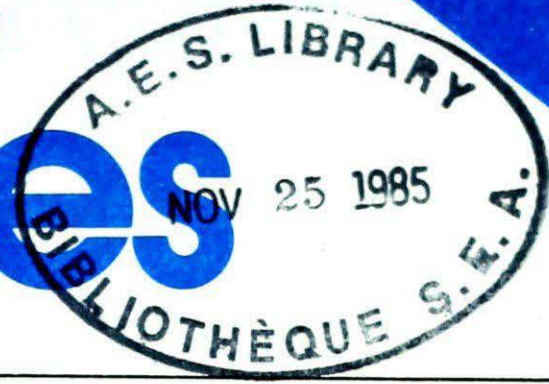


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CLIMATIC PERSPECTIVES

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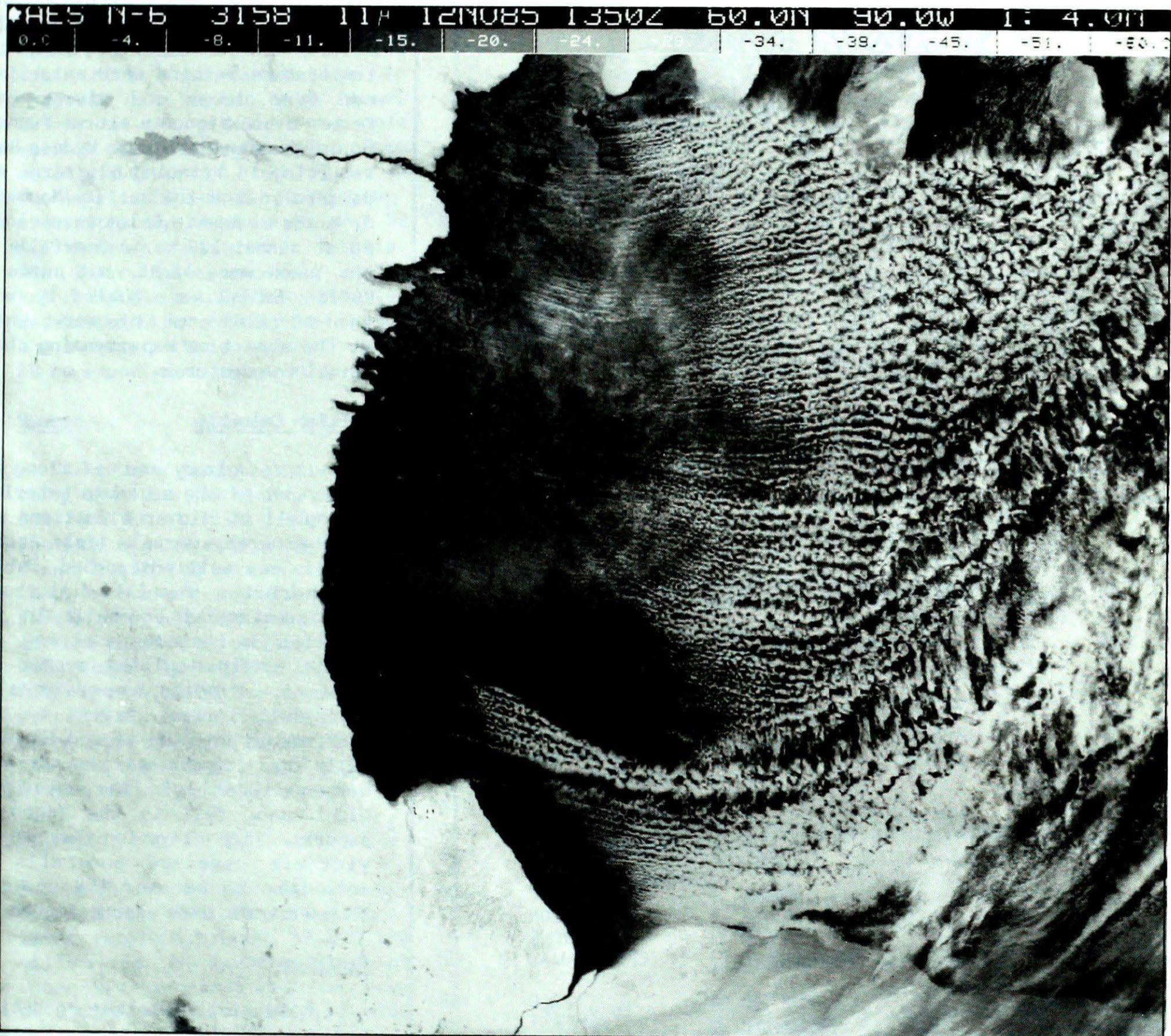
Climatic Perspectives



