Environment Canada Environnement Canada

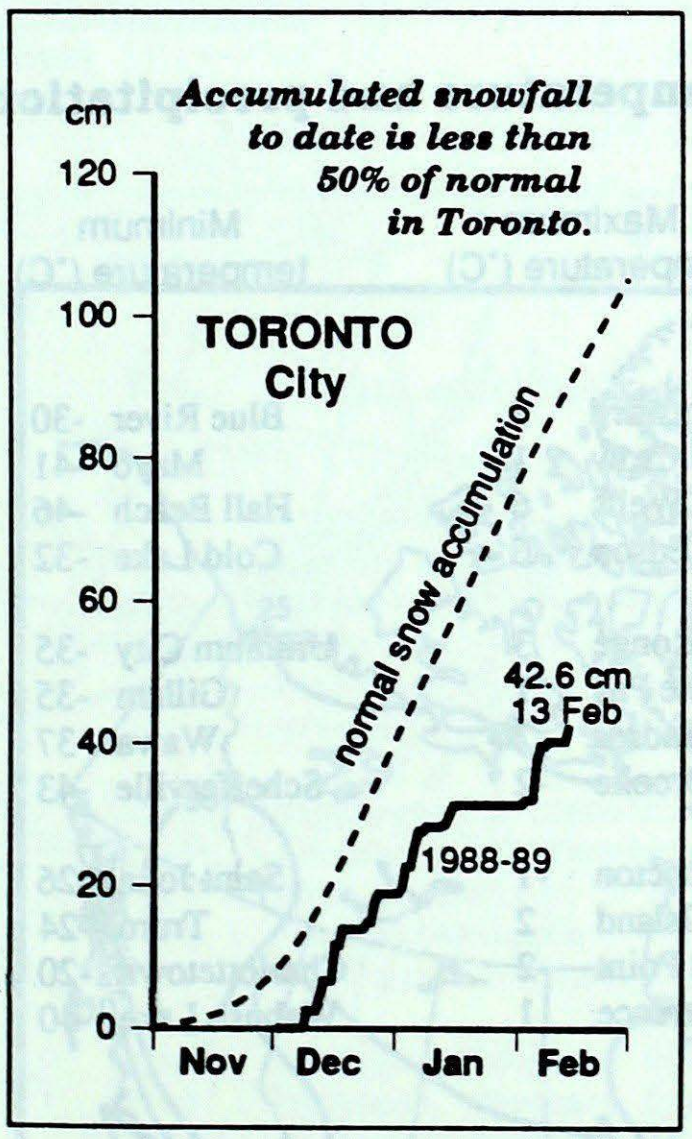
Climatic Perspectives

February 6 to 12, 1989 **A weekly review of Canadian climate** *Vol. 11 No. 7*

Invasion of mild air ends cold spell in the northwest

An extensive north-south ridge of high pressure has become established off the west coast, blocking the usual progression of Pacific weather systems onto North America and has forced a stream of very mild air to circle around the ridge through northern Alaska then plunge southward up the Mackenzie River Valley and into the northern Prairie provinces.

The most intense period of cold weather this winter in Canada's northwest has now been terminated by a remarkable warming which, surprisingly, has been moving southward along and east of the western cordillera mountain ranges of North America. According to Jim Steele (Yukon Weather Centre), the Yukon's warmest temperature of the week, +1°C, was recorded in the north at Old Crow on the 9th. Farther north, at Inuvik in the Mackenzie Delta, the moderation in temperatures continued with the mercury easing above the freezing point on three consecutive days (8-10th). A similar three-day thaw occurred further south at Norman Wells, where a +5.8°C reading on the 10th broke the previous maximum February record of 5.0°C set on February 6, 1954. A similar, but not quite as spectacular moderation in temperatures occurred in the Prairie provinces and in B.C.



