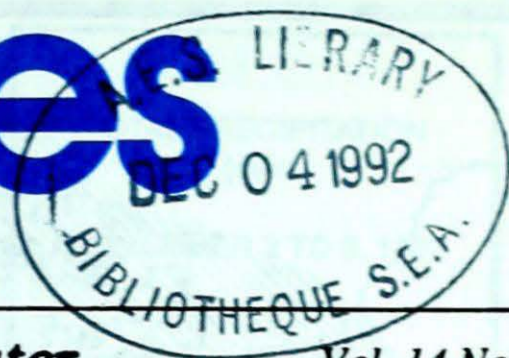




Climatic Perspectives



November 2 to 8, 1992

A weekly review of Canadian climate and water

Vol. 14 No. 45

Major snowfalls blanket parts of Manitoba and Ontario

Winter arrived early and with a vengeance, as heavy snow and cold weather dominated the scenario across eastern parts of the country this week.

The first major winter storm of the season moved northward through western Wisconsin and into northwestern Ontario on November 2 and 3. Along with significant accumulations of snow there were strong easterly winds, causing some poor visibilities in southeastern Manitoba. Precipitation totals in northwestern Ontario ranged from 10 to over 20 millimeters, while in southeastern Manitoba, 3 to 10 millimetres were tallied. For the week, Geraldton, Ont., was blanketed with 35.0 cm of snow, Thunder Bay received 19.2 cm, Pickle Lake recorded 16.8 cm and Winnipeg 8.2 cm.

Moderate to strong north winds behind the storm pulled cold Arctic air into the region. As a result, some daily low temperature records were broken in Manitoba. On the 5th, Lynn Lake broke the daily low minimum record with -22.8°C , while Thompson equalled the low minimum with -24.0°C . The next day, Gimli established a new daily low minimum of -16.8°C .

The cold air has invaded the entire eastern half of the continent this week. Below-freezing temperatures were even recorded in the southeastern states of Georgia and Florida. The dome of the

cold air stretched from southern Manitoba into the American mid-west and eastward to the coast. As a result of the cold weather, seasonal heating requirements for the densely populated areas of southern Ontario are 25 to 40 percent above normal.

The cold weather across eastern Canada tied or broke some records in the Maritimes as well. Halifax International Airport set a new minimum record of -6.0°C , on Sunday, breaking the old record of -4.0°C set in 1984, while Charlottetown tied the 1879 record of -7.0°C . Record-keeping began in 1872 at Charlottetown. On the 8th, Gander, Nfld., broke the 1960 minimum temperature record of -6.1°C with -7.0°C .

Rain in British Columbia

It was a wet week across the southern half of B.C., as a series of Pacific disturbances kept the region cloudy, with some areas receiving frequent periods of precipitation.

In Terrace, the rain that fell this week was as much as has fallen for the past two months. At Prince George, rain on the first eight days of the month inundated the

area with an amount equal to 85 percent of the mean for the entire month. Kamloops received 51.6 mm of rain. This is more than four times the normal November rainfall total. Accumulations in Kamloops are rapidly approaching the record total precipitation for November of 65 mm, set in 1911.

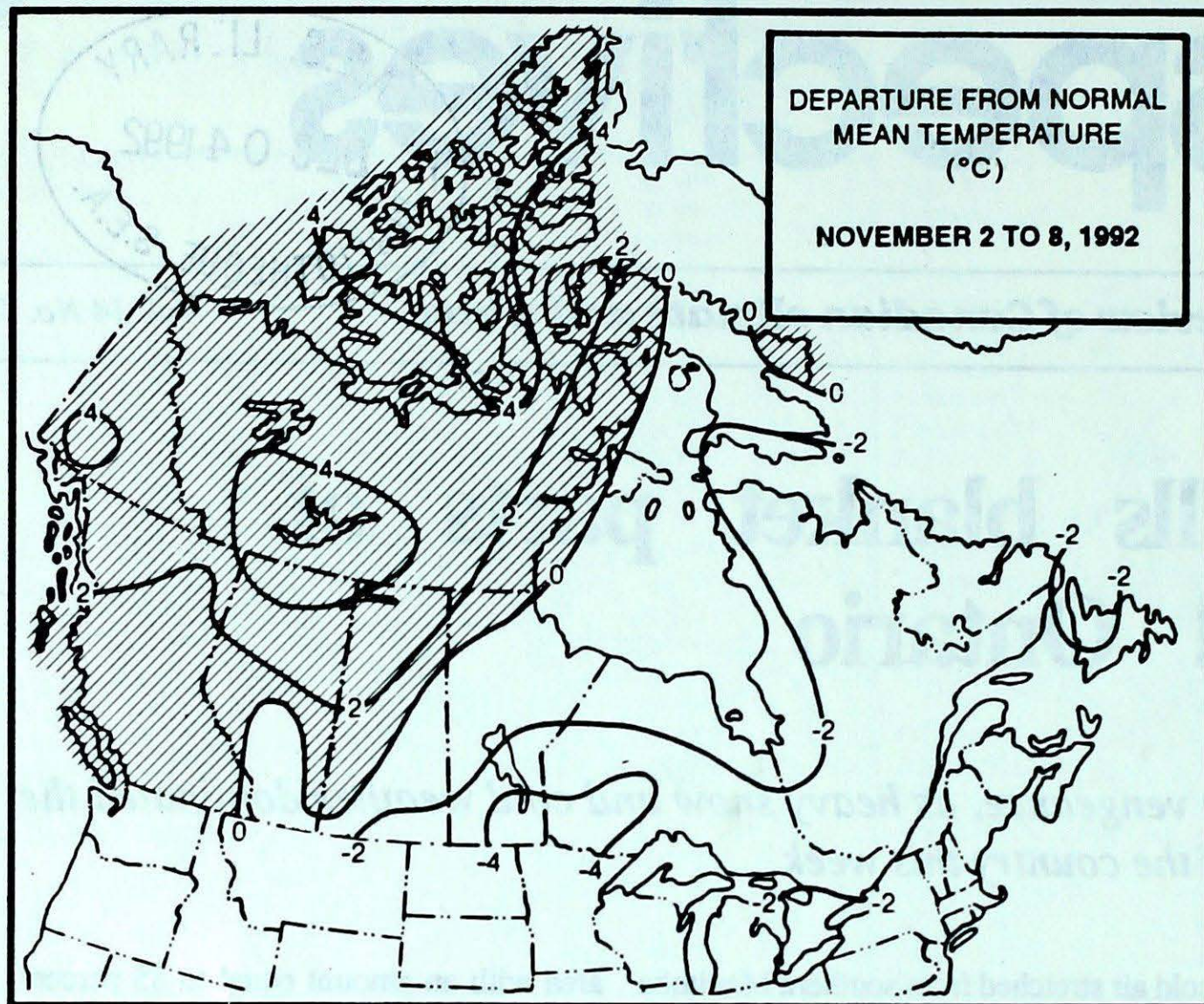
Across northern B.C., a thick blanket of snow brought skiers out of hibernation and winter highway crews out of their armchairs. Logging interests have moved into the bush, but have not yet established their ice roads across the rivers. However, reports from Fort Nelson indicate that many rivers in the surrounding area have frozen over.

