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# Climatic Perspectives

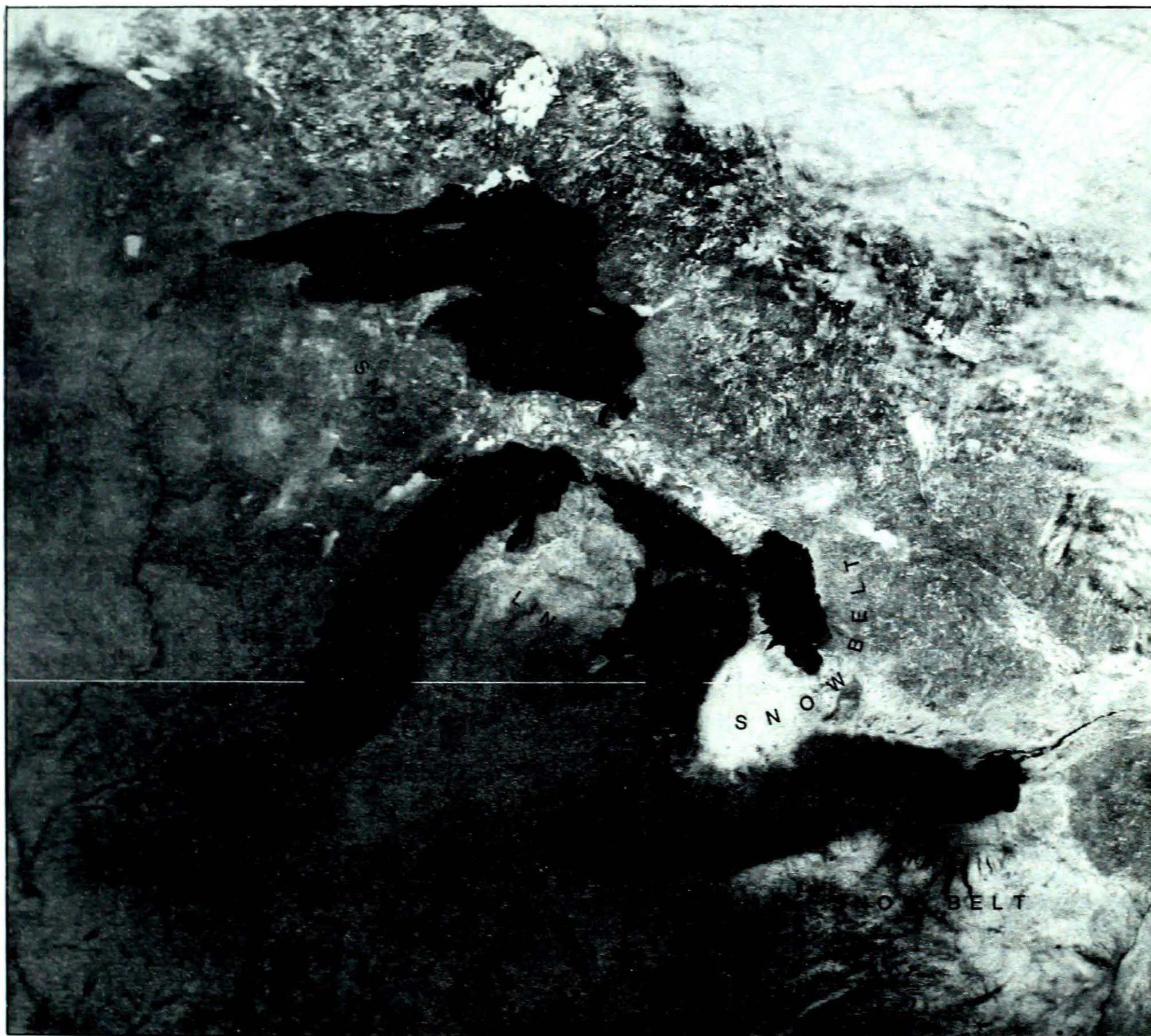
MONTHLY SUPPLEMENT INCLUDED

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A weekly review of the Canadian climate

