Environment Canada | Environnement Canada

Climatic Perspectives

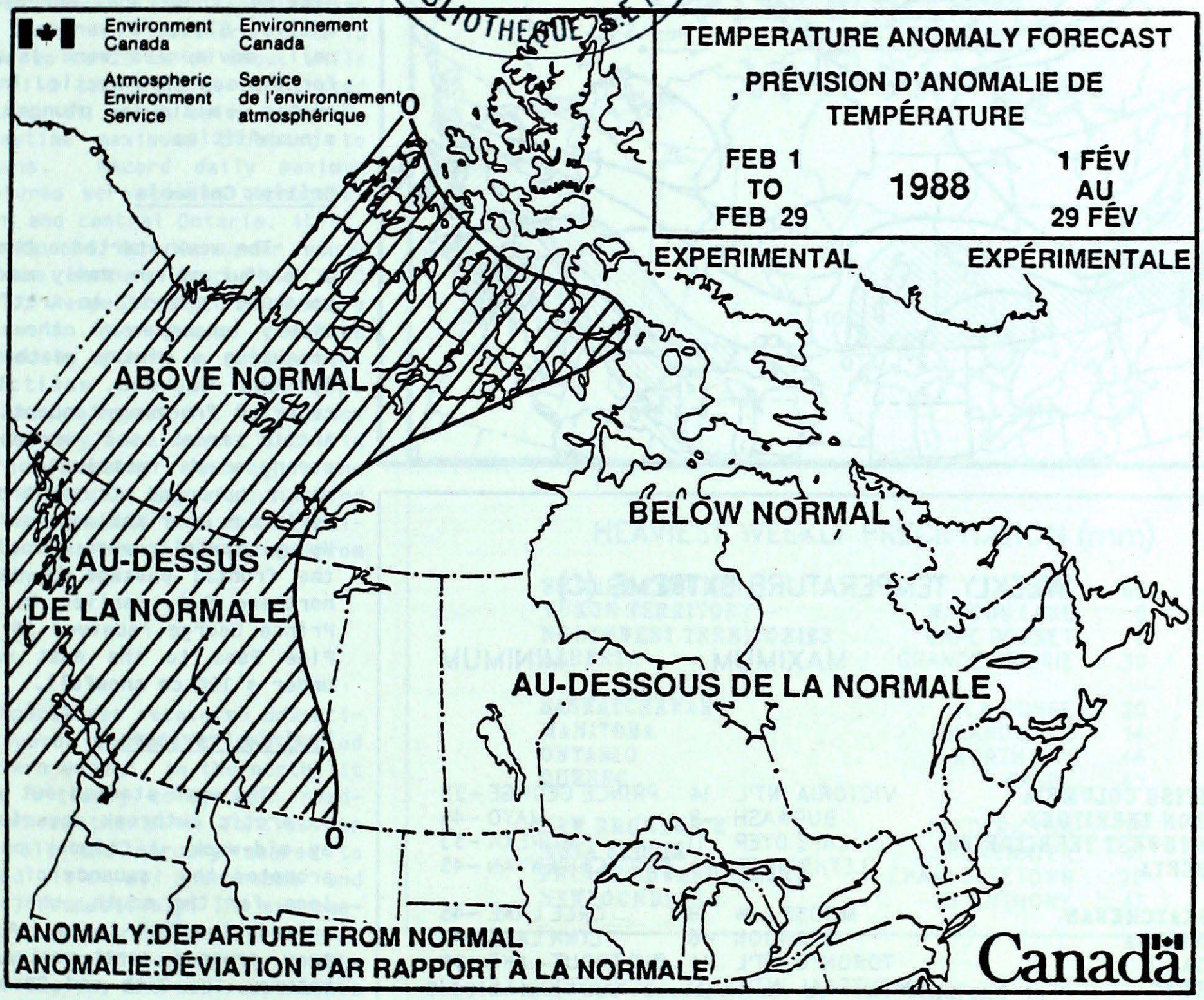
A weekly review of Canadian climate | January 26 to February 1, 1988 | Vol.10 No.5

Environment Canada | Environnement Canada
Atmospheric Environment Service | Service de l'environnement atmosphérique

