Environment Canada Environnement Canada

Climatic Perspectives

MONTHLY SUPPLEMENT INCLUDED

February 13 to 19, 1989 **A weekly review of Canadian climate** *Vol. 11 No. 8*

Extensive arctic high dominates weather

A massive dome of cold air originating in the High Arctic moved southward bringing record high pressure and another dose of bitterly cold weather to the Prairies.

A ridge of high pressure covering most of central Canada produced bitterly cold temperatures on the Prairies. During the middle of the week, record-low daytime readings were set at several prairie locations when the temperatures struggled to climb above -35°C. Farther north, a stream of mild Pacific air continued to bring balmy temperatures into the Yukon and Northwest Territories. At Swift River Highway station in the Yukon, the mercury climbed to a very mild 4°C on February 13.

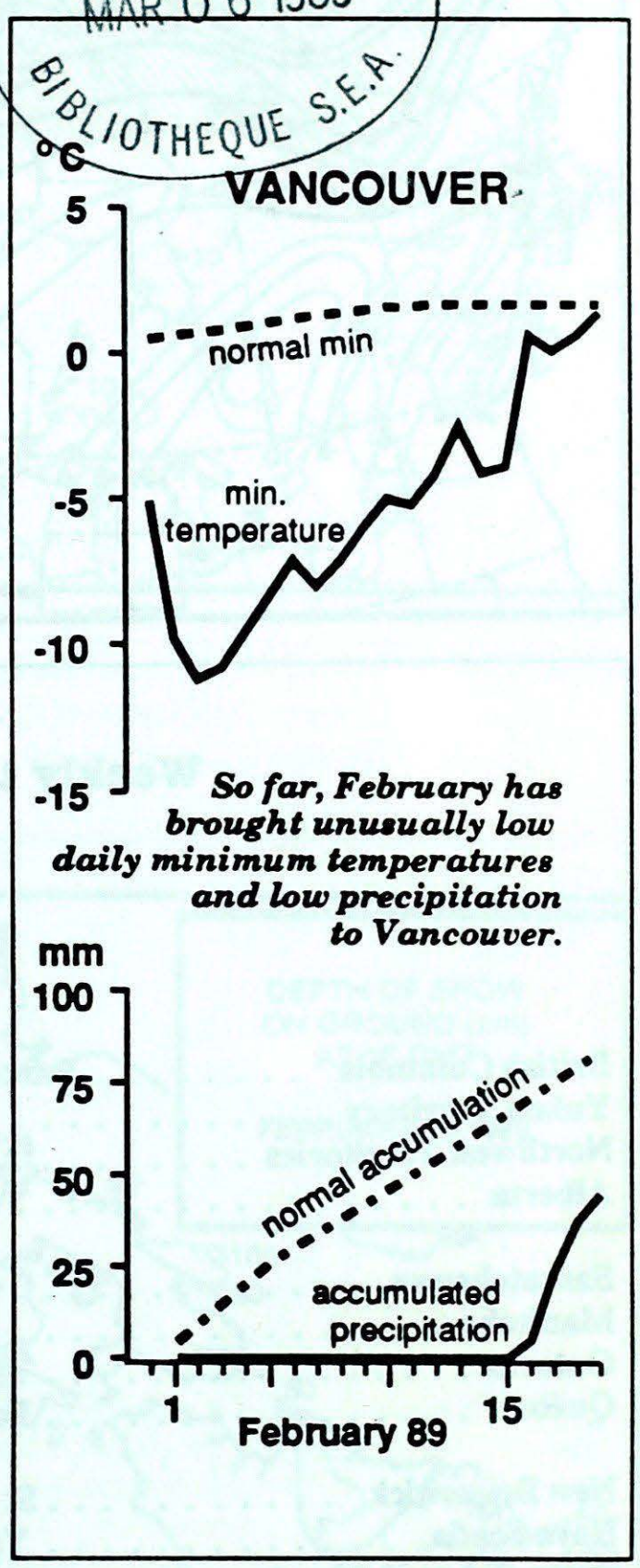
The weight of the cold Arctic air produced all-time high pressure readings in Saskatchewan and Manitoba as the central pressure rose above 105.9 kilopascals. Similar pressure records were also established in the U.S. Midwest on the 16th. Reported high incidences of migraine headaches from Alberta to Ontario were attributed to the sudden change in atmospheric pressure.

Southern B.C. ends its cold dry spell

An outbreak of cold air early in February kept temperatures below average throughout most of southern B.C. At Vancouver, this cold spell was the longest in any February. Daytime temperatures remained below the freezing mark from the 1st to the 3rd. According to Earl Coatta (AES - Vancouver), only 1 in 6 cold spells last 5 days or longer in Vancouver. The cold weather was particularly discomforting to residents since the last major Arctic outbreak occurred over 3 years ago (Nov. 1985). The cold weather helped to freeze the ground, allowing easy transport of heavy machinery for logging and drilling operations in the northern muskeg. On February 17, moisture laden air from the west ended the cold weather and deposited 15 to 25 cm of snow along the south coast of B.C. Victoria received the most, 26 cm.

A look ahead ...

