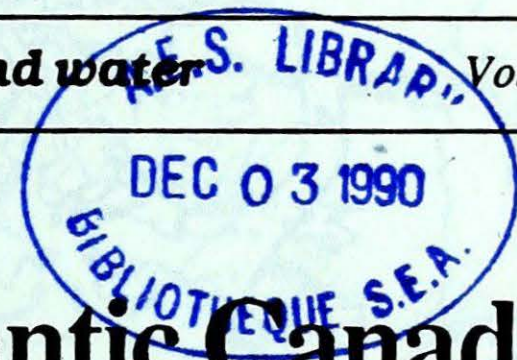


Climatic Perspectives

MONTHLY SUPPLEMENT INCLUDED

Archives

November 12 to 18, 1990 A weekly review of Canadian climate and water Vol.12 No.46



Early winter storms batter Atlantic Canada

Fierce storms are not uncommon during the winter months in Atlantic Canada. Some of these storms develop and move up the eastern seaboard, while others strengthen dramatically once they move over the Gulf of St. Lawrence.

Three major storms battered Atlantic Canada in the last two weeks, producing a combination of heavy snow, rain and high winds. The storms have been more intense than would usually be expected this early in the season. While generally wind gusts inland remained under 100 km/h, winds off the coast were much higher.

The first two storms buried much of northern New Brunswick, the Gaspé and Eastern Quebec with snow, closing schools and businesses. The snowstorms effectively ensured that the remaining 1700 acres of potatoes in New Brunswick will not be harvested.

The Miramichi region of New Brunswick received the brunt of the first storm on November 6 and 7, when almost 50 cm of snow fell. On the 10th and 11th, the Matapedia Valley in the Gaspé Peninsula received the heaviest snowfalls of 45 cm. The heavy snow and strong winds downed trees and hydro lines, leaving thousands without power. Elsewhere, heavy rain and winds whipped Nova Scotia and P.E.I., causing flooding.

The last storm to hit Atlantic Canada on November 18 and 19, brought more snow to New Brunswick, 20 to 25 cen-

timetres, and heavy rainfalls of 40 to 100 millimetres to Nova Scotia and P.E.I.

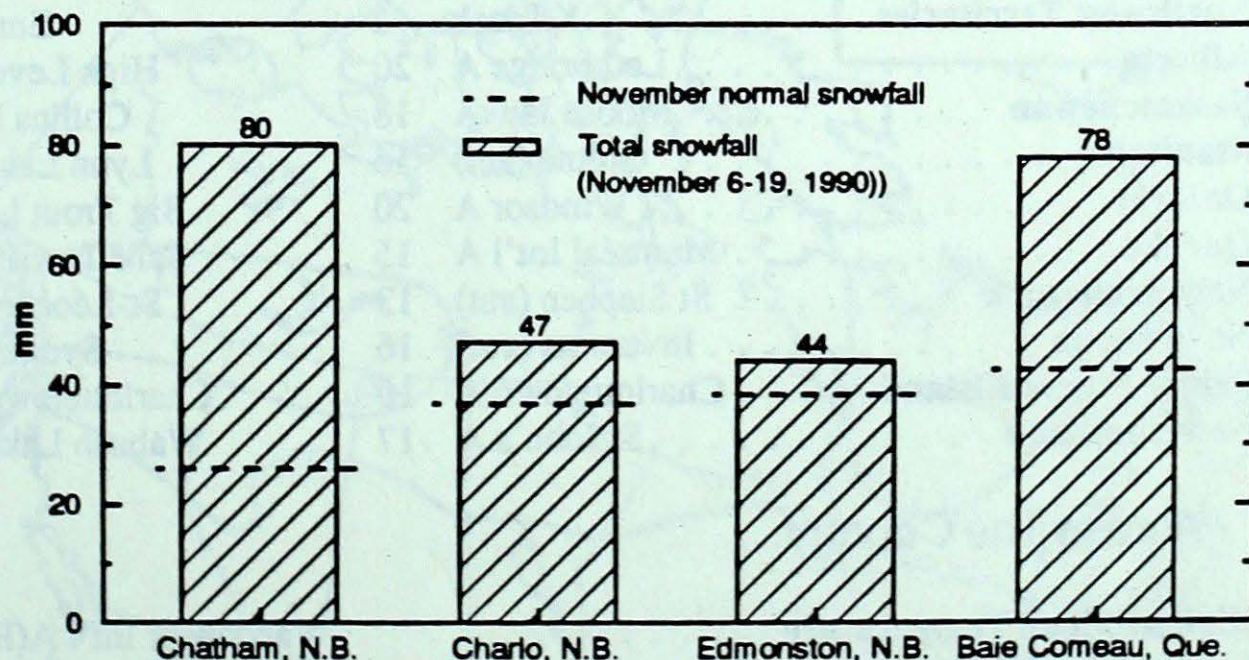
CN ferries disrupted by high seas in the Maritimes

Storm force winds occurred over all marine areas between the 11th and 13th. Winds gusting to almost 130 km/h, cut ferry services to Prince Edward Island, Newfoundland and across the Bay of Fundy. Winds up to 125 km/h were observed in Georges Bank area, south of Yarmouth, N.S., and were as high as 160 km/h, southeast of Sable Island. A wind speed of 126 km/h was recorded at Yarmouth on the 11th. With waves 10 to 20 metres high, it was just too rough even for the large CN Marine Atlantic ferries.

