

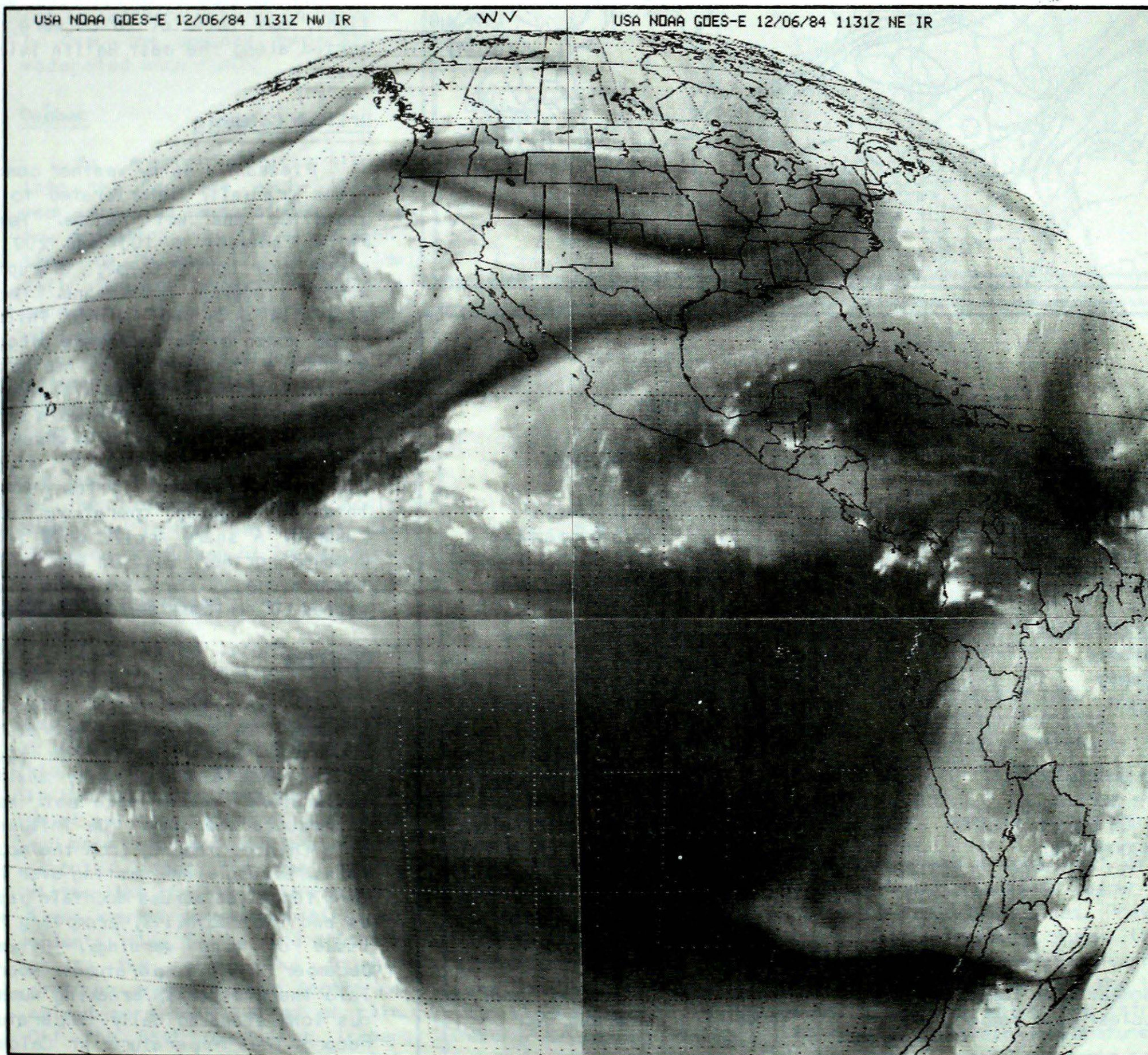
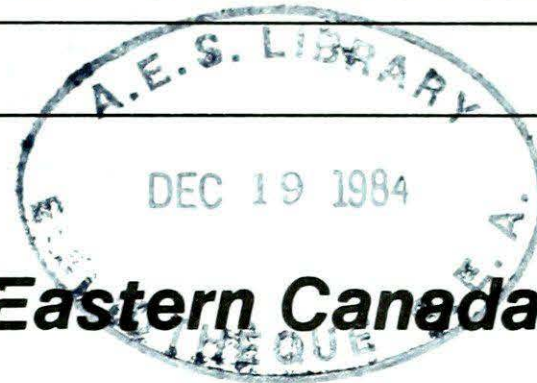
Climatic Perspectives