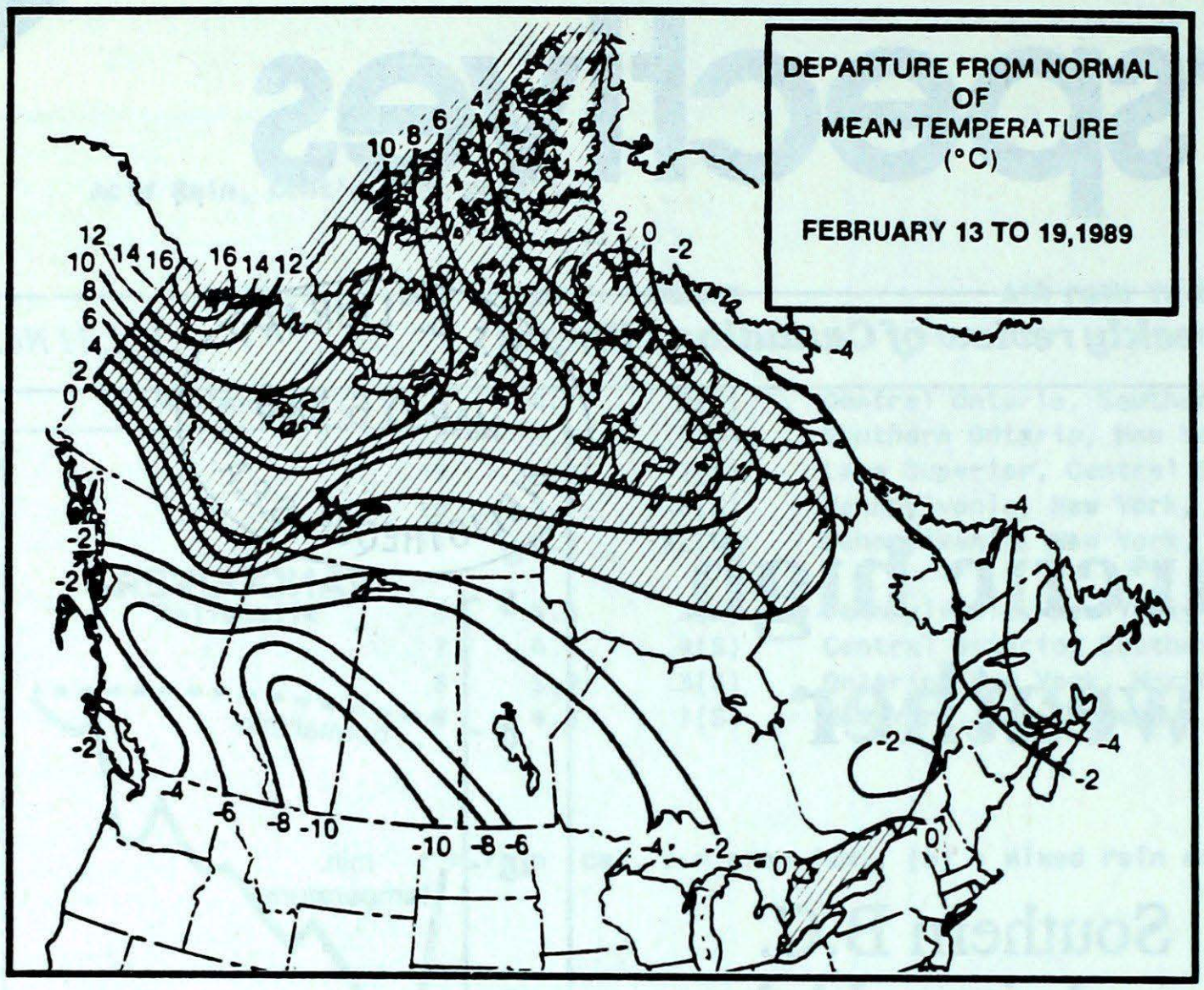
Starting the week of February 27, a strong ridge of high pressure over Alaska will give mild conditions to the Yukon and B.C. while the rest of the country will experience cold and dry weather. The core of the cold air will lie over the northern parts of Manitoba, Ontario, Québec and most of the Maritimes as well as Newfoundland —*prepared February 21.*



So far, February has brought unusually low daily minimum temperatures and low precipitation to Vancouver.

A. Gergye, Canadian Climate Centre

Canada



Snowpack Conditions in B.C. February 1,1989.

The southern half of B.C. had a normal to slightly below normal snowpack with basin-wide averages ranging from 88% of normal in the Okanagan to 103% along the south coast. The northern half of the province reports an extremely heavy snowpack. This heavy snowpack extends southward to the Nechako and parts of the upper Fraser. The havier snowpack for the Peace River Region was 129% of normal, the highest February 1 reading since 1976.

British Columbia
Ministry of Environment

Weekly temperature and precipitation extremes

	Maximum temperature (°C)		Minimum temperature (°C)		Heaviest precipitation (mm)	
British Columbia	Prince Rupert	10	Puntzi Mountain	-32	Vancouver Int'l	45
Yukon Territory	Faro	2	Watson Lake	-36	Komakuk Beach A	3
Northwest Territories	Inuvik	-1	Shepherd Bay A	-47	Eureka	7
Alberta	Banff	2	Fort Chipewyan	-42	Red Deer	6
Saskatchewan	Estevan	-6	Cree Lake	-43	Estevan	2
Manitoba	Gretna	-4	Gillam	-40	Churchill	4
Ontario	Windsor	6	Red Lake	-38	Wawa	22
Québec	Bagotville	5	Kuujjuaq	-39	Kuujjuarapik	15
New Brunswick	St Stephen	5	Fredericton	-28	Fredericton	18
Nova Scotia	Yarmouth	6	Truro	-24	Yarmouth	35
Prince Edward Island	East Point	3	Charlottetown	-24	Charlottetown	18
Newfoundland	Bonavista	9	Wabush Lake	-35	Port-Aux-Basques	37

Across The Country...