A Look Ahead...

For the week of November 16, below-normal temperatures are expected for the entire country, with much below-normal values across the northern half.

A westerly flow across the nation will allow disturbances to dump near to above-normal amounts of precipitation - mostly in the form of snow - over many areas.

A. Gergye, Canadian Climate Centre



Weekly normal temperatures (°C)

	max.	min.
Whitehorse A	-1.9	-8.7
Iqaluit A	-6.2	-13.6
Yellowknife A	-5.4	-12.6
Vancouver Int'l A	10.7	4.0
Victoria Int'l A	11.0	3.5
Calgary Int'l A	6.9	-5.8
Edmonton Int'l A	3.9	-7.8
Regina A	4.6	-7.3
Saskatoon A	3.5	-6.7
Winnipeg Int'l A	3.9	-4.8
Ottawa Int'l A	8.1	0.0
Toronto (Pearson Int'l A)	9.4	1.1
Montréal Int'l A	8.6	1.2
Québec A	6.3	-0.9
Fredericton A	9.0	-0.6
Saint John A	8.7	0.8
Halifax (Shearwater)	10.2	3.1
Charlottetown A	8.8	1.7
Goose A	3.0	-4.2
St John's A	8.3	1.8

Weekly temperature and precipitation extremes

	Maximum temperature (°C)	Minimum temperature (°C)	Heaviest precipitation (mm)
British Columbia	Victoria Int'l A 15	Fort Nelson A -14	Estevan Point (aut) 108
Yukon Territory	Teslin (aut) 5	Komakuk Beach A -24	Watson Lake A 6
.	Whitehorse A 5		
Northwest Territories	Hay River A 3	Alert -33	Cape Dyer A 23
Alberta	Lethbridge A 12	Edson A -12	Calgary Int'l A 16
Saskatchewan	Moose Jaw A 9	Collins Bay -16	North Battleford A 10
Manitoba	Dauphin A 3	Lynn Lake A -24	Winnipeg Int'l A 8
Ontario	Port Weller (aut) 17	Lansdown -18	Trenton A 59
Quebec	Mont Joli A 13	La Grande IV A -24	Montréal Int'l A 41
New Brunswick	St Stephen (aut) 11	St-Léonard A -12	Saint John A 22
Nova Scotia	Sable Island 15	Amherst (aut) -6	Sydney A 18
Prince Edward Island	Charlottetown A 12	Charlottetown A -7	Charlottetown A 12
Newfoundland	St John's A 10	Churchill Falls A -20	St Anthony 33

Across The Country...

Highest Mean Temperature	Estevan Point (aut) (B.C.) 9
Lowest Mean Temperature	Eureka (N.W.T.) -25

CLIMATIC PERSPECTIVES
VOLUME 14

Managing editor **A. Saulesleja**
 Editor-in-charge **Andrew Radomski**
 Long-range forecasts **Aaron Gergye**
 French version **Alain Caillet**
 Data manager **M. Skarpathiotakis**
 Computer support **Robert Eals**
 Art layout **K. Czaja**
 Translation **D. Pokorn**
 Cartography **T. Chivers**

ISBN 0225-5707 UDC 551.506.1(71)

Climatic Perspectives is a weekly publication (disponible aussi en français) of the Canadian Climate Centre, Atmospheric Environment Service, 4905 Dufferin St., Downsview, Ontario, Canada M3H 5T4

(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.

