



Climatic perspectives



More heavy rain and snow in the East

While a series of winter storms affected the eastern half of the nation, cold Arctic air streamed southwards across western Canada, putting British Columbia back into the cold.

Another vicious storm pounded the Maritimes on Wednesday, producing heavy rain and snowfalls, and hurricane-force winds. On February 17, Halifax set a new 24-hour precipitation record of 74.1 mm for the month of February. This is the second storm in less than one week to cause extensive flooding in this region, particularly in the more southern areas of the Maritimes. The storm also produced winds in excess of 100 km/h. At Grand Etang, on the west coast of Cape Breton Island, winds gusted to 135 km/h. These southeast winds, known locally by the Acadians as Les Suetes, toppled fuel storage tanks at Cheticamp, spilling thousands of litres of gasoline into a safety dike. Heavy snow, as much as 43 cm, fell in northern New Brunswick, the Gaspé and along the North Shore.

In Newfoundland and Labrador, this storm caused blizzard conditions, with a mixture of snow, rain and freezing rain. A number of daily rain and snowfall records were broken. At Daniel's Harbour, winds were clocked gusting to 159 km/h. The winds flipped a tractor trailer transport at Wreckhouse, near Port aux Basques, and ferry services to the Island were temporarily disrupted.

A good old-fashioned winter?

In Ontario, the week was cold and snowy, as two disturbances, both originating from the American southwest, brought snow to the lower Great Lakes and the St. Law-

rence Valley. On February 16 and 17, between 10 and 20 centimetres of fresh snow covered the ground. Later in the week, on the 21st and 22nd, a more vigorous storm, the 5th of the season, dumped an additional 15 to 30 centimetres, with strong easterly winds whipping the snow into drifts.

This latest weekend snowstorm brings February's total snowfall at Toronto's Pearson Airport to 31 cm, which is only 4 cm more than the February average, but 20 cm more than last year. This season's total snowfall during December and January was approximately 4 cm less than the 66 cm long-term average, while the temperature during these same two months averaged nearly 2°C above normal. With figures such as these, what is surprising is that this is the snowiest February since 1988, when 52 cm was recorded, and the snowiest winter to-date since the winter of 1983-84, when 106 cm of snow fell to the end of February.

Does this mean that southern Ontario is in the midst of a harsh winter or have the past few winters been rather timid?

St. Lawrence River ice jam

Five powerful Coast Guard icebreakers have been kept busy trying to break up a massive ice jam that formed between Montreal and Trois-Rivières more than a week ago. The ice, which has blocked ships and caused the water level to rise

three metres above normal at Montreal was eventually broken up.

Elsewhere...

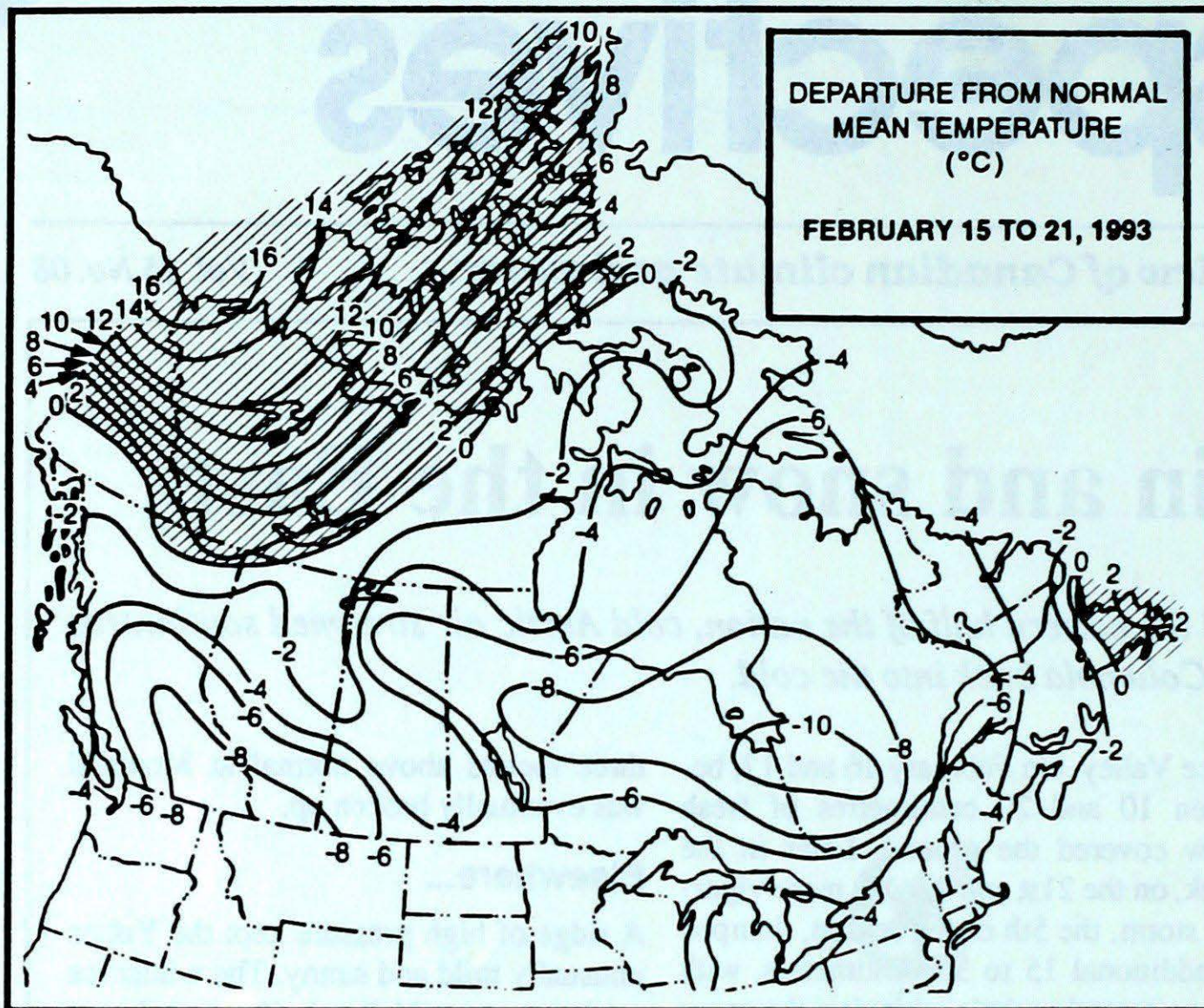
A ridge of high pressure kept the Yukon unusually mild and sunny. The winter ice road between Yellowknife and Lupin Mine was opened once the winds died down. More than 150 vehicles reached the mine destination; approximately 600 more transports are expected to travel the route before spring breakup. In the eastern Arctic, it was clear and cold, with blizzards reported.