A weekly review of Canadian Climate

November 5 to 11, 1985

Vol.7 No.44

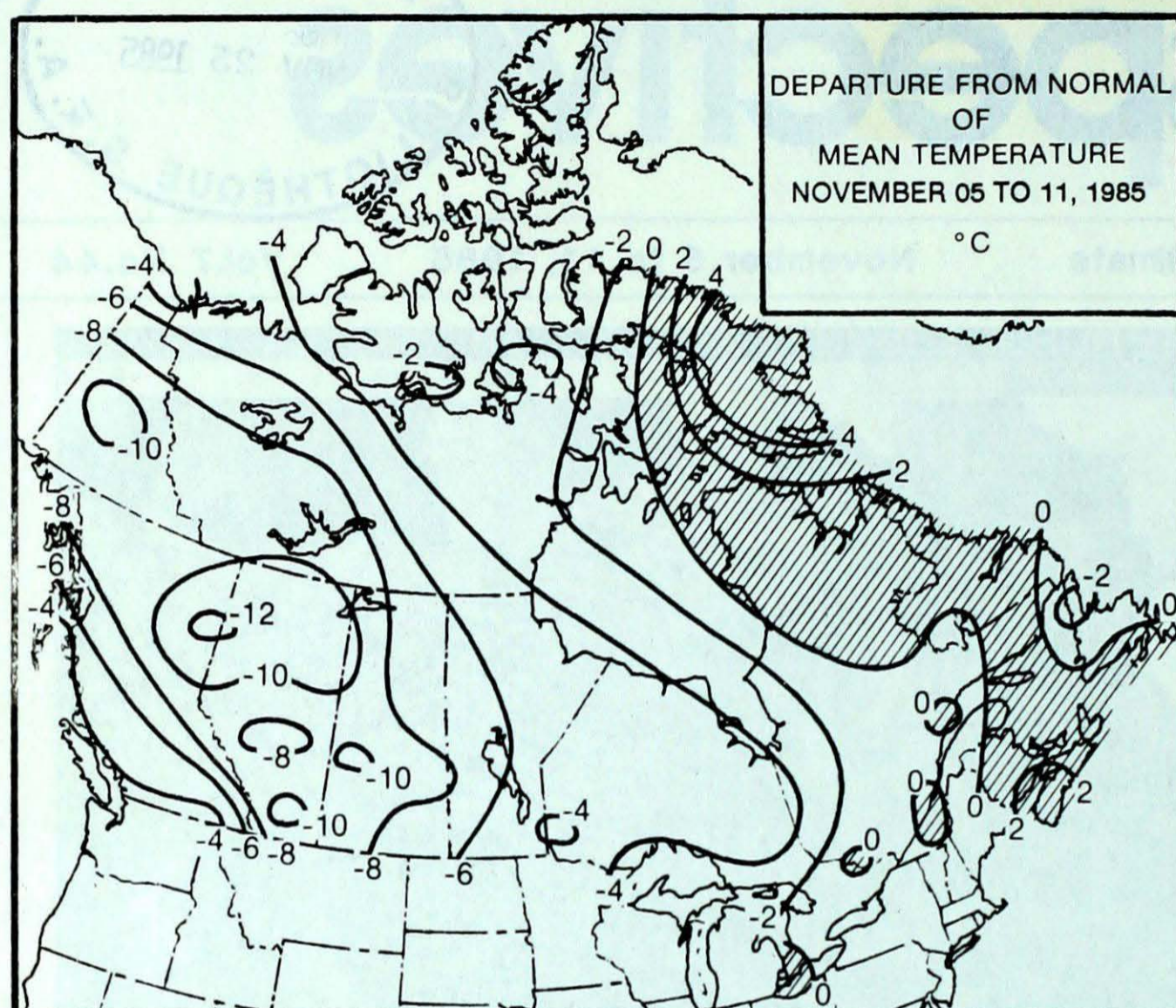


This NOAA 6 infrared satellite picture of November 12, 1985 shows the effects of a cold Arctic airmass sweeping across the partially frozen waters of Hudson Bay.

- **Record breaking cold in Western Canada**
-substantial snowfalls in many areas
- **First snow in Southern Ontario and Southern Quebec**
- **Much needed rain falls in the Maritimes**

Canada 

TEMPERATURE



ACROSS THE COUNTRY...

Yukon and Northwest Territories

Most of northern Canada was caught in the icy grip of winter. With the exception of Baffin Island, mean temperatures were well below normal, and numerous new daily low temperature records were established. Many lakes and rivers have frozen over. Vigorous storms funneled northeastwards across Hudson Bay, resulting in blinding blizzards and dangerous wind chills. On November 6, gusts at Rankin Inlet were clocked at almost 120 km/h. Snowfalls in the Yukon were light, but parts of Baffin Island were buried by more than 40 cm of snow this week, while at the same time experiencing above normal temperatures.

British Columbia

It was cloudy and wet along the coast and in the southern interior. Snow fell at higher elevations and in the north, where a cold Arctic airmass was well entrenched. During the period a frontal disturbance gave substantial snowfalls in the interior. In its wake, a strong dry Arctic outflow spilled across the province, dropping temperatures to well below normal values by the weekend. On November 11 and 12, many daily low temperature records were broken throughout the province. Light snow fell in the Vancouver suburbs. High-elevation suburbs of Victoria received snowfalls of more than 20 cm over the weekend; thunderstorms were also reported.

Prairies

Cold wintry weather conditions arrived in the Prairies. Temperatures declined steadily through the week as an Arctic high pressure cell built southeastwards. Many low temperature records were broken over the weekend, especially in Alberta, when readings plunged to the minus twenties in the south and minus thirties in the north. Sunshine was scarce. Disturbances deposited snow most days, and all districts are now reporting a snow cover of at least several centimetres.

WEEKLY TEMPERATURE EXTREME (C)

	MAXIMUM	MINIMUM
BRITISH COLUMBIA	VICTORIA INT'L 11	PUNTZI MOUNTAIN -33
YUKON TERRITORY	KOMAKUK BEACH A 1	MAYO -40
NORTHWEST TERRITORIES	CAPE DORSET A 0	EUREKA -40
ALBERTA	RED DEER 5	HIGH LEVEL -34
SASKATCHEWAN	REGINA 7	URANIUM CITY -30
MANITOBA	PORTAGE LA PRAIRIE 11	THOMPSON -27
ONTARIO	WINDSOR 12	ARMSTRONG -27
QUEBEC	SHERBROOKE 12	CHIBOUGAMAU -21
NEW BRUNSWICK	MONCTON 14	CHARLO -14
NOVA SCOTIA	SHELburnE 15	AMHERST -6
PRINCE EDWARD ISLAND	SUMMERSIDE 13	SUMMERSIDE -4
NEWFOUNDLAND	ARGENTIA 12	WABUSH LAKE -20

ACROSS THE NATION

WARMEST MEAN TEMPERATURE	10	SABLE ISLAND	NS
COOLEST MEAN TEMPERATURE	-33	EUREKA	NWT

Ontario

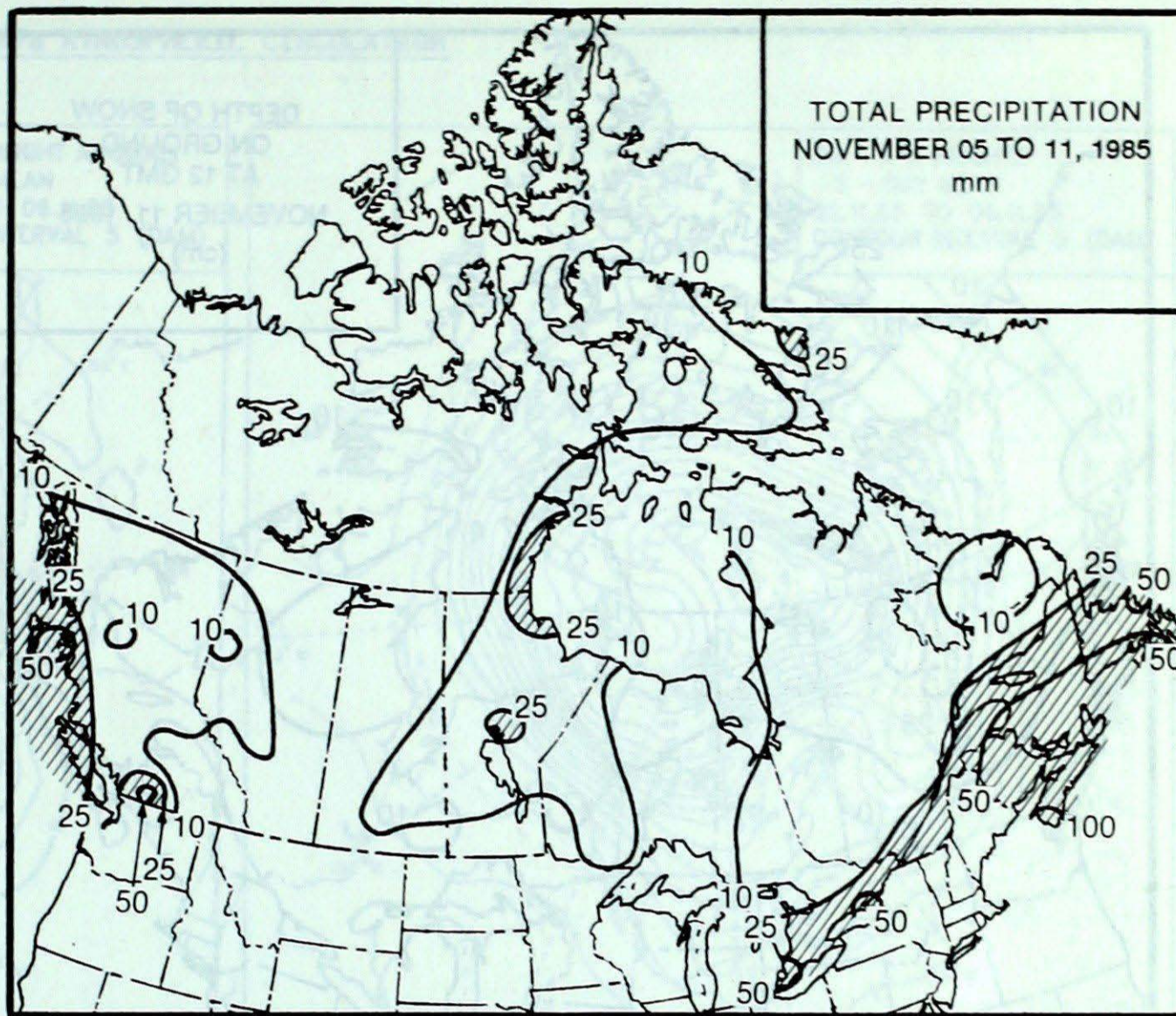
In the north the weather was changeable and cold. Many long standing daily low temperature records were broken over the weekend. At Armstrong the mercury plunged to -27°C on October 11. It was an inclement week across the southern half of the province, with drizzle and rain reported on most days. Mild temperatures early in the week gave way to below normal values by the weekend as a cold airmass sagged southwards. Once again a disturbance tracking out of the American mid-west brought heavy precipitation, between 30 and 50 millimetres, to southern Ontario. The lower lakes received mostly rain, but more northern counties had their first major snowfall of the season, with amounts of up to 20 cm reported in ski country.