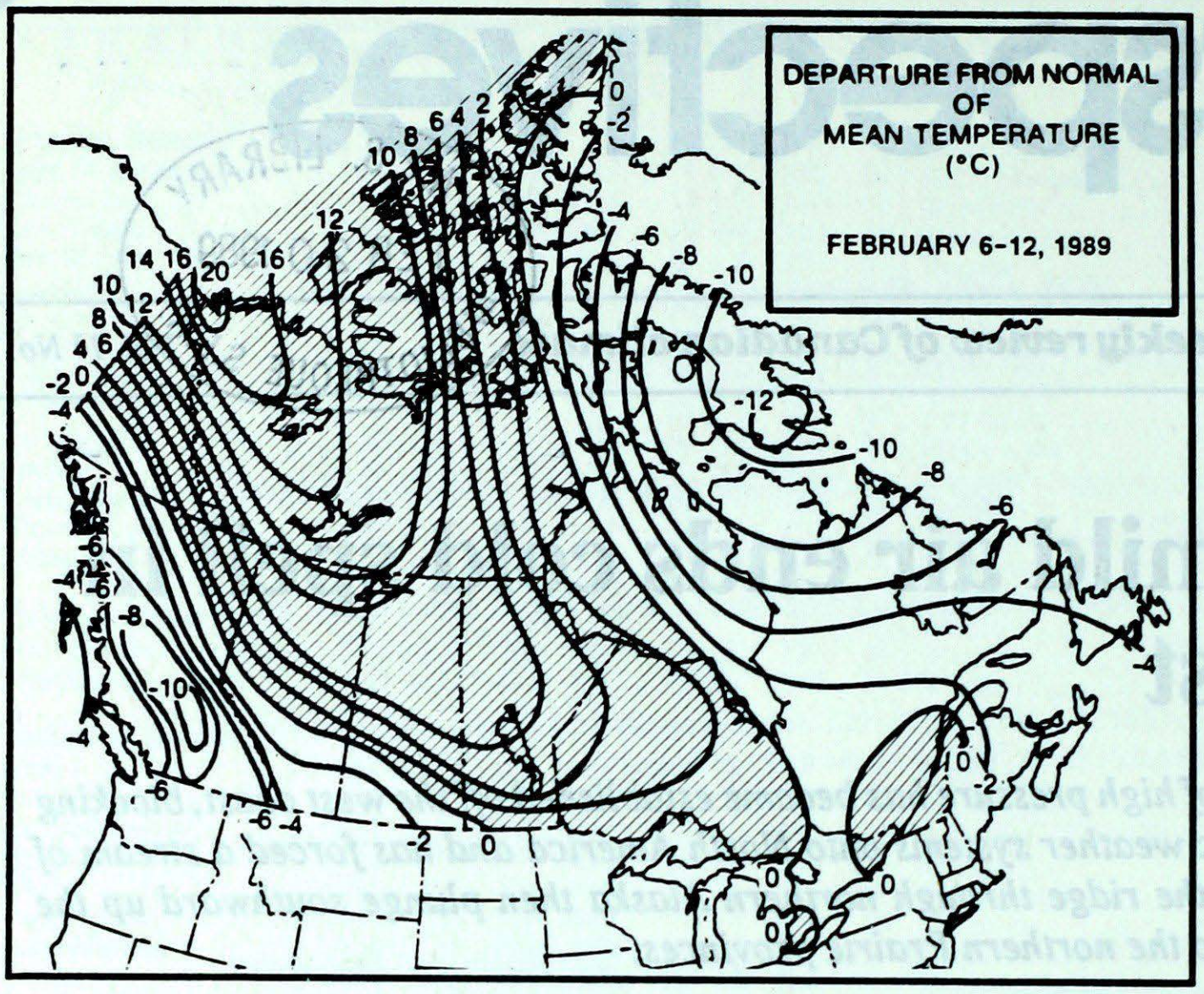
Little precipitation across the country

Under the protection of the offshore ridge, B.C. had a very sunny, dry week. Earl Coatta (AES Vancouver) has noted that there has been no measurable precipitation in Vancouver this month, which makes this the third longest February dry spell. A dry week across the Prairies is not unusual but in southern Ontario, this week has been a continuation of a very dry winter. Bryan Smith (Ontario Climate Centre) has this report: "The Toronto-Niagara and Kent-Essex areas continue their dry winter. Following 1988, their driest year since 1963, January and February, to-date, have remained dry with only 20-50% of normal precipitation". The lack of stormy weather provided excellent conditions for the 35th annual winter carnival at Québec city and the Winterlude festival at Ottawa.

Cold weather ahead...

The Canadian Climate Centre long-range forecast for the mid-February to mid-March period calls for below normal temperatures throughout most of Canada. Only southern Ontario is expected to experience above normal temperatures. A ridge of high pressure over the north Pacific Ocean and a trough of low pressure over the northeastern Arctic are the main features for this forecast. A flow of air from the northwest, between these two centres, is expected to dominate the circulation over Canada (see map page 7) - *prepared February 15.*

A. Shabbar, Canadian Climate Centre



This week in the U.S.A.

In Alaska, temperatures rose to as much as 18.7 °C above normal as bitterly cold conditions ended. Only southeastern Alaska remained colder than normal.

Little or no precipitation fell in the Pacific Northwest as unusually dry conditions developed.

Generally less than 11.2 mm of precipitation was reported as dry weather persisted across the eastern United States. Cold air invaded the entire United States, where temperatures were as much as 17 °C below normal.

Climate Analysis Centre, NOAA

Weekly temperature and precipitation extremes

	Maximum temperature (°C)		Minimum temperature (°C)		Heaviest precipitation (mm)	
British Columbia	Abbotsford	9	Blue River	-30	Port Alberni	12
Yukon Territory	Old Crow	1	Mayo	-41	Komakuk Beach A	6
Northwest Territories	Norman Wells	6	Hall Beach	-46	Lupin	10
Alberta	Edson	6	Cold Lake	-32	Fort Chipewyan	3
Saskatchewan	La Ronge	3	Uranium City	-35	La Ronge	3
Manitoba	The Pas	1	Gillam	-35	Island Lake	7
Ontario	Windsor	2	Wawa	-37	Wawa	30
Québec	Sherbrooke	-2	Schefferville	-43	Québec	23
New Brunswick	Moncton	-1	Saint John	-26	Saint John	11
Nova Scotia	Sable Island	2	Truro	-24	Shearwater	10
Prince Edward Island	East Point	-2	Charlottetown	-20	Charlottetown	11
Newfoundland	St Lawrence	1	Wabush Lake	-40	Daniel's Harbour	22

Across The Country...

Warmest Mean Temperature	Cape St.James (BC)	3
Coolest Mean Temperature	Hall Beach (NWT)	-41

89/02/6-89/02/12

CLIMATIC PERSPECTIVES
VOLUME 11

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The purpose of the publication is to make topical information available to the public concerning the Canadian Climate and its socio-economic impact.

