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Climatic Perspectives

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September 7 to 13, 1992 **A weekly review of Canadian climate and water** Vol. 14 No. 37

Cool, damp summer dims crop prospects

This has definitely been a summer to remember, or perhaps, more appropriately, a summer to forget in many parts of Canada, especially where agriculture is concerned.

In southern Ontario, summer 1992 has been the coldest since 1927, with plenty of precipitation. Southern Manitoba just endured the coldest summer on record, and records date back to before the turn of the century. Alberta farmers have had to cope with one of the earliest snowfalls on record, not once but twice! In addition, portions of southern Alberta have endured one of their coldest summers since 1951.

This year's cool summer has delayed crop development in many parts of central Canada, and the unusual wetness has delayed harvesting operations. For example, in Saskatchewan last week, only 5 percent of the province's grain crop was in the bin and just 23 percent has been cut. Last year at this time, 74 percent of the crop had been combined, while another 18 percent was already cut and drying in the fields. The delay means that the swathed grain is beginning to sprout, and that mould is becoming more widespread each passing day that the wet weather continues, lowering the quality and yield.

In Saskatchewan, killing frosts have already hit just about every corner of the grain belt, causing irreparable damage to many crops. While August frosts have occurred in the past, this year's early cool episode is exceptional due to its length. Many districts have had 3 and even 5 consecutive nights with below freezing temperatures.

In Ontario's Niagara fruit belt, two devastating hail storms in August put the finishing touches to a cold and wet growing season. Soft fruits such as peaches and pears were especially hard hit by the hailstorms, with some areas completely devastated. Better off are the grain farmers in southwestern Ontario, but with the average fall frost just a month away, there are still other crops that require a lot more heat and sunshine in order to reach full maturity. As an example, Ontario's corn crop has been delayed by about three weeks because of insufficient heat, but luckily frost has only been spotty so far this September. On the other hand, in Manitoba there is little hope for the hybrid corn crop, as there just have not been enough warm days this summer.

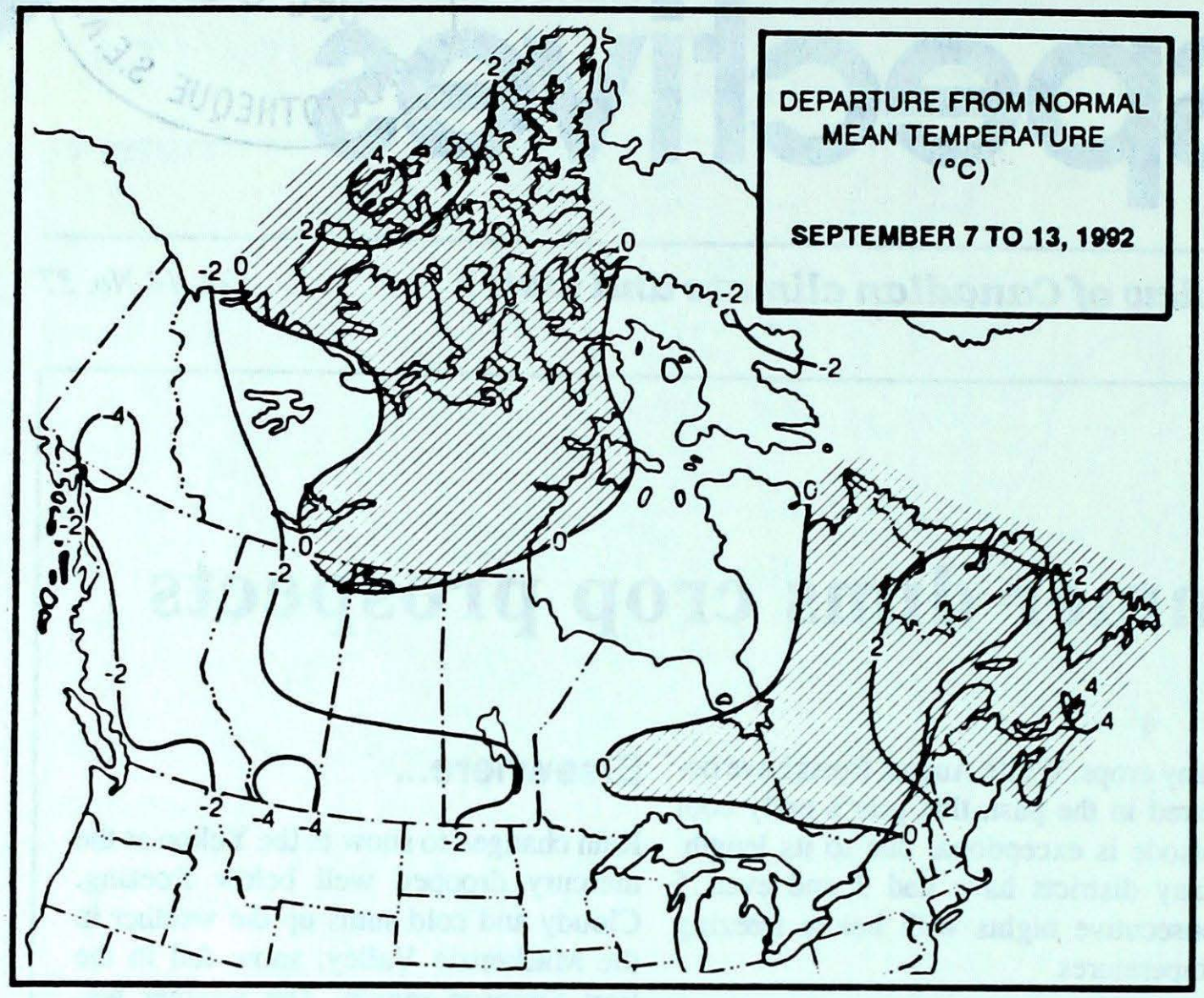
On a more positive note, the weather in British Columbia's Okanagan Valley was much more summer-like, with fruits and vegetables ripening ahead of schedule. On a down side, dry weather and the lack of irrigation in the southern interior valleys resulted in crop losses. It's been a relatively good summer in the Maritimes, but more moisture is needed in Nova Scotia's Annapolis Valley.

