Environment Canada Environnement Canada

Climatic Perspectives

December 10 to 16, 1990 ***A weekly review of Canadian climate and water*** *Vol.12 No.50*

Record snowfalls accumulate in the Rockies

A series of Pacific storms have been sweeping inland and providing record amounts of precipitation in the B.C. coastal mountains and the Alberta Rockies.

Mountain snow conditions are well above normal for this time of the year, with present snowfall accumulations in the Rockies comparable to those normally accumulated by February or March.

A record 229.6 cm of snow has fallen on Banff, Alta. so far this season, a figure that has already exceeded last year's total accumulation of 224.1 cm. By the end of November, Banff had received 146.2 cm, a new November high, slightly eclipsing the previous record snowfalls set in 1945 and 1895. Jasper has received 132 cm of snow more than twice the 63.8 cm normal. Ski resorts near Banff have between 100 and 200 centimetres of snow on the slopes - the best ski conditions this early in the season since the 1940s.

In British Columbia many of the mountain passes have also had record snowfalls. The Salmo-Creston Highway through the Kootenay Pass has received between 200 and 300 centimetres of snow since the beginning of December alone. Closer to the coast, the Coquihalla Highway has had the most snow ever at the Coquihalla Pass since the highway opened several years ago. Avalanche control and snow clearing crews have been hard pressed trying to keep some of the major B.C. highways passable. Snowfalls at the higher elevations of the Columbia and Fraser River watersheds have already surpassed 500 cm, and in many cases are just a couple of hundred centimetres short of last years seasonal snowfall totals. Snowfalls are running 2 to 3 times higher than the average for this time of year, and are approaching or exceeded the heavy snowfall years of 1976, 1972 and 1948.

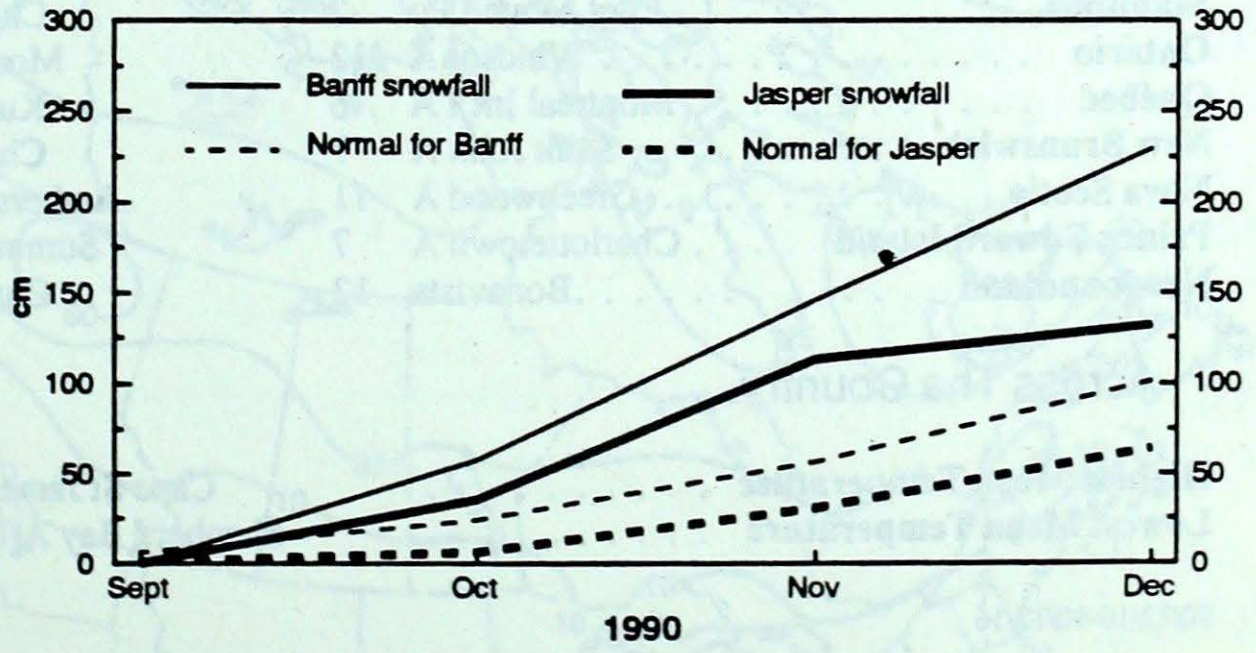
A white Christmas for the east...

For the week of December 24, below-normal temperatures are expected across most of Canada, except above-normal readings will occur in the Mackenzie District of the Northwest Territories, the Yukon and northern British Columbia. Temperatures will be near to slightly above normal in the Atlantic region. Bitterly cold, windy weather can be expected across the Prairies, while from the Great Lakes and eastward into the Maritimes, a major snowfalls will ensure a truly white Christmas week.

Seasons Greetings

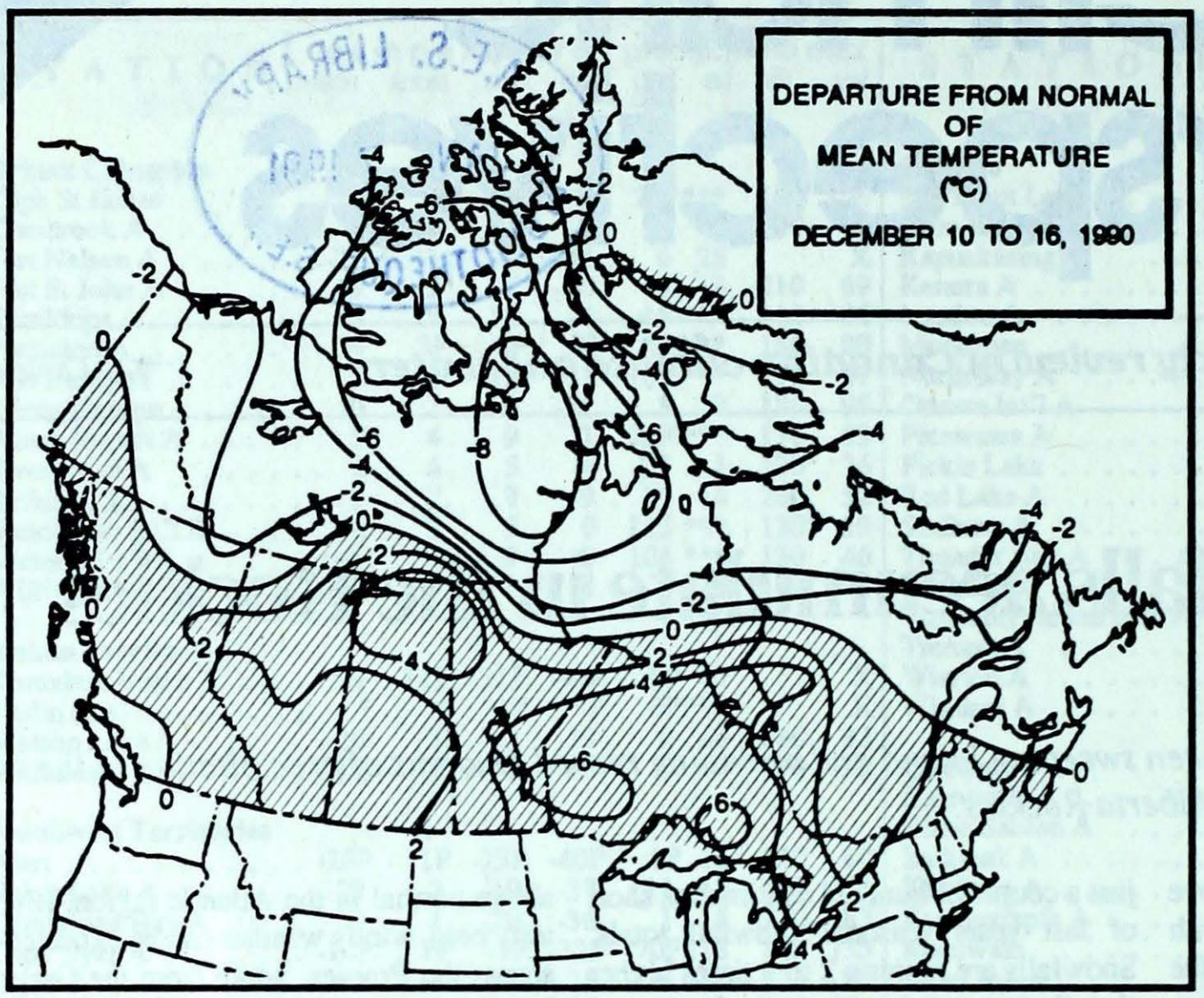
We would like to extend to all our readers all the best for this holiday season and wish them a prosperous and happy New Year. As usual Climatic Perspectives will not be published during the Christmas - New Year period. All maps and tables for this period will appear in January 1991.

