

Climatic Perspectives

A WEEKLY REVIEW OF CANADIAN CLIMATE

MONTHLY SUPPLEMENT INCLUDED

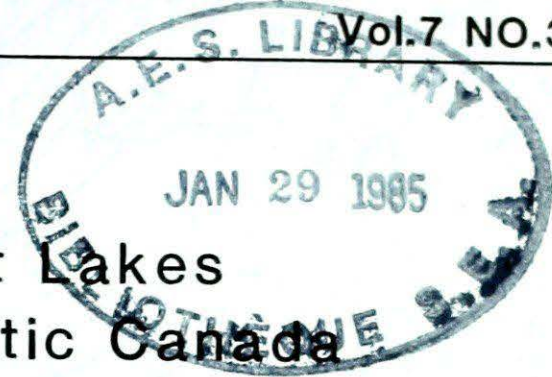
Canadian Climate Centre

For the period January 15 to 21, 1985

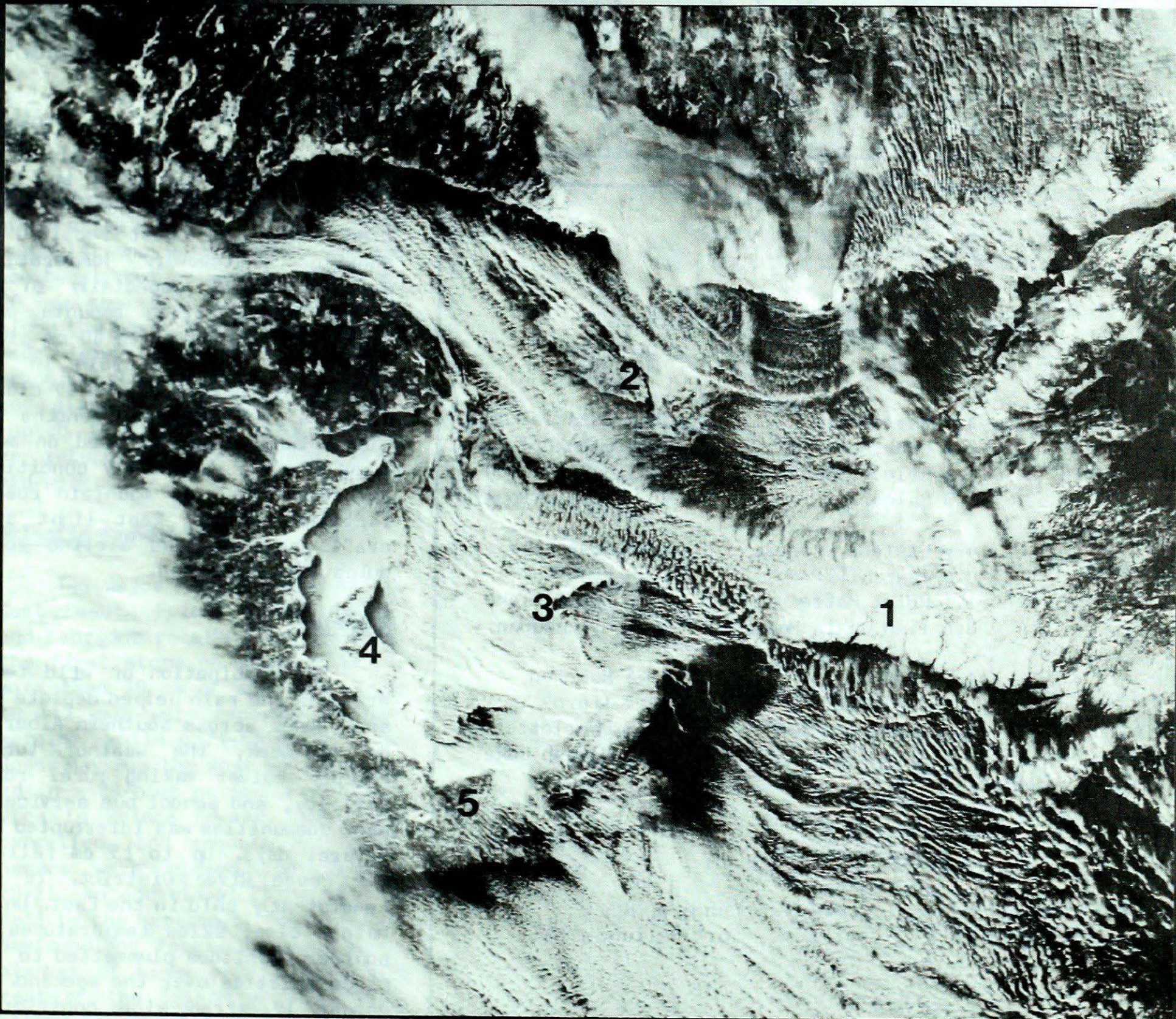
Vol. 7 NO. 3

● Severe winter grips Eastern Canada

Blizzards and high wind chills... Great Lakes
Crippling snowstorms... Atlantic Canada



*AES N-9 512 VIS 17JAN85 1727Z 48.0N 61.9W 1: 4.0M



This NOAA 9 satellite image of January 17, 1985 shows the effect of arctic air swirling over the Gulf of St. Lawrence. For more details see page 3.

