

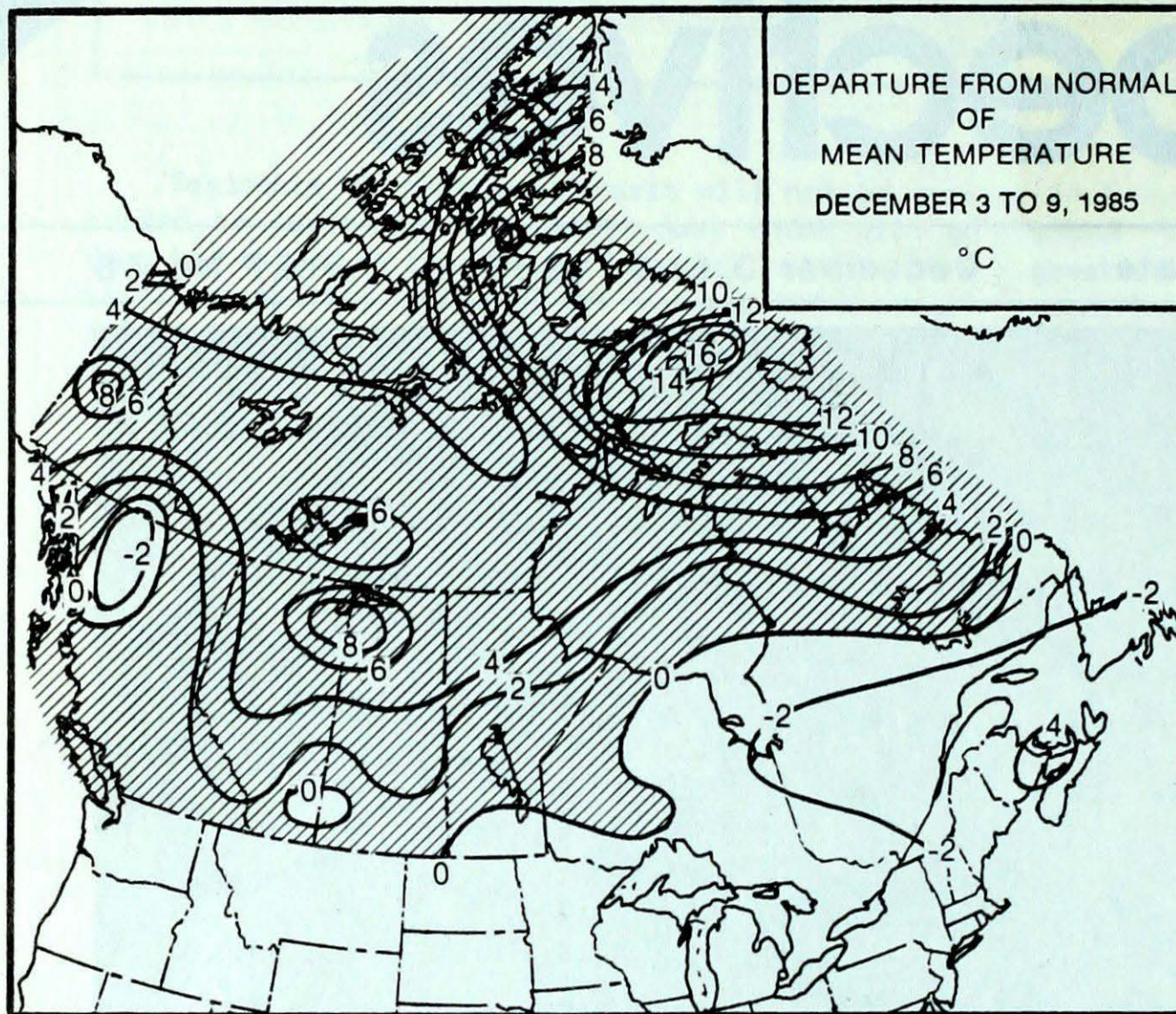
This NOAA 9 photo of December 4, 1985 shows Hudson Bay extensively ice covered with numerous leads of open water or new (darker) thin ice. Fast ice is evident all along the western shore of Hudson Bay and around James Bay.

- ***Winter eases its grip in the West***
- ***Winter storm batters Newfoundland***
  - heavy snow in Labrador
  - winds disrupt coastal ferry service



# TEMPERATURE

## ACROSS THE COUNTRY...



### Yukon and Northwest Territories

Much milder Pacific air moved inland from the Gulf of Alaska, finally displacing the record cold Arctic airmass from the valleys of the southern Yukon by mid-week, and the rest of the Yukon by week's end. By December 5, maximum temperatures climbed to above freezing at several locations. The warming trend was associated with increased cloud, but snowfalls were light. Temperatures were well above normal in the eastern Arctic, and many daily maximum temperature records were broken during the period. The temperature at Frobisher climbed to 2°C on December 4 and 5. All lakes and rivers across the Canadian north now have a solid ice cover.

### British Columbia

A much milder weather regime took hold as the westerlies allowed a Pacific airmass to push inland. In the north and the central interior it was a more pleasant week. After the bitter cold snap, the logging, construction and recreation industry was able to get back to normal. In the Okanagan, the extremely cold weather caused an undetermined amount of damage to orchards and vineyards. Significant snowfalls and milder temperatures caused several avalanches in the Coquichall Pass in the southern interior.

### Prairie Provinces

Temperatures slowly moderated to near normal values. With the exception of the north, maximum temperatures in Alberta climbed well above the freezing mark by the middle of the week, while daytime readings in the eastern Prairies moderated to near freezing over the weekend. Skies were predominantly cloudy everywhere. Snowfalls were light. Snow depths at the end of the week ranged from 30 cm in the Peace River district to only a few centimetres in the southern agricultural districts.

