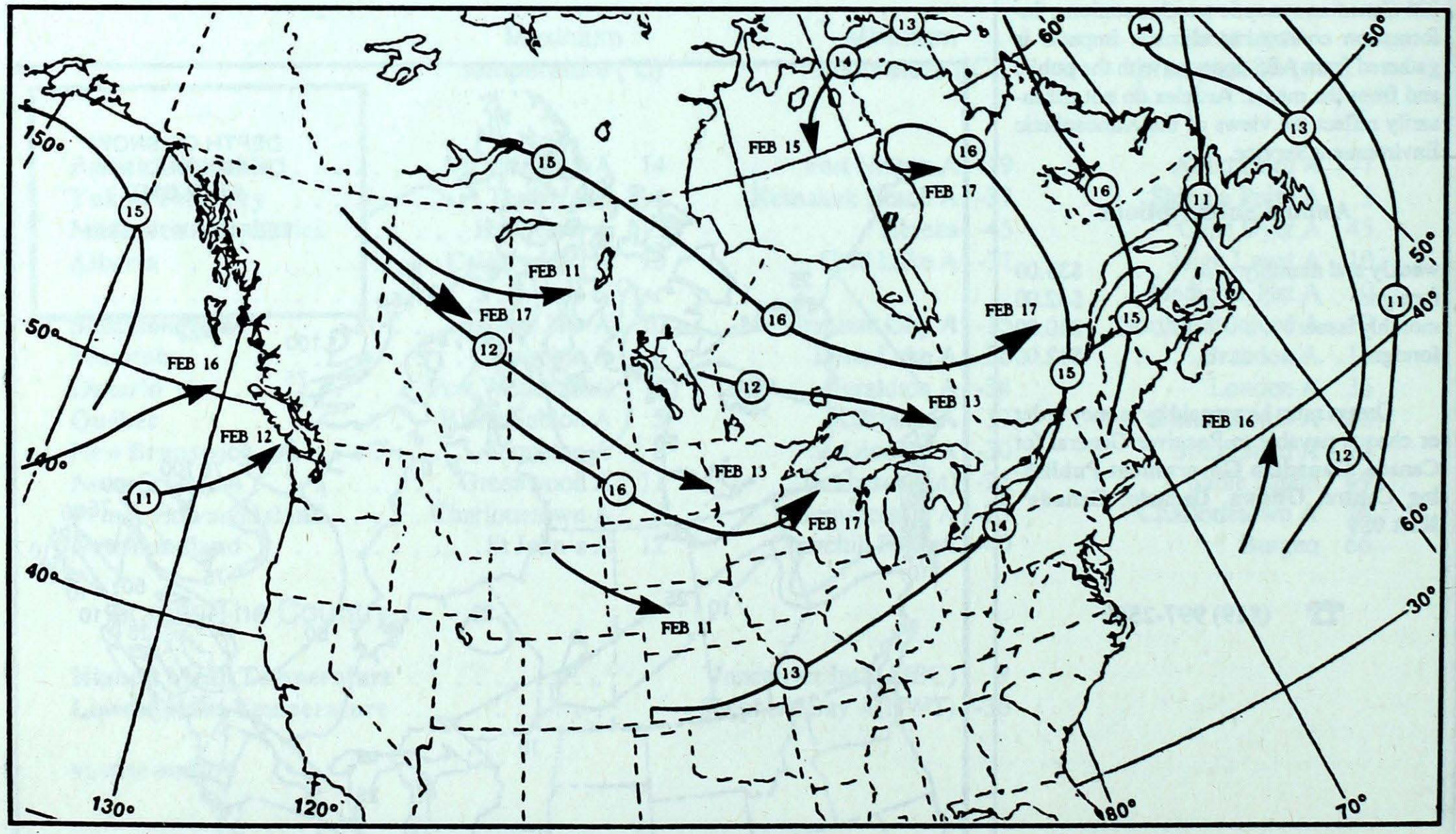
ATMOSPHERIC CIRCULATION



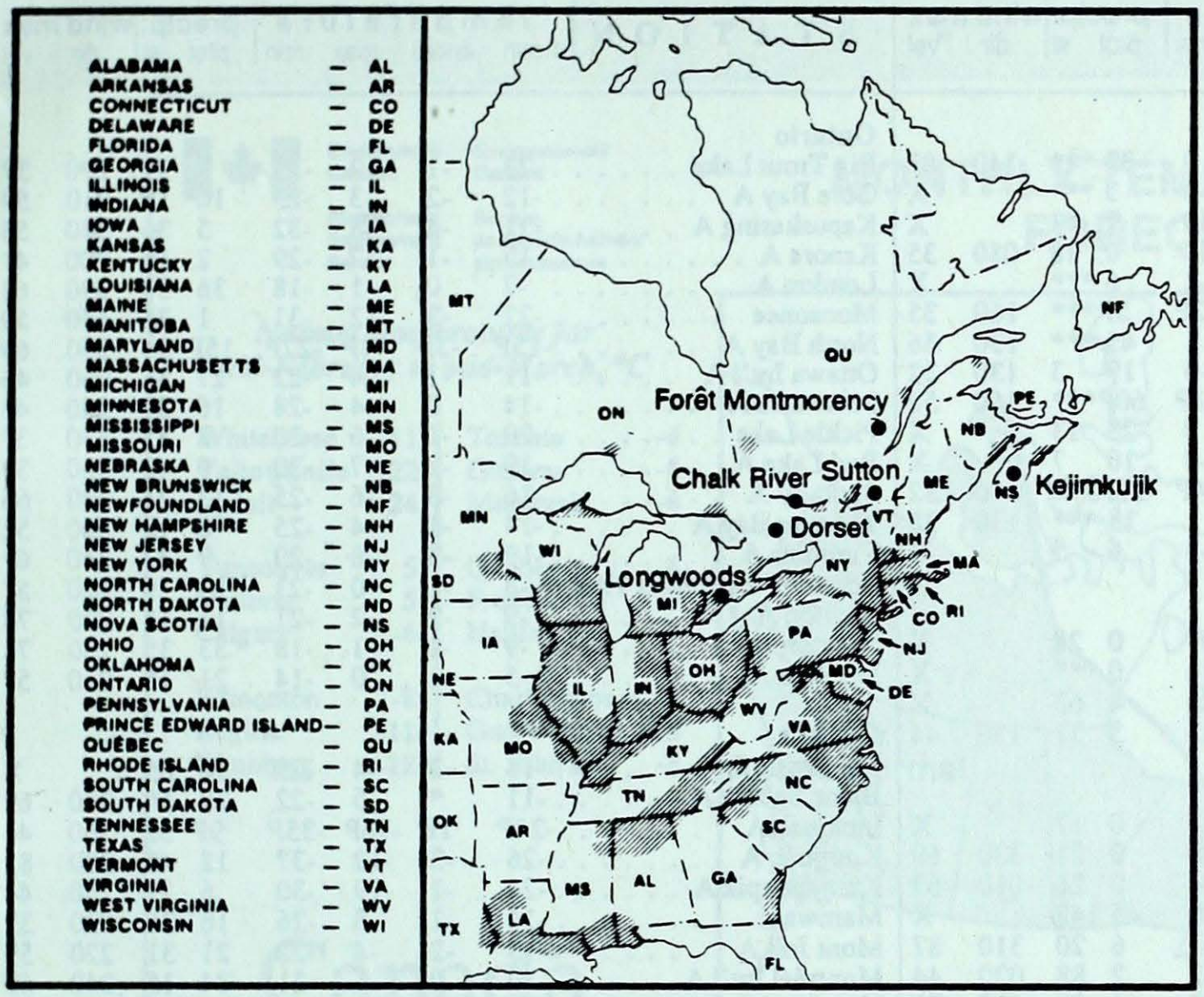
Mean geopotential height
50-kPa level (10-decametre intervals)



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 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.

