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Environnement Canada

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CLIMATIC PERSPECTIVES

Climatic Perspectives

WEEKLY REVIEW OF CANADIAN CLIMATE

MONTHLY SUPPLEMENT INCLUDED

FEBRUARY 17, 1984

(Aussi disponible en français)

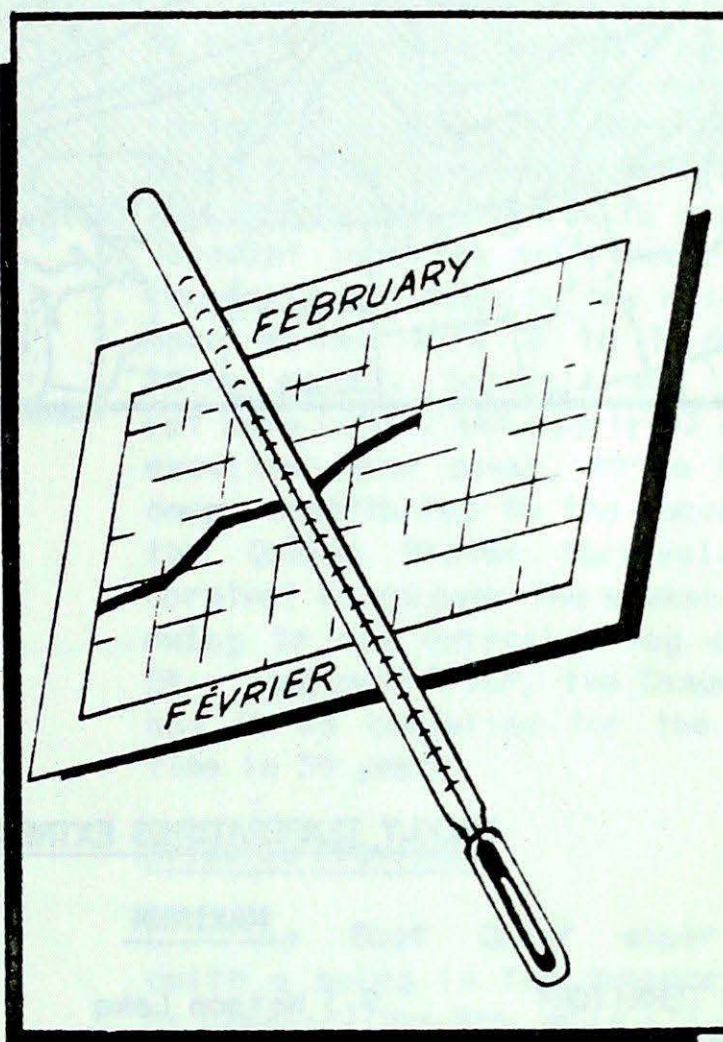
VOL. 6 NO. 6

FOR THE PERIOD FEBRUARY 7-13, 1984

• Unseasonable warmth produces Spring-like weather across most of Canada

The mild spell that arrived near the end of January across southern Canada, continued into mid-February. Although there were several days of cold weather in eastern Canada, the average temperatures have been 4 to 10 degrees above the norm and as much as 13° above normal on the southern Prairies. Spring-like weather accompanied by heavy rains significantly reduced the snow cover in southern Ontario and caused floodings. Most of the southern Prairies was virtually snow free.

The mild weather hampered transportation in many locations. Owing to the muddy roads in southern British Columbia, logging was disrupted. Thick fog plagued many communities extending from Manitoba to the East Coast. Winnipeg Airport was closed for about 36 hours as fog reduced visibilities to near zero. Near Toronto, a massive 60-car pile-up occurred in dense fog and claimed 2 lives. Fog also forced cancellation of some flights in Halifax, and slippery roads disrupted transportation throughout most of Nova Scotia early in the week.



INSIDE THE JANUARY MONTHLY SUPPLEMENT....

