

# Climatic Perspectives

MONTHLY SUPPLEMENT INCLUDED

ARCH. C2

July 9 to 15, 1990

A weekly review of Canadian climate and water

Vol. 12 No 28

## Record Warmth Reverses Cool Spell in The West

The cool wet weather during the first week of July did a spectacular about face as record breaking temperatures were reported across southern British Columbia, the Prairies and the Northwest Territories.

Broad smiles returned as the temperatures soared into the record-breaking 30°C range, in the Southwestern half of the country this week

On the 10th and 11th, Fort Smith, NWT established record daily maximum temperatures of 31.0° and 34.2°C, respectively. Both records dated back to 1975. Elsewhere across the Territories, Baker Lake reported record-breaking daily maximum temperatures of 28.6°C on the 11th, shattering the long standing record dating back to 1955 and 1947 and 26.8°C on the 12th, the old record ensconced since 1964. That same day, Cape Dyer also broke its daily maximum record established in 1960, while Coral Harbour tied the record established in 1964.

The most dramatic changes occurred in the interior of British Columbia, and the Prairies where numerous daily maximum temperature records were tied or broken. On the 11th, Kamloops, Kelowna, Penticton and Prince George, B.C. recorded temperatures in the low to mid-thirties. The hot weather was beneficial to Lake Okanagan which dropped 12 cm since its peak level on June 25. In the area surrounding Terrace, B.C., river levels have dropped to near normal after near flooding in June. In the central parts of the Okanagan Valley, the cherry harvest was well under way, with the late varieties showing good quality, while the apricot harvest is about ten to fourteen days away. Farther to the south, cherries were almost picked and the apri-

cots were being harvested. On the down side, with only nine days of dry weather, the risk of forest fires was rated as high in the forested areas of B.C. However, according to Gilles Lanteigne, of the Canadian Inter-Agency Forest Fire Centre, all on-going fires were under control, and there was no anticipation of the situation becoming out of hand.

### More severe weather in B.C. and Saskatchewan.

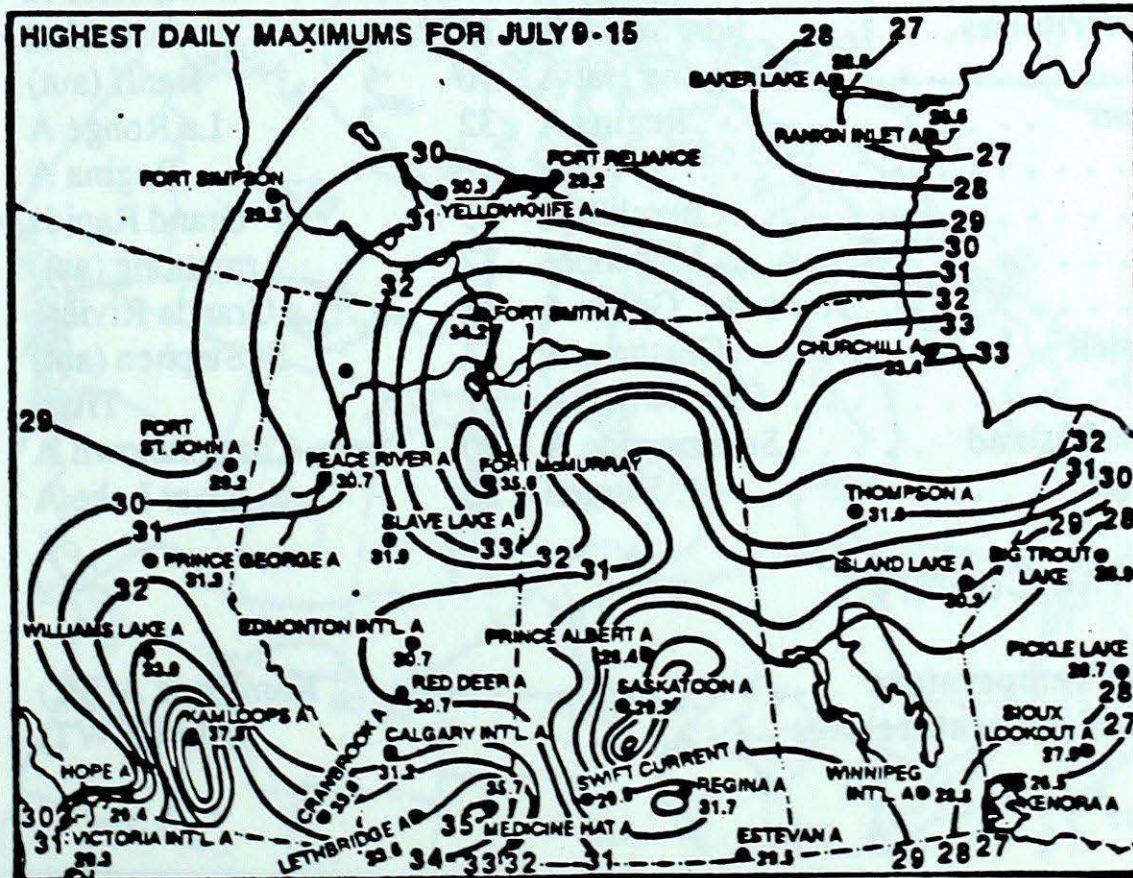
On the 11th, golf-ball size hail was reported at Clucutz Lake, B.C., 35 miles west of Prince George. At Mayfair, Sask. three or four funnel clouds were sighted, two tornadoes touched down for about three minutes 30 km east of Eyebrow, two tornadoes were sighted along with a funnel cloud 30 km southwest of Craik, Moose Jaw reported a funnel cloud and 20 mm diameter hail and finally a report of a

funnel cloud at Balgonie. There were no reports of any major damage.