A WEEKLY REVIEW OF CANADIAN CLIMATE

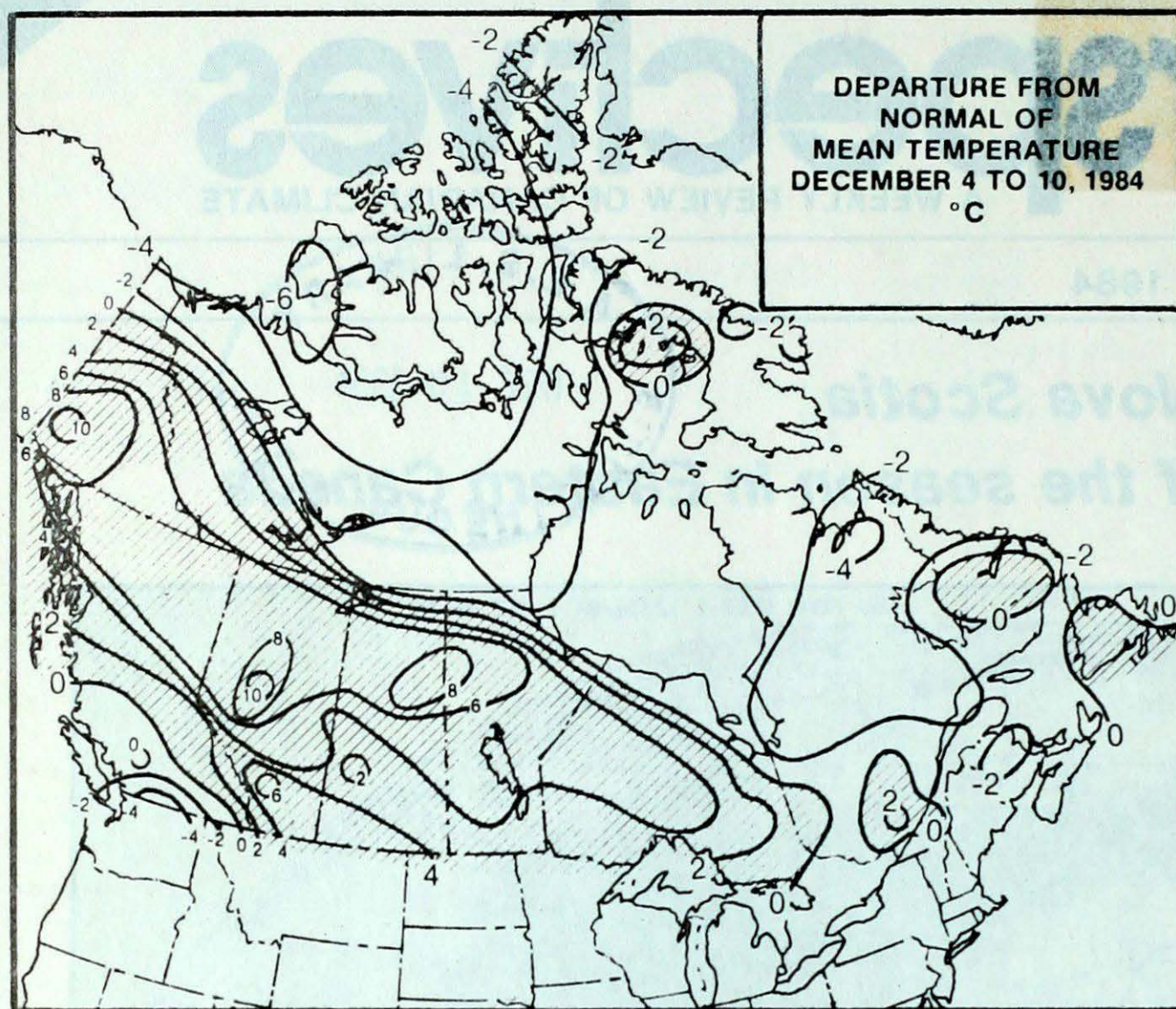
Canadian Climate Centre

For the period December 4 to 10, 1984

- *Drought broken in Nova Scotia*
- *First snowstorms of the season in Eastern Canada*



A GOES (Geostationary Operational Environmental Satellite) image of December 6, 1984 depicting the distribution of water vapour over a large portion of the globe (for more details, see page 3).

ACROSS THE COUNTRY...Yukon and Northwest Territories

A strong southerly flow allowed a mild Pacific airmass to penetrate the Yukon, while a very frigid Arctic high pressure cell was poised to the North. Maximum temperatures in the Yukon climbed to almost 4° early in the period. In contrast, maximum temperatures at Mould Bay in the western Arctic hovered near the minus thirties all week. Snowfalls in the Northwest Territories were light, but falls of 20 cm were reported along the east Baffin Island coast.

British Columbia

Pleasantly sunny weather conditions gradually deteriorated to an unsettled and wet regime. Heavy rains, between a 100 and 200 mm along the North Coast, disrupted winter logging operations. Heavy snowfalls occurred further inland; roads north of Terrace were plugged with more than 100 cm of new snow. In the Kootenays, snowfall accumulations are the heaviest to date since 1973. The Salmo-Creston Highway in the South was occasionally closed due to snow slides. In the central interior logging operations have resumed. A sharp Arctic cold front crossed northern B.C. on Dec 9. The temperature at Fort St. John plummeted 10° in a matter of minutes.

Prairies

It was predominantly sunny and pleasant. In the East, temperatures moderated rapidly, and by the middle of the week many new daily maximum temperature records were set. Most of Alberta was under the influence of a Chinook blowing from the mountains. Strong winds gusting over 100 km/h funnelled across mountain passes and the foothills, prompting the issue of wind warnings. Between December 6-9, temperatures soared into the mid-teens, breaking numerous long standing daily temperature records. The temperature at Calgary climbed to 16 degrees on Dec 6. Precipitation was light, but 5 to 10 cm of new snow fell in the foothills.

WEEKLY TEMPERATURE EXTREMES (°C)

	MAXIMUM	MINIMUM
YUKON TERRITORY	1.9 Mayo	-43.0 Dawson
NORTHWEST TERRITORIES	0.4 Hay River	-43.0 Coppermine
BRITISH COLUMBIA	11.0 Sandspit	-27.5 Puntzi Mountain
ALBERTA	16.1 Calgary	-36.8 High Level
SASKATCHEWAN	7.0 Nipawin	-41.9 Cree Lake
MANITOBA	6.0 Grand Rapids	-33.6 Gillam
ONTARIO	7.2 Point Petre	-34.3 Big Trout Lake
QUEBEC	9.0 Iles de la Madeleine	-32.3 Matagami
NEW BRUNSWICK	8.6 Saint John	-22.4 St. Stephen
NOVA SCOTIA	13.4 Sable Island	-14.3 Amherst
PRINCE EDWARD ISLAND	9.5 East Point	-13.7 Charlottetown
NEWFOUNDLAND	15.1 Argentia	-31.5 Churchill Falls

ACROSS THE NATION

Warmest mean temperature	6.5	Cape St. James, BC
Coollest mean temperature	-36.6	Eureka, NWT