TEMPERATURE ANOMALY FORECAST
PRÉVISION D'ANOMALIE DE TEMPÉRATURE

FEB 1 TO FEB 29 — 1988 — 1 FÉV AU 29 FÉV

EXPERIMENTAL — EXPÉRIMENTALE

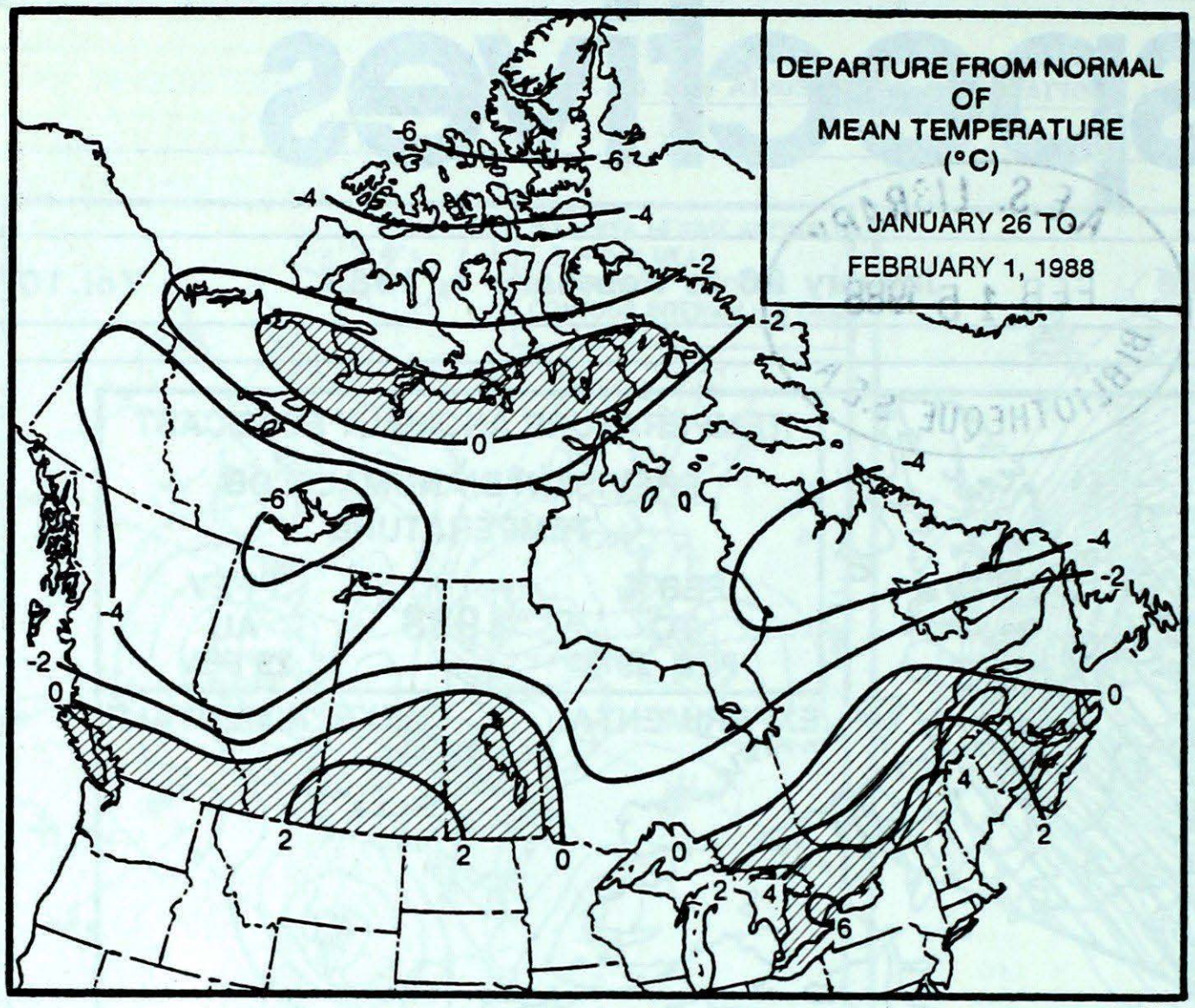


The above map is the latest in the evolution towards developing an acceptable format to be used in the official public product which will be formally introduced early this year. Stations near the line separating the two categories are expected to be in the transition zone between above and below normal averaged temperatures. Please forward any comments to the Canadian Climate Centre at the address listed on page 4 or call (416) 739-4436.

- ***Frigid Arctic air and snow Western Canada***
- ***Balmy temperatures and melting snow Southern Ontario and Southern Quebec***

Canada

TEMPERATURE



WEEKLY TEMPERATURE EXTREME (C)

		MAXIMUM		MINIMUM
BRITISH COLUMBIA	VICTORIA INT'L	14	PRINCE GEORGE	-38
YUKON TERRITORY	BURWASH	-8	MAYO	-45
NORTHWEST TERRITORIES	CAPE DYER	-11	EUREKA	-53
ALBERTA	LETHBRIDGE	14	FORT CHIPEWYAN	-45
SASKATCHEWAN	MOOSE JAW	8	CREE LAKE	-45
MANITOBA	BRANDON	-6	LYNN LAKE	-41
ONTARIO	TORONTO INT'L	14	BIG TROUT LAKE	-39
QUEBEC	MONTREAL INT'L	11	SCHEFFERVILLE	-41
NEW BRUNSWICK	FREDERICTON	8	FREDERICTON	-24
NOVA SCOTIA	SHELBURNE	13	SYDNEY	-18
PRINCE EDWARD ISLAND	CHARLOTTETOWN	7	SUMMERSIDE	-18
NEWFOUNDLAND	ST JOHN'S	10	WABUSH LAKE	-35

ACROSS THE NATION

WARMEST MEAN TEMPERATURE	3	VANCOUVER INT'L BC
COOLEST MEAN TEMPERATURE	-43	EUREKA NWT

ACROSS THE COUNTRY

Yukon and Northwest Territories

In the Yukon, mild temperatures gave way to bitterly cold weather conditions by mid-week. At Dawson, a new daily low of -45°C was recorded on the 30th. Weather warnings were required because of strong winds, blowing snow and dangerous wind chills. Blizzard warnings and wind chill advisories were issued daily for the southern Arctic. In the high Arctic, minimums plunged to the minus fifties.

British Columbia

The week started out mild, with a handful of new daily maximum temperature records. An Arctic airmass slowly encompassed the province, producing a wintry weather regime. By the weekend, all locations reported freezing temperatures. The Arctic front was accompanied by strong winds, gusting to 100 km/h, which uprooted trees and damaged buildings near Kamloops on the 29th. Heavy snowfalls were associated with the frontal passage in central and northern B.C. earlier in the week. Prince George received 30 cm, while Pine Pass to the east was buried under a 100 cm snowfall.

Prairie Provinces

The week started out mild, with an Arctic outbreak covering Alberta by mid-week. A Chinook on the 28th prompted the issuance of wind warnings for the south, where readings soared to the teens. A band of snow crossed north-central Alberta between the 27th and 29th, leaving behind 20 to 30 centimetres. The Banff-Jasper area picked up as much as 30 cm. As the Arctic airmass deepened, readings plunged to the minus forties during the weekend. The deep freeze and lack of a snow cover was attributed for a rash of water main breaks in Edmonton.

Relatively mild temperatures in Saskatchewan and Manitoba gradually gave way with the slow arrival of the leading edge of an Arctic airmass. Light snow accompanied the frontal passage; amounts ranged from 5 to 10 centimetres. Readings plummeted to the minus thirties by

PRECIPITATION

the weekend, but strong winds made it feel much colder.