Warmest Mean Temperature	Kindakun Point (BC)	4
Coolest Mean Temperature	Eureka (NWT)	-37

89/02/13-89/02/19

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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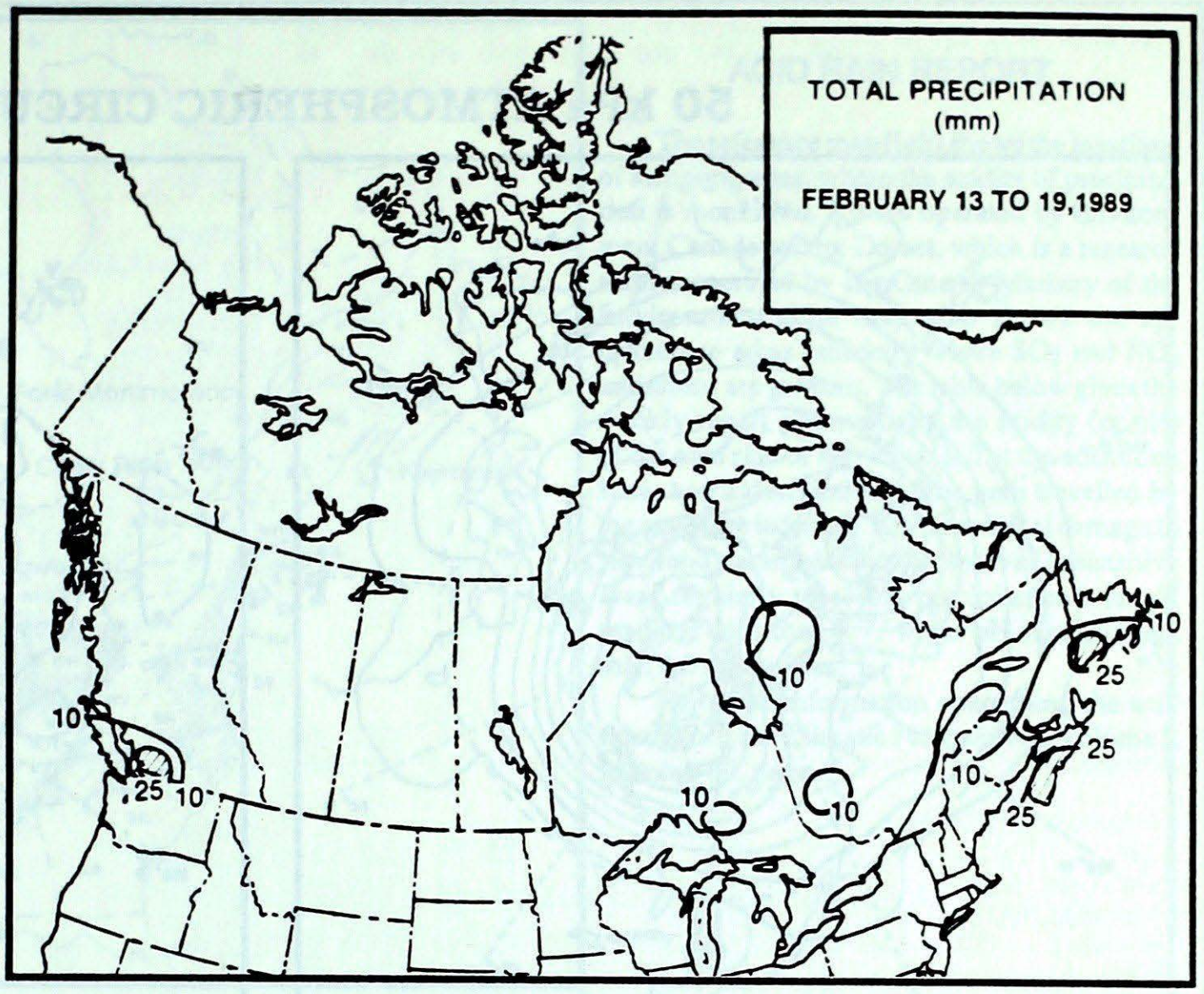
