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dian Climate Centre

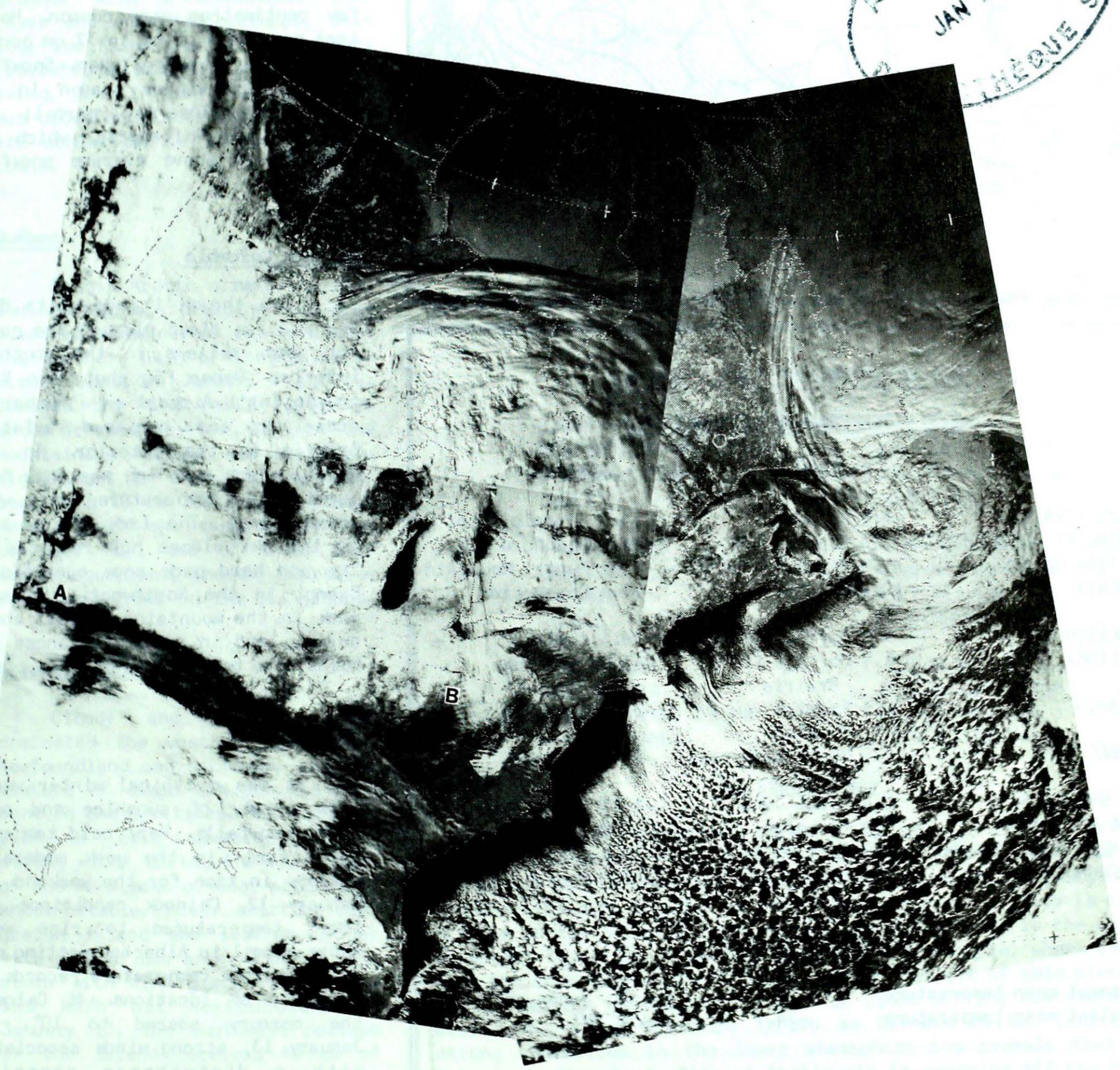
Climatic Perspectives

A WEEKLY REVIEW OF CANADIAN CLIMATE

For the period January 8 to 14, 1985

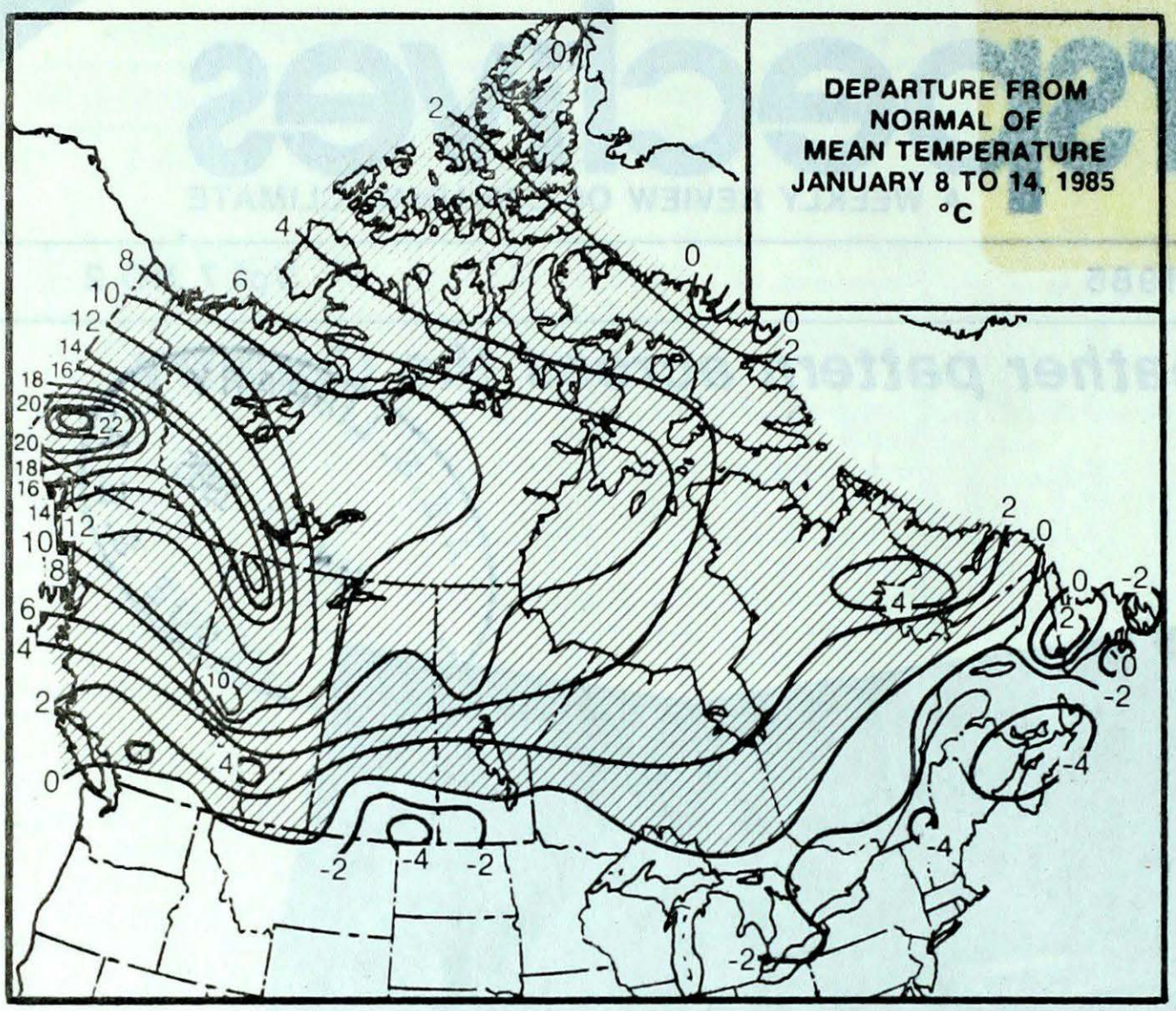
Vol.7 NO.2

• Typical January weather pattern across the Country



The NOAA 9 satellite image of January 13, 1985 shows the southward extent of ground snowcover, and reveals an Arctic airmass sweeping across the Atlantic. For more information see page 3.

Canada



WEEKLY TEMPERATURE EXTREMES (°C)

	MAXIMUM		MINIMUM	
YUKON TERRITORY	3.6	Burwash	-34.5	Shingle Point
NORTHWEST TERRITORIES	- 3.8	Cape Dorset	-46.9	Shepherd Bay
BRITISH COLUMBIA	11.0	Kindakun Point	-21.6	Puntzi Mountain
ALBERTA	10.1	Calgary	-29.4	Coronation
SASKATCHEWAN	5.2	Buffalo Narrows	-36.4	Yorkton
MANITOBA	1.7	Portage la Prairie	-37.8	Lynn Lake
ONTARIO	0.6	Trenton Wiarton	-38.6	Atikokan
QUÉBEC	- 1.9	Montreal/Dorval	-37.6	Kuujjuaq
NEW BRUNSWICK	0.8	Saint John	-25.2	Fredericton
NOVA SCOTIA	6.0	Yarmouth	-19.0	Truro
PRINCE EDWARD ISLAND	- 1.9	East Point	-18.8	Charlottetown
NEWFOUNDLAND	1.4	Cape Race	-28.9	Churchill Falls

ACROSS THE NATION

Warmest mean temperature	7.1	Cape St. James, BC
Coolest mean temperature	-34.9	Eureka, NWT

ACROSS THE COUNTRY...

Yukon and Northwest Territories