Ontario

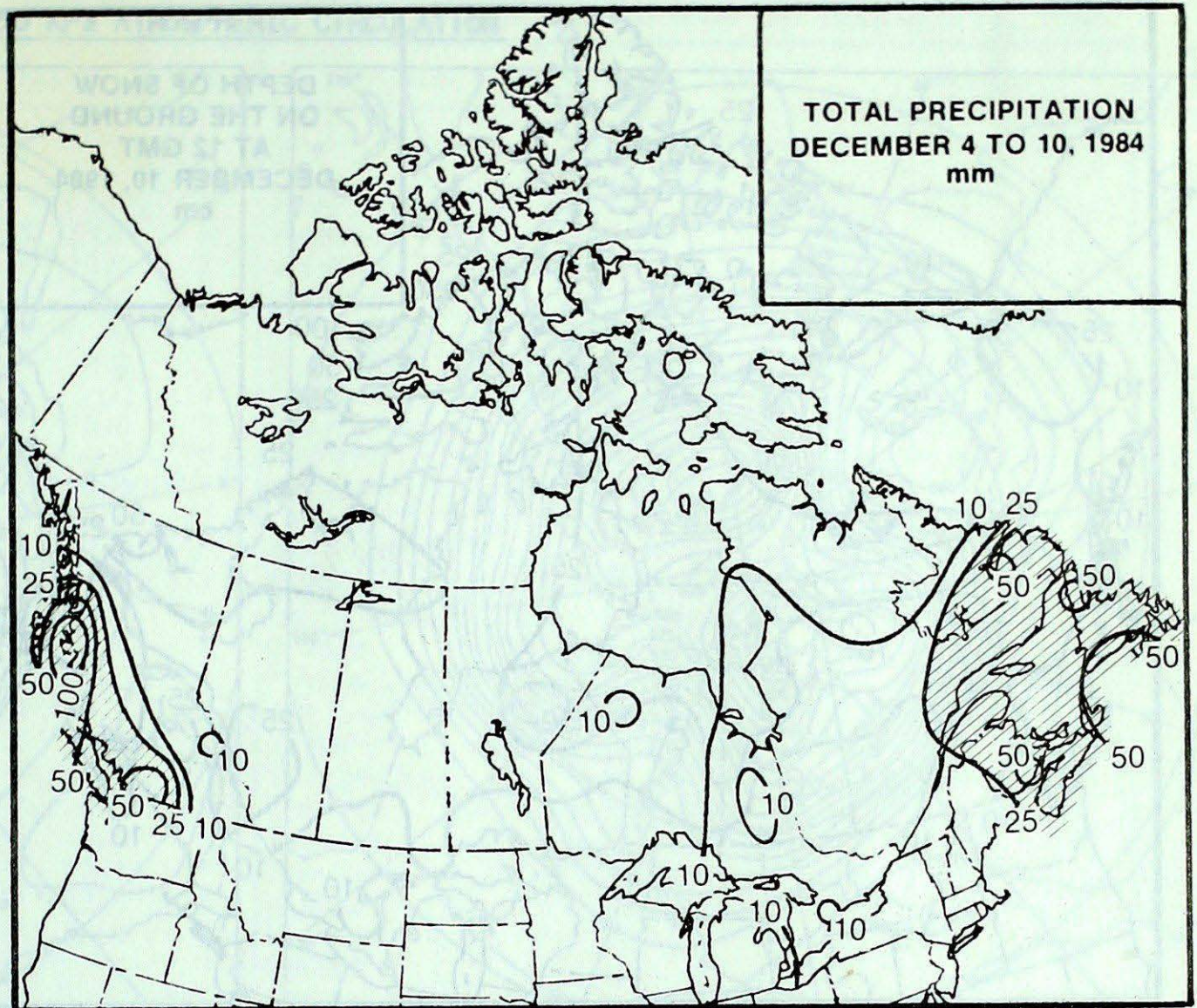
The southern half of the Province received its first significant snowfall of the season on December 6. Amounts ranged from several centimetres in the Southwest to more than 15 cm in eastern Ontario. In the wake of this system strong winds and falling temperatures caused blowing and drifting snow in rural areas. Snow squalls to the lee of the Great Lakes dumped an additional 10 to 20 cm in some localities. Several new daily minimum temperature records were set in northern Ontario on December 7. Over the weekend temperatures moderated once again.

Québec

An Arctic airmass slipped into the Province early in the week, dropping temperatures, with a few exceptions, to the minus twenties. On December 7, several new daily minimum temperature records were set. Snowfalls generally ranged between 10 and 25 cm, with the bulk of precipitation occurring between December 6-7. The Eastern Townships, which had just recovered from a heavy snowfall on December 3, received an additional 35 cm of new snow on December 6, resulting in the closure of many schools. Sherbrook in the last eight days received more than 61 cm of snow.

Atlantic Provinces

Two major storms crossed Atlantic Canada during the early and middle part of the period. Heaviest snowfalls occurred in New Brunswick, while a mixture of rain and snow fell elsewhere. Some areas in New Brunswick received up to 40 cm of new snow. Schools, businesses and many roads were closed, but ski resorts opened for the season. Winter-like conditions in the Maritimes caused numerous traffic accidents; five deaths were attributed to the storms. The drought-stricken areas of Nova Scotia received more than 100 mm of rain. Off the East Coast, an iceberg threatened several drilling platforms near the Grand Banks, necessitating the harnessing and towing of the iceberg by ocean going tugs.