Site	day	pH	amount		air path to site
					February 10 to 16, 1991
Longwoods	14-15	5.2	20	S	. . . . . Lake Huron
	16	4.3	3	S	. . . . . Southern Michigan, Illinois, Northern Indiana
Dorset*	10	5.1	2	S	. . . . . Northern Lake Huron
	12	5.0	1	S	. . . . . Lake Huron, Northern Michigan
	13	4.4	3	S	. . . . . Eastern Ontario, Western New York
	14	4.4	12	S	. . . . . Eastern Ontario
	15	4.4	1	S	. . . . . Northeastern Ontario
	16	4.2	1	S	. . . . . Southern Iowa, Southern Michigan
Chalk River	12	4.7	2	S	. . . . . Lake Huron
	13	4.2	3	S	. . . . . Eastern Ontario, Southern Quebec, Eastern New York
	14	4.3	7	S	. . . . . Southwestern Quebec
	16	4.3	2	S	. . . . . Lake Huron, Michigan
Sutton	14	4.2	3	S	. . . . . New Hampshire, Western Maine
	15	4.1	2	S	. . . . . Eastern Ontario, Southern Quebec
Montmorency	14	4.2	17	S	. . . . . Northern Maine, New Brunswick
	16	3.9	2	S	. . . . . Southern Quebec, Eastern Ontario
Kejimkujik					. . . . . Data not available

. . . . . 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	6	2	9	3	32	***	140	87
Cranbrook A	3	5	10	-4	3	***		X
Fort Nelson A	-12	7	-6	-19	7	43		X
Fort St John A	-3	11	7	-10	0	18	080	35
Kamloops A	4	6	10	-1	6	***		X
Penticton A	5P	4P	13P	-2P	5P	***	160	35
Port Hardy A	7	3	10	1	45	***	130	56
Prince George A	2	9	7	-5	19	3	130	32
Prince Rupert A	6P	3P	10P	-1P	60P	***	150	52
Revelstoke A	2	4	5	0	23	13		X
Smithers A	1	7	7	-8	10	7		X
Vancouver Int'l A	9P	4P	13P	4P	31P	***	090	32
Victoria Int'l A	8	3	14	1	13	***	130	33
Williams Lake A	2	7	8	-5	6	5		X
Yukon Territory								
Komakuk Beach A	-25	3	-14	-37	0	28		X
Teslin (aut)	-5	*	4	-14	0	***		X
Watson Lake A	-13	7	-2	-25	4	63		X
Whitehorse A	-4	11	3	-13	3	31	180	44
Northwest Territories								
Alert	-35	-1	-26	-41	0	17		X
Baker Lake A	-32	1	-26	-38	0	21	330	69
Cambridge Bay A	-35	-1	-26	-44	0	26	010	67
Cape Dyer A	-18	5	-10	-29	45	142		X
Clyde A	-22	5	-16	-31	6	20	310	87
Coppermine A	*	*	-13	-43	2	88	020	44
Coral Harbour A	-25	6	-17	-32	4	28	020	74
Eureka	-36	2	-15	-45	0	6	020	65
Fort Smith A	-20	4	-10	-34	4	64	150	52
Hall Beach A	-29	4	-21	-36	0	30	340	39
Inuvik A	-25	7	-15	-40	2	45		X
Iqaluit A	-23	4	-6	-34	8	27	050	104
Mould Bay A	-35	0	-23	-44	0	19	320	50
Norman Wells A	-21	7	-14	-35	4	35	290	33
Resolute A	-33	1	-23	-41	0	18	040	54
Yellowknife A	-25	1	-14	-36	5	53	150	37
Alberta								
Calgary Int'l A	1	10	15	-10	5	5	350	44
Cold Lake A	-9	6	-1	-31	9	19		X
Edmonton Namao A	-2	10	6	-13	3	1	320	39
Fort McMurray A	-14	3	-7	-30	6	12	120	33
High Level A	-15	5	-7	-26	10	41		X
Jasper	3	10	7	-3	3	1		X
Lethbridge A	4	10	14	-7	6	***	250	63
Medicine Hat A	0	8	9	-11	10	5	320	41
Peace River A	-7	9	2	-15	9	6		X
Saskatchewan								
Cree Lake	-19	3	-10	-33	4	43	200	39
Estevan A	-7	5	4	-21	2	2	330	52
La Ronge A	-15	4	-5	-27	2	45		X
Regina A	-8	7	6	-23	3	2	340	52
Saskatoon A	-10	6	1	-27	3	3		X
Swift Current A	-4	7	9	-22	6	3	180	46
Yorkton A	-13	3	-1	-31	11	21	310	41
Manitoba								
Brandon A	-14	2	-3	-32	11	18	290	43
Churchill A	-27	-1	-19	-34	0	19	310	56
Lynn Lake A	-24	-1	-11	-36	3	33	330	44
The Pas A	-18	1	-8	-27	0	11	340	39
Thompson A	-22	0	-12	-33	2	65	320	41
Winnipeg Int'l A	-14	1	-5	-26	4	5	170	37