ACROSS THE COUNTRY...Yukon and Northwest Territories

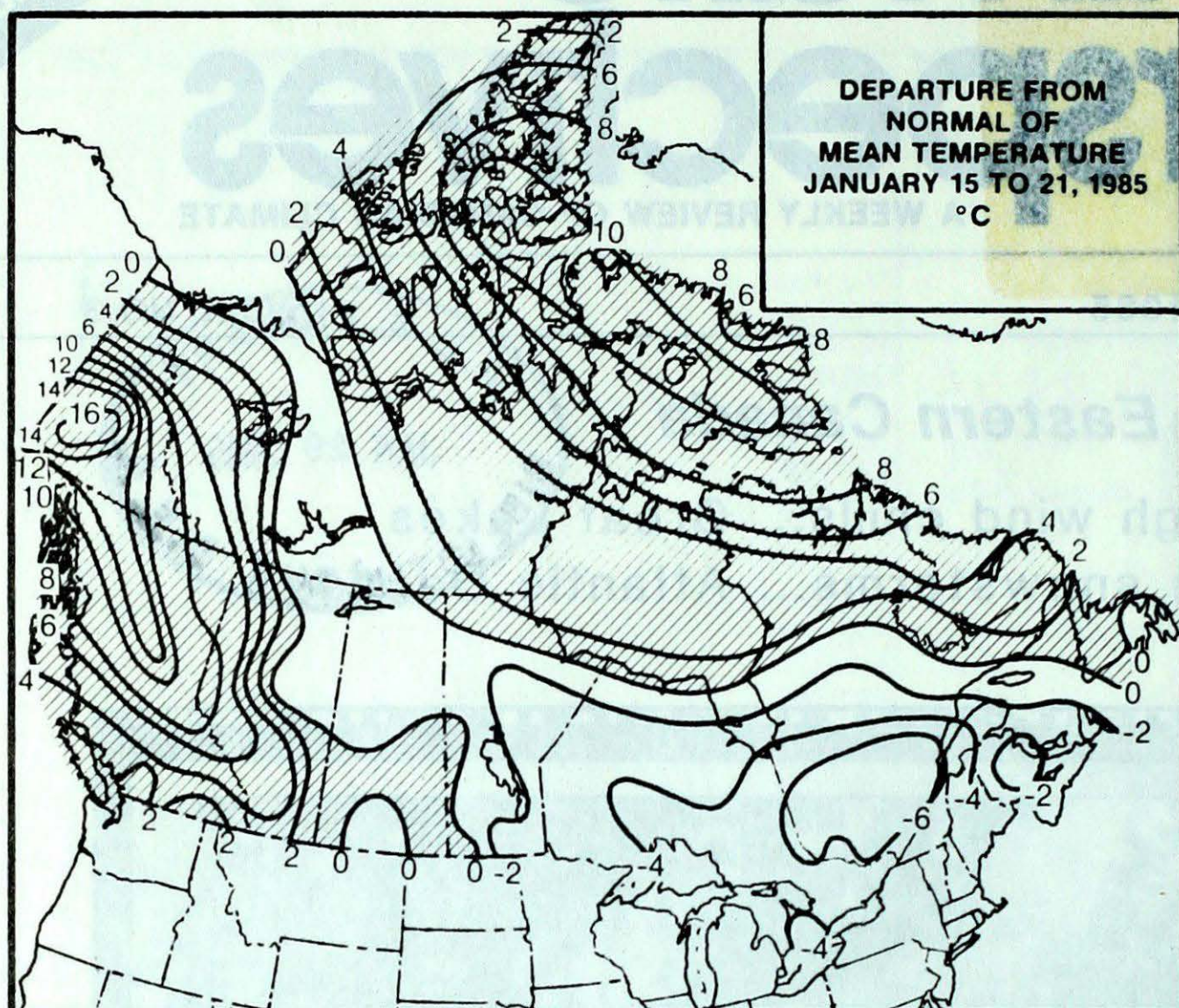
A strong Arctic high pressure cell slipped southwards across the Mackenzie District, dropping temperatures to below normal values. In several communities maximum temperatures remained in the minus forties for several days. Elsewhere across the North, mean temperatures were above normal and many daily maximum temperature records were broken. The weather in the Yukon was balmy. Daytime temperatures in the South climbed to 4°, and mean temperatures were more than 15° above normal. Between 10 and 25 cm of new snow fell in the southern Yukon and along the Baffin Island coast. Weather warnings were issued for the Dempster highway earlier in the week because of snow and blowing snow.

British Columbia

It was a cloudy and dull week, with extensive low cloud and fog. Sunshine was scarce; some communities along the coast received no sunshine whatsoever. Temperatures were very mild, especially in the North. Precipitation amounts were variable, ranging up to 80 mm along the coast. Freezing rain in the interior on January 18 and 19 closed highways for various lengths of time. Hauling has stopped on many logging roads due to icy conditions and deep slush on mountain roads. Inclement weather kept light aircraft grounded, and airline schedules were disrupted.

Prairies

The combination of mild temperatures and rain helped deplete the snow cover across southern Alberta. By mid-week, the weather turned sharply colder making rural roads very icy, and school bus service in many communities was interrupted for several days. Up to 15 cm fell in the Peace River District. It was consistently cold in the East. Under mainly clear skies temperatures in southern Manitoba plummeted to the minus thirties over the weekend. On January 19, strong winds contributed to dangerous wind chill readings. Snowfalls were generally very light.

WEEKLY TEMPERATURE EXTREMES (°C)

	MAXIMUM	MINIMUM
YUKON TERRITORY	3.7 Whitehorse	-38.5 Shingle Point
NORTHWEST TERRITORIES	2.7 Frobisher Bay	-47.6 Shepherd Bay
BRITISH COLUMBIA	11.1 Prince Rupert	-25.3 Fort Nelson
ALBERTA	10.0 Calgary	-46.0 Fort Chipewyan
SASKATCHEWAN	4.9 Eastend Cypress	-45.4 Cree Lake
MANITOBA	- 0.6 Churchill	-43.0 Lynn Lake
ONTARIO	- 1.1 Point Petre	-43.8 Pickle Lake
QUÉBEC	0.6 Iles de la Madeleine	-42.1 Nitchequon
NEW BRUNSWICK	- 1.9 Fredericton	-25.4 Moncton
NOVA SCOTIA	6.7 Sable Island	-24.3 Truro
PRINCE EDWARD ISLAND	6.0 Charlottetown	-19.9 Charlottetown
NEWFOUNDLAND	6.4 Argentia	-31.5 Wabush Lake

ACROSS THE NATION

Warmest mean temperature	7.7	Langara, BC
Coolest mean temperature	-31.3	Fort Reliance, NWT