March 3 to 9, 1987

Vol.9 No.10

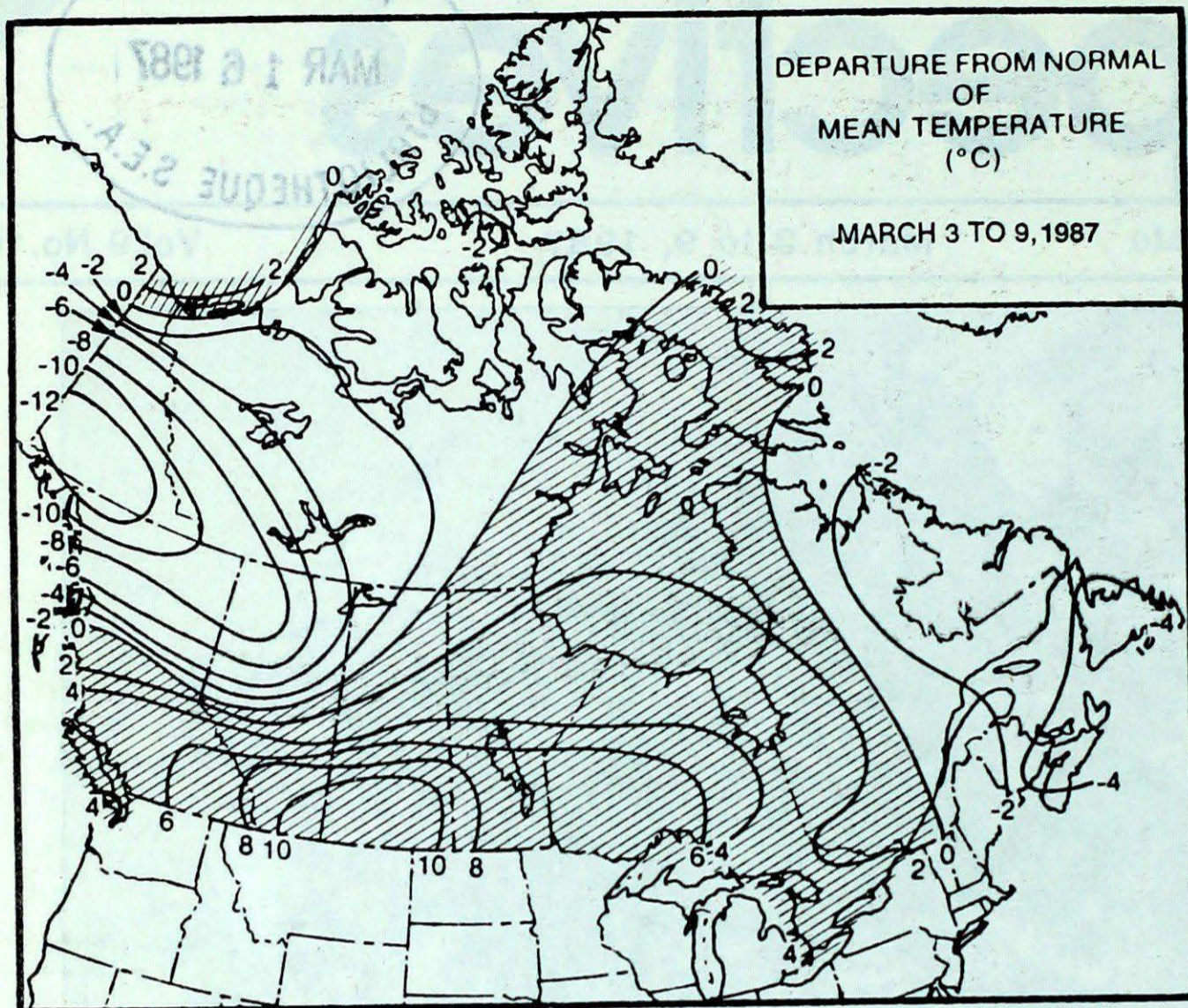


Although sunny, record warm weather was experienced over the weekend, a substantial covering of snow still exists in the snowbelt near Georgian Bay. The snow line has gradually retreated northwards, stretching northwestwards across the Great Lakes. A NOAA 9 photo, March 7, 1987.

- **Arctic blast follows record warmth over the Prairies and central Canada**
- **Heavy snowfall and avalanche hazard in the western mountains**

Canada 

# TEMPERATURE



## ACROSS THE COUNTRY...

### Yukon and Northwest Territories

In the Yukon, minimum temperatures plunged to the minus forties at the beginning of the period. During the middle of the week, an area of high pressure produced clear and calm conditions, allowing the thermometer at Olgilvie to register  $-50^{\circ}\text{C}$  on the 6th. Temperatures moderated over the weekend, with some snow in the Mackenzie Valley. Although skies were sunny, strong winds caused dangerous wind chills along the southern Arctic coast. A blizzard halted all outdoor activity on Baffin Island during the latter part of the period.

### British Columbia

An Arctic cold front pushed southward, giving Fort Nelson its coldest temperature of the season,  $-35.6^{\circ}\text{C}$  on the 3rd. A shallow Arctic outflow reached the north coast, resulting in mixed precipitation. Freezing rain, snow and avalanches closed the highways between Terrace and Stewart and Prince George and Fort St. John. The southern third of the province had numerous daily high temperature records broken up to the 6th. All early flowering trees and plants are blooming on the south coast.

### Prairies

Record breaking warm weather covered the southern prairies during the first half of the week, while at the same time a bitterly cold Arctic high pressure cell pressed slowly southward from the Territories. On March 4, the temperature spread between minimum readings in the northern districts and maximum temperatures in the south was as great as  $45^{\circ}\text{C}$ . For four consecutive days the mercury climbed to the mid to upper teens throughout the southern prairies, and soared to the low twenties in the southwest. Snowfalls, in the order of a few centimetres, were quite general with the passage of a cold front towards the weekend. As much as 60 cm of snow fell in the Rockies this week. Because of the very mild weather,

## WEEKLY TEMPERATURE EXTREME (C)

	MAXIMUM	MINIMUM
<b>BRITISH COLUMBIA</b>	KAMLOOPS 18	DEASE LAKE -38
<b>YUKON TERRITORY</b>	WHITEHORSE -3	OGILVIE -50
<b>NORTHWEST TERRITORIES</b>	FORT SIMPSON -5	EUREKA -48
<b>ALBERTA</b>	MEDICINE HAT 23	HIGH LEVEL -36
<b>SASKATCHEWAN</b>	ESTEVAN 21	URANIUM CITY -37
<b>MANITOBA</b>	PORTAGE LA PRAIRIE 12	THOMPSON -32
<b>ONTARIO</b>	WINDSOR 22	PICKLE LAKE -28
<b>QUEBEC</b>	MANIWAKI 14	KUUJJUAQ -36
<b>NEW BRUNSWICK</b>	FREDERICTON 6	SAINT JOHN -27
<b>NOVA SCOTIA</b>	SHELburnE 9	GREENWOOD -26
<b>PRINCE EDWARD ISLAND</b>	EAST POINT 4	CHARLOTTETOWN -19
<b>NEWFOUNDLAND</b>	ST ANTHONY 3	WABUSH LAKE -32

## ACROSS THE NATION

WARMEST MEAN TEMPERATURE	10	ABBOTSFORD	BC
COOLEST MEAN TEMPERATURE	-40	EUREKA	NWT

the avalanche hazard was extreme at Banff and Jasper. A number of highways were closed in the mountains because of avalanche control measure.