Seasonal snowfall accumulation



Snowfall accumulations this year in the Canadian Rockies are more than twice the normal, giving ski resorts one of the best seasons in decades.

Canada



Weekly normal temperatures (°C)

	max.	min.
Whitehorse A	-11.9	-20.1
Iqaluit A	-18.9	-26.6
Yellowknife A	-19.4	-27.4
Vancouver Int'l A	7.0	1.4
Victoria Int'l A	7.5	1.5
Calgary Int'l A	-0.6	-13.3
Edmonton Int'l A	-7.1	-18.7
Regina A	-7.4	-18.1
Saskatoon A	-8.9	-19.1
Winnipeg Int'l A	-9.7	-19.2
Ottawa Int'l A	-3.2	-11.4
Toronto (Pearson Int'l A)	0.5	-6.9
Montréal Int'l A	-2.4	-10.1
Québec A	-4.7	-12.9
Fredericton A	-1.4	-10.6
Saint John A	0.4	-8.5
Halifax (Shearwater)	2.5	-5.1
Charlottetown A	0.2	-7.2
Goose A	-10.3	-18.6
St John's A	1.8	-4.7

Weekly temperature and precipitation extremes

	Maximum temperature (°C)		Minimum temperature (°C)		Heaviest precipitation (mm)	
British Columbia	Sandspit A	9	Puntzi Mountain	-26	Prince Rupert A	97
Yukon Territory	Whitehorse A	-2	Shingle Point	-36	Whitehorse A	6
Northwest Territories	Fort Smith A	19	Shepherd Bay A	-46	Hay River A	11
Alberta	Red Deer A	15	High Level	-30	Grande Prairie A	8
Saskatchewan	Eastend Cypress (aut)	1	Uranium City	-33	Yorkton A	17
Manitoba	Pilot Mound Po	-2	Churchill	-33	Brandon A	21
Ontario	Windsor A	12	Moosonee	-27	Thunder Bay A	23
Québec	Montréal Int'l A	6	Kuujjuaq	-36	Gaspe A	40
New Brunswick	Saint John A	7	Charlo A	-19	Saint John A	40
Nova Scotia	Greenwood A	11	Amherst (aut)	-12	Sydney A	63
Prince Edward Island	Charlottetown A	7	Summerside	-12	Charlottetown A	27
Newfoundland	Bonavista	12	Churchill	-33	Port Aux Basques	76

Across The Country...

Highest Mean Temperature	Cape St James(BC)	5
Lowest Mean Temperature	Shepherd Bay A(NWT)	-40

90/12/10-90/12/16

CLIMATIC PERSPECTIVES
VOLUME 12

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The purpose of the publication is to make topical information available to the public concerning the Canadian Climate and its socio-economic impact.

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.