Ontario

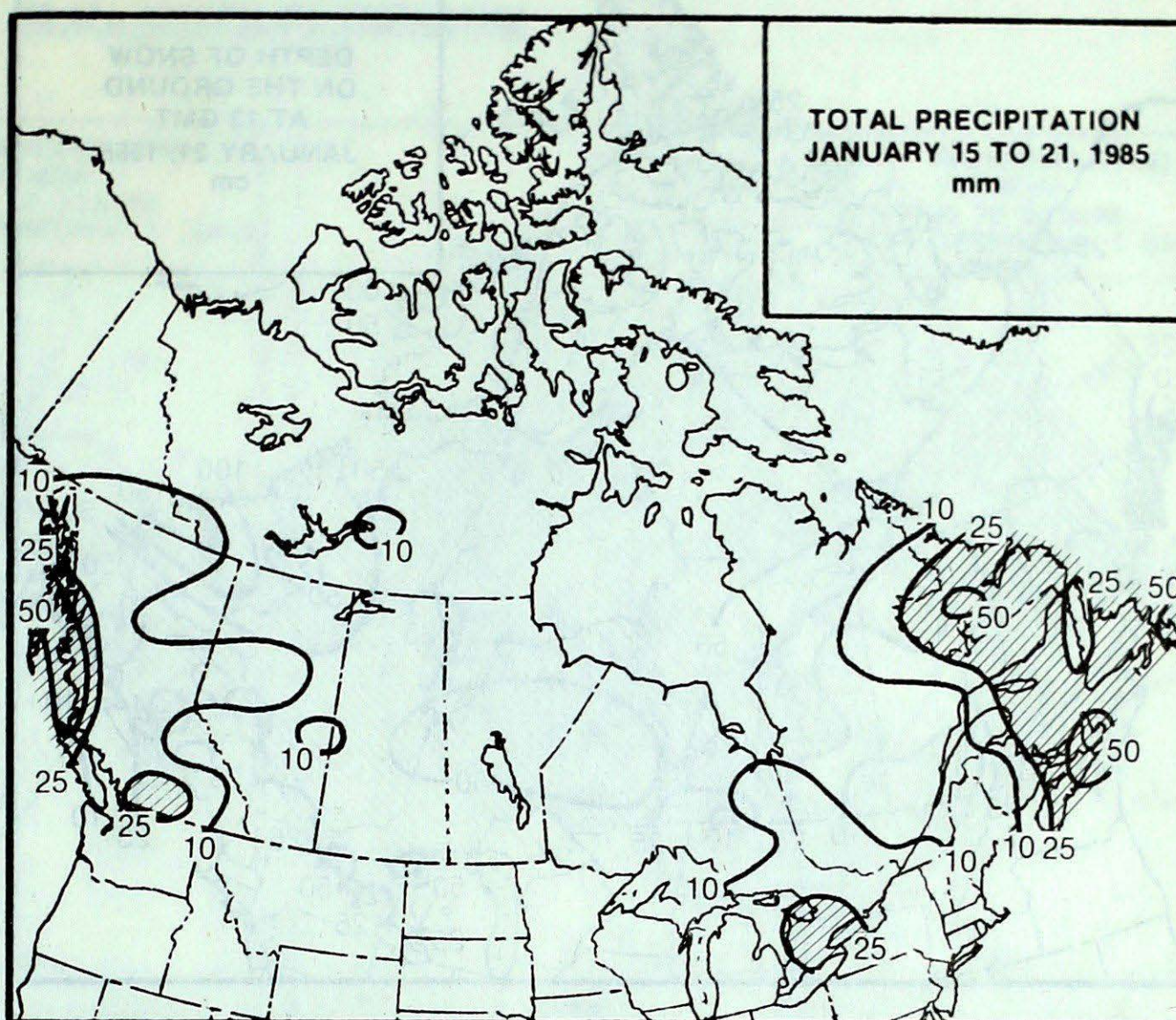
Snow and bone-chilling cold gripped the Province. Snowfalls were in a range of 15 to 25 cm but were considerably higher in the snowbelt. Over the weekend, a frigid Arctic airmass surged southward, dropping temperatures to record low values. At Windsor the mercury leveled off at -25.5° on the morning of January 20, breaking a century-old record of -24.4° . Heavy snow squalls and wind gusts in excess of 75 km/h caused blowing snow and wind chill readings of -45° . During the height of the storm police were forced to close numerous highways because of white-outs and abandoned cars. Parts of southwestern Ontario were buried in snow. Some localities accumulated 40 cm in a 24-hour period.

Québec

It was a cold week across the southern half of the Province, with uncomfortable wind chills. Snow accumulations were minimal in the Southwest, but between 20 and 30 cm of new snow fell in the Gaspé and along the North Shore. Strong winds made highway travel difficult. Many schools and businesses were closed, and aircraft schedules were disrupted. Significantly milder weather returned to the North after mid-week.

Atlantic Provinces

Two major storms affected the East Coast. Prince Edward Island and Labrador received the brunt of the first storm on January 15-16. More than 30 cm of snow and winds to 115 km/h were recorded at Summerside, while a 71-cm snowfall at Goose Bay was the most ever recorded in a 24-hour period. Ferry service to Prince Edward Island was cancelled, and schools and businesses were closed. On January 20-21, an additional 25 cm of snow fell in the Maritimes. Southeastern Newfoundland received rain, but a blanket of heavy snow covered the rest of the Island and Labrador. Strong winds caused blowing and drifting snow and many schools were closed.