Quebec

The early part of the week was rainy and mild. Southwestern Quebec received its first significant snowfall of the season on November 9 and 10. In the wake of this system, Arctic air invaded the province, and temperatures over the weekend dropped to well below normal values. On November 10 and 11, fourteen new daily low temperature records were set. On November 8, a plane went down in a snowstorm in the Némiscau district of central Quebec, injuring three persons.

Atlantic

Much needed rain finally arrived in the Maritimes. Most locations received between 50 and 100 millimetres. On November 6, Saint John, N.B. received 55.2 mm. Temperatures were on the mild side during the first half of the week. High pressure gave fair weather to Newfoundland and Labrador until November 7, when an approaching disturbance brought heavy rain and strong winds to the Island, especially along the south coast. Easterly winds peaked at 95 km/h at Port aux Basques. Weather conditions were changeable in Labrador during the latter part of the week. Many locations reported light snow or rain.

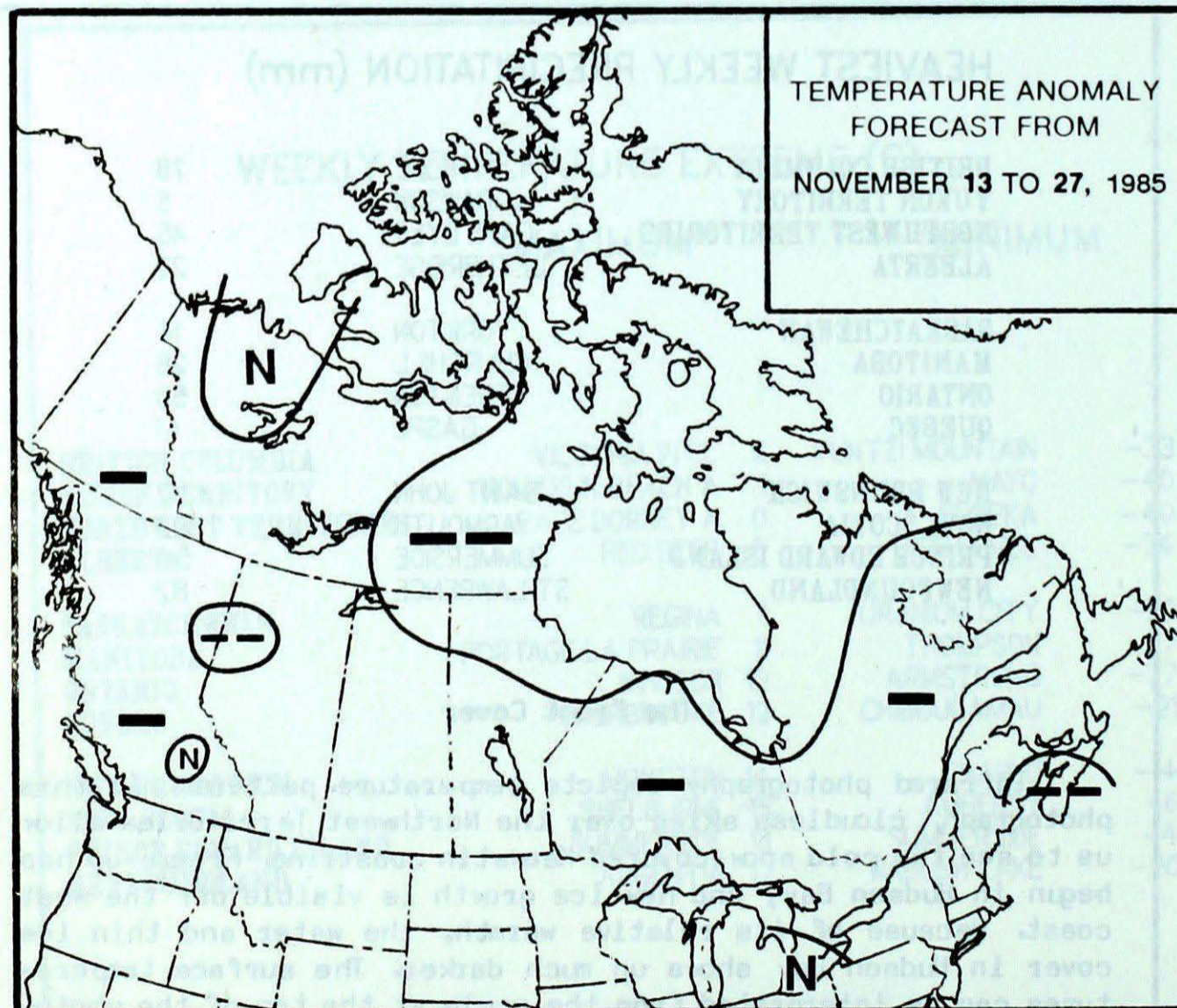
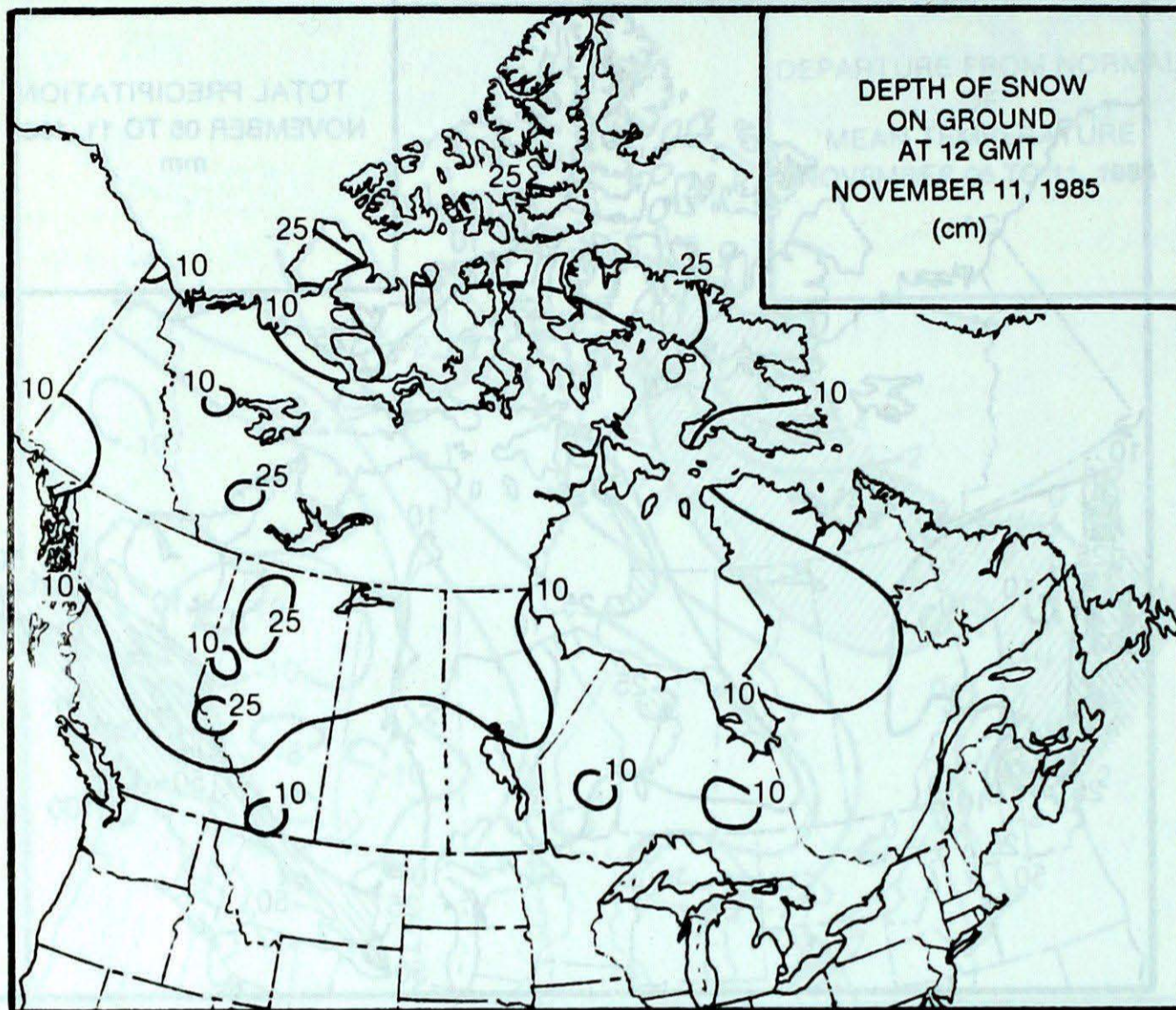
**HEAVIEST WEEKLY PRECIPITATION (mm)**