Mean temperatures were well above normal in the West, but only in the southern Yukon did the mercury manage to climb above freezing. Temperatures ranged from a high of 4° at Burwash on January 9, to a low of -47° at Shepherd Bay. The Mackenzie District received between 10 and 15 centimetres of new snow, while elsewhere, amounts of only a few centimetres were common. Heaviest snowfalls of up to 32 cm occurred in the southern Yukon. Snowfall totals this winter season in the Yukon are close to normal; the exception is Whitehorse, which has received an above average snowfall to-date.

British Columbia

Even though it was quite dry, fog and low cloud plagued the coast and many valleys in the southern interior. Dense fog shut down Vancouver Int'l Airport on a number of occasions and hampered aviation traffic in the interior. In the North, where sunshine was more frequent, mean temperatures were well above normal. The lack of new snow on the ski slopes has resulted in icy and hard pack snow conditions. Except in the Northwest, the snow pack in the mountains is well above normal, and in a few instances records have been set.

Prairies

It was a typical winter week, with plenty of sunshine and only light snowfalls. Very cold temperatures early in the week moderated sharply in time for the weekend. On January 12, Chinook conditions allowed temperatures to rise well above normal in Alberta, setting new daily maximum temperature records at a number of locations. At Calgary the mercury soared to 10°. On January 13, strong winds associated with a disturbance crossing Manitoba caused heavy drifting and blowing snow, prompting the closure of many highways.