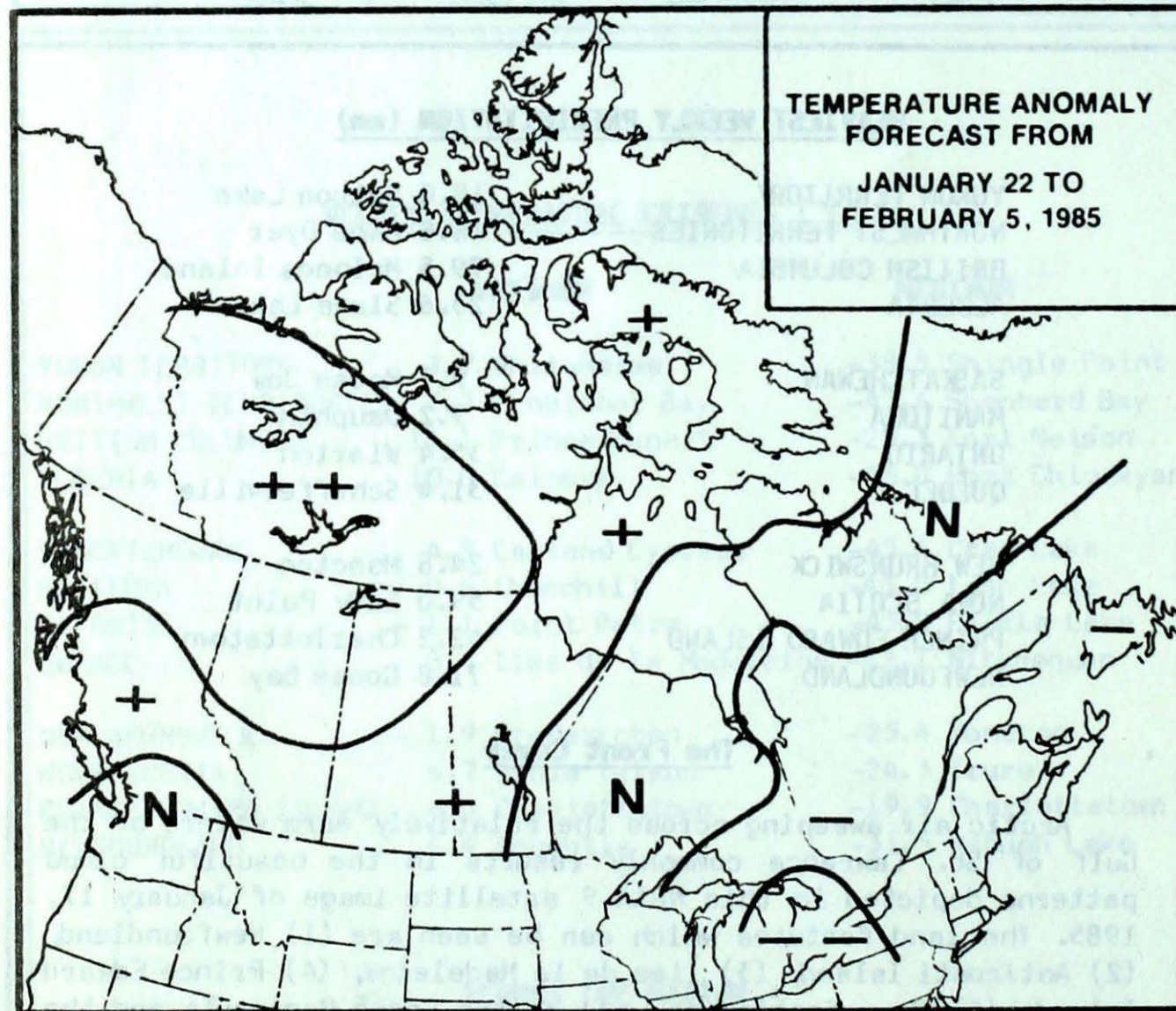
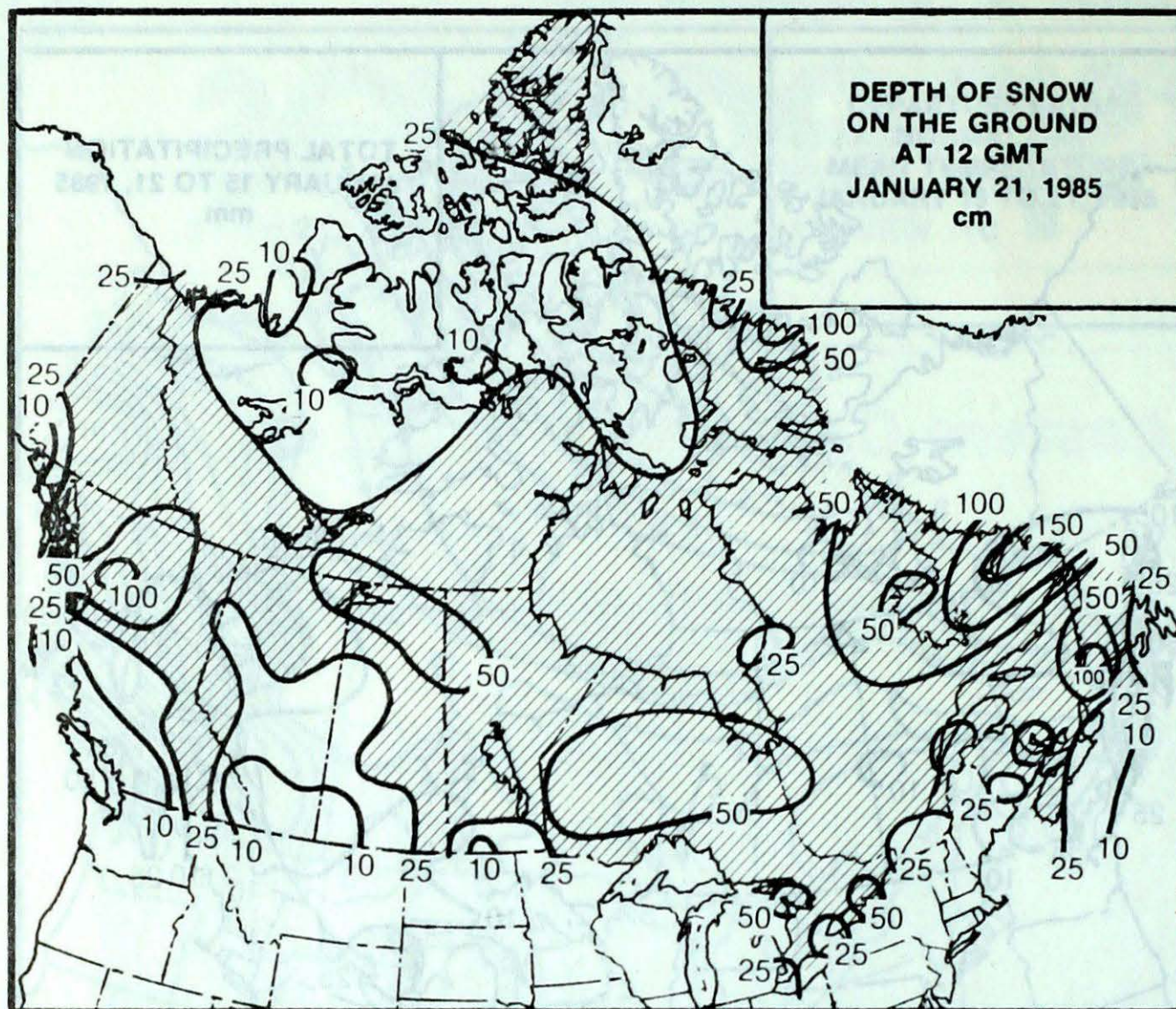


HEAVIEST WEEKLY PRECIPITATION (mm)

YUKON TERRITORY	18.0 Watson Lake
NORTHWEST TERRITORIES	16.8 Cape Dyer
BRITISH COLUMBIA	79.5 McInnes Island
ALBERTA	23.6 Slave Lake
SASKATCHEWAN	9.7 Moose Jaw
MANITOBA	9.2 Dauphin
ONTARIO	35.4 Wiarton
QUÉBEC	31.4 Schefferville
NEW BRUNSWICK	24.8 Moncton
NOVA SCOTIA	59.0 Eddy Point
PRINCE EDWARD ISLAND	42.2 Charlottetown
NEWFOUNDLAND	71.8 Goose Bay

The Front Cover

Arctic air sweeping across the relatively warm waters of the Gulf of St. Lawrence commonly results in the beautiful cloud patterns depicted in this NOAA 9 satellite image of January 17, 1985. The land features which can be seen are (1) Newfoundland, (2) Anticosti Island, (3) Îles de la Madeleine, (4) Prince Edward Island, (5) Nova Scotia, as well as the Gaspé Peninsula and the north shore of Québec. Streamlined by the cold winds, the ribbons of cloud produce snow squalls which make a major contribution to the average snowfalls of 800 centimetres which are observed annually on the west side of Newfoundland. These snow amounts are more than double the average annual snowfalls on the east side of the Province.