BRITISH COLUMBIA	HOPE	78
YUKON TERRITORY	DAWSON	5
NORTHWEST TERRITORIES	CAPE DYER	45
ALBERTA	LETHBRIDGE	22
SASKATCHEWAN	YORKTON	14
MANITOBA	CHURCHILL	28
ONTARIO	TRENTON	58
QUEBEC	GASPE	61
NEW BRUNSWICK	SAINT JOHN	82
NOVA SCOTIA	YARMOUTH	102
PRINCE EDWARD ISLAND	SUMMERSIDE	54
NEWFOUNDLAND	ST LAWRENCE	82

The Front Cover

Infrared photography depicts temperature patterns. In this photograph, cloudless skies over the Northwest Territories allow us to see the cold snow-covered Keewatin coastline. Freeze-up has begun in Hudson Bay, and new ice growth is visible off the west coast. Because of its relative warmth, the water and thin ice cover in Hudson Bay shows up much darker. The surface temperatures can be interpreted from the scale at the top of the photograph. The Arctic airmass is unable to pick up very much moisture over the land and ice covered waters, and therefore remains cloud-free. As soon as it reaches the open water areas of central Hudson Bay it quickly becomes saturated and unstable. Cumulus cloud forms and is streamed into parallel lines by the strong winds.