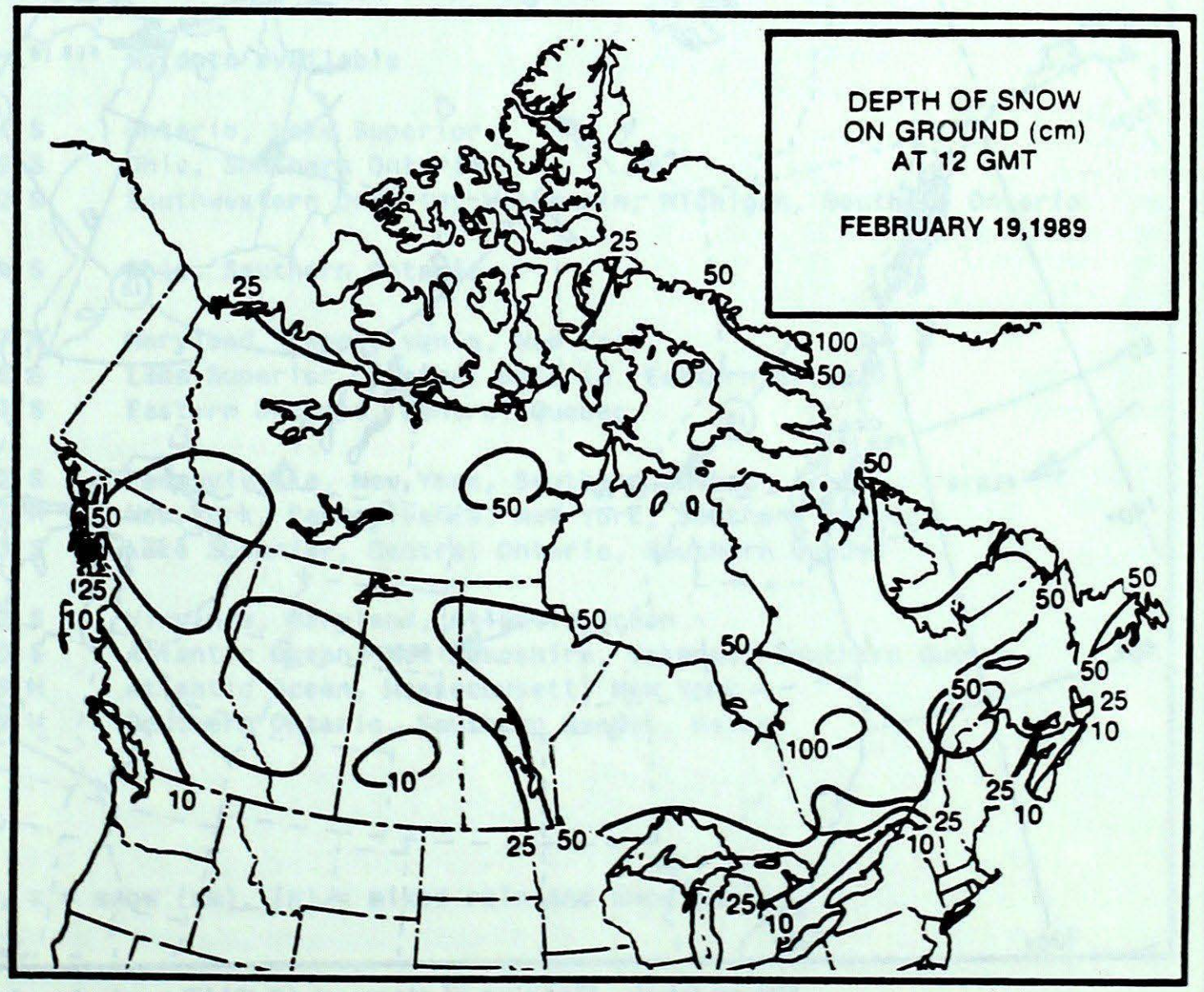
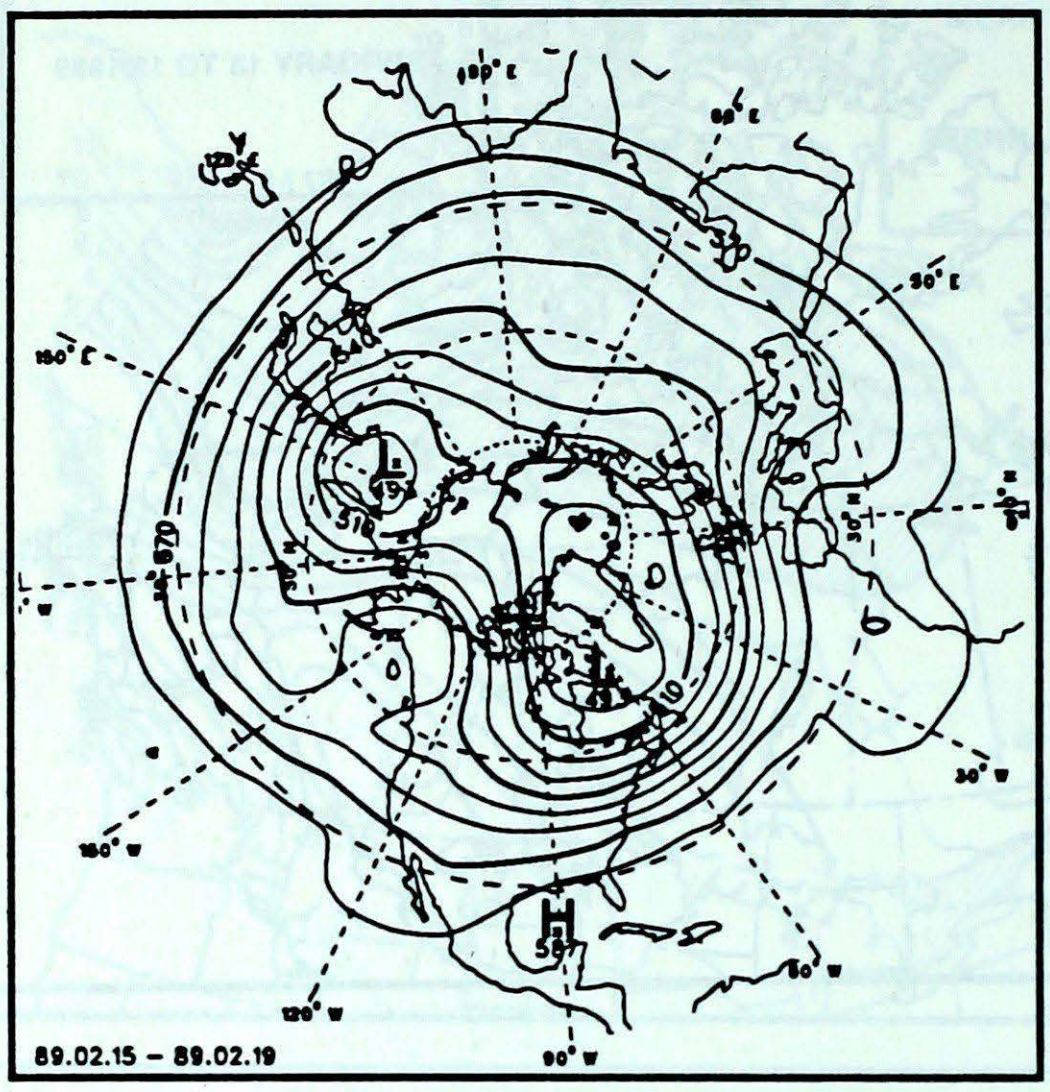
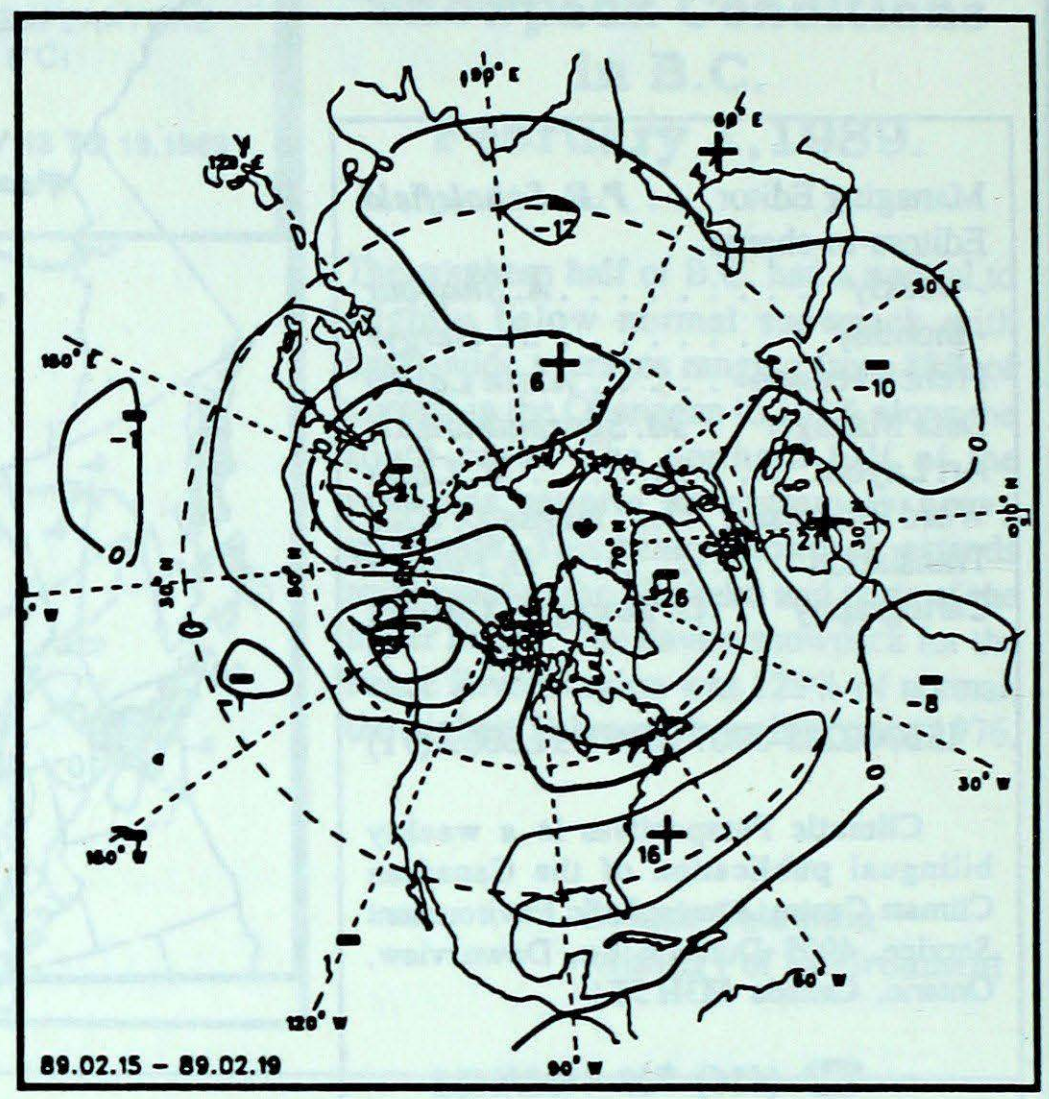