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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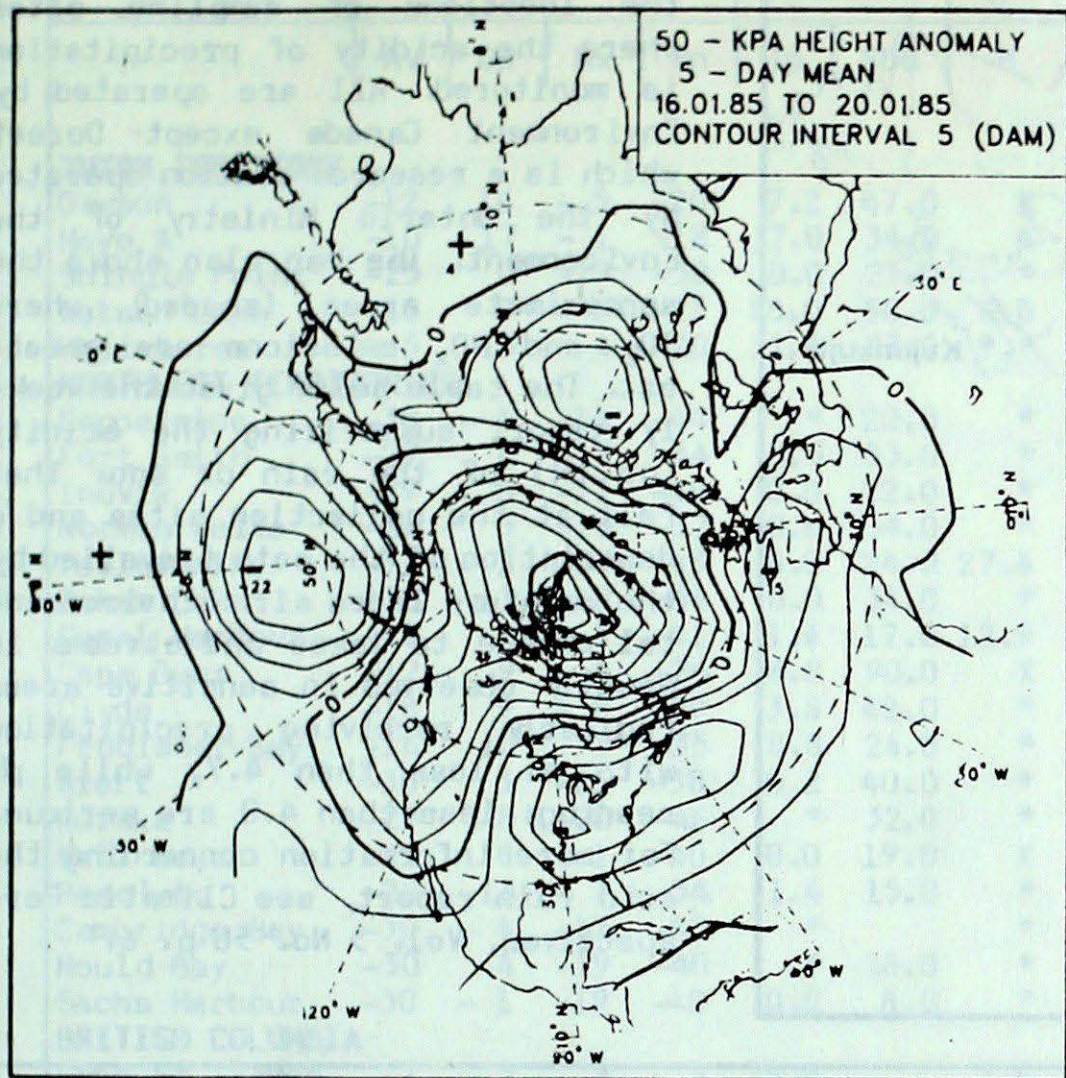
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