Environment Canada Environnement Canada

Climatic Perspectives

July 3 to 9, 1989 — A weekly review of Canadian climate — Vol. 11 No 28

Typical Summer Weather Across the Country

Warm temperatures and thunderstorms, common features associated with summer weather, were again prevalent across the country last week, with many instances of thunderstorm-associated severe weather such as large hail, violent winds, and heavy downpours and a few tornadoes.

The continuation of unsettled weather in B.C. resulted in frequent afternoon and evening thunderstorms at interior locations. Hail was reported at Fort Nelson on the 7th and a record daily maximum of 29.2°C on the 5th. Hay farmers are anxiously awaiting a spell of drier weather.

In the Yukon, frequent afternoon thunderstorms were reported and the associated lightning strikes caused several forest fires. Dawson City and Mayo had record maximum temperatures of 31.9 and 31.0°C respectively on the 8th.

Severe thunderstorms accompanied by wild lightning and pounding rain rolled across northern and central Alberta late on the 7th and early the next day, touching off an oil tank fire southwest of Edmonton and forest fires elsewhere. Also on the 7th, Medicine Hat and Lethbridge both reached record-tying daily maximum temperatures of 35.1 and 34.3°C respectively.

Saskatchewan and Manitoba were hit with numerous severe thunderstorms on the 5th, 6th, and 7th which included reported tornadoes at Sandy Lake, Manitoba on the 5th, and at Osage and Peebles, Saskatchewan on the 7th. Peebles lost its curling rink and general store and every house in town suffered considerable damage, but no serious injuries were reported. Estevan set a daily record of 37.6°C on the 8th.

In Ontario, 2 possible tornadoes were reported on July 4th near Big Trout Lake and south of North Bay. On the same day, damaging thunderstorms hit the Joliette region of southern Québec. Local flooding and large hail were reported at several communities bordering the northeast shore of Lake Ontario on the 7th. Later in the same day, a band of severe thunderstorms crossed the Maritimes causing a number of power blackouts.