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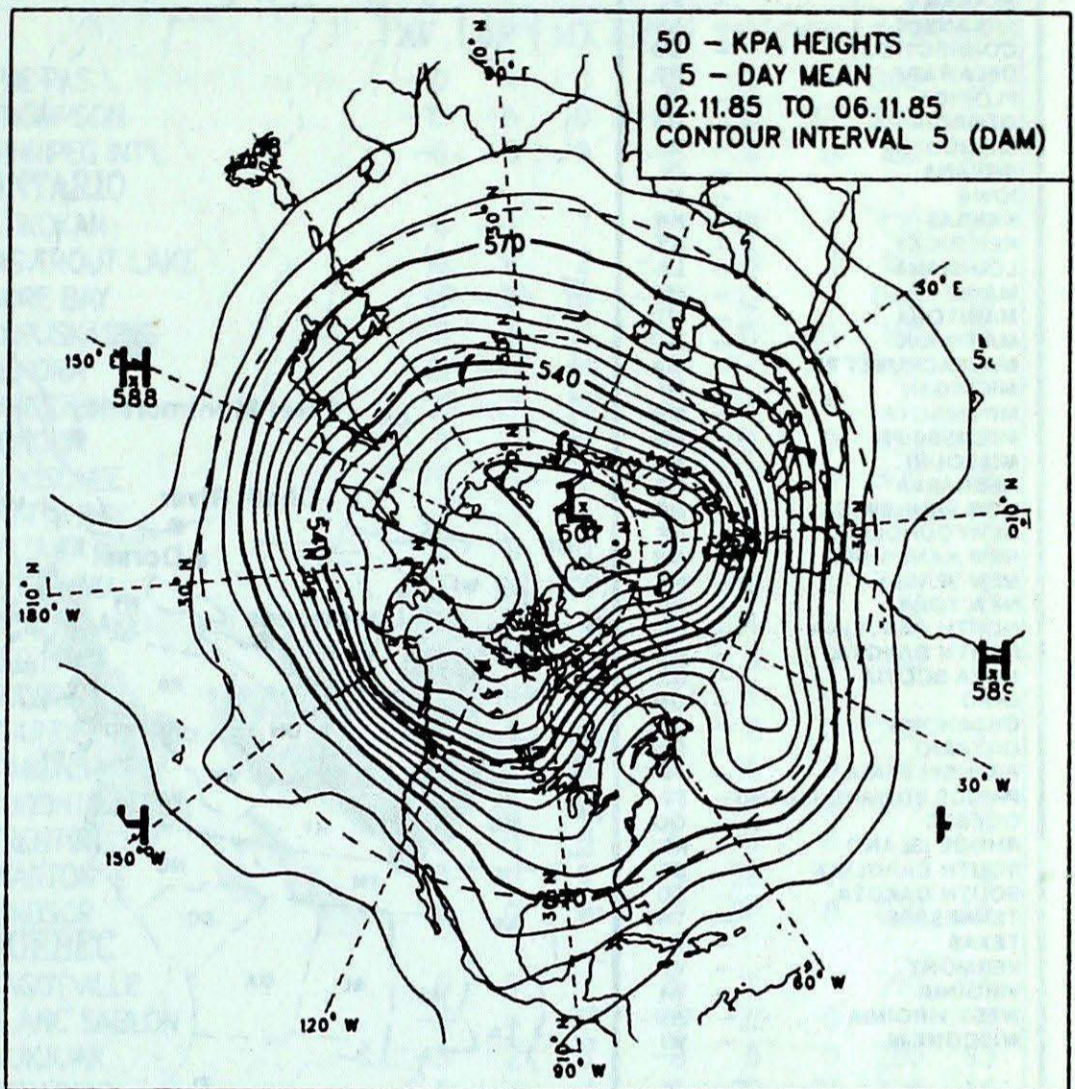
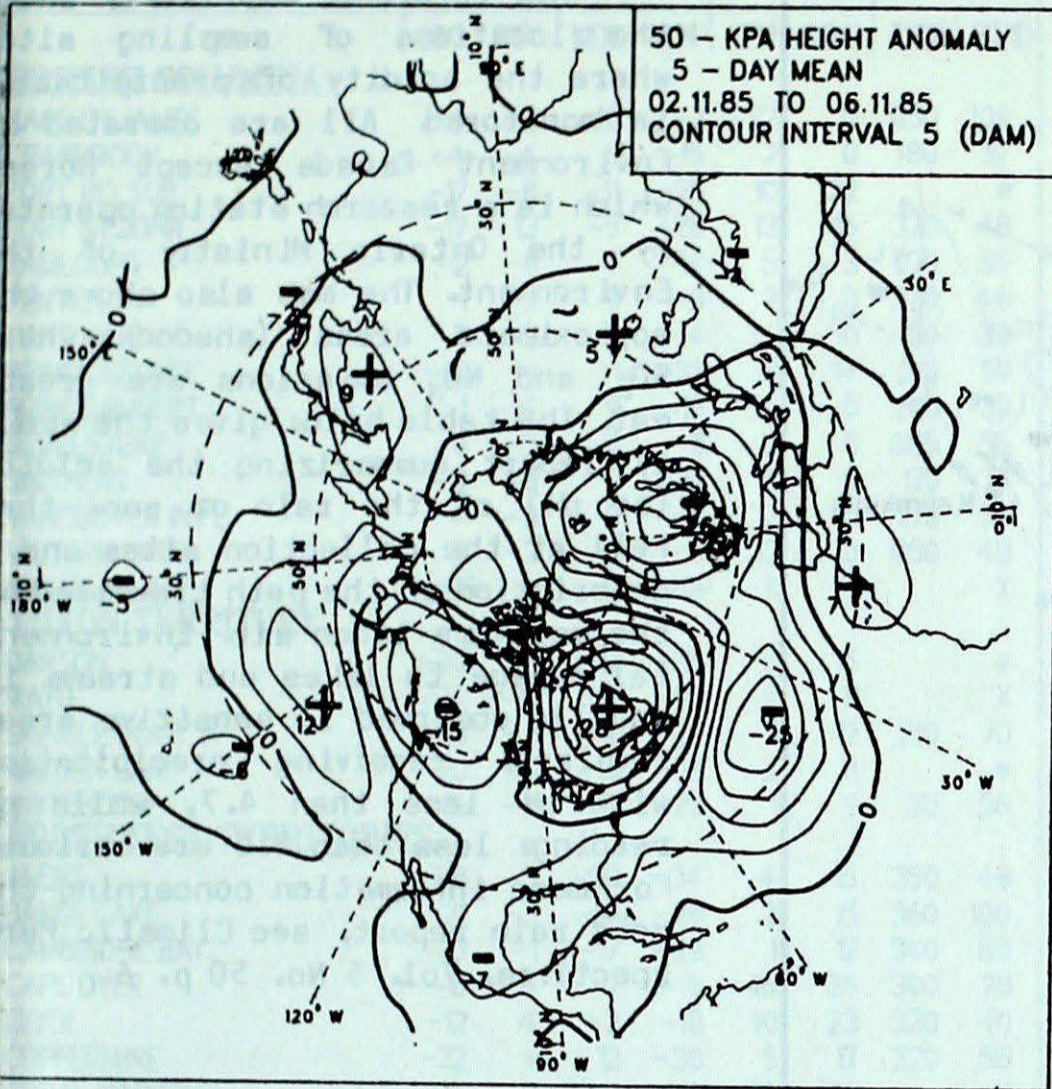
The data shown in this publication are based on unverified reports from approximately 225 Canadian synoptic weather stations. Information concerning climatic impacts is gathered from AES contacts with the public and from the media. Articles do not necessarily reflect the views of the Atmospheric Environment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

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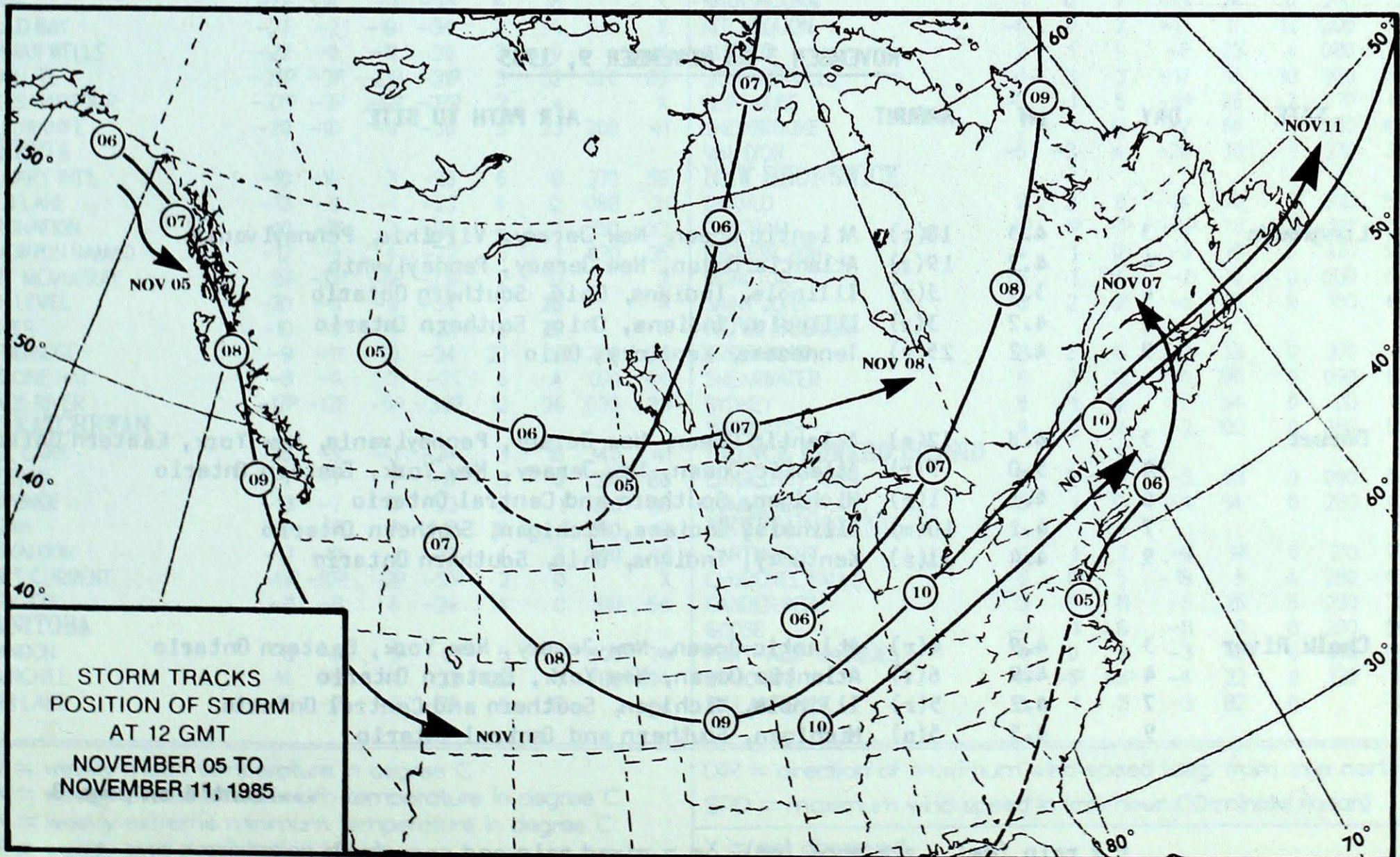
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50 KPa ATMOSPHERIC CIRCULATION