Ontario

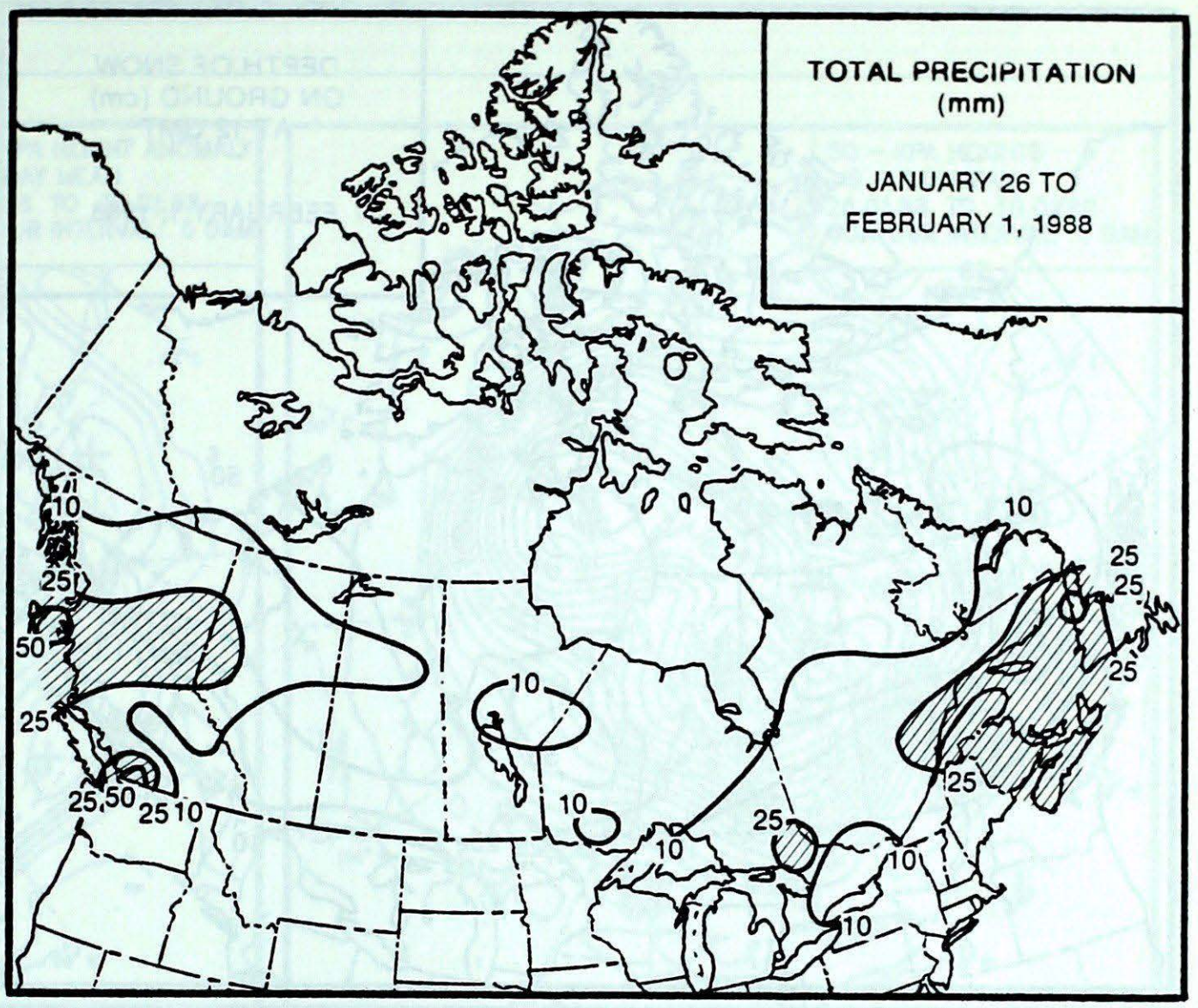
The week started off cold and dry as a northwesterly flow pushed Arctic air over the province. After mid-week, a storm emerged out of the American mid-west, tracking north-eastward across the upper Great Lakes. Parts of northern Ontario received up to 25 cm of snow, while record mild temperatures penetrated the south. It was a balmy weekend, with daytime maximums climbing to the teens. Record daily maximum temperatures were broken throughout southern and central Ontario. At St. Catharines and Toronto under sunny skies, the mercury soared to 15°C and 14°C, respectively, on January 31. Snow on the ground remained conspicuously absent in most southern sections of the province. Toronto had a meager 4.2 cm of snow during January, the lowest total in 51 years of weather records at the airport. The final day of the period temperatures cooled down dramatically as a winter storm approached from the southwest.

Quebec

Temperatures recovered dramatically towards the end of the period in southern Quebec. In the north, it remained bitterly cold, with readings down to the minus forties. On January 31, the mercury soared to 10°C and 11°C at Sherbrooke and Montréal, respectively. The extremely mild weather resulted in most of the snow cover disappearing in the Montréal region, and was responsible for the cancellation of a number of events on the final day of the annual Snow Festival. The unusual weather also caused problems for the local winter carnival in Val d'Or. Heaviest precipitation fell along the lower St. Lawrence, as snow early in period, and a mixture of snow and rain there after.

Maritimes

Cloud cover varied during the period. On the 26th, a winter storm intensified off the coast of Nova Scotia and was accompanied by strong winds, heavy rain and snow. At Shearwater and Western Head, winds were clocked gusting to 100 km/h. Halifax and Shearwater recorded more than 40 mm of rain. A number of streets and many basements were flooded in Halifax. The frame of a two story apartment complex under construction was demolished by the winds. The weather was responsible for scattered power outages in Nova Scotia. Temperatures fluctuated during the week with the warmest readings on February 1.



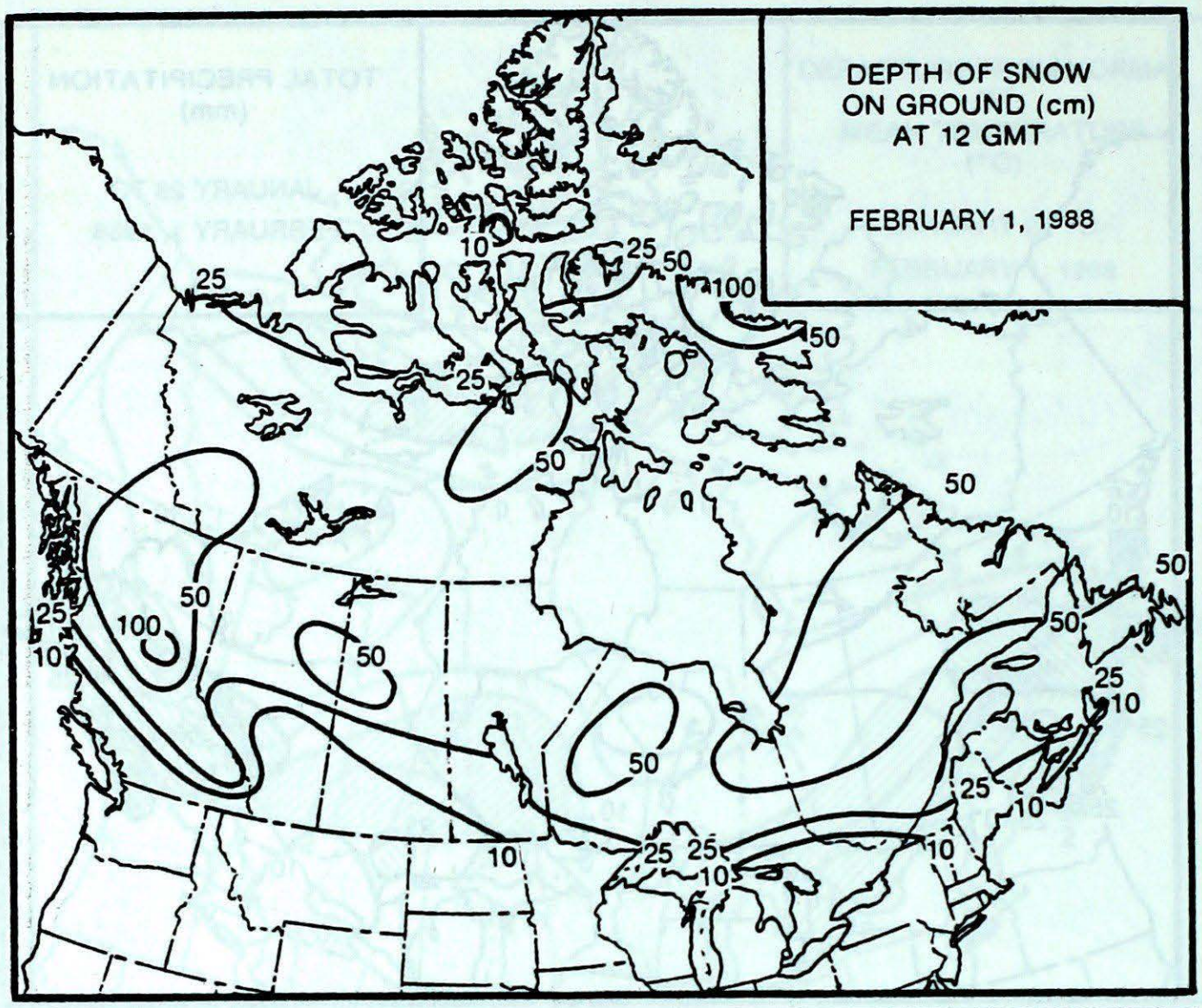
HEAVIEST WEEKLY PRECIPITATION (mm)