Elsewhere...

Rain changed to snow in the Yukon as the mercury dropped well below freezing. Cloudy and cold sums up the weather in the Mackenzie Valley; snow fell in the Fort Simpson region. The weather was cool and unsettled in British Columbia, with snow falling at higher elevations. A strong westerly flow and a storm track in the vicinity kept the weather conditions unsettled across the prairies. Substantial snowfalls were reported in the Alberta foothills. In Ontario, wet weather conditions gave way to a sunny weekend in the south. Warm but changeable weather conditions affected the Maritimes. Warm southwesterlies in Newfoundland produced fog along the south coast. There were record rainfalls and strong winds over the weekend. In Labrador, the early and latter parts of the period were unsettled.

A Look Ahead...

For the week of September 21, above normal temperatures will occur across southern Ontario, the southern half of Quebec and the Atlantic provinces. Elsewhere, cold temperatures will persist. The Prairies may experience temperatures as much as 7°C below normal. Precipitation will occur across the southern half of the country east of Saskatchewan, with some snow falling across Manitoba and northwestern Ontario.



Weekly normal temperatures (°C)

	max.	min.
Whitehorse A	13.6	3.2
Iqaluit A	6.3	0.9
Yellowknife A	11.1	4.6
Vancouver Int'l A	19.1	10.6
Victoria Int'l A	19.9	9.1
Calgary Int'l A	18.2	4.5
Edmonton Int'l A	16.5	3.9
Regina A	20.4	6.1
Saskatoon A	19.1	6.0
Winnipeg Int'l A	19.7	7.3
Ottawa Int'l A	20.9	9.8
Toronto (Pearson Int'l A)	22.9	10.4
Montréal Int'l A	20.9	10.3
Québec A	18.9	7.9
Fredericton A	20.3	7.6
Saint John A	18.2	8.3
Halifax (Shearwater)	19.6	10.7
Charlottetown A	18.6	9.8
Goose A	14.5	5.6
St John's A	16.5	8.7

Weekly temperature and precipitation extremes

	Maximum temperature (°C)		Minimum temperature (°C)		Heaviest precipitation (mm)	
British Columbia	Lytton	27	Puntzi Mountain (aut)	-5	Prince Rupert A	110
Yukon Territory	Watson Lake A	14	Beaver Creek	-13	Watson Lake A	25
Northwest Territories	Fort Smith A	17	Alert	-14	Hay River A	60
Alberta	Medicine Hat A	26	Red Deer A	-4	Fort McMurray A	22
Saskatchewan	Estevan A	24	Eastend Cypress (aut)	-3	La Ronge A	55
Manitoba	Gretna (aut)	25	Thompson A	-5	The Pas A	35
Ontario	Toronto Int'l A	26	Armstrong (aut)	-2	Sioux Lookout	64
Quebec	Sherbrooke A	28	Chibougamau	0	La Grant Rivière	44
New Brunswick	Fredericton A	27	St-Léonard A	0	St-Léonard A	8
Nova Scotia	Sydney A	27	Greenwood A	4	Western Head (aut)	83
	Truro	27	Truro	4		
Prince Edward Island	Charlottetown A	24	Charlottetown A	7	East Point (aut)	24
Newfoundland	Comfort Cove	26	Cartwright	0	Argentia A	75

Across The Country...

Highest Mean Temperature	Sable Island (N.S.)	19
Lowest Mean Temperature	Alert (N.W.T.)	-7