An Arctic air mass covered British Columbia providing overall fair weather, except for the fact that between 15 and 20 centimetres of unwanted snow fell in Victoria and in the southern interior valleys towards the end of the week.

Mostly cold, sunny weather predominated across the Prairies and northern Ontario. Southern Alberta received 5 to 10 centimetres of snow during the weekend, with the foothills digging out from under as much as 30 cm.

A look ahead...

Cold weather will dominate the eastern half of the country and the Arctic. The Prairies will experience near to above normal temperatures. Unsettled weather is likely for British Columbia, southern Ontario, Quebec, and the Atlantic region.



Weekly normal temperatures (°C)

	max.	min.
Whitehorse A	-8.5	-18.1
Iqaluit A	-21.9	-30.7
Yellowknife A	-21.0	-30.9
Vancouver Int'l A	8.1	1.5
Victoria Int'l A	8.4	1.3
Calgary Int'l A	-1.9	-13.5
Edmonton Int'l A	-6.0	-17.6
Regina A	-8.7	-20.1
Saskatoon A	-9.7	-21.2
Winnipeg Int'l A	-10.5	-21.7
Ottawa Int'l A	-4.4	-13.5
Toronto (Pearson Int'l A)	-1.3	-9.9
Montréal Int'l A	-4.1	-13.0
Québec A	-5.5	-15.2
Fredericton A	-2.2	-13.8
Saint John A	-1.9	-12.5
Halifax (Shearwater)	-0.2	-8.4
Charlottetown A	-3.1	-11.6
Goose A	-8.9	-19.2
St John's A	-1.6	-8.1

Weekly temperature and precipitation extremes

	Maximum temperature (°C)	Minimum temperature (°C)	Heaviest precipitation (mm)
British Columbia	Estevan Point (aut) 9	Dease Lake -32	Victoria Int'l A 19
		Puntzi Mountain (aut) -32	
Yukon Territory	Komakuk Beach A 5	Watson Lake A -36	Shingle Point A 8
Northwest Territories	Fort Simpson A 1	Shepherd Bay A -47	Inuvik A 8
Alberta	Edson A 0	High Level A -36	Edmonton Int'l A 12
	Pincher Creek (aut) 0		Edmonton Municipal A 12
Saskatchewan	Estevan A -5	Cree Lake -43	Swift Current A 4
Manitoba	Dauphin A -8	Lynn Lake A -40	Dauphin A 2
Ontario	Trenton A 2	Lansdowne House -43	Warton A 29
Quebec	Chevery (aut) 2	La Grande IV A -45	La Grande IV A 705
New Brunswick	Moncton A 8	St-Léonard A -32	Saint John A 36
Nova Scotia	Greenwood A 10	Sydney A -23	Sydney A 66
Prince Edward Island	Charlottetown A 7	Charlottetown A -20	Charlottetown A 30
Newfoundland	Argentia A 11	Wabush Lake A -41	St John's A 72

Across The Country...