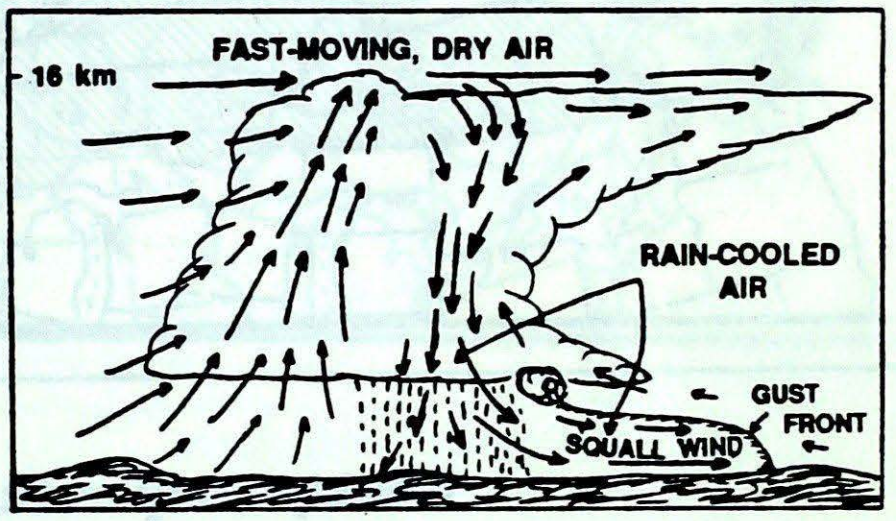


Diagram of a mature thunderstorm

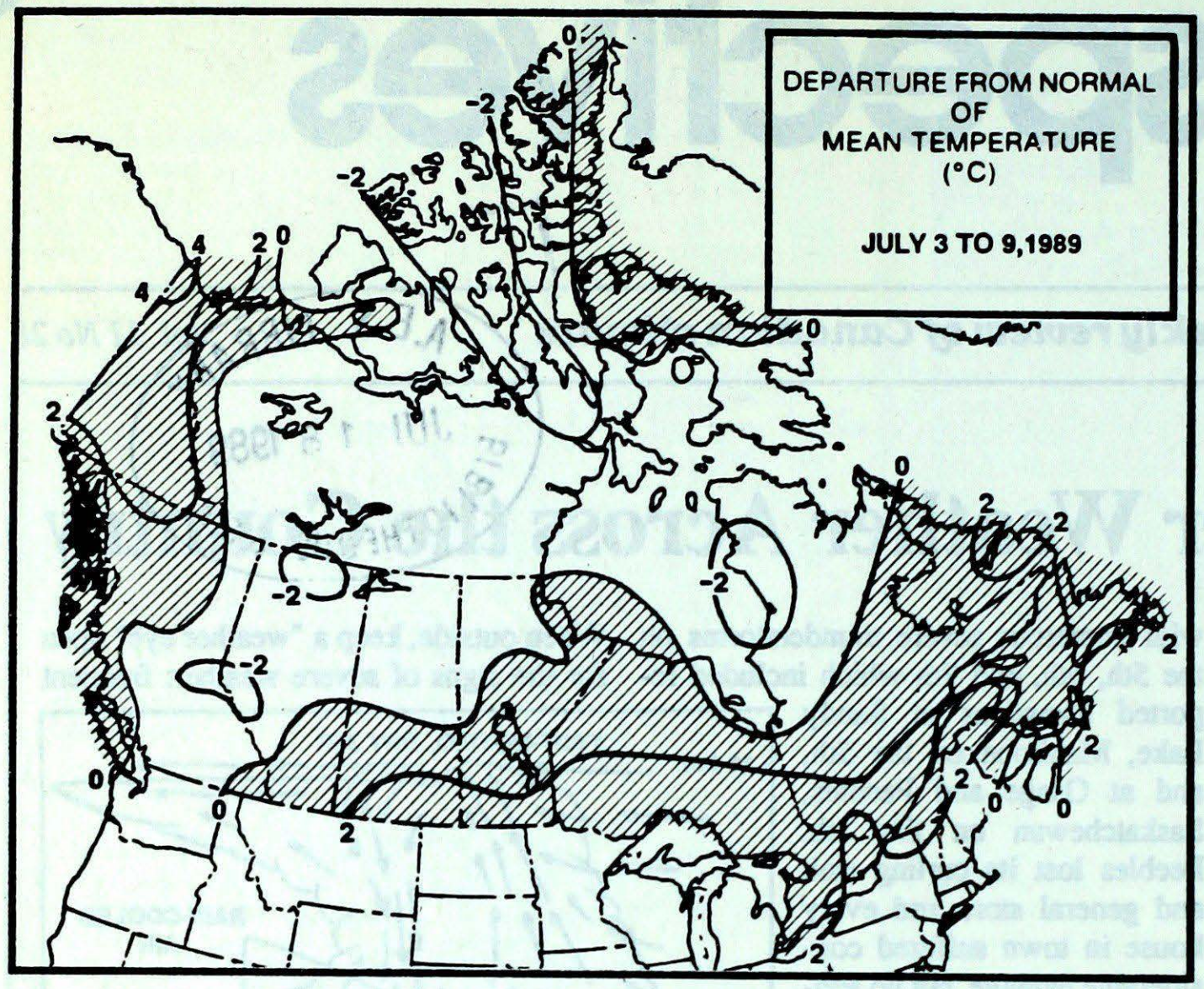
Severe Thunderstorm Hazard

Since only about 10 percent of thunderstorms are severe and the damage paths of violent winds and hail are confined to local areas or narrow paths, the chances of experiencing the more serious effects of a severe thunderstorm are very small. As a safety tip, keep informed of the possibility of severe weather. Timely weather information is contained in the forecasts, advisories and warnings distributed through the news media from the weather office. When outside, keep a "weather eye" open for the signs of severe weather: frequent lightning, roll clouds and chaotic sky, unusual darkness and possible funnel clouds. Be prepared to seek shelter.

Warm temperatures to continue across most of the country...

A stationary ridge of high pressure over western Canada will continue to dominate the weather during the week of July 16. Temperatures are expected to be above the seasonal norm from the Yukon to northwestern Ontario. An eastward-moving ridge of high pressure from the North Atlantic will control the weather pattern over eastern Canada. Atlantic Canada and Québec will experience above normal temperatures during the third week of July. A weak trough of low pressure over southern Ontario is expected to bring slightly below normal temperatures over the Great Lakes.

A. Shabbar
Canadian Climate Centre



Elsewhere ...

Heat aggravates forest fires in western U.S.A.

Forest fires raged as a strong ridge of high pressure brought dry and hot weather to much of the west. Extreme heat broiled the Southwest, Rockies, the northern half of the Plains, and the upper Midwest as weekly temperatures averaged up to 6.6°C above normal. The greatest departures occurred in the central Rockies and northern Plains where dozens of stations tied or set new daily maximum temperature records during the week and many locations established new July and/or all-time record highs. Denver Colorado hit 100°F (37.4°C) for the 5th consecutive day (July 4-8).

Climate Analysis Centre
Washington D.C.

Weekly temperature and precipitation extremes

	Maximum temperature (°C)		Minimum temperature (°C)		Heaviest precipitation (mm)	
British Columbia	Cranbrook A	31	Puntzi Mountain (aut)	1	Blue River A	29
Yukon Territory	Whitehorse A	29	Shingle Point A	2	Faro (aut)	6
Northwest Territories	Fort Simpson A	29	Cape Hooper	-4	Iqaluit A	35
Alberta	Medicine Hat A	35	Banff (aut)	3	Edson A	67
Saskatchewan	Estevan A	38	Eastend Cypress (aut)	5	Meadow Lake A	33
Manitoba	Portage La Prairie A	36	Churchill A	4	Brandon A	33
Ontario	Petawawa A	34	Sioux Lookout A	-7	Cobourg (aut)	601
Québec	Bagotville A	34	Kuujjuarapik A	0	Val-d'Or	43
New Brunswick	Charlo A	33	St-Léonard A	5	St-Léonard A	19
Nova Scotia	Greenwood A	30	Sable Island	5	Western Head (aut)	54
Prince Edward Island	Summerside A	27	Charlottetown A	7	East Point (aut)	64
Newfoundland	Goose A	28	Daniels Harbour	-3	St Anthony	34

Across The Country...