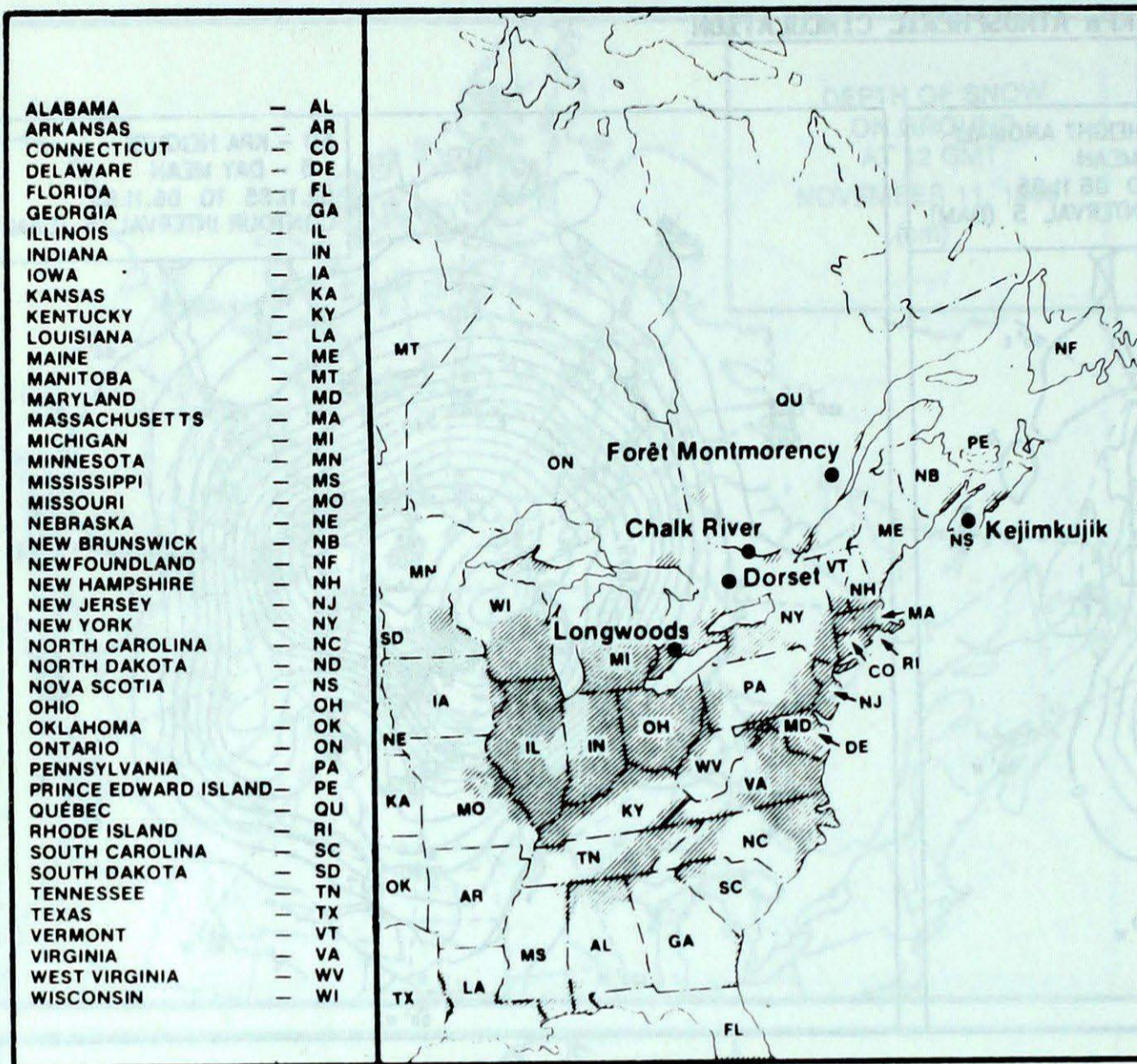
MEAN 50 KPa HEIGHT ANOMALY (dam)
November 2 to November 6, 1985

MEAN 50 KPa HEIGHTS (dam)
November 2 to November 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 SO_2 and 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.

NOVEMBER 3 to NOVEMBER 9, 1985

SITE	DAY	pH	AMOUNT	AIR PATH TO SITE
Longwoods	3	4.3	18(r)	Atlantic Ocean, New Jersey, Virginia, Pennsylvania
	4	4.7	19(r)	Atlantic Ocean, New Jersey, Pennsylvania
	6	3.9	3(r)	Illinois, Indiana, Ohio, Southern Ontario
	7	4.2	3(r)	Illinois, Indiana, Ohio, Southern Ontario
	9	4.2	25(r)	Tennessee, Kentucky, Ohio
Dorset	3	4.8	12(r)	Atlantic Ocean, New Jersey, Pennsylvania, New York, Eastern Ontario
	4	5.0	9(r)	Atlantic Ocean, New Jersey, New York, Eastern Ontario
	6	4.1	1(r)	Michigan, Southern and Central Ontario
	7	4.2	10(m)	Illinois, Indiana, Michigan, Southern Ontario
	9	4.4	11(r)	Kentucky, Indiana, Ohio, Southern Ontario
Chalk River	3	4.9	4(r)	Atlantic Ocean, New Jersey, New York, Eastern Ontario
	4	4.9	6(r)	Atlantic Ocean, New York, Eastern Ontario
	7	4.2	5(r)	Illinois, Michigan, Southern and Central Ontario
	9	4.5	5(s)	Michigan, Southern and Central Ontario