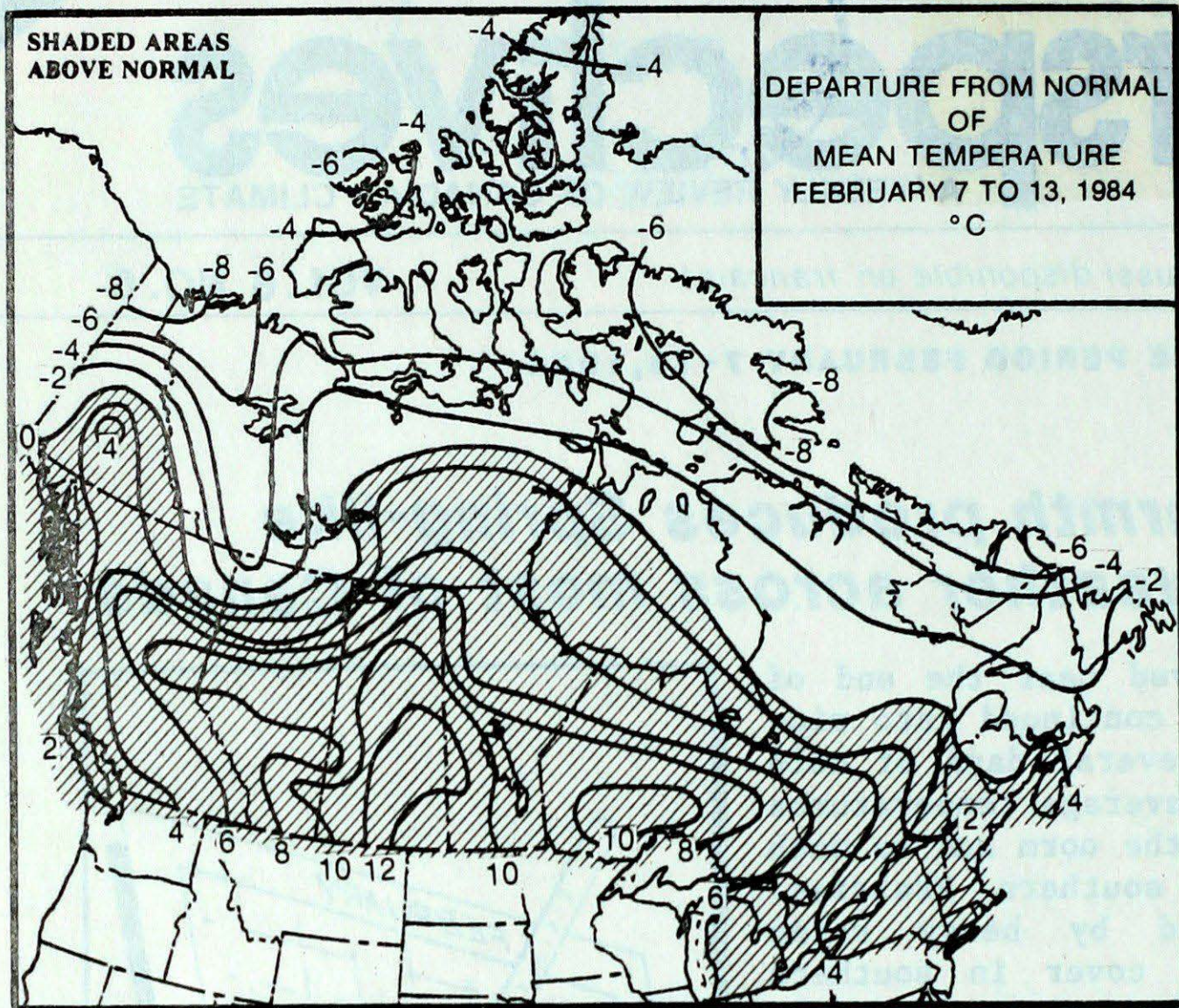
- Satellite applications in Meteorology and Hydrology
- The Chinook Winds - a respite from the severe cold in Alberta
- Ice forecast off the East Coast for February

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NOTE: The data shown in this publication are based on unverified reports from approximately 225 Canadian synoptic stations.

Canada

ACROSS THE COUNTRY...



Yukon and Northwest Territories

Except for the southern Yukon, mean temperatures were well below normal across the North. The average readings were 8 to 10 degrees below normal and overnight values fell below -40° at some locations. On February 7, a daytime reading of 9.3° at Watson Lake was only one tenth of a degree short of the monthly record. Precipitation was light; however, weak weather systems crossing the Northwest Territories deposited 15 to 18 cm of snow in the Mackenzie District. Once again this week, strong winds and cold temperatures produced high wind chill and disrupted transportation on the Dempster Highway.

British Columbia

It continued to be mild but due to a moist onshore flow it was considerably more overcast than last week. Precipitation occurred more frequently but amounts were relatively light in the interior. Skiing conditions have deteriorated everywhere at lower levels and were reported to be variable at higher elevations. Muddy roads and melting snow made logging difficult in the interior. Early spring flowers were in full bloom along the West Coast and on Vancouver Island.

Prairies

Very mild and sunny conditions prevailed in the west, but cloud increased towards the east. Mean temperatures were as great as 12° above normal across the south, and as a result of the above-freezing daytime temperatures the snow cover in the extreme south has all but disappeared. Widespread fog covered a large area of southern Saskatchewan and Manitoba for several days, disrupting air traffic and inconveniencing passengers. Winnipeg International Airport was closed intermittently for a total of 38 hours.