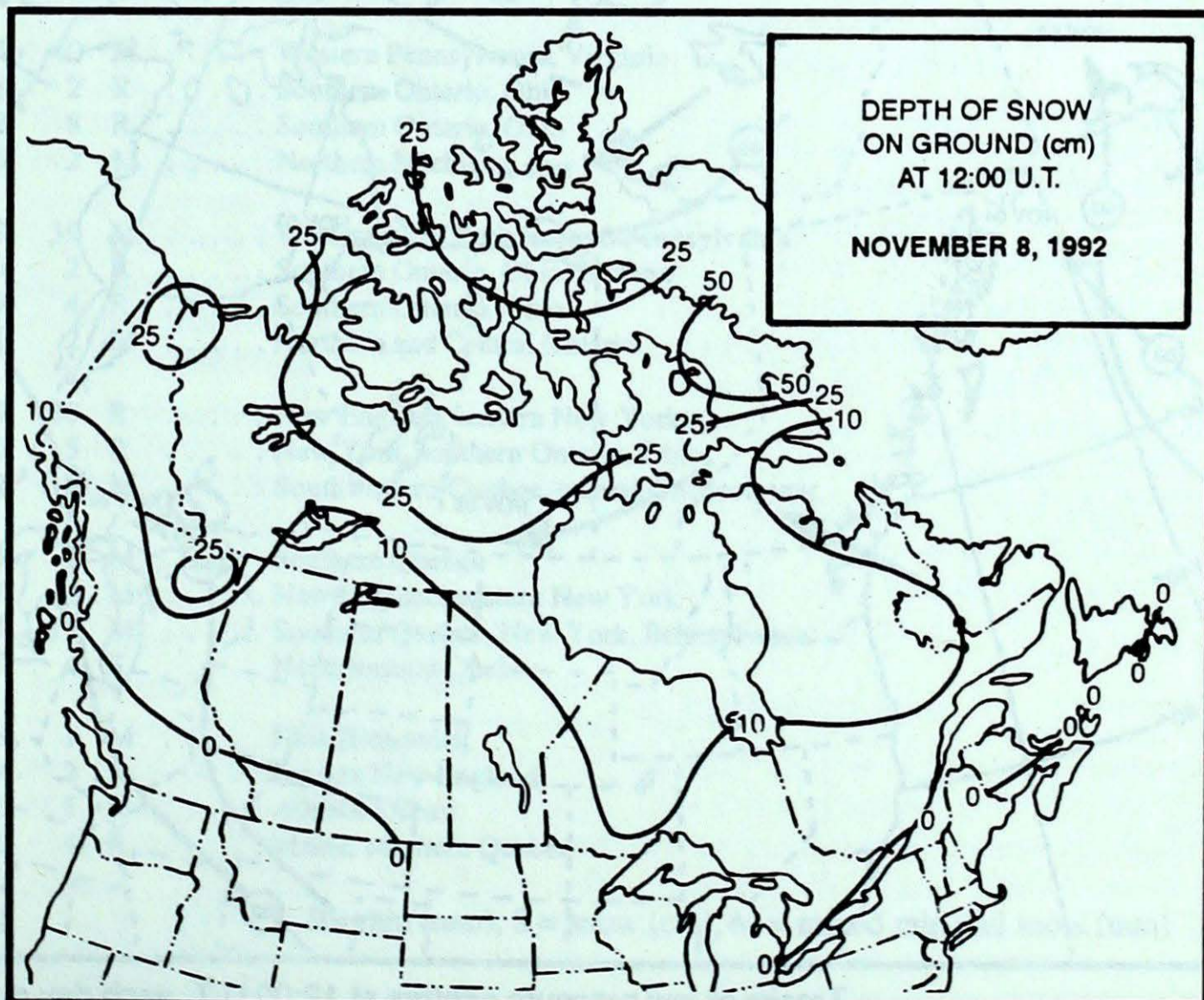
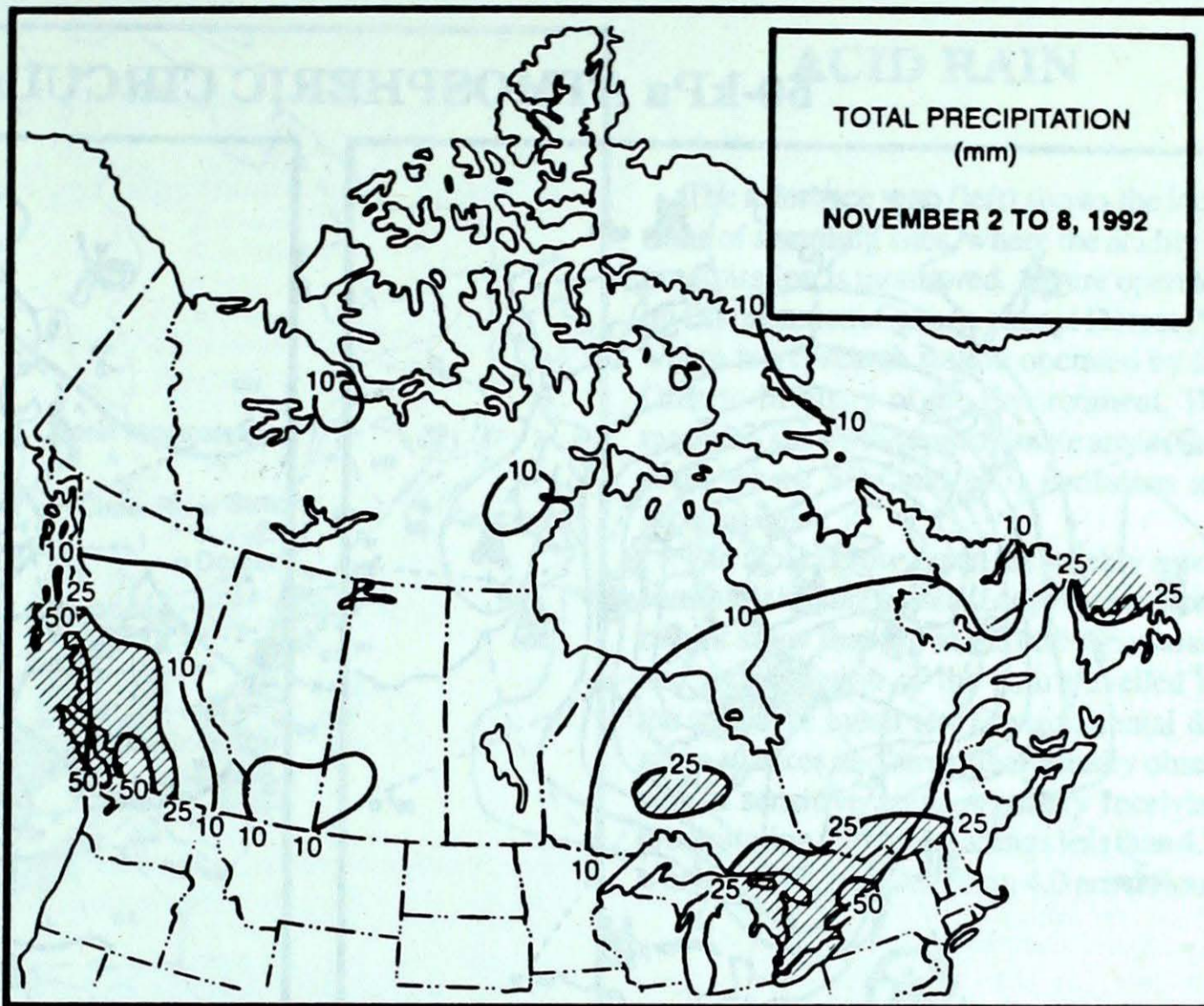
The data in this publication are based on unverified reports from approximately 225 Canadian synoptic weather stations. Information concerning climatic impacts is gathered from AES contacts with the public and from the media. Articles do not necessarily reflect the views of the Atmospheric Environment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