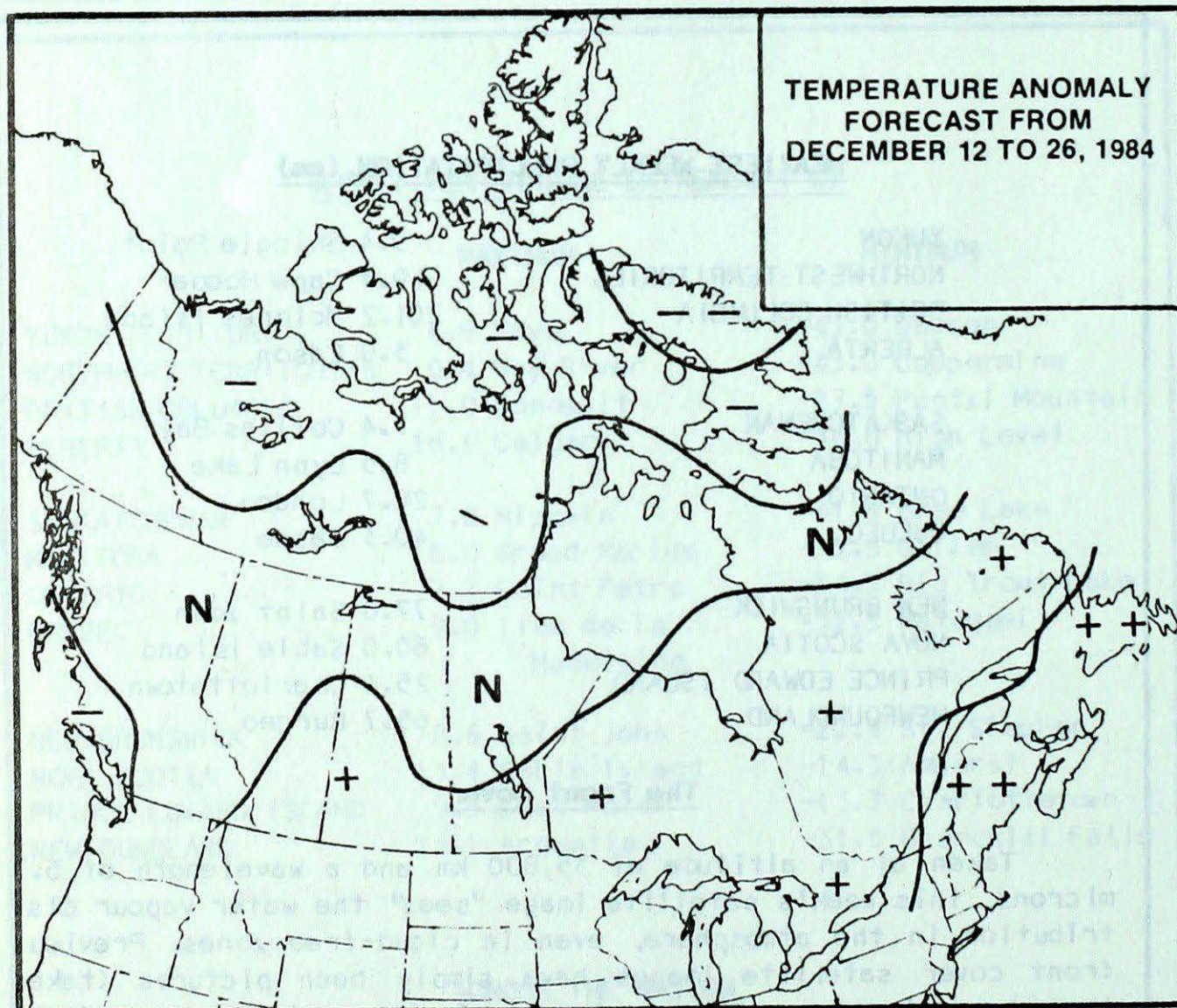
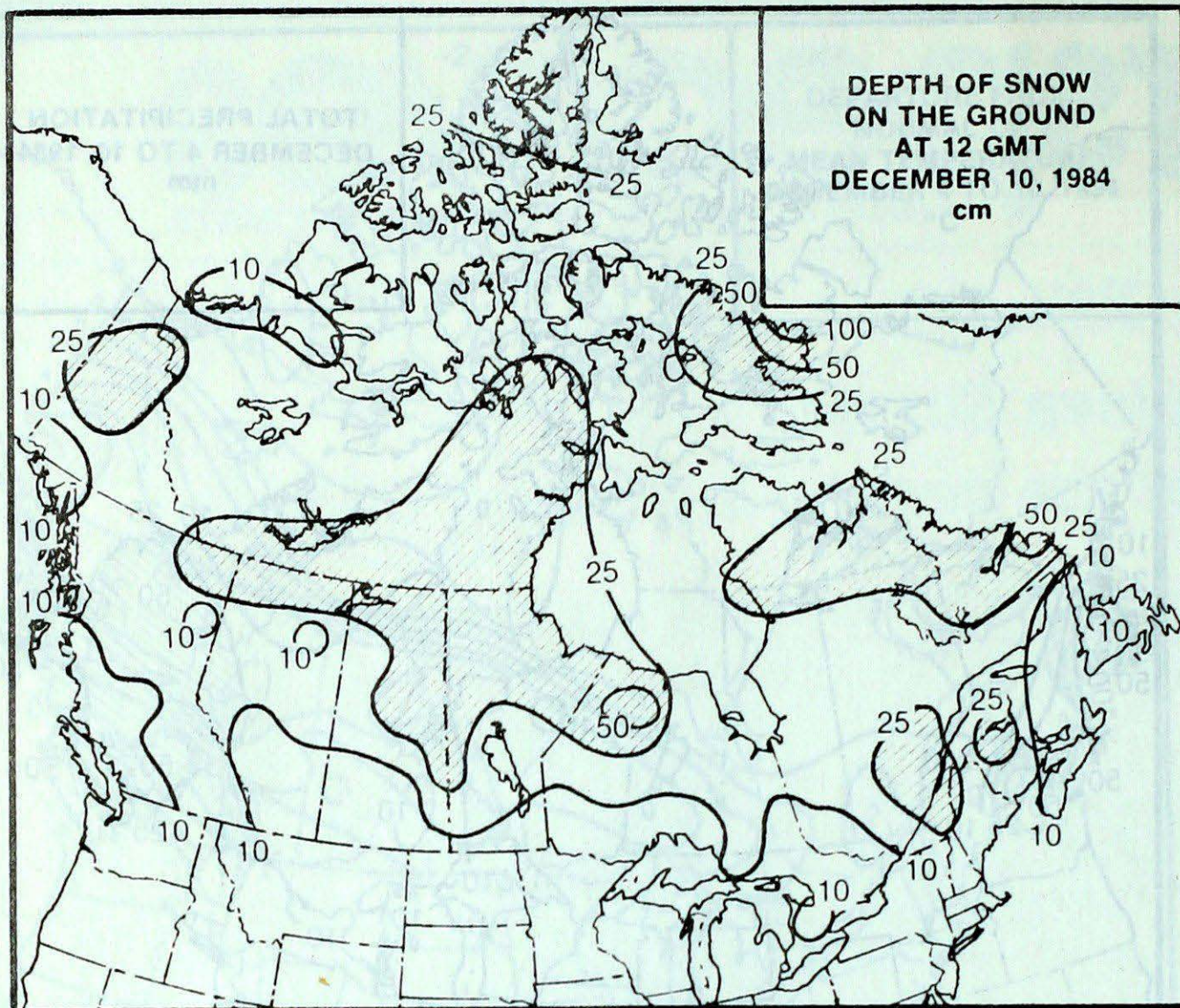


HEAVIEST WEEKLY PRECIPITATION (mm)

YUKON	9.4 Shingle Point
NORTHWEST TERRITORIES	19.4 Cape Hooper
BRITISH COLUMBIA	201.2 McInnes Island
ALBERTA	3.0 Edson
SASKATCHEWAN	7.4 Collins Bay
MANITOBA	8.5 Lynn Lake
ONTARIO	28.7 London
QUEBEC	40.3 Gaspé
NEW BRUNSWICK	77.0 Saint John
NOVA SCOTIA	60.0 Sable Island
PRINCE EDWARD ISLAND	25.4 Charlottetown
NEWFOUNDLAND	65.7 Burgeo

The Front Cover

Taken at an altitude of 35,800 km and a wavelength of 6.7 microns, this week's satellite image "sees" the water vapour distribution in the atmosphere, even in cloud-free zones. Previous front cover satellite images have simply been pictures (taken through a transparent atmosphere) of the underlying surface, whether they be land, sea, or cloud tops. In this case the image is a sounding of the atmosphere itself in which the infrared energy sensed by the satellite depends upon air temperature and the amount of radiation absorbed by water vapour in the air column beneath. While areas in the picture can be interpreted as regions of high water vapour content, dark bands as dry regions.