Ontario

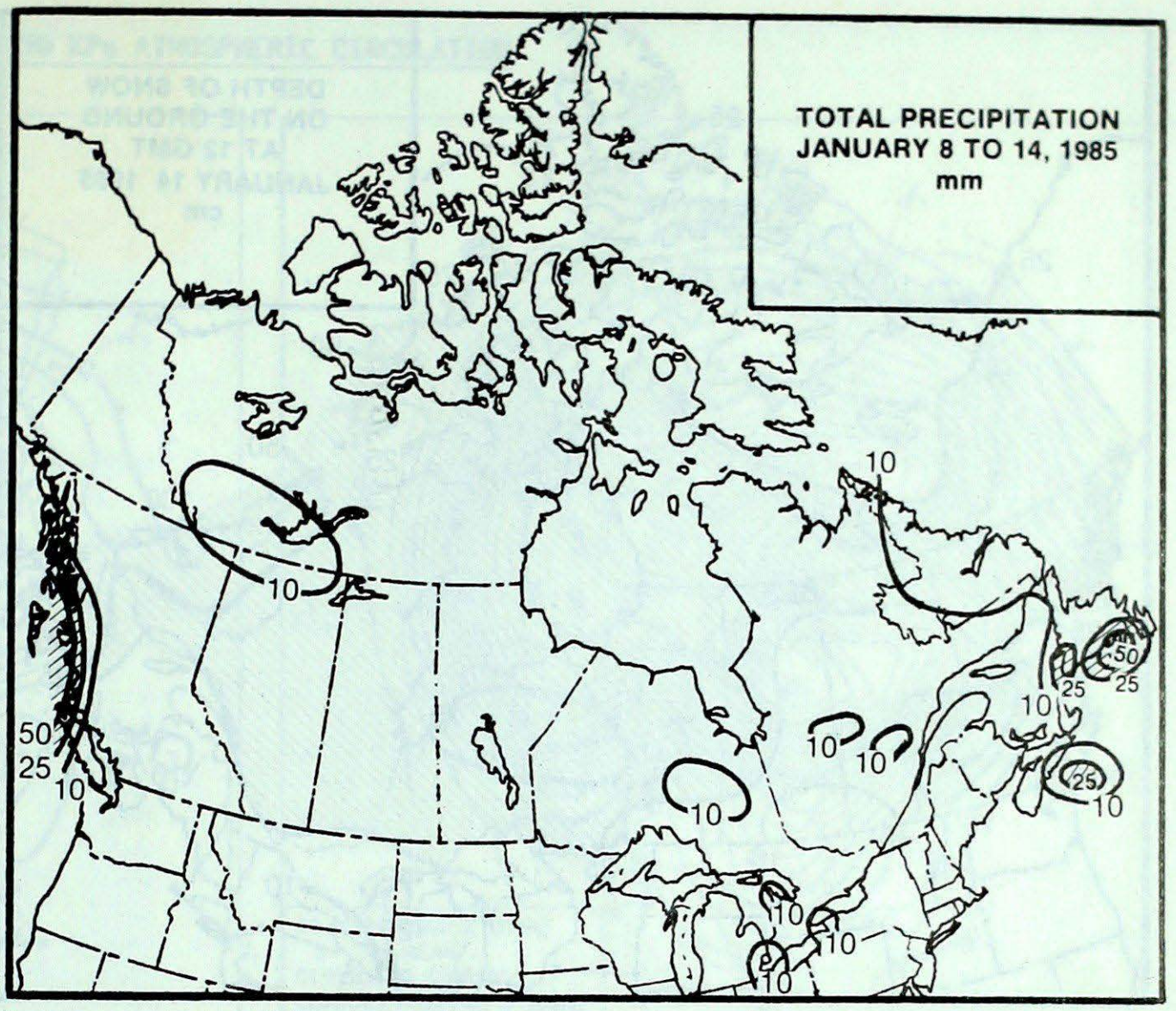
The coldest weather of the season settled in over Ontario, dropping night-time temperatures to the minus thirties in the North and the minus twenties in the South. Snowfalls were light, generally less than 10 cm. All areas have a substantial snow cover of 20 cm or more, with the exception of the extreme South, where there are only a few centimetres on the ground. With a continuous snow cover and cold temperatures, skiing, ice fishing and other outdoor recreational activities are in full swing, just in time for the numerous upcoming winter carnivals that are annual events in many Ontario towns.

Québec

A cold Arctic airmass spilled southeastwards, dropping temperatures to below normal values across the southern half of the Province. Strong winds on January 9 and 10, lowered the wind chill factor to uncomfortable levels. Only in the mountainous regions was there any significant new snow, but generally less than 10 cm. Cold temperatures have allowed ski resort operators to make full use of their snow making equipment, thereby improving snow conditions on the ski slopes.

Atlantic Provinces

Cloudy and overcast skies dominated the weather picture in Newfoundland and Labrador, while a mixture of cloud and sun was evident in the Maritimes. The combination of cold temperatures and strong winds during the first part of the week made outdoor activities uncomfortable. After skirting Cape Breton Island and leaving Sydney with 6 cm of new snow, a major snow storm with wind gusts exceeding a 100 km/h hit Newfoundland on January 13. The southeast portion of the Island received 48 cm of new snow, while 25 cm fell along the Labrador coast. Cartwright reported 167 cm of snow on the ground at the end of the week.