92/09/07-92/09/13

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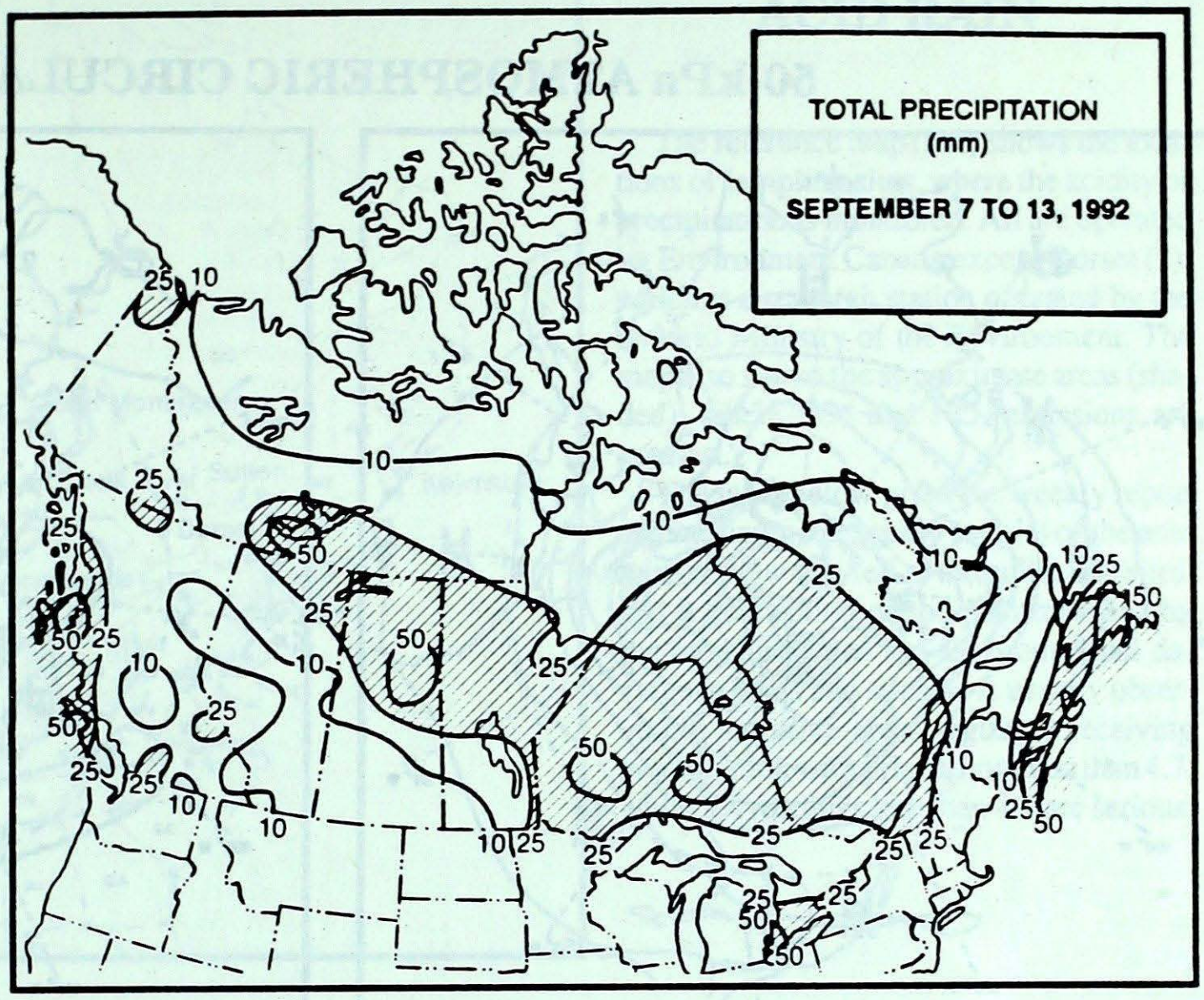
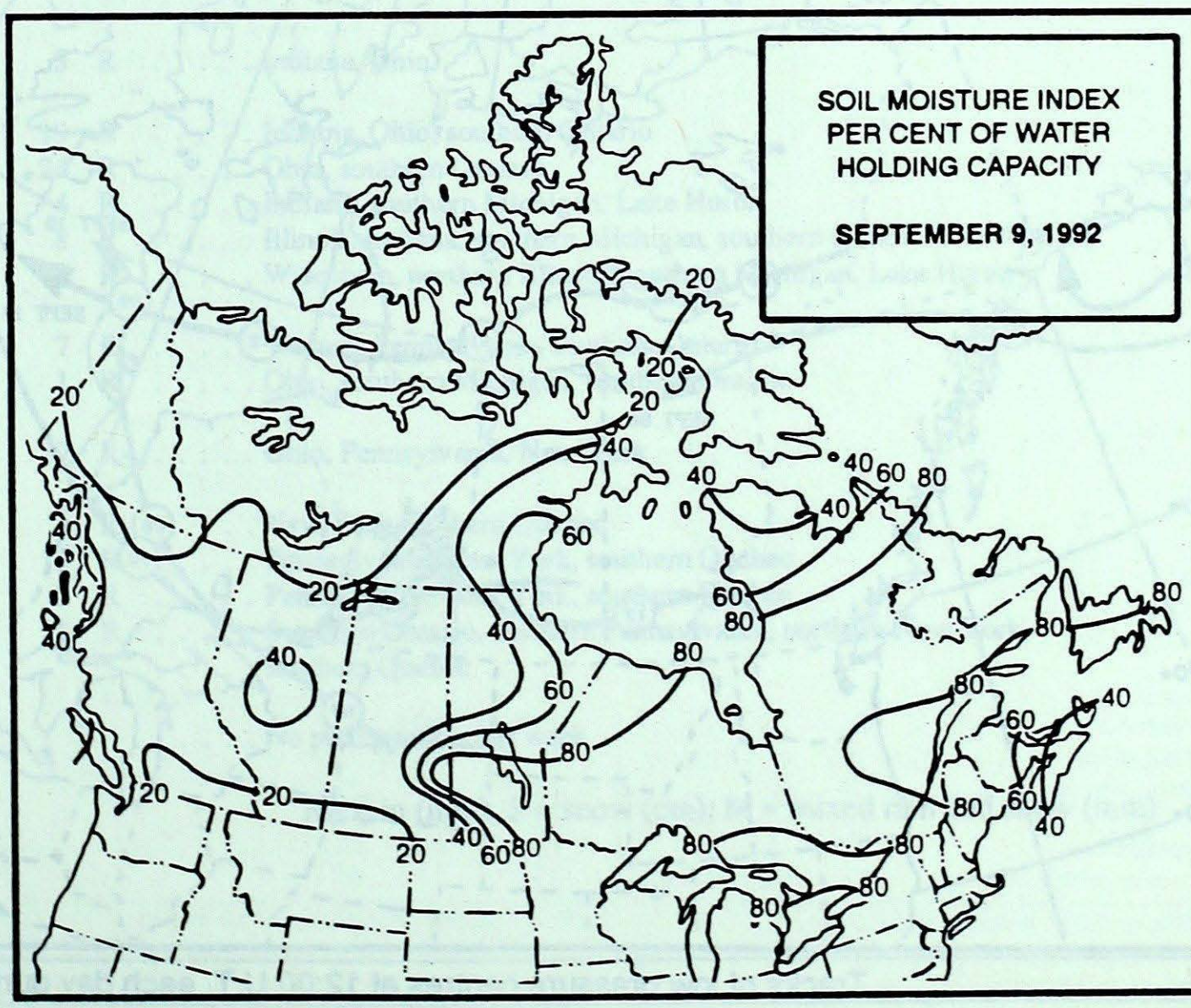