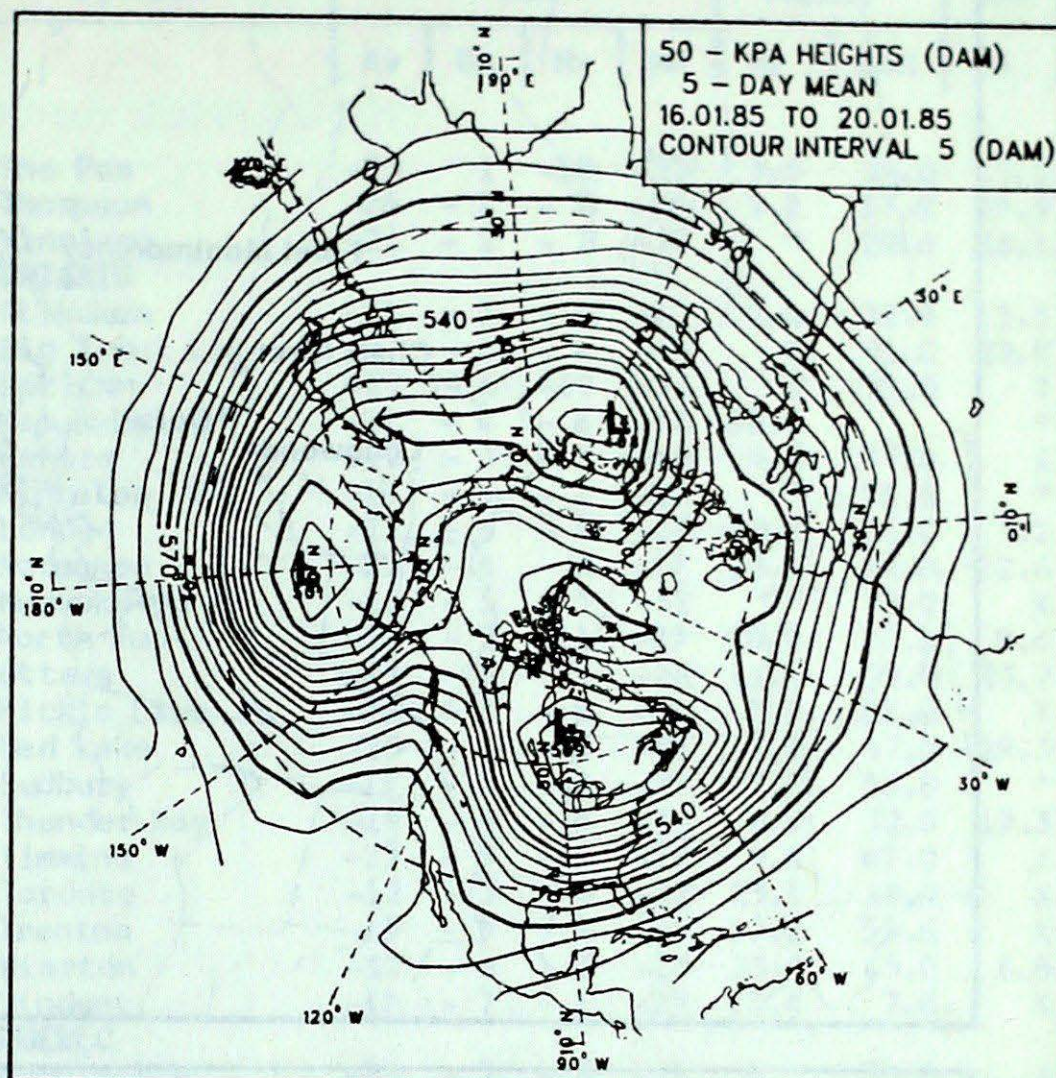
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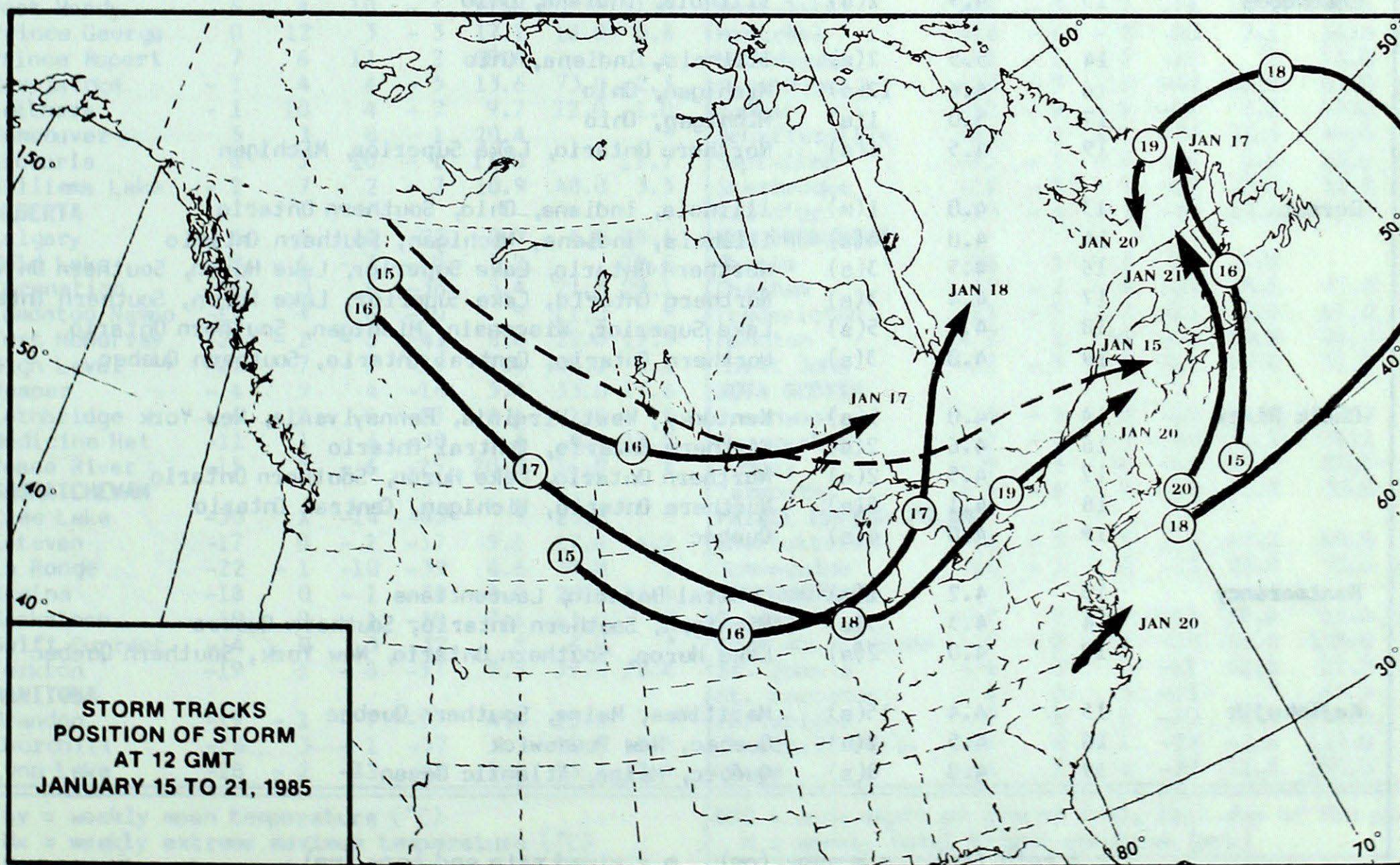
50 KPa ATMOSPHERIC CIRCULATION