Highest Mean Temperature	Windsor A(ONT)	24
Lowest Mean Temperature	MacKar Inlet(NWT)	2

89/07/03-89/07/09

CLIMATIC PERSPECTIVES
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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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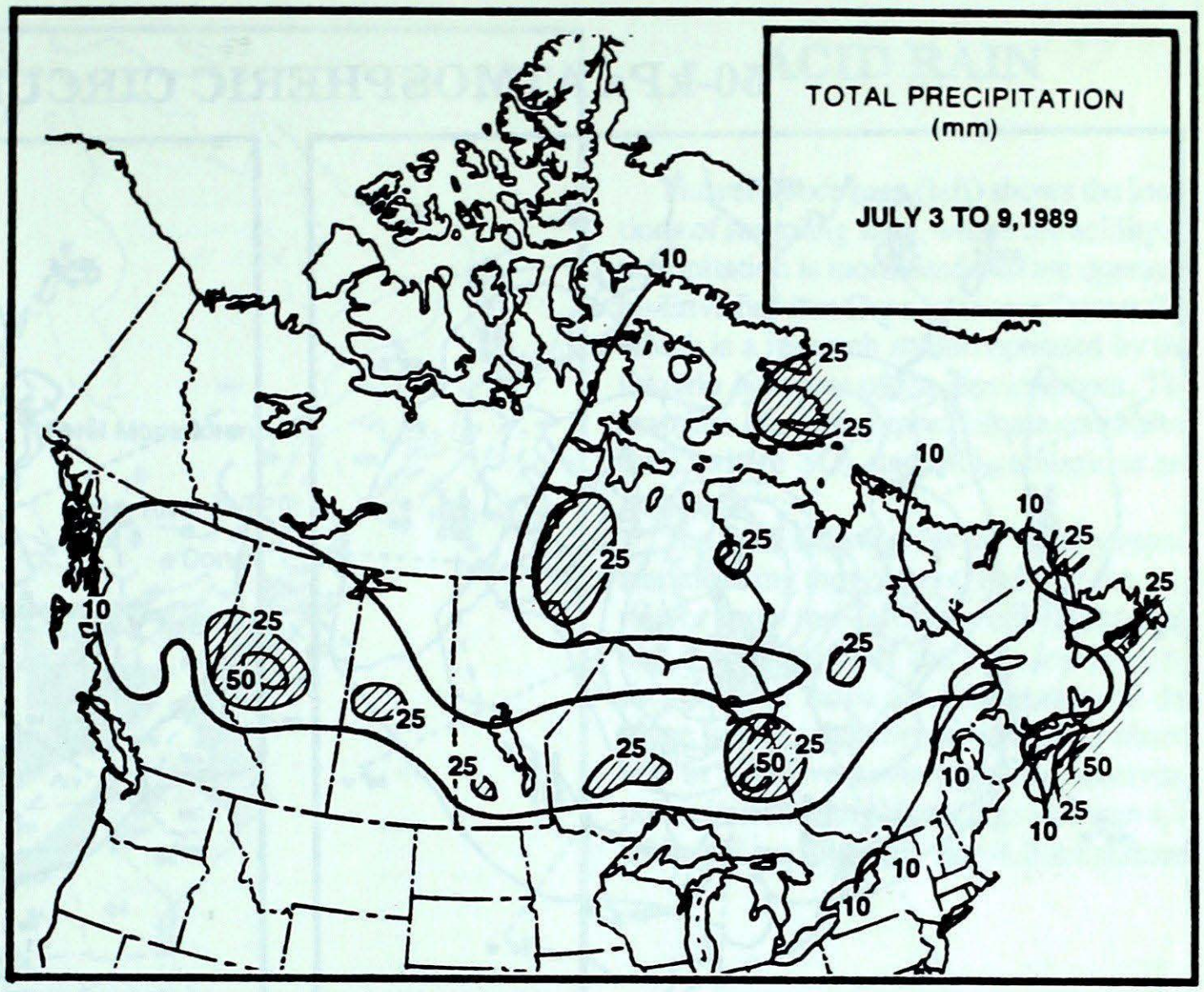
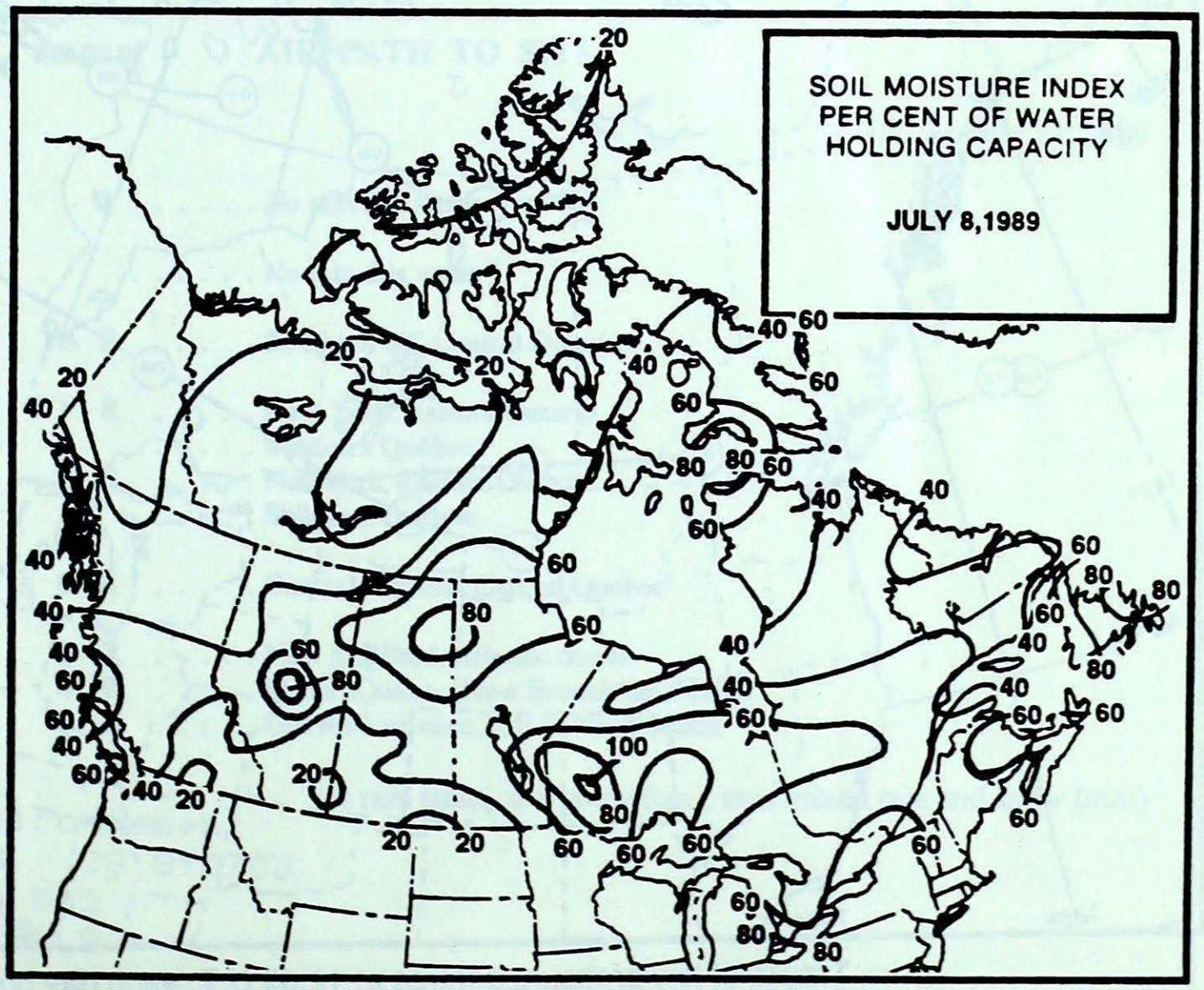
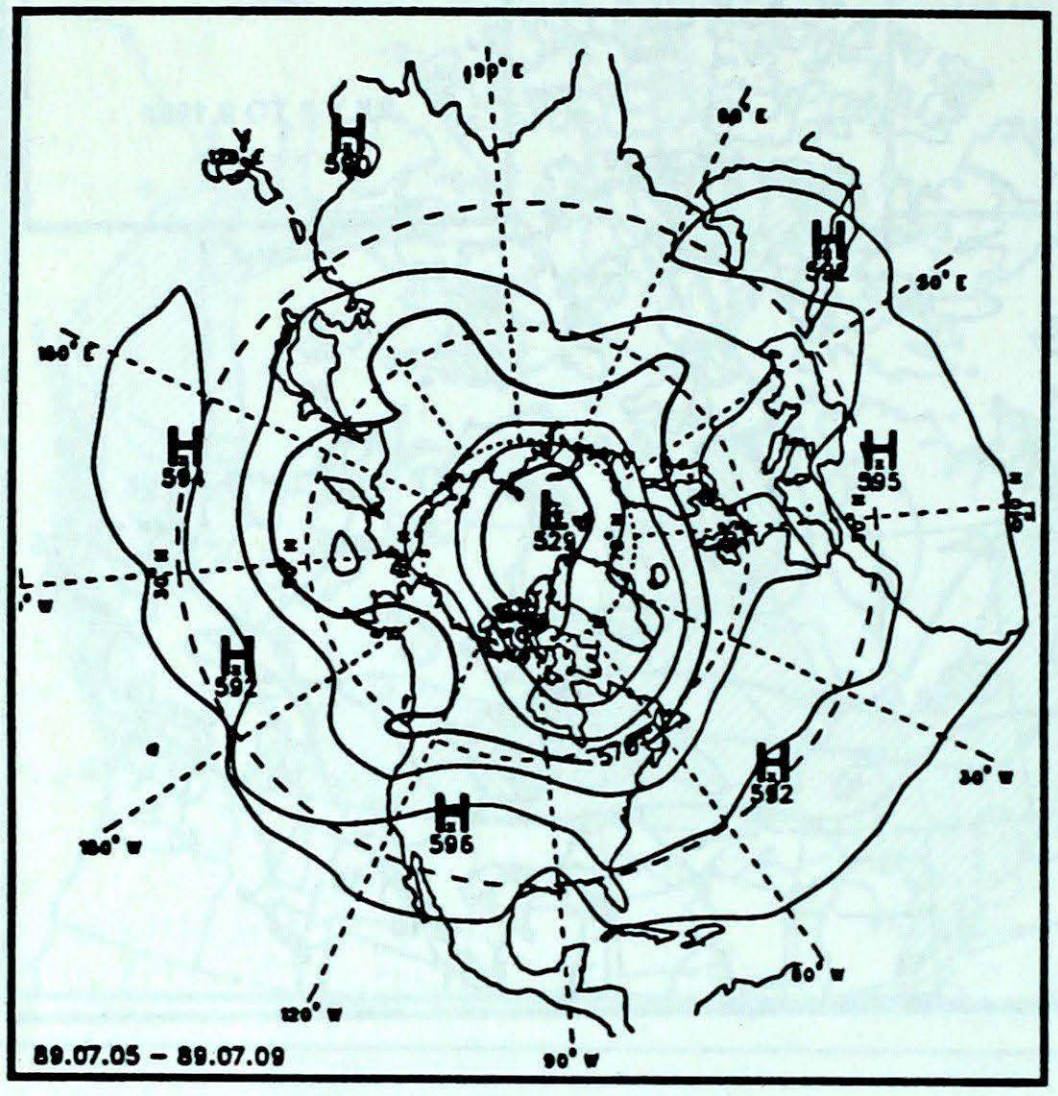
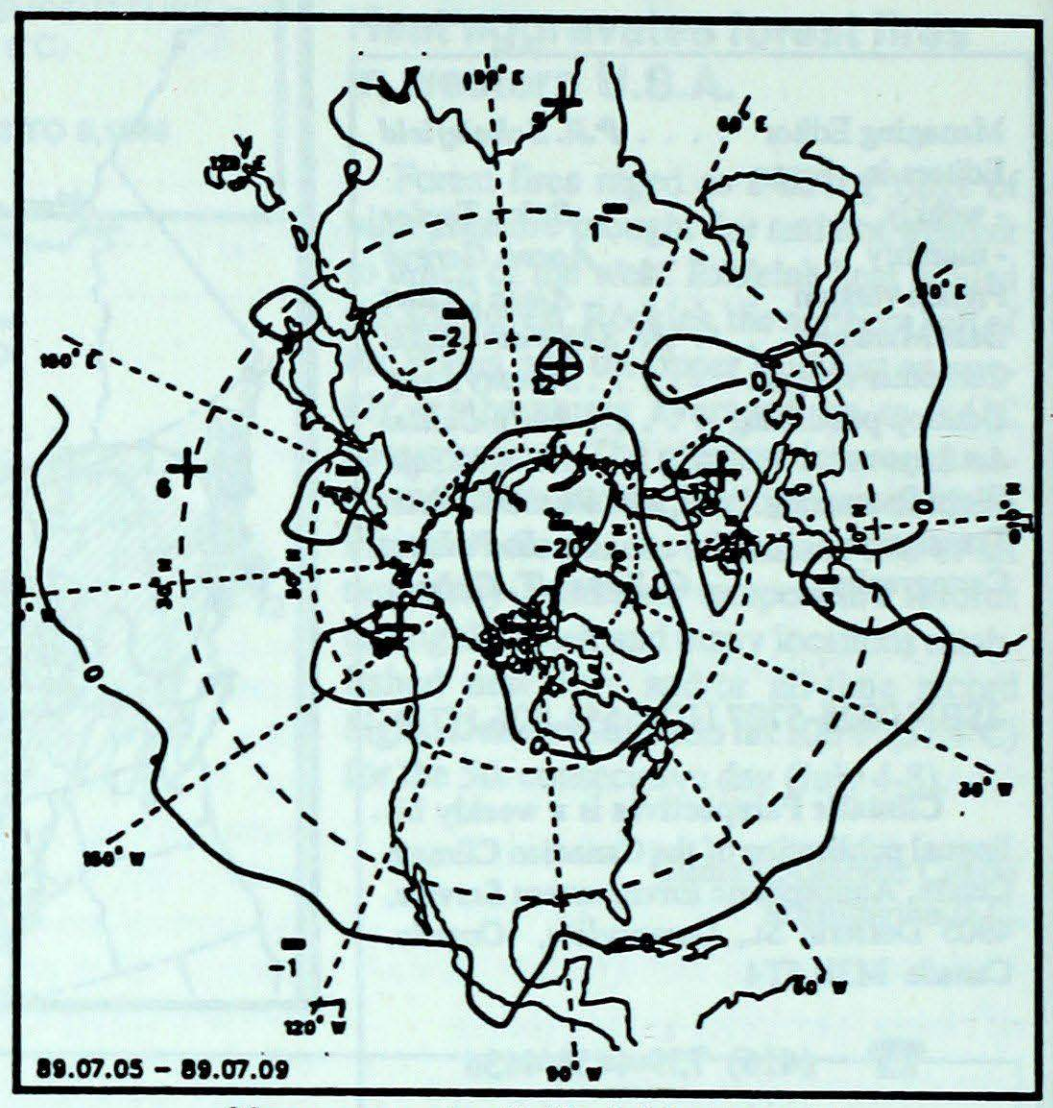