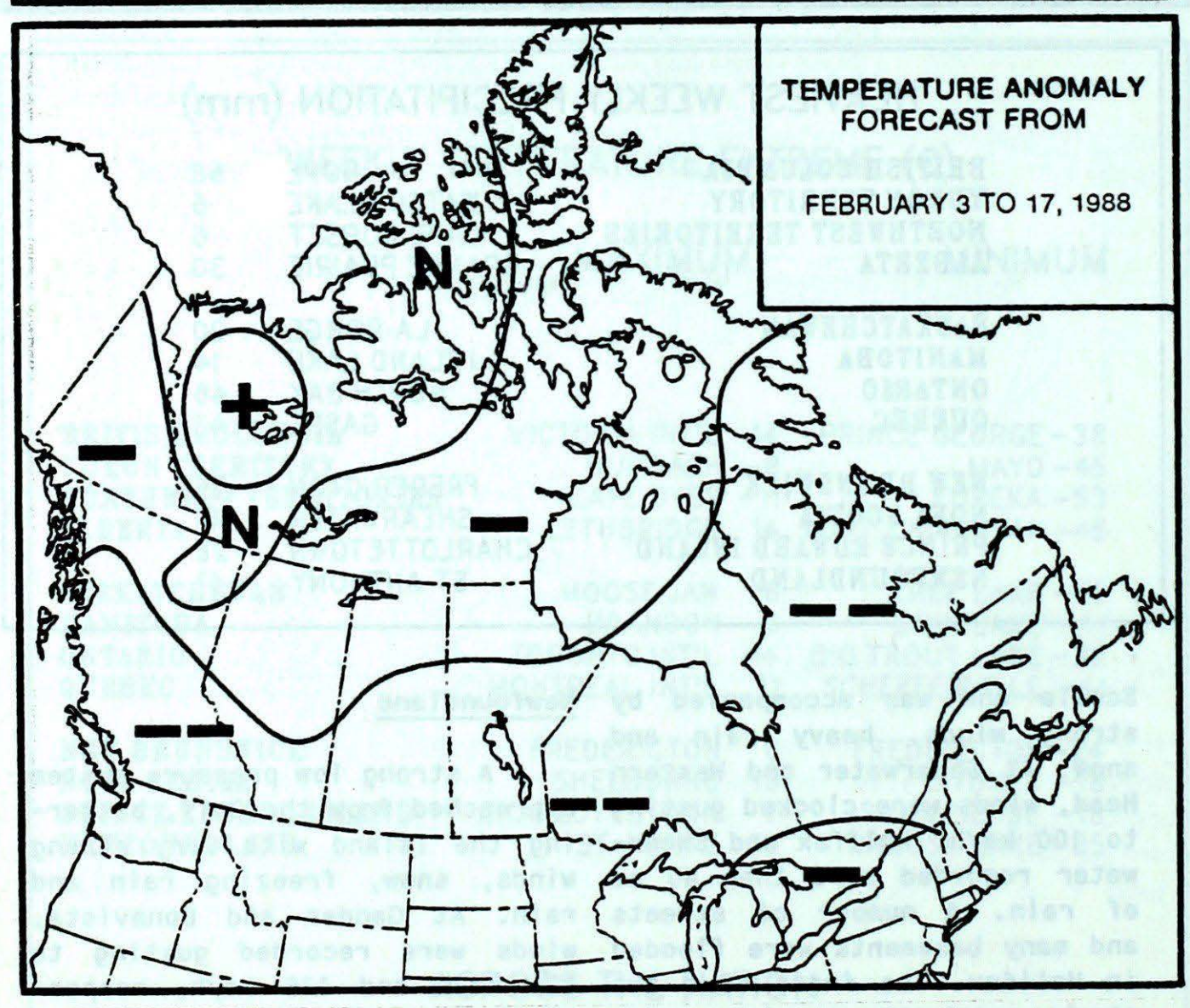
BRITISH COLUMBIA	HOPE	68
YUKON TERRITORY	WATSON LAKE	6
NORTHWEST TERRITORIES	CAPE DORSET	6
ALBERTA	GRANDE PRAIRIE	30
SASKATCHEWAN	LA RONGE	20
MANITOBA	ISLAND LAKE	14
ONTARIO	NORTH BAY	46
QUEBEC	GASPE	43
NEW BRUNSWICK	FREDERICTON	35
NOVA SCOTIA	SHEARWATER	47
PRINCE EDWARD ISLAND	CHARLOTTETOWN	28
NEWFOUNDLAND	ST ANTHONY	47

Newfoundland

A strong low pressure system approached from the Gulf, battering the Island with very strong winds, snow, freezing rain and rain. At Gander and Bonavista, winds were recorded gusting to 126 km/h and 135 km/h, respectively. At Corner Brook, winds peaked at 150 km/h., damaging buildings. Heavy snowfalls occurred in Labrador late Tuesday and Wednesday. In the wake of the system, daily snowfalls of 5 to 15 centimetres were common over western Newfoundland.

FORECAST





Temperature Anomaly Forecast

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.

++	much above normal
+	above normal
N	normal
-	below normal
--	much below normal

CLIMATIC PERSPECTIVES VOLUME 10

Managing Editor P.R. Scholefield
Editors-in-charge
weekly A.K. Radomski
monthly A. Shabbar
French A.A. Caillet
Data Manager M. Skarpathiotakis
Art Layout K. Czaja
Word Processing P. Burke/U. Ellis
Translation D. Pokorn
Cartography G. Young/T. Chivers

Regional Correspondents
Atlantic: F.Amirault; Que.: J.Miron
Ont.:B.Smith; Central: J.F. Bendell
Western: W.Prusak; Pac.: E.Coatta;
Yukon Weather Centre: J. Steele;
Frobisher Bay & Yellowknife Weather Offices; Newfoundland Weather Centre: G.MacMillan; Ice Central Ottawa
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)739-4438/4436.**

The purpose of the publication is to make topical information available to the public concerning the Canadian Climate and its socio-economic 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. The contents may be reprinted freely with proper credit.