....Cont'd on page 8

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

TEMPERATURE, PRECIPITATION AND MAXIMUM WIND DATA FOR THE WEEK ENDING 0600 GMT NOVEMBER 12, 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
BRITISH COLUMBIA									THE PAS	-10	*	1	-19	12	*	300	61
CAPE ST. JAMES	4	-3	10	-2	22	0	050	109	THOMPSON	-15	-6	0	-27	15	12	280	57
CRANBROOK	-4	-4	6	-15	2	0	180	37	WINNIPEG INT'L	-6	-5	9	-18	6	0	180	67
FORT NELSON	-17	-8	-11	-29	10	22		*	ONTARIO								
FORT ST. JOHN	-17	-13	-5	-28	13	16	320	48	ATIKOKAN	-6	-4	7	-20	18	1	130	39
KAMLOOPS	-2	-6	7	-14	5	3	270	56	BIG TROUT LAKE	-10	*	2	-20	8	1	150	59
PENTICTON	1	-3	9	-9	7	0	320	44	GORE BAY	0P	-3P	8P	-10P	12	1	040	46
PORT HARDY	3	-3	9	-4	34	0	110	33	KAPUSKASING	-8	-6	1	-21	15	13	140	33
PRINCE GEORGE	-10	*	1	-27	18	14	010	59	KENORA	-5P	-4P	9P	-16P	14	4	170	61
PRINCE RUPERT	1	-4	9	-10	56	0	240	39	KINGSTON	3P	-2P	11P	-5P	29	0		X
REVELSTOKE	0	-3	6	-9	8	0	080	56	LONDON	5	1	10	-2	37	0	020	44
SMITHERS	-8	-8	2	-22	5	9	170	37	MOOSONEE	-7	-5	4	-20	3	1	300	39
VANCOUVER INT'L	4	-3	9	-6	22	0	270	39	NORTH BAY	-3	-3	7	-14	14	2	240	43
VICTORIA INT'L	4	-3	11	-6	12	0	050	48	OTTAWA INT'L	3	0	10	-8	22	6		X
WILLIAMS LAKE	-9P	*	4P	-20P	11	21		X	PETAWAWA	2P	0P	10P	-8P	10	4		X
YUKON TERRITORY									PICKLE LAKE	-10	-6	3	-21	14	10	160	54
DAWSON	-20	*	-12	-35	5P	15		*	RED LAKE	-8	-4	9	-18	8	2	150	59
MAYO	-24	-11	-13	-40	4	11		X	SUDBURY	-4P	-4P	4P	-13P	14	0		X
SHINGLE POINT A	-19	-3	-4	-29	1	12	210	70	THUNDER BAY	-4	-4	6	-16	8	0	290	61
WATSON LAKE	-20	-9	-12	-35	2	11		*	TIMMINS	-6P	-5P	0P	-19P	15	9	260	33
WHITEHORSE	-16	-9	-4	-29	1	9	170	56	TORONTO INT'L	4	0	11	-5	34	0	240	59
NORTHWEST TERRITORIES									TRENTON	3	-1	11	-6	58	0		X
ALERT	-28	-3	-20	-34	4	15	350	48	WIARTON	3	-1	9	-5	28	7		X
BAKER LAKE	-21	-3	-14	-28	2	15	360	100	WINDSOR	6	0	12	-3	50	0	020	44
CAMBRIDGE BAY	-23	-1	-17	-29	1	12	340	80	QUEBEC								
CAPE DYER	-8	6	-2	-19	45	35	300	78	BAGOTVILLE	0	0	7	-15	10	1	250	54
CLYDE	-12	4	-2	-18	10	23	320	81	BLANC SABLON	-1P	*	7P	-11P	3P	0		X
COPPERMINE	-22	*	-12	-30	5	17	320	56	INUKJUAK	-3	2	3	-8	5	0	280	93
CORAL HARBOUR	-16	0	-1	-31	22	24		X	KUUJUAQ	-6	1	1	-15	32	27	320	56
EUREKA	-33	-2	-20	-40	2	16	300	57	KUUJUAARAPIK	-3	0	3	-12	22	6	250	70
FORT SMITH	-18	-10	-9	-29	2	15		X	MANIWAKI	1	-1	9	-12	16	2	250	37
FROBISHER BAY	-7	5	0	-14	3	9	140	67	MONT JOLI	1	0	9	-13	18	0	080	57
HALL BEACH	-21	-1	-11	-30	3	14	290	63	MONTREAL INT'L	4	0	10	-6	34	2	040	63
INUVIK	-22	-4	-1	-35	4	18		X	NATASHQUAN	1	0	7	-13	24	0	260	72
MOULD BAY	-27	-2	-19	-34	2	36		X	NITCHEQUON	-6	0	2	-17	17	12	300	52
NORMAN WELLS	-22	-6	-11	-30	3	9		X	QUEBEC	2	1	9	-8	23	*	080	76
RESOLUTE	-26P	-3P	-21P	-31P	2	32	020	89	SCHEFFERVILLE	-6	1	3	-17	16	10	300	67
SACHS HARBOUR	-22P	-3P	-9P	-27P	2	*		X	SEPT-ILES	-2	-1	5	-18	26	2	070	61
YELLOWKNIFE	-20	-10	-11	-30	5	23	200	41	SHERBROOKE	3	1	12	-7	56	2	280	63
ALBERTA									VAL D'OR	-5	-3	4	-20	18	1	270	37
CALGARY INT'L	-10	-10	3	-25	6	8	270	56	NEW BRUNSWICK								
COLD LAKE	-13	-9	-1	-22	4	12	080	31	CHARLO	2	0	8	-14	38	5	280	56
CORONATION	-10	-8	3	-20	4	2	350	33	CHATHAM	4P	1P	11P	-4P	78	2	080	57
EDMONTON NAMAQ	-12	-9	4	-22	5	7	070	35	FREDERICTON	4	1	12	-6	79	0	070	54
FORT MCMURRAY	-15P	-11P	-5P	-23P	2	12		X	MONCTON	5	1	14	-7	74	0	080	63
HIGH LEVEL	-20	-11	-11	-34	2	28		*	SAINT JOHN	6	2	12	-5	82	0	100	67
JASPER	-10	-9	4	-28	2	28		X	NOVA SCOTIA								
LETHBRIDGE	-9	-11	5	-24	22	12	260	78	GREENWOOD	8	3	15	0	58	0	270	61
MEDICINE HAT	-8	-9	2	-21	6	4	070	44	SHEARWATER	8	2	12	0	80	0	090	52
PEACE RIVER	-17P	-12P	-5P	-30P	12	26	030	33	SYDNEY	6	1	12	-2	54	0	110	81
SASKATCHEWAN									YARMOUTH	9	3	15	2	102	0	280	56
CREE LAKE	-16	-9	-3	-24	3	16	340	41	PRINCE EDWARD ISLAND								
ESTEVAN	-7	-7	7	-17	5	0	310	80	CHARLOTTETOWN	6	2	13	-3	53	0	090	56
LA RONGE	-13	-7	0	-23	2	1	310	39	SUMMERSIDE	5	1	13	-4	54	0	280	67
REGINA	-10	-7	7	-17	10	1	310	61	NEWFOUNDLAND								
SASKATOON	-12	-10	1	-23	4	3	300	48	CARTWRIGHT	0	1	7	-9	10	0	210	78
SWIFT CURRENT	-11P	-10P	-2P	-17P	2	0		X	CHURCHILL FALLS	-5	0	5	-18	5	4	280	65
YORKTON	-11	-8	4	-24	14	0	310	54	GANDER INT'L	3	0	11	-5	25	5	280	70
MANITOBA									GOOSE	-1	1	8	-11	8	0	280	56
BRANDON	-8	-6	9	-18	5	0	300	74	PORT-AUX-BASQUES	4	0	9	-3	42	0	070	98
CHURCHILL	-14	-5	-1	-23	28	7	280	104	ST JOHN'S	4P	-1P	10P	-4	22	0	130	70
LYNN LAKE	-15	-7	-2	-27	5	17		*	ST LAWRENCE	5	1	11	-3	82	0		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)