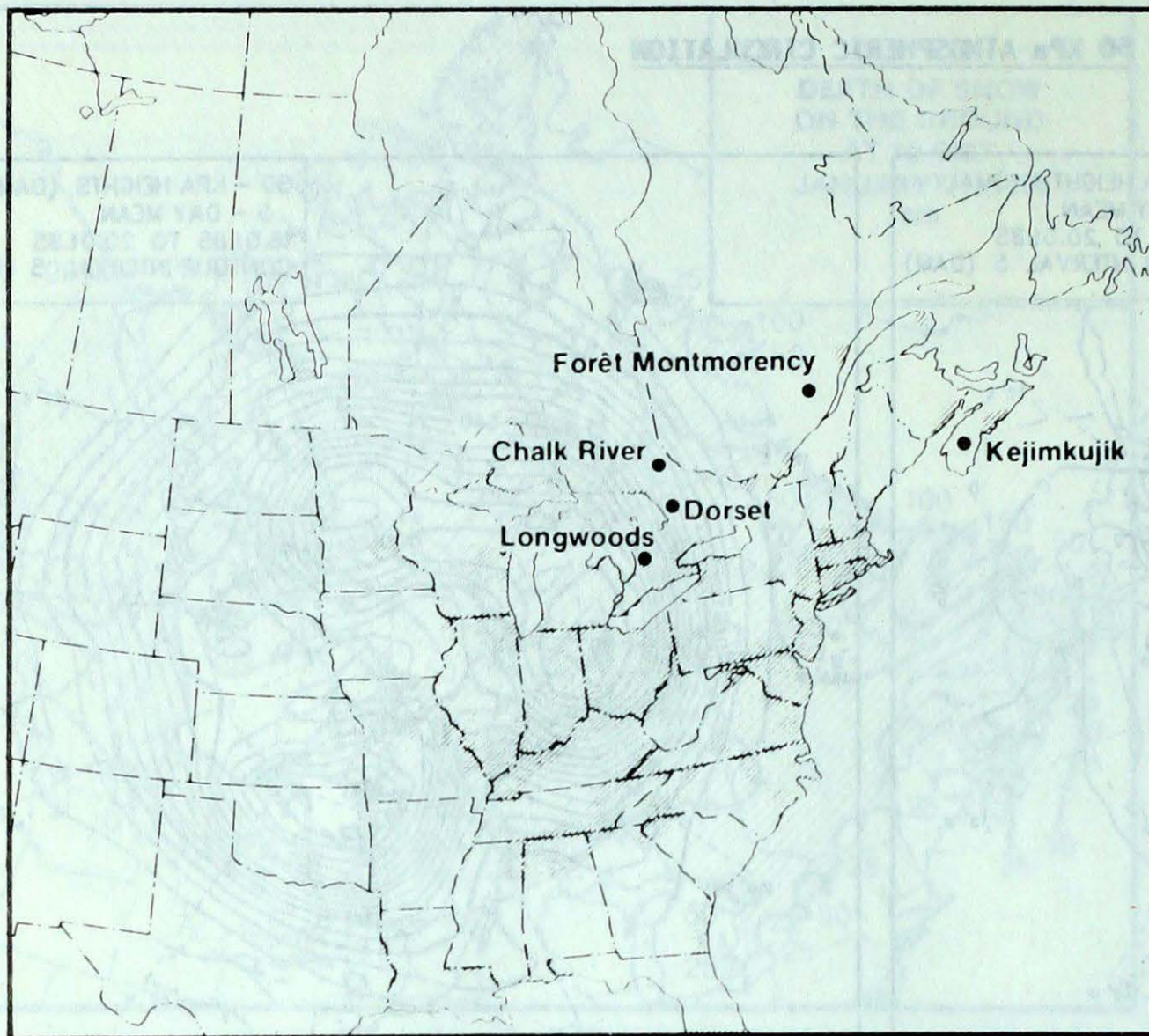


MEAN 50 KPa HEIGHT ANOMALY (dam)
January 16 to January 20, 1985



MEAN 50 KPa HEIGHTS (dam)
January 16 to January 20, 1985



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 SO₂ 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.

JANUARY 13, to JANUARY 20, 1985

SITE	DAY	pH	AMOUNT	AIR PATH TO SITE
Longwoods	13	4.9	2(s)	Illinois, Indiana, Ohio
	14	5.5	2(s)	Illinois, Indiana, Ohio
	16	4.6	12(s)	Michigan, Ohio
	17	5.0	1(s)	Michigan, Ohio
	19	4.5	6(s)	Northern Ontario, Lake Superior, Michigan
Dorset	13	4.0	1(m)	Illinois, Indiana, Ohio, Southern Ontario
	14	4.0	4(s)	Illinois, Indiana, Michigan, Southern Ontario
	16	4.5	3(s)	Northern Ontario, Lake Superior, Lake Huron, Southern Ontario
	17	4.4	3(s)	Northern Ontario, Lake Superior, Lake Huron, Southern Ontario
	18	4.1	5(s)	Lake Superior, Wisconsin, Michigan, Southern Ontario
	19	4.0	3(s)	Northern Ontario, Central Ontario, Southern Quebec
Chalk River	14	4.0	1(s)	Kentucky, West Virginia, Pennsylvania, New York
	16	4.6	2(s)	Northern Ontario, Central Ontario
	17	4.5	2(s)	Northern Ontario, Lake Huron, Southern Ontario
	18	4.1	5(s)	Northern Ontario, Michigan, Central Ontario
	19	4.0	4(s)	Quebec
Montmorency	13	4.2	1(s)	Central Ontario, Laurentians
	14	4.3	3(s)	Michigan, Southern Ontario, Southern Quebec
	19	4.0	2(s)	Lake Huron, Southern Ontario, New York, Southern Quebec
Kejimikujik	15	4.4	15(s)	Maritimes, Maine, Southern Quebec
	16	4.5	2(s)	Quebec, New Brunswick
	19	4.0	8(s)	Québec, Maine, Atlantic Ocean