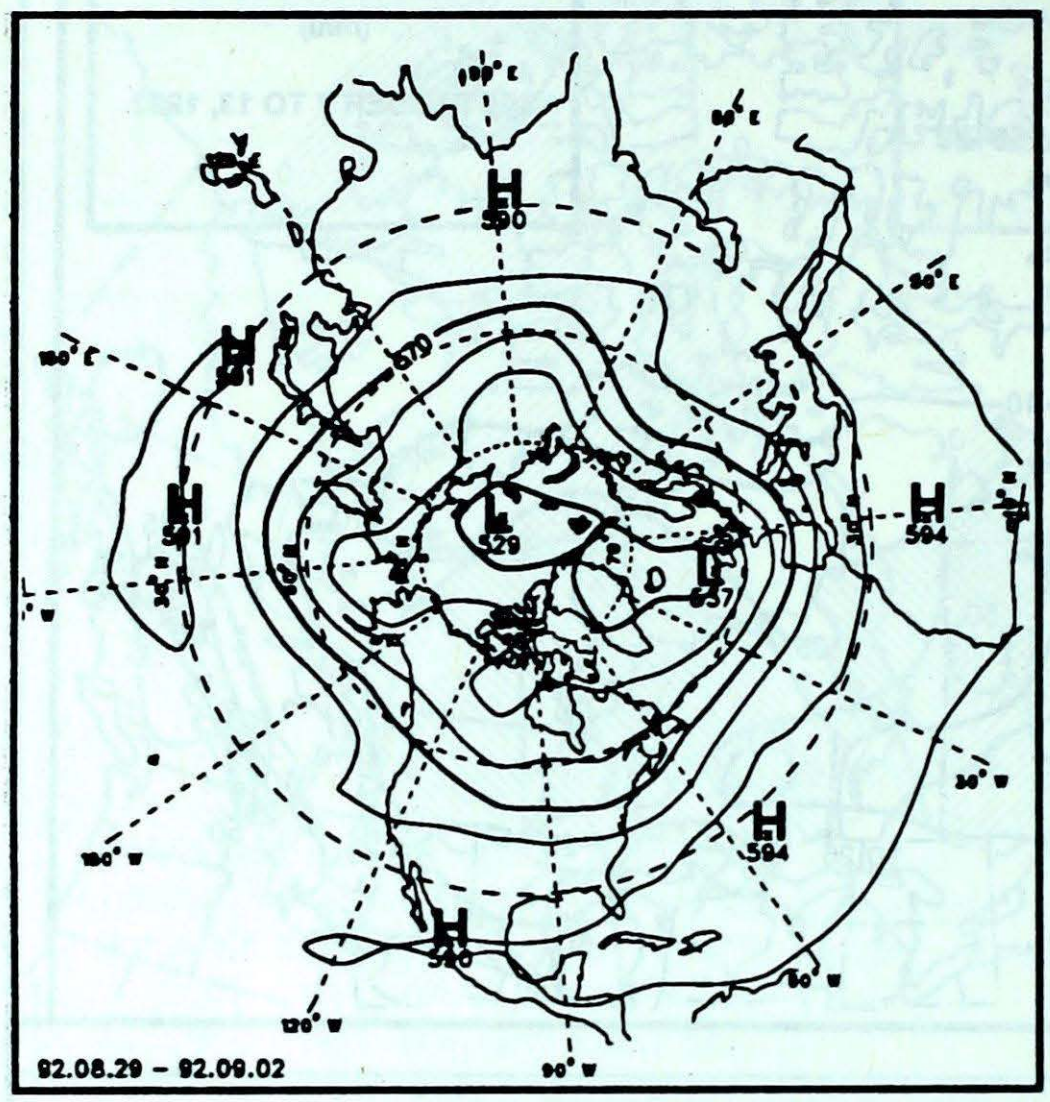
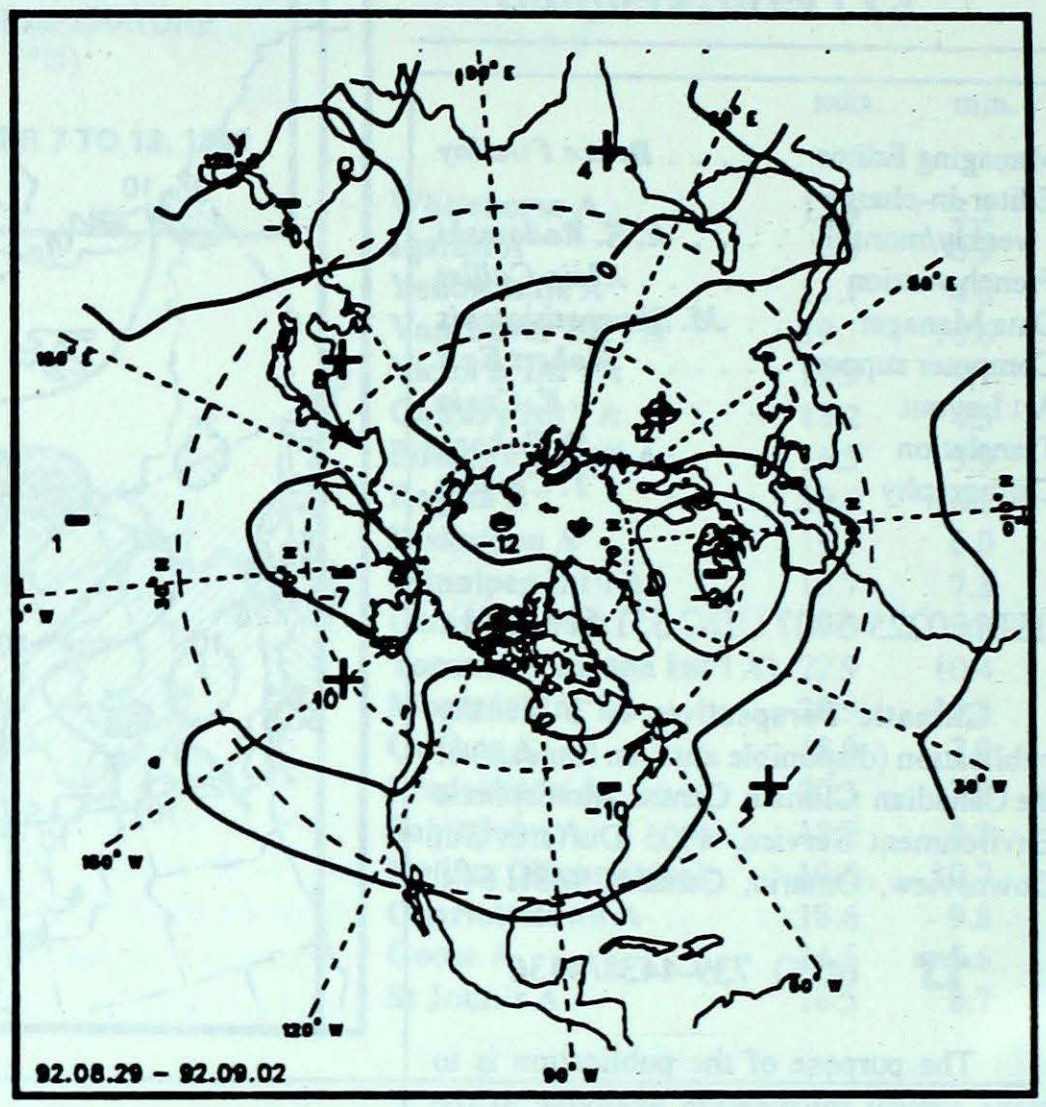