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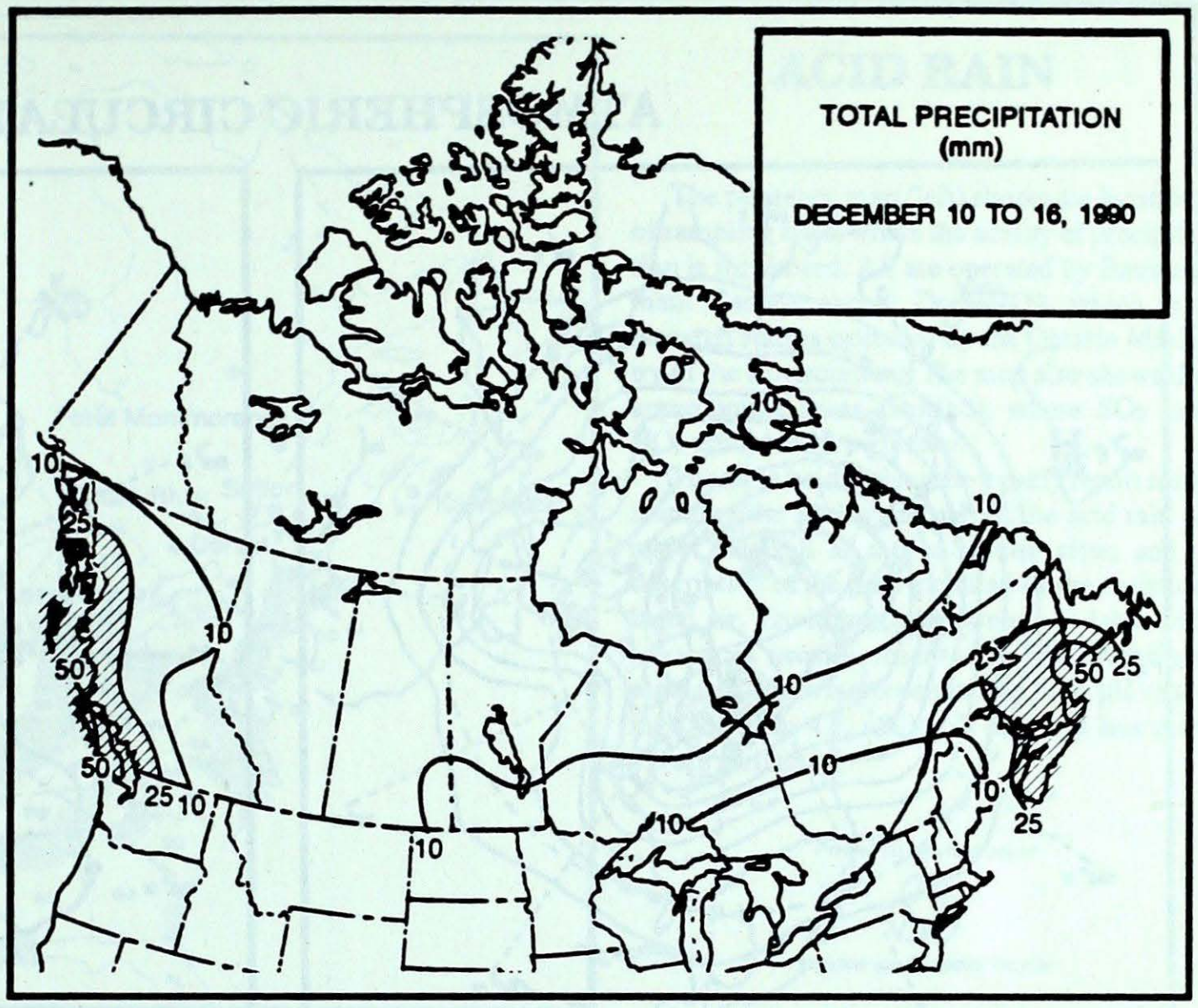