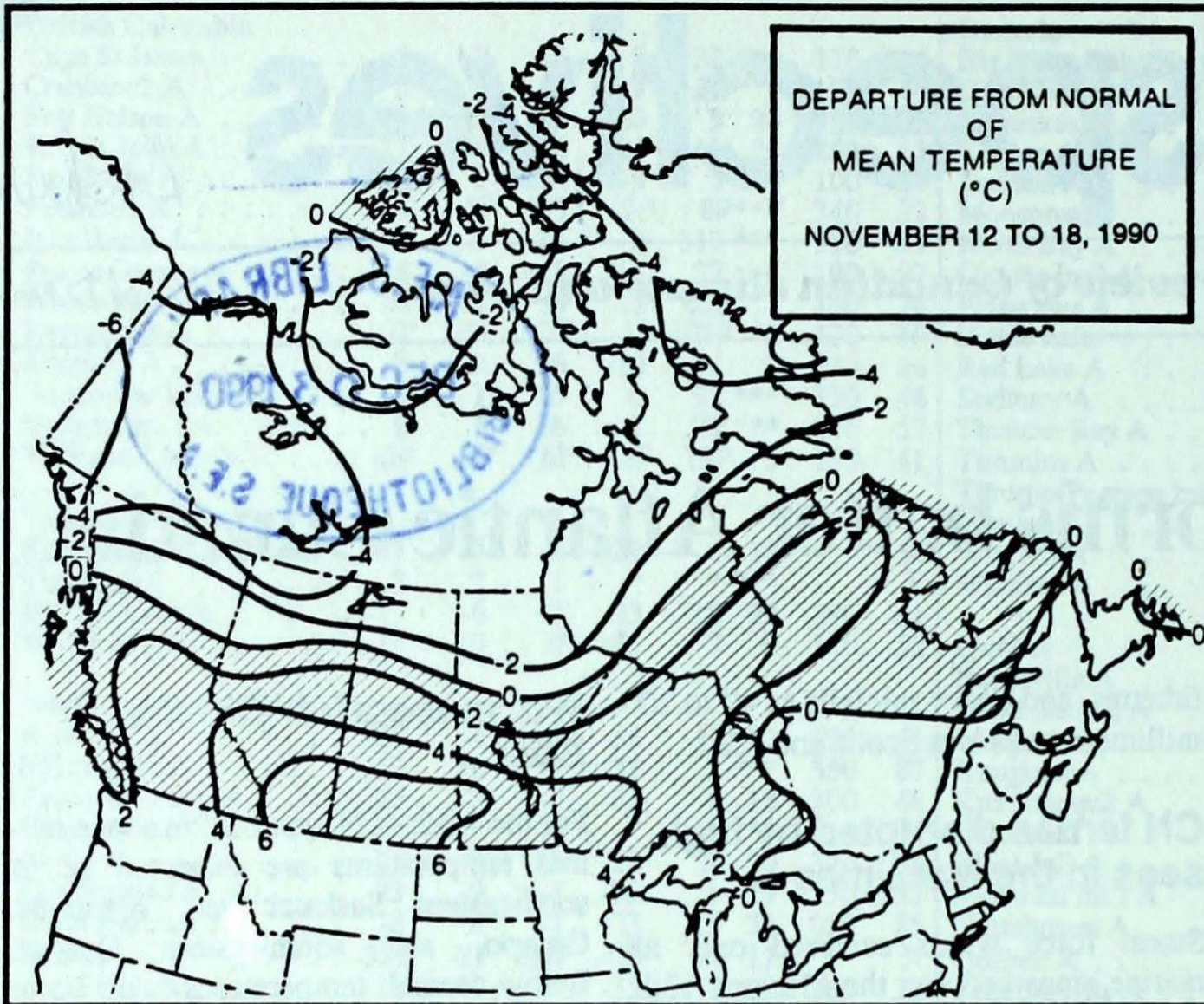
Warm weather for the East...

For the week of November 26, above-normal temperatures are expected across southeastern Saskatchewan, Manitoba, Ontario, and southwestern Quebec. Below-normal temperatures will occur across northern Baffin Island, the Queen Elizabeth Islands, the Yukon, Mackenzie District of the Northwest Territories and British Columbia. Elsewhere temperatures will be near normal. The greatest departures will occur across southern Manitoba and the southern half of Ontario with temperatures of about 5 degrees above normal, while the western half of B.C. will experience temperatures approximately 5 to 7 degrees below normal.

Recent Snowfalls in Eastern Canada



In northern New Brunswick and eastern Quebec more snow fell in the first two weeks of November than what usually falls in the entire month.



Weekly normal temperatures (°C)

	max.	min.
Whitehorse A	-5.8	-13.0
Iqaluit A	-8.5	-16.6
Yellowknife A	-8.6	-16.8
Vancouver Int'l A	8.6	2.5
Victoria Int'l A	9.0	2.4
Calgary Int'l A	2.2	-9.4
Edmonton Int'l A	0.4	-10.4
Regina A	0.3	-9.5
Saskatoon A	-0.8	-9.4
Winnipeg Int'l A	0.2	-7.4
Ottawa Int'l A	5.2	-2.1
Toronto (Pearson Int'l A)	7.8	-0.4
Montréal Int'l A	5.4	-1.3
Québec A	3.2	-3.4
Fredericton A	5.4	-2.9
Saint John A	5.6	-1.8
Halifax (Shearwater)	7.7	1.0
Charlottetown A	5.9	-0.6
Goose A	-0.5	-7.5
St John's A	5.8	0.0

Weekly temperature and precipitation extremes

	Maximum temperature (°C)	Minimum temperature (°C)	Heaviest precipitation (mm)
British Columbia	Kamloops A 18	Fort Nelson A -28	Prince Rupert A 145
Yukon Territory	Teslin (aut) -3	Whitehorse A -36	Watson Lake A 11
	Whitehorse A -3		
Northwest Territories	Killinek 2	Eureka -43	Fort Reliance 19
Alberta	Lethbridge A 20	High Level A -26	Jasper 26
Saskatchewan	Moose Jaw A 18	Collins Bay -30	Cree Lake 15
Manitoba	Gretna (aut) 16	Lynn Lake A -26	Churchill A 14
Ontario	Windsor A 20	Big Trout Lake -20	North Bay A 14
Québec	Montréal Int'l A 15	Schefferville A -21	Blanc Sablon A 57
New Brunswick	St Stephen (aut) 13	St-Léonard A -9	Moncton A 36
Nova Scotia	Inverness (aut) 16	Sydney A -5	Truro 75
Prince Edward Island	Charlottetown A 10	Charlottetown A -6	Charlottetown A 46
Newfoundland	St John's A 17	Wabush Lake A -26	Argentia A 92

Across The Country...