Ontario

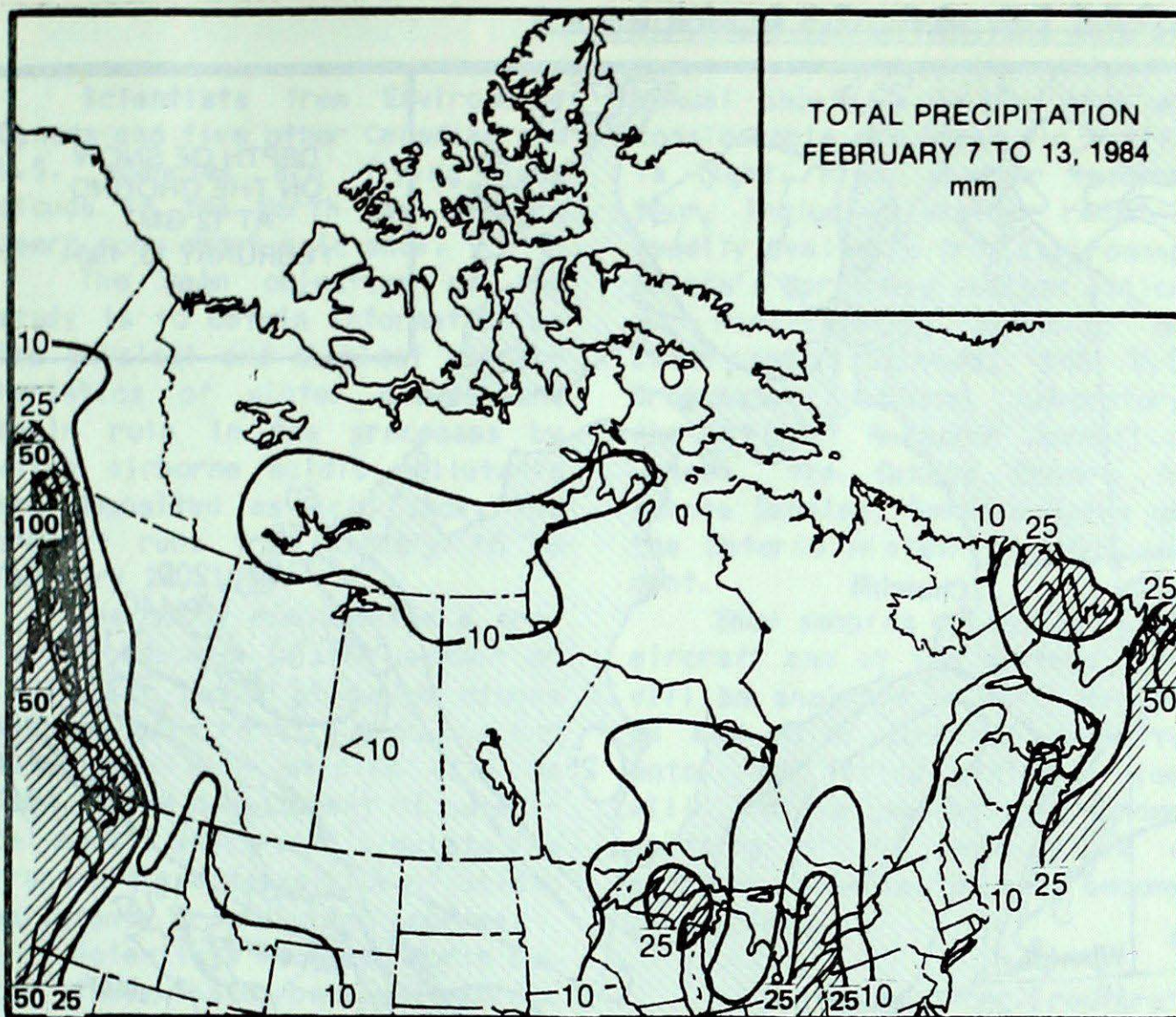
Frigidly cold weather yielded to above-freezing temperatures that reached as far north as James Bay.

WEEKLY TEMPERATURES EXTREMES ($^{\circ}$ C)

	<u>MAXIMUM</u>	<u>MINIMUM</u>
YUKON TERRITORY	9.3 Watson Lake	-42.9 Komakuk Beach
NORTHWEST TERRITORIES	-9.5 Fort Reliance	-49.0 Eureka
BRITISH COLUMBIA	14.0 Abbotsford	-29.1 Fort Nelson
ALBERTA	13.4 Lethbridge	-36.0 Fort Chipewyan
SASKATCHEWAN	8.1 Moose Jaw	-37.0 Uranium City
MANITOBA	6.3 Dauphin	-33.9 Lynn Lake
ONTARIO	12.6 Windsor	-39.6 Moosonee
QUEBEC	13.9 Sherbrooke	-44.5 Schefferville
NEW BRUNSWICK	8.5 Chatham	-25.4 Chatham
NOVA SCOTIA	10.5 Shelburne	-23.4 Shelburne
PRINCE EDWARD ISLAND	4.8 Summerside	-22.2 Charlottetown
NEWFOUNDLAND	13.8 Argentia VTMS	-36.8 Churchill Falls

ACROSS THE NATION

Warmest mean temperature	8.1	Vancouver, BC
Coollest mean temperature	-45.0	Eureka, NWT



HEAVIEST WEEKLY PRECIPITATION (mm)

YUKON	10.6 Dawson
NORTHWEST TERRITORIES	18.2 Fort Simpson
BRITISH COLUMBIA	121.8 McInnes Island
ALBERTA	7.6 Fort McMurray
SASKATCHEWAN	12.6 Collins Bay
MANITOBA	11.2 Churchill
ONTARIO	40.9 London
QUEBEC	52.8 Blanc Sablon
NEW BRUNSWICK	11.8 Moncton
NOVA SCOTIA	39.4 Sable Island
PRINCE EDWARD ISLAND	19.2 Summerside
NEWFOUNDLAND	52.1 Argentia VTMS

Ice Cover on the Great Lakes

Lake Superior: North shores and the eastern end were extensively ice covered, but half of the lake is open water.