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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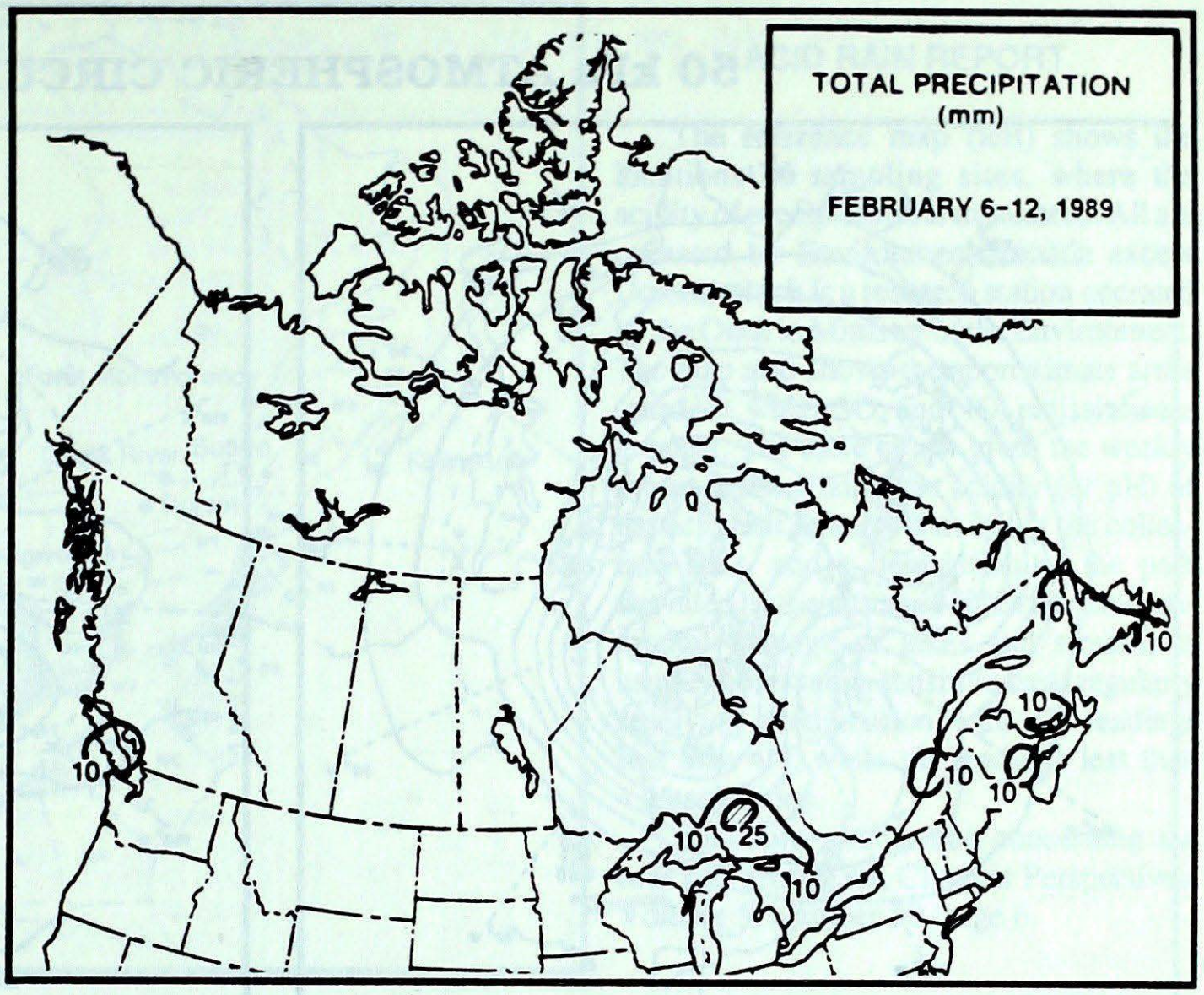