Highest Mean Temperature	Vancouver Int'l A(BC)	8
Lowest Mean Temperature	Eureka(NWT)	-40

CLIMATIC PERSPECTIVES
VOLUME 12

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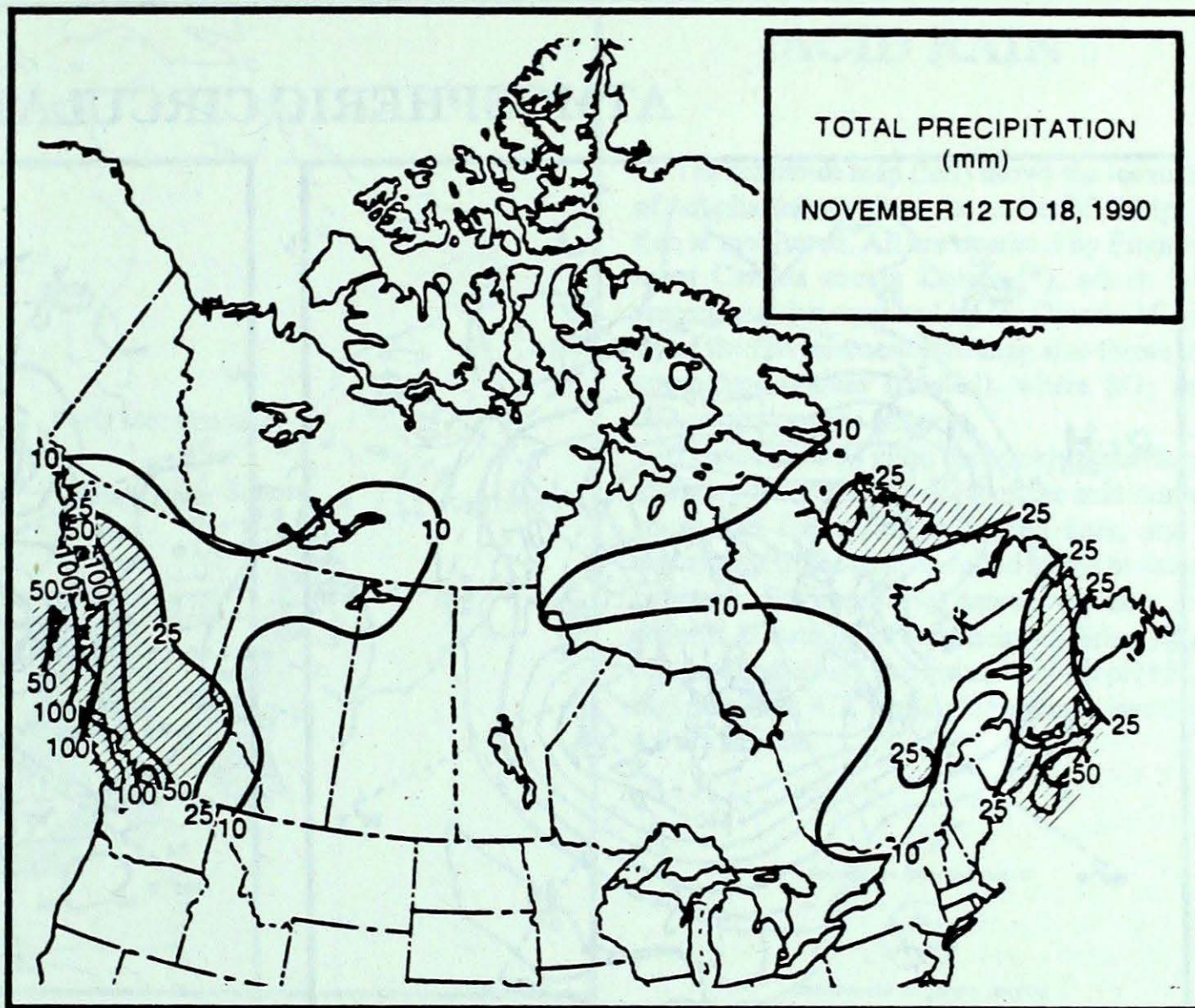
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