Highest Mean Temperature	Estevan Point (aut) (B.C.) 3
Lowest Mean Temperature	Shepherd Bay A (N.W.T.) -39

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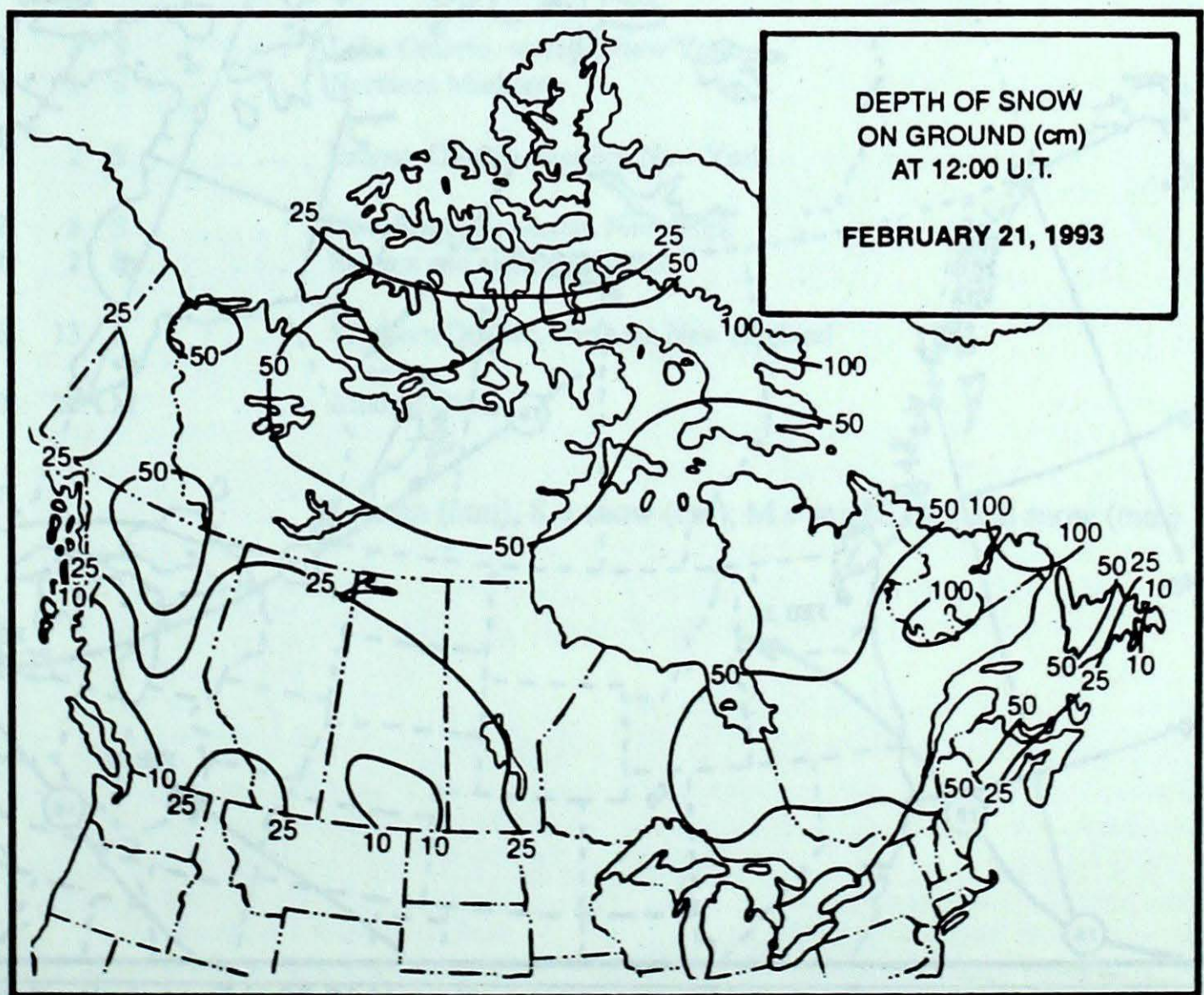
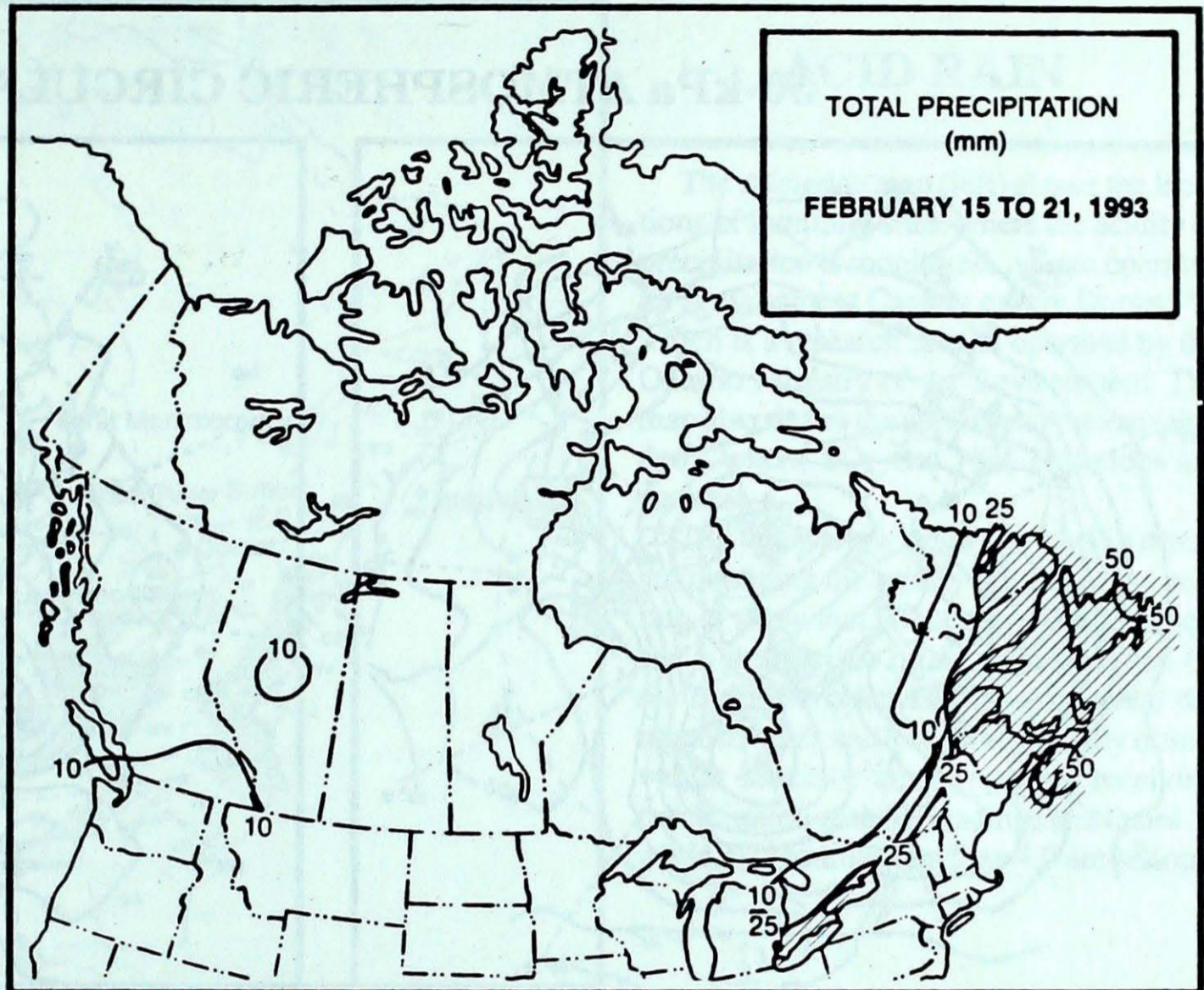