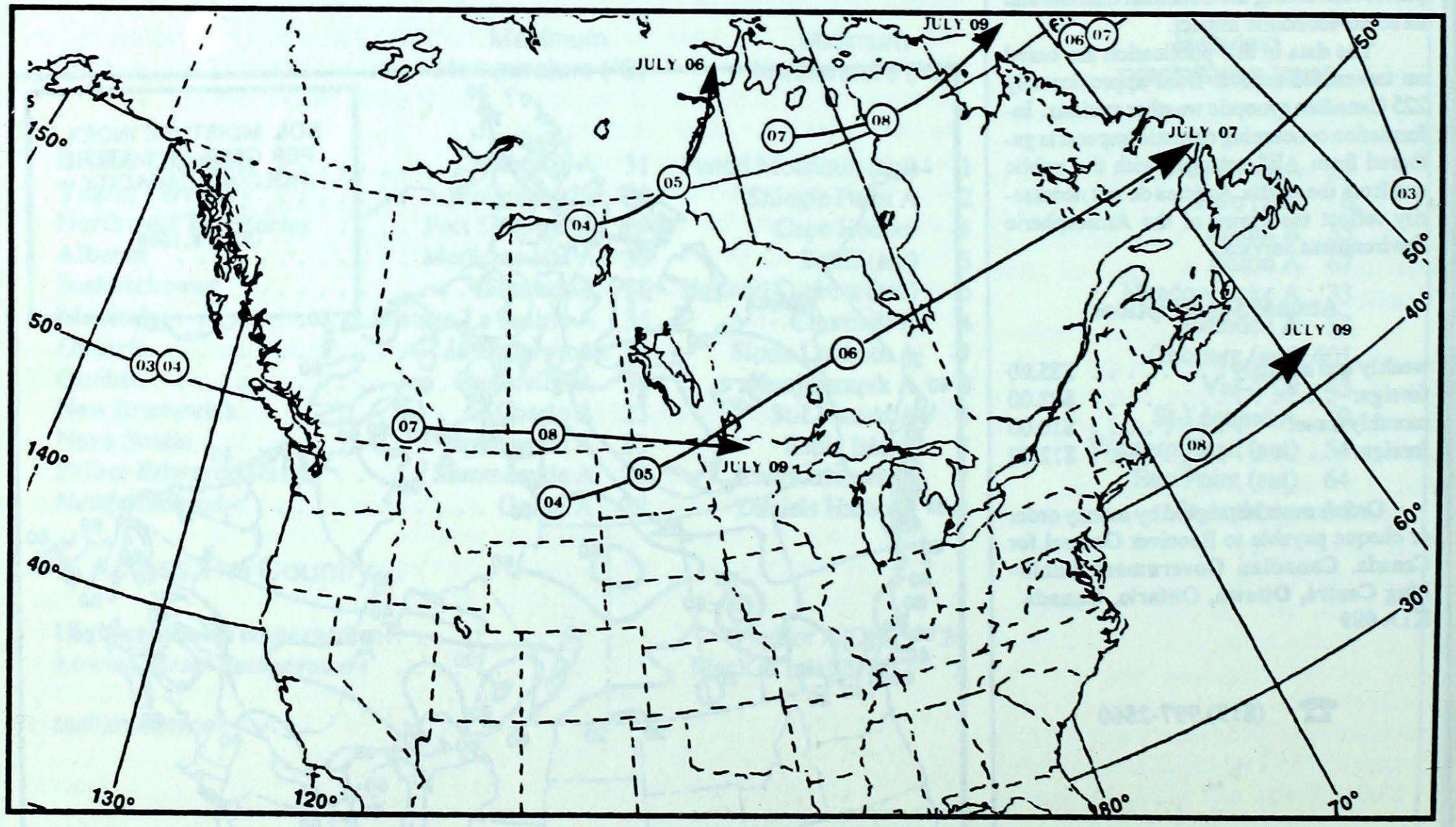
50-kPa ATMOSPHERIC CIRCULATION



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

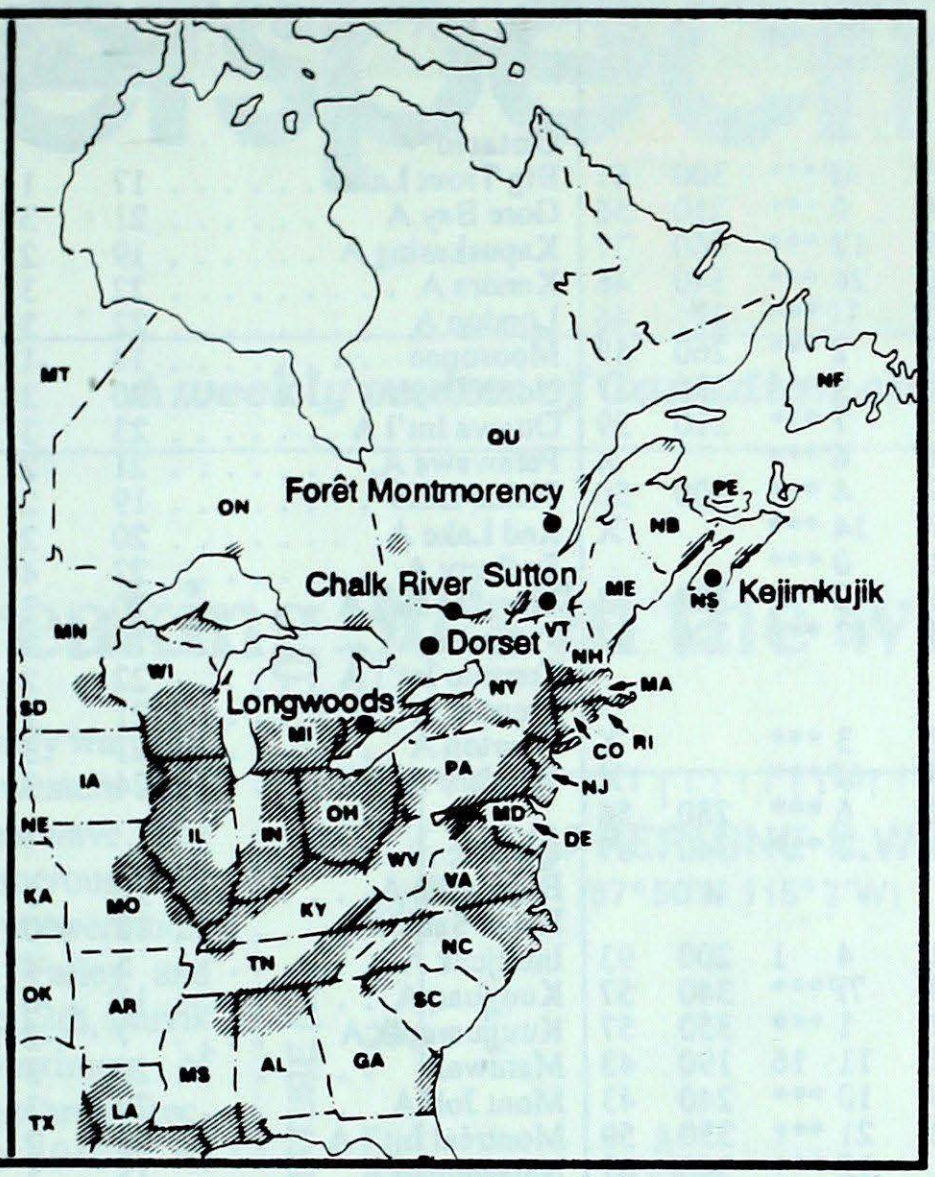


Mean geopotential height anomaly
50-kPa level (10 decametre intervals)



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
					July 11, 1989
Longwoods					. . . . . No rain this week
Dorset *					. . . . . No rain this week
Chalk River	4	4.0	18	R	. . . . . Southern and Central Ontario
Sutton	6	4.9	1	R	. . . . . New York, Eastern Ontario
					. . . . . Southern Québec
	7	4.5	3	R	. . . . . NewYork, Eastern Ontario
					. . . . . Southern Québec
Montmorency	4	4.6	9	R	. . . . . Central Ontario, Central Quebec
Kejimkujik	2	4.1	2	R	. . . . . New England, Atlantic ocean
	7	4.4	4	R	. . . . . EasternQuebec, New Brunswick, Maine
	8	4.4	1	R	. . . . . GulfSt-Laurence, P.E.I., Nova Scotia