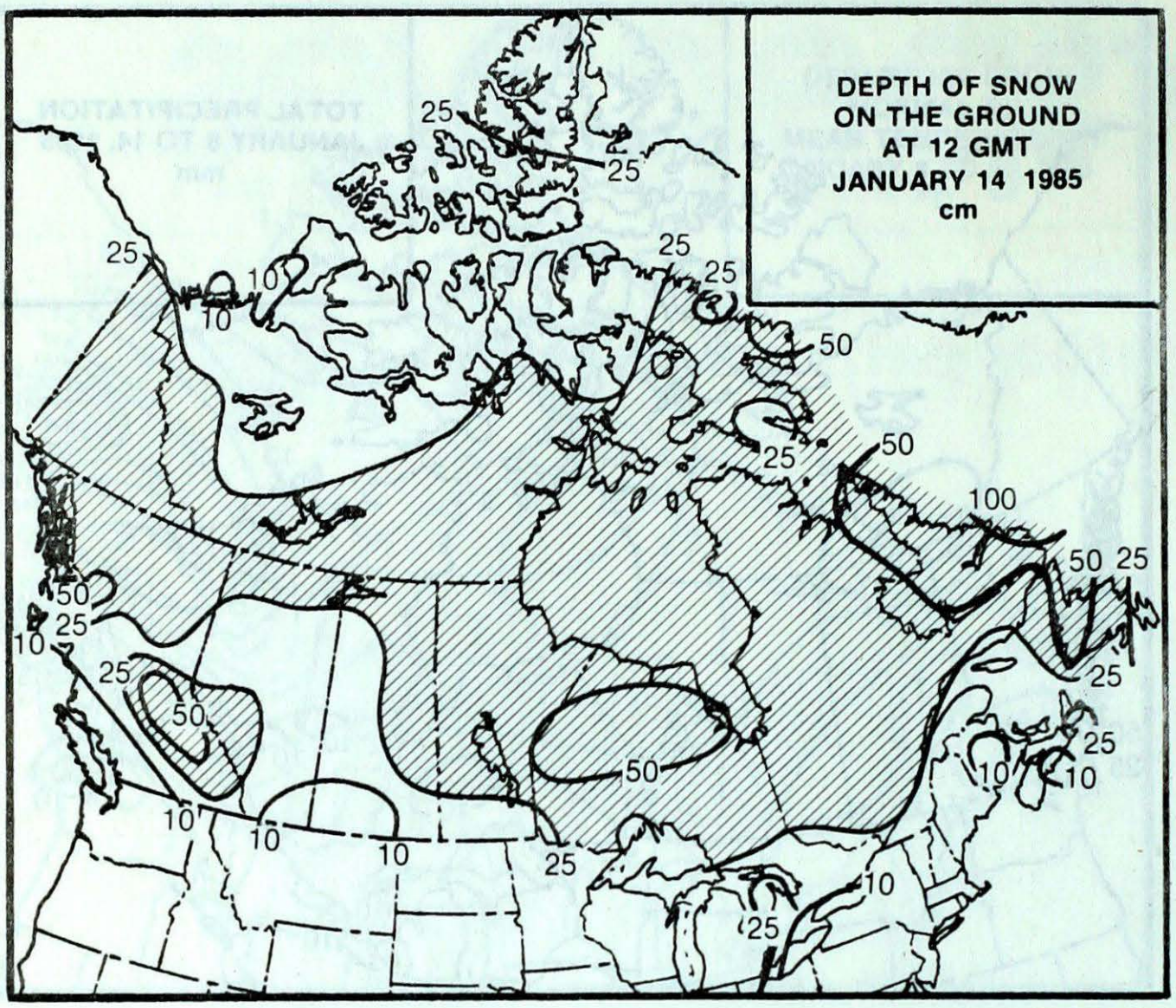


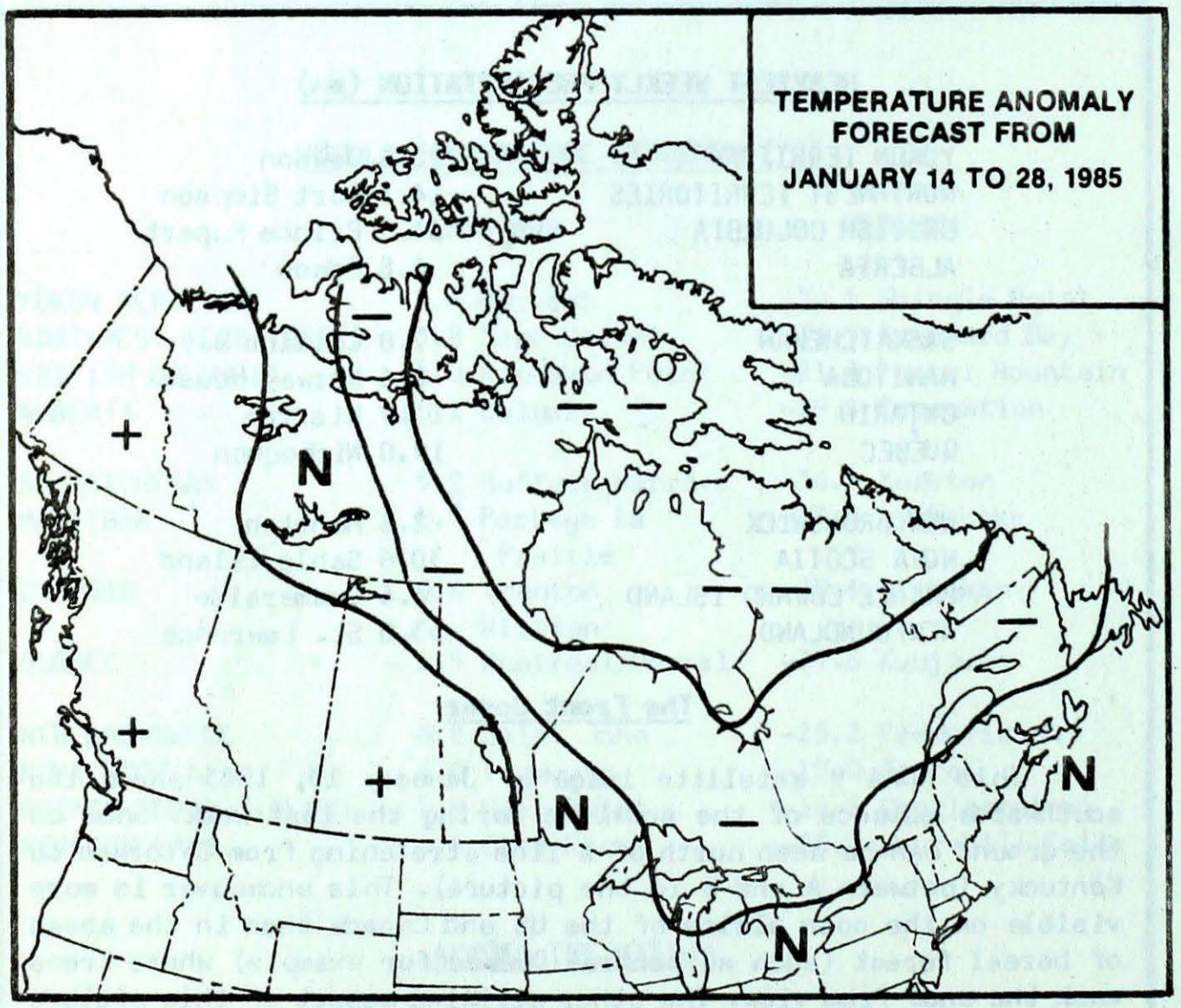
HEAVIEST WEEKLY PRECIPITATION (mm)

YUKON TERRITORY	10.6	Dawson
NORTHWEST TERRITORIES	14.1	Fort Simpson
BRITISH COLUMBIA	64.6	Prince Rupert
ALBERTA	6.8	Edson
SASKATCHEWAN	7.0	Collins Bay
MANITOBA	8.6	Norway House
ONTARIO	13.7	Wiarton
QUÉBEC	19.0	Nichequon
NEW BRUNSWICK	2.6	Moncton
NOVA SCOTIA	30.6	Sable Island
PRINCE EDWARD ISLAND	4.4	Summerside
NEWFOUNDLAND	53.0	St. Lawrence

The Front Cover

This NOAA 9 satellite image of January 13, 1985 shows the southwards advance of the snowline during the last week. Snow on the ground can be seen north of a line stretching from Colorado to Kentucky (between A and B in the picture). This snowcover is more visible on the open plains of the US and Canada than in the areas of boreal forest (such as central Québec for example) where trees mask the snow from view. The other striking aspect of this picture is the complex but regular pattern of cloud off the eastern seaboard. The cloud structure (known as Bernard cells) indicates strong convection in the lower atmosphere and reveals that an intense northwesterly flow of Arctic air is sweeping off the continent out over the Atlantic.