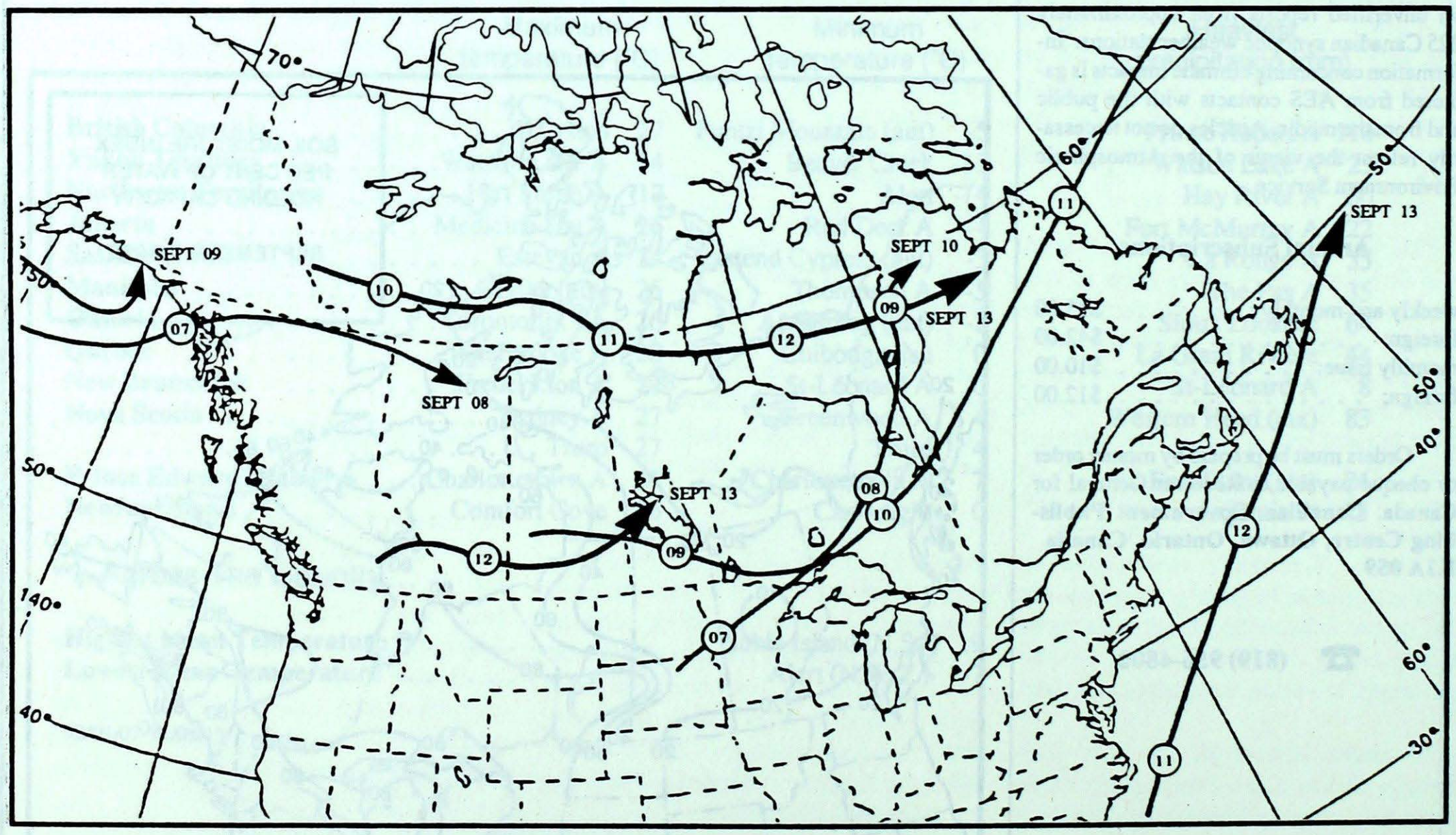
50-kPa ATMOSPHERIC CIRCULATION



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

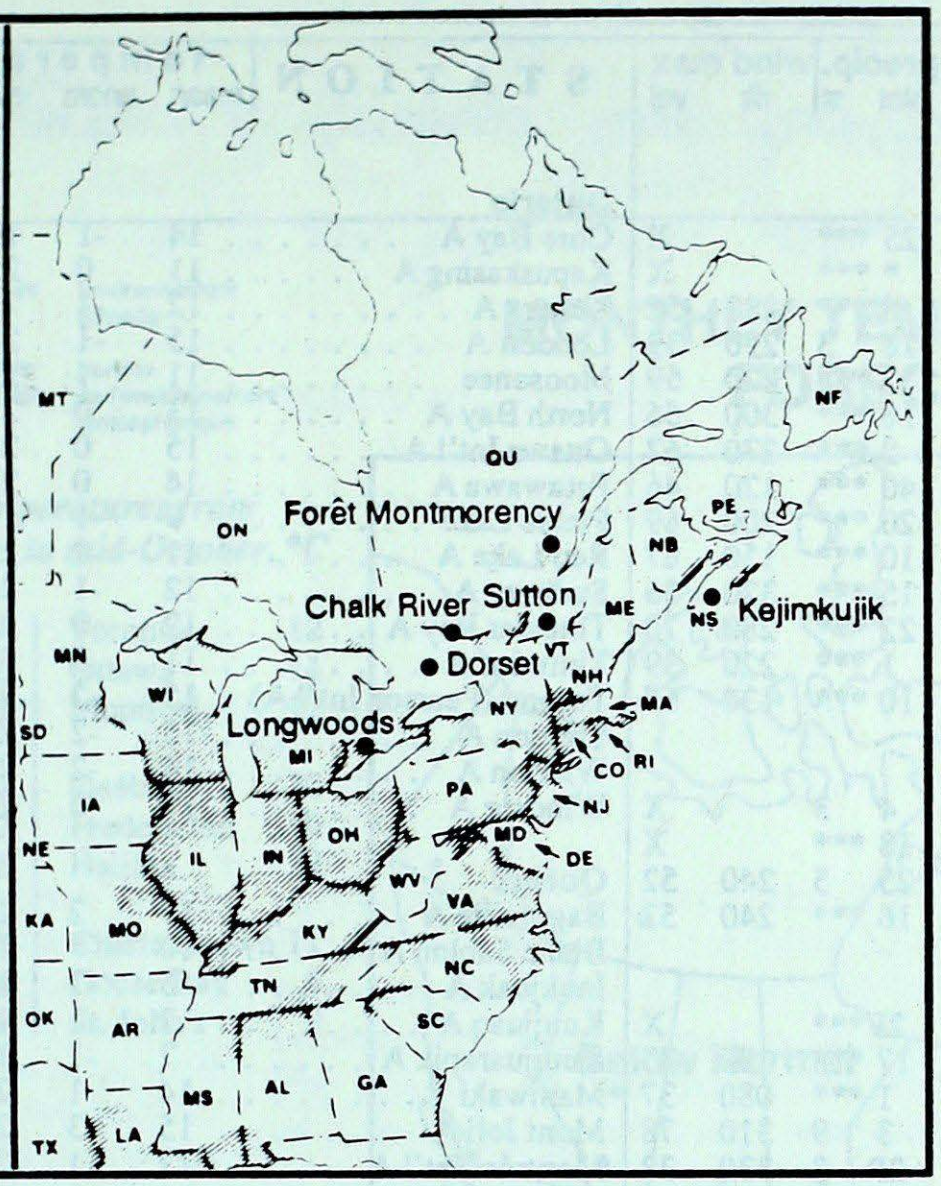


Mean geopotential height anomaly
50-kPa level (10 decametre intervals)



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

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

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.