STATION	temperature mean	anom	max	min	precip. ptot	st	wind max dir	vel
Ontario								
Big Trout Lake	-23	-1	-12	-33	3	11	290	37
Gore Bay A	-12	-2	-3	-23	10	17	010	59
Kapuskasing A	-21	-4	-8	-32	5	36	340	56
Kenora A	-15	-1	-7	-29	2	14	200	41
London A	-7	0	-1	-18	36	31	290	63
Moosonee	-22	-3	-12	-31	1	35	340	59
North Bay A	-15P	-3P	-4P	-27P	15P	54	350	69
Ottawa Int'l A	-11	-1	-4	-22	27	35	060	46
Petawawa A	-14	0	-4	-28	16	34	340	48
Pickle Lake	-20	-1	-6	-30	3	35	350	37
Red Lake A	-19	-2	-7	-30	0	40	330	39
Sudbury A	-16	-3	-6	-25	13	24	340	65
Thunder Bay A	-14	-1	-4	-25	0	18	350	52
Timmins A	-19	-3	-8	-29	9	37	340	67
Toronto(Pearson Int'l A)	-8	-1	0	-21	12	9	220	57
Trenton A	-9	-2	-2	-21	11	11	220	74
Wiarton A	-9	-1	-1	-18	33	35	230	74
Windsor A	-5	-1	0	-14	21	15	210	57
Québec								
Bagotville A	-18	-3	-4	-29	14	65		X
Blanc Sablon A	-11	*	5	-22	28	56	240	69
Inukjuak A	-24P	1P	-16P	-35P	9P	32	360	44
Kuujjuaq A	-26	-3	-12	-37	12	45	220	82
Kuujjuarapik A	-24	-1	-19	-30	6	27	240	44
Maniwaki	-14	-1	-3	-26	16	36	030	33
Mont Joli A	-13	-2	-4	-22	21	31	220	59
Montréal Int'l A	-10	0	-1	-21	24	15	240	59
Natashquan A	-15P	-4P	2P	-33P	14P	93	070	52
Québec A	-13	-2	-4	-23	24	91	080	74
Schefferville A	-25	-3	-13	-32	5	81	270	52
Sept-Îles A	-17	-5	-3	-32	23	55	080	56
Sherbrooke A	-12	0	2	-24	17	34	270	43
Val-d'Or A	-17	-1	-7	-28	15	40	330	56
New Brunswick								
Charlo A	-15	-2	-2	-27	7	106	240	44
Chatham A	-12	-3	1	-25	11	19	060	59
Fredericton A	-10	-2	3	-27	14	19	060	52
Moncton A	-10	-2	8	-25	23	15	060	52
Saint John A	-9	-1	5	-24	19	12	090	61
Nova Scotia								
Greenwood A	-6	0	11	-16	12	6	260	59
Shearwater A	-5	0	9	-17	47	1	090	67
Sydney A	-5	1	6	-17	46	1	240	65
Yarmouth A	-4	0	8	-12	28	1	090	65
Prince Edward Island								
Charlottetown A	-9	-1	8	-23	26	17	100	56
Summerside A	-9	-2	7	-23	16	16	090	50
Newfoundland								
Cartwright	-12	0	6	-22	35	192	310	93
Churchill Falls A	-24	-4	-3	-40	12	99	250	48
Gander Int'l A	-5	1	10	-17	49	26	340	65
Goose A	-17	-2	4	-30	27	94	240	63
Port Aux Basques	-6	0	4	-16	48	27	110	102
St John's A	-2	2	12	-13	61	2	320	78
St Lawrence	-2	2	9	-12	53	10		X
Wabush Lake A	-24	-3	-12	-40	10	72	020	33

91/02/11-91/02/17

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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Normal temperatures for mid-February to mid-March, °C

Whitehorse	-11	Toronto	-4
Yellowknife	-22	Ottawa	-6
Iqaluit	-24	Montreal	-6
Vancouver	5	Quebec	-8
Victoria	5	Fredericton	-5
Calgary	-6	Halifax	-3
Edmonton	-8	Charlottetown	-5
Regina	-11	Goose Bay	-12
Winnipeg	-12	St. John's	-3

Canada

MONTHLY TEMPERATURE FORECAST