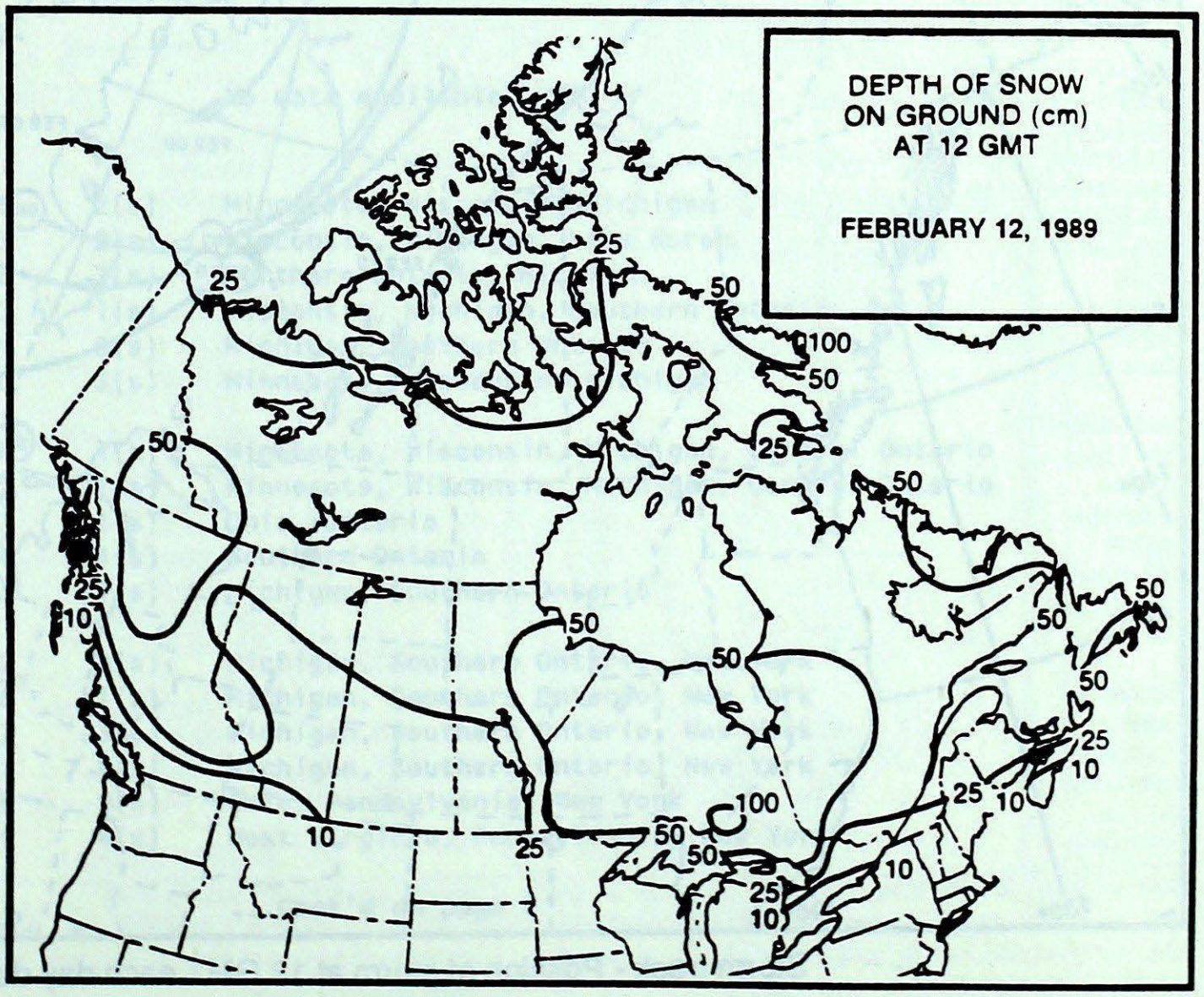
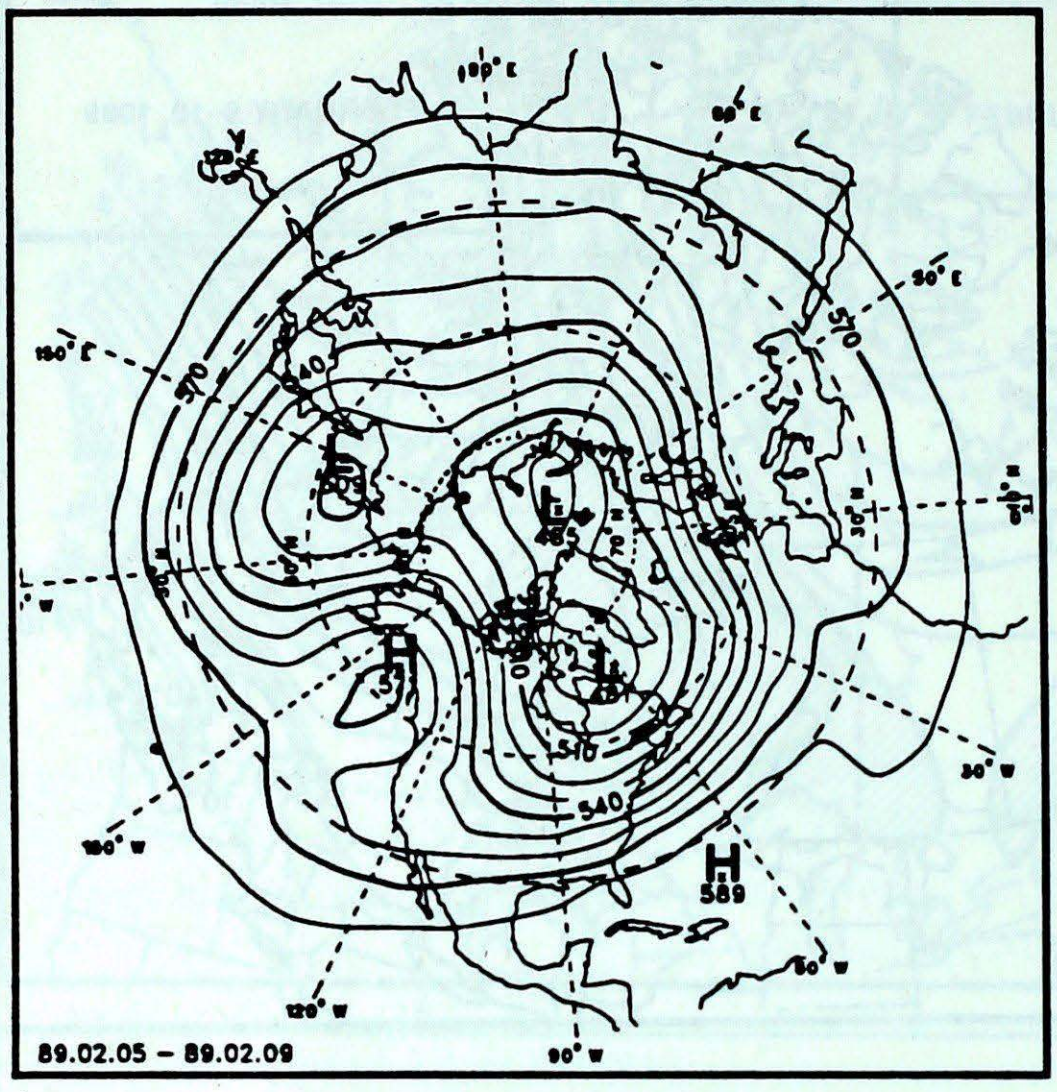
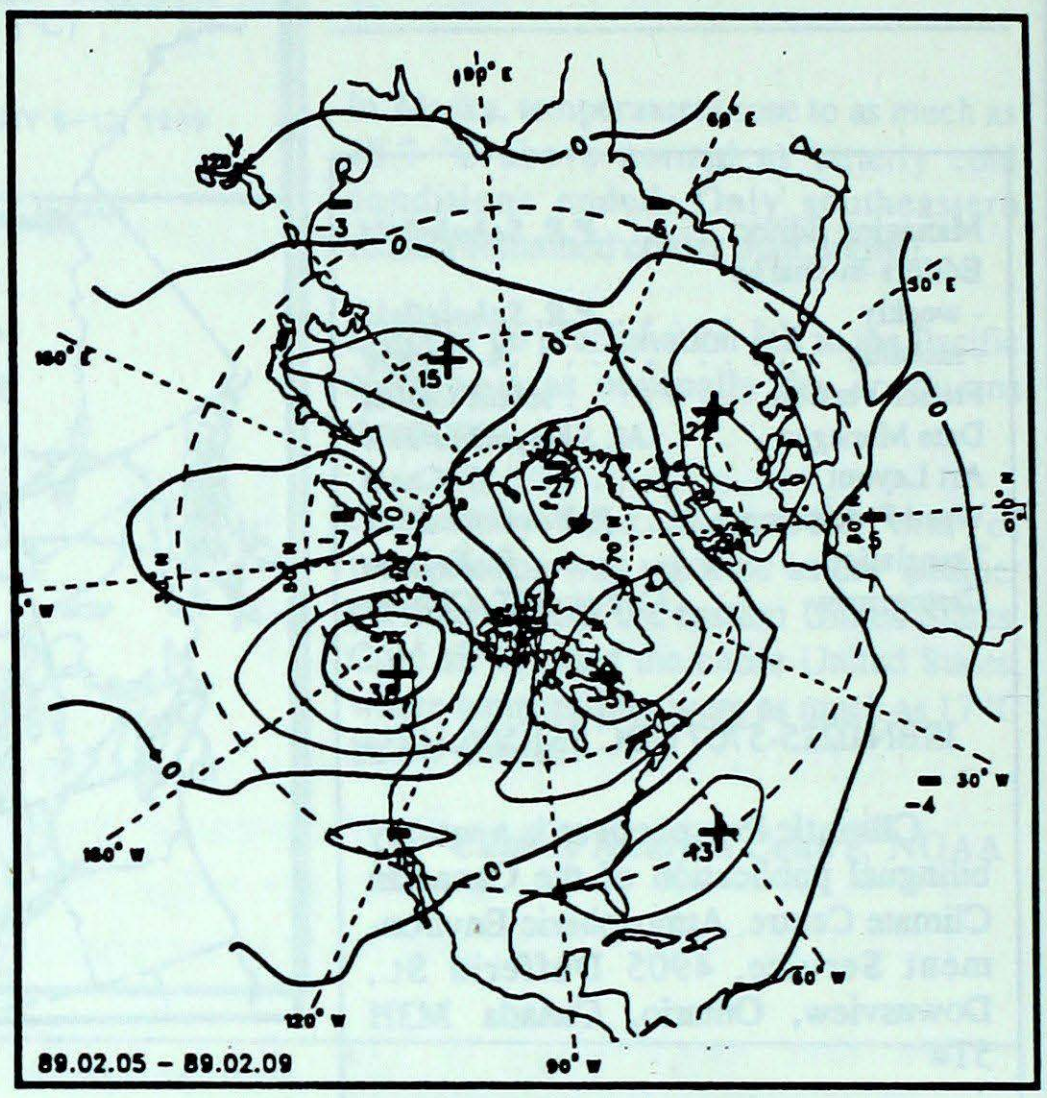