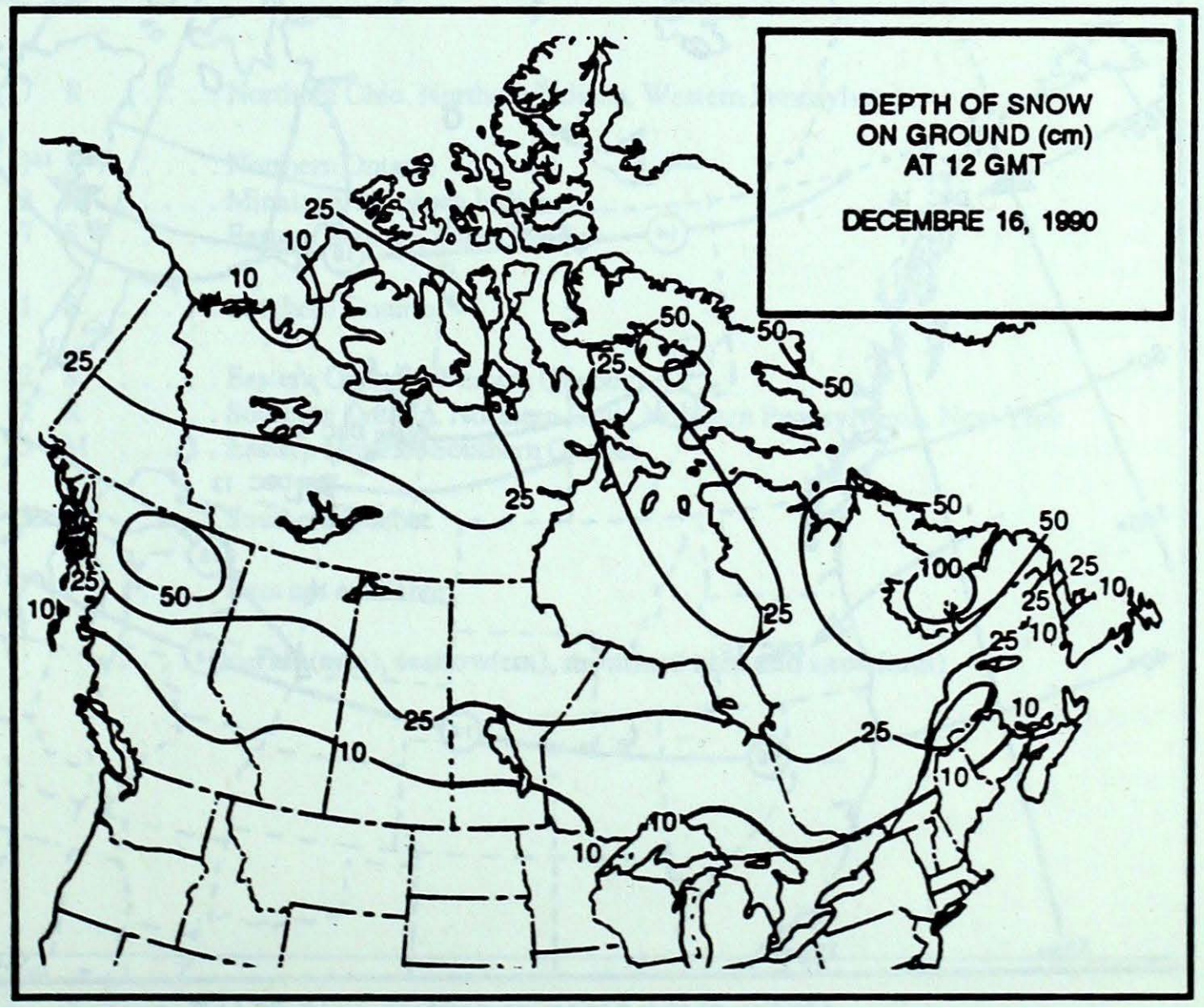
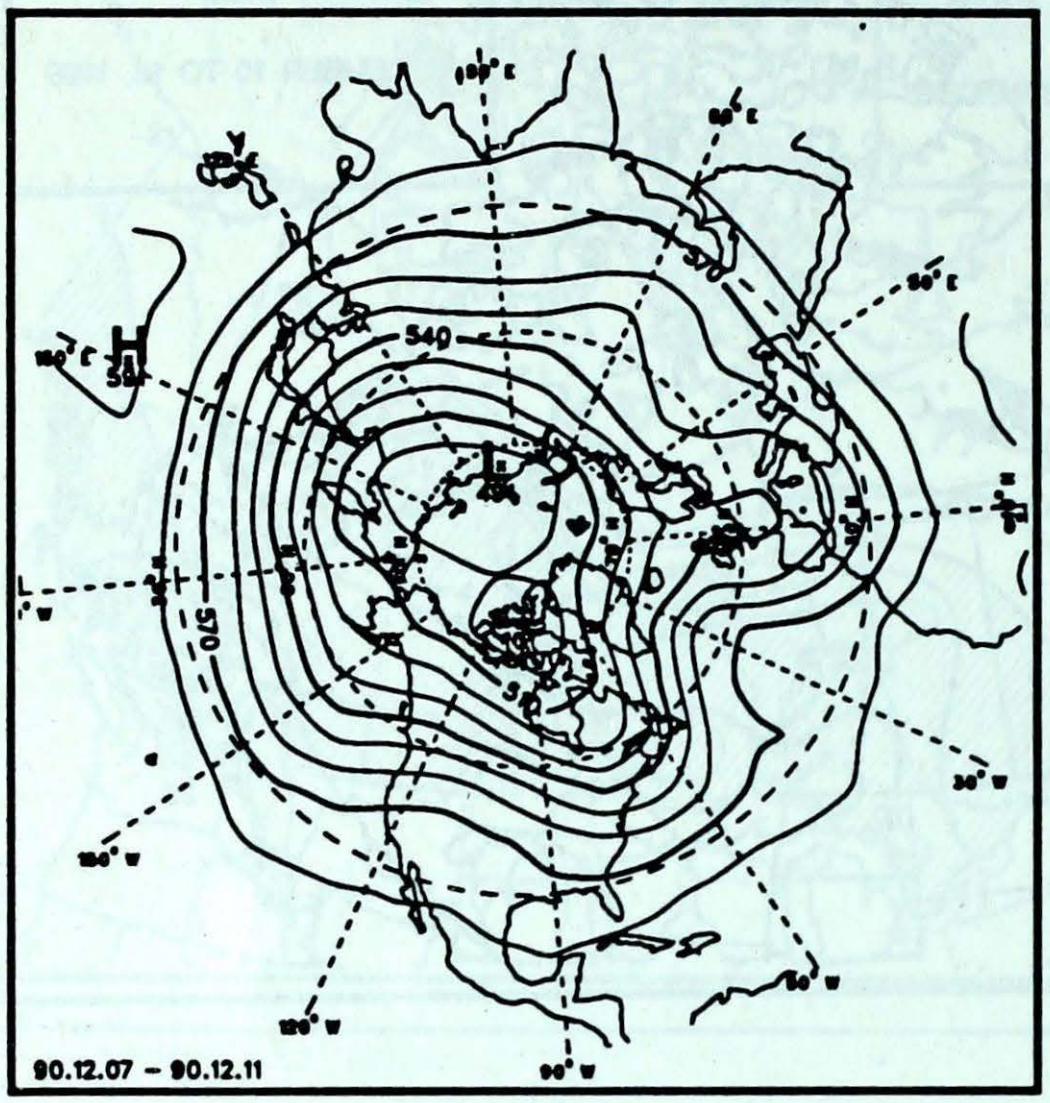
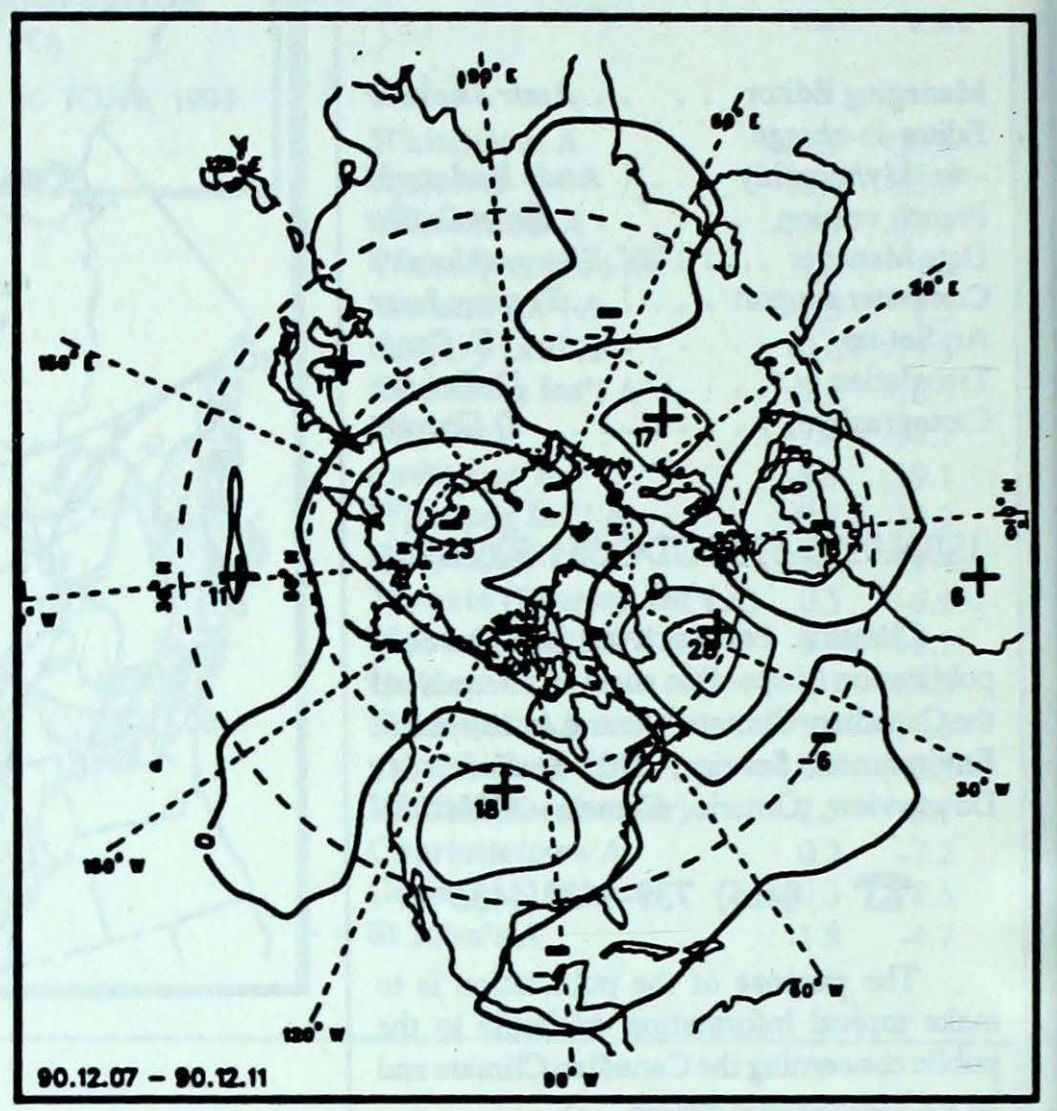