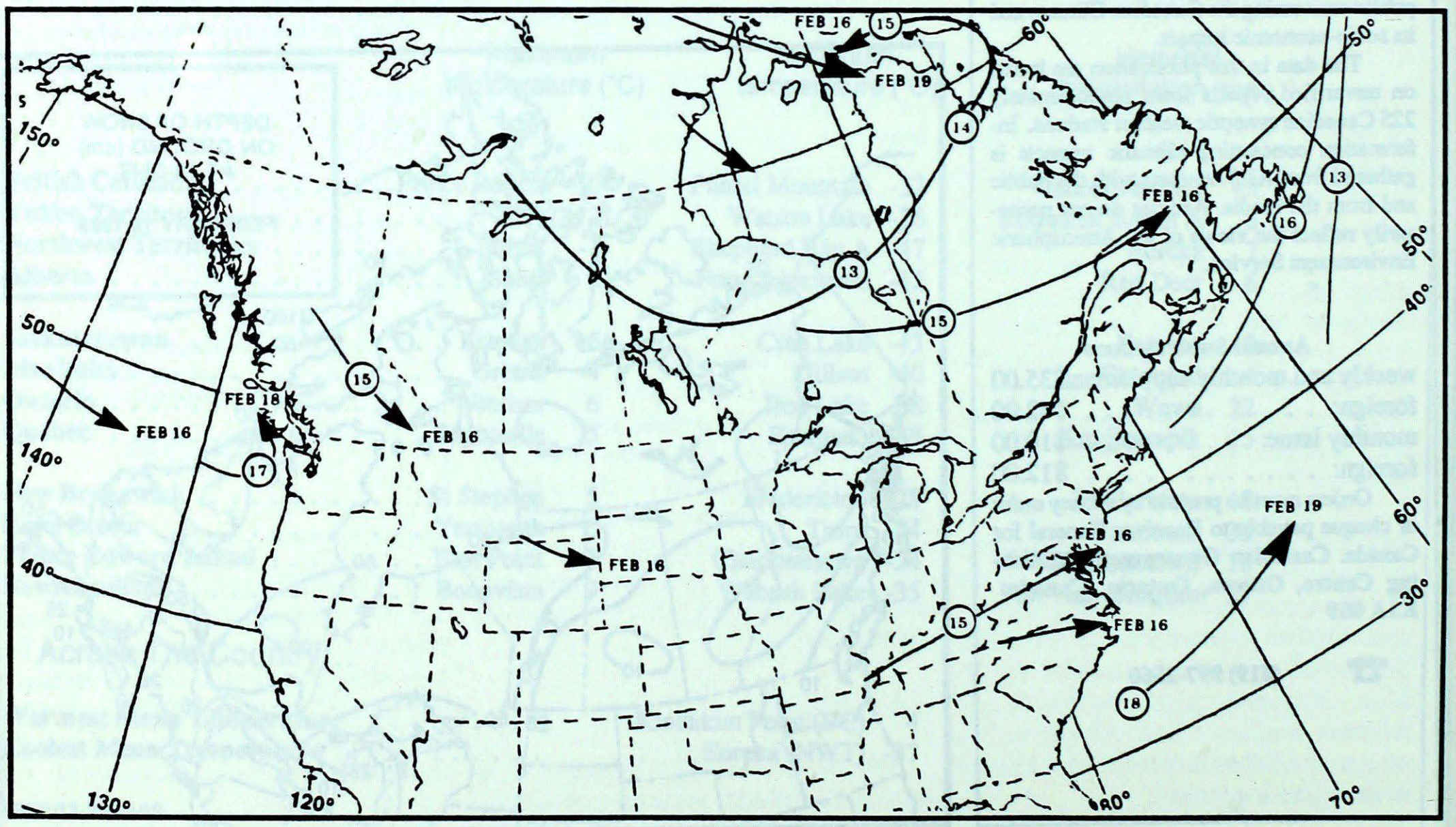
50 kPa ATMOSPHERIC CIRCULATION



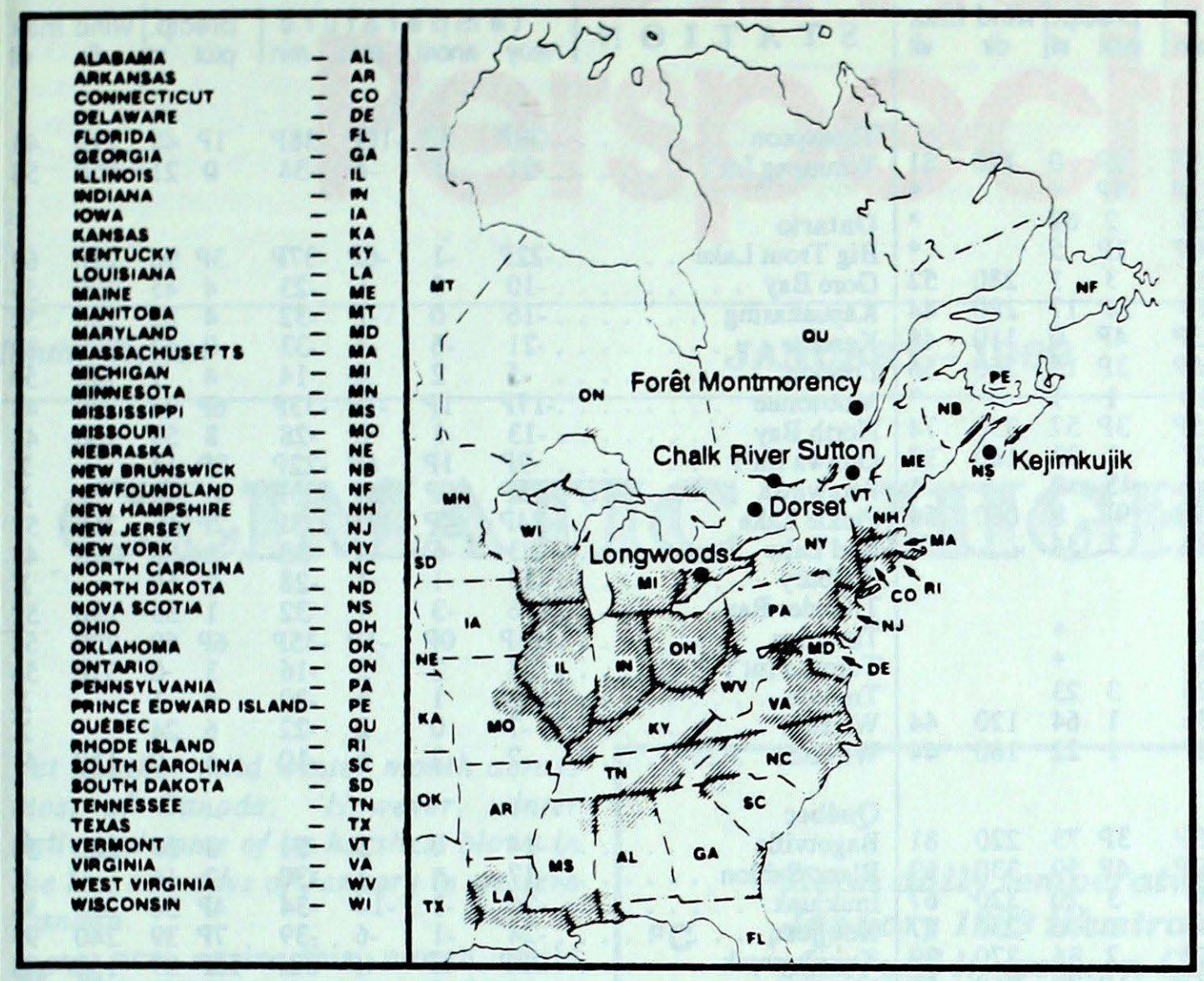
Mean geopotential height
50 kPa level (10 decameter intervals)