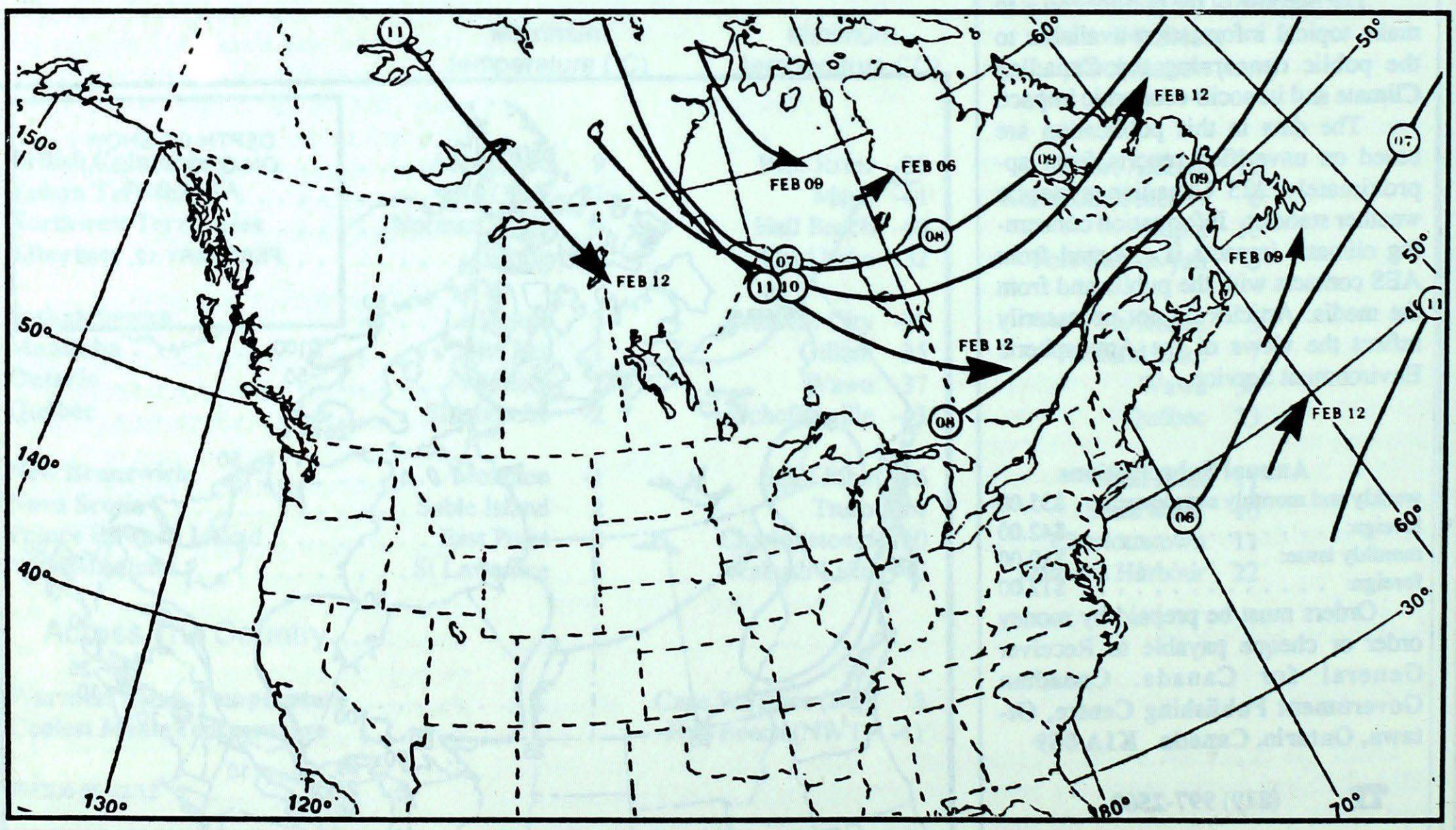
50 kPa ATMOSPHERIC CIRCULATION



Mean geopotential height
50 kPa level (10 decameter intervals)

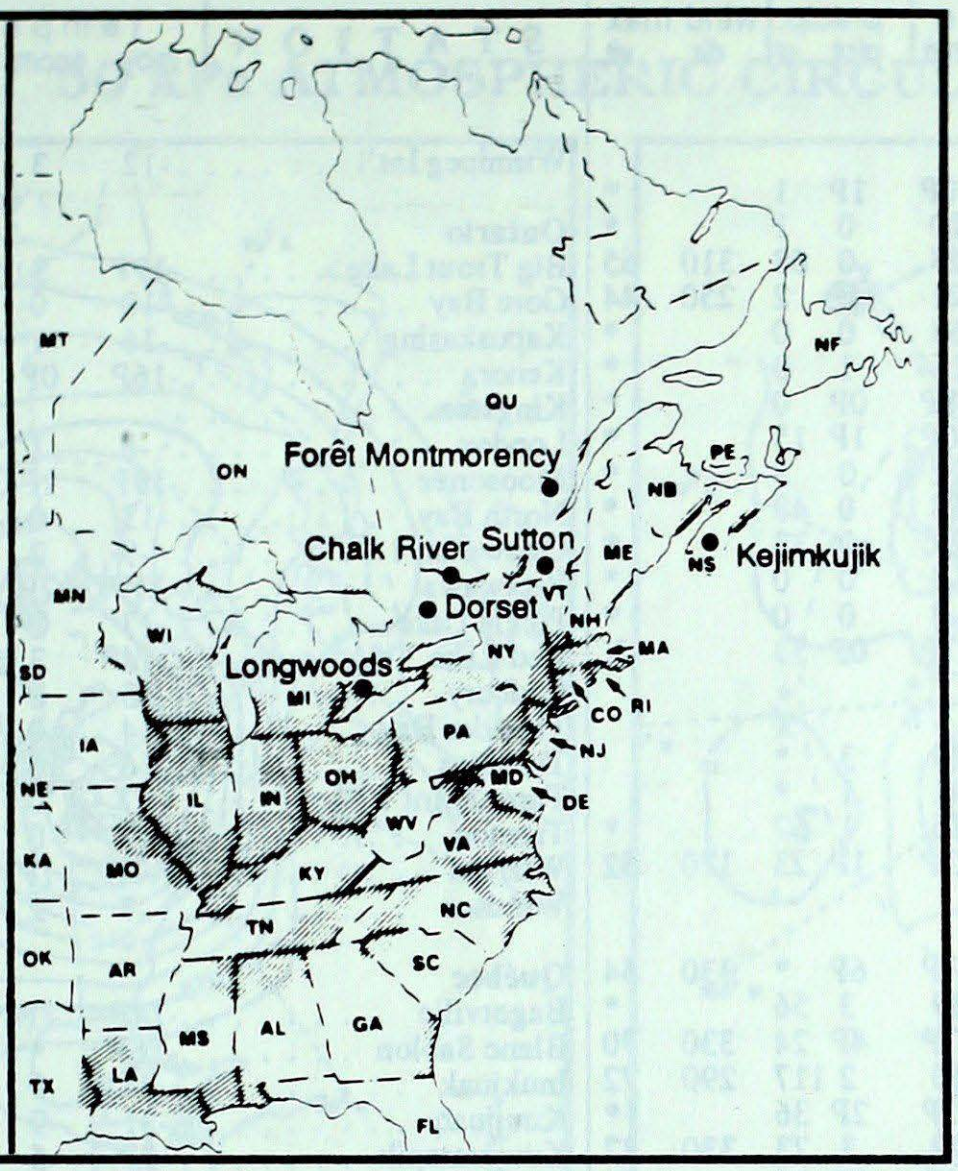


Mean geopotential height anomaly
50 kPa level (10 decameter intervals)