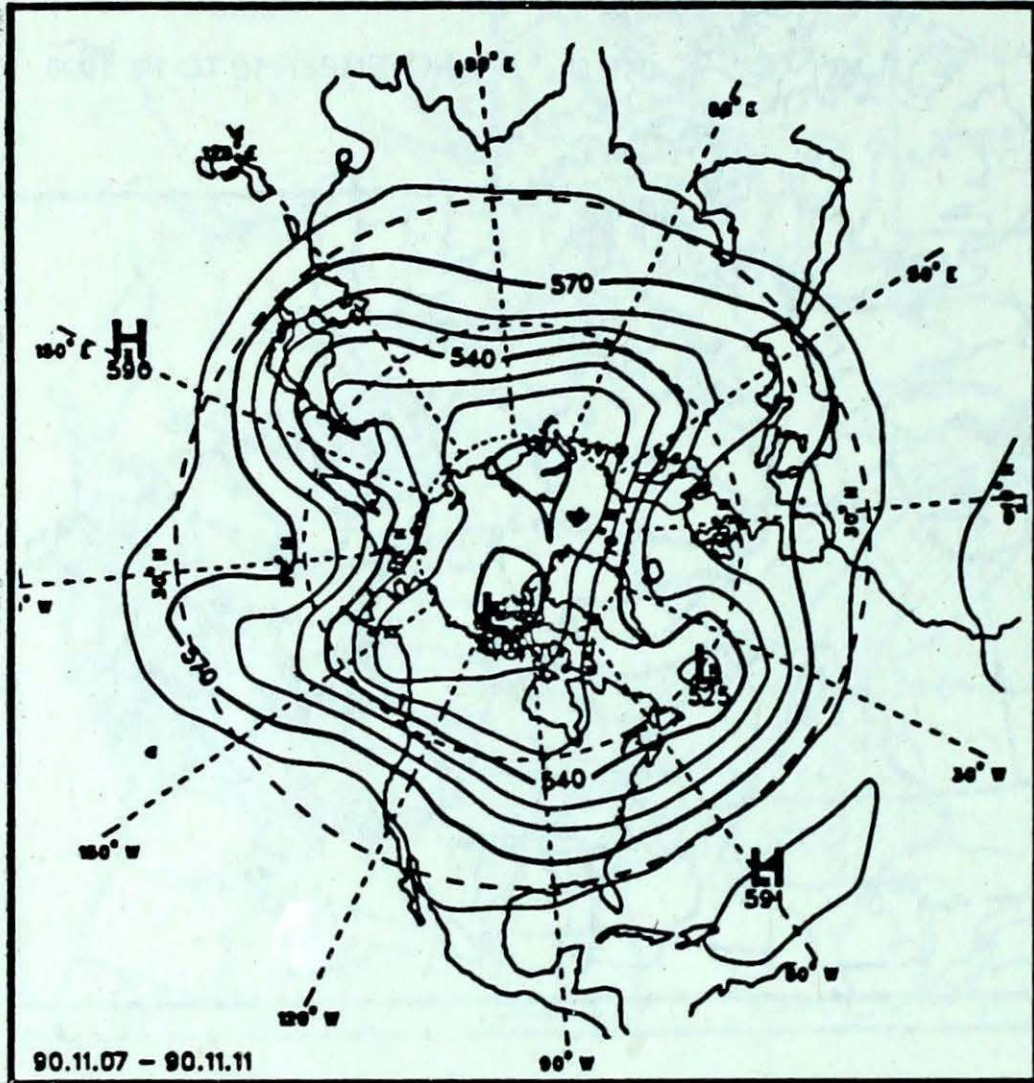
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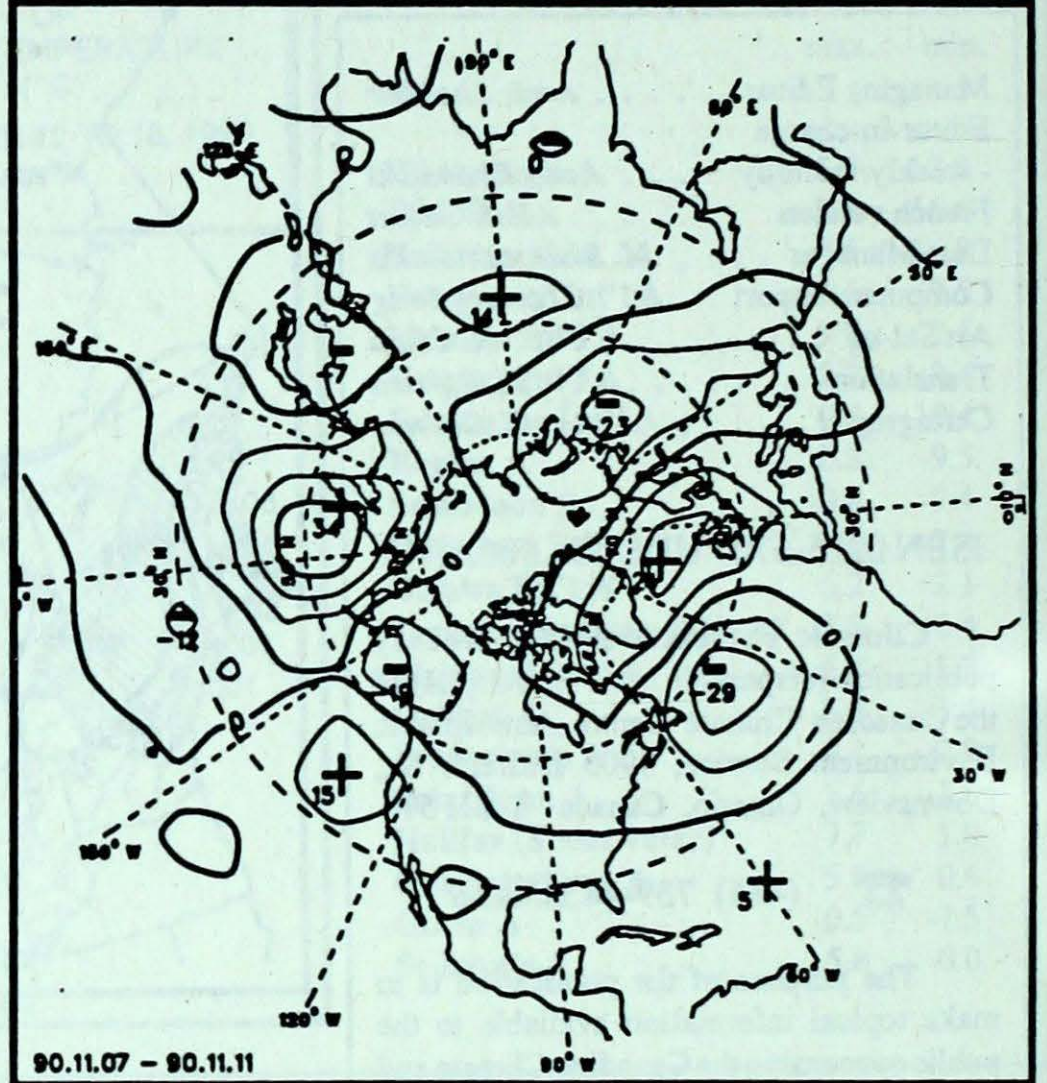
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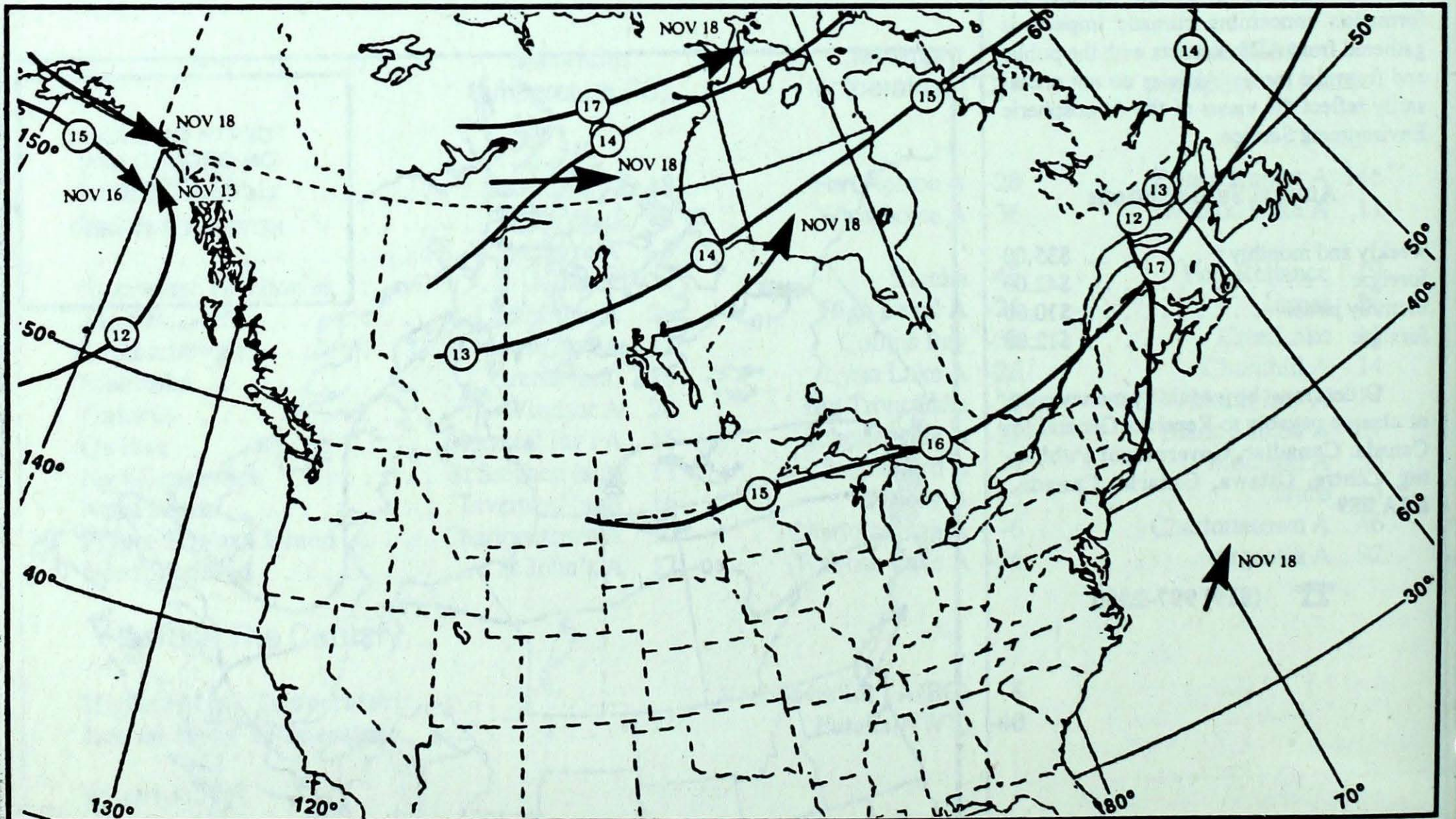
ATMOSPHERIC CIRCULATION