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 6

Managing Editor M.J. Newark
Editor (English) A. Radomski
Editor (French) A. Caillet
Staff Writer M. Skarpathiotakis
Art Layout and Graphics W. Johnson
K. Czaja
J. Rautenberg
Word Processing U. Ellis, N. Khaja
P. Hare

Regional Correspondents

Atl.: F. Amirault; Que.: J. Miron
Central: F. Luciw; Ont.: B. Smith
Western: W. Prusak; Pac.: N. Penny
Yukon: H. Wahl; Ice: T. Mullane

ISSN 0225-5707

UDC 551.506.1(71)

Climatic Perspectives is a weekly bilingual publication of the Canadian Climate Centre, Atmospheric Environment Service, 4905 Dufferin St., Downsview, Ont. Canada M3H 5T4. **Phone (416)667-4711/4906.**

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.

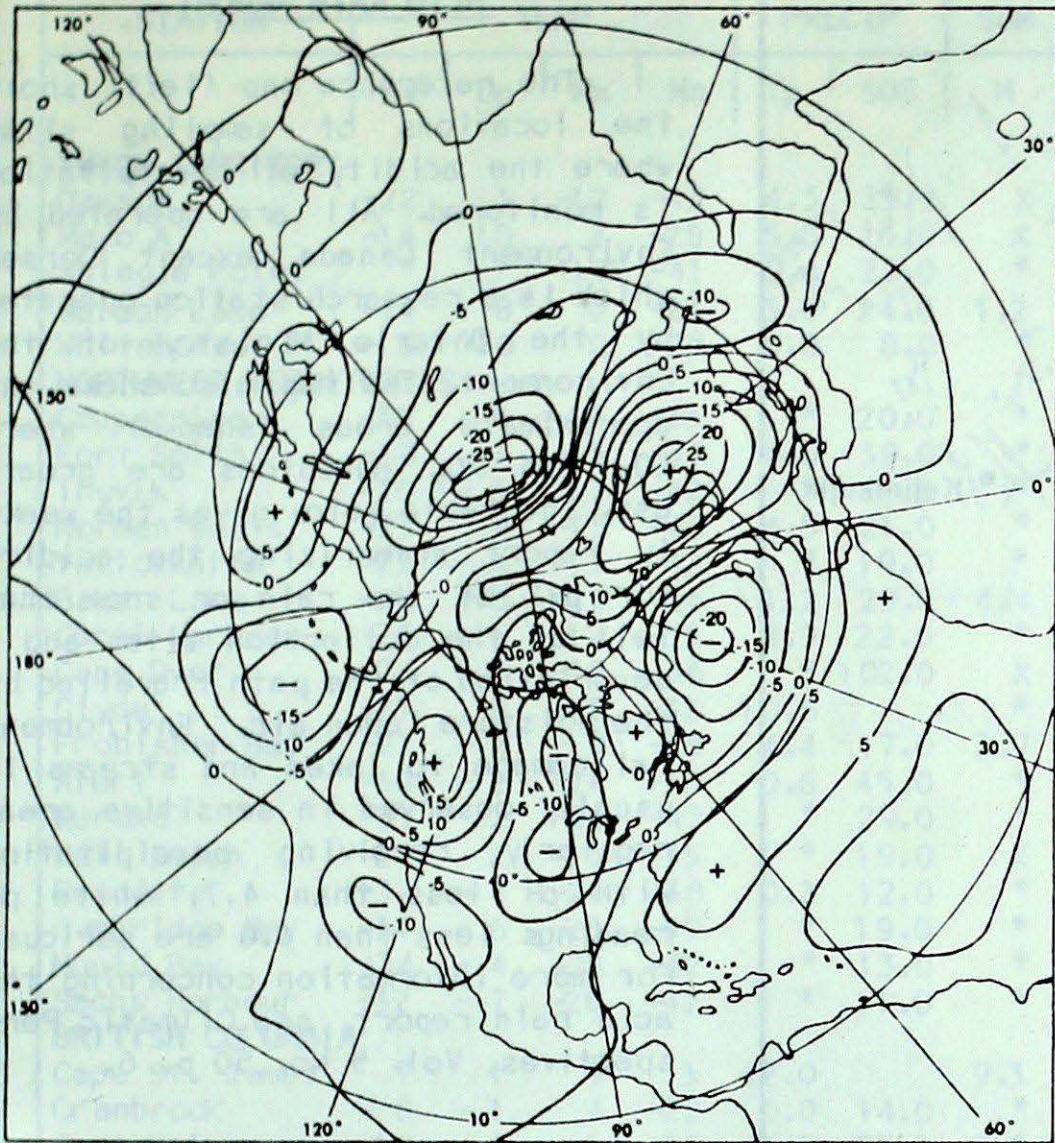
The data shown in this publication are based on unverified reports from approximately 225 Canadian synoptic weather stations. Information concerning climatic impacts is gathered from AES contacts with the public and from the media. Articles do not necessarily reflect the views of the Atmospheric Environment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