Annual Subscriptions

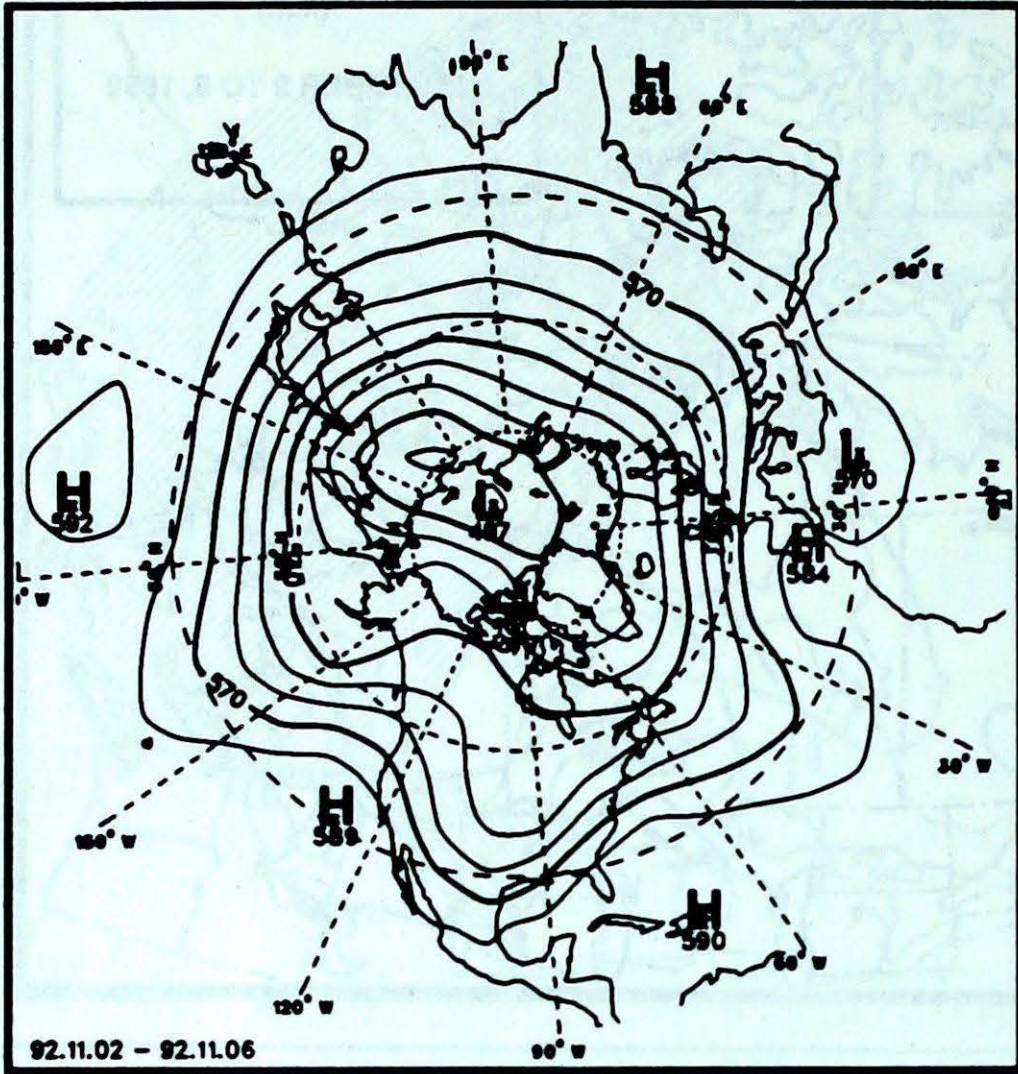
weekly and monthly : \$35.00
 foreign: \$42.00
 monthly issue: \$10.00
 foreign: \$12.00