### Ontario

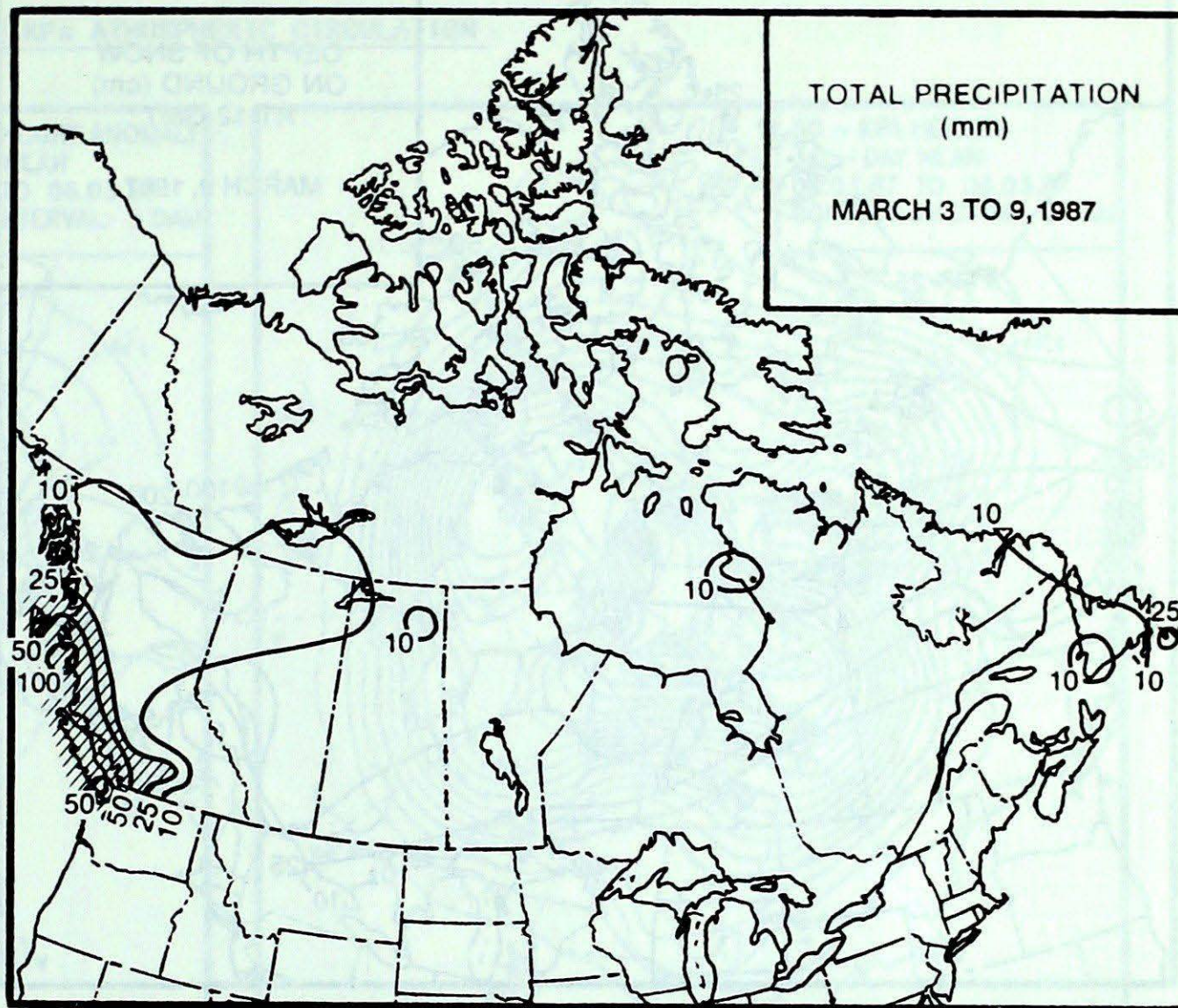
High pressure, both at the surface and aloft, produced sunny spring-like conditions most of the week. Over the weekend temperatures soared to the record low twenties in the southwest. Toronto City's temperature of 17.9°C on the 7th was the highest temperature ever recorded so early in the year since records began in 1840. Daily maximum temperature records were also broken in northwestern Ontario on March 6 and 7, with readings climbing to the low to mid-teens. Rapidly melting snow swelled creeks and rivers. A five year old boy was swept to his death by flood waters near Toronto. An ice jam backed up the Credit River, flooding the small community of Churchville west of Toronto. A sharp cold front moved across the province on March 8, and by the next day temperatures everywhere were suppressed well below the freezing mark.

### Quebec

On the morning of March 5, a combination of thick fog and below freezing temperatures resulted in icy road surfaces of many of Montreal's bridges crossing the St. Lawrence. The phenomena caused by condensation freezing on the cold pavement caused numerous early morning traffic accidents and tie-ups, injuring more than a dozen people. There was a pronounced warming trend in southern Quebec over the weekend, with the mercury in the southwest reaching the record teens. Elsewhere, temperatures remained on the cold side; heaviest snowfalls were in the north and east.

### Maritimes

After last week's storm cloudy skies and periods of snow lingered over the Maritimes. Sydney received 10 cm of fresh snow on the 3rd. The first half of the period was very cold, with minimums dropping to the minus twenties. At Greenwood, a minimum reading of -26°C on the 4th was within 1°C of a new March record.



### HEAVIEST WEEKLY PRECIPITATION (mm)

BRITISH COLUMBIA	MCINNES ISLAND	108
YUKON TERRITORY	WATSON LAKE	10
NORTHWEST TERRITORIES	FORT SMITH	13
ALBERTA	HIGH LEVEL	27
SASKATCHEWAN	COLLINS BAY	13
MANITOBA	CHURCHILL	7
ONTARIO	GERALDTON	8
QUEBEC	INUKJUAK	13
NEW BRUNSWICK	MONCTON	7
NOVA SCOTIA	SAINT JOHN	
PRINCE EDWARD ISLAND	SYDNEY	22
NEWFOUNDLAND	CHARLOTTETOWN	8
	ST LAWRENCE	41