Lake Huron and Georgian Bay: Northern portion of the lake ice covered. Except for the southwestern section, thick ice over Georgian Bay. For mid-February, these conditions

are about normal.

Lake Erie: About 95 per cent of the lake has ice over 30 cm thick. Only extreme southern areas have open water.

Lake Ontario: Primarily open water, however, small amount of ice in the eastern areas and in the entrance to the St. Lawrence Seaway.

On February 12, the temperature rose to 5° at Moosonee breaking the old mark of 0.6° for the day. The mild weather resulted in a prolonged mild spell across the Province and significantly reduced Ontario's snow cover. The depletion of the snow cover has considerably lessened the potential of severe spring flooding. On February 13, dense fog reduced visibilities to near zero in southern Ontario. Scores of cars collided, killing two people just west of Toronto.

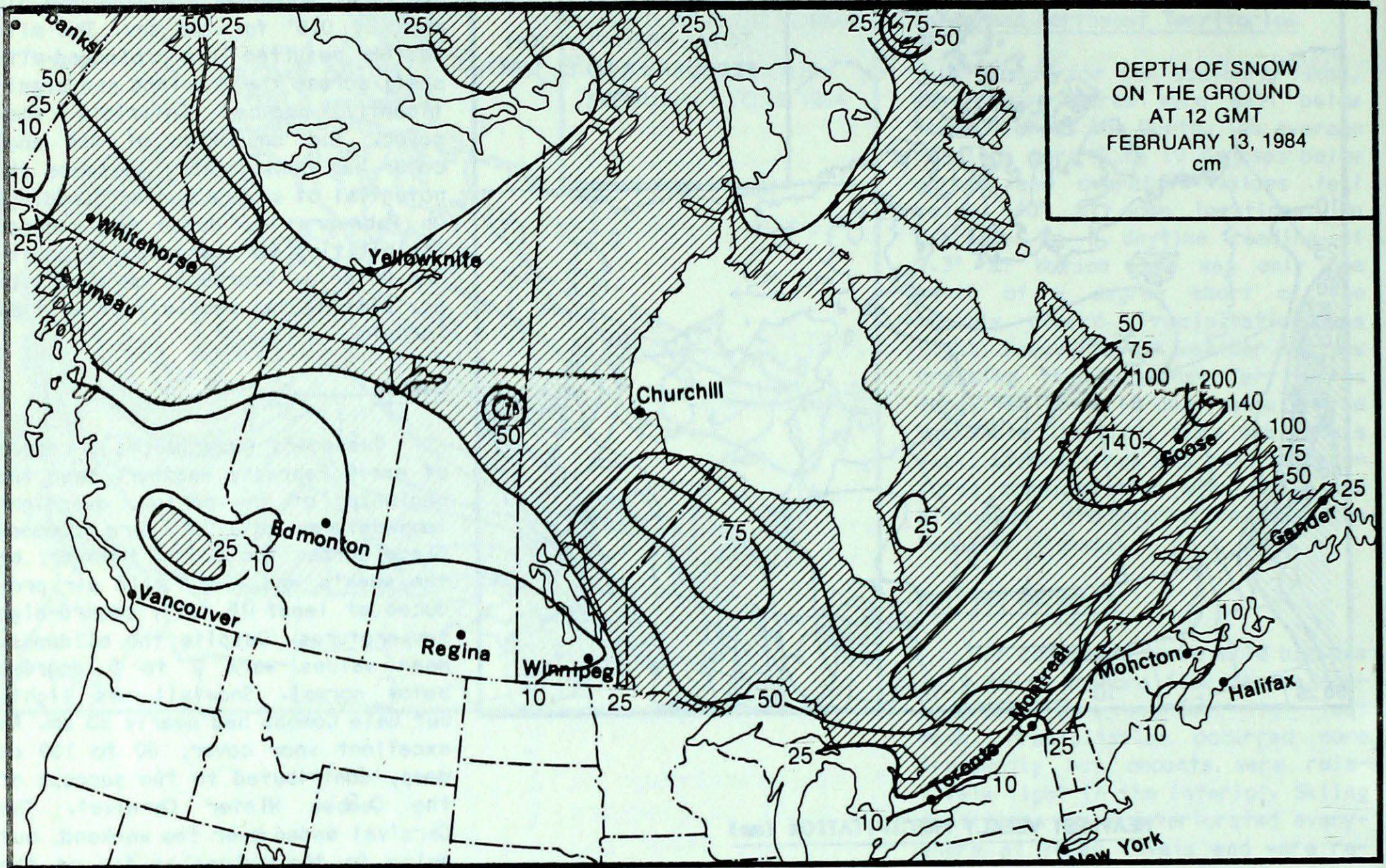
Québec

Québecers experienced a repeat of early February weather. Near the beginning of the period, overnight temperatures of -25° were commonplace across the South. However, by the week's end, very mild air produced at least 16 daily record-high temperatures. Despite the mildness, mean values were 2 to 5 degrees below normal. Snowfall was light, but Bale Comeau had nearly 53 cm. An excellent snow cover, 80 to 100 cm deep, contributed to the success of the Québec Winter Carnival. The Carnival ended over the weekend, but owing to the extensive fog on the St. Lawrence River, the Canoe race had to be cancelled for the first time in 30 years.