## WEEKLY TEMPERATURE EXTREME (C)

	MAXIMUM	MINIMUM
BRITISH COLUMBIA	SATURNA 10	DEASE LAKE -34
YUKON TERRITORY	TESLIN 3	BEAVER CREEK -45
NORTHWEST TERRITORIES	FROBISHER BAY 2	EUREKA -39
ALBERTA	CALGARY INT'L 9	HIGH LEVEL -35
SASKATCHEWAN	MOOSE JAW 3	CREE LAKE -33
MANITOBA	DAUPHIN -1	LYNN LAKE -34
ONTARIO	PORTAGE LA PRAIRIE	ATIKOKAN -35
QUEBEC	PORT WELLER 4	CHIBOUGAMAU -31
	BLANC SABLON 4	
	NATASHQUAN	
NEW BRUNSWICK	ST STEPHEN 1	CHATHAM -16
NOVA SCOTIA	SYDNEY 9	TRURO -13
PRINCE EDWARD ISLAND	EAST POINT 1	CHARLOTTETOWN -11
NEWFOUNDLAND	ARGENTIA 12	WABUSH LAKE -23

## ACROSS THE NATION

WARMEST MEAN TEMPERATURE	6	SATURNA	BC
COOLEST MEAN TEMPERATURE	-29	EUREKA	NWT



**Ontario**

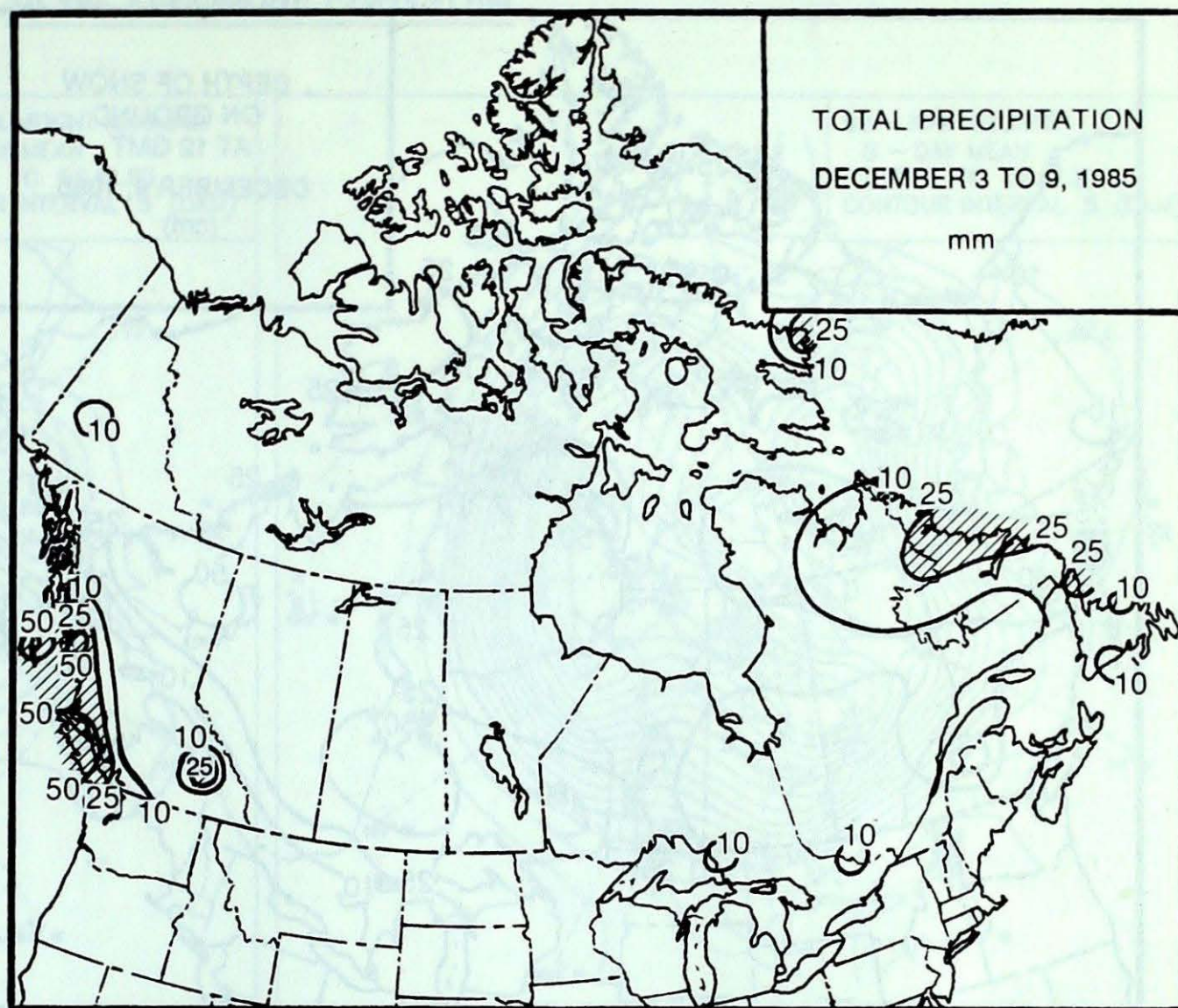
This was a cool, but a relatively dry period. Cloud cover plagued the province most of the week, but sunshine was more prevalent in the north. Precipitation tended to be light and evenly spread, with amounts generally less than 10 mm. Snow fell in the north; a mixture of snow and rain fell in the south. While southern Ontario remained snow free, snow depths in the north ranged from 50 to 60 centimetres. Timmins was reporting 70 cm of snow on the ground.

**Quebec**

It was frequently sunny in the south, with only light precipitation. Weather systems moving across the north produced snow on most days, with total amounts of up to 25 cm. Strong winds gusting to 100 km/h on December 3 and 4 caused a large barge loaded with oil to break away from its moorings and run aground near Matane, spilling fuel oil in the St. Lawrence River. Daytime temperatures in the southwest managed to climb to near freezing over the weekend. Roads turned icy when night-time readings fell below freezing, resulting in a multitude of automobile accidents near Sherbrooke and Montreal.