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 7

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It began in 1978 and in 1983 was expanded to include a monthly supplement (formerly known as the Canadian Weather Review). The purpose of the publication is to make topical information available to the public concerning the Canadian Climate and its socioeconomic impact.

Unsolicited articles are welcome but should be at maximum about 1500 words in length. They will be subject to editorial change without notice due to publishing time constraints. Black and white photographs can be used, but not colour. The contents may be reprinted freely with proper credit.

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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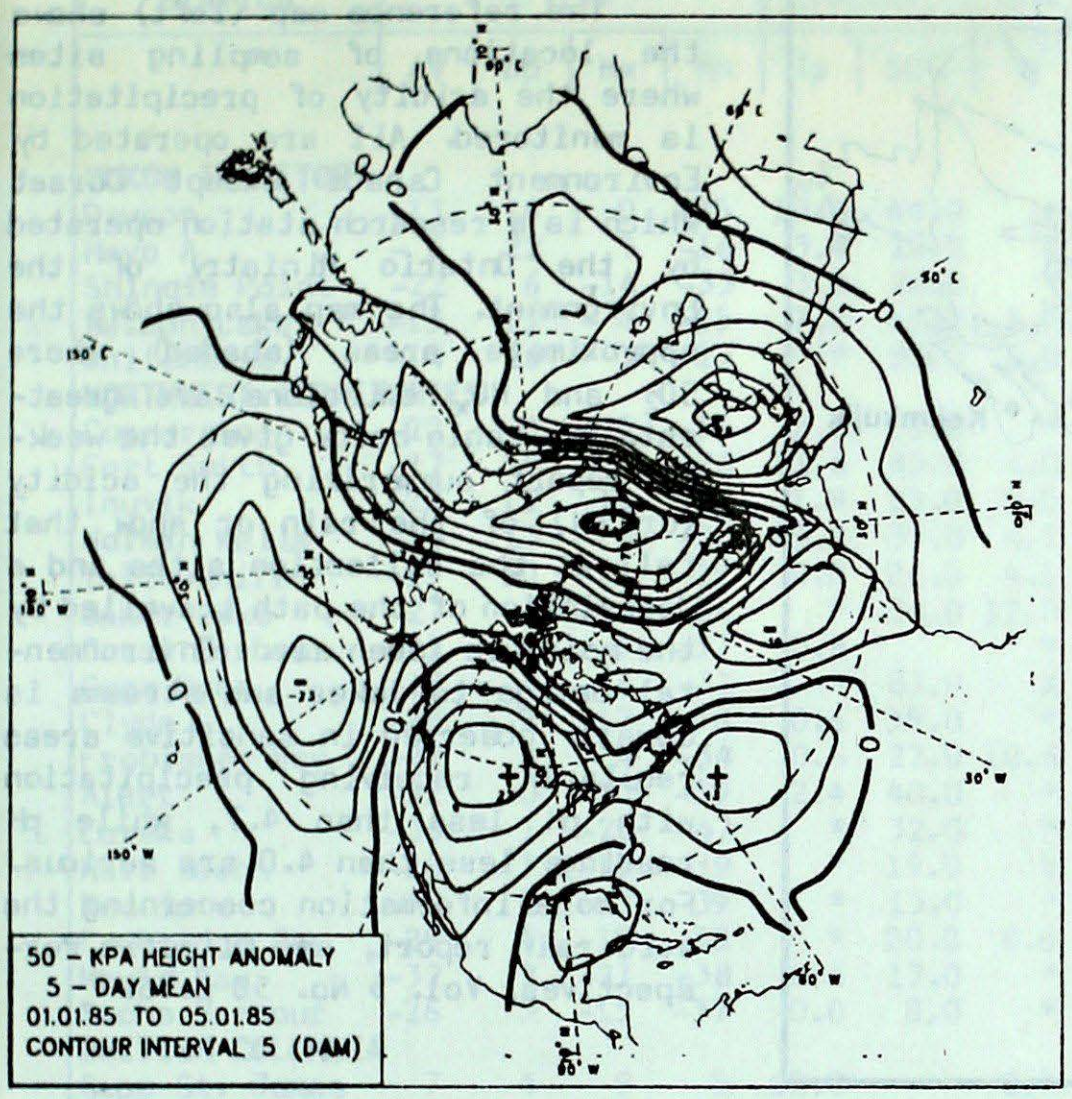
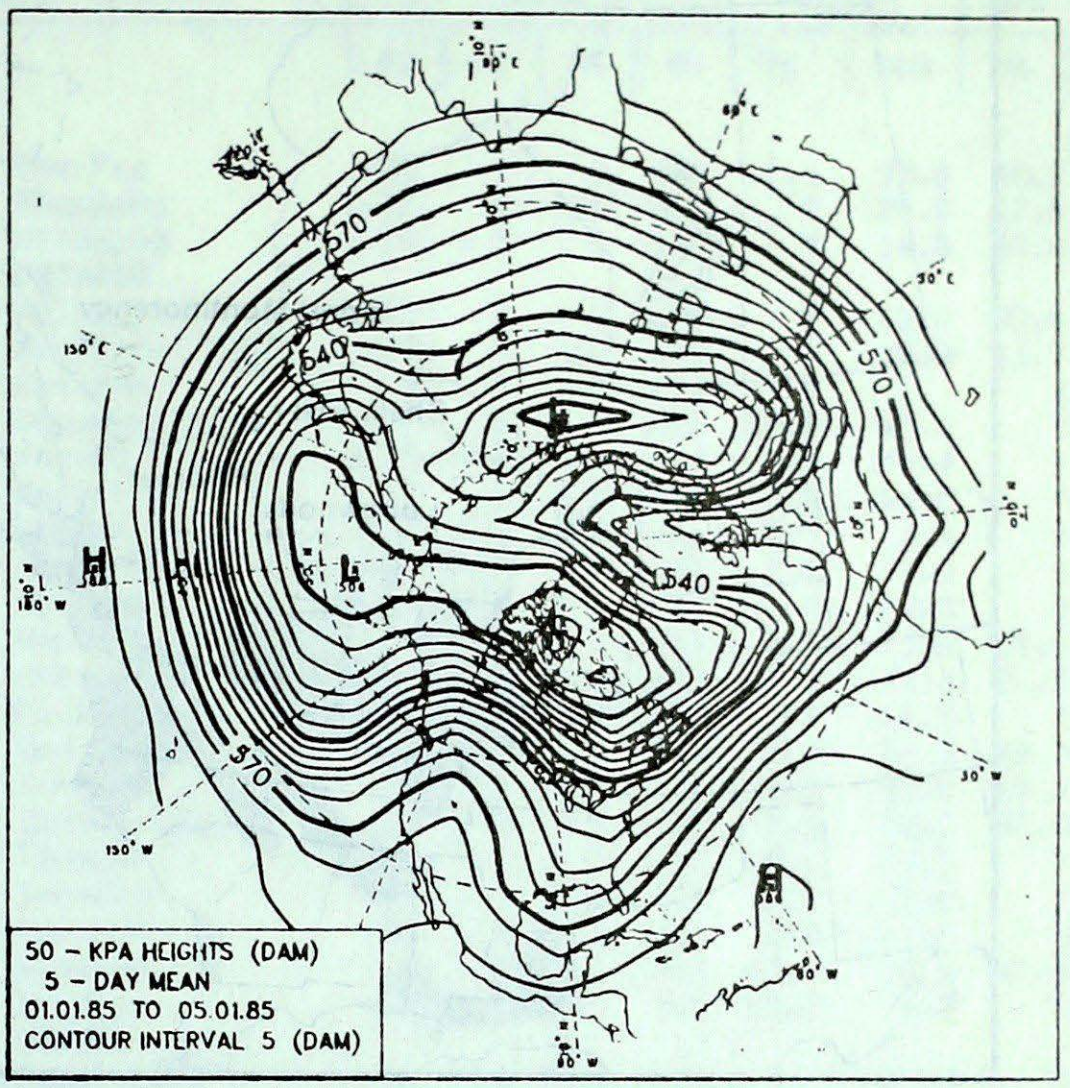
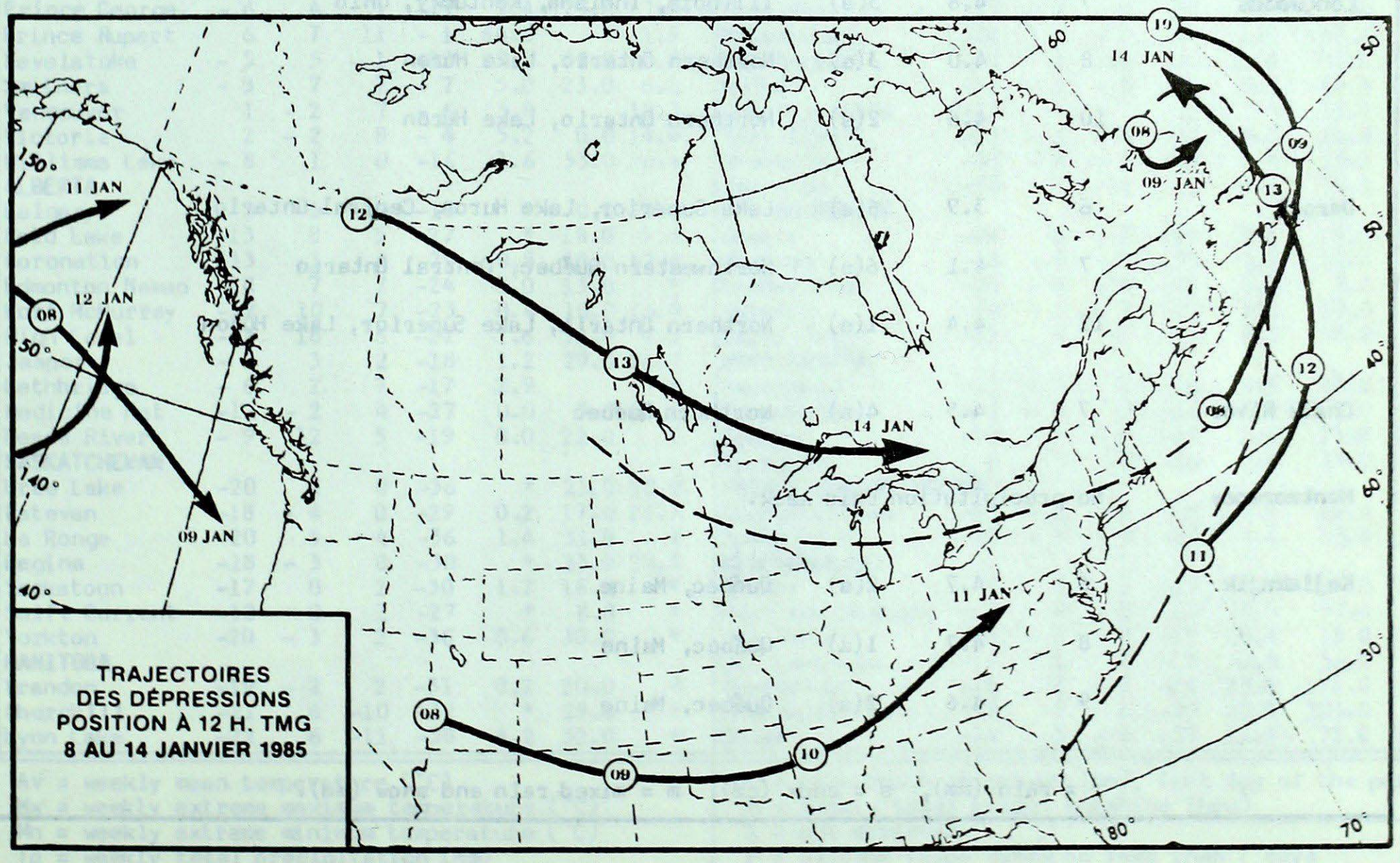
50 KPa ATMOSPHERIC CIRCULATION