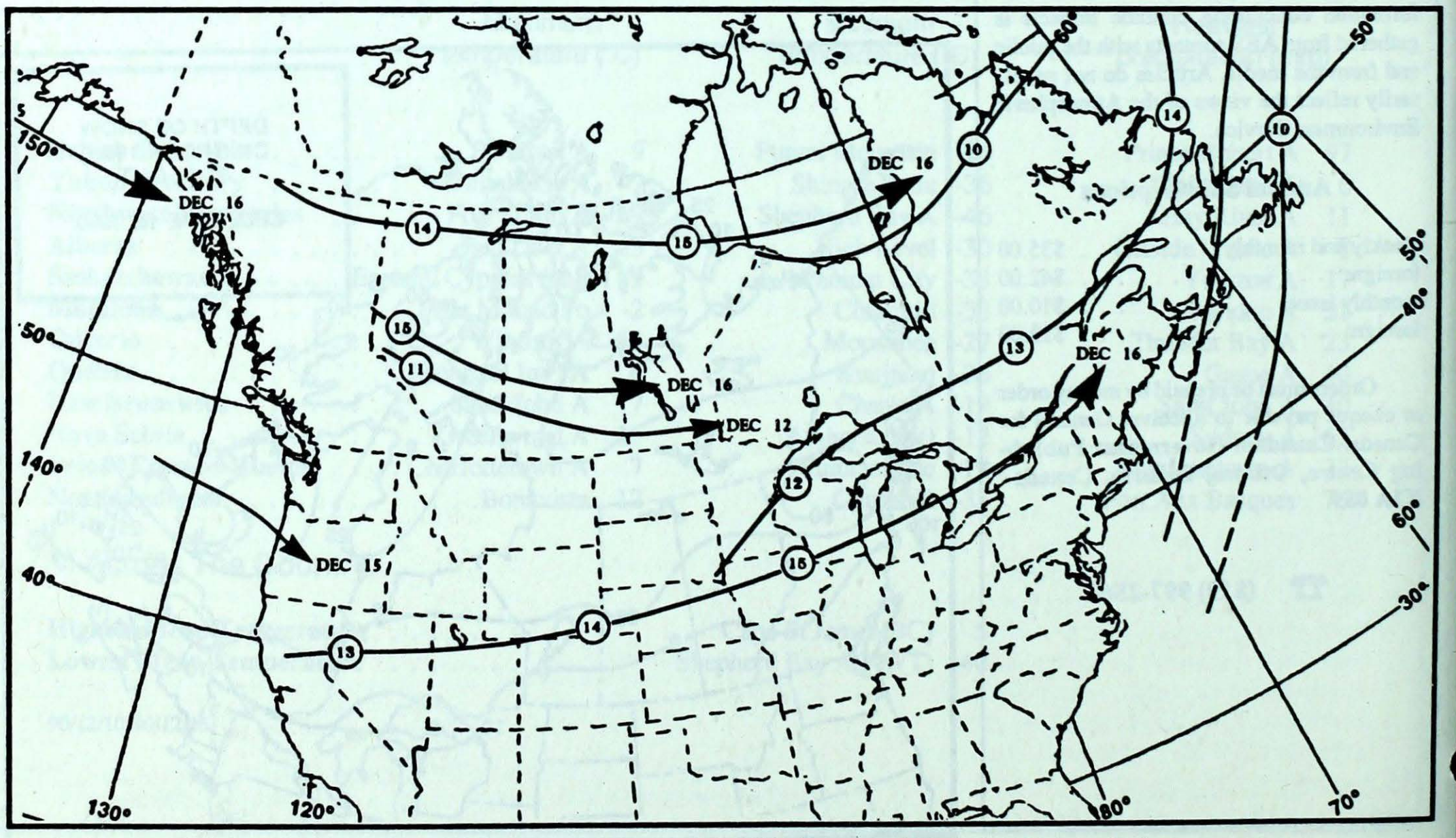
ATMOSPHERIC CIRCULATION



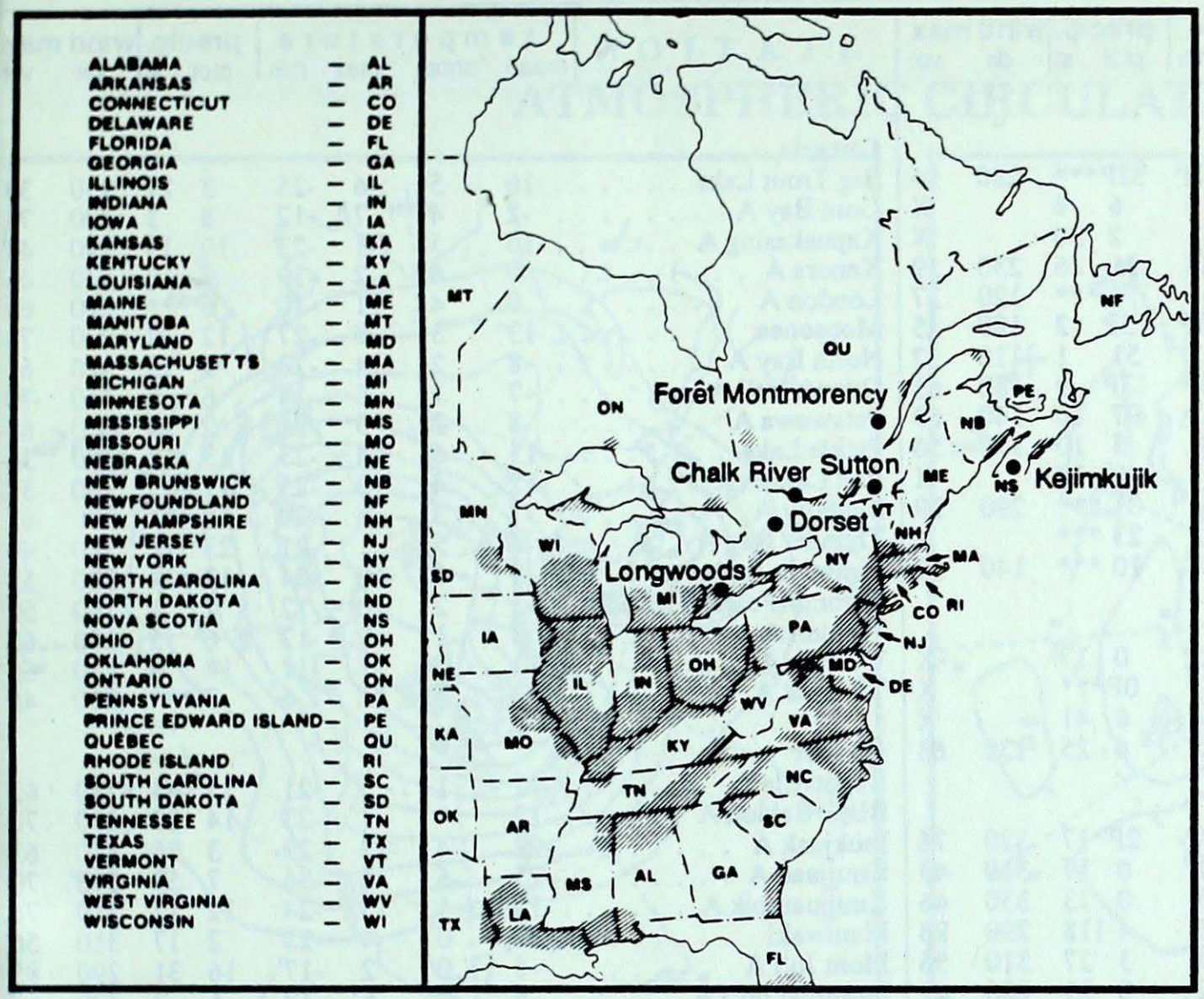
Mean geopotential height
50-kPa level (10-decametre intervals)



Mean geopotential height anomaly
50-kPa level (10-decametre intervals)



Tracks of low pressure centres at 12:00 U.T. each day during the period.