**Atlantic**

A major low pressure system tracked across southern Labrador on December 3, and was associated with very strong winds, falling temperatures and heavy precipitation. In Labrador there was heavy snow and blowing snow, with amounts totaling 20 to 40 centimetres. The snow storm was welcomed by skiing enthusiasts in Labrador City, as the 1985-86 world cup cross-country ski season commenced on the weekend. Winds in Labrador on November 24 gusted to 120 km/h. At St. John's, Nfld., the strong winds disrupted ferry service to Bell Island. In the Maritimes, record warm temperatures on December 2 plummeted to below normal values the next day. Skies were mainly sunny, but the combination of strong winds and below freezing temperatures made for an uncomfortable wind chill.

**HEAVIEST WEEKLY PRECIPITATION (mm)**

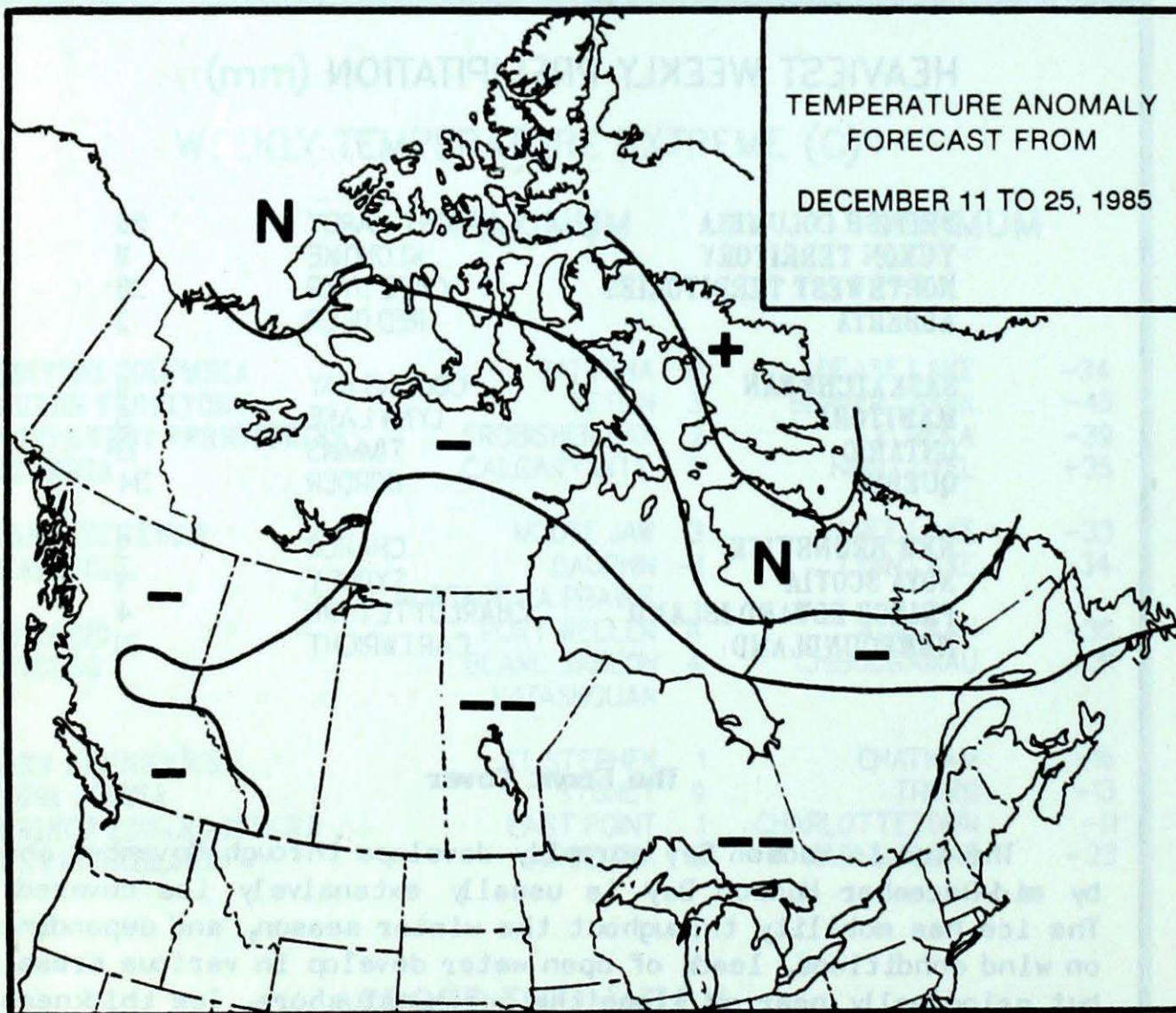
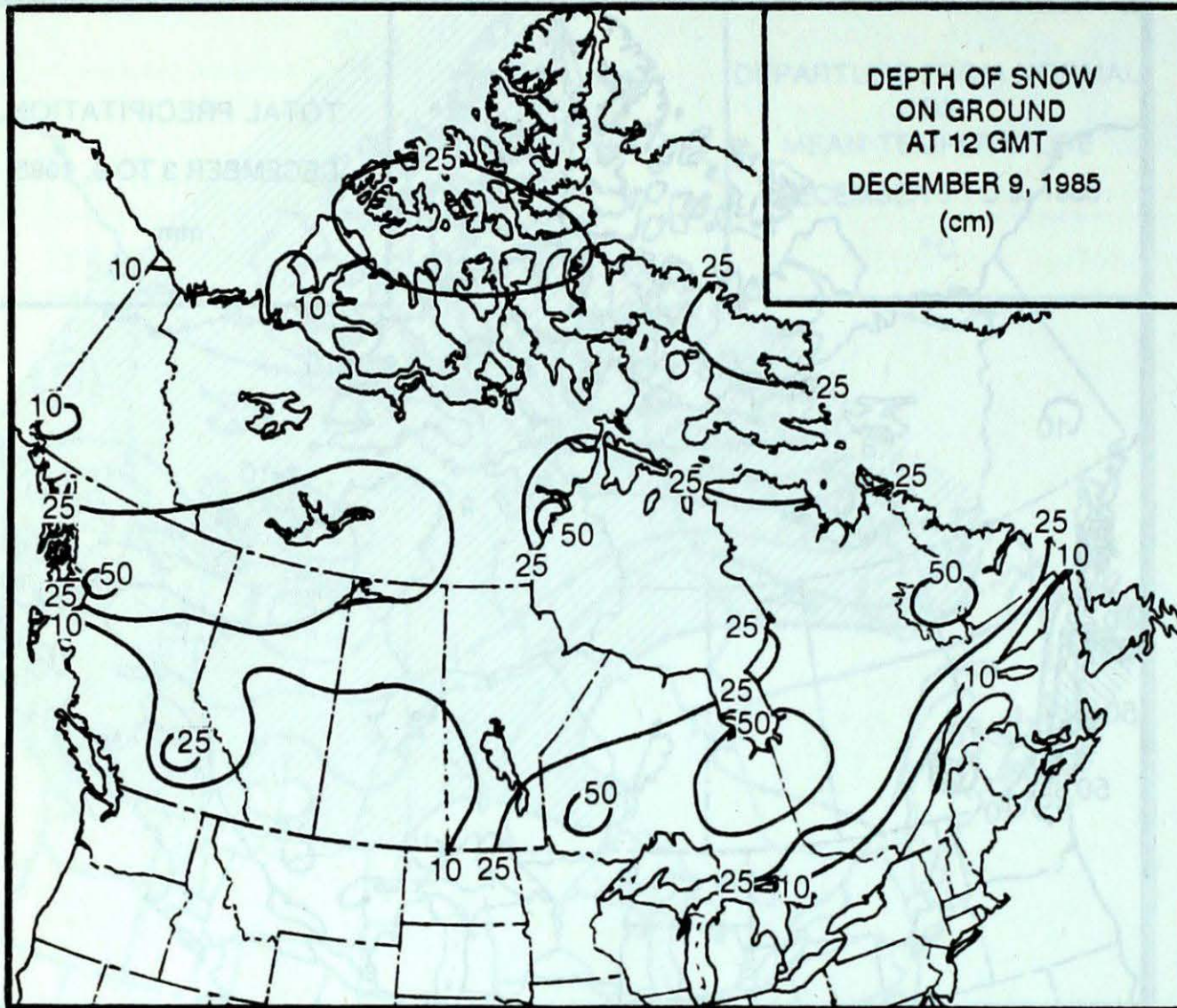
BRITISH COLUMBIA	PORT HARDY	66
YUKON TERRITORY	KLONDIKE	11
NORTHWEST TERRITORIES	CAPE DYER	38
ALBERTA	RED DEER	2
SASKATCHEWAN	COLLINS BAY	9
MANITOBA	LYNN LAKE	8
ONTARIO	TIMMINS	13
QUEBEC	BORDER	34
NEW BRUNSWICK	CHARLO	3
NOVA SCOTIA	SYDNEY	9
PRINCE EDWARD ISLAND	CHARLOTTETOWN	4
NEWFOUNDLAND	CARTWRIGHT	31