The data 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.

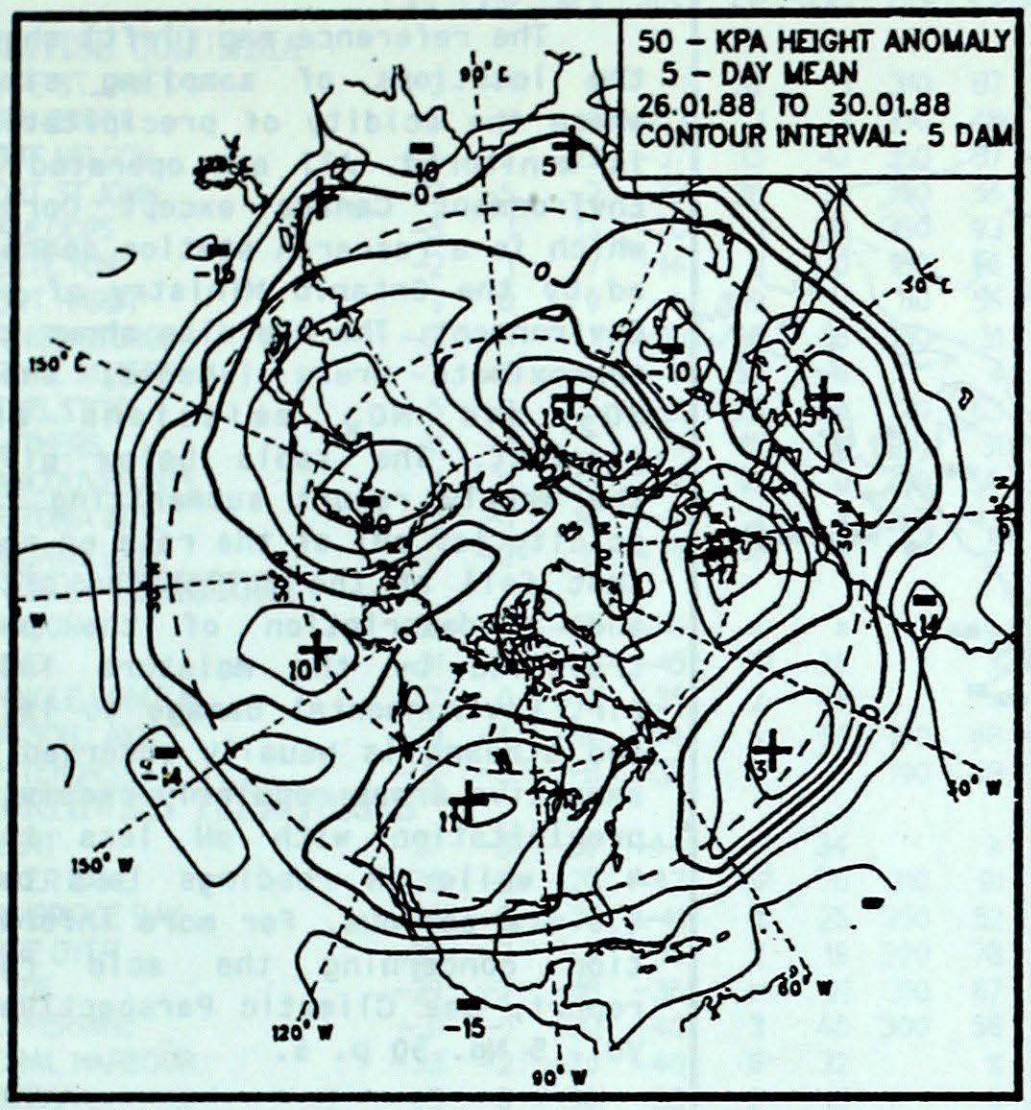
Annual Subscriptions

weekly & monthly supplement: $35.00
foreign: $42.00
Monthly issue: $10.00
foreign: $12.00

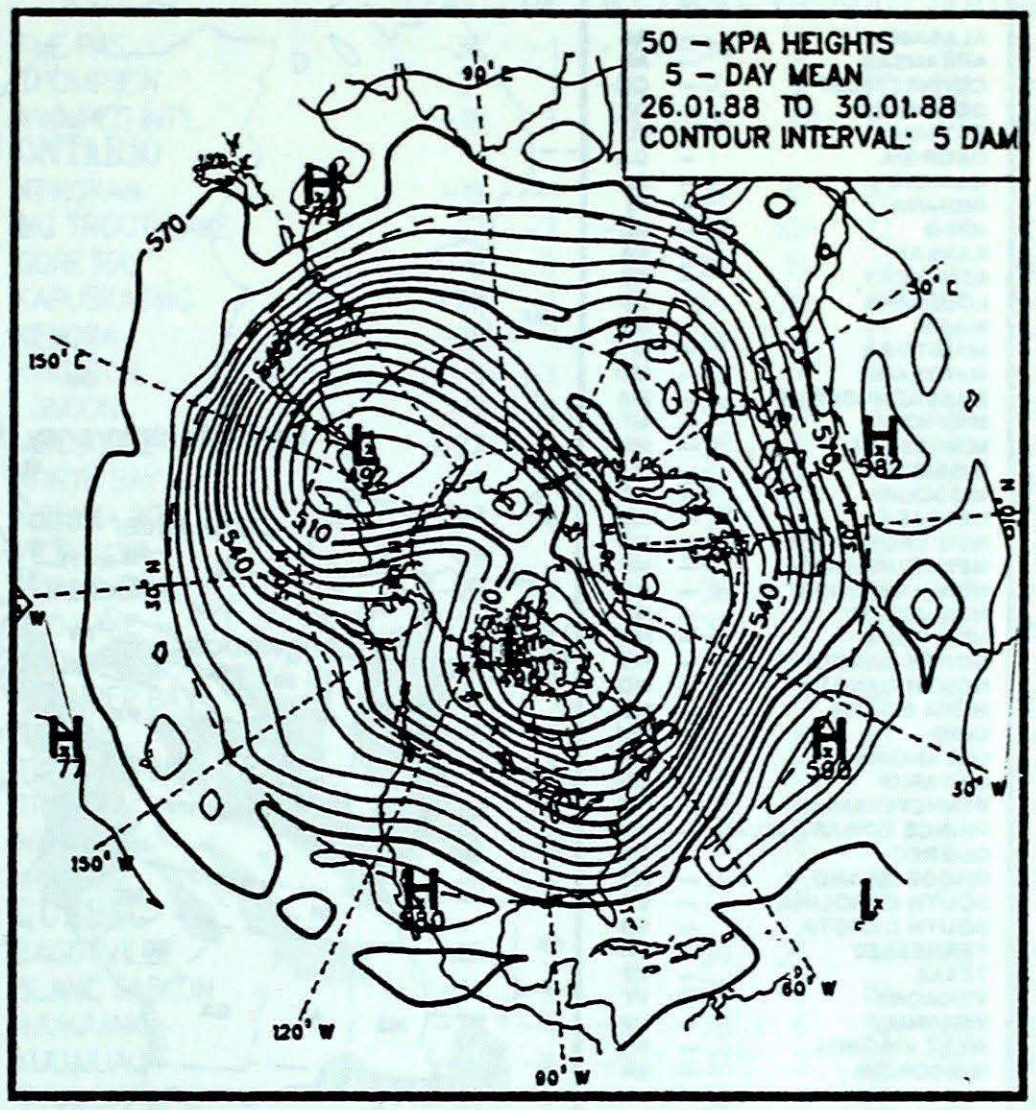
Orders must be prepaid by money order or cheque payable to Receiver General for Canada. **Canadian Government Publishing Centre, Ottawa, Ontario K1A 0S9** (613)994-1495