Mean geopotential height anomaly
50 kPa level (10 decameter intervals)



Storm track - Position of storm at 12 GMT each day during the period.



ACID RAIN REPORT

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.

For more information concerning the acid rain report, see Climatic Perspectives, Volume 5, Number 50, page 6.

FEBRUARY 12 TO FEBRUARY 18, 1989

SITE	DAY	pH	AMOUNT	AIR PATH TO SITE
Longwoods				No data available
Dorset	12	4.9	1 S	Ontario, Lake Superior
	13	4.2	9 S	Ohio, Southern Ontario
	18	4.5	2 S	Southwestern Ontario, Wisconsin, Michigan, Southern Ontario
Chalk River	13	4.2	4 S	Ohio, Southern Ontario
Sutton	13	4.1	7 M	Maryland, Pennsylvania, New York
	15	4.6	8 S	Lake Superior, Central Ontario, Eastern Ontario
	16	4.6	1 S	Eastern Ontario, Central Quebec
Montmorency	12	4.3	2 S	Pennsylvania, New York, Southern Quebec
	13	4.0	7 M	New York, Pennsylvania, New York, Southern Quebec
	15	4.6	3 S	Lake Superior, Central Ontario, Southern Quebec
Kejimkujik	12	3.9	2 S	Virginia, Maryland, Atlantic Ocean
	13	4.9	5 S	Atlantic Ocean, New Hampshire, Vermont, Southern Quebec
	14	4.9	19 M	Atlantic Ocean, Massachusett, New York
	15	4.5	9 M	Southern Ontario, Southern Quebec, Maine