**The Front Cover**

The ice in Hudson Bay normally develops through November and by mid-December Hudson Bay is usually extensively ice covered. The ice has mobility throughout the winter season, and depending on wind conditions, leads of open water develop in various areas, but principally near or along the northwest shore. Ice thickness increase throughout the winter months and the ice also becomes heavily ridged. Currently, the ice thickness is estimated around 20 cm, but this varies considerably. In the new year ice thickness of one to two metres will be quite common.



# FORECAST



### Temperature Anomaly Forecast

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

This forecast is prepared by searching historical weather maps to find cases similar to the present. The historical outcome during the 15 days subsequent to the chosen analogues is assumed to be a forecast for the next 15 days from now.

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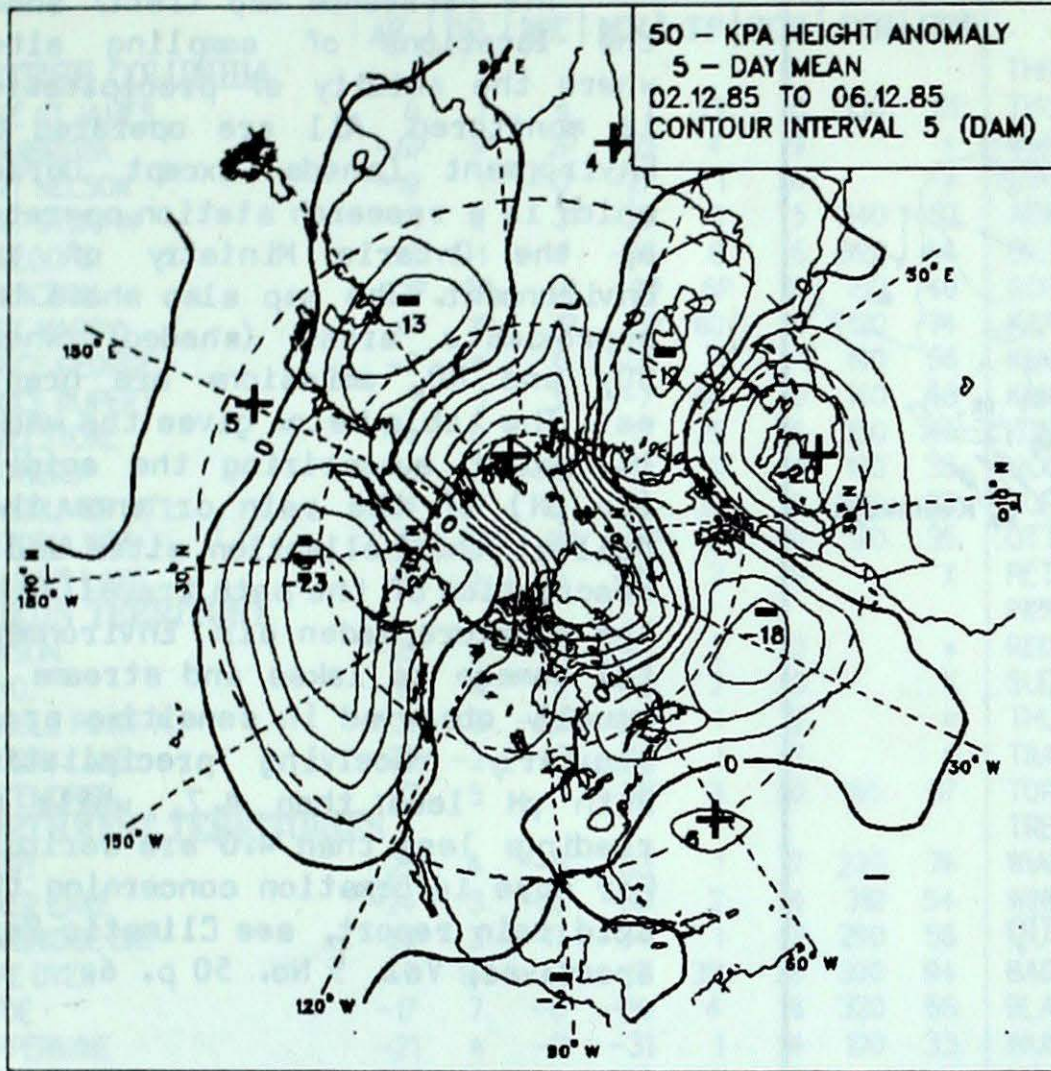
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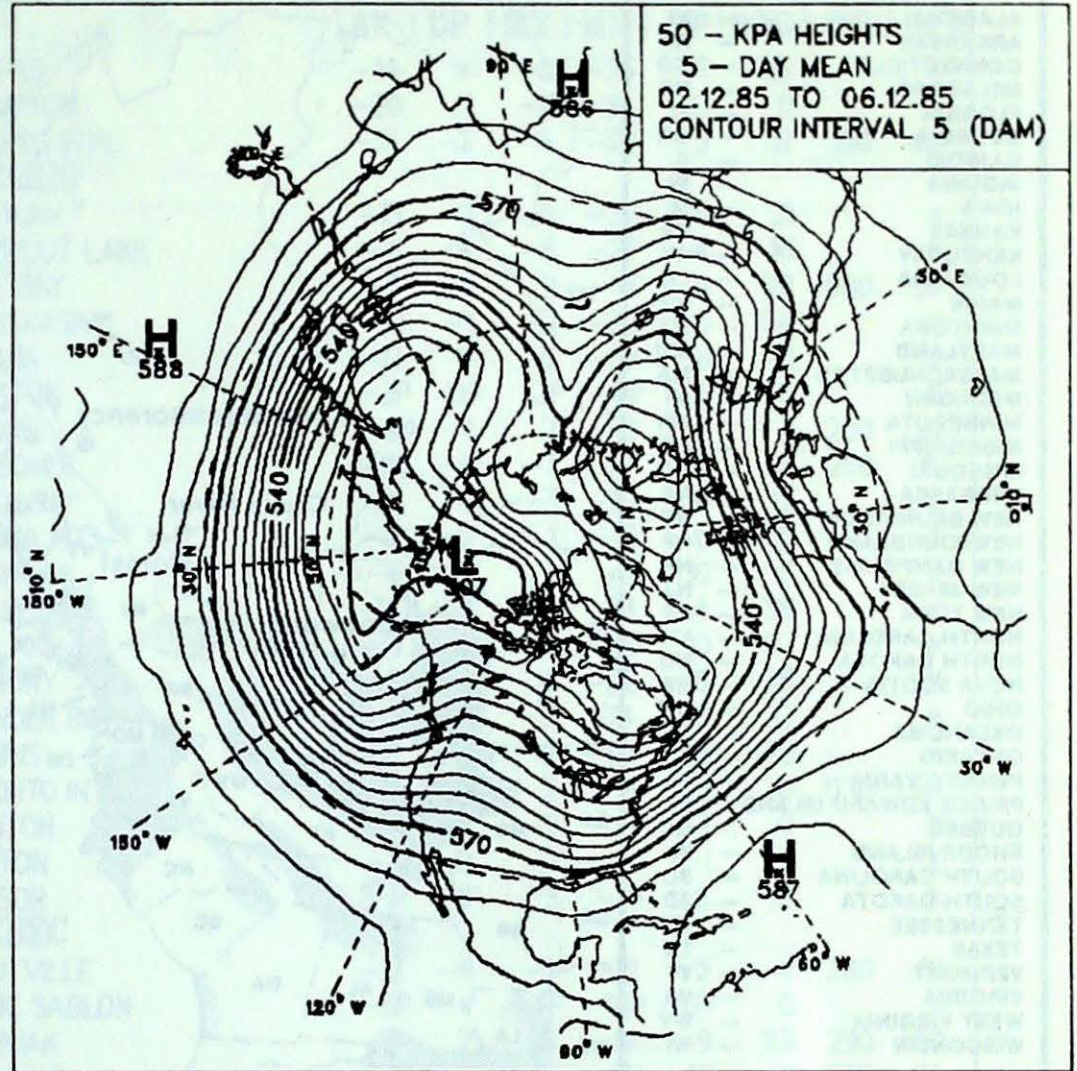
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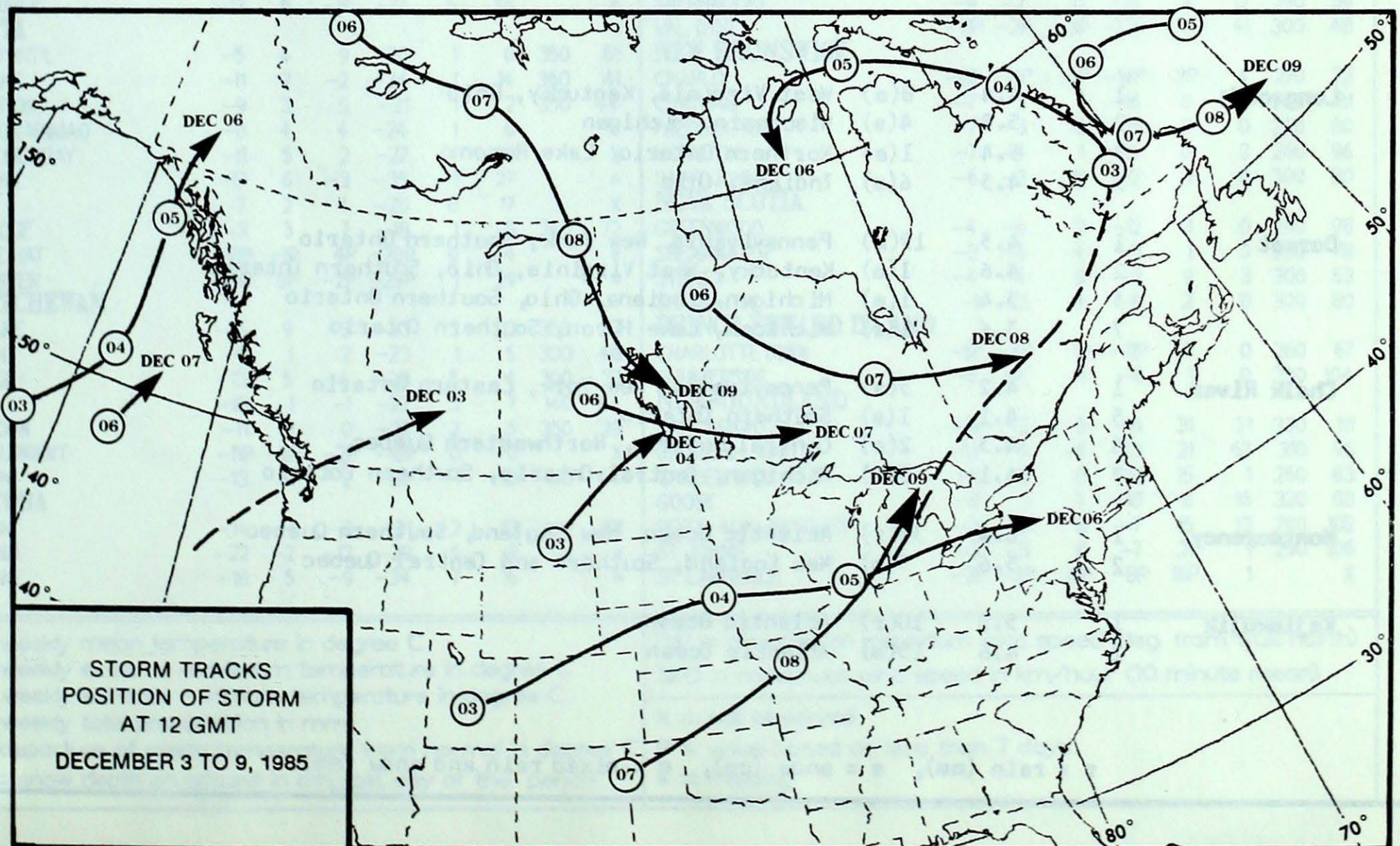
**50 KPa ATMOSPHERIC CIRCULATION**