Orders must be prepaid by money order or cheque payable to Receiver General for Canada. Canadian Government Publishing Centre, Ottawa, Ontario, Canada K1A 0S9

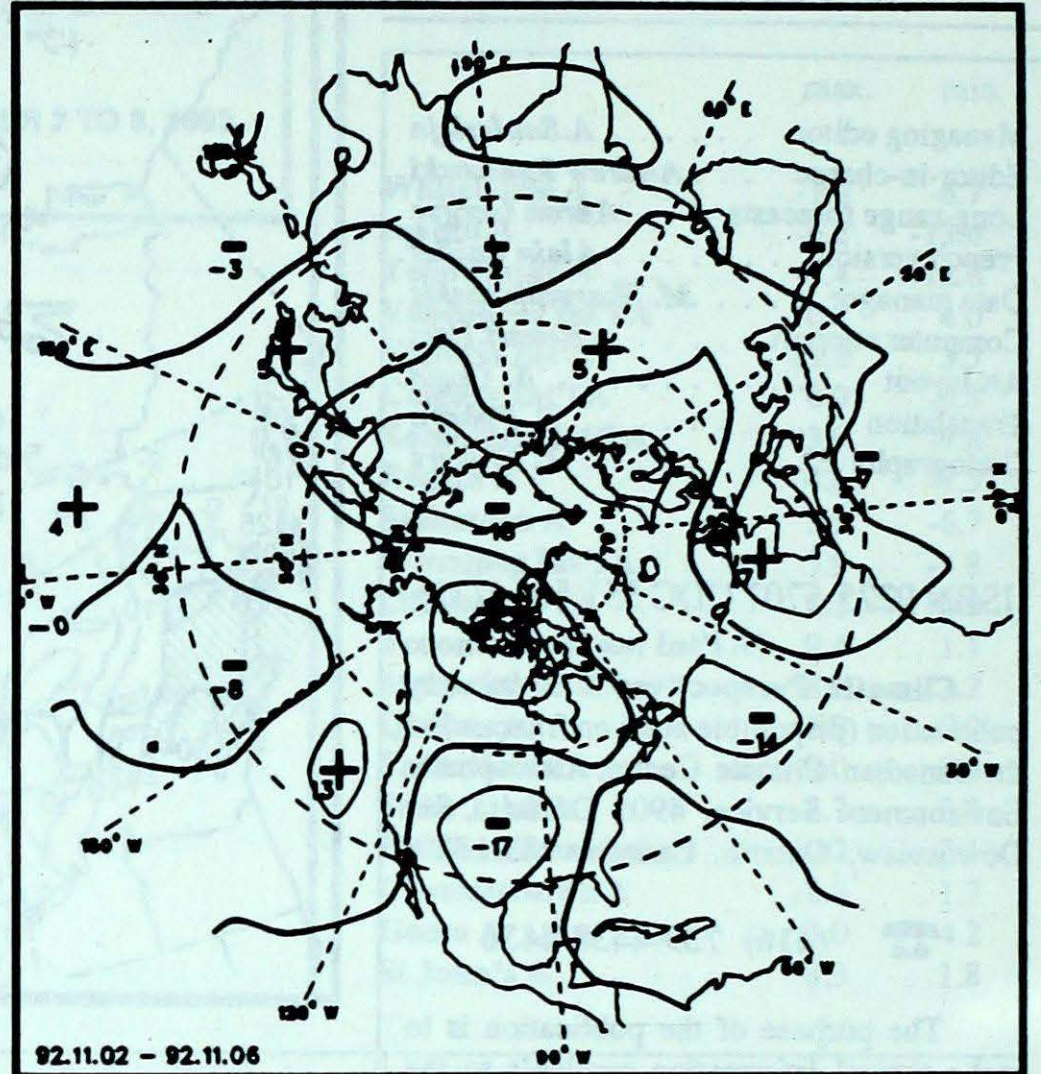
(819) 956-4802



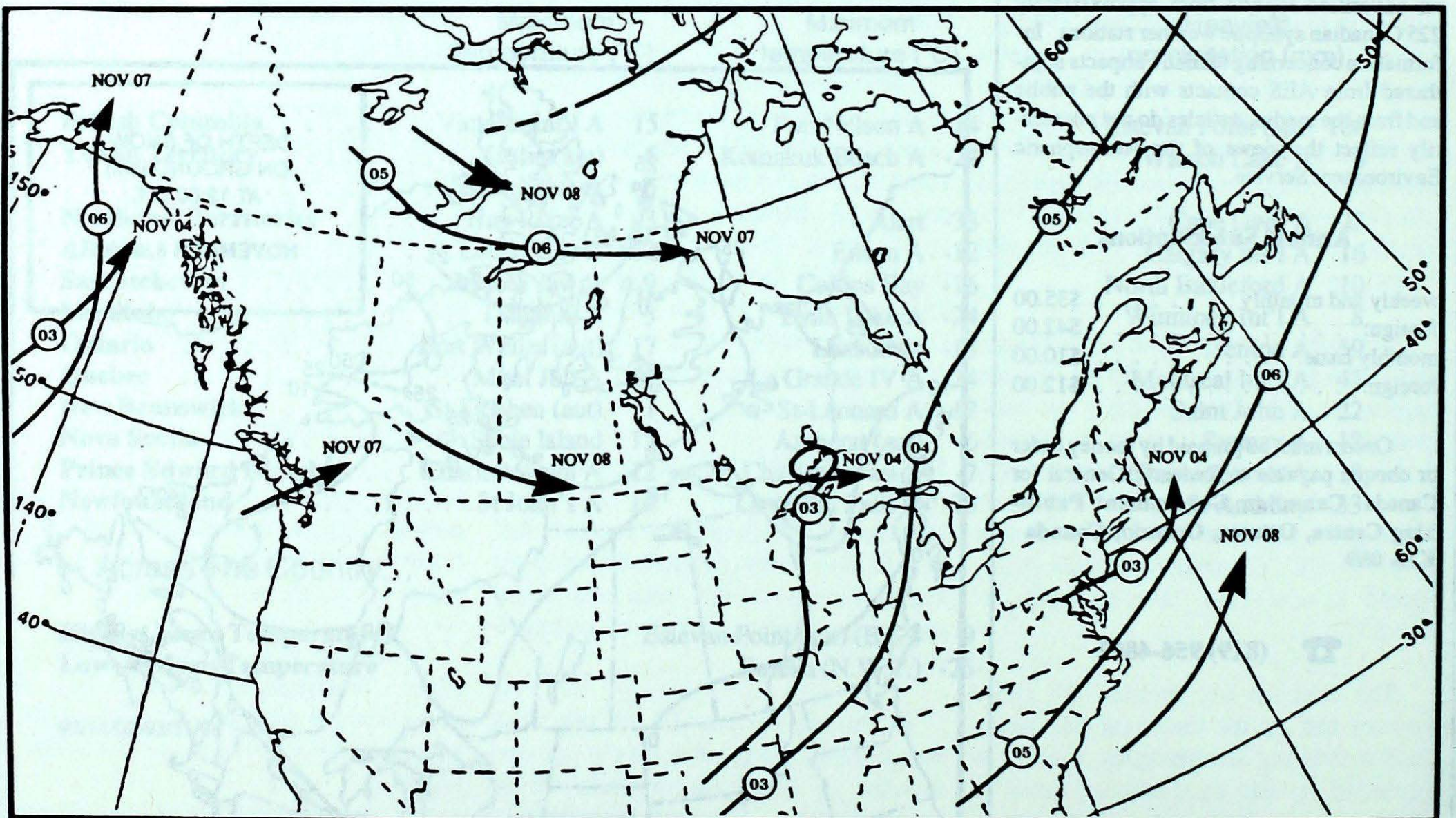
50-kPa ATMOSPHERIC CIRCULATION



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



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

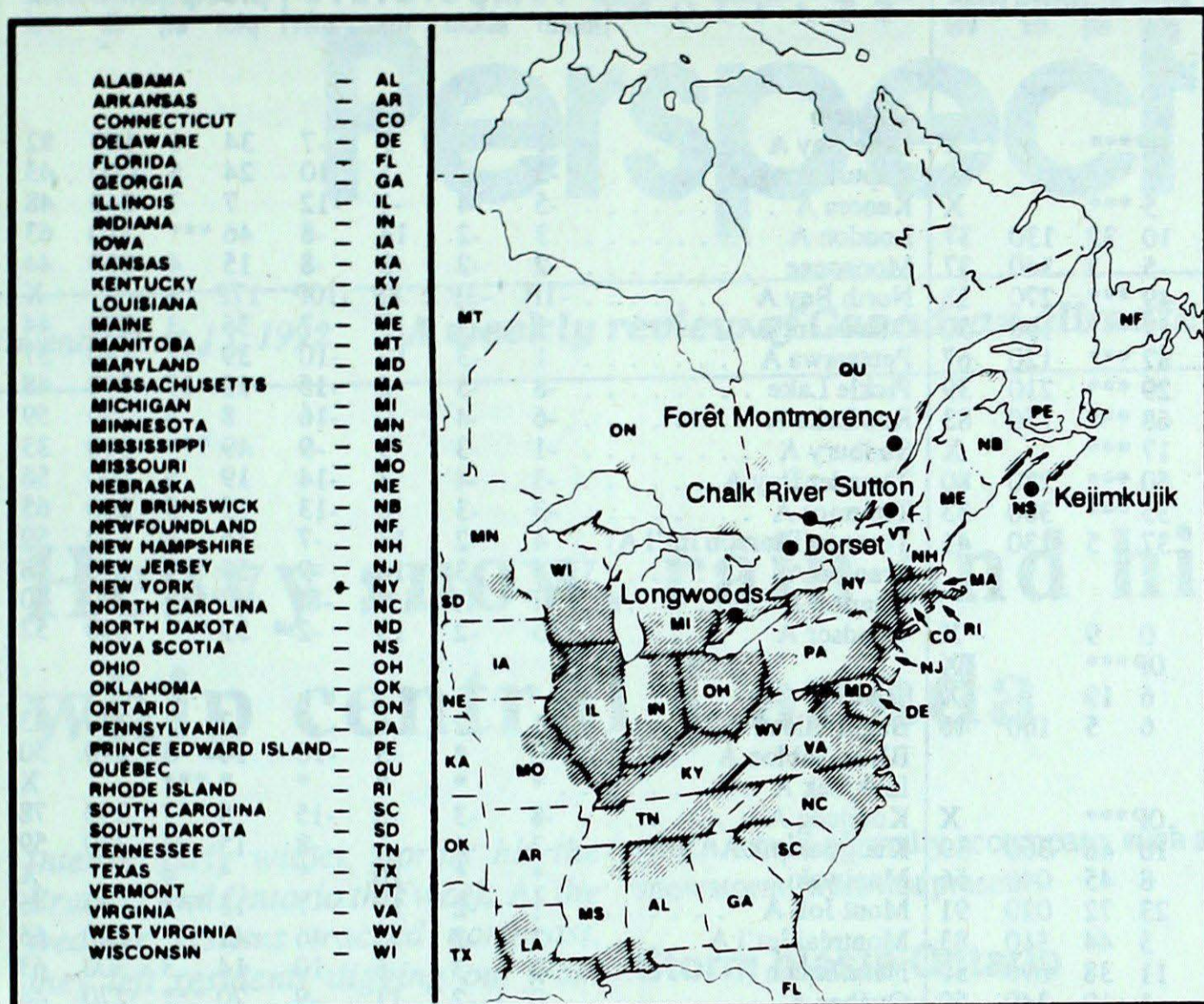


Tracks of low pressure centres at 12:00 U.T. each day during the period.

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.