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

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



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 5 TO FEBRUARY 11, 1989

SITE	DAY	pH	AMOUNT	AIR PATH TO SITE
Longwoods				**No data available**
Dorset	5	5.0	2(s)	Minnesota, Wisconsin, Michigan
	6	4.3	2(s)	Wisconsin, Michigan, Lake Huron
	8	4.8	7(s)	Northern Ontario, Michigan
	9	4.3	1(s)	Wisconsin, Michigan, Southern Ontario
	10	4.4	5(s)	Michigan, Southern Ontario
	11	5.0	3(s)	Minnesota, Wisconsin, Michigan
Chalk River	5	4.8	1(s)	Minnesota, Wisconsin, Michigan, Central Ontario
	6	4.2	1(s)	Minnesota, Wisconsin, Michigan, Central Ontario
	8	4.3	1(s)	Ohio, Ontario
	10	4.4	1(s)	Southern Ontario
	11	4.8	1(s)	Michigan, Southern Ontario
Sutton	5	4.2	4(s)	Michigan, Southern Ontario, New York
	6	3.8	1(s)	Michigan, Southern Ontario, New York
	7	3.7	3(s)	Michigan, Southern Ontario, New York
	9	4.2	2(s)	Michigan, Southern Ontario, New York
	10	4.5	2(s)	Ohio, Pennsylvania, New York
	11	3.9	4(s)	West Virginia, Pennsylvania, New York

...Cont'd on page 8

STATION	temperature moy	anom	max	min	precip. ptot	st	wind max dir	vit
British Columbia								
Cape St.James	3P	-2P	6P	0P	1P	1		*
Cranbrook	-12	-7	-2	-20	0	1		*
Fort Nelson	-10	7	7	-27	0	68	310	65
Fort St.John	-7	3	3	-21	0	2	250	44
Kamloops	-10	-8	-2	-18	0	0		*
Penticton	-9	-9	-1	-16	1	0		*
Port Hardy	-1P	-5P	6P	-8P	0P	0		*
Prince George	-18P	-11	-6P	-30P	1P	15		*
Prince Rupert	-4	-7	4	-12	0	3		*
Revelstoke	-10	-7	-1	-18	0	48		*
Smithers	-15	-10	-3	-27	0	33		*
Vancouver Int'l	0	-5	8	-8	0	0		*
Victoria Int'l	0	-5	8	-8	0	0		*
Williams Lake	-14P	-10	-3P	-27P	0P	33		X
Yukon Territory								
Dawson	-22	3	-8	-39	3	*		
Mayo	-21	6	-8	-41	1	*		
Watson Lake	-22	-3	-7	-35	1	67		*
Whitehorse	-19P	-7P	-6P	-33P	1P	23	170	52
Northwest Territories								
Alert	-31P	2P	-23P	-37P	6P	*	330	54
Baker Lake	-31	1	-23	-39	3	56		*
Cambridge Bay	-25P	9P	-16P	-37P	4P	24	330	70
Cape Dyer	-30	-9	-23	-40	2	117	290	72
Clyde	-39P	-12P	-31P	-45P	2P	36		*
Coppermine	-15	7	-4	-29	3	73	330	87
Coral Harbour	-37P	-7P	-31P	-43P	2P	16		X
Eureka	-40	-2	-31	-45	4	16		*
Fort Smith	-11	10	1	-30	4	*		X
Iqaluit	-38	-13	-32	-43	1P	16	340	50
Hall Beach	-41	-10	-28	-46	2	39	090	35
Inuvik	-7	23	2	-16	4	41		X
Mould Bay	-25P	11P	-7P	-36P	4P	31		X
Norman Wells	-8P	18P	6P	-19P	5P	*		X
Resolute	-33	0	-27	-39	2	20	030	61
Yellowknife	-12	13	0	-32	2	*	330	65
Alberta								
Calgary Int'l	-6P	0P	5P	-20P	0P	1	340	59
Cold Lake	-9	3	0	-32		*		
Coronation	-11P	-1P	-4P	-27P	0	0		*
Edmonton Namao	-8	2	0	-21		*		
Fort Mcmurray	-9	6	4	-29	1	*		X
High Level	-10	9	3	-25	1	39	330	44
Jasper	-13	-6	-1	-25	1	38		X
Lethbridge	-8	-4	1	-24	2	7	260	67
Medicine Hat	-10P	-3P	-1P	-27P	3P	10	340	43
Peace River	-8P	4P	1P	-21P	1P	11	310	52
Saskatchewan								
Cree Lake	-13	8	0	-30	3	50	330	67
Estevan	-13	-1	-3	-27	1	17	330	63
La Ronge	-9	9	3	-29	3	36	290	48
Regina	-14	0	-4	-31	2	11	330	61
Saskatoon	-13	2	-2	-30	1	6	360	57
Swift Current	-13	-3	-5	-30	3	24		X
Yorkton	-12	4	-3	-30	1	24	340	61
Manitoba								
Brandon	-13	3	-3	-28	1	19	310	56
Churchill	-24P	1P	-13P	-33P	3P	39	030	65
Lynn Lake	-19P	4P	-3P	-30P	5P	*	330	80
The Pas	-10	8	1	-28	4P	12	340	69
Thompson	-15P	7P	-5P	-32P	7P	*	340	65
Winnipeg Int'l	-12	3	-2	-28	1	22	020	65
Ontario								
Big Trout Lake	-19P	3	-9P	-36P	12P	87	310	67
Gore Bay	-10	0	-1	-27	13	44	270	83
Kapuskasing	-16	1	-7	-32	10	85	330	52
Kenora	-16P	0P	-2P	-27P	4P	64	300	63
Kingston						10		
London	-8	-1	-1	-15	7	6	250	70
Moosonee	-19P	1P	-7P	-32P	6P	70	320	39
North Bay	-13	0	-6	-30	23	57	320	61
Ottawa Int'l	-9	2	-3	-21	10	20		X
Petawawa	-11P	2P	-3P	-25P	2P	21		X
Pickle Lake	-17	2	-2	-33	6	67	310	65
Red Lake	-14	3	-1	-30	6	89	310	59
Sudbury	-13	0	-6	-31	5	63		X
Thunder Bay	-14	0	2	-26	1	37	320	59
Timmins	-16	0	-6	-33	6	59	230	41
Toronto Int'l	-7	0	0	-17	2P	1	260	87
Trenton	-7	0	-1	-19	10	3		X
Wiarton	-7P	1P	-2P	-15P	28P	36		X
Windsor	-7	-2	2	-16	2	1	270	70
Québec								
Bagotville	-14P	1P	-5P	-25P	5P	44	270	56
Blanc Sablon	-16P	*	-5P	-29P	14P	16		X
Inukjuak	-34	-9	-29	-42	2P	30	020	35
Kuujjuaq	-31	-9	-22	-41	2P	38	240	41
Kuujjuarapik	-27	-5	-15	-40	3	25	160	48
Maniwaki	-12P	1P	-4P	-25P	5P	31	300	59
Mont Joli	-11	0	-4	-19	8	31	190	57
Montréal Int'l	-8	2	-3	-19	8	8	250	67
Natashquan	-15	-4	-6	-28	9	39	260	46
Québec	-11	1	-4	-20	23	41	250	63
Schefferville	-27	-5	-16	-43	2	42	250	46
Sept-Iles	-18	-4	-6	-29	14	43	290	48
Sherbrooke	-10	3	-2	-21	7	24	250	67
Val D'or	-17	-1	-7	-33	13	47	330	50
New Brunswick								
Charlo	-15	-2	-3	-24	3	82	270	56
Chatham	-13P	-3P	-4P	-23P	0P	16	280	52
Fredericton	-13P	-4P	-2P	-22P	6P	21	320	52
Moncton	-10	-2	-1	-21	4	10	290	63
Saint John	-13P	-5P	-3P	-26P	11P	27	280	44
Nova Scotia								
Greenwood	-9P	-3P	-1P	-18P	7P	24	300	65
Shearwater	-7P	-2P	-1P	-17P	10P	12	270	46
Sydney	-11P	-5P	-2P	-22P	8P	*	180	52
Yarmouth	-5P	-1P	1P	-12P	9P	4	270	67
Prince Edward Island								
Charlottetown	-11P	-3P	-3P	-20P	11P	32	290	41
Summerside	-10P	-3P	-4P	-19P	9P	19	280	57
Newfoundland								
Cartwright	-17P	-4P	-7P	-26P	7P	89	340	56
Churchill Falls	-24	-4	-13	-38	4	71	310	54
Gander Int'l	-10P	-4P	0P	-20P	4P	34	180	74
Goose	-19P	-4P	-8P	-28P	1P	31	250	46
Port-Aux-Basques	-8P	-2P	-2P	-16P	14P	74	300	94
St John's	-9	-5	1	-18	10	40	270	72
St Lawrence	-6P	-2P	1P	-16P	14P	37		X
Wabush Lake	-24	-3	-13	-40	3	41	310	39