MEAN 50 KPa HEIGHT ANOMALY (dam)  
December 2 to December 6, 1985



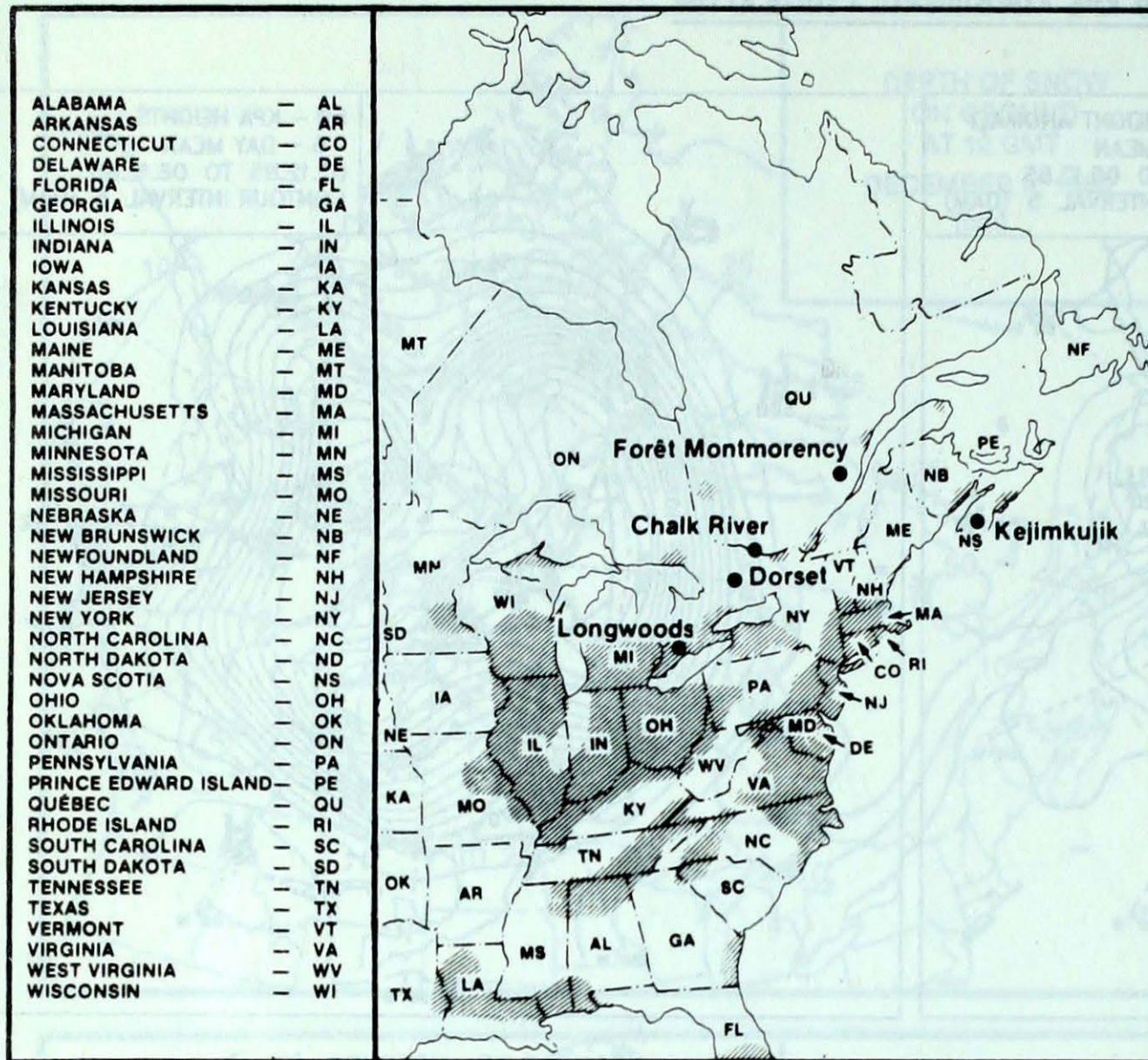
MEAN 50 KPa HEIGHTS (dam)  
December 2 to December 6, 1985