SITE day pH amount AIR PATH TO SITE

November 1 to 7, 1992

Longwoods	. . . . . Data not available this week			
Dorset *	02	4.5	40 M	. . . . . Western Pennsylvania, Virginia
	03	3.8	2 R	. . . . . Southern Ontario, Ohio
	04	4.2	8 R	. . . . . Southern Ontario, Ohio
	05	4.6	2 M	. . . . . Northern Michigan
Chalk River	02	4.8	39 M	. . . . . Western New York, eastern Pennsylvania
	03	3.8	2 R	. . . . . Southern Ontario, Ohio, Indiana
	04	3.9	4 R	. . . . . Southern Ontario, Ohio
	05	4.5	2 M	. . . . . Northern and Central Ontario
Sutton	02	4.9	30 R	. . . . . New England, eastern New York
	04	4.0	5 R	. . . . . New York, southern Ontario, Ohio
	05	4.9	9 M	. . . . . Southwestern Quebec, central Ontario
Montmorency	02	5.0	1 M	. . . . . Southern Quebec
	03	4.2	4 M	. . . . . New England, eastern New York
	04	4.3	15 M	. . . . . Southern Quebec, New York, Pennsylvania
	05	4.8	4 S	. . . . . Northwestern Quebec
Kejimikujik	01	4.6	1 M	. . . . . New Brunswick
	03	4.9	2 R	. . . . . Eastern New England
	04	4.2	5 R	. . . . . Atlantic Ocean
	05	4.4	4 R	. . . . . Maine, southern Quebec