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



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

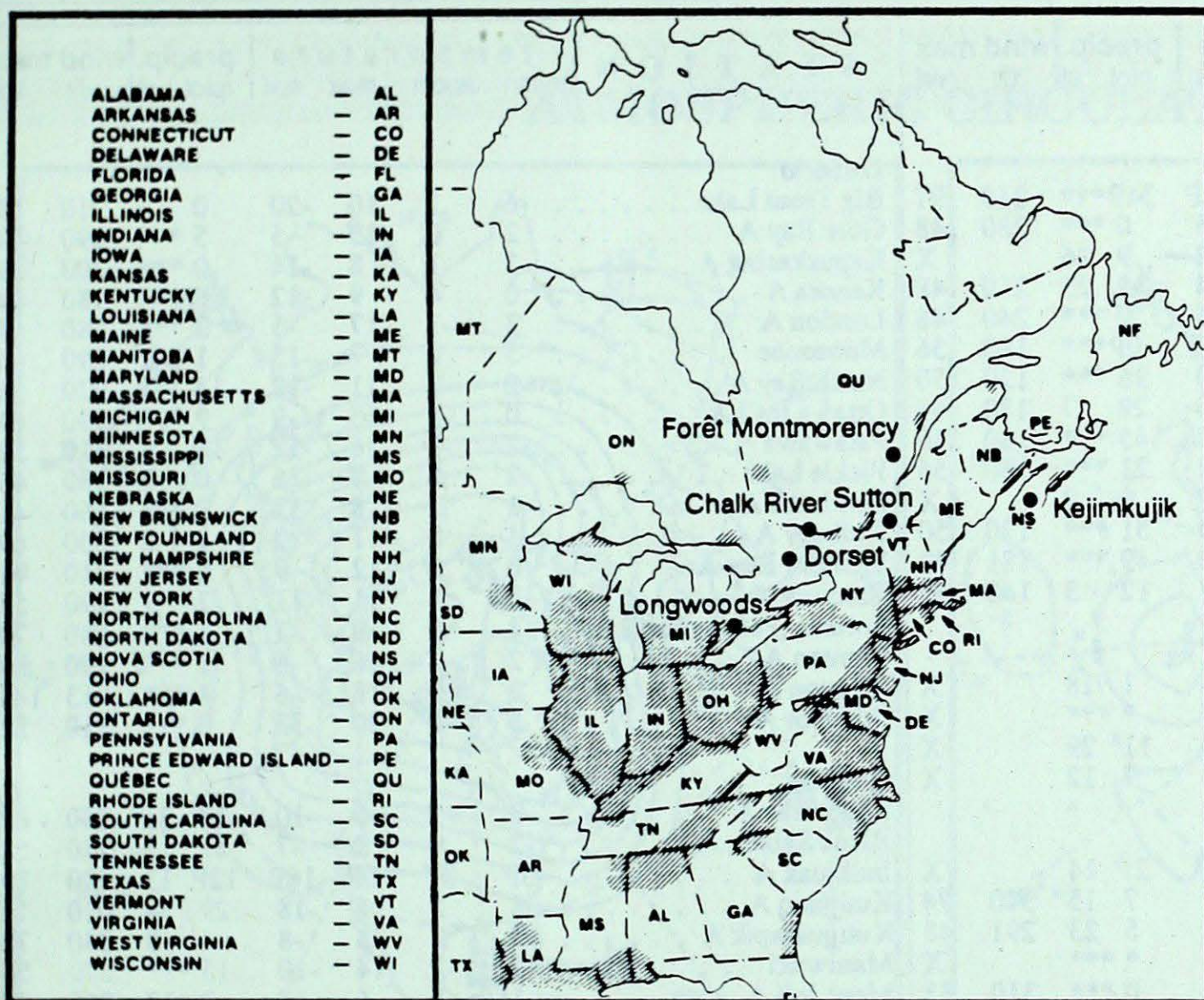


Tracks of low pressure centres at 12:00 U.T. each day during the period.

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 SO₂ 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.