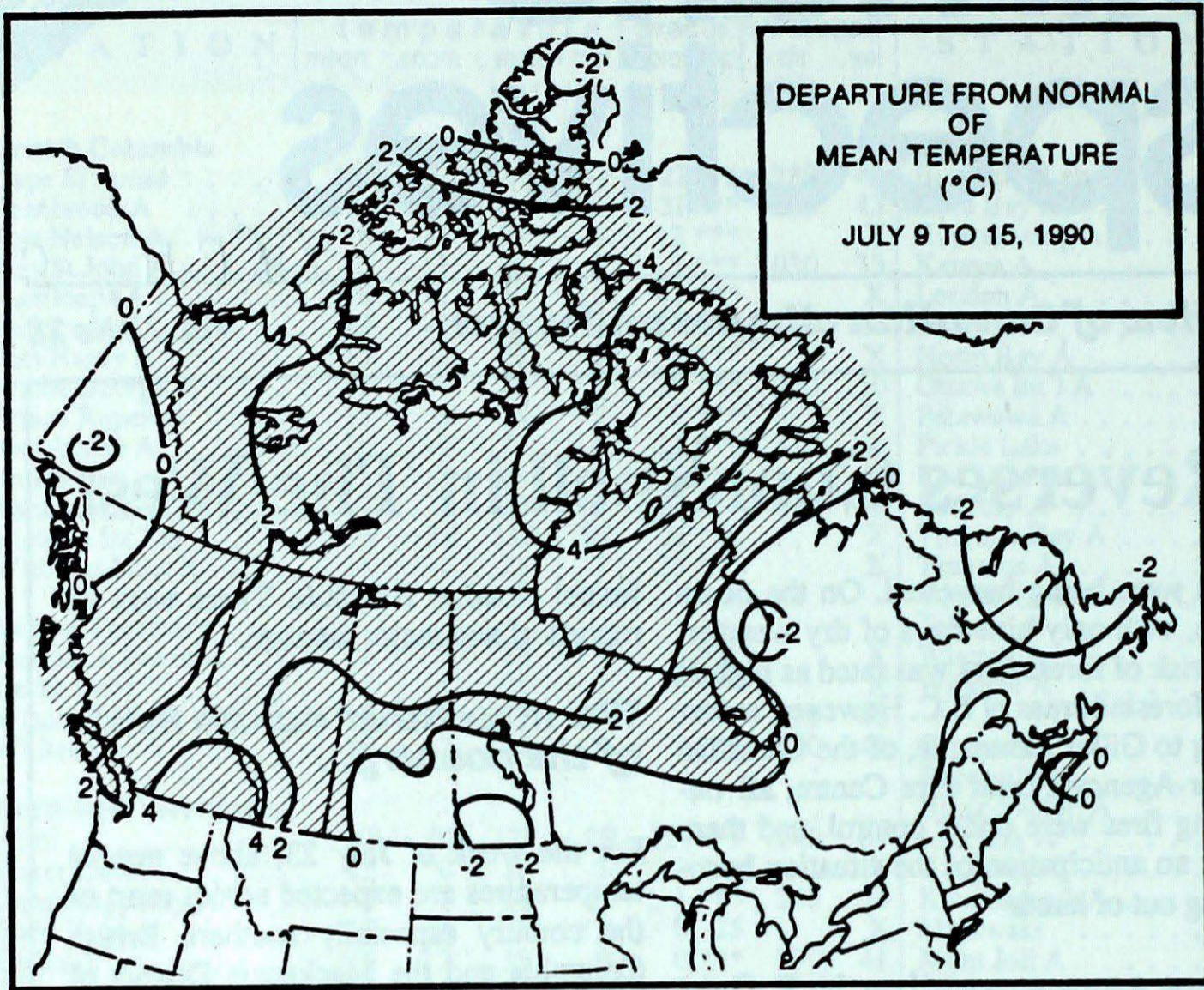
### Warm weather across most of the country...

For the week of July 23, above normal temperatures are expected across most of the country especially southern British Columbia and the Mackenzie District of the Northwest Territories.

Temperatures will generally be about 2 to 3 degrees above normal across the Prairies, and about 4 to 5 degrees above normal over southern B.C., southwestern Alberta and the Mackenzie District. Ontario and the Atlantic provinces can expect near to above-normal values. Most of Quebec will experience near to below-normal temperatures, except the Ungava Peninsula and southern Baffin Island will be below normal.







**Weekly normal temperatures (°C)**

	max.	min.
Whitehorse A	20.6	8.2
Iqaluit A	11.3	3.5
Yellowknife A	20.8	12.1
Vancouver Int'l A	21.8	12.6
Victoria Int'l A	21.3	10.8
Calgary Int'l A	23.7	9.8
Edmonton Int'l A	22.5	9.6
Regina A	26.4	12.2
Saskatoon A	25.6	12.1
Winnipeg Int'l A	26.1	13.6
Ottawa Int'l A	26.3	14.9
Toronto (Pearson Int'l A)	26.9	14.1
Montréal Int'l A	26.1	15.6
Québec A	24.8	13.3
Fredericton A	25.7	13.3
Saint John A	21.9	11.7
Halifax (Shearwater)	21.6	12.9
Charlottetown A	23.2	14.0
Goose A	22.2	10.9
St John's A	20.9	11.0

**Weekly temperature and precipitation extremes**

	Maximum temperature (°C)	Minimum temperature (°C)	Heaviest precipitation (mm)
British Columbia	Kamloops A 38	Dease Lake 1	Prince Rupert A 38
Yukon Territory	Shingle Point A 25	Komakuk Beach A 3	Watson Lake A 13
		Whitehorse A 3	
Northwest Territories	Fort Smith A 34	Alert -2	Yellowknife A 51
Alberta	Medicine Hat A 36	Banff (aut) 4	Cold Lake A 36
Saskatchewan	Regina A 32	La Ronge A 8	Meadow Lake A 36
		Regina A 8	
Manitoba	Churchill A 33	Grand Rapids 1	Churchill A 11
Ontario	Moosonee 32	Armstrong (aut) 4	London A 35
Québec	Gaspe A 33	La Grande Rivière 1	Blanc Sablon A 55
New Brunswick	Chatham A 33	St Stephen (aut) 6	St-Léonard A 13
Nova Scotia	Greenwood A 31	Truro 8	Yarmouth A 25
Prince Edward Island	Summerside A 30	Charlottetown A 11	Charlottetown A 8
Newfoundland	Burgeo 26	Deer Lake A 2	Daniels Harbour 43