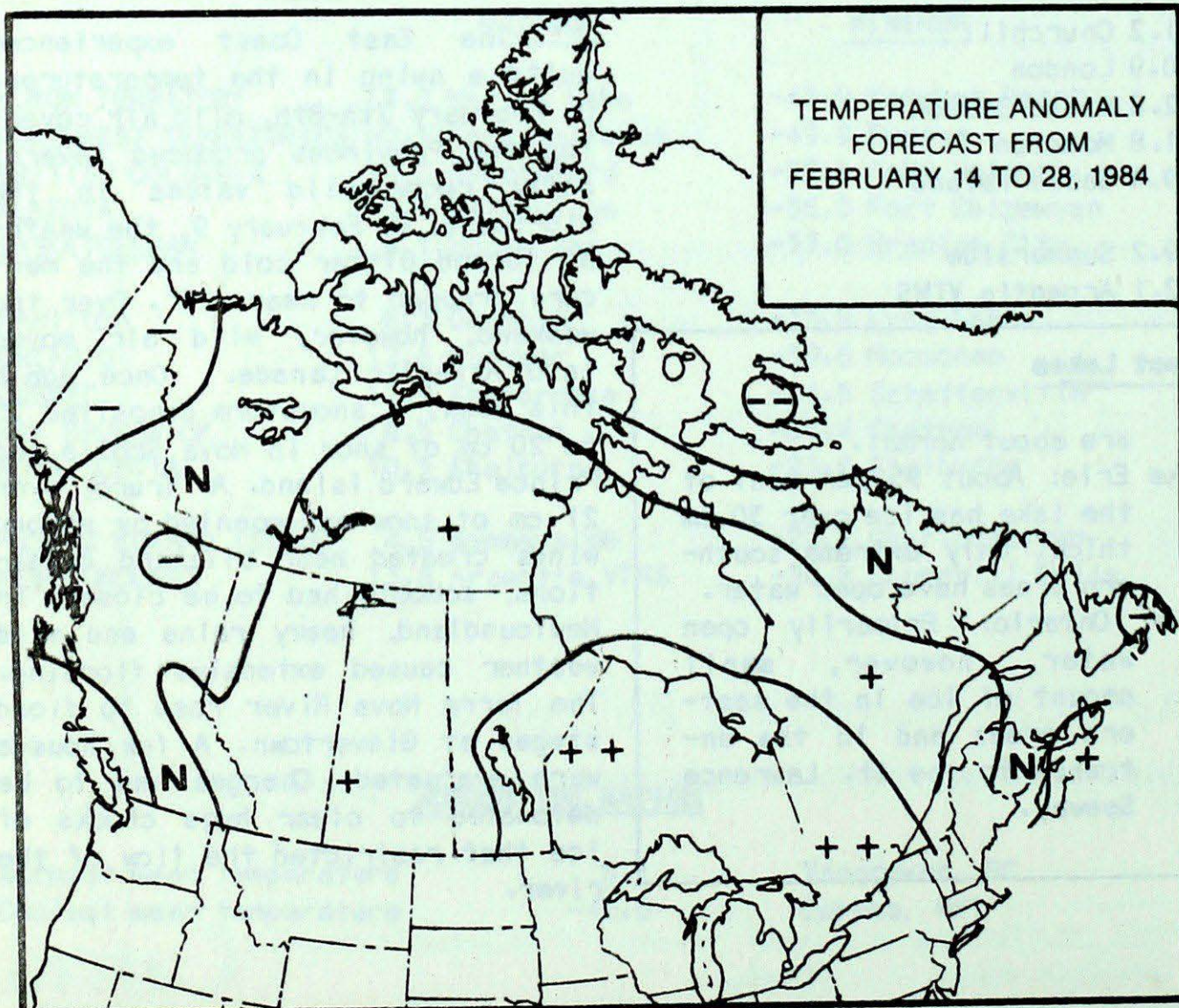
Atlantic Provinces

The East Coast experienced quite a swing in the temperatures. On February 7th-8th, mild air covering the Provinces produced several daily record-mild values in the mid-teens. By February 9, the weather turned bitter cold and the mercury dropped to near -25°. Over the weekend, however, mild air moved into Atlantic Canada. Once again this week, a snowstorm deposited 15 to 20 cm of snow in Nova Scotia and Prince Edward Island. At Truro, over 21 cm of snow accompanied by strong winds created near blizzard conditions, schools had to be closed. In Newfoundland, heavy rains and mild weather caused extensive flooding. The Terra Nova River rose to flood stages at Glovertown. A few houses were evacuated. Charges had to be detonated to clear huge chunks of ice that restricted the flow of the river.

SNOW DEPTH ON THE GROUND



TEMPERATURE ANOMALY FORECAST



Temperature Anomaly Forecast

The temperature anomaly forecast, for each of the 70 Canadian stations, is prepared by searching historical weather maps to find cases similar to the present one. The principle used is that a prediction for the next 15 days may be based on what is known to have actually happened during 15-day periods. After the five best cases are selected, the surface temperature anomalies are calculated. This results in five separate forecasts, which are averaged to provide the forecast depicted.