ACID RAIN

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 acid 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 readings less than 4.7, while pH readings less than 4.0 are serious.

December 9 to 15, 1990

Site	day	pH	amount		air path to site
Longwoods	15	4.5	7	R	Northern Ohio, Northern Indiana, Western Pennsylvania
Dorset*	11	4.5	1	S	Northern Ontario
	12	3.8	3	M	Michigan, Northern Indiana
	15	4.5	7	S	Eastern Ontario, Lake Ontario
Chalk River	12	3.9	1	S	Southern Ontario
Sutton	10	5.1	2	S	Eastern Ontario, Western Quebec
	12	3.6	2	R	Southern Ontario, Northern Ohio, Northern Pennsylvania, New York
	13	4.0	5	M	Eastern Ontario, Southern Quebec
Montmorency	9	4.3	3	m	Southern Quebec
Kejimkujik					Data not available

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

STATION	temperature mean	anom	max	min	precip. ptot	st	wind max dir	vel
British Columbia								
Cape St James	5P	-1P	8P	2P	32P	***	280	96
Cranbrook A	-5	0	3	-13	6	6		X
Fort Nelson A	-24	-3	-15	-31	2	30		X
Fort St John A	-9	4	-1	-23	11	26	230	59
Kamloops A	-1	2	4	-8	1	***	120	37
Penticton A	0P	0P	8P	-5P	5P	2	180	35
Port Hardy A	2	-2	6	-2	51	1	110	52
Prince George A	-7P	1P	1P	-15P	13P	9	180	61
Prince Rupert A	2	-1	7	-3	97	10	140	63
Revelstoke A	-2	2	3	-6	5	10	170	56
Smithers A	-5	1	0	-11	9	18		X
Vancouver Int'l A	4	-1	7	1	31	***	290	39
Victoria Int'l A	4	-1	8	-2	23	***		X
Williams Lake A	-7	0	-1	-14	10	***	140	52
Yukon Territory								
Komakuk Beach A	-29	-6	-22	-35	0	17		X
Teslin (aut)	-18P	*	-5P	-*	0P	***		X
Watson Lake A	-24	-1	-13	-34	6	41		X
Whitehorse A	-15	2	-2	-25	6	25	130	63
Northwest Territories								
Alert	-37P	-6P	-26P	-44P	2P	17	320	76
Baker Lake A	-37	-9	-33	-41	0	17	310	43
Cambridge Bay A	-35	-6	-32	-38	0	13	330	46
Cape Dyer A	-21	-1	-10	-36	4	118	290	98
Clyde A	-25	0	-19	-34	3	27	310	56
Coppermine A	-35	-6	-26	-42	0	31	080	41
Coral Harbour A	-33	-7	-16	-41	1	15	320	61
Eureka	-34	2	-29	-41	0	7	290	74
Fort Smith A	-18	3	19	-28	1	50		X
Hall Beach A	-32	-4	-23	-38	0	30	310	67
Inuvik A	-26	1	-18	-34	3	35		X
Iqaluit A	-26	-3	-8	-40	10	29	340	72
Mould Bay A	-35	-4	-29	-39	0	28		X
Norman Wells A	-27	0	-21	-38	3	14	290	37
Resolute A	-36	-6	-31	-39	0	33	360	54
Yellowknife A	-25	-2	-18	-35	1	43	140	43
Alberta								
Calgary Int'l A	-6	1	4	-16	2	1	280	52
Cold Lake A	-15	0	-5	-27	7	18		X
Edmonton Namao A	-9	3	-1	-20	0	11	320	33
Fort McMurray A	-15	2	-1	-30	7	17		X
High Level A	-22	0	-11	-30	0	42	340	48
Jasper	-9	-1	-2	-20	4	26		X
Lethbridge A	-5	0	2	-17	7	3	250	72
Medicine Hat A	-5	2	8	-21	5	3	210	48
Peace River A	-12	3	0	-24	7	15	260	57
Saskatchewan								
Cree Lake	-16	6	-8	-27	1	47		X
Estevan A	-8	3	1	-21	5	7	300	61
La Ronge A	-15	3	-8	-24	4	35		X
Regina A	-11	2	-2	-25	8	7	290	46
Saskatoon A	-12	2	-3	-25	4	7		X
Swift Current A	-8	2	1	-22	8	7	300	48
Yorkton A	-13	2	-4	-25	17	14	320	43
Manitoba								
Brandon A	-13	2	-4	-28	21	***	300	52
Churchill A	-28	-6	-18	-38	3	34	360	50
Lynn Lake A	-19	5	-10	-30	10	44	200	32
The Pas A	-15	3	-7	-27	4	16	330	32
Thompson A	-21	2	-11	-31	4	55	210	33
Winnipeg Int'l A	-9	5	-3	-20	12	7	290	52

STATION	temperature mean	anom	max	min	precip. ptot	st	wind max dir	vel
Ontario								
Big Trout Lake	-16	5	-6	-25	3	27	230	39
Gore Bay A	-2	4	7	-12	8	3	300	74
Kapuskasing A	-10	5	-1	-23	10	15	290	48
Kenora A	-9	6	-2	-19	9	10	330	46
London A	0	4	11	-10	6	***	270	69
Moosonee	-13	3	0	-27	12	22	290	78
North Bay A	-8	2	4	-20	3	15	320	61
Ottawa Int'l A	-7	1	6	-14	6	8	310	70
Petawawa A	-8	2	5	-21	2	14	310	63
Pickle Lake	-13	6	-4	-23	13	13	190	32
Red Lake A	-12	4	-2	-25	11	15	360	37
Sudbury A	-7	3	4	-20	6	***	290	63
Thunder Bay A	-6	5	1	-21	23	12	340	48
Timmins A	-9	6	0	-24	12	14	280	52
Toronto(Pearson Int'l A)	-1	2	10	-12	2	1	260	59
Trenton A	-3	1	9	-12	6	5	250	63
Wiarton A	-1	2	11	-11	14	6	230	65
Windsor A	3	5	12	-6	7	***	230	46
Québec								
Bagotville A	-11	1	3	-21	15	44	280	65
Blanc Sablon A	-12	*	1	-23	14	20	290	70
Inukjuak A	-22	-4	-12	-29	3	16	340	63
Kuujjuaq A	-25	-6	-6	-36	7	59	290	70
Kuujjuarapik A	-15	1	-3	-24	12	17	310	76
Maniwaki	-10	0	4	-22	2	17	310	56
Mont Joli A	-8	0	2	-17	16	31	290	85
Montréal Int'l A	-5	1	6	-12	6	7	320	57
Natashquan A	-14	-3	1	-24	24	40	290	52
Québec A	-7	2	4	-19	9	22	300	59
Schefferville A	-22	-2	-5	-32	8	73	300	59
Sept-Îles A	-13	-1	0	-24	20	44	330	67
Sherbrooke A	-7	1	4	-17	6	2	260	59
Val-d'Or A	-11	3	1	-26	5	18	310	63
New Brunswick								
Charlo A	-9	-1	2	-19	10	35	270	70
Chatham A	-7	0	5	-16	18	3	040	74
Fredericton A	-5	1	7	-15	25	8	310	65
Moncton A	-6	0	6	-14	30	3	310	69
Saint John A	-3	1	7	-13	40	***	320	67
Nova Scotia								
Greenwood A	-2	0	11	-11	31	***	160	65
Shearwater A	-2	0	8	-10	43	***	290	57
Sydney A	-2	0	8	-11	63	1	140	89
Yarmouth A	1	1	10	-9	37	***	350	65
Prince Edward Island								
Charlottetown A	-3P	1P	7P	-13P	27P	1	100	65
Summerside A	-4	-1	5	-12	24	2	310	61
Newfoundland								
Cartwright	-13	-3	-4	-24	17	73	310	89
Churchill Falls A	-23	-2	-5	-33	10	114	280	67
Gander Int'l A	-5	-1	5	-16	11	1	230	169
Goose A	-19	-4	-7	-26	9	63	270	48
Port Aux Basques	-3	-1	4	-11	76	8	090	117
St John's A	-3	-1	10	-12	21	1	210	78
St Lawrence	-1	1	12	-9	8	***		X
Wabush Lake A	-21P	0P	-5P	-33P	6P	44	310	50

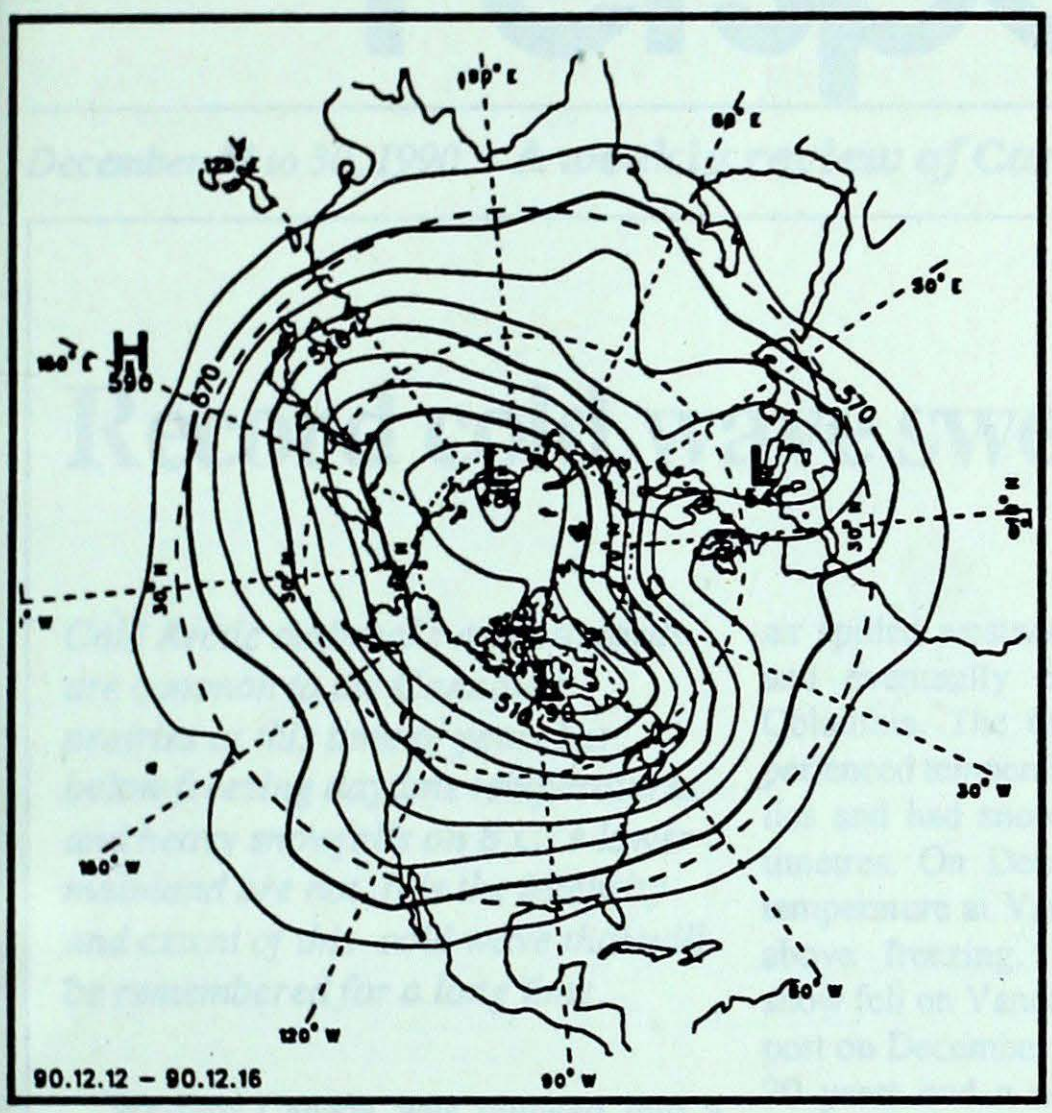
90/12/10-90/12/16

mean = mean weekly temperature, °C
max = maximum weekly temperature, °C
min = minimum weekly temperature, °C
anom = mean temperature anomaly, °C

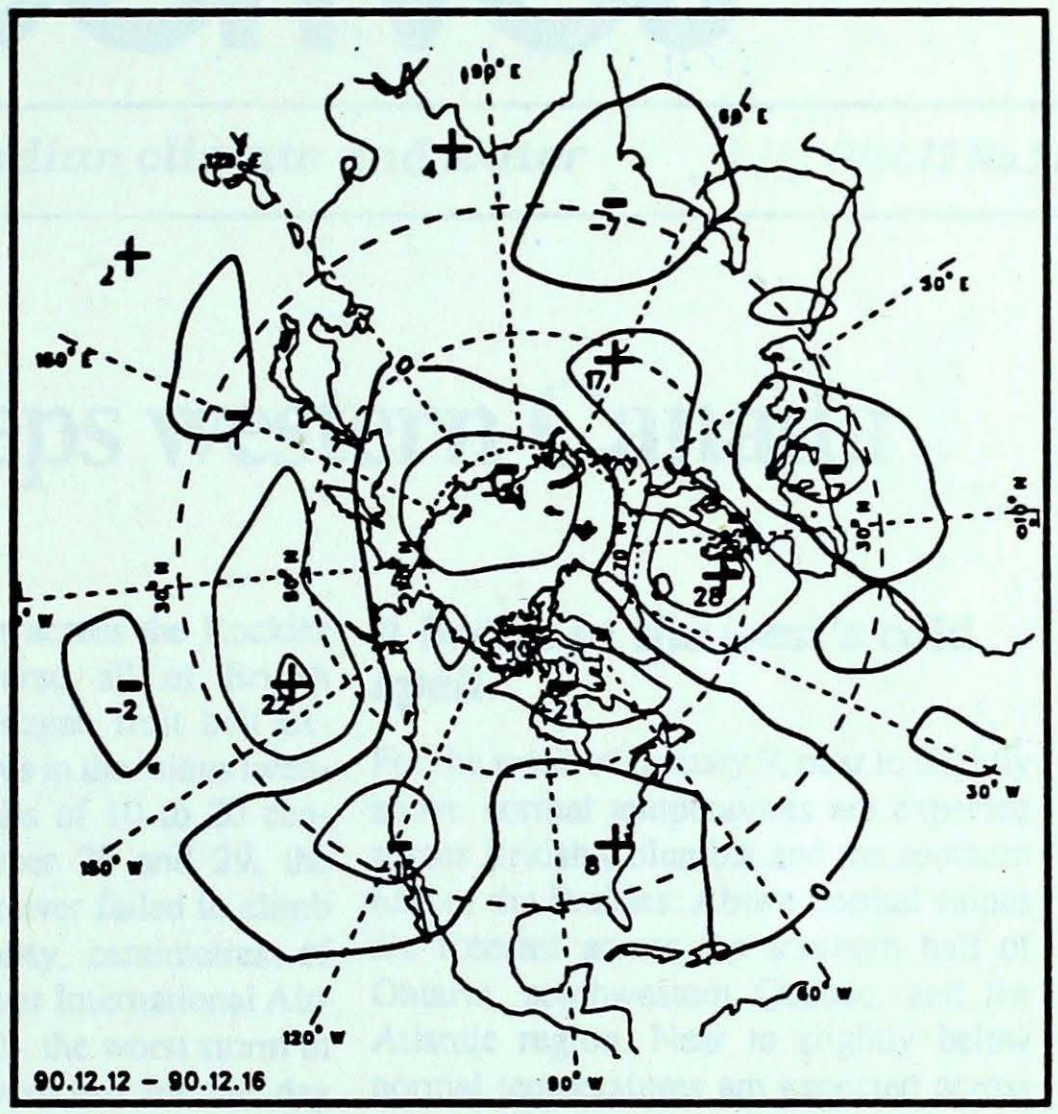
ptot = weekly precipitation total in mm
st = snow thickness on the ground in cm
dir = direction of max wind, deg. from north.
vel = wind speed in km/h

— Annotations —
X = no observation
P = less than 7 days of data
***** = missing data when going to printing.

ATMOSPHERIC CIRCULATION



Mean geopotential height
50-kPa level (10-decametre intervals)



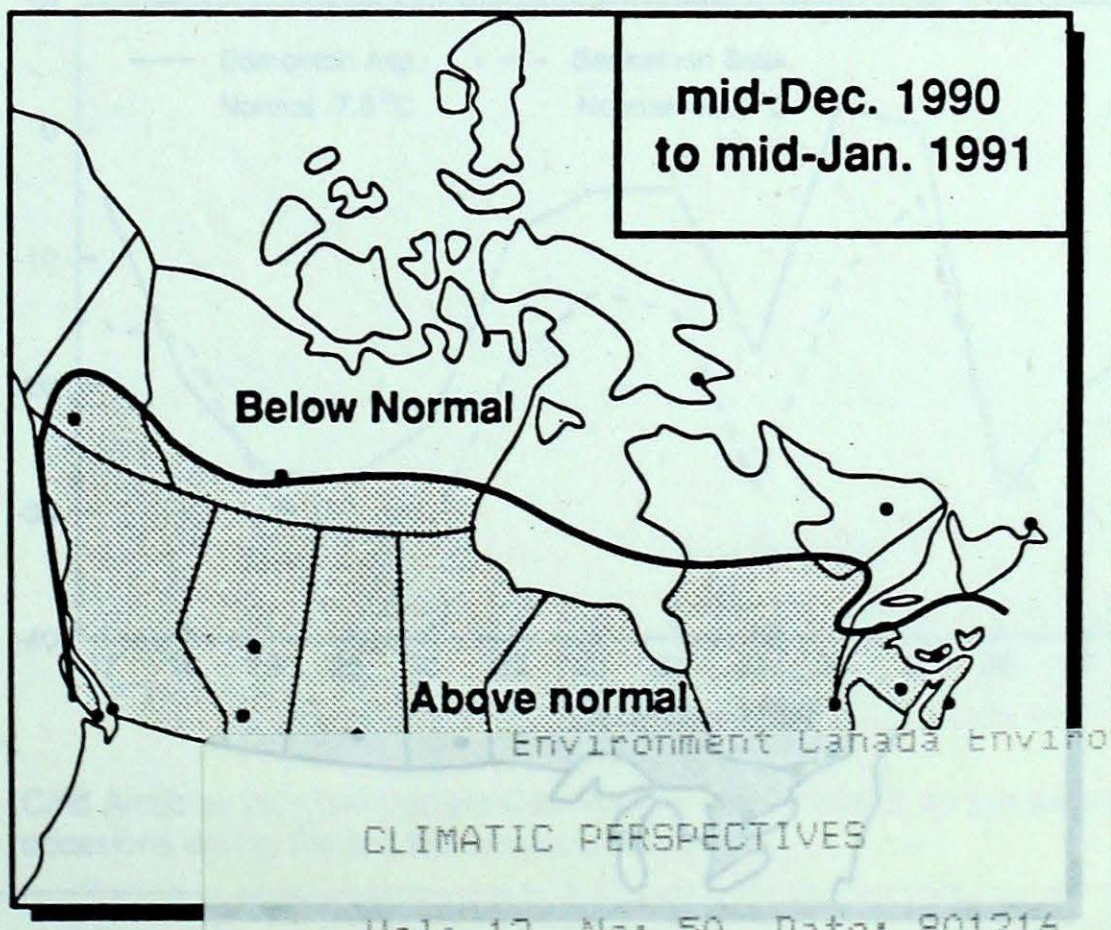
Mean geopotential height anomaly
50-kPa level (10-decametre intervals)

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

MONTHLY TEMPERATURE FORECAST

Normal temperatures for mid-December to mid-January, °C

Whitehorse	-19	Toronto	-5
Yellowknife	-26	Ottawa	-9
Iqaluit	-24	Montréal	-9
Vancouver	3	Québec	-11
Victoria	4	Fredericton	-8
Calgary	-10	Halifax	-3
Edmonton	-14	Charlottetown	-6
Regina	-15	Goose Bay	-15
Winnipeg	-17	St. John's	-3



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