**Across The Country...**

Highest Mean Temperature	Kamloops A(BC)	24
Lowest Mean Temperature	Alert(NWT)	1



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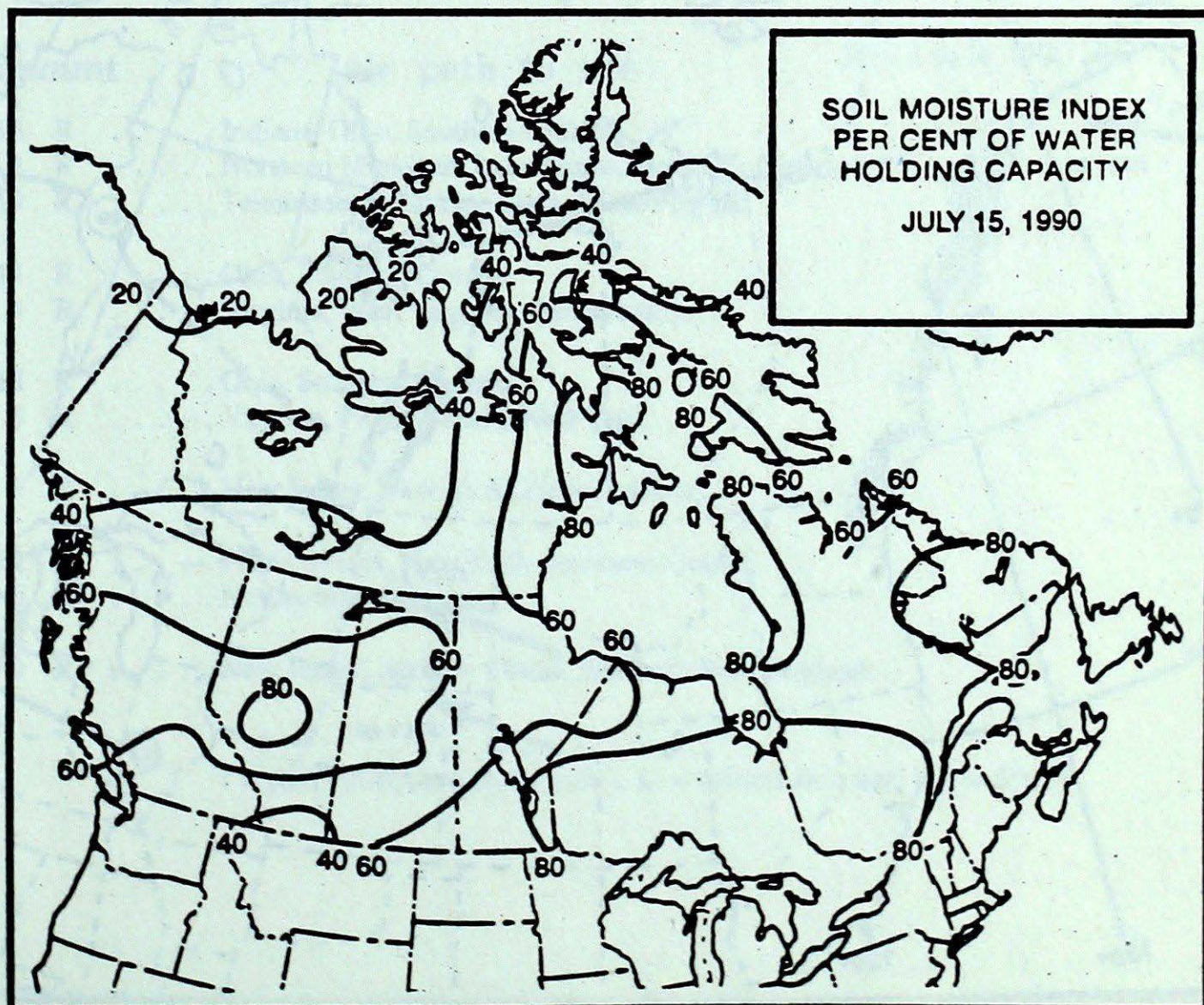