# ACID RAIN

## 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  $\text{SO}_2$  and  $\text{NO}_x$  emissions are greatest. The table below gives the weekly report summarizing the acidity (or pH) of the 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 less than 4.7, while pH readings less than 4.0 are serious. For more information concerning the acid rain report, see Climatic Perspectives, Vol. 5 No. 50 p. 6.

DECEMBER 1 to DECEMBER 7, 1985

SITE	DAY	pH	AMOUNT	AIR PATH TO SITE
Longwoods	1	4.4	8(s)	West Virginia, Kentucky, Ohio
	2	5.8	4(s)	Wisconsin, Michigan
	3	5.4	1(s)	Northern Ontario, Lake Huron
	5	4.5	6(s)	Indiana, Ohio
Dorset	1	4.3	19(m)	Pennsylvania, New York, Southern Ontario
	2	4.6	1(s)	Kentucky, West Virginia, Ohio, Southern Ontario
	5	3.4	1(m)	Michigan, Indiana, Ohio, Southern Ontario
	7	3.6	1(r)	Michigan, Lake Huron, Southern Ontario
Chalk River	1	4.2	3(s)	Pennsylvania, New York, Eastern Ontario
	5	4.1	1(s)	Southern Ontario
	6	4.3	2(s)	Central Ontario, Northwestern Quebec
	7	4.1	5(s)	Michigan, Central Ontario, Southern Ontario
Montmorency	1	6.4	38(r)	Atlantic Ocean, New England, Southern Quebec
	2	5.6	9(m)	New England, Southern and Central Quebec
Kejimikujik	1	5.0	10(r)	Atlantic Ocean
	2	4.6	15(m)	Atlantic Ocean