CIRCULATION

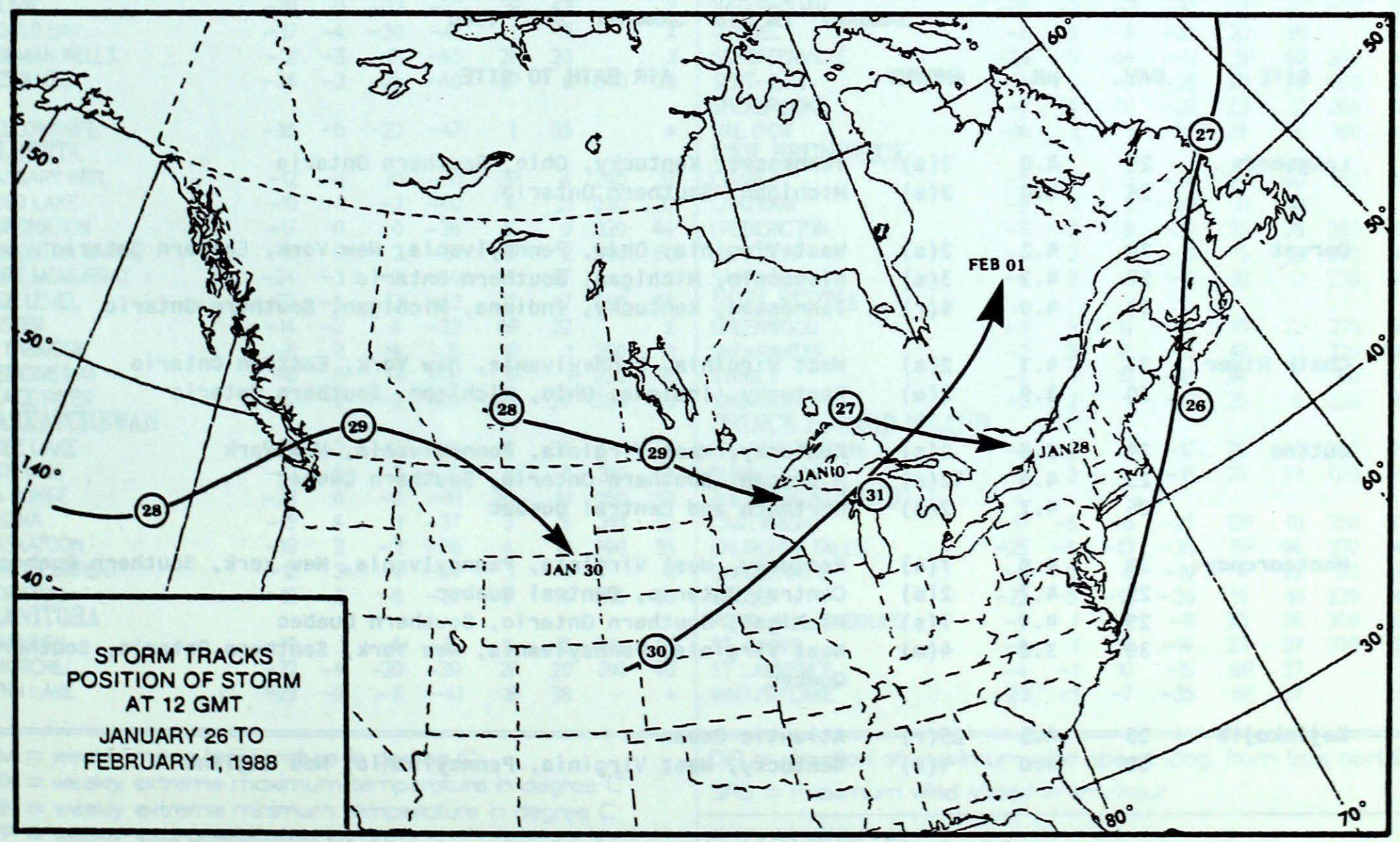
50 KPa ATMOSPHERIC CIRCULATION



MEAN 50 KPa HEIGHT ANOMALY (dam)