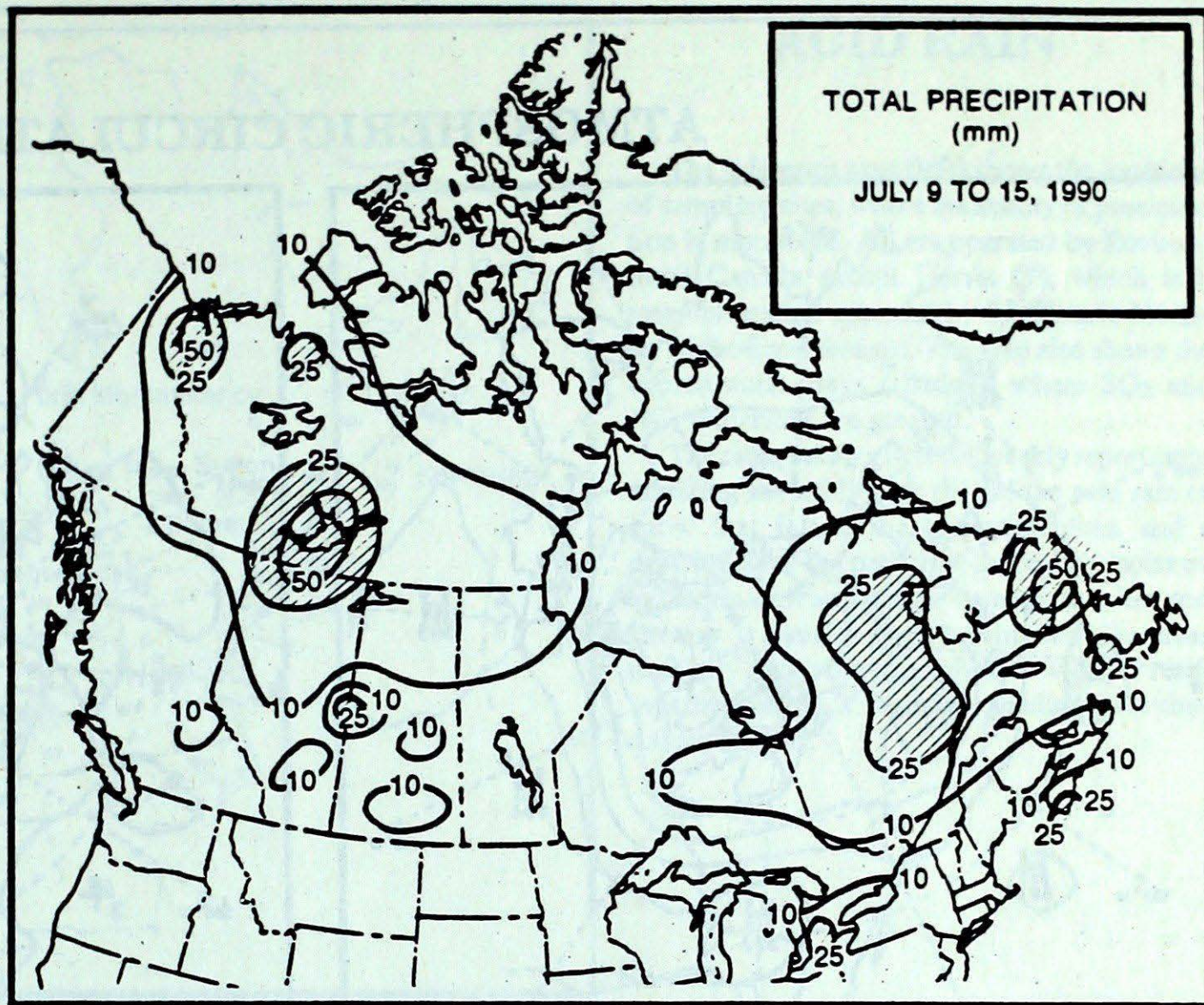
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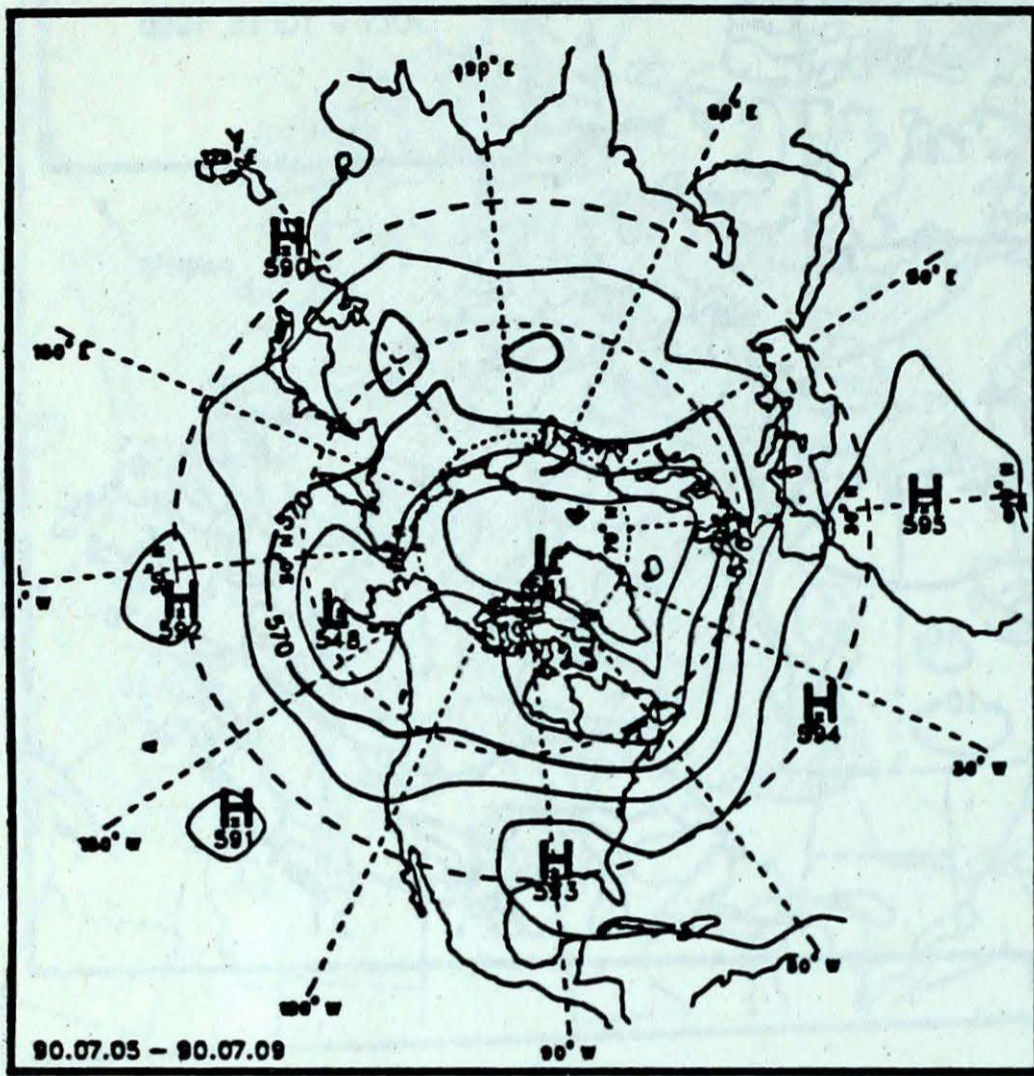
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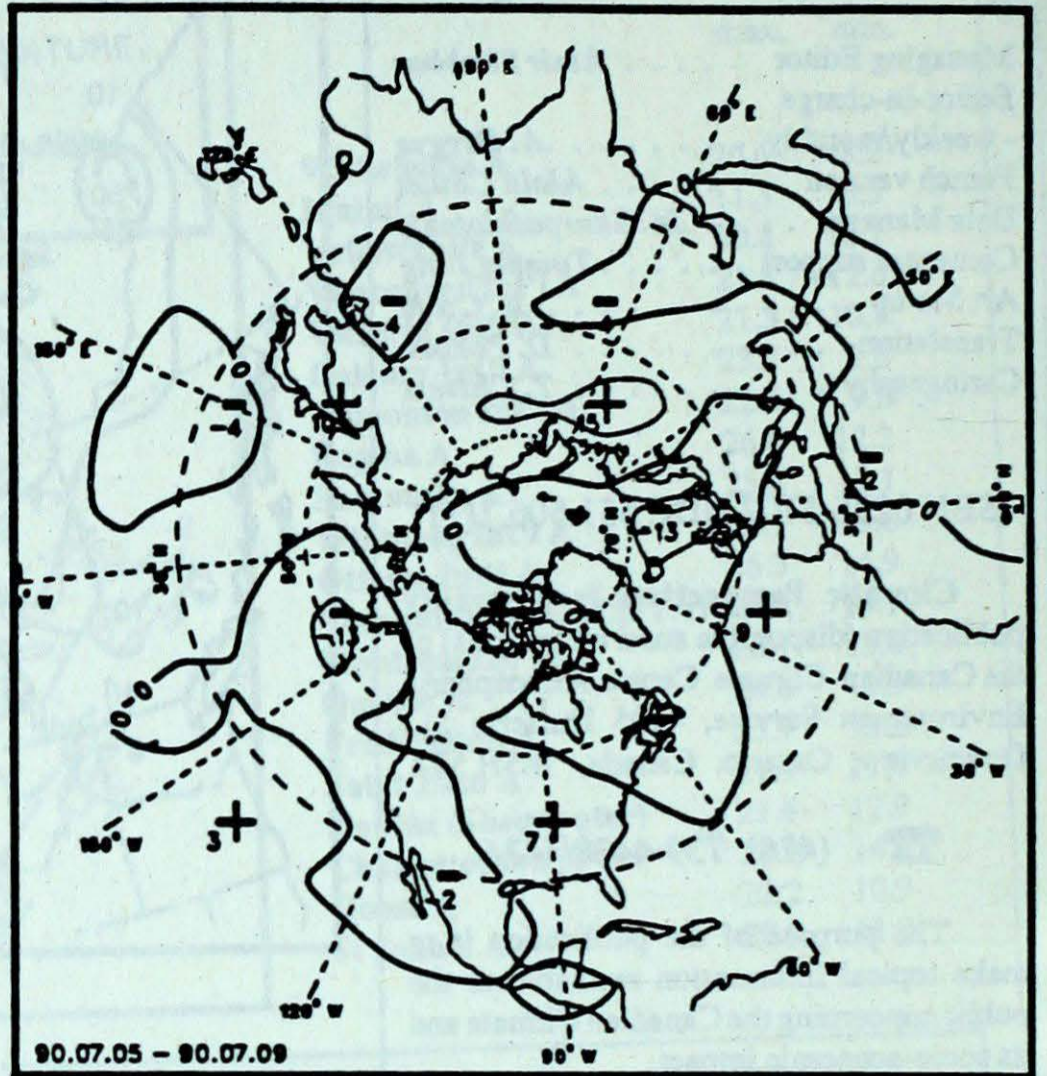