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



## TEMPERATURE, PRECIPITATION AND MAXIMUM WIND DATA FOR THE WEEK ENDING 0600 GMT DECEMBER 10, 1985

STATION	TEMPERATURE				PRECIP.		WIND MX		STATION	TEMPERATURE				PRECIP.		WIND MX	
	AV	DP	MX	MN	TP	SOG	DIR	SPD		AV	DP	MX	MN	TP	SOG	DIR	SPD
<b>BRITISH COLUMBIA</b>									THE PAS	-14	*	-8	-26	7	15		*
CAPE ST. JAMES	6	1	9	1	33	0	130	111	THOMPSON	-20	1	-11	-34	3	11		*
CRANBROOK	-6P	1P	2P	-17P	4	9		*	WINNIPEG INT'L	-14	-2	-4	-29	3	12	180	43
FORT NELSON	-19	1	-10	-27	1	26		*	<b>ONTARIO</b>								
FORT ST. JOHN	-11	2	3	-29	0	5	240	52	ATIKOKAN	-13	-1	-6	-35	4	31		*
KAMLOOPS	-3	-1	4	-14	8	6	090	44	BIG TROUT LAKE	-16	*	-8	-27	4	16		*
PENTICTON	-2P	-2P	4P	-9P	6P	5	180	46	GORE BAY	-4	-1	2	-13	5	20	030	37
PORT HARDY	4P	1P	7P	0P	60	0	120	74	KAPUSKASING	-12	-1	-2	-22	5	54		*
PRINCE GEORGE	-7	*	6	-21	1	1	190	56	KENORA	-12	0	-6	-29	8	41		*
PRINCE RUPERT	3	1	9	-7	40	0	140	48	KINGSTON	-3P	0P	2P	-11P	0	0		X
REVELSTOKE	-4	0	1	-12	25	26	350	46	LONDON	-2	-1	2	-8	7	3	230	39
SMITHERS	-10	-3	2	-22	3	8	190	35	MOOSONEE	-15	-4	-7	-27	2	55	260	35
VANCOUVER INT'L	4	0	9	-4	36	0	290	33	NORTH BAY	-7	-1	-1	-20	6	12		*
VICTORIA INT'L	4P	0P	9P	-2P	12	0	170	35	OTTAWA INT'L	-5	0	1	-13	6	6		X
WILLIAMS LAKE	-5	*	5	-21	2	9		X	PETAWAWA	-6	2	1	-17	10	6		X
<b>YUKON TERRITORY</b>									PICKLE LAKE	-14	1	-8	-26	4	38		*
DAWSON	-25	*	-11	-43	2	22		*	RED LAKE	-13	2	-6	-28	10	37		*
MAYO	-16	9	2	-43	2	20		X	SUDBURY	-8	0	0	-22	8	25		X
SHINGLE POINT A	-23P	1P	-12P	-32P	1	12		*	THUNDER BAY	-9	-1	-2	-24	3	32		*
WATSON LAKE	-25	-2	-16	-36	1	17		*	TIMMINS	-10	1	-2	-23	13	70		*
WHITEHORSE	-12	5	1	-38	3	20	180	67	TORONTO INT'L	-1	0	2	-8	2	0	030	54
<b>NORTHWEST TERRITORIES</b>									TRENTON	-3	-1	3	-13	2	0		X
ALERT	-25	4	-9	-33	1	17	230	74	WIARTON	-2	0	2	-11	1	0		X
BAKER LAKE	-24	3	-15	-30	2	14	310	54	WINDSOR	-1P	-1P	3	-7P	6	0		*
CAMBRIDGE BAY	-26	3	-17	-34	1	12	290	56	<b>QUEBEC</b>								
CAPE DYER	-7	14	-1	-17	38	28	300	94	BAGOTVILLE	-12	-4	-5	-21	5	4	280	81
CLYDE	-17	7	-8	-26	4	16	320	56	BLANC SABLON	-8P	*	4P	-16P	17P	0		X
COPPERMINE	-21	*	-11	-31	1	14	100	33	INUKJUAQ	-13	2	-6	-19	9	33	290	50
CORAL HARBOUR	-16	9	-4	-29	5	35		X	KUJUUJUAQ	-11	5	0	-22	16	45	300	69
EUREKA	-29	5	-19	-39	2	13		*	KUJUUJARAPIK	-12	0	-4	-20	6	22	280	43
FORT SMITH	-16	5	-7	-32	5	32		X	MANIWAKI	-7	0	1	-17	8	9	300	54
FROBISHER BAY	-7	13	2	-20	8	17	060	72	MONT JOLI	-8	-3	-2	-13	5	0	300	104
HALL BEACH	-12P	15P	0	-24P	3	16	320	57	MONTREAL INT'L	-5	-1	1	-11	5	4	270	69
INUVIK	-23	4	-12	-33	2	16		X	NATASHQUAN	-9	-2	4	-19	2	0	300	76
MOULD BAY	-27	3	-18	-38	3	30		X	NITCHEQUON	-16	-1	-6	-23	*	43	330	65
NORMAN WELLS	-22	5	-14	-36	2	14		X	QUEBEC	-8	-2	-1	-14	2	7	280	74
RESOLUTE	-18P	10P	-12P	-23P	2	30	100	57	SCHEFFERVILLE	-13	3	-5	-21	18	32	310	85
SACHS HARBOUR	-24P	2P	-14P	-33P	2P	6		X	SEPT-ILES	-11	-2	0	-21	4	11	320	72
YELLOWKNIFE	-17	6	-8	-27	5	38		*	SHERBROOKE	-9	-2	0	-18	9	12	290	59
<b>ALBERTA</b>									VAL D'OR	-11P	-2P	-3P	-23P	*	41	300	48
CALGARY INT'L	-5	4	9	-20	1	0	350	61	<b>NEW BRUNSWICK</b>								
COLD LAKE	-11	2	-2	-24	1	14	360	41	CHARLO	-8P	-1P	-2P	-14P	3P	4	270	72
CORONATION	-9	3	5	-21	1	2	350	44	CHATHAM	-7	-3	1	-16	0	0	280	81
EDMONTON NAMAQ	-8	4	4	-24	1	6		*	FREDERICTON	-7	-3	0	-15	0	0	290	80
FORT MCMURRAY	-11	5	2	-27	0P	16		X	MONCTON	-7	-4	1	-14	0	0	260	96
HIGH LEVEL	-17	6	-3	-35	1	27		*	SAINT JOHN	-6	-3	0	-12	1	0	300	80
JASPER	-7	2	4	-20	0	17		X	<b>NOVA SCOTIA</b>								
LETHBRIDGE	-3	3	7	-18	1	5	260	72	GREENWOOD	-4	-4	2	-12	3	0	290	98
MEDICINE HAT	-8P	-1P	4P	-20P	0	4		*	SHEARWATER	-3	-4	4	-11	1	0	280	78
PEACE RIVER	-14P	0P	-2P	-29P	1	29		*	SYDNEY	-4	-4	9	-9	9	3	300	63
<b>SASKATCHEWAN</b>									YARMOUTH	-1	-3	4	-6	2	0	300	80
CREE LAKE	-14	9	-3	-33	3	22	350	37	<b>PRINCE EDWARD ISLAND</b>								
ESTEVAN	-9	1	2	-23	1	5	300	48	CHARLOTTETOWN	-6P	-4P	1P	-11P	4	0	260	67
LA RONGE	-13	5	-4	-28	5	4	300	37	SUMMERSIDE	-5	-4	1	-11	1	0	280	104
REGINA	-10	1	-1	-22	3	7	140	54	<b>NEWFOUNDLAND</b>								
SASKATOON	-11	2	0	-22	2	5	350	39	CARTWRIGHT	-9	-2	3	-19	31	31	330	111
SWIFT CURRENT	-11P	-2P	-2P	-18P	0	0		X	CHURCHILL FALLS	-13	4	-4	-23	21	67	310	96
YORKTON	-13	1	-2	-25	1	10	140	44	GANDER INT'L	-5	-2	8	-10	15	1	260	83
<b>MANITOBA</b>									GOOSE	-9	1	4	-18	6	16	320	63
BRANDON	-14	-1	-3	-31	2	13	140	43	PORT-AUX-BASQUES	-3	-3	8	-7	15	13	280	102
CHURCHILL	-22	-2	-12	-29	5	9		*	ST JOHN'S	-3	-3	8	-7	21	1	290	106
LYNN LAKE	-18	5	-9	-34	7	16		*	ST LAWRENCE	-2P	-2P	10P	-8P	16P	1		X

AV = weekly mean temperature in degree C  
 MX = weekly extreme maximum temperature in degree C  
 MN = weekly extreme minimum temperature in degree C  
 TP = weekly total precipitation in mm  
 DP = departure of mean temperature from normal in degree C  
 SOG = snow depth on ground in cm, last day of the period

DIR = direction of maximum wind speed (deg. from true north)  
 SPD = maximum wind speed in km/hour (10 minute mean)

X = not observed

P = value based on less than 7 days

\* = missing