Annual Subscriptions

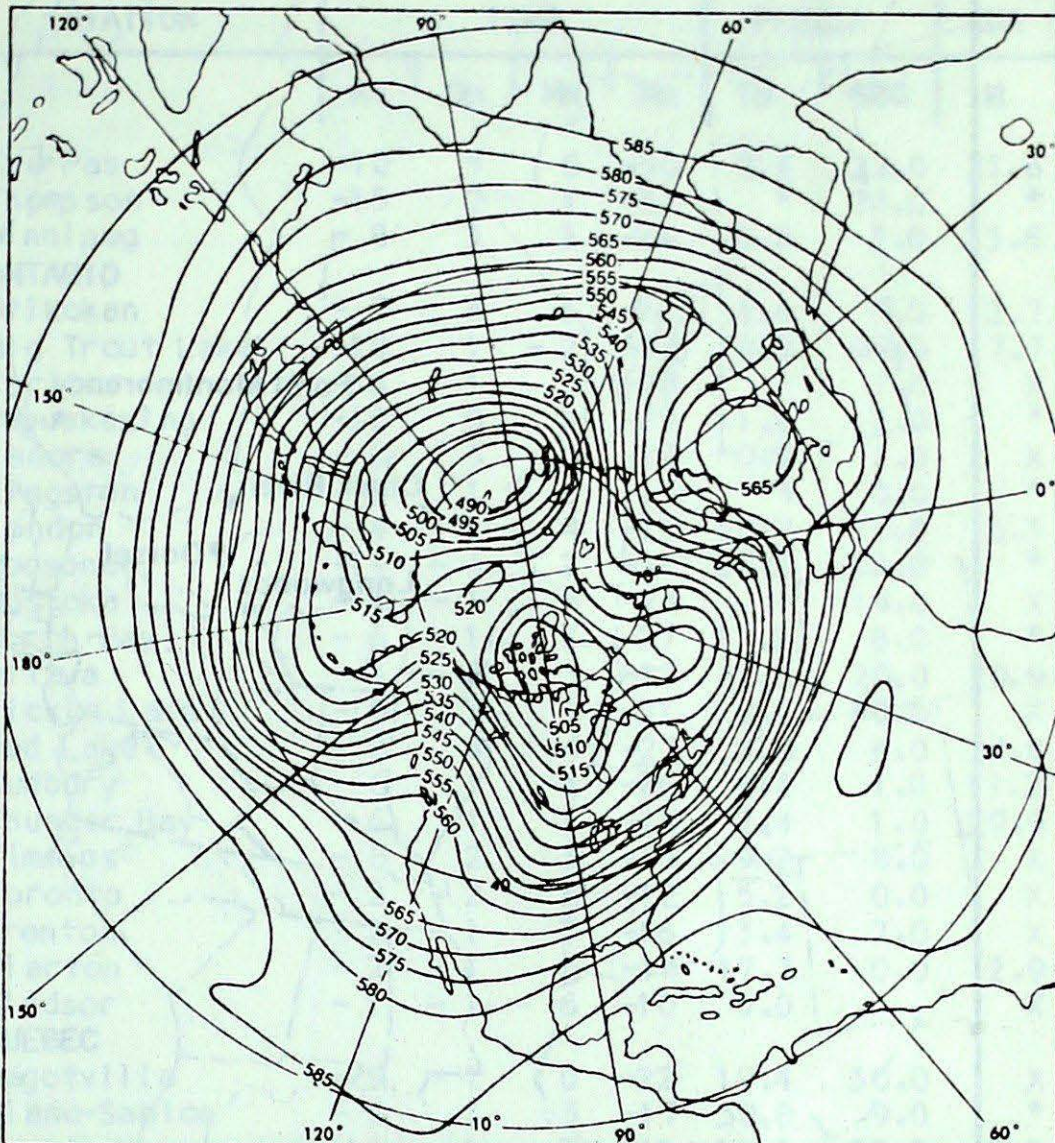
Weekly Issue Including
monthly supplement: \$35.00
Monthly Issue only: \$10.00

Subscription enquiries: Supply and Services Canada, Publishing Centre, Ottawa, Ontario, Canada, K1A 0S9.