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Site	day	pH	amount	air path to site	November 11 to 17, 1990
Longwoods	11	5.7	3 S	Southern Michigan, Wisconsin
	16	4.4	2 R	.....	Indiana, Illinois
Dorset*	11	4.9	11 S	.....	Northern Michigan, Lake Huron
	16	4.4	10 R	.....	Southern Ontario, Michigan, Northern Ohio
Chalk River	11	4.9	7 S	.....	Northern Ontario
	16	4.3	9 R	.....	Eastern Ontario
Sutton	13	6.1	4 S	.....	Northwestern Quebec, Eastern Ontario
	16	4.2	13 R	.....	Lake Ontario, New York
Montmorency	16	4.1	17 R	.....	Southwestern Quebec
Kejimikujik	11	4.7	8 M	.....	New England
	17	4.7	22 R	.....	Atlantic Ocean

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

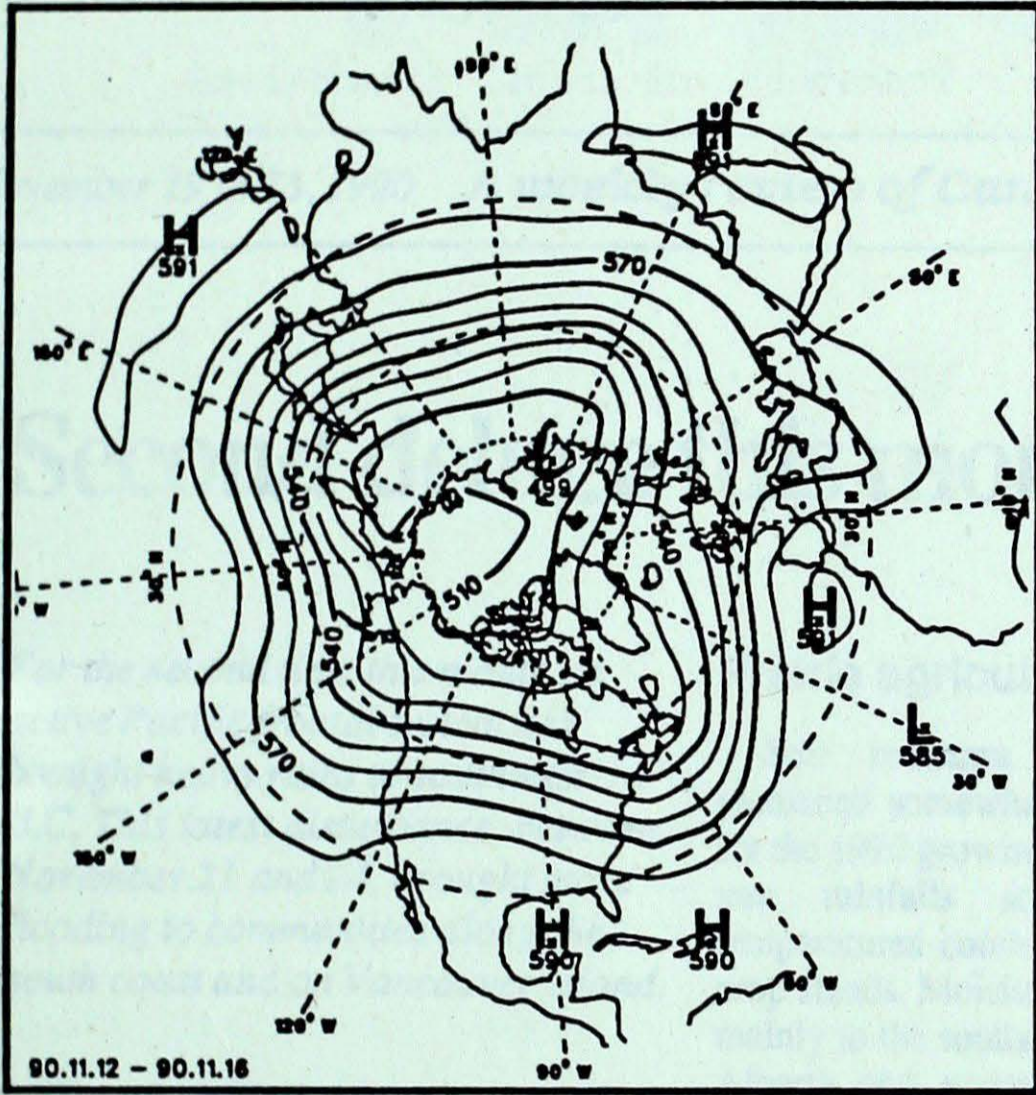
STATION	temperature				precip. ptot st	wind max		STATION	temperature				precip. ptot st	wind max		
	mean	anom	max	min		dir	vel		mean	anom	max	min		dir	vel	
British Columbia								Ontario								
Cape St James	7P	1P	11P	3P	34P***	210	91	Big Trout Lake	-6	3	10	-20	0	4	310	57
Cranbrook A	4	5	14	-5	0 ***	280	48	Gore Bay A	2	0	13	-5	5 ***	290	59	
Fort Nelson A	-16	-3	-1	-28	9 26	X	X	Kapuskasing A	-3	1	8	-14	0 ***	200	59	
Fort St John A	-6	1	5	-24	15 23	210	48	Kenora A	0	4	9	-12	0 ***	180	44	
Kamloops A	6	4	18	-5	0 ***	240	46	London A	3	-1	17	-5	3 ***	280	54	
Penticton A	7P	4P	14P	-1P	0P***	180	56	Moosonee	-5	0	7	-15	1 1	290	46	
Port Hardy A	5	1	14	0	96 ***	120	50	North Bay A	-2	-2	11	-12	14 9	020	56	
Prince George A	0	3	10	-10	29 7	180	69	Ottawa Int'l A	0	-1	15	-9	9 ***	290	67	
Prince Rupert A	5	2	11	0	145 ***	180	130	Petawawa A	-2	-1	16	-12	10 1	310	52	
Revelstoke A	4	3	8	-2	21 ***	180	56	Pickle Lake	-2	5	8	-16	0 1	180	46	
Smithers A	-1	2	5	-7	9 9	X	X	Red Lake A	-1	5	8	-12	0 ***	160	41	
Vancouver Int'l A	8	2	14	3	51 ***	120	50	Sudbury A	-1	0	11	-12	8 3	360	69	
Victoria Int'l A	7	1	13	0	49 ***	181	43	Thunder Bay A	0	2	12	-9	2 ***	310	41	
Williams Lake A	1	3	15	-7	12 3	140	65	Timmings A	-3	1	11	-11	2 1	290	52	
Yukon Territory								Toronto(Pearson Int'l A)								
Komakuk Beach A	-21	-3	-13	-33	1 18	X	X	Trenton A	2	-2	16	-8	1 ***	290	69	
Teslin (aut)	*	*	-3	*	***	X	X	Warton A	3	0	18	-6	4 ***	013	148	
Watson Lake A	-19	-5	-6	-34	11 29	X	X	Windsor A	5	-1	20	-3	0 ***	310	52	
Whitehorse A	-17	-8	-3	-36	7 12	X	X	Québec								
Northwest Territories								Bagotville A	-3	-1	5	-10	28 21	280	82	
Alert	-34P	-7P	-22P	-39P	2P 14	X	X	Blanc Sablon A	-2	*	2	-7	57 13	230	52	
Baker Lake A	-22	-3	-11	-29	7 15	340	74	Inukjuak A	-5P	2P	0P	-16P	12P 13	190	89	
Cambridge Bay A	-25	-2	-16	-32	5 23	291	48	Kuujuuaq A	-6	2	1	-18	29 38	010	74	