### ATMOSPHERIC CIRCULATION



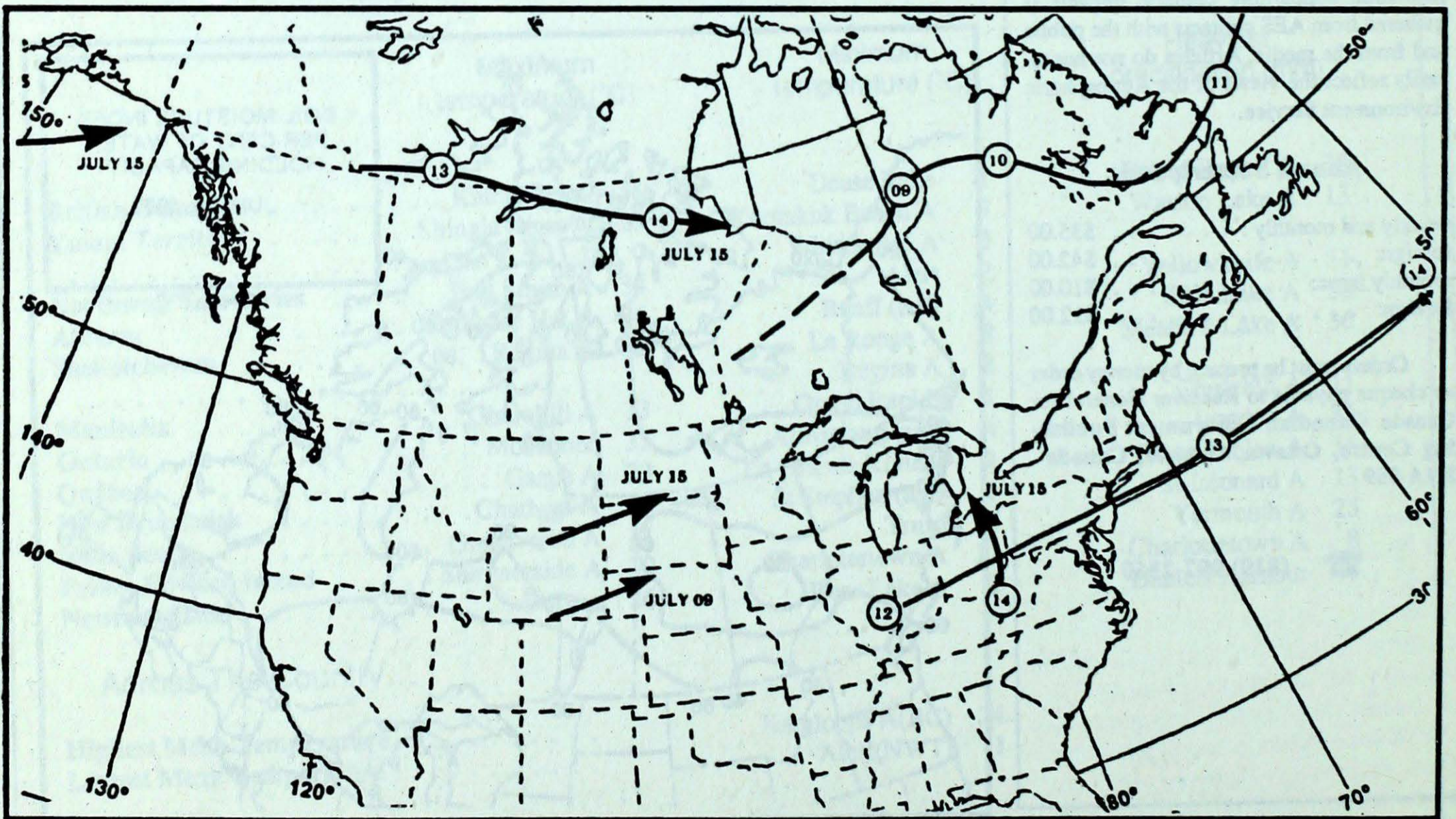
90.07.05 - 90.07.09

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



90.07.05 - 90.07.09

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

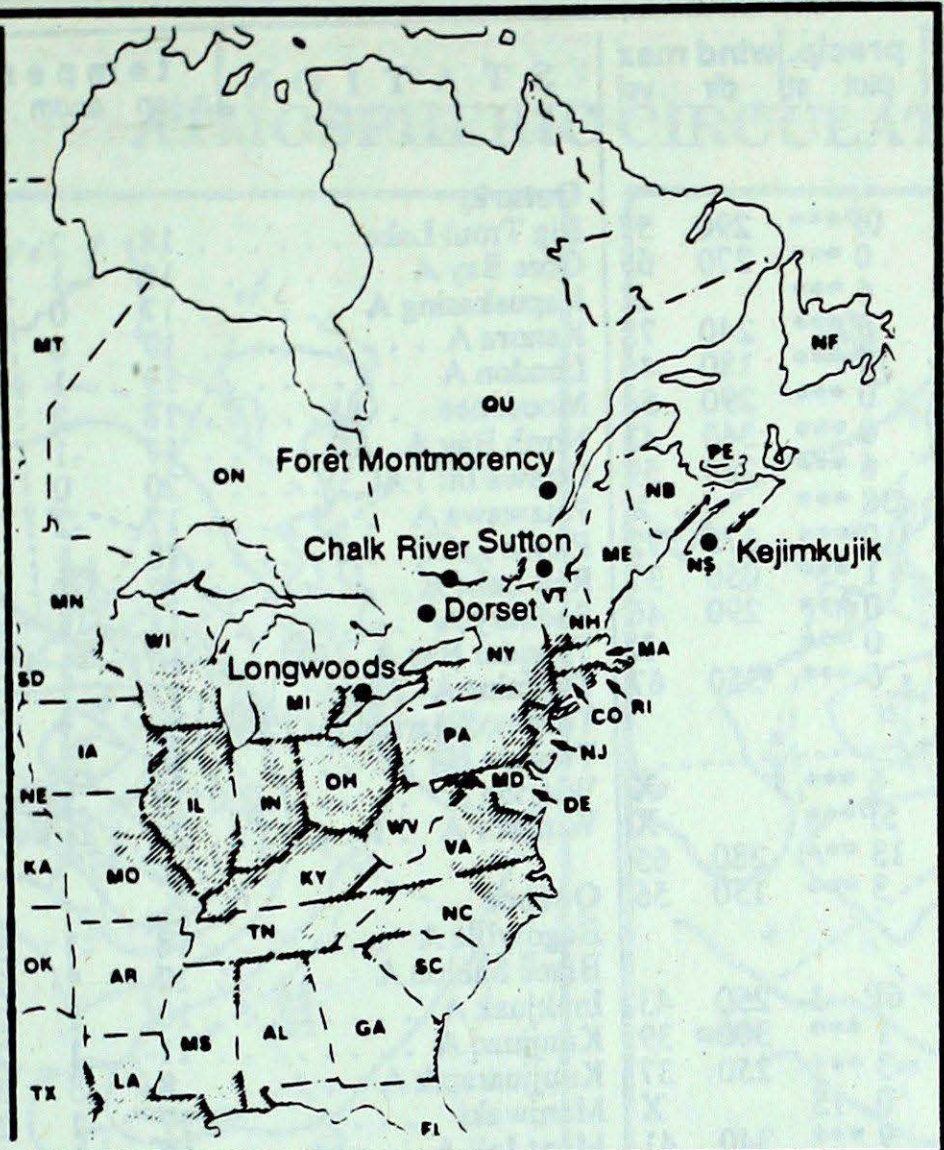


Tracks of low pressure centres at 12:00 U.T. each day during the period.



## ACID RAIN

- ALABAMA -- AL
- ARKANSAS -- AR
- CONNECTICUT -- CT
- 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 -- QC
- RHODE ISLAND -- RI
- SOUTH CAROLINA -- SC
- SOUTH DAKOTA -- SD
- TENNESSEE -- TN
- TEXAS -- TX
- VERMONT -- VT
- VIRGINIA -- VA
- WEST VIRGINIA -- WV
- WISCONSIN -- WI



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<sub>2</sub> and NO<sub>x</sub> 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 8 to 14, 1990
Longwoods	8	4.6	13 R	..... Indiana, Ohio, Southern Ontario	
	10	4.5	2 R	..... Northern Michigan, Lake Huron, Southern Ontario	
	14	4.2	19 R	..... Tennessee, Kentucky, Ohio, West Virginia	
Dorset *	8	3.9	14 R	..... Ohio, Southern Ontario	
	14	4.0	4 R	..... Virginia, West Virginia, Pennsylvania	
Chalk River	8	4.1	18 R	..... Ohio, Southern Ontario	
	14	4.0	5 R	..... Virginia, Pennsylvania, New York	
Sutton	8	3.5	9 R	..... New Jersey, New York, New England	
Montmorency	8	4.4	12 R	..... Pennsylvania, New York, Southern Quebec	
	9	5.0	5 R	..... Northwestern Quebec	
Kejimikujik	9	4.3	9 R	..... New Jersey, Atlantic Ocean, Southern New England	