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	13P	1P	18P	9P	4P	***	300	61
Cranbrook A	18	0	31	6	0	***	210	56
Fort Nelson A	16	-1	29	5	12	***	060	37
Fort St John A	15	-1	24	6	26	***	340	46
Kamloops A	19P	-1P	29P	9P	1P	***	230	46
Penticton A	18	-1	29	7	2	***	260	59
Port Hardy A	13	0	19	7	9	***	330	37
Prince George A	14	-2	23	5	7	***	210	39
Prince Rupert A	13	0	17	8	6	***		X
Revelstoke A	17	-1	28	7	4	***	300	50
Smithers A	15	0	26	7	14	***		X
Vancouver Int'l A	17	0	23	11	0	***		
Victoria Int'l A	15	-1	24	8	0	***	200	43
Williams Lake A	13	-2	22	4	12	***	320	52
Yukon Territory								
Komakuk Beach A	12	6	23	2	3	***		X
Teslin (aut)	17P	400P	28P	6P	6P	***		X
Watson Lake A	18	2	28	7	6	***	280	56
Whitehorse A	17	3	29	3	3	***	340	57
Northwest Territories								
Alert	4	1	12	-1	4	1	200	93
Baker Lake A	9P	-2P	17P	2P	7P	***	340	57
Cambridge Bay A	6	-2	14	2	1	***	350	57
Cape Dyer A	3	-2	13	-2	11	16	190	43
Clyde A	5	1	16	-3	10	***	240	43
Coppermine A	11	2	20	2	21	***	330	59
Coral Harbour A	7	-1	14	1	12	***	340	67
Eureka	4	-2	11	0	9	1	160	72
Fort Smith A	15	-2	28	3	9	***	300	37
Hall Beach A	6	1	13	1	14	***	290	52
Inuvik A	16P	3P	27P	2P	1P	***	210	48
Iqaluit A	5	-2	13	2	35	***	310	65
Mould Bay A	2	-3	7	-2	8	***	280	59
Norman Wells A	16P	-1P	27P	6P	3P	***		X
Resolute A	2	-2	7	-1	5	1	020	63
Yellowknife A	15	-1	27	7	1	***	350	48
Alberta								
Calgary Int'l A	16	0	27	5	0	***	350	67
Cold Lake A	16P	-1P	27P	8P	2P	***	020	44
Edmonton Namao A	16	-1	25	9	50	***	361	59
Fort McMurray A	15	-2	26	3	6	***	230	35
High Level A	14	-2	26	3	12	***	330	59
Jasper	12	-3	23	3	29	***		X
Lethbridge A	17	-1	34	6	0	***	270	70
Medicine Hat A	20	1	35	8	1	***	240	54
Peace River A	16	0	24	6	17	***	240	56
Saskatchewan								
Cree Lake	15P	-1P	24P	6P	3P	***	290	50
Estevan A	22	3	38	9	2	***	320	69
La Ronge A	17	0	26	8	25	***	270	57
Regina A	21	2	33	8	2	***	330	50
Saskatoon A	19	1	29	9	5	***	230	54
Swift Current A	19	1	34	8	0	***	260	43
Yorkton A	19	1	31	7	11	***	310	59
Manitoba								
Brandon A	21	2	35	10	33	***	310	100
Churchill A	13	2	24	4	30	***	300	63
Lynn Lake A	15P	-1P	23P	6P	3P	***	241	37
The Pas A	18	0	28	9	23	***	340	59
Thompson A	16P	1P	28P	8P	9P	***	290	69
Winnipeg Int'l A	21	2	32	13	16	***	241	63

STATION	temperature mean	anom	max	min	precip. ptot	st	wind max dir	vel
Ontario								
Big Trout Lake	17	1	26	11	15	***	350	61
Gore Bay A	21	3	30	12	0	***		X
Kapuskasing A	19	2	31	7	24	***	340	61
Kenora A	22	3	30	14	18	***	300	70
London A	22	3	30	13	0	***	220	37
Moosonee	14	-1	28	4	41	***	290	52
North Bay A	20	3	29	9	8	***	360	44
Ottawa Int'l A	23	3	32	15	3	***	310	37
Petawawa A	21	2	34	8	1	***	240	39
Pickle Lake	19	2	29	11	37	***	330	69
Red Lake A	20	2	30	9	24	***	220	74
Sudbury A	22	4	31	10	0	***	250	48
Thunder Bay A	20	3	30	10	4	***	320	39
Timmins A	19	2	33	7	50	***	350	46
Toronto Int'l A	22	2	30	12	0	***	350	56
Trenton A	21	1	29	13	17	***	210	32
Wiarton A	21	3	29	12	0	***		X
Windsor A	24	3	31	17	0	***	040	43
Québec								
Bagotville A	20	3	34	7	3	***	240	44
Blanc Sablon A	12	400	21	6	33	***	210	48
Inukjuak A	5	-4	11	1	25	***	330	65
Kuujjuaq A	11	0	21	3	14	***	290	70
Kuujjuarapik A	7	-2	21	0	18	***	250	52
Maniwaki	20	3	32	6	2	***	200	32
Mont Joli A	20	3	32	8	0	***	250	59
Montréal Int'l A	22	2	31	13	3	***	320	
Natashquan A	15	1	21	8	4	***	200	33
Québec A	21P	3P	30P	11P	0P	***	340	41
Schefferville A	12	0	22	4	14	***	250	65
Sept-Îles A	15	0	21	7	21	***	010	50
Sherbrooke A	19	3	30	8	8	***		X
Val-d'Or A	19	3	31	5	43	***	320	59
New Brunswick								
Charlo A	19	2	33	6	2	***	310	43
Chatham A	20	1	31	7	0	***	230	43
Fredericton A	18	0	30	7	3	***	040	52
Moncton A	17P	0P	29P	6P	0P	***	200	52
Saint John A	16	0	25	8	1	***	220	44
Nova Scotia								
Greenwood A	18	0	30	6	0	***	270	37
Shearwater A	18	1	24	11	41	***	020	32
Sydney A	17	1	28	8	3	***	220	46
Yarmouth A	15	0	21	8	6	***	170	33
Prince Edward Island								
Charlottetown A	18	0	27	7	9	***	210	50
Summerside A	18	0	27	10	6	***	190	65
Newfoundland								
Cartwright	14	3	26	3	3	***	220	52
Churchill Falls A	15	2	25	5	5	***	250	7
Gander Int'l A	16	0	26	8	20	***	260	57
Goose A	18	3	28	7	7	***	230	59
Port Aux Basques	14	2	22	7	7	***	290	48
St John's A	15	1	26	6	19	***	270	74
St Lawrence	14	4	23	5	29	***		X
Wabush Lake A	13	1	25	4	16	***	240	46

89/07/03-89/07/09

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.