- ++ much above normal
- + above normal
- N normal
- below normal
- much below normal

ENVIRONMENT CANADA MONITORS ACID SNOW

Scientists from Environment Canada and five other Canadian and U.S. agencies are flying into clouds in the North Bay area to learn more about acid snow.

The main objective of the study is to obtain information on the physical and chemical characteristics of winter clouds and their role in the processes by which airborne acidic pollutants are deposited as acid snow. The project runs from January 16 to February 24, 1984.

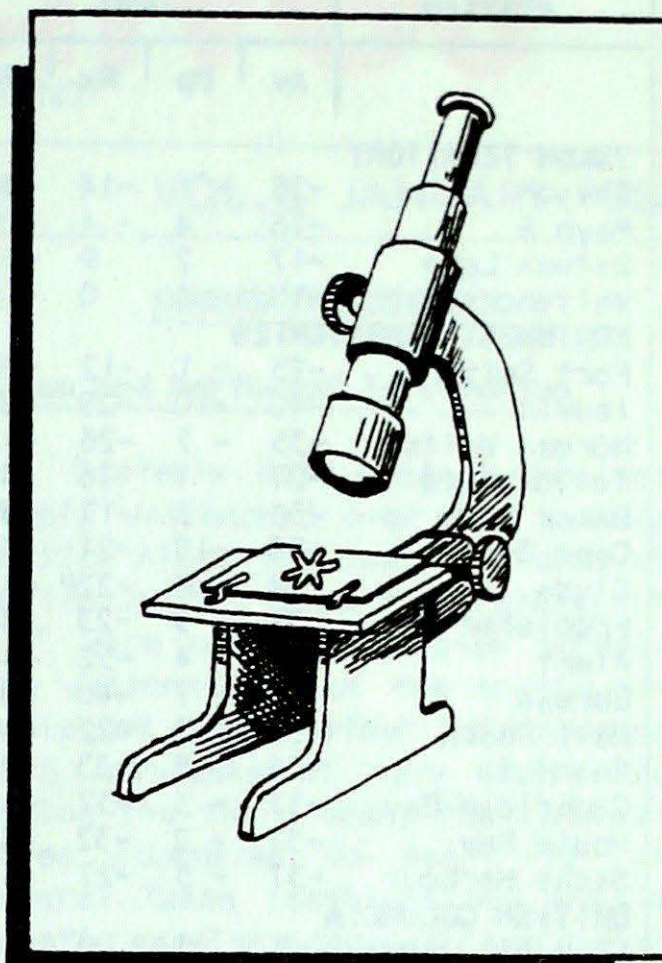
The study complements a project conducted in the summer of 1982 which looked at summer clouds and how acid rain is produced and data from both studies will be used in the development of numerical models which will simulate the transport and deposition of acidic pollutants from distant sources.

Scientists selected North Bay for their base because average

annual snowfalls in the area are considerable and local air traffic is light. Also, weather information, including weather radar is readily available from Environment Canada's North Bay weather office.

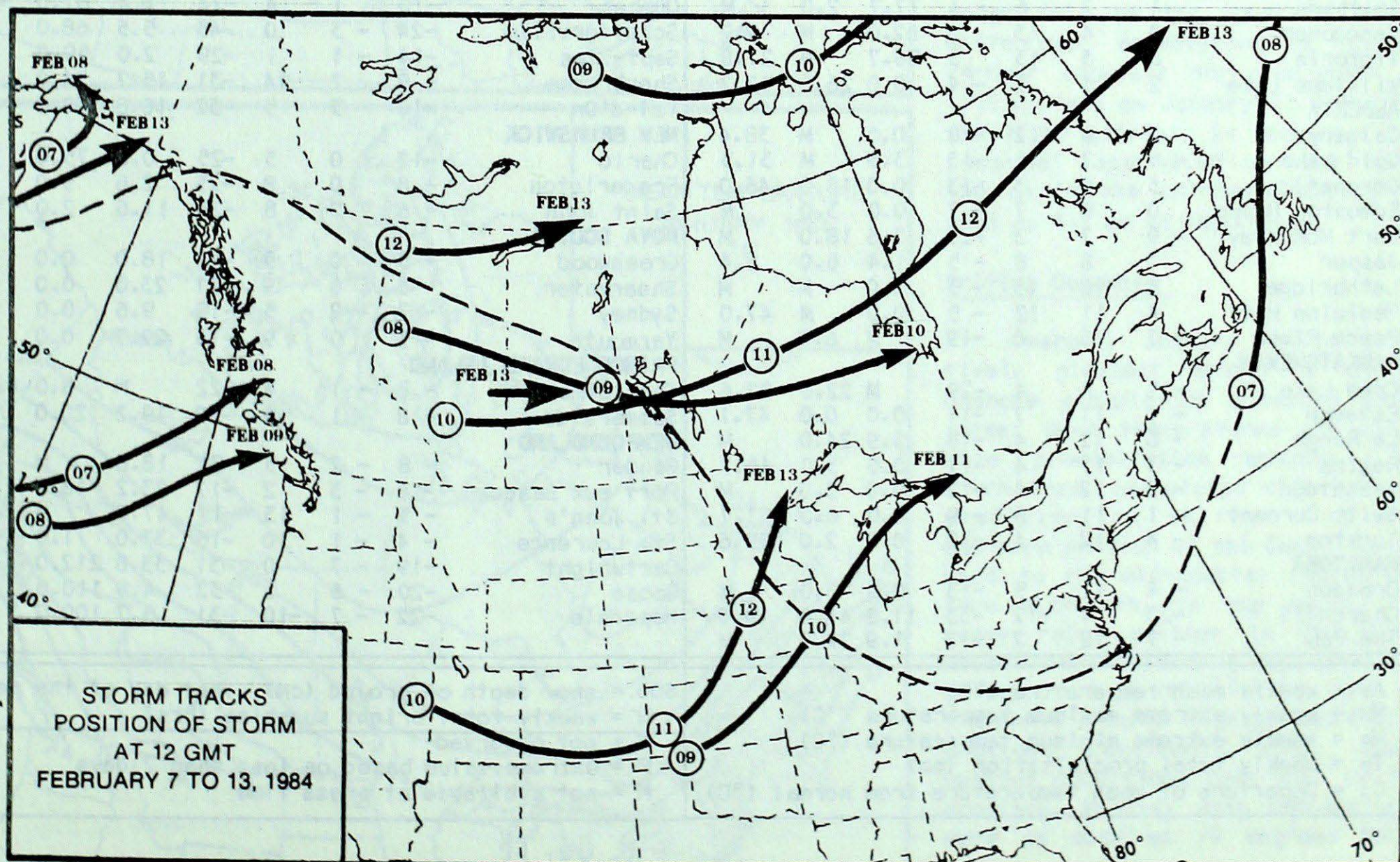
Participating agencies are Environment Canada, the U.S. Brookhaven National Laboratory, the National Research Council of Canada, the Canada Centre for Remote Sensing, Ontario Hydro and the Ontario Ministry of Environment.