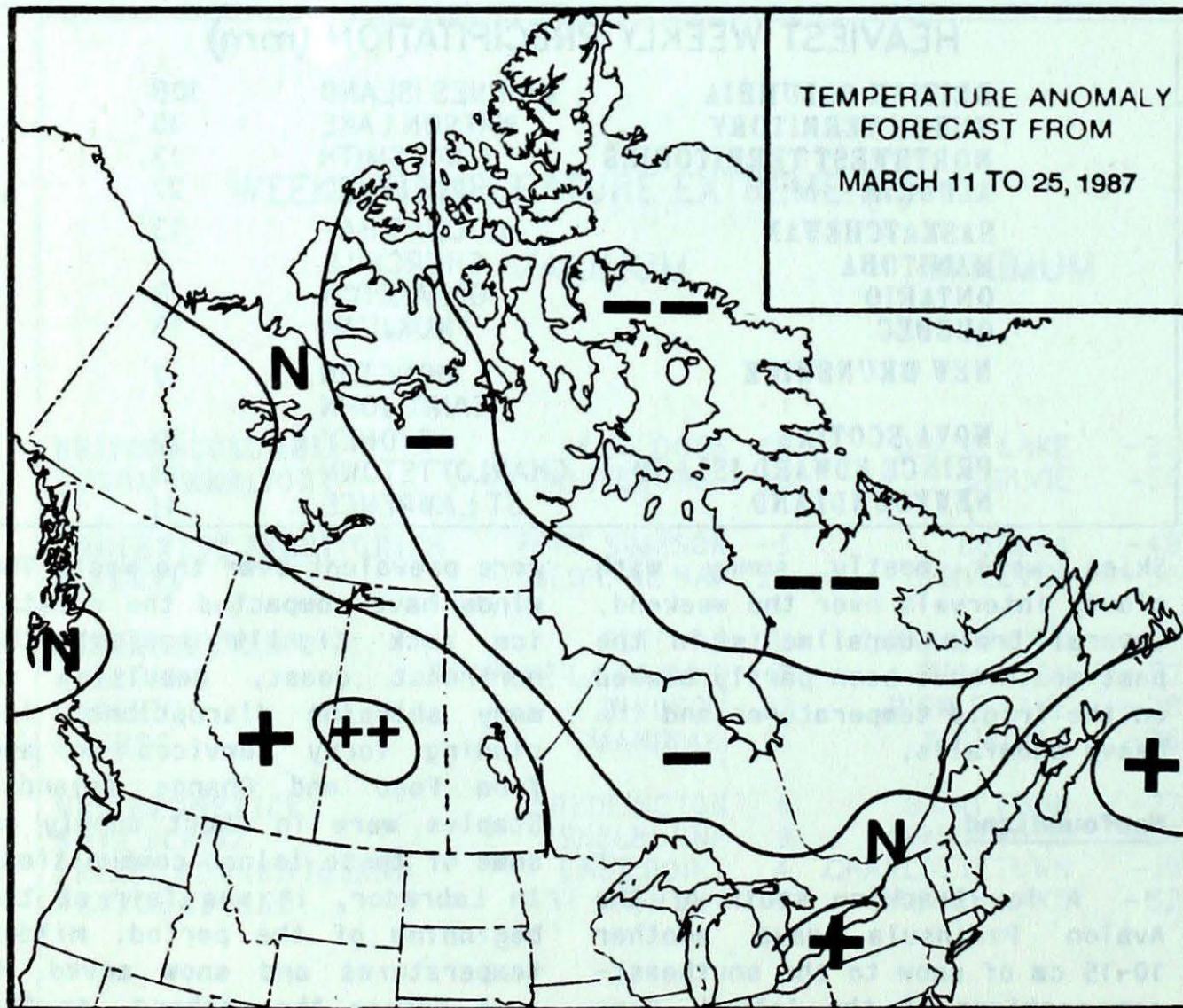
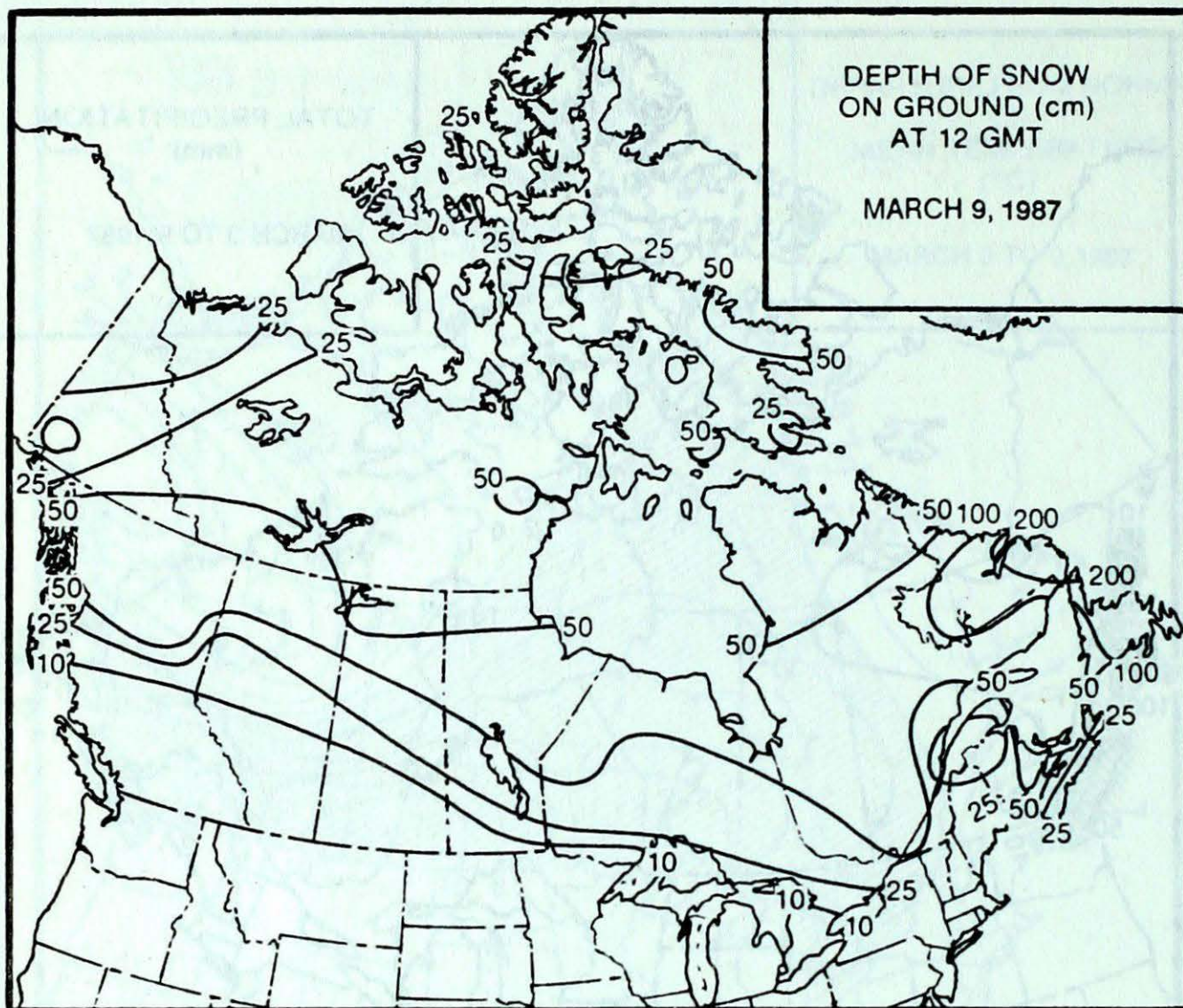
Skies were mostly sunny with cloudy intervals over the weekend. Several train derailments in the past month have been partly blamed on the frigid temperatures and the heavy snowfalls.

### Newfoundland

A low tracking south of the Avalon Peninsula gave another 10-15 cm of snow to the southeastern portions of the Island. Some roads were once again closed on the Avalon and Burin Peninsulas. Onshore winds during the latter part of the period gave frequent flurries to the eastern sections of the Island, while sunshine was

more prevalent over the west. The winds have compacted the coastal ice pack tightly against the northeast coast, resulting in many shipping disruptions, including ferry services to and from Fogo and Change Islands. Staples were in short supply on some of these island communities. In Labrador, it was fair at the beginning of the period. Milder temperatures and snow moved in just before the weekend. As the weather system moved off strong winds and flurries prevailed. Nain was buffeted by winds gusting to 141 km/h on Saturday, which caused heavy blowing snow and whiteouts.