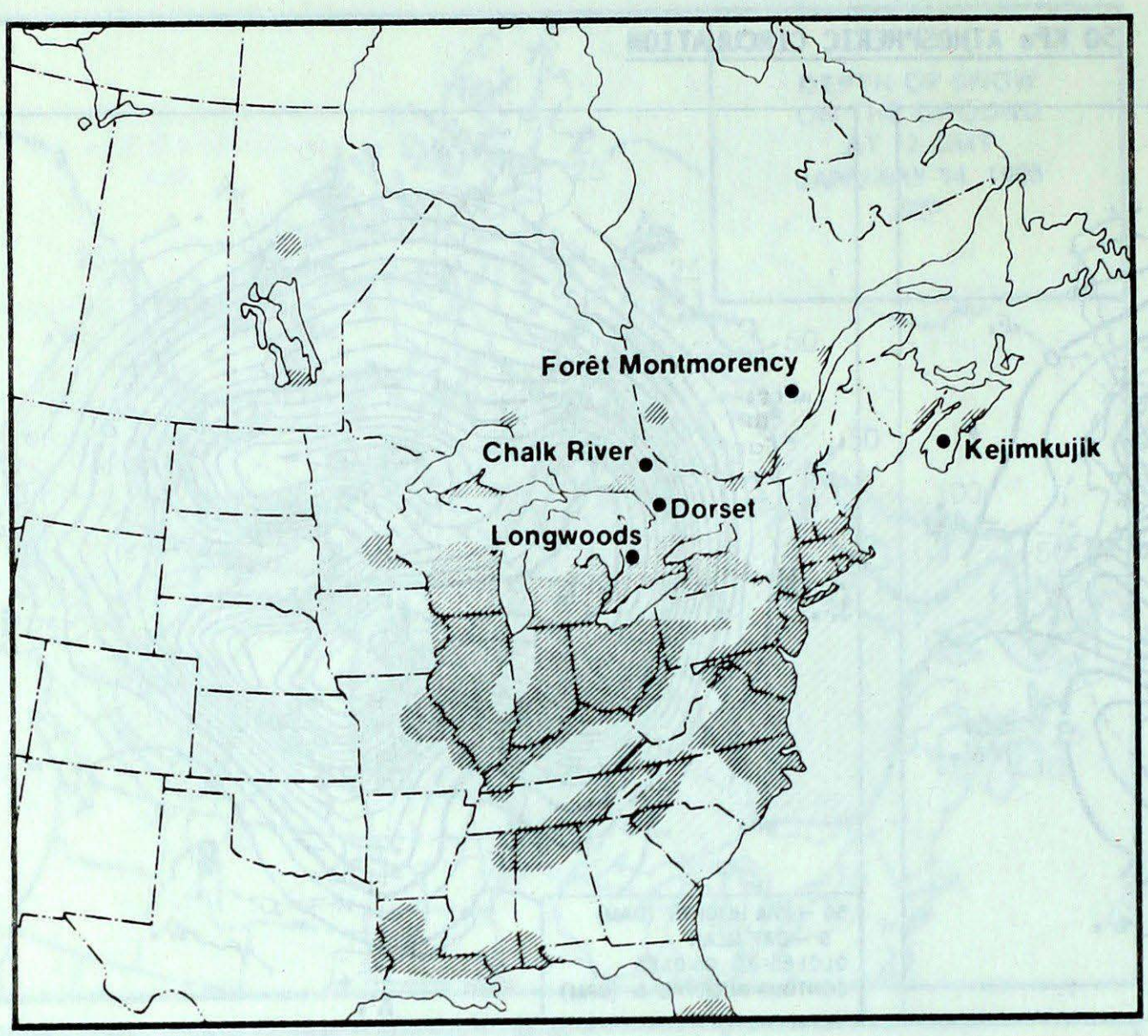


MEAN 50 KPa HEIGHT ANOMALY (dam)
January 1 to January 5, 1985



MEAN 50 KPa HEIGHTS (dam)
January 1 to January 5, 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 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.

JANUARY 6, to JANUARY 12, 1985

SITE	DAY	pH	AMOUNT	AIR PATH TO SITE
Longwoods	7	4.6	3(s)	Illinois, Indiana, Kentucky, Ohio
	8	4.0	3(s)	Northern Ontario, Lake Huron
	10	4.6	2(s)	Northern Ontario, Lake Huron
Dorset	6	3.9	6(s)	Lake Superior, Lake Huron, Central Ontario
	7	4.1	6(s)	Northwestern Québec, Central Ontario
	12	4.4	1(s)	Northern Ontario, Lake Superior, Lake Huron
Chalk River	7	4.5	4(s)	Northern Québec
Montmorency	No precipitation this week.			
Kejimkujik	6	4.7	2(s)	Québec, Maine
	8	4.7	1(s)	Québec, Maine
	9	4.6	2(s)	Québec, Maine