Snow samples collected by the aircraft and at the surface sites will be analyzed in North Bay for pH and major chemical constituents. The entire winter project will improve scientists' understanding of how snow picks up airborne pollutants and becomes more acidic.



Information Directorate

STORM TRACKS



TEMPERATURE, PRECIPITATION AND BRIGHT SUNSHINE DATA FOR THE WEEK ENDING 0600 GMT FEBRUARY 14, 1984

STATION	TEMP				PRECIP		SUN	STATION	TEMP				PRECIP		SUN
	Av	Dp	Mx	Mn	Tp	SOG	H		Av	Dp	Mx	Mn	Tp	SOG	H
YUKON TERRITORY								Thompson	-17	5	-7	-33	2.2	38.0	16.3
Dawson	-25	-1	-14	-38	10.6	56.0	M	Winnipeg	-6	10	3	-22	1.6	8.0	20.2
Mayo A	-16	4	-4	-29	6.2	57.0	M	ONTARIO							
Watson Lake	-17	2	9	-34	3.4	42.0	16.1	Big Trout Lake	-15	7	-3	-29	14.3	78.0	M
Whitehorse	-10	4	0	-19	4.8	27.0	12.4	Earlton	-8	7	4	-29	M	73.0	M
NORTHWEST TERRITORIES								Kapusking	-8	10	7	-32	6.4	36.0	M
Fort Smith	-23	-1	-12	-38	6.2	45.0	18.2	Kenora	-6	9	3	-22	2.6	37.0	M
Inuvik	-40	-10	-29	-48	1.0	58.0	6.7	London	-2	4	9	-14	40.9	5.0	14.7
Norman Wells	-35	-7	-26	-42	3.5	25.0	13.5	Moosonee	-14	5	7	-40	13.2	31.0	8.0
Yellowknife	-27	-1	-16	-38	11.4	12.0	24.7	Muskoka	-5	5	8	-25	M	47.0	M
Baker Lake	-30	3	-17	-39	9.5	42.0	M	North Bay	-6	6	9	-26	13.6	58.0	19.1
Cape Dyer	-38	-18	-21	-47	0.0	M	M	Ottawa	-8	3	3	-21	1.6	36.0	32.1
Clyde	M	M	-27P	-43	M	80.0	6.6	Pickle Lake	-9	10	0	-29	6.6	72.0	M
Frobisher Bay	-35	-9	-23	-43	3.2	24.0	18.0	Red Lake	-8	10	2	-30	2.7	47.0	17.7
Alert	-36	-4	-32	-40	1.0	20.0	M	Sudbury	-7	6	6	-27	7.8	71.0	4.8
Eureka	-45	-7	-40	-49	0.0	19.0	M	Thunder Bay	-5	9	4	-21	22.7	25.0	19.6
Hall Beach	-38	-7	-22	-45	0.3	23.0	M	Timmins	-8	8	7	-35	6.6	80.0	M
Resolute	-39	-5	-33	-43	0.0	25.0	M	Toronto	-3	4	8	-19	22.2	1.0	M
Cambridge Bay	-37	-3	-32	-41	2.2	23.0	M	Trenton	-4	3	9	-18	7.4	4.0	M
Mould Bay	-37	-2	-32	-44	0.4	25.0	M	Warton	-2	5	10	-21	14.6	19.0	19.3
Sachs Harbour	-37	-5	-27	-41	M	19.0	0.0	Windsor	0	4	13	-12	18.9	M	M
BRITISH COLUMBIA								QUEBEC							
Cape St. James	5	1	9	2	86.2	M	5.1	Bagotville	-13	2	4	-31	2.8	49.0	M
Cranbrook	0	5	6	-8	1.0	M	8.4	Blanc-Sablon	-14	-4	-1	-27	52.8	92.0	22.6
Fort Nelson	-21	-3	-11	-29	3.6	29.0	12.1	Inukjuak	-27	-2	-13	-37	4.8	33.0	21.3
Fort St. John	-6	6	8	-21	8.3	M	M	Kuujuuaq	-27	-4	-14	-40	2.0	38.0	27.7
Kamloops	3	5	11	-5	1.0	M	20.7	Kuujuuarapik	-23	-1	0	-41	7.1	25.0	22.0
Penticton	3	4	6	-1	5.6	M	2.7	Maniwaki	-8	4	7	-24	1.4	41.0	28.8