# 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.

### CLIMATIC PERSPECTIVES VOLUME 9

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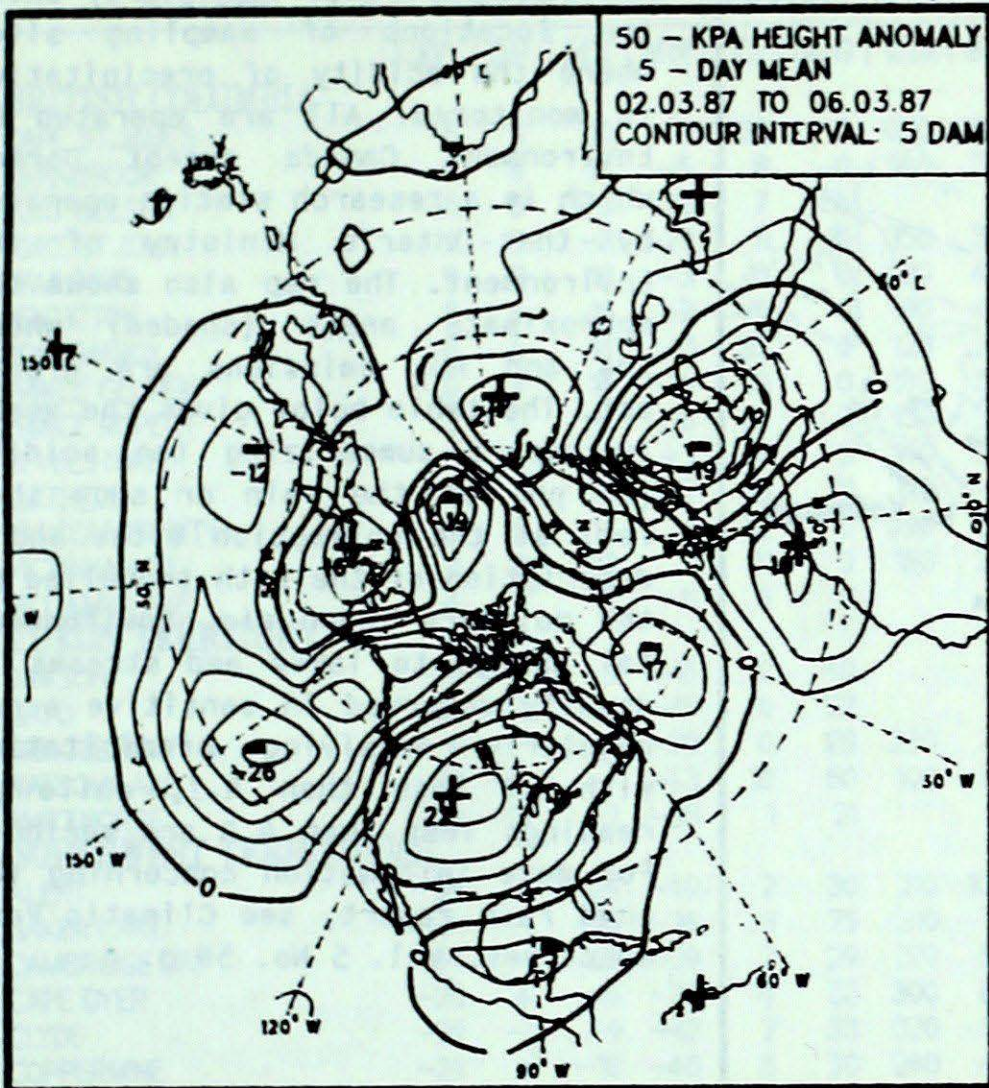