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

STATION	temperature moy	anom	max	min	precip. ptot	st	wind dir	max vit
British Columbia								
Cape St.James	4P	-1P	8P	1P	0P	0	120	81
Cranbrook	-9P	-6P	-1P	-17P	8P	*		*
Fort Nelson	-15	4	-1	-28	2	69		*
Fort St.John	-17P	-4P	-3P	-30P	1P	5		*
Kamloops	-4	-3	3	-11	3	1	280	52
Penticton	-4	-5	3	-13	14	17	180	44
Port Hardy	2P	-2P	6P	-3P	4P	0	110	46
Prince George	-13P	-7	-4P	-26P	3P	15	360	56
Prince Rupert	-1	-4	10	-10	1	1		*
Revelstoke	-7P	-6P	-1P	-15P	3P	57	330	74
Smithers	-12	-6	1	-27	1	33	180	37
Vancouver Int'l	2	-3	7	-4	45	2		*
Victoria Int'l	1P	-4P	6P	-7P	9P	8	060	56
Williams Lake	-10	-6	0	-23	2	34		X
Yukon Territory								
Dawson	-19	8	-7	-31		*		
Mayo	-16	5	-3	-31		*		
Komak Beach A	-11	17	0	-26	3	23		
Watson Lake	-19	0	-1	-36	1	64	120	44
Whitehorse	-14	0	0	-27	1	22	180	44
Northwest Territories								
Alert	-30P	4P	-17P	-38P	3P	73	220	81
Baker Lake	-30P	3P	-14P	-39P	4P	59	330	69
Cambridge Bay	-27	8	-11	-37	3	20	320	67
Cape Dyer	-29	-6	-22	-37	1	116	250	67
Clyde	-31	-3	-22	-42	2	36	270	39
Coppermine	-25P	8	-9P	-35P	1P	77	250	56
Coral Harbour	-26	4	-17	-31	2P	17		X
Eureka	-37	1	-27	-45	7	20	110	54
Fort Smith	-24	0	-8	-41	1	45		X
Iqaluit	-25P	2P	-17P	-33P	5P	20	330	41
Hall Beach	-30	3	-17	-43	2P	40	290	69
Inuvik	-15	16	-1	-29	4	42		X
Mould Bay	-26	10	-5	-36	3	23		X
Norman Wells	-19P	10P	-8P	-29P	2P	22		X
Resolute	-32P	2P	-15P	-39P	2P	22	340	74
Yellowknife	-24	2	-9	-40	0	30	320	33
Alberta								
Calgary Int'l	-17P	-9P	-5P	-28P	1P	7	350	37
Cold Lake	-23P	-7P	-16P	-29P	*	*		*
Coronation	-23	-10	-8	-36	0	0		*
Edmonton Namao	-22P	-9P	-7P	-32P	0P	12		*
Fort Mcmurray	-21	-4	-4	-38	0	21		X
High Level	-23	-5	-4	-40	0	38	330	31
Jasper	-14	-7	-1	-31	3	32		X
Lethbridge	-15P	-9P	-4P	-32P	2P	12	330	31
Medicine Hat	-19	-11	-6	-31	4	13		*
Peace River	-21	-6	-4	-37	2	13		*
Saskatchewan								
Cree Lake	-25	-4	-9	-43	1	47	320	52
Estevan	-23	-10	-6	-35	2	17	300	57
La Ronge	-22	-4	-8	-38	1	35	310	41
Regina	-24	-9	-7	-35	0	11	320	44
Saskatoon	-24	-8	-10	-35	1	6	240	37
Swift Current	-23	-12	-9	-33	1	24		X
Yorkton	-23	-6	-6	-36	0	24	330	56
Manitoba								
Brandon	-23	-7	-5	-36	0	16	300	48
Churchill	-27	0	-10	-38	4	37	310	61
Lynn Lake	-26	-5	-12	-39	1	53	310	41
The Pas	-21	-2	-10	-35	1	13	340	63
Thompson	-26P	-5P	-10P	-38P	1P	48	270	43
Winnipeg Int'l	-21	-5	-4	-34	0	21	350	56
Ontario								
Big Trout Lake	-22P	-1	-6P	-37P	3P	96	290	69
Gore Bay	-10	0	1	-23	4	45	290	56
Kapuskasing	-16	0	-1	-32	4	82	180	52
Kenora	-21	-6	-4	-33	0	62	300	39
London	-5	2	4	-14	4	1	180	50
Moosonee	-17P	1P	-1P	-33P	6P	73	200	48
North Bay	-13	-1	0	-28	8	59	160	48
Ottawa Int'l	-9P	1P	4P	-22P	3P	14		X
Petawawa	-13P	0P	5P	-33P	4P	19		X
Pickle Lake	-24P	-4P	-11P	-38P	2P	65	260	57
Red Lake	-23	-6	-4	-38	1	88	270	48
Sudbury	-13	-1	1	-28	2	60		X
Thunder Bay	-16	-3	1	-32	1	33	290	52
Timmins	-16P	0P	-1P	-35P	6P	60	200	54
Toronto Int'l	-4	2	5	-16	3	0	310	54
Trenton	-6	1	5	-20	8	1		X
Wiarton	-7	0	2	-22	6	24		X
Windsor	-2	2	6	-10	4	0	150	41
Québec								
Bagotville	-14	0	5	-31	3	39	260	54
Blanc Sablon	-17	*	-1	-30	12	16		X
Inukjuak	-26	-1	-14	-34	4P	30	250	56
Kuujjuaq	-24	-1	-6	-39	7P	39	240	93
Kuujjuarapik	-22P	1P	-4P	-32P	15P	27	150	78
Maniwaki	-13	0	4	-32	7	28	250	43
Mont Joli	-11	0	3	-23	7	22	260	61
Montréal Int'l	-9	1	5	-22	4	5	140	48
Natashquan	-15	-4	-2	-28	8	42	180	56
Québec	-13	-2	2	-29	12	50	330	41
Schefferville	-24	-2	-8	-34	5	65	270	72
Sept-Iles	-16	-4	-2	-27	13	30	320	50
Sherbrooke	-13	-1	3	-34	14	35	170	41
Val D'or	-17	-2	-1	-33	11	45	170	54
New Brunswick								
Charlo	-12	0	3	-26	7	84	290	56
Chatham	-12P	-3P	2P	-26P	1P	16	210	48
Fredericton	-10	-2	3	-28	18	25	350	48
Moncton	-10	-3	4	-24	13	12	290	52
Saint John	-9	-2	4	-26	14	26	310	50
Nova Scotia								
Greenwood	-8	-2	5	-19	20	14	180	72
Shearwater	-7	-2	4	-17	31	5	210	48
Sydney	-10	-4	3	-22	23P	17	190	59
Yarmouth	-5	-1	6	-13	35	1	170	59
Prince Edward Island								
Charlottetown	-11	-3	3	-24	18	33	330	52
Summerside	-12P	-4P	2P	-21P	4P	24	170	57
Newfoundland								
Cartwright	-17	-5	-2	-30	2	89	230	59
Churchill Falls	-20	-1	-5	-33	4	70	270	65
Gander Int'l	-12	-5	3	-23	5	32	180	81
Goose	-17	-3	-4	-30	1	30	260	63
Port-Aux-Basques	-8P	-3P	1P	-17P	37P	95	300	100
St John's	-10	-5	3	-20	21	50	180	74
St Lawrence	-8	-3	2	-18	24	1		X
Wabush Lake	-22P	-1P	-6P	-35P	5P	37	280	52

89/02/13-89/02/19

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.
vit = wind speed in km/h

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