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

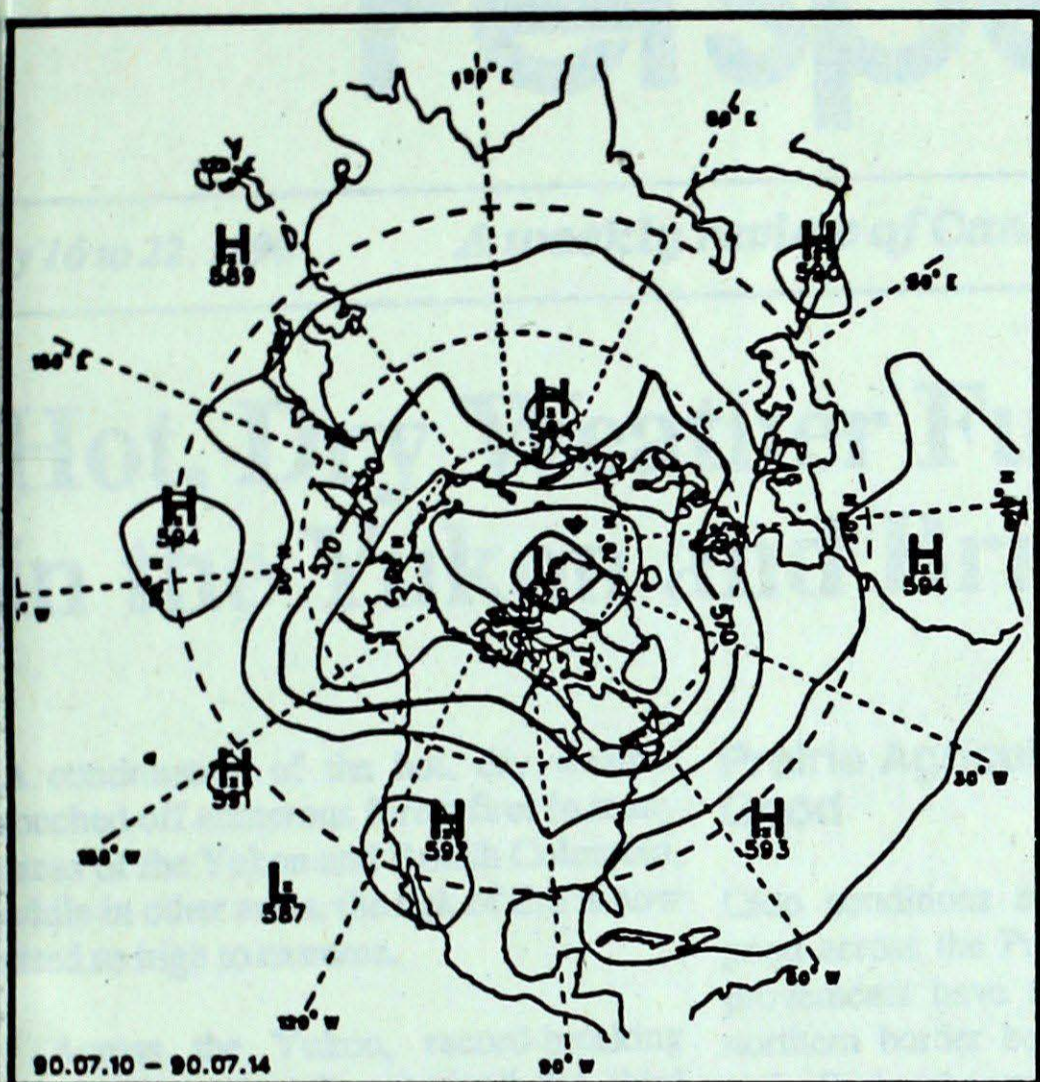


STATION	temperature				precip. ptot st	wind max		STATION	temperature				precip. ptot st	wind max	
	mean	anom	max	min		dir	vel		mean	anom	max	min		dir	vel
<b>British Columbia</b>								<b>Ontario</b>							
Cape St James	14P	2P	19P	11P	0P***	290	57	Big Trout Lake	18	2	29	7	1 ***	330	61
Cranbrook A	23	6	34	12	0 ***	270	65	Gore Bay A	18	-1	25	10	11 ***	X	
Fort Nelson A	18	1	29	8	6 ***		X	Kapuskasing A	17	0	30	4	10 ***	310	63
Fort St John A	19	3	29	7	6 ***	240	72	Kenora A	19	0	27	11	0 ***	300	33
Kamloops A	24	3	38	14	4 ***	180	46	London A	19	-1	27	10	35 ***	060	54
Penticton A	24	4	38	14	0 ***	290	56	Moosonee	18	2	32	4	4 ***	250	46
Port Hardy A	15	1	21	8	0 ***	340	43	North Bay A	17	-1	25	9	5 ***	300	43
Prince George A	17	2	31	4	6 ***	280	59	Ottawa Int'l A	20	0	28	12	3 ***	360	52
Prince Rupert A	14	1	20	7	38 ***		X	Petawawa A	17	-2	27	6	15 ***	330	44
Revelstoke A	22	4	32	11	0 ***	170	72	Pickle Lake	18	1	29	7	4 ***	310	37
Smithers A	15	0	26	4	1 ***	050	37	Red Lake A	17	-1	28	5	0 ***	320	37
Vancouver Int'l A	20	3	27	14	0 ***	290	46	Sudbury A	18	-1	26	10	2 ***	320	44
Victoria Int'l A	19	3	29	10	0 ***		X	Thunder Bay A	16	-1	28	6	0 ***	310	44
Williams Lake A	18	4	34	6	0 ***	350	67	Timmins A	17	-1	29	5	9 ***	330	46
<b>Yukon Territory</b>								<b>Toronto (Pearson Int'l A)</b>							
Komakuk Beach A	8	1	15	3	6 ***		X	Trenton A	19	-1	28	11	10 ***	310	41
Teslin (aut)	12P	*	18P	3P	5P***		X	Warton A	17	-1	23	11	5 ***	180	50
Watson Lake A	14	-1	23	4	13 ***	280	65	Windsor A	21	-1	29	16	20 ***	050	56
Whitehorse A	11	-3	20	3	3 ***	150	56	<b>Québec</b>							
<b>Northwest Territories</b>								<b>Bagotville A</b>							
Alert	1P	-2P	6P	-2P	6P 1	250	43	Blanc Sablon A	12	*	21	6	55 ***	240	41
Baker Lake A	15	4	29	7	1 ***	300	39	Inukjuak A	10	1	21	3	6 ***	080	65
Cambridge Bay A	11	3	23	5	3 ***	250	37	Kuujuuaq A	11	-1	20	1	12 ***	290	63
Cape Dyer A	9	4	19	2	0 15		X	Kuujuarapik A	8	-3	31	1	20 ***	190	59
Clyde A	7	3	19	1	9 ***	340	41	Maniwaki	17	-1	26	5	10 ***	330	35
Coppermine A	14	5	30	5	3 ***	240	59	Mont Joli A	19	1	29	11	11 ***	240	72
Coral Harbour A	13	4	24	4	0 ***	300	69	Montréal Int'l A	20	-1	30	10	4 ***	300	44