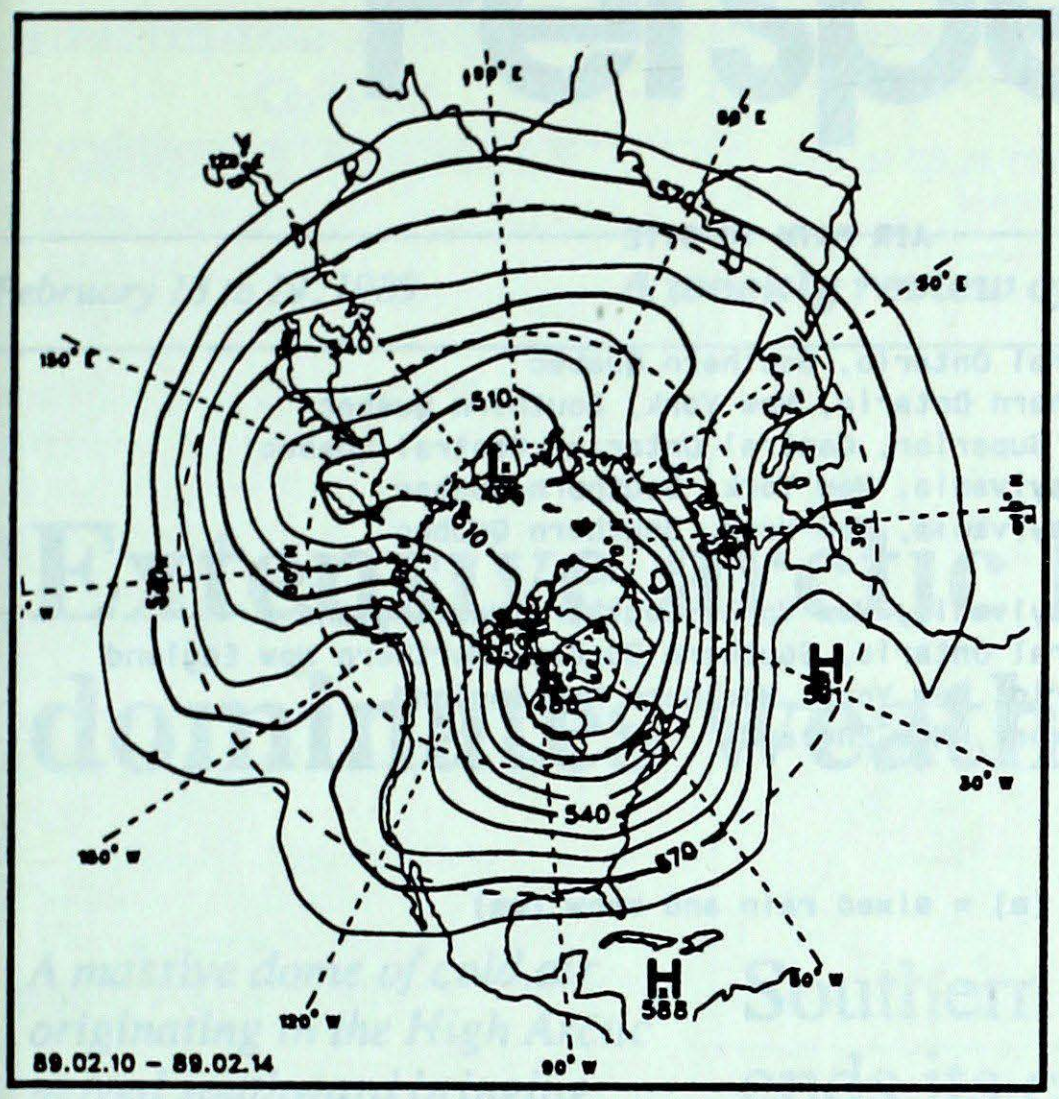
89/02/06-89/02/12

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

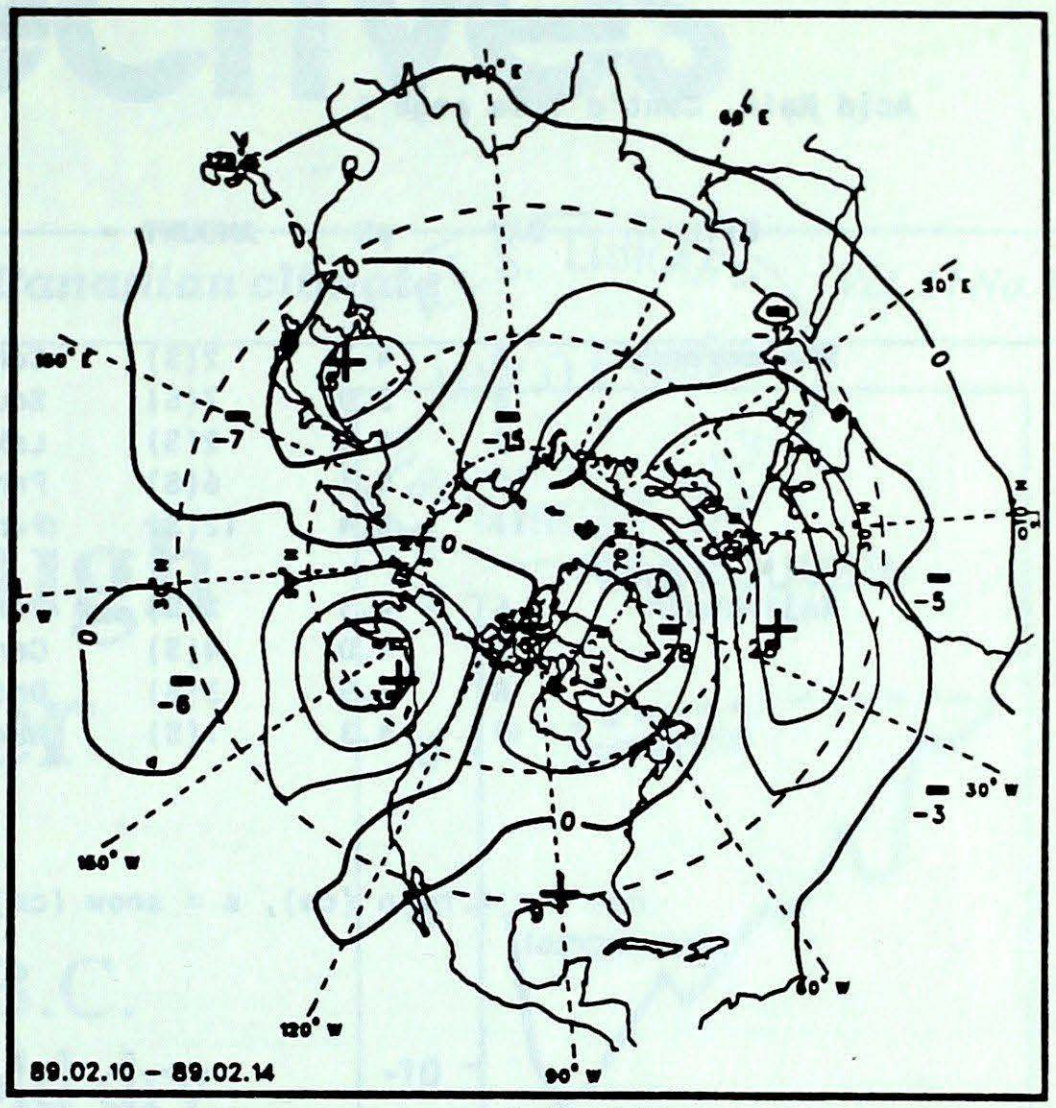
ptot = weekly precipitation total in mm
st = snow thickness on the ground in cm
dir = direction of max wind, deg. from north.
vit = wind speed in km/h

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

50 kPa ATMOSPHERIC CIRCULATION



Mean geopotential height
50 kPa level (10 decameter intervals)



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

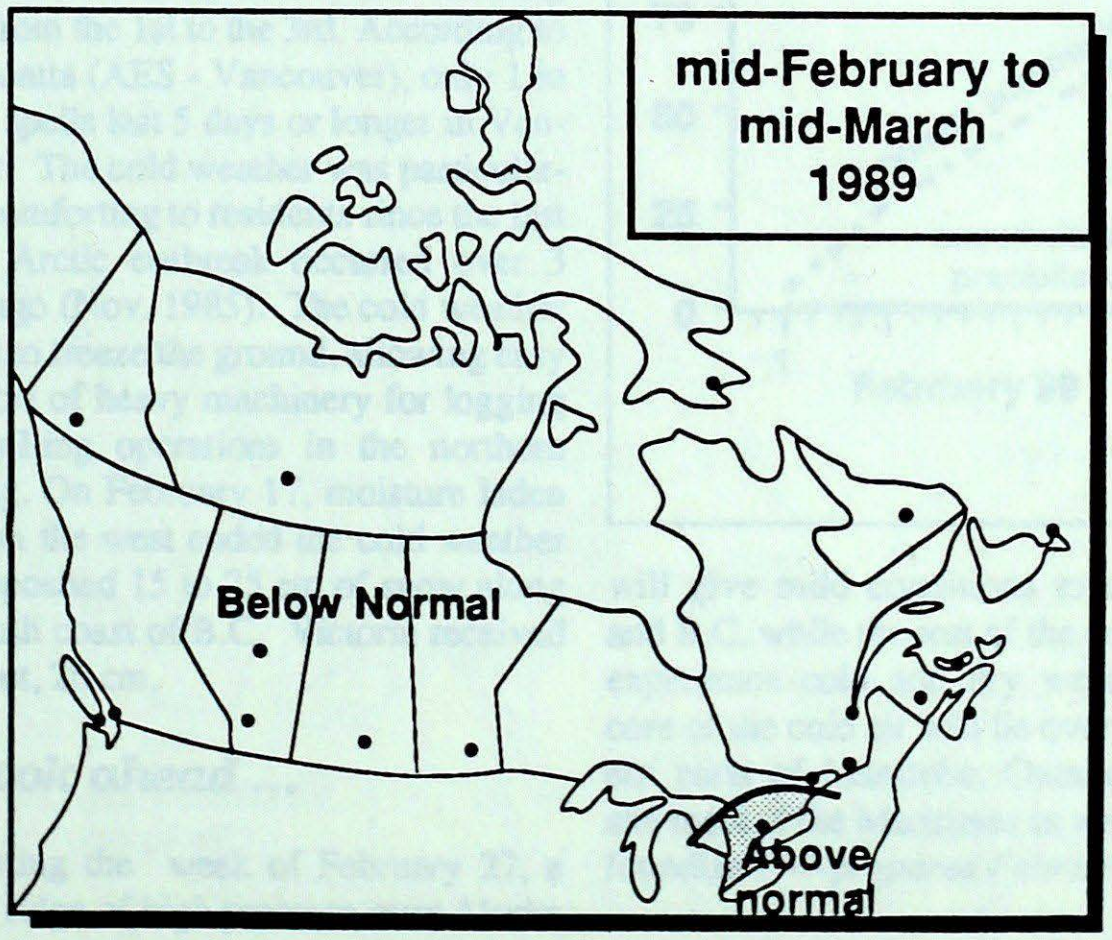
Environment Canada / Environnement Canada

Atmospheric Environment Service / Service de l'environnement atmosphérique

MONTHLY TEMPERATURE FORECAST

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

Acid Rain, Cont'd from page 5

SITE	DAY	pH	AMOUNT	AIR PATH TO SITE
Montmorency	5	4.3	2(S)	Central Ontario, Southern Quebec
	8	3.9	7(S)	Southern Ontario, New York, Southern Quebec
	9	4.5	2(S)	Lake Superior, Central Ontario, Central Quebec
	10	4.1	6(S)	Pennsylvania, New York, Southern Quebec
	11	4.4	12(S)	Pennsylvania, New York, Southern Quebec
Kejimkujik	6	4.5	3(S)	Pennsylvania, New York, Southern New England
	7	4.0	4(S)	Central Ontario, Southern Quebec, Northern New England
	8	3.9	3(S)	Ontario, New York, Northern New England
	9	4.3	1(S)	New York, New England

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