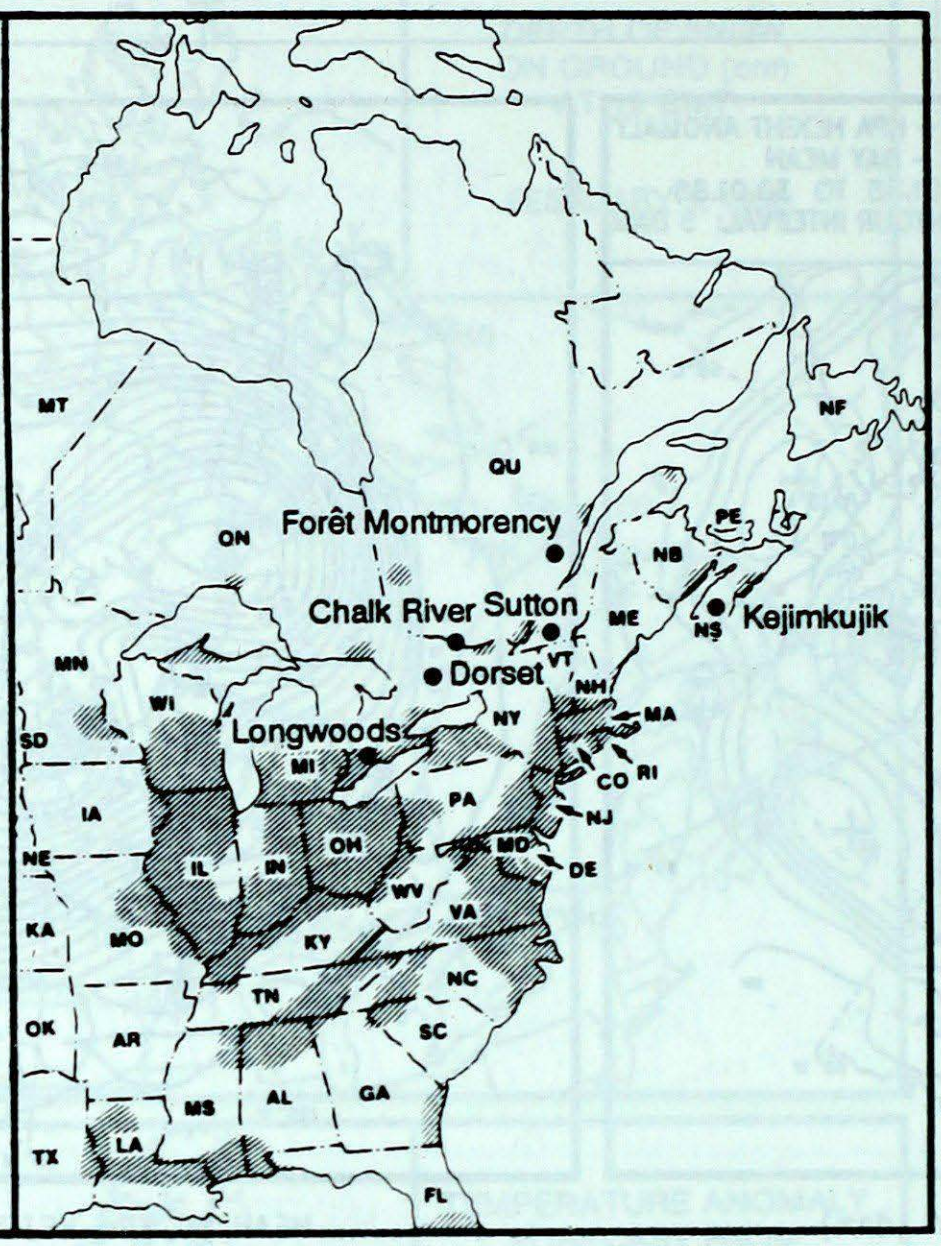


MEAN 50 KPa HEIGHTS (dam)



ACID RAIN

ALABAMA	—	AL
ARKANSAS	—	AR
CONNECTICUT	—	CO
DELAWARE	—	DE
FLORIDA	—	FL
GEORGIA	—	GA
ILLINOIS	—	IL
INDIANA	—	IN
IOWA	—	IA
KANSAS	—	KA
KENTUCKY	—	KY
LOUISIANA	—	LA
MAINE	—	ME
MANITOBA	—	MT
MARYLAND	—	MD
MASSACHUSETTS	—	MA
MICHIGAN	—	MI
MINNESOTA	—	MN
MISSISSIPPI	—	MS
MISSOURI	—	MO
NEBRASKA	—	NE
NEW BRUNSWICK	—	NB
NEWFOUNDLAND	—	NF
NEW HAMPSHIRE	—	NH
NEW JERSEY	—	NJ
NEW YORK	—	NY
NORTH CAROLINA	—	NC
NORTH DAKOTA	—	ND
NOVA SCOTIA	—	NS
OHIO	—	OH
OKLAHOMA	—	OK
ONTARIO	—	ON
PENNSYLVANIA	—	PA
PRINCE EDWARD ISLAND	—	PE
QUÉBEC	—	QU
RHODE ISLAND	—	RI
SOUTH CAROLINA	—	SC
SOUTH DAKOTA	—	SD
TENNESSEE	—	TN
TEXAS	—	TX
VERMONT	—	VT
VIRGINIA	—	VA
WEST VIRGINIA	—	WV
WISCONSIN	—	WI



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 24 TO JANUARY 30, 1988

SITE	DAY	pH	AMOUNT	AIR PATH TO SITE
Longwoods	25	4.0	2(s)	Tennessee, Kentucky, Ohio, Southern Ontario
	26	4.0	3(s)	Michigan, Southern Ontario
Dorset	24	4.2	2(s)	West Virginia, Ohio, Pennsylvania, New York, Eastern Ontario
	27	4.3	3(s)	Wisconsin, Michigan, Southern Ontario
	30	4.0	6(r)	Tennessee, Kentucky, Indiana, Michigan, Southern Ontario
Chalk River	24	4.1	2(s)	West Virginia, Pennsylvania, New York, Eastern Ontario
	30	3.9	2(m)	Kentucky, Indiana, Ohio, Michigan, Southern Ontario
Sutton	24	3.8	2(s)	Kentucky, West Virginia, Pennsylvania, New York
	25	4.6	12(s)	Michigan, Southern Ontario, Southern Quebec
	26	4.7	2(s)	Northern and Central Quebec
Montmorency	24	4.0	7(s)	Kentucky, West Virginia, Pennsylvania, New York, Southern Quebec
	25	4.7	2(s)	Central Ontario, Central Quebec
	29	4.1	7(s)	Michigan, Southern Ontario, Southern Quebec
	30	3.8	4(m)	West Virginia, Pennsylvania, New York, Southern Ontario, Southern Quebec
Kejinkujik	25	4.5	25(r)	Atlantic Ocean
	30	4.0	1(m)	Kentucky, West Virginia, Pennsylvania, New England