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								
Blue River A	1P	1P	8P	-2P	0P***		X	Gore Bay A	1	-3	9	-7	34	6	100	82
Cape St James	*	*	*	*	* **		X	Kapuskasing A	-3	-2	5	-10	24	5	090	43
Cranbrook A	2	1	8	-3	5 ***		X	Kenora A	-5	-4	-1	-12	7	7	060	48
Fort Nelson A	-6	1	1	-14	10 32	130	37	London A	3	-2	14	-8	46 ***		210	63
Fort St John A	0	2	6	-7	5 3	340	37	Moosonee	-2	-2	3	-8	15	4	080	44
Kamloops A	5	1	10	-3	49 ***	270	33	North Bay A	-1P	-3P	8P	-10P	17P	3		X
Penticton A	6	1	11	-2	27 ***	190	50	Ottawa Int'l A	1	-3	15	-7	36	3	270	44
Port Hardy A	7	1	11	3	87 ***	120	67	Petawawa A	1	-3	12	-10	39 ***		130	37
Prince George A	2	2	6	-3	29 ***	210	39	Pickle Lake	-8	-5	-2	-15	12	17	060	48
Prince Rupert A	7	2	12	1	68 ***	150	83	Red Lake A	-6	-4	0	-16	8	8	050	59
Smithers A	2	2	7	-1	17 ***		X	Sudbury A	-1	-3	9	-9	49 ***		310	33
Vancouver Int'l A	8	1	12	4	50 ***	280	80	Thunder Bay A	-3	-4	3	-14	19	5	090	56
Victoria Int'l A	8	1	15	2	35 ***	300	33	Timmings A	-3	-3	6	-13	15	5	090	65
Williams Lake A	0	0	5	-5	37 5	130	41	Toronto(Pearson Int'l A)	4	-2	13	-7	36	3	110	59
Yukon Territory								Québec								
Komakuk Beach A	-12	4	2	-24	0 9		X	Bagotville A	-1	-2	6	-9	12	3	270	43
Teslin (aut)	-1P	*	5P	-7P	0P***		X	Blanc Sablon A	-2	*	5	-10	10	5	270	50
Watson Lake A	-7	2	0	-16	6 19		X	Inukjuak A	*	*	*	*	* **			X
Whitehorse A	-1	5	5	-7	6 5	160	46	Kuujuuaq A	-8	-3	-3	-15	5	7	250	78
Northwest Territories								New Brunswick								
Alert	-22P	4P	-9P	-33P	0P***		X	Fredericton A	1	-3	11	-9	16 ***		300	48
Baker Lake A	-15	2	0	-23	10 46	360	59	Miscou Island (aut)	1P	-2P	8P	-8P	2P***			
Cambridge Bay A	-18	4	-8	-28	8 45	040	56	Moncton A	2P	-3P	11P	-4P	13P***		180	44
Cape Dyer A	-10	2	-4	-16	23 72	020	91	Saint John A	2	-3	11	-6	22 ***		220	39
Clyde A	-17	-3	-8	-25	5 44	310	83	Nova Scotia								
Coppermine A	-12	3	-2	-27	11 38	090	50	Greenwood A	3	-3	13	-5	12 ***		310	46
Coral Harbour A	-16	-1	-2	-26	1 19	340	59	Shearwater A	4	-3	13	-2	10 ***		330	46
Eureka	-25P	6P	-17P	-31P	2P***		X	Sydney A	3	-3	13	-4	18 ***		180	44
Fort Smith A	-2	5	2	-6	8 6	120	41	Yarmouth A	4	-3	12	-3	14 ***		310	39
Hall Beach A	-18	1	-6	-27	1 38	310	56	Prince Edward Island								
Inuvik A	-15	2	-7	-26	3 34		X	Charlottetown A	2	-3	12	-7	12 5		270	41
Iqaluit A	-12	-2	-1	-25	7 7	330	100	East Point (auto)	2P	*	6P	-3P	0P***			
Mould Bay A	-18	6	-8	-28	4 26		X	Newfoundland								
Norman Wells A	-11	3	-1	-16	3 14	100	83	Cartwright	-3	-3	4	-10	14 ***		310	67
Resolute A	-18	4	-11	-27	3 14	260	52	Churchill Falls A	-8	-3	2	-20	12 22		280	59
Yellowknife A	-4	5	2	-10	6 5	120	59	Gander Int'l A	0	-3	10	-7	12 ***		160	74
Alberta								92/11/02-92/11/08								
Calgary Int'l A	0	-1	6	-8	16 ***	330	59	Goose A	-4	-4	4	-13	9 7		260	74
Cold Lake A	-1	1	5	-7	4 4		X	St John's A	2	-4	10	-5	12 ***		020	82
Edmonton Namao A	1	2	5	-3	4 ***	140	43	St Lawrence	3	-2	10	-4	12 ***			X
Fort McMurray A	-1	3	3	-4	6 6	120	33	Wabush Lake A	-8	-4	2	-20	10 21		310	39
High Level A	-2	5	5	-8	6 4	360	57									
Jasper	*	*	3	*	* 7		X									
Lethbridge A	2	-1	12	-8	12 ***	250	56									
Medicine Hat A	2	0	10	-3	10 ***	350	41									
Peace River A	-1	3	4	-9	4 3	360	35									
Saskatchewan																
Cree Lake	-3	2	1	-12	5 9	210	33									
Estevan A	-3	-3	6	-9	3 3	340	56									
La Ronge A	-1	3	2	-5	1 ***		X									
Regina A	-2	-1	8	-8	3 3	350	43									
Saskatoon A	-1	0	5	-9	2 3	010	33									
Swift Current A	-1	-1	5	-7	8 ***	330	39									
Yorkton A	-3	-1	4	-8	1 ***	340	50									
Manitoba																
Brandon A	-4	-2	0	-8	3 ***	010	56									
Churchill A	-9	0	-1	-19	8 14	320	67									
Lynn Lake A	-8	-1	1	-24	5 4	180	37									
The Pas A	-4	-1	3	-15	1 3	010	43									
Thompson A	-8	-2	-1	-23	3 5	180	35									
Winnipeg Int'l A	-5	-5	1	-12	8 8	360	57									

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.