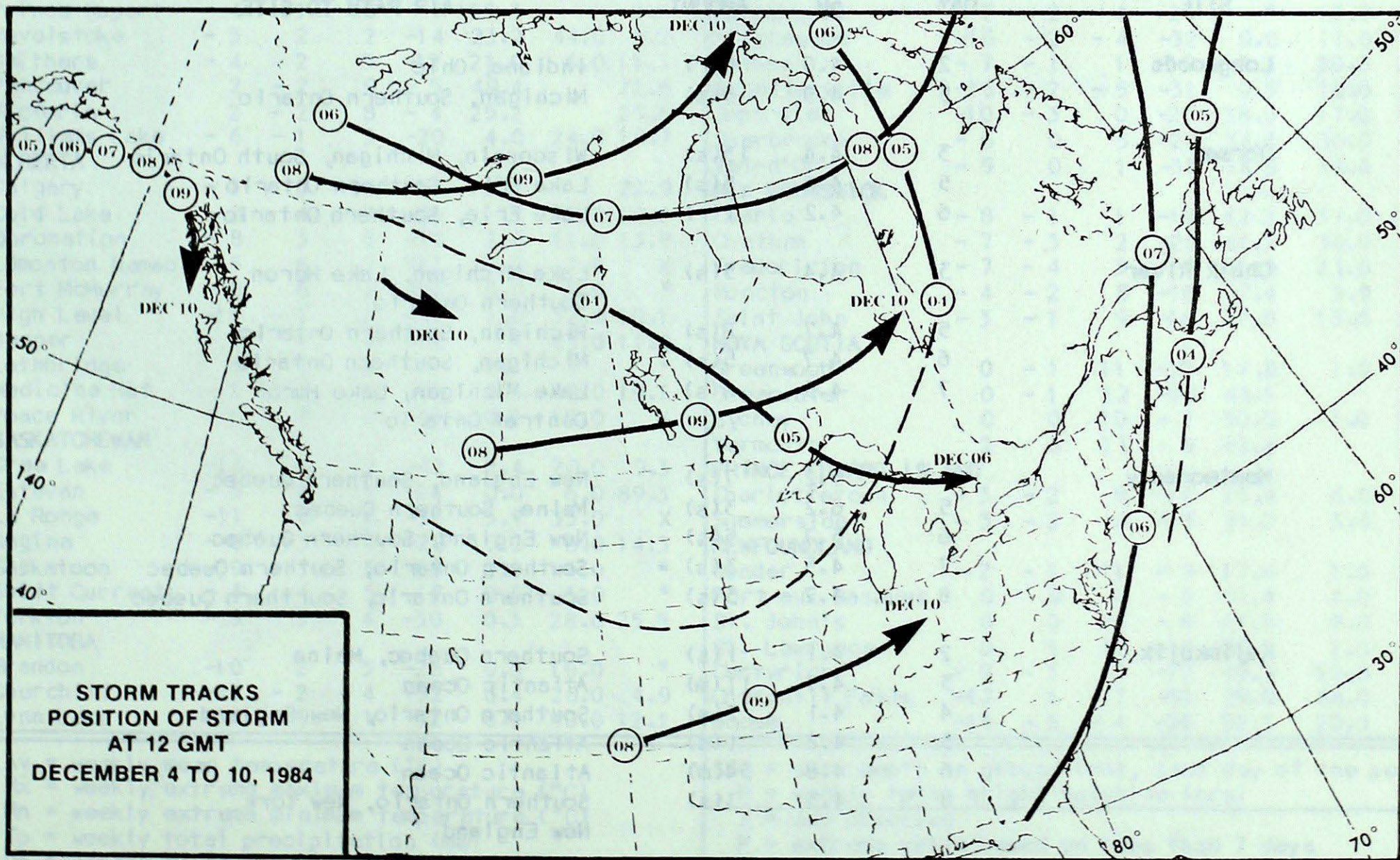
50 KPa ATMOSPHERIC CIRCULATION

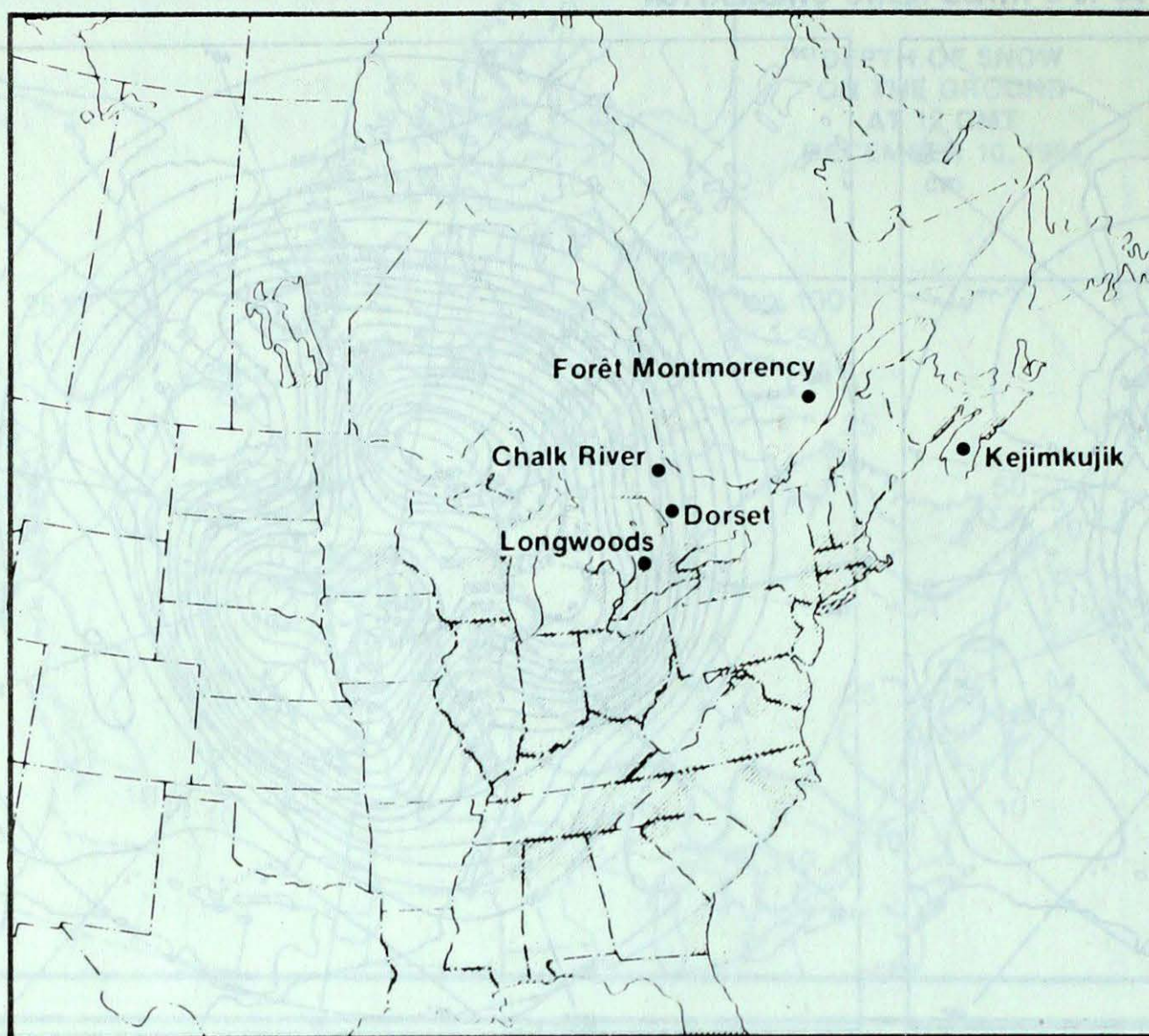


MEAN 50 KPa HEIGHT ANOMALY (dam)
DECEMBER 2 to December 6, 1984



MEAN 50 KPa HEIGHTS (dam)
DECEMBER 2 to December 6, 1984



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.

DECEMBER 2 to DECEMBER 8, 1984

SITE	DAY	pH	AMOUNT	AIR PATH TO SITE
Longwoods	2	4.0	8(r)	Indiana, Ohio
	5	4.9	3(s)	Michigan, Southern Ontario
Dorset	3	4.4	15(s)	Wisconsin, Michigan, South Ontario
	5	4.4	5(s)	Lake Erie, Southern Ontario
	6	4.2	1(r)	Lake Erie, Southern Ontario
Chalk River	3	4.4	5(s)	Lake Michigan, Lake Huron Southern Ontario
	5	4.7	8(s)	Michigan, Southern Ontario
	6	4.7	5(s)	Michigan, Southern Ontario
	7	4.3	6(s)	Lake Michigan, Lake Huron Central Ontario
Montmorency	3	5.2	7(s)	New England, Southern Quebec
	5	6.2	3(s)	Maine, Southern Quebec
	6	5.7	5(s)	New England, Southern Quebec
	7	4.5	3(s)	Southern Ontario, Southern Quebec
	8	4.7	3(s)	Southern Ontario, Southern Quebec
Kejimikujik	2	4.1	1(s)	Southern Quebec, Maine
	3	4.7	11(m)	Atlantic Ocean
	4	4.1	2(s)	Southern Ontario, New England
	5	4.8	1(s)	Atlantic Ocean
	6	4.8	34(m)	Atlantic Ocean
	8	4.5	3(s)	Southern Ontario, New York New England