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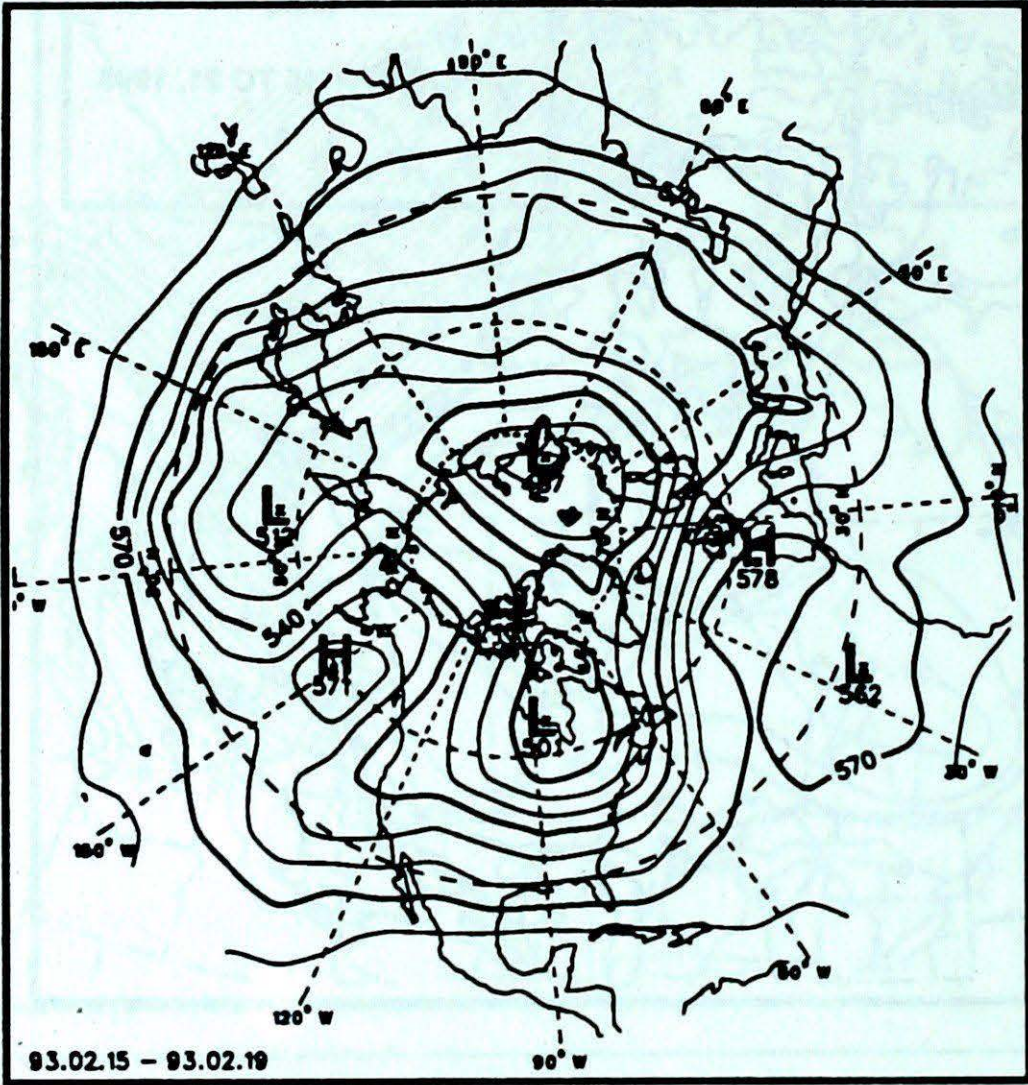
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The purpose of the publication is to make topical information available to the public concerning the Canadian Climate and its socio-economic impact.