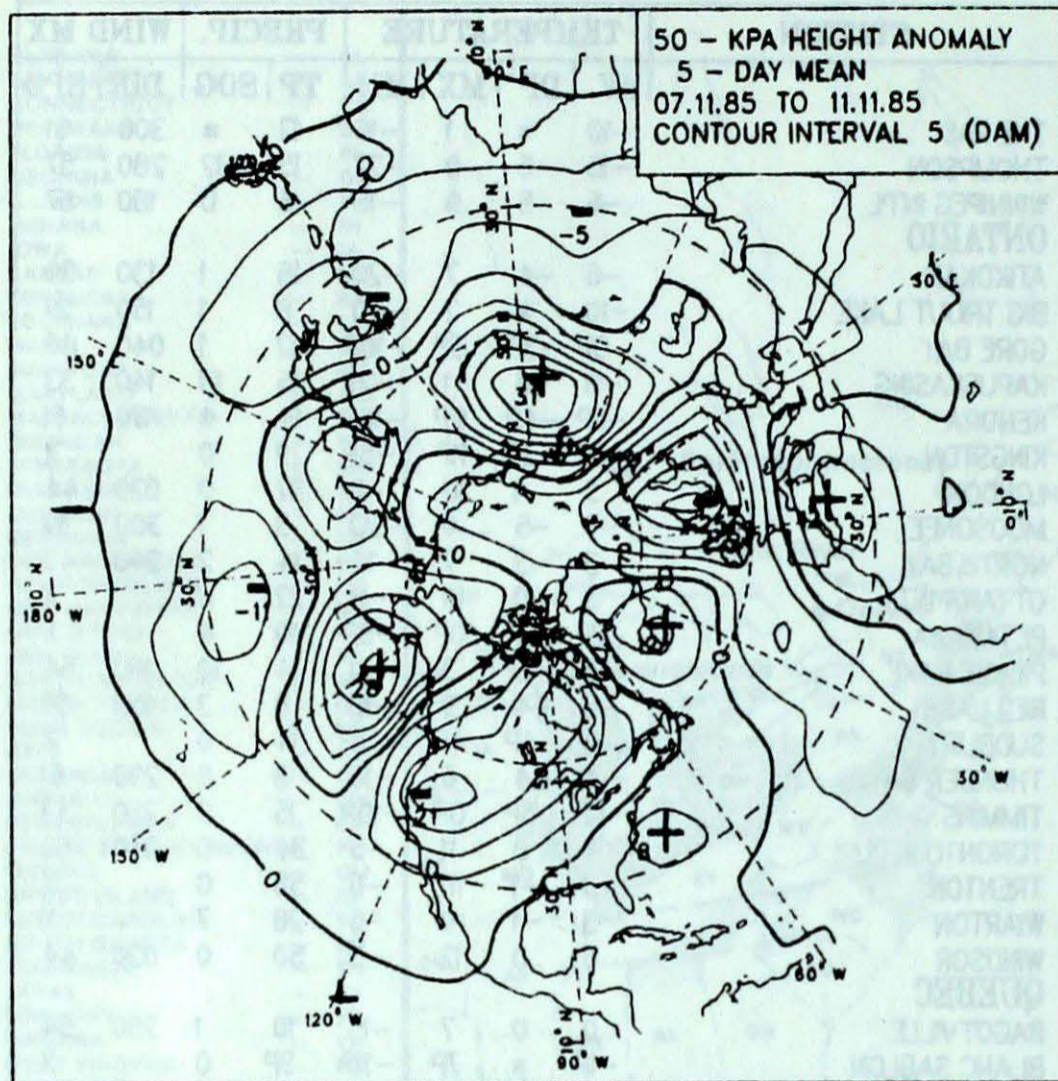
X = not observed

P = value based on less than 7 days

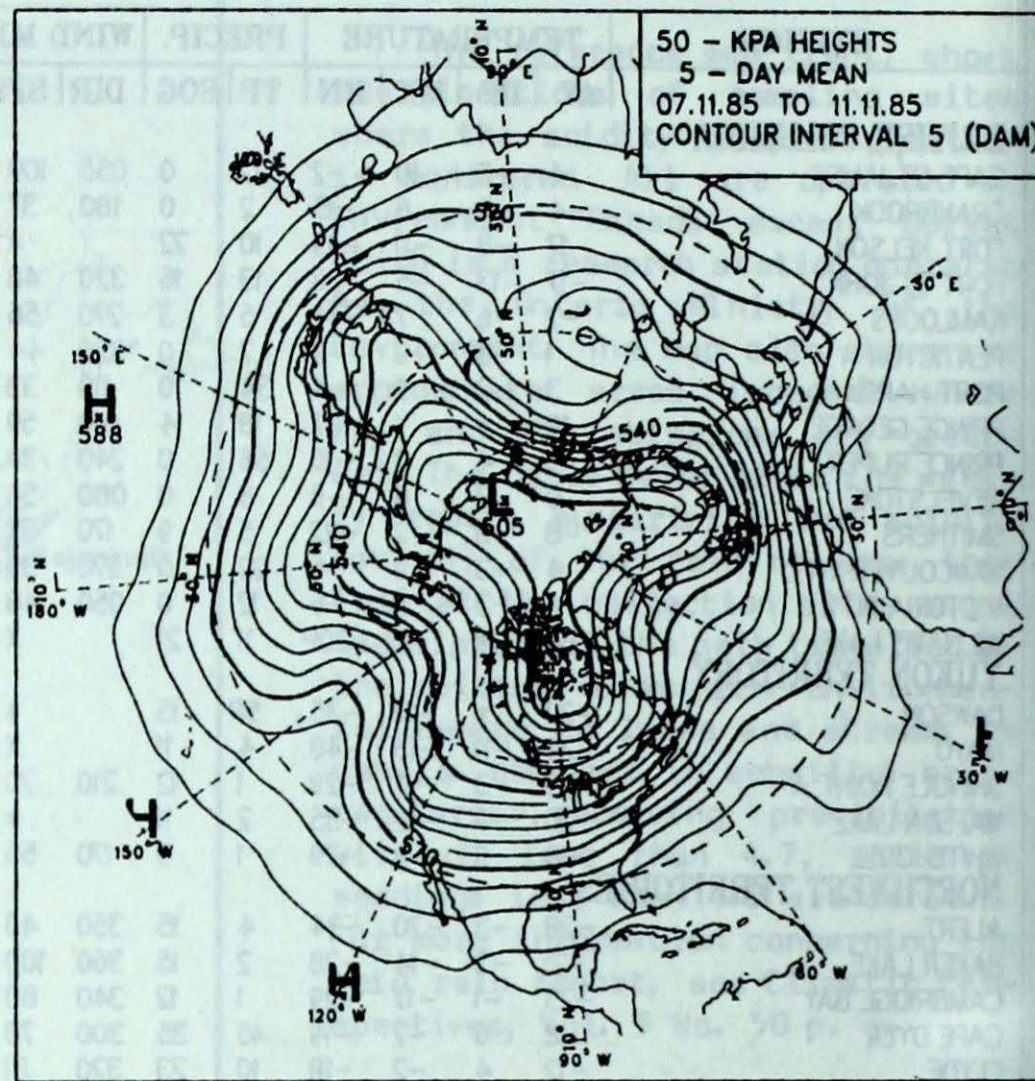
* = missing

CIRCULATION

50 KPa ATMOSPHERIC CIRCULATION



MEAN 50 KPa HEIGHT ANOMALY (dam)
November 7 to November 11, 1985



MEAN 50 KPa HEIGHTS (dam)
November 7 to November 11, 1985

ACID RAIN Cont'd from page 5

SITE	DAY	pH	AMOUNT	AIR PATH TO SITE
Montmorency	5	6.6	3(r)	Atlantic Ocean, Maine
	6	6.1	15(r)	Atlantic Ocean, Maritimes, Maine
	8			DATA NOT AVAILABLE
	9			DATA NOT AVAILABLE
Kejinkujik	5	5.5	48(r)	Atlantic Ocean
	6	4.6	30(r)	Atlantic Ocean
	9	3.9	4(r)	Ohio, Pennsylvania, Atlantic Ocean

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