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 15, 1985

STATION	TEMP				PRECIP		SUN
	Av	Dp	Mx	Mn	Tp	SOG	H
YUKON TERRITORY							
Dawson	-13	16	0	-25	10.6	44.0	X
Mayo A	- 6	22	3	-16	3.4	28.0	X
Shingle Point	-22	6	-14	-35	3.8	28.0	*
Watson Lake	-13	13	- 4	-25	7.2	43.0	3.9
Whitehorse	- 4	16	3	-17	*	30.0	6.0
NORTHWEST TERRITORIES							
Coppermine	-22	8	- 5	-36	2.4	20.0	*
Fort Smith	-17	10	- 8	-26	11.6	45.0	4.0
Inuvik	-22	11	-11	-37	1.8	23.0	0.0
Norman Wells	-16	13	- 9	-26	3.8	39.0	4.7
Yellowknife	-19	10	-11	-29	0.0	26.0	4.1
Baker Lake	-27	7	-12	-36	*	34.0	12.0
Coral Harbour	-21	9	- 7	-37	0.8		*
Cape Dyer	-18	4	- 6	-31	*	87.0	X
Clyde	-28	- 2	-17	-38	0.6	39.0	*
Frobisher Bay	-22	4	- 4	-34	0.6	22.0	10.6
Alert	-32	0	-20	-39	2.4	40.0	*
Eureka	-35	1	-20	-47	*	32.0	*
Hall Beach	-28	3	-18	-39	*	19.0	X
Resolute	-30	2	-17	-39	*	15.0	*
Cambridge Bay	-29	5	-19	-38	*	20.0	0.0
Mould Bay	-32	2	-21	-38	0.6	17.0	*
Sachs Harbour	-26	5	-15	-37	0.0	8.0	*
BRITISH COLUMBIA							
Cape St. James	7	4	9	5	62.0		0.1
Cranbrook	- 9	2	- 3	-20	0.2	30.0	6.5
Fort Nelson	-13	11	- 1	-21	2.2	44.0	5.1
Fort St. John	- 6	12	6	-14	1.1	0.0	X
Kamloops	- 4	1	1	- 8	0.0	11.0	7.8
Penticton	- 3	- 1	0	- 4	0.0	4.0	0.0
Port Hardy	5	2	8	- 1	32.7		14.8
Prince George	- 6	4	1	-11	9.4	23.0	7.2
Prince Rupert	6	7	11	- 1	64.6		1.9
Revelstoke	- 5	5	- 1	-13	17.5	58.0	4.8
Smithers	- 3	7	7	- 7	5.0	23.0	6.0
Vancouver	1	- 2	7	- 6	5.8		12.3
Victoria	2	- 2	8	- 4	5.2	0.0	14.4
Williams Lake	- 8	1	0	-16	1.6	53.0	8.4
ALBERTA							
Calgary	- 5	5	10	-18	*	0.0	33.6
Cold Lake	-13	8	5	-27	*	18.0	9.4
Coronation	-13	3	4	-29	0.8	18.0	17.4
Edmonton Namao	-10	7	7	-24	2.0	13.0	*
Fort McMurray	-12	10	7	-23	0.4	10.0	16.0
High Level	-13	18	6	-22	1.6	36.0	8.3
Jasper	- 9	3	2	-18	1.2	29.0	24.7
Lethbridge	- 6	2	7	-17	2.9		*
Medicine Hat	-12	- 2	4	-27	0.0	5.0	27.1
Peace River	- 9	12	5	-19	0.0	22.0	X
SASKATCHEWAN							
Cree Lake	-20	X	0	-36	*	21.0	10.0
Estevan	-18	- 4	0	-29	0.2	17.0	26.3
La Ronge	-20	5	4	-36	1.4	31.0	X
Regina	-18	- 3	0	-30	*	15.0	22.3
Saskatoon	-17	0	2	-30	1.2	18.0	*
Swift Current	-12	0	2	-27	*	8.0	*
Yorkton	-20	- 3	2	-36	0.6	30.0	*
MANITOBA							
Brandon	-19	- 2	2	-31	0.2	20.0	*
Churchill	-21	6	-10	-32	*	29.0	*
Lynn Lake	-22	6	-11	-38	4.2	52.0	*
The Pas	-20	1	0	-36	1.6	35.0	20.1
Thompson	-21	6	-11	-35	*	28.0	17.9
Winnipeg	-18	- 1	1	-30	*	16.0	25.4
ONTARIO							
Atikokan	-20	0	- 6	-39	*	32.0	30.4
Big Trout Lake	-20	4	-10	-34	*	94.0	11.7
Earlton	*	*	- 4	-33P	*		X
Kapuskasing	-17	1	- 8	-31	12.8	42.0	*
Kenora	-17	- 1	- 4	-27	4.5	34.0	X
Kingston	-11	- 1	- 1	-22	0.0	14.0	*
London	- 7	- 1	- 2	-16	5.7	3.0	*
Moosonee	-17	3	- 9	-30	3.8	51.0	*
Muskoka	-14	- 3	- 1	-33	*	22.0	X
North Bay	-16	- 3	- 4	-28	4.9	21.0	19.5
Ottawa	-14	- 2	- 1	-23	2.7	31.0	27.3
Pickle Lake	-19	2	-10	-31	*	66.0	X
Red Lake	-19	0	- 7	-35	5.0	56.0	19.7
Sudbury	-15	- 1	- 4	-26	4.2	31.0	13.3
Thunder Bay	-16	- 2	- 4	-31	2.2	32.0	31.8
Timmins	-17	1	- 5	-30	10.6	39.0	X
Toronto	-10	- 3	- 1	-24	0.7	7.0	X
Trenton	-10	- 2	1	-22	2.0	11.0	X
Wiarton	- 8	- 2	1	-16	13.7	28.0	13.6
Windsor	- 7	- 2	0	-13	12.0	4.0	X
QUEBEC							
Bagotville	-16	0	- 8	-29	10.8	30.0	X
Blanc-Sablon	-11	2	- 4	-20	15.8	35.0	9.5
Inukjuak	-21	3	-11	-34	*	44.0	18.6
Kuujjuaq	-20	3	- 4	-38	5.4	53.0	17.2
Kuujjuarapik	-18	3	-11	-30	2.4	21.0	5.3
Maniwaki	-16	- 2	- 3	-29	2.8	29.0	25.4
Mont-Joli	-14	- 3	- 9	-20	9.8	15.0	65.2
Montréal	-13	- 3	- 2	-22	8.5	11.0	20.9
Natashquan	-14	- 2	- 5	-27	1.0	21.0	*
Nitchequon	-22	1	-15	-33	19.0	51.0	5.2
Québec	-14	- 2	- 5	-21	3.0	43.0	13.5
Schefferville	-17	5	- 7	-32	*	33.0	16.5
Sept-Iles	-15	- 1	- 8	-24	0.0	14.0	*
Sherbrooke	-17	- 4	- 3	-27	*	15.0	14.8
Val-d'Or	-18	- 1	- 5	-26	6.2	39.0	22.9
NEW BRUNSWICK							
Charlo	-14	0	- 7	-20	0.1	20.0	32.0
Chatham	-14	- 4	- 4	-23	1.2	20.0	38.9
Fredericton	-14	- 4	- 4	-25	0.6	9.0	*
Moncton	-14	- 5	- 4	-22	2.6	13.0	*
Saint John	-12	- 5	1	-18	0.6	18.0	*
NOVA SCOTIA							
Greenwood	-10	- 5	2	-18	0.4	18.0	X
Shearwater	- 9	- 5	3	-13	0.2	7.0	32.5
Sydney	-10	- 5	- 5	-15	6.0	15.0	21.1
Yarmouth	- 6	- 3	6	-10	4.8	19.0	6.9
PRINCE EDWARD ISLAND							
Charlottetown	-13	- 6	- 5	-19	2.6	19.0	*
Summerside	-13	- 5	- 3	-18	4.4	13.0	35.6
NEWFOUNDLAND							
Gander	- 7	- 2	- 2	-15	13.0	25.0	13.4
Port aux Basques	- 6	- 3	- 2	-10	30.0	97.0	*
St. John's	- 6	- 2	0	-15	18.4	15.0	6.7
St. Lawrence	- 4	1	0	- 9	53.0	36.0	X
Cartwright	-11	2	- 2	-24	25.6	171.0	X
Churchill Falls	-18	5	- 6	-29	15.0	126.0	X
Goose	-14	2	- 4	-28	14.6	72.0	13.5

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