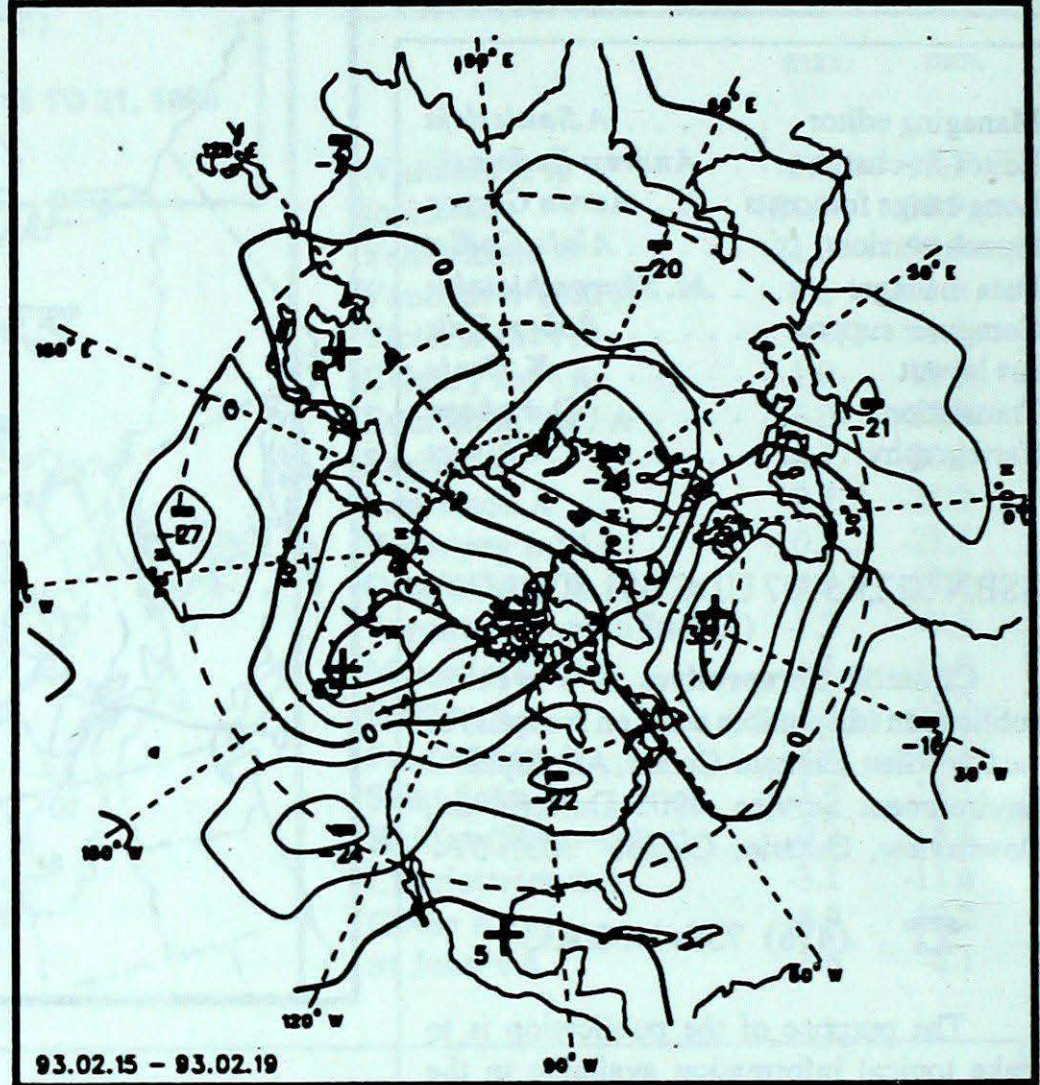
The data in this publication are based on unverified reports from approximately 225 Canadian synoptic weather stations. Information concerning climatic impacts is gathered from AES contacts with the public and from the media. Articles do not necessarily reflect the views of the Atmospheric Environment Service.