Cape Dyer A	*	*	*	*	***	X	X	Kuujuarapik A	-3	2	3	-8	4 8	340	74	
Clyde A	-22	-4	-17	-30	0 ***	310	63	Maniwaki	-2	-2	14	-10	15 ***	270	54	
Coppermine A	-22	-2	-13	-31	3 23	150	39	Mont Joli A	-1	-1	6	-10	9 13	260	87	
Coral Harbour A	-19P	-3P	-5P	-30P	3P 23	020	69	Montréal Int'l A	0	-2	15	-7	12 ***	280	57	
Eureka	-40P	-9P	-27P	-43P	0P 9	X	X	Natashquan A	-1	0	5	-7	33 8	230	83	
Fort Smith A	-15	-4	-1	-27	13 48	320	41	Québec A	-2	-1	5	-8	15 11	270	63	
Hall Beach A	-23	-4	-11	-30	1 20	130	57	Schefferville A	-9	1	0	-21	23 62	290	61	
Inuvik A	-25	-5	-16	-38	2 32	160	46	Sept-Îles A	-2	1	4	-10	7 17	310	87	
Iqaluit A	-15	-2	-3	-29	7 ***	020	50	Sherbrooke A	-2	-1	12	-10	5 ***	270	54	
Mould Bay A	-27	1	-20	-37	3 27	X	X	Val-d'Or A	-5	-2	9	-17	8 8	310	69	
Norman Wells A	-23	-4	-13	-37	1 15	120	63	New Brunswick								
Resolute A	-25	-1	-16	-33	0 27	100	70	Charlo A	-1	-1	4	-7	*** 70	270	72	
Yellowknife A	-18	-5	-3	-31	9 20	080	43	Chatham A	-1	-1	5	-7	26 7	270	91	
Alberta								Fredericton A	1	0	9	-6	15 ***	260	82	
Calgary Int'l A	2	6	14	-7	1 1	260	76	Moncton A	1	-1	11	-7	36 ***	260	83	
Cold Lake A	-4	2	4	-15	0 ***	X	X	Saint John A	2P	0P	11P	-6P	31P***	270	65	
Edmonton Namao A	-3	2	7	-13	0 5	290	33	Nova Scotia								
Fort McMurray A	-5	3	7	-17	8 7	260	33	Greenwood A	3	-1	14	-5	61 ***	260	93	
High Level A	-16	-6	2	-26	17 36	X	X	Shearwater A	4	0	12	-4	61 ***	260	69	
Jasper	1	5	13	-8	26 2	X	X	Sydney A	3	-1	15	-5	16 ***	240	65	
Lethbridge A	6	7	20	-11	0 ***	220	100	Yarmouth A	5	0	13	-3	32 ***	280	80	
Medicine Hat A	5	7	19	-7	0 ***	230	48	Prince Edward Island								
Peace River A	-9	-1	2	-20	12 14	X	X	Charlottetown A	2	-1	10	-6	46 ***	280	80	
Saskatchewan								Summerside A	2	-1	8	-5	34 ***	250	82	
Cree Lake	-10	-3	2	-23	15 21	300	54	Newfoundland								
Estevan A	2	5	16	-11	0 ***	260	44	Cartwright	-2	0	4	-6	18 26	360	69	
La Ronge A	-5	2	7	-15	0 8	270	32	Churchill Falls A	-8	0	1	-24	5 53	290	57	
Regina A	1	5	18	-10	0 ***	140	43	Gander Int'l A	2	1	13	-5	7 1	220	67	
Saskatoon A	0	5	12	-9	0 1	290	39	Goose A	-3	1	2	-11	4 15	260	44	
Swift Current A	4	7	17	-7	0 ***	220	65	Port Aux Basques	3	-1	9	-4	15 ***	270	93	
Yorkton A	-1	5	9	-10	0 ***	150	50	St John's A	3	0	17	-3	8 ***	250	67	
Manitoba								St Lawrence	3	-1	12	-3	4 ***	X	X	
Brandon A	-1	5	11	-11	0 ***	260	32	Wabush Lake A	-8	0	2	-26	11 33	340	44	
Churchill A	-14	-3	-3	-23	14 24	270	80	90/11/12-90/11/18								
Lynn Lake A	-12	-4	-1	-26	2 17	310	52									
The Pas A	-4	3	4	-15	0 9	290	46									
Thompson A	-12	-3	1	-25	1 25	290	54									
Winnipeg Int'l A	1	4	14	-12	0 ***	170	59									