SITE	day	pH	amount		AIR PATH TO SITE
					September 6 to 12, 1992
Longwoods	06	4.2	3	R	. . . . . Indiana, Ohio
Dorset *	06	4.0	19	R	. . . . . Indiana, Ohio, southern Ontario
	07	4.2	24	R	. . . . . Ohio, southern Ontario
	08	4.0	4	R	. . . . . Indiana, southern Michigan, Lake Huron
	09	4.0	8	R	. . . . . Illinois, Indiana, southern Michigan, southern Ontario
	10	4.8	8	R	. . . . . Wisconsin, northern Illinois, southern Michigan, Lake Huron
Chalk River	06	4.9	7	R	. . . . . Western Pennsylvania, southern Ontario
	07	3.7	1	R	. . . . . Ohio, southern Michigan, southern Ontario
Sutton	10	4.4	57	R	. . . . . Ohio, Pennsylvania, New York
Montmorency	06	4.3	3	R	. . . . . New York,southern Quebec
	08	4.4	15	R	. . . . . Pennsylvania, New York, southern Quebec
	09	3.9	5	R	. . . . . Pennsylvania, New York, southern Quebec
	10	4.0	15	R	. . . . . Southern Ontario, northern Pennsylvania, northern New York,
					. . . . . southern Quebec
Kejimkujik					. . . . . No precipitation this week

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								
Blue River A	8	-3	21	-1	25	***		X
Cape St James	*	*	*	*	*	***		X
Cranbrook A	11	-3	24	-2	6	***	280	52
Fort Nelson A	6	-4	17	-3	18	3	290	39
Fort St John A	8	-3	17	-4	2	***	220	59
Kamloops A	13	-3	24	5	16	***	300	56
Penticton A	14	-2	26	1	2	***	270	67
Port Hardy A	12	0	17	5	40	***	120	46
Prince George A	7	-3	16	0	20	***	200	69
Prince Rupert A	11	-1	15	2	110	***	150	67
Smithers A	8	-3	18	-1	15	***	320	56
Vancouver Int'l A	14	-1	20	7	22	***	280	70
Victoria Int'l A	13	-2	22	3	1	***	220	39
Williams Lake A	8	-3	20	-2	10	***	130	67
Yukon Territory								
Komakuk Beach A	-1	-4	5	-9	4	3		X
Teslin (aut)	5	*	13	-7	18	***		X
Watson Lake A	6	-3	14	-2	25	5	240	52
Whitehorse A	4	-4	12	-8	16	***	240	52
Northwest Territories								
Alert	-7P	1P	2P	-14P	2P	***		X
Baker Lake A	5	1	13	-2	17	***	100	33
Cambridge Bay A	2	1	7	-2	1	***	080	37
Cape Dyer A	-2	-2	5	-7	3	9	310	78
Clyde A	-1P	-2P	2P	-4P	2P	3	330	32
Coppermine A	2	-2	8	-5	9	***	360	39
Coral Harbour A	3	0	7	-2	2	***	010	63
Eureka	-3P	2P	2P	-10P	0P	3		X
Fort Smith A	10	1	18	1	28	***	150	35
Hall Beach A	1	0	6	-2	0	***		X
Inuvik A	1	-3	9	-7	11	3	320	43
Iqaluit A	3	0	7	0	3	***	320	54
Mould Bay A	-1	4	3	-4	0	3		X
Norman Wells A	5	-2	17	-5	4	***	310	46
Resolute A	-3	1	2	-8	2	3	120	32
Yellowknife A	8	0	12	3	11	***	070	44
Alberta								
Calgary Int'l A	8	-3	23	-2	9	***	340	74
Cold Lake A	9	-2	18	-3	5	***	290	91
Edmonton Namao A	9	-2	22	-2	8	***	280	70
Fort McMurray A	9	-1	20	-1	22	***	250	43
High Level A	7	-2	18	-3	21	3	340	43
Jasper	*	*	19	*	*	***		X
Lethbridge A	10	-4	23	-1	8	***	360	91
Medicine Hat A	11	-4	26	-2	8	***	340	52
Peace River A	7	-3	17	-1	5	***	300	59
Saskatchewan								
Cree Lake	8	0	18	1	32	***	210	44
Estevan A	12	-2	24	-1	5	***	270	72
La Ronge A	9	-1	20	-1	55	***	130	41
Regina A	11	-2	23	0	7	***	290	59
Saskatoon A	10	-2	24	1	4	***	290	52
Swift Current A	10	-3	23	0	6	***	300	50
Yorkton A	9	-3	19	-2	13	***	280	50
Manitoba								
Brandon A	11	-2	23	-1	7	***	260	72
Churchill A	6	-1	12	2	26	***	060	70
Lynn Lake A	7	-1	15	-2	33	***	280	52
The Pas A	10	-1	18	1	35	***	140	52
Thompson A	7	-2	17	-5	29	***	060	56
Winnipeg Int'l A	12	-2	23	1	27	***	250	61