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

TEMPERATURE, PRECIPITATION AND MAXIMUM WIND DATA FOR THE WEEK ENDING 0600 GMT FEBRUARY 2,1988

STATION	TEMPERATURE				PRECIP.		WIND MX	
	AV	DP	MX	MN	TP	SOG	DIR	SPD
BRITISH COLUMBIA								
CAPE ST.JAMES	3	-1	8	-1	32	1	310	87
CRANBROOK	-6	4	9	-23	1	3	350	48
FORT NELSON	-24	-2	-13	-37	13	42	350	37
FORT ST.JOHN	-22	-5	-2	-33	26	38	360	65
KAMLOOPS	-5	1	13	-20	1	0	280	93
PENTICTON	-2	1	7	-14	1	0	180	56
PORT HARDY	3	0	9	-4	19	1	110	56
PRINCE GEORGE	-17	1	1	-38	28	36	350	31
PRINCE RUPERT	-2	-2	6	-11	57	8		*
REVELSTOKE	-5	2	5	-21	23	36	120	63
SMITHERS	-11	-1	3	-29	15	31	010	31
VANCOUVER INT'L	3	0	13	-8	10	0	280	54
VICTORIA INT'L	3	-1	14	-7	3	*	260	43
WILLIAMS LAKE	-12	-2	8	-29	4	2		X
YUKON TERRITORY								
DAWSON	-35	-7	-25	-45	*	*		
MAYO	-31	-4	-17	-45	3P	36		X
SHINGLE POINT A	-27	0	-13	-35	2	46		*
WATSON LAKE	-29	-4	-15	-44	6	50	100	48
WHITEHORSE	-22	-3	-8	-37	6	26	190	48
NORTHWEST TERRITORIES								
ALERT	-37	-5	-30	-44	*	34		*
BAKER LAKE	-36	-2	-26	-43	1P	70	310	91
CAMBRIDGE BAY	-36	-2	-26	-41	1	25	350	52
CAPE DYER	-25	-3	-11	-36	2	19	300	78
CLYDE	-29	-2	-18	-36	*	21	310	67
COPPERMINE	-31	-1	-20	-40	3	40	300	56
CORAL HARBOUR	-33	-2	-25	-46	1P	32		X
EUREKA	-43	-6	-30	-53	2	13		*
FORT SMITH	-32	-4	-17	-44	2	39		X
IQALUIT	-29	-3	-19	-36	1	*	320	57
HALL BEACH	-31	1	-23	-39	1P	30	290	56
INUVIK	-29	0	-23	-37	3P	43		X
MOULD BAY	-37	-4	-30	-47	1	17		X
NORMAN WELLS	-31	-3	-21	-40	2P	20		X
RESOLUTE	-36	-3	-25	-40	2P	8	340	33
YELLOWKNIFE	-35	-6	-22	-47	1	35		*
ALBERTA								
CALGARY INT'L	-12	-1	10	-31	3P	4	290	37
COLD LAKE	-19	-1	-2	-40	*	21	030	37
CORONATION	-17	0	0	-36	4	0	320	44
EDMONTON NAMAO	-16	0	2	-31	1P	2	340	50
FORT MCMURRAY	-24	-3	-3	-40	19	57		X
HIGH LEVEL	-27	-4	-13	-43	11	47	360	56
JASPER	-14	-2	4	-33	0P	22		X
LETHBRIDGE	-8	2	14	-31	1P	1	260	91
MEDICINE HAT	-8	5	13	-31	2P	1	230	46
PEACE RIVER	-22	-2	-2	-36	23	26	360	43
SASKATCHEWAN								
CREE LAKE	-27	-2	-13	-45	5	35		*
ESTEVAN	-12	5	7	-32	3	3	310	57
LA RONGE	-23	0	-8	-41	20	51	060	33
REGINA	-15	4	1	-37	3	8	310	52
SASKATOON	-18	2	-3	-38	4	13	290	35
SWIFT CURRENT	-12	3	6	-34	1	4		X
YORKTON	-19	2	-8	-37	4	14	310	46
MANITOBA								
BRANDON	-19	1	-6	-35	5	13	290	57
CHURCHILL	-32	-4	-20	-39	2P	20	310	43
LYNN LAKE	-29	-2	-11	-41	1P	38		*
THE PAS	-24	-1	-12	-36	8	29	340	39
THOMPSON	-27	1	-15	-40	3P	27	010	39
WINNIPEG INT'L	-18	3	-6	-31	2P	15	170	56
ONTARIO								
ATIKOKAN	-19	-1	0	-37	10	29		*
BIG TROUT LAKE	-27	-3	-13	-39	10P	72	040	43
GORE BAY	-8	3	6	-24	19	9	270	65
KAPUSKASING	-20	0	-3	-34	20	81	270	54
KENORA	-18	1	-3	-34	3	37	150	39
KINGSTON	-5	-3	7	-21	*	0		X
LONDON	-3	5	10	-15	12	0	230	61
MOOSONEE	-22	0	-6	-36	8	104	260	44
NORTH BAY	-9	4	6	-27	46	7	170	41
OTTAWA INT'L	-7	4	9	-22	7	3		X
PETAWAWA	-9	3	9	-29	5	10		X
PICKLE LAKE	-23	-1	-6	-36	8	52	040	39
RED LAKE	-22	0	-6	-37	3	39	160	35
SUDBURY	-11	3	4	-30	20	*		X
THUNDER BAY	-16	1	-1	-32	8	18	310	35
TIMMINS	-18	-1	-2	-33	8	65	180	46
TORONTO INT'L	-2	6	14	-15	7	0	210	63
TRENTON	-3	5	10	-18	9	0		X
WIARTON	-4	4	10	-18	16	1		X
WINDSOR	-1	4	10	-14	13	0	210	48
QUEBEC								
BAGOTVILLE	-13	3	3	-30	25	41	080	39
BLANC SABLON	-14	-2	-2	-25	40	62		X
INUKJUAK	-28	-4	-17	-35	6	36	260	50
KUUJJUAQ	-39	-5	-16	-37	2	30	290	65
KUUJJUARAPIK	-27	-4	-14	-39	5	27	250	61
MANIWAKI	-10	3	7	-28	7	12	350	31
MONT JOLI	-9	3	4	-20	33	35	170	56
MONTREAL INT'L	-6	4	11	-21	10	*	230	46
NATASHQUAN	-15	-2	-2	-30	23	42	030	93
QUEBEC	-8	6	4	-24	22	59		*
SCHEFFERVILLE	-29	-5	-14	-41	5P	66	300	46
SEPT-ILES	-14	2	-3	-28	20	26	080	57
SHERBROOKE	-7	4	10	-28	23	12	260	33
VAL D'OR	-16	1	5	-34	24	36	180	44
NEW BRUNSWICK								
CHARLO	-11	1	3	-24	25	90	250	37
CHATHAM	-9	1	7	-24P	31	41		*
FREDERICTON	-8	2	8	-24	35	28	280	63
MONCTON	-7	2	6	-21	15	13	060	59
SAINT JOHN	-6	3	6	-19	31	12	230	56
NOVA SCOTIA								
GREENWOOD	-3	3	12	-15	15	22	270	50
SHEARWATER	-2	3	10	-15	47	1	220	100
SYDNEY	-4	3	10	-18	34	5	260	44
YARMOUTH	-2	2	9	-12	25	0	220	85
PRINCE EDWARD ISLAND								
CHARLOTTETOWN	-6	2	7	-17	28	20	240	65
SUMMERSIDE	-6	2	5	-18	27	39	070	59
NEWFOUNDLAND								
CARTWRIGHT	-17	-5	-5	-25	12P	111	350	93
CHURCHILL FALLS	-25	-4	-13	-35	6P	96	270	41
GANDER INT'L	-8	0	6	-19	*	25	170	48
GOOSE	-22	-5	-12	-30	19	61	330	41
PORT-AUX-BASQUES	-5	1	4	-11	33	26	300	63
ST JOHN'S	-4	1	10	-14	23	27	270	67
ST LAWRENCE	-4	-1	10	-15	8P	27		X
WABUSH LAKE	-23	-1	-7	-35	6P	57		*

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