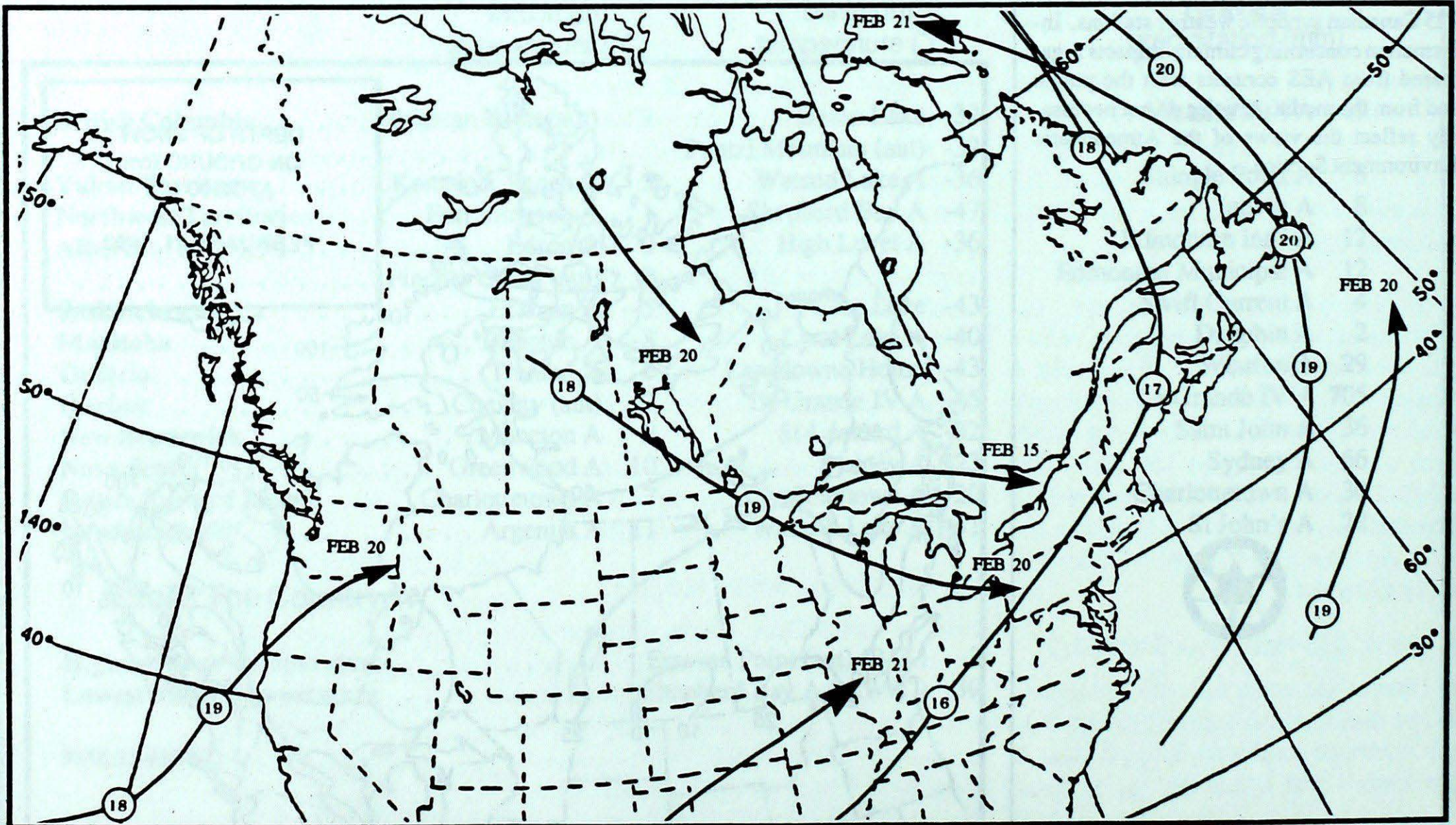
50-kPa ATMOSPHERIC CIRCULATION



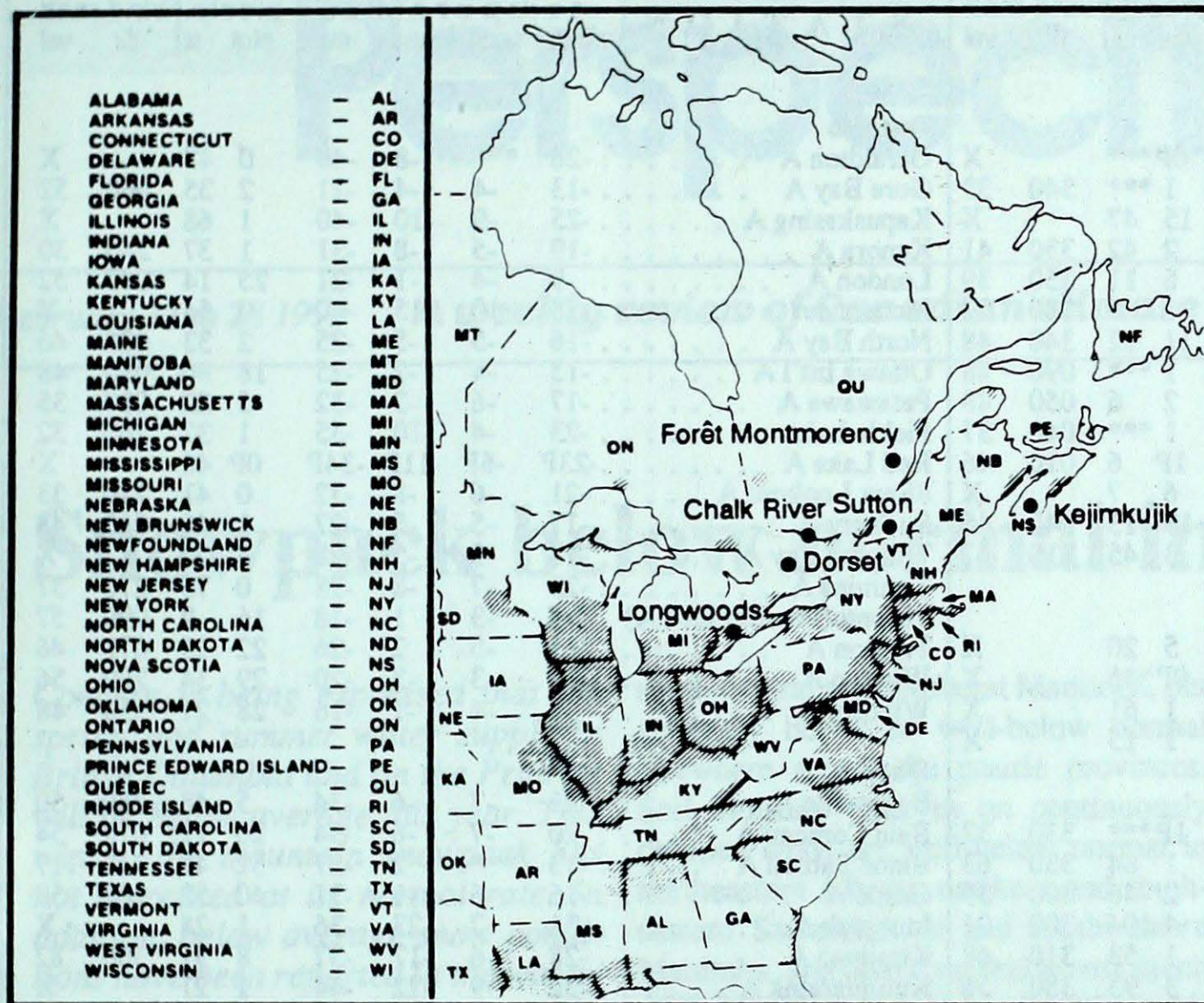
Mean geopotential height
50-kPa level (10 decametre intervals)



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 14 to 20, 1993

Longwoods	16	4.2	2 S	... Southern Ontario, Ohio
Dorset *	16	4.3	3 S	... Lake Ontario, western New York
	19	4.3	1 S	... Northern Michigan
Chalk River	16	4.2	2 S	... Eastern Ontario, western New York
Sutton	16	4.2	8 S	... New England, eastern New York
	18	4.1	2 S	... Eastern and central Ontario
Montmorency	16	4.6	13 S	... Southern Quebec, northern New England
Kejimikujik	16	5.0	25 M	... Atlantic Ocean