Eureka	4	-2	10	0	0 ***	330	63	Natashquan A	11P	-3P	21P	6P	19P***	270	44
Fort Smith A	19	3	34	10	21 ***	290	65	Québec A	19	-1	27	9	10 ***	290	50
Hall Beach A	10	5	18	3	1 ***	340	41	Schefferville A	12	-2	18	8	27 ***	240	59
Inuvik A	14	-1	24	6	50 ***		X	Sept-Îles A	16	0	32	7	17 ***	290	52
Iqaluit A	11	3	22	4	0 ***	340	44	Sherbrooke A	17	-1	29	6	3 ***	270	44
Mould Bay A	8P	4P	13P	2P	0P***		X	Val-d'Or A	16	-1	28	5	13 ***	320	41
Norman Wells A	19	2	27	10	1 ***	260	43	<b>New Brunswick</b>							
Resolute A	5P	1P	11P	0P	2P***	010	54	Charlo A	18	0	32	9	10 ***	260	43
Yellowknife A	19	2	30	11	51 ***	350	56	Chatham A	18	-1	33	8	9 ***	270	59
<b>Alberta</b>								<b>Fredericton A</b>							
Calgary Int'l A	19	3	31	10	10 ***	350	78	Moncton A	18	-1	29	7	4 ***	280	61
Cold Lake A	20	2	31	9	36 ***	290	69	Saint John A	17	0	29	8	4 ***	220	54
Edmonton Namao A	20	2	30	10	0 ***	270	52	<b>Nova Scotia</b>							
Fort McMurray A	20	4	36	8	5 ***	270	57	Greenwood A	19	-1	31	9	0 ***	240	59
High Level A	19	3	32	7	35 ***	290	76	Shearwater A	19	1	30	12	4 ***	260	44
Jasper	18	3	31	6	6 ***		X	Sydney A	17	-1	28	8	3 ***	270	56
Lethbridge A	21	2	34	10	5 ***	200	100	Yarmouth A	16	0	21	11	25 ***	180	48
Medicine Hat A	23	3	36	13	0 ***	020	52	<b>Prince Edward Island</b>							
Peace River A	18	2	31	8	13 ***	260	63	Charlottetown A	18	-1	27	11	8 ***	290	65
<b>Saskatchewan</b>								<b>Summerside A</b>							
Cree Lake	18	3	30	8	17 ***	250	52	19	0	30	11	5 ***	290	57	
Estevan A	19	-2	30	8	2 ***	180	50	<b>Newfoundland</b>							
La Ronge A	19	2	31	8	2 ***	300	56	Cartwright	11	-2	22	3	12 ***	330	44
Regina A	19	-1	32	8	13 ***	330	57	Churchill Falls A	12	-2	20	6	11 ***	290	48
Saskatoon A	20	1	29	9	4 ***	300	43	Gander Int'l A	14	-3	21	5	30 ***	360	52
Swift Current A	19	0	30	10	19 ***	110	61	Goose A	15	-2	25	5	5 ***	220	48
Yorkton A	17	-1	29	8	0 ***	170	46	Port Aux Basques	13	0	22	5	17 ***	270	70
<b>Manitoba</b>								<b>St John's A</b>							
Brandon A	17	-2	26	7	4 ***	200	48	15	-2	22	5	2 ***	240	67	
Churchill A	14	3	33	3	11 ***	320	59	St Lawrence	14	2	26	7	16 ***	X	
Lynn Lake A	19	3	33	6	1 ***	280	46	Wabush Lake A	13	-1	21	8	24 ***	310	57
The Pas A	18	1	31	8	0 ***	220	44	<b>90/07/09-90/07/15</b>							
Thompson A	19	3	32	2	3 ***	210	50								
Winnipeg Int'l A	18	-2	29	8	0 ***	030	48								