Port Hardy	7	3	11	3	73.0	M	17.4	Mont-Joli	-11	0	5	-25	1.5	28.0	15.7
Prince George	3	9	8	-4	3.6	2.0	8.7	Montréal	-8	2	7	-20	5.3	14.0	M
Prince Rupert	5	1	10	-1	105.0	M	0.6	Natashquan	-13	-2	-1	-26	12.0	57.0	21.2
Revelstoke	1	5	4	-6	13.9	34.0	0.6	Nitchequon	-23	-1	0	-41	4.0	30.0	15.7
Smithers	1	7	6	-4	17.7	2.0	M	Québec	-10	1	4	-24	1.4	87.0	18.1
Vancouver	8	4	13	2	62.0	M	9.7	Schefferville	-24	-3	0	-45	5.5	68.0	32.9
Victoria	8	3	13	3	28.7	M	21.8	Sept-Îles	-14	-1	1	-29	2.0	59.0	24.0
Williams Lake	2	5	7	-4	0.0	26.0	17.2	Sherbrooke	-9	2	14	-31	15.2	34.0	27.0
ALBERTA								Val-d'Or	-10	5	5	-32	10.8	68.0	16.6
Calgary	3	9	12	-8	0.0	M	38.4	NEW BRUNSWICK							
Cold Lake	-5	7	6	-13	3.5	M	31.5	Charlo	-12	0	5	-25	0.0	75.0	23.6
Coronation	-5	6	3	-13	0.0	18.0	46.0	Fredericton	-8	0	8	-25	2.6	9.0	M
Edmonton Namao	0	9	7	-7	0.0	3.0	M	Saint John	-6	2	8	-23	11.6	2.0	35.5
Fort McMurray	-9	7	3	-23	7.6	18.0	M	NOVA SCOTIA							
Jasper	1	8	8	-5	1.4	6.0	8.4	Greenwood	-5	0	9	-21	18.0	0.0	M
Lethbridge	5	10	13	-3	0.0	M	M	Shearwater	-5	0	9	-21	23.0	0.0	29.3
Medicine Hat	4	11	12	-5	0.0	M	47.0	Sydney	-7	-2	5	-19	9.6	0.0	22.3
Peace River	-7	6	6	-19	M	6.0	M	Yarmouth	-3	0	9	-15	29.7	0.0	21.9
SASKATCHEWAN								PRINCE EDWARD ISLAND							
Cree Lake	-11	X	4	-29	M	22.0	22.6	Charlottetown	-8	-1	4	-22	M	8.0	M
Estevan	-1	11	7	-11	0.0	0.0	47.1	Summerside	-8	-1	5	-22	19.2	20.0	26.8
La Ronge	-6	12	4	-18	3.9	24.0	M	NEWFOUNDLAND							
Regina	-3	11	4	-11	0.0	3.0	45.7	Gander	-8	-2	5	-21	18.8	M	24.8
Saskatoon	-3	12	4	-12	0.0	3.0	M	Port aux Basques	-8	-3	2	-17	23.2	18.0	M
Swift Current	1	11	8	-9	0.0	0.0	53.7	St. John's	-5	-1	13	-17	47.6	M	15.5
Yorkton	-4	12	4	-12	0.0	2.0	29.6	St. Lawrence	-4	-1	10	-16	37.0	1.0	M
MANITOBA								Cartwright	-19	-7	0	-31	33.8	212.0	M
Brandon	-4	11	5	-13	0.0	0.0	M	Goose	-20	-6	1	-32	4.9	110.0	34.2
Churchill	-23	4	-12	-33	11.2	46.0	19.9	Hopedale	-22	-7	-10	-31	5.7	100.0	M
The Pas	-7	12	2	-17	1.9	22.0	M								

Av = weekly mean temperature (°C)
Mx = weekly extreme maximum temperature (°C)
Mn = weekly extreme minimum temperature (°C)
Tp = weekly total precipitation (mm)
Dp = Departure of mean temperature from normal (°C)

SOG = snow depth on ground (cm), last day of the period
H = weekly total bright sunshine (hrs)
X = not observed
P = extreme value based on less than 7 days
M = not available at press time