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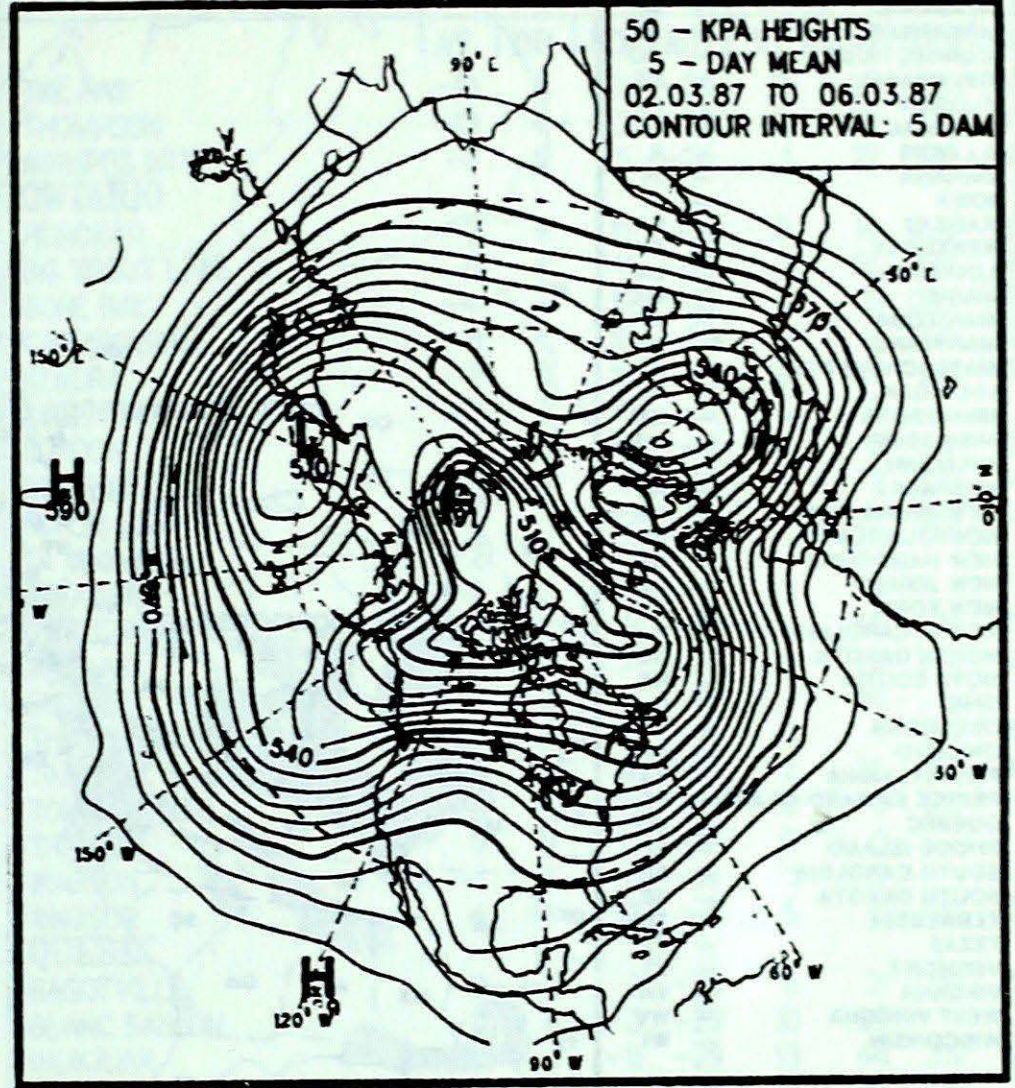
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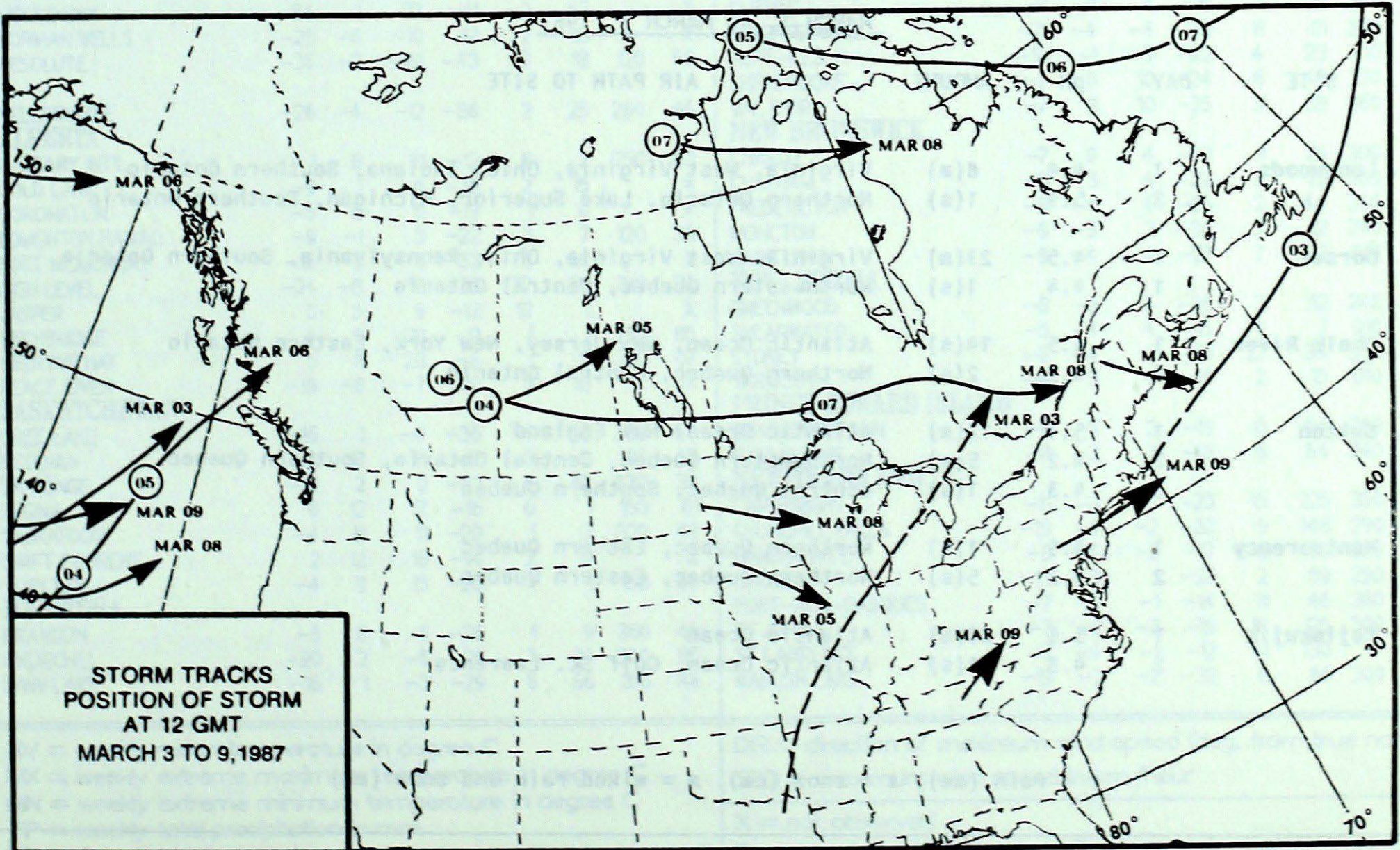
**50 KPa ATMOSPHERIC CIRCULATION**