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

TEMPERATURE, PRECIPITATION AND BRIGHT SUNSHINE DATA FOR THE WEEK ENDING 0600 GMT JANUARY 22, 1985

STATION	TEMP				PRECIP		SUN	STATION	TEMP				PRECIP		SUN
	Av	Dp	Mx	Mn	Tp	SOG	H		Av	Dp	Mx	Mn	Tp	SOG	H
YUKON TERRITORY								The Pas	-23	1	-10	-37	3.5	36.0	15.1
Dawson	-12	16	-5	-20	7.2	47.0	X	Thompson	-26	-2	-9	-40	3.2	27.0	29.9
Mayo A	-10	17	-1	-18	7.0	34.0	X	Winnipeg	-21	-2	-7	-37	*	20.0	16.1
Shingle Point	-25	0	-19	-38	0.0	25.0	*	ONTARIO							
Watson Lake	-16	9	-6	-23	18.0	58.0	6.8	Atikokan	-21	-3	-4	-40	2.4	32.0	12.5
Whitehorse	-5	13	4	-20	11.4	33.0	*	Big Trout Lake	-27	-2	-4	-40	*	91.0	22.8
NORTHWEST TERRITORIES								Earlton	-22	-6	-10	-36	*	38.0	X
Coppermine	-30	-1	-14	-44	*	20.0	*	Kapuskasing	-22	-4	-8	-37	10.8	*	
Fort Smith	-27	0	-12	-44	0.5	53.0	*	Kenora	-22	-3	-8	-40	4.4	37.0	X
Inuvik	-29	0	-17	-40	0.0	22.0	*	Kingston	-13	-4	-2	-25	*	56.0	*
Norman Wells	-24	5	-13	-37	0.6	34.0	*	London	-12	-6	-4	-25	35.2	26.0	5.1
Yellowknife	-31	-3	-17	-43	0.0	24.0	27.4	Moosonee	-25	-4	-8	-37	10.1	59.0	22.6
Baker Lake	-30	3	-10	-44	0.0	34.0	*	Muskoka	-15	-5	-5	-32	*	38.0	X
Coral Harbour	-21	9	-3	-41	1.4	17.0	12.9	North Bay	-20	-7	-11	-29	10.0	27.0	9.6
Cape Dyer	-12	9	-1	-26	16.8	90.0	X	Ottawa	-17	-6	-5	-26	11.1	39.0	23.7
Clyde	-18	9	-8	-29	3.8	42.0	*	Pickle Lake	-26	-4	-4	-44	2.0	67.0	X
Frobisher Bay	-16	10	3	-35	8.8	24.0	*	Red Lake	-23	-3	-5	-41	2.2	57.0	19.3
Alert	-30	3	-25	-38	0.2	40.0	*	Sudbury	-19	-5	-8	-29	12.0	36.0	*
Eureka	-29	8	-20	-46	*	32.0	*	Thunder Bay	-19	-4	-4	-36	0.9	32.0	19.3
Hall Beach	-21	8	1	-40	0.0	19.0	X	Timmins	-23	-5	-8	-38	9.6	47.0	X
Resolute	-20	13	-7	-34	1.4	15.0	*	Toronto	-12	-5	-4	-22	25.1	15.0	X
Cambridge Bay	-30	4	-17	-40	*		*	Trenton	-13	-5	-4	-23	19.2	35.0	X
Mould Bay	-30	4	-19	-40	*	18.0	*	Warton	-12	-6	-3	-25	35.4	65.0	6.8
Sachs Harbour	-30	-1	-19	-40	0.0	8.0	*	Windsor	-12	-7	-2	-25	15.4	7.0	X
BRITISH COLUMBIA								QUEBEC							
Cape St. James	7	3	9	5	28.4		1.0	Bagotville	-23	-7	-8	-31	8.1	30.0	X
Cranbrook	-5	1	2	-14	1.4	30.0	9.3	Blanc-Sablon	-8	4	2	-17	30.2	45.0	*
Fort Nelson	-18	5	-11	-25	11.3	56.0	7.5	Inukjuak	-23	2	-3	-39	*	46.0	34.0
Fort St. John	-11	6	4	-20	9.4	11.0	X	Kuujuuaq	-16	8	0	-37	13.4	51.0	0.7
Kamloops	-1	5	7	-11	6.2	5.0	3.1	Kuujuarapik	-19	4	-4	-38	6.7	23.0	17.8
Penticton	-1	2	4	-6	11.3	4.0	2.4	Maniwaki	-20	-6	-7	-34	12.6	42.0	20.7
Port Hardy	6	4	10	-1	51.8		11.0	Mont-Joli	-16	-5	-7	-24	18.4	21.0	19.9
Prince George	0	12	3	-3	17.1	18.0	0.4	Montréal	-16	-6	-2	-25	7.1	16.0	25.5
Prince Rupert	7	6	11	2	68.6		1.4	Natashquan	-12	-1	-5	-21	*	33.0	*
Revelstoke	-1	4	4	-5	13.6	73.0	2.3	Nitchequon	-26	-3	-11	-42	18.0	67.0	14.5
Smithers	-1	10	4	-7	9.7	22.0	1.0	Québec	-18	-6	-5	-26	7.6	49.0	19.6
Vancouver	5	3	8	-1	20.4		*	Schefferville	-21	1	-1	-33	31.4	48.0	0.0
Victoria	6	3	10	-1	11.0		15.7	Sept-Îles	-15	-1	-8	-26	3.8	13.0	28.9
Williams Lake	-2	7	2	-7	10.9	48.0	3.3	Sherbrooke	-17	-5	-4	-29	10.8	18.0	14.3
ALBERTA								Val-d'Or	-23	-6	-12	-35	10.6	43.0	17.7
Calgary	-6	5	10	-22	2.7	4.0	28.4	NEW BRUNSWICK							
Cold Lake	-19	-1	-3	-40	7.2		20.6	Charlo	-14	1	-3	-22	5.5		*
Coronation	-16	0	6	-38	5.4	21.0	29.1	Chatham	-12	-2	-4	-24	15.1	37.0	27.8
Edmonton Namao	-11	4	6	-30	*	11.0	*	Fredericton	-13	-5	-2	-23	7.9	19.0	*
Fort McMurray	-23	-1	-8	-41	8.6	22.0	19.5	Moncton	-7	1	59	-25	24.8	39.0	34.7
High Level	-21	7	-9	-35	7.4	48.0	8.1	Saint John	-12	-5	-1	-22	14.4	31.0	34.9
Jasper	-4	9	4	-14	5.4	33.0	13.6	NOVA SCOTIA							
Lethbridge	-6	3	9	-23	2.4	2.0	*	Greenwood	-8	-3	2	-18	20.5	36.0	X
Medicine Hat	-11	1	6	-30	3.4	4.0	33.0	Shearwater	-7	-3	3	-16	32.1	26.0	*
Peace River	-15	5	-6	-25	20.0	36.0	X	Sydney	-8	-3	4	-19	56.9	22.0	31.3
SASKATCHEWAN								Yarmouth	-6	-4	2	-12	31.0	30.0	6.4
Cree Lake	-30	X	-14	-45	*	23.0	*	PRINCE EDWARD ISLAND							
Estevan	-17	0	-2	-37	9.1	27.0	4.2	Charlottetown	-10	-3	6	-20	42.2	48.0	*
La Ronge	-22	-1	-10	-39	4.6	35.0	X	Summerside	-10	-3	0	-20	39.8	52.0	31.0
Regina	-18	0	-1	-38	8.0	20.0	11.5	NEWFOUNDLAND							
Saskatoon	-19	0	-3	-38	7.6	23.0	*	Gander	-7	0	3	-13	39.6	33.0	24.9
Swift Current	-14	0	3	-32	*	6.0	*	Port aux Basques	-5	-2	2	-10	41.2	118.0	*
Yorkton	-19	1	-8	-37	9.5	39.0	12.4	St. John's	-4	0	5	-12	52.6	12.0	14.2
MANITOBA								St. Lawrence	-4	0	5	-12	*	46.0	X
Brandon	-19	-1	-7	-39	4.4	23.0	*	Cartwright	-9	4	2	-20	30.5	190.0	X
Churchill	-26	3	-1	-37	1.7	27.0	19.5	Churchill Falls	-19	4	-1	-28	41.4	147.0	X
Lynn Lake	-28	-2	-12	-43	1.5	53.0	13.4	Goose	-14	2	-4	-22	71.8	150.0	6.9

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
* = missing