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									
Blue River A	-12P	-9P	-4P	-23P	0P***		X	Geraldton A	-26	***	-8	-40	0	47		X	
Comox A	1	-3	7	-6	1	***	340	33	Gore Bay A	-13	-4	-4	-21	2	35	060	52
Cranbrook A	-15	-12	-6	-27	15	47		X	Kapuskasing A	-25	-9	-10	-40	1	68		X
Fort Nelson A	-14	4	0	-30	2	42	330	41	Kenora A	-19	-5	-8	-31	1	37	240	30
Fort St John A	-14	-1	0	-23	6	11	350	39	London A	-9	-4	-1	-21	25	14	070	52
Kamloops A	-8	-7	-2	-16	1	5	280	52	Moosonee	-28	-10	-15	-40	0	54		X
Penticton A	-6	-7	0	-14	11	12	340	48	North Bay A	-16	-5	-5	-25	2	33	080	46
Port Hardy A	1	-3	7	-5	1	***	090	48	Ottawa Int'l A	-13	-4	-2	-25	18	80	080	48
Prince George A	-12	-6	-2	-22	2	6	050	48	Petawawa A	-17	-6	-3	-32	5	22	080	35
Prince Rupert A	-1	-5	8	-12	1	***	040	37	Pickle Lake	-23	-4	-10	-35	1	32	260	32
Smithers A	-8P	-4P	2P	-20P	1P	6	010	46	Red Lake A	-23P	-6P	-11P	-34P	0P	46		X
Vancouver Int'l A	0	-4	7	-7	6	7		X	Sioux Lookout A	-21	-6	-8	-32	0	41	270	33
Victoria Int'l A	1	-4	6	-5	19	13	040	65	Sudbury A	-17	-5	-5	-27	1	45	060	43
Williams Lake A	-14	-11	-5	-23	3	45	310	37	Thunder Bay A	-18	-5	-5	-28	3	20		X
Yukon Territory								Québec									
Komakuk Beach A	-10	19	5	-22	5	20		X	Bagotville A	-21	-7	-6	-34	5	43	280	50
Teslin (aut)	-18P	***P	-8P	-29P	0P***			X	Baie Comeau A	-20	-7	-6	-34	20	72	070	54
Watson Lake A	-21	-2	-7	-36	1	61		X	Blanc Sablon A	-13	***	2	-27	52	42	240	117
Whitehorse A	-14	-1	-4	-27	1	15		X	Gaspé A	-16	-6	-1	-31	40	52	280	50
Northwest Territories								New Brunswick									
Alert	-25P	10P	-17P	-33P	1P***	330	32	Fredericton A	-12	-4	6	-26	26	***	290	65	
Baker Lake A	-34	-1	-23	-40	1	84	330	63	Miscou Island (aut)	-12P	-2P	3P	-20P	13P***			
Cambridge Bay A	-31	5	-22	-38	2	46	300	39	Moncton A	-11	-3	8	-23	27	12	260	61
Cape Dyer A	-27	-3	-21	-35	4	104	300	91	Saint John A	-10	-3	6	-22	36	17	100	78
Clyde A	-31	-3	-21	-41	1	53	310	48	St Leonard A	-18	***	-6	-32	28	82	310	52
Coppermine A	-20	4	-6	-34	3	95	350	56	Nova Scotia								
Coral Harbour A	-35	-5	-25	-40	0	22	020	37	Greenwood A	-7	-2	10	-19	32	11	240	78
Eureka	-32	7	-19	-39	0	18		X	Shearwater A	-7	-3	6	-16	54	14	250	74
Fort Smith A	-22	1	-8	-40	3	49	310	33	Sydney A	-8	-2	7	-23	66	20	150	87
Hall Beach A	-37	-3	-28	-41	1	49	300	39	Yarmouth A	-5P	-2P	7P	-13P	21P	15	300	56
Inuvik A	-13	17	-2	-24	8	76	310	52	Prince Edward Island								
Iqaluit A	-34	-7	-20	-40	1	22	340	61	Charlottetown A	-9	-2	7	-20	30	16	321	33
Mould Bay A	-24	12	-15	-35	3	18		X	East Point (auto)	-9	***	4	-19	24	***		
Norman Wells A	-13	15	1	-25	5	34	320	76	Newfoundland								
Resolute A	-29	5	-21	-36	0	18	060	78	Cartwright	-16	-3	2	-29	34	126	190	102
Yellowknife A	-23	3	-5	-38	2	30	330	56	Churchill Falls A	-28P	-8P	-13P	-40P	0P	110	280	50
Alberta								93/02/15-93/02/21									
Calgary Int'l A	-16	-8	-5	-24	8	15	340	57	Gander Int'l A	-5	2	9	-20	37	9	190	93
Cold Lake A	-17	-2	-8	-31	3	26	350	35	Goose A	-19	-5	2	-29	26	54	260	82
Edmonton Namao A	-15	-3	-6	-23	3	19	320	37	Stephenville A	-9	-3	4	-24	32	94	110	107
Fort McMurray A	-18	-2	-6	-33	4	17	340	32	St John's A	-3	2	7	-14	72	7	190	102
Grande Prairie A	-16	-3	-2	-29	4	24		X	St Lawrence	-3P	2P	8P	-17P	27P	6		X
High Level A	-19	-3	-4	-36	4	21	310	52	Wabush Lake A	-26	-4	-13	-41	6	72	290	37
Lethbridge A	-16	-10	-6	-26	10	17		X									
Medicine Hat A	-16	-8	-6	-27	6	10	330	37									
Peace River A	-17	-2	-3	-29	3	17		X									
Saskatchewan																	
Cree Lake	-24	-7	-12	-43	2	34	340	41									
Estevan A	-18	-5	-5	-32	2	9	290	43									
La Ronge A	-20	-3	-9	-31	1	18	330	39									
Regina A	-19	-4	-9	-30	3	14		X									
Saskatoon A	-20	-5	-10	-32	1	11	310	35									
Swift Current A	-19	-8	-9	-29	4	8	300	44									
Yorkton A	-18	-2	-8	-28	2	10	290	37									
Manitoba																	
Brandon A	-19	-3	-10	-31	1	14	250	44									
Churchill A	-29	-3	-22	-36	0	16	300	43									
Lynn Lake A	-27	-7	-14	-40	0	28	340	37									
The Pas A	-22	-3	-11	-31	0	10	290	41									
Thompson A	-27	-7	-13	-40	0	32		X									
Winnipeg Int'l A	-20	-4	-12	-29	1	35	010	37									

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.