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

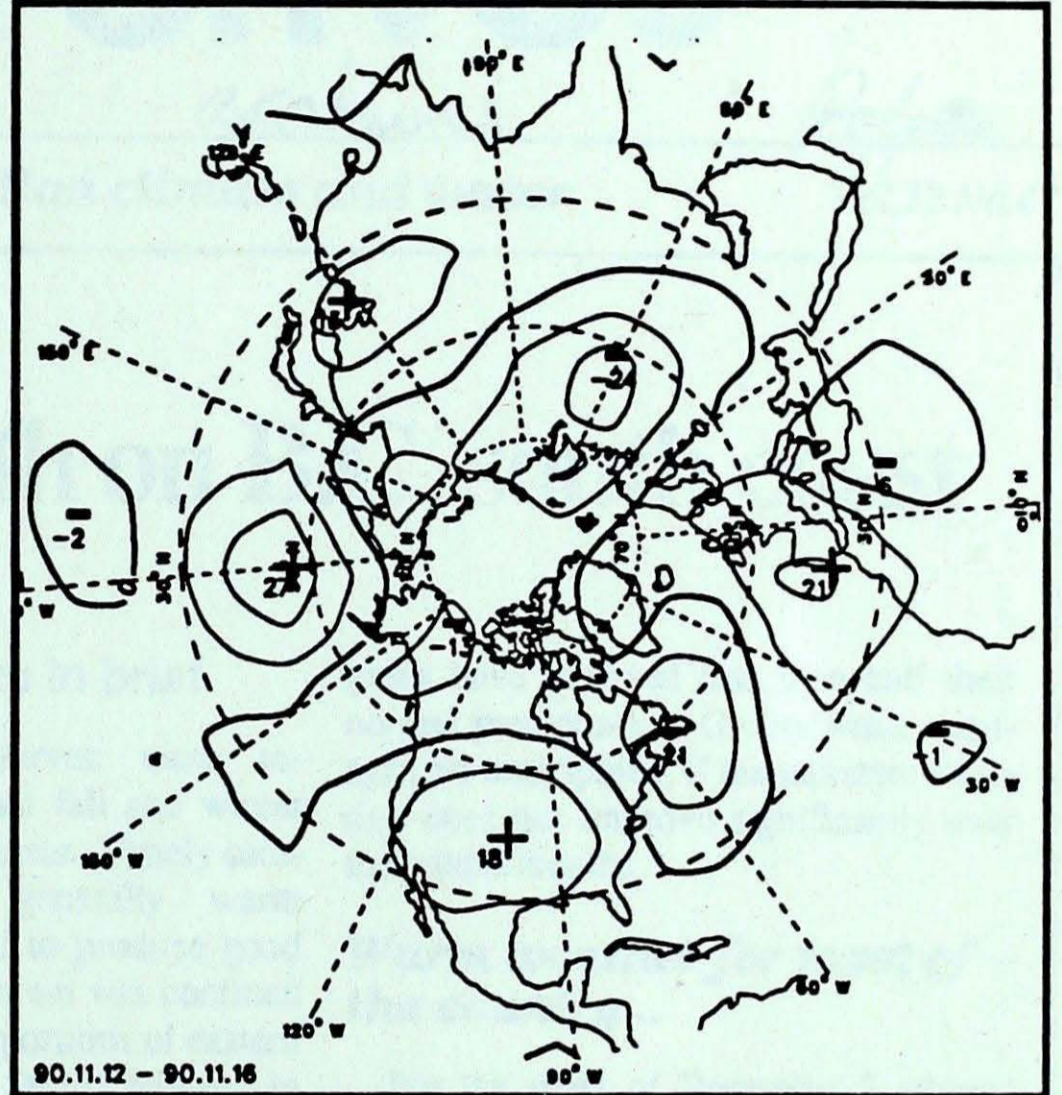
ptot = weekly precipitation total in mm
 st = snow thickness on the ground in cm
 dir = direction of max wind, deg. from north.
 vel = wind speed in km/h

— 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)



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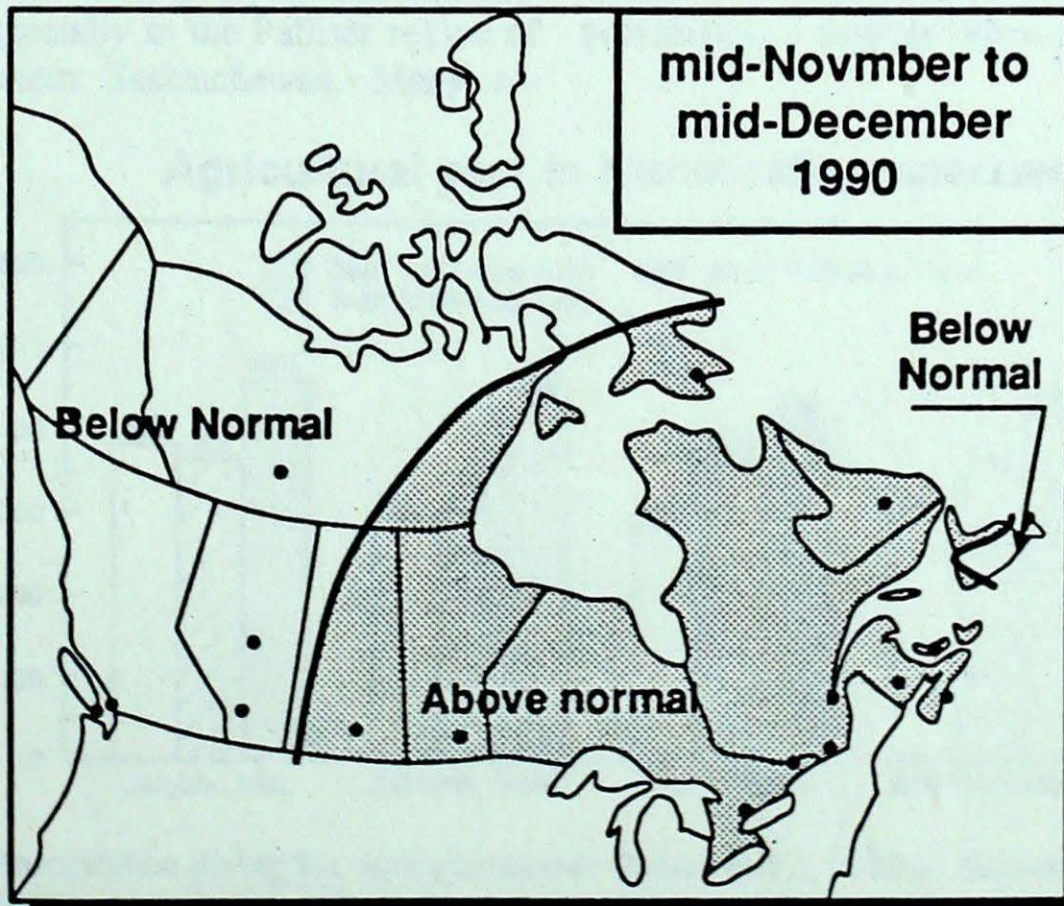
Service
de l'environnement
atmosphérique

MONTHLY TEMPERATURE FORECAST

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

Whitehorse	-13	Toronto	0
Yellowknife	-19	Ottawa	-3
Iqaluit	-17	Montreal	-2
Vancouver	5	Quebec	-5
Victoria	5	Fredericton	-3
Calgary	-5	Halifax	2
Edmonton	-8	Charlottetown	-1
Regina	-9	Goose Bay	-8
Winnipeg	-9	St. John's	1

Canada



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Archives

C-2 Ref