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

TEMPERATURE, PRECIPITATION AND BRIGHT SUNSHINE DATA FOR THE WEEK ENDING 0600 GMT DECEMBER 11, 1984

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	-10	5	6	-30	0.4	22.0	21.6
Dawson	-22	3	-12	-43	4.3	25.0	X	Thompson	-15	7	1	-33	*	25.0	*
Mayo A	-14	10	2	-28	6.0	26.0	X	Winnipeg	-8	3	3	-24	0.8	3.0	23.6
Shingle Point	*	*	-17P	-41	9.4	23.0	*	ONTARIO							
Watson Lake	-14	8	0	-23	3.0	24.0	1.2	Atikokan	-9	4	3	-27	4.4	9.0	12.7
Whitehorse	-6	10	0	-25	5.0	8.0	*	Big Trout Lake	-15	1	-2	-34	10.8	99.0	7.7
NORTHWEST TERRITORIES								Earlton	-6	1	3	-27	*	7.0	X
Coppermine	-30	-6	-16	-43	*	20.0	*	Kapuskasing	-10	0	2	-29	11.6	17.0	*
Fort Smith	-18	1	-3	-37	4.0	39.0	*	Kenora	-8	3	3	-27	0.0	2.0	X
Inuvik	-30	-3	-17	-42	*	25.0	*	Kingston	-2	1	6	-15	*	0.0	*
Norman Wells	-23	4	-15	-40	4.5	21.0	*	London	-4	-3	4	-11	28.7	10.0	6.3
Yellowknife	-25	-4	-13	-42	*	19.0	*	Mooseonee	-14	-4	2	-31	21.3	15.0	*
Baker Lake	-28	-3	-16	-36	1.2	29.0	4.4	Muskoka	-4	-1	5	-24	*	14.0	X
Coral Harbour	-24	-1	-12	-33	8.9	22.0	*	North Bay	-6	-1	2	-27	12.2	8.0	*
Cape Dyer	-24	-3	-12	-36	*	102.0	X	Ottawa	-4	0	3	-17	22.6	20.0	20.9
Clyde	-23	0	-15	-32	10.6		*	Pickle Lake	-10	5	1	-31	8.8	30.0	X
Frobisher Bay	-21	-2	-9	-35	4.4	17.0	3.7	Red Lake	-8	4	4	-27	2.8	4.0	24.4
Alert	-30	-2	-21	-36	0.6	45.0	*	Sudbury	-6	1	4	-26	8.4	1.0	11.2
Eureka	-37	-2	-26	-43	*	29.0	*	Thunder Bay	-6	1	6	-25	2.4	1.0	29.9
Hall Beach	-24	2	-15	-35	*	19.0	X	Timmins	-8	2	3	-30	9.2	8.0	X
Resolute	-32	-4	-26	-38	0.2	12.0	*	Toronto	-2	-2	6	-12	5.2	0.0	X
Cambridge Bay	-34	-6	-25	-39	*	19.0	*	Trenton	-2	-1	7	-16	13.4	7.0	X
Mould Bay	-34	-4	-28	-42	*	13.0	*	Warton	-2	-1	5	-14	17.7	0.0	2.9
Sachs Harbour	-32	-7	-20	-42	*	11.0	*	Windsor	-1	-1	6	-10	5.0		X
BRITISH COLUMBIA								QUEBEC							
Cape St. James	7	1	9	3	42.0		9.3	Bagotville	-9	-1	0	-22	19.4	30.0	X
Cranbrook	-8	-1	4	-22	0.0	14.0	*	Blanc-Sablon	-6	1	3	-17	30.0	9.0	*
Fort Nelson	-14	6	-1	-26	3.2	37.0	9.8	Inukjuak	-15	-1	-3	-31	11.6	52.0	6.2
Fort St. John	-6	7	5	-23	0.5	2.0	X	Kuujuuaq	-18	-4	-4	-29	3.2	36.0	18.9
Kamloops	-3	-1	4	-9	3.9	6.0	16.9	Kuujuarapik	-12	-2	-3	-20	16.7	11.0	3.2
Penticton	-4	-4	1	-10	1.0	0.0	*	Maniwaki	-7	0	3	-21	19.4	16.0	15.9
Port Hardy	4	0	7	-2	91.5		18.0	Mont-Joli	-7	-2	4	-17	14.2	9.0	14.9
Prince George	-5	1	4	-21	0.0	4.0	*	Montréal	-4	0	4	-16	20.8	17.0	21.7
Prince Rupert	4	1	10	-7	150.3		2.6	Natashquan	-7	-2	4	-24	*	13.0	*
Revelstoke	-3	2	2	-14	23.2	44.0	5.2	Nitchequon	-16	-2	-4	-32	9.0	11.0	12.2
Smithers	-4	2	5	-12	21.0	6.0	11.7	Québec	-7	-1	1	-18	19.3	30.0	22.6
Vancouver	2	-2	9	-5	49.4		21.6	Schefferville	-16	-2	-5	-31	9.5	16.0	12.2
Victoria	2	-2	8	-4	25.2		20.6	Sept-Îles	-10	-3	0	-25	38.0	17.0	17.3
Williams Lake	-6	-1	3	-20	4.0	24.0	18.7	Sherbrooke	-6	0	5	-24	34.4	38.0	19.7
ALBERTA								Val-d'Or	-9	0	1	-31	14.8	18.0	4.8
Calgary	-1	7	16	-16	1.2		22.9	NEW BRUNSWICK							
Cold Lake	-8	4	7	-26	*	18.0	10.2	Charlo	-8	-1	1	-19	42.2	37.0	16.9
Coronation	-8	3	5	-18	2.8	11.0	13.8	Chatham	-7	-3	2	-20	41.2	30.0	18.9
Edmonton Nmao	-5	6	7	-22	0.0	7.0	X	Fredericton	-7	-4	3	-19	45.8	23.0	*
Fort McMurray	-8	6	7	-30	0.0	9.0	*	Moncton	-4	-2	8	-16	27.4	5.0	*
High Level	-16	-1	2	-37	1.6	32.0	10.1	Saint John	-3	-1	9	-16	77.0	15.0	22.5
Jasper	-7	1	4	-18	*	23.0	11.0	NOVA SCOTIA							
Lethbridge	0	5	11	-17	1.1		*	Greenwood	0	-1	11	-12	17.8	1.0	X
Medicine Hat	-1	6	8	-13	0.4	0.0	19.1	Shearwater	0	-1	12	-10	44.1		27.3
Peace River	-6	7	4	-30	0.2	15.0	X	Sydney	0	0	10	-7	50.0	1.0	14.2
SASKATCHEWAN								Yarmouth	2	0	13	-9	43.4		18.3
Cree Lake	-13	X	3	-42	2.4	20.0	9.3	PRINCE EDWARD ISLAND							
Estevan	-5	4	5	-24	0.0	6.0	89.3	Charlottetown	-3	-2	8	-14	25.4	6.0	*
La Ronge	-11	8	6	-36	3.7	33.0	X	Summerside	-3	-2	8	-13	21.2	3.0	13.6
Regina	-8	3	4	-28	0.2	6.0	14.3	NEWFOUNDLAND							
Saskatoon	-9	3	3	-26	0.0	14.0	*	Gander	-2	-1	11	-9	17.6	1.0	25.4
Swift Current	-4	4	5	-17	0.5	3.0	*	Port aux Basques	0	0	8	-5	51.4	4.0	*
Yorkton	-9	3	4	-30	0.3	28.0	25.5	St. John's	0	0	15	-6	41.5	0.0	*
MANITOBA								St. Lawrence	0	1	13	-8	60.2	2.0	X
Brandon	-10	2	3	-28	0.0	10.0	*	Cartwright	-9	-3	0	-17	40.9	59.0	X
Churchill	-21	-2	-4	-32	6.4	26.0	4.9	Churchill Falls	-17	1	-7	-31	29.0	66.0	X
Lynn Lake	-14	9	1	-32	8.5	40.0	12.1	Goose	-14	-5	-4	-26	52.1	20.0	19.5

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