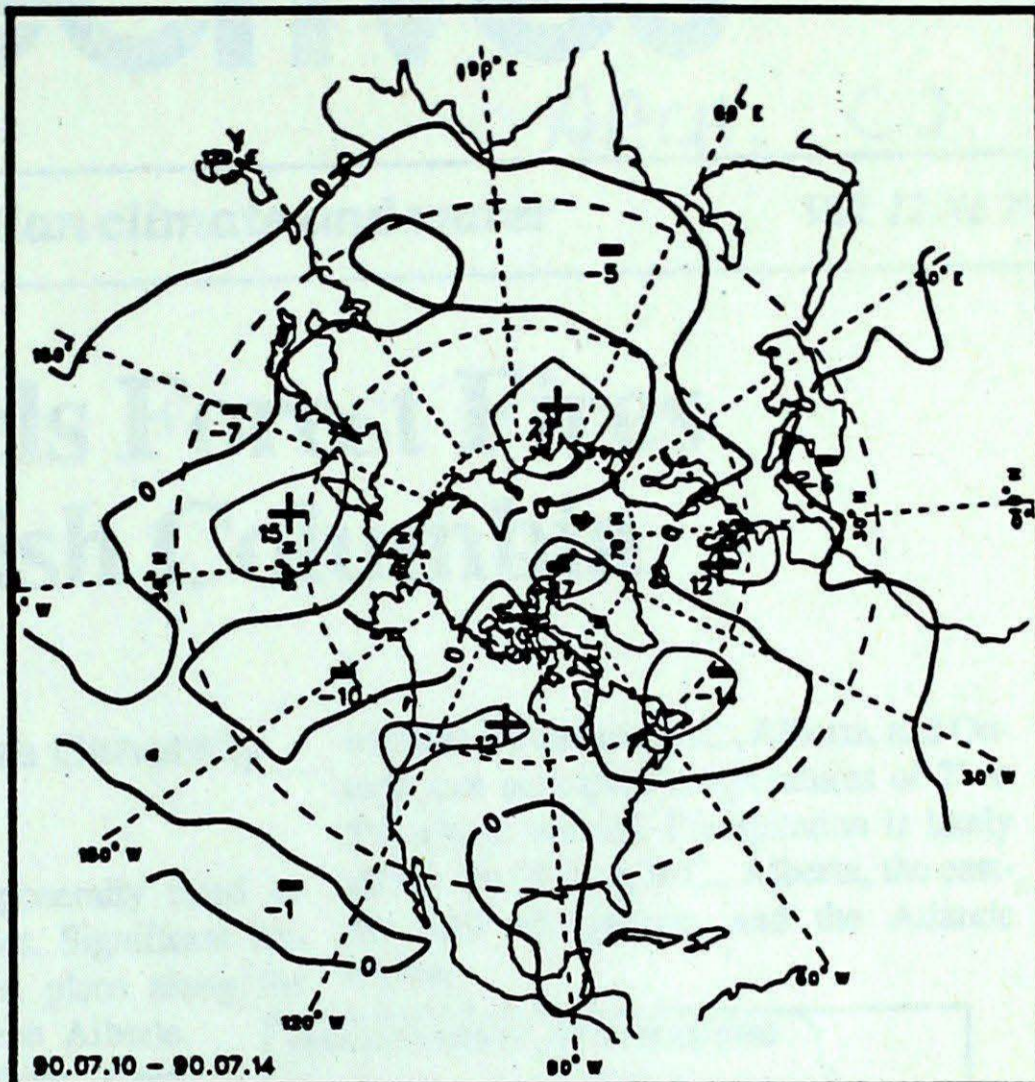
mean = mean weekly temperature, °C  
 max = maximum weekly temperature, °C  
 min = minimum weekly temperature, °C  
 anom = mean temperature anomaly, °C  
 ptot = weekly precipitation total in mm  
 st = snow thickness on the ground in cm  
 dir = direction of max wind, deg. from north.  
 vel = wind 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)



Environnement  
Canada

Environnement  
Canada

Atmospheric  
Environment  
Service