MEAN 50 KPa HEIGHT ANOMALY (dam)  
March 2 to 6, 1987

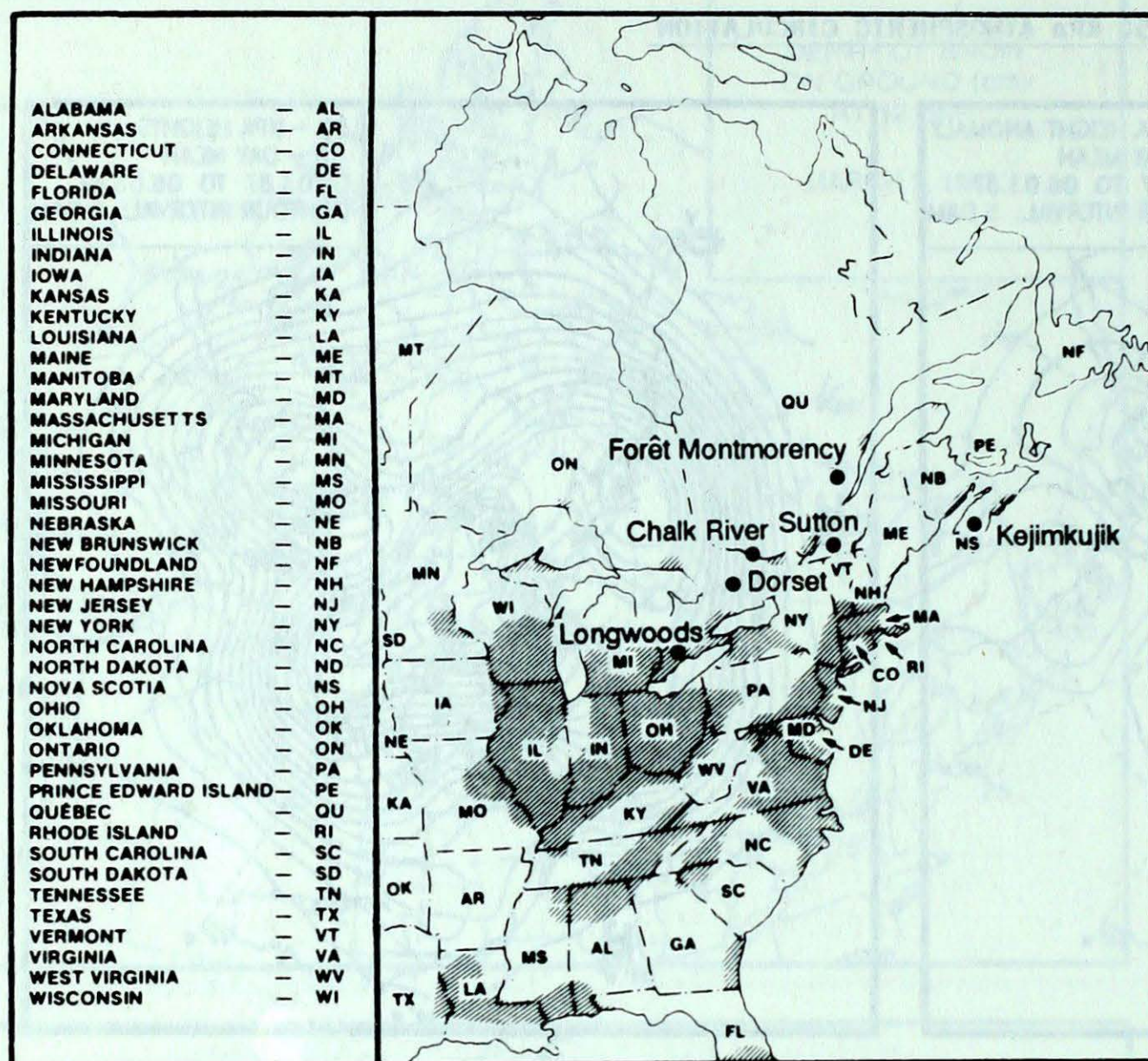


MEAN 50 KPa HEIGHTS (dam)  
March 2 to 6, 1987



# 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.

MARCH 1, TO MARCH 7, 1987

SITE	DAY	pH	AMOUNT	AIR PATH TO SITE
Longwoods	1	4.4	8(m)	Virginia, West Virginia, Ohio, Indiana, Southern Ontario
	3	5.9	1(s)	Northern Ontario, Lake Superior, Michigan, Southern Ontario
Dorset	1	4.5	23(m)	Virginia, West Virginia, Ohio, Pennsylvania, Southern Ontario
	1	4.4	1(s)	Northwestern Quebec, Central Ontario
Chalk River	1	4.5	14(s)	Atlantic Ocean, New Jersey, New York, Eastern Ontario
	2	4.2	2(s)	Northern Quebec, Central Ontario
Sutton	1	5.1	13(m)	Atlantic Ocean, New England
	2	4.2	5(s)	Northwestern Quebec, Central Ontario, Southern Quebec
	3	4.3	1(s)	Central Quebec, Southern Quebec
Montmorency	1	4.9	1(s)	Northern Quebec, Eastern Quebec
	2	5.2	5(s)	Northern Quebec, Eastern Quebec
Kejimikujik	1	5.6	28(m)	Atlantic Ocean
	2	4.8	11(s)	Atlantic Ocean, Gulf St. Lawrence