STATION	temperature mean	anom	max	min	precip. ptot	st	wind max dir	vel
Ontario								
Gore Bay A	14	-1	19	5	20	***	260	78
Kapuskasing A	11	0	22	2	45	***	240	65
Kenora A	12	-1	21	5	43	***	220	56
London A	15	-1	25	4	40	***	260	56
Moosonee	11	1	23	3	53	***	240	63
North Bay A	13	0	21	4	16	***	250	56
Ottawa Int'l A	15	0	26	5	8	***	310	57
Petawawa A	14	0	24	0	17	***	270	56
Pickle Lake	9	-1	19	1	41	***	210	48
Red Lake A	11	-2	20	3	44	***	250	63
Sudbury A	12	-1	21	3	33	***	240	52
Thunder Bay A	12	0	22	0	23	***	300	59
Timmins A	11	0	23	1	34	***	240	54
Toronto(Pearson Int'l A)	15	-2	26	4	24	***	290	54
Trenton A	15	-2	24	3	15	***	300	48
Wiarton A	14	-2	22	4	21	***	240	48
Windsor A	17	-2	24	8	52	***		X
Québec								
Bagotville A	15	2	27	2	25	***	290	54
Blanc Sablon A	10	*	15	5	9	***	080	37
Inukjuak A	5	-1	12	2	35	***	290	67
Kuujjuaq A	7	1	13	1	18	***	210	67
Kuujjuarapik A	7	-1	17	2	37	***	250	83
Maniwaki	14	1	23	1	19	***		X
Mont Joli A	15	3	26	5	30	***	180	56
Montréal Int'l A	17	1	28	4	34	***	260	56
Natashquan A	13	3	19	3	2	***	280	48
Québec A	16	2	25	4	27	***	240	39
Schefferville A	8	2	14	3	22	***	250	65
Sept-Îles A	13	2	20	3	24	***	080	52
Sherbrooke A	15	3	28	2	33	***	200	56
Val-d'Or A	12	1	24	2	29	***	200	72
New Brunswick								
Fredericton A	16	3	27	2	1	***	200	56
Miscou Island (aut)	16	3	23	5	0	***		
Moncton A	17	3	26	3	0	***	210	61
Saint John A	15	1	22	5	6	***	200	43
Nova Scotia								
Greenwood A	17	3	26	4	42	***	230	46
Shearwater A	17	2	24	8	51	***	350	52
Sydney A	19	4	27	8	59	***	360	56
Yarmouth A	16	2	22	7	7	***	200	44
Prince Edward Island								
Charlottetown A	17	3	24	7	6	***	350	44
East Point (auto)	18	*	22	13	24	***		
Newfoundland								
Cartwright	10	1	22	0	9	***	200	59
Churchill Falls A	10	2	18	2	15	***	250	57
Gander Int'l A	15	2	25	6	61	***	210	65
Goose A	13	3	21	6	20	***	270	54
St John's A	16	3	26	5	44	***	330	89
St Lawrence	15	3	21	7	15	***		X
Wabush Lake A	9	2	18	2	22	***	240	56

92/09/07-92/09/13

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.

Environment Canada / Environnement Canada

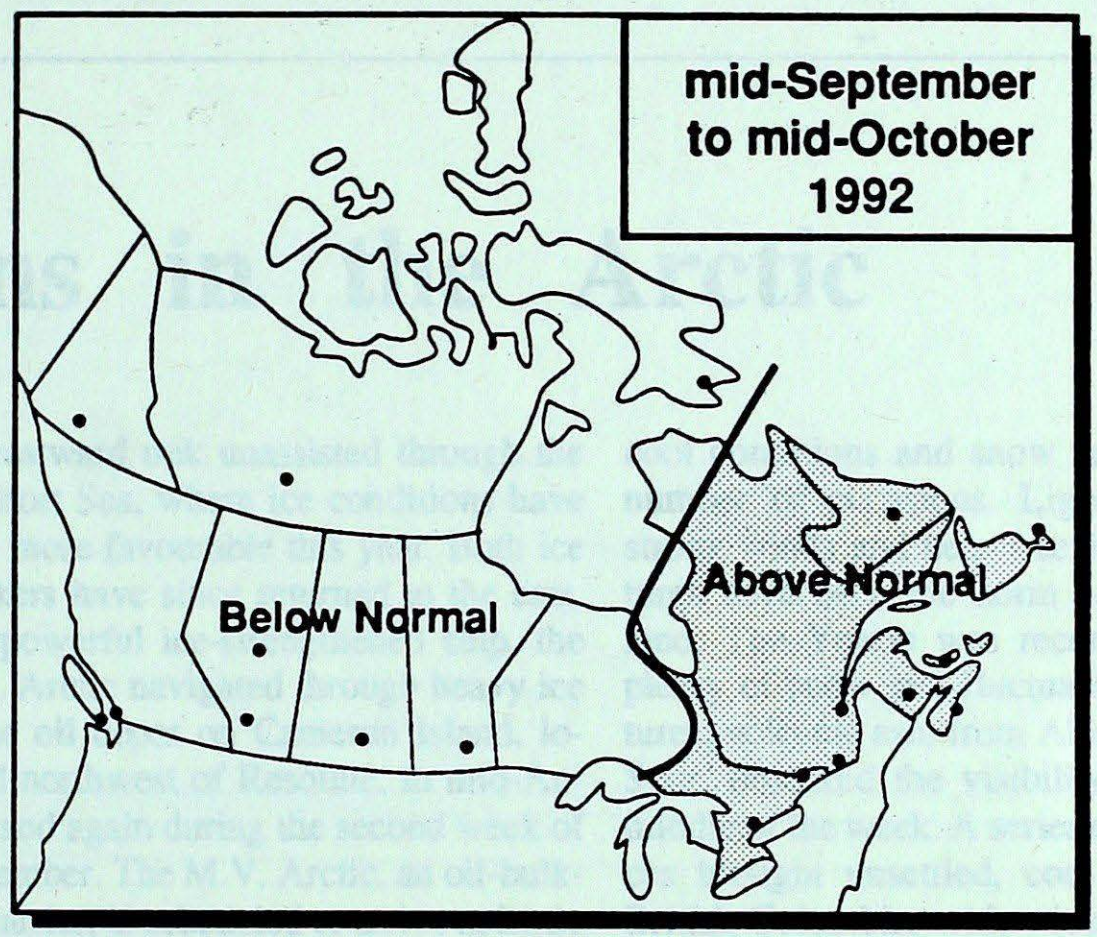
Atmospheric Environment Service / Service de l'environnement atmosphérique

Normal temperatures from mid-September to mid-October, °C

Whitehorse	4	Toronto	12
Yellowknife	3	Ottawa	11
Iqaluit	-1	Montréal	12
Vancouver	12	Québec	10
Victoria	12	Fredericton	10
Calgary	8	Halifax	12
Edmonton	8	Charlottetown	11
Regina	8	Goose Bay	6
Winnipeg	9	St. John's	9

Canada

MONTHLY TEMPERATURE FORECAST



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