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

## TEMPERATURE, PRECIPITATION AND MAXIMUM WIND DATA FOR THE WEEK ENDING 0600 GMT MARCH 10, 1987

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	-10	*	5	-29	2	25	130	54
CAPE ST. JAMES	6	1	10	1	32	0	050	102	THOMPSON	-13	4	2	-32	3	56	320	48
CRANBROOK	5	6	14	-5	8	0	140	35	WINNIPEG INT'L	-7	5	5	-26	1	27	180	54
FORT NELSON	-21	-8	-5	-36	7	55		*	<b>ONTARIO</b>								
FORT ST. JOHN	-19	-10	-8	-29	11	16	350	33	ATIKOKAN	-2	9	15	-21	0	14	030	35
KAMLOOPS	9	8	18	-3	0	0	090	46	BIG TROUT LAKE	-11	*	11	-26	2	65	330	59
PENTICTON	8	6	16	-3	4	0	190	67	GORE BAY	-4	3	12	-18	0	8	030	78
PORT HARDY	8	5	14	-1	82	0	120	61	KAPUSKASING	-8	4	10	-26	1	17	220	50
PRINCE GEORGE	0	*	14	-14	15	0	180	57	KENORA	-3	8	10	-21	0	17	210	56
PRINCE RUPERT	3	0	14	-8	62	0	150	50	KINGSTON	-2	2	10	-11	0	0		X
REVELSTOKE	3	4	11	-3	46	5	140	35	LONDON	1	3	19	-12	5	0	310	56
SMITHERS	-2	1	10	-12	15	11	170	41	MOOSONEE	-12	3	6	-28	4	72	320	43
VANCOUVER INT'L	9	5	14	1	52	0	090	37	NORTH BAY	-6	1	10	-22	1	25	020	54
VICTORIA INT'L	8	3	13	1	31	0	150	39	OTTAWA INT'L	-2	3	12	-16	1	42		X
WILLIAMS LAKE	4	*	13	-11	6	0		X	PETAWAWA	-4	2	16	-19	1	30		X
<b>YUKON TERRITORY</b>									PICKLE LAKE	-7	7	10	-28	1	66	220	43
DAWSON	-29	*	-9	-45	0	40		*	RED LAKE	-5	7	11	-27	0	43	340	48
MAYO	-29	-13	-10	-45	0	27		X	SUDBURY	-6	2	11	-22	1	56		X
SHINGLE POINT A	*		-9P	-39	0	28	230	74	THUNDER BAY	-3	6	16	-18	0	1	010	46
WATSON LAKE	-28	-13	-7	-43	10	60	100	52	TIMMINS	-7	4	14	-26	2	35	360	43
WHITEHORSE	-24	-13	-3	-38	1	21		*	TORONTO INT'L	1	4	18	-12	0	0	010	57
<b>NORTHWEST TERRITORIES</b>									TRENTON	0	2	12	-14	0	0		X
ALERT	-34	0	-24	-40	2	30	210	104	WIARTON	-1	3	11	-14	1	2		X
BAKER LAKE	-31	-1	-26	-36	8	75	310	72	WINDSOR	4	4	22	-8	5	0	010	72
CAMBRIDGE BAY	-34	-1	-27	-39	3	29	270	50	<b>QUEBEC</b>								
CAPE DYER	-20	4	-10	-30	4	52	300	85	BAGOTVILLE	-9	-1	3	-23	6	21	250	57
CLYDE	-29	-1	-9	-42	2	33	320	57	BLANC SABLON	-11	*	-3	-23	10	85		X
COPPERMINE	-29	*	-18	-40	6	30	240	46	INUKJUAQ	-22	1	-8	-29	13	46	310	74
CORAL HARBOUR	-26	1	-16	-33	4	31		X	KUWJUAQ	-22	-3	-8	-36	8	37	320	91
EUREKA	-40	-1	-30	-48	2	17	140	72	KUWJUARAPIK	-18	2	0	-28	5	42	190	59
FORT SMITH	-22	-4	-10	-31	13	75		X	MANIWAKI	-3	4	14	-20	3	39	350	43
IQUALUIT	-25	-1	-17	-34	1	16	330	87	MONT JOLI	-9	-2	3	-20	1	8	220	78
HALL BEACH	-31	0	-14	-38	1	0	310	76	MONTREAL INT'L	-4	1	9	-18	1	30	240	57
INUVIK	-27	-1	-10	-44	1	42		X	NATASHQUAN	-10	-3	0	-22	6	35	260	78
MOULD BAY	-34	1	-27	-41	2	43		X	QUEBEC	-7	0	4	-19	1	61	260	67
NORMAN WELLS	-28	-6	-10	-42	2	18		X	SCHIEFFERVILLE	-21	-4	-4	-33	8	61	330	80
RESOLUTE	-36	-2	-20	-43	3	18	120	56	SEPT-ILES	-10	-1	5	-22	4	23	310	78
YELLOWKNIFE	-26	-4	-12	-36	3	25	280	46	SHERBROOKE	-6	0	10	-24	6	43	270	41
<b>ALBERTA</b>									VAL D'OR	-7	3	10	-25	3	38	360	52
CALGARY INT'L	1	8	21	-12	5	2	250	63	<b>NEW BRUNSWICK</b>								
COLD LAKE	-9	1	6	-26	2	15		*	CHARLO	-7	0	4	-22	1	24	300	61
CORONATION	-5	6	11	-19	1	0		*	CHATHAM	-8	-3	4	-22	2	72	260	50
EDMONTON NAMAQ	-9	-1	3	-22	3	7	120	33	FREDERICTON	-8	-4	6	-25	2	44	340	44
FORT MCMURRAY	-16	-3	-3	-32	5	36		X	MONCTON	-9	-5	3	-24	7	42	240	67
HIGH LEVEL	-24	-8	-10	-36	27	88	010	35	SAINT JOHN	-9	-4	4	-27	7	57	010	48
JASPER	0	5	9	-13	12	1		X	<b>NOVA SCOTIA</b>								
LETHBRIDGE	4	9	20	-9	1	1	260	85	GREENWOOD	-8	-6	4	-26	3	52	240	80
MEDICINE HAT	5	11	23	-6	1	0	220	67	SHEARWATER	-5	-4	4	-15	7	7	010	61
PEACE RIVER	-19	-8	-7	-30	6	18		*	SYDNEY	-8	-4	3	-15	22	34	330	69
<b>SASKATCHEWAN</b>									YARMOUTH	-4	-3	7	-15	2	15	010	57
CREE LAKE	-16	1	-4	-36	4	55	330	44	<b>PRINCE EDWARD ISLAND</b>								
ESTEVAN	2	12	21	-17	0	0	100	43	CHARLOTTETOWN	-9	-5	3	-19	8	54	260	48
LA RONGE	-12	2	0	-32	4	67	330	39	SUMMERSIDE	-8	-3	3	-16	6	64	240	65
REGINA	0	12	17	-16	0	1	150	61	<b>NEWFOUNDLAND</b>								
SASKATOON	-4	8	11	-20	1	2	320	43	CARTWRIGHT	-11	-2	-1	-23	15	225	350	83
SWIFT CURRENT	2	12	18	-14	2	0		X	CHURCHILL FALLS	-19	-4	-2	-32	9	148	290	93
YORKTON	-4	9	15	-20	1	1	150	56	GANDER INT'L	-8	-4	-2	-17	8	70	290	76
<b>MANITOBA</b>									GOOSE	-13	-3	1	-27	2	89	290	80
BRANDON	-5	8	6	-26	1	9	360	48	PORT-AUX-BASQUES	-7	-4	-1	-14	11	46	260	87
CHURCHILL	-20	2	-5	-29	7	24	300	85	ST JOHN'S	-7	-5	-2	-15	18	125	300	83
LYNN LAKE	-16	1	-3	-29	6	66	310	46	ST LAWRENCE	-7	-4	-1	-12	41	130		X
									WABUSH LAKE	-19	-3	-2	-32	8	66	300	87

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

X = not observed  
 P = value based on less than 7 days  
 \* = missing

TEMPERATURE, PRECIPITATION AND MAXIMUM WIND DATA FOR THE WEEK ENDING 0000 GMT, MARCH 1967

STATION	LAT	LONG	ELEVATION (FT)	TEMPERATURE		WIND DIR	WIND SPD (MPH)	PRECIP (IN)	SFC SNOW (IN)
				AV	MX				
BRANDON	49.1	100.0	1000	2	10	10	10	0	0
CHARLTON	49.9	100.0	1000	2	10	10	10	0	0
REGINA	50.4	100.0	1000	2	10	10	10	0	0
SASKATON	50.2	100.0	1000	2	10	10	10	0	0
WINDYBAY	50.0	100.0	1000	2	10	10	10	0	0
YORKTON	50.3	100.0	1000	2	10	10	10	0	0
ALBERTA									
EDMONTON	53.5	110.0	1000	2	10	10	10	0	0
CALGARY	51.0	115.0	1000	2	10	10	10	0	0
NEW BRUNSWICK									
HALIFAX	44.6	63.6	1000	2	10	10	10	0	0
QUEBEC	46.8	71.2	1000	2	10	10	10	0	0
OTTAWA	45.3	75.7	1000	2	10	10	10	0	0
ONTARIO									
TORONTO	43.7	79.4	1000	2	10	10	10	0	0
BRITISH COLUMBIA									
VICTORIA	48.4	123.3	1000	2	10	10	10	0	0
VANCOUVER	49.2	123.1	1000	2	10	10	10	0	0

AV = weekly mean temperature in degrees C  
 MX = weekly extreme maximum temperature in degrees C  
 MN = weekly extreme minimum temperature in degrees C  
 TP = weekly total precipitation in mm  
 DP = direction of mean temperature from normal in degrees C  
 P = value based on less than 7 days  
 X = not observed  
 DIR = direction of maximum wind speed (deg from true north)  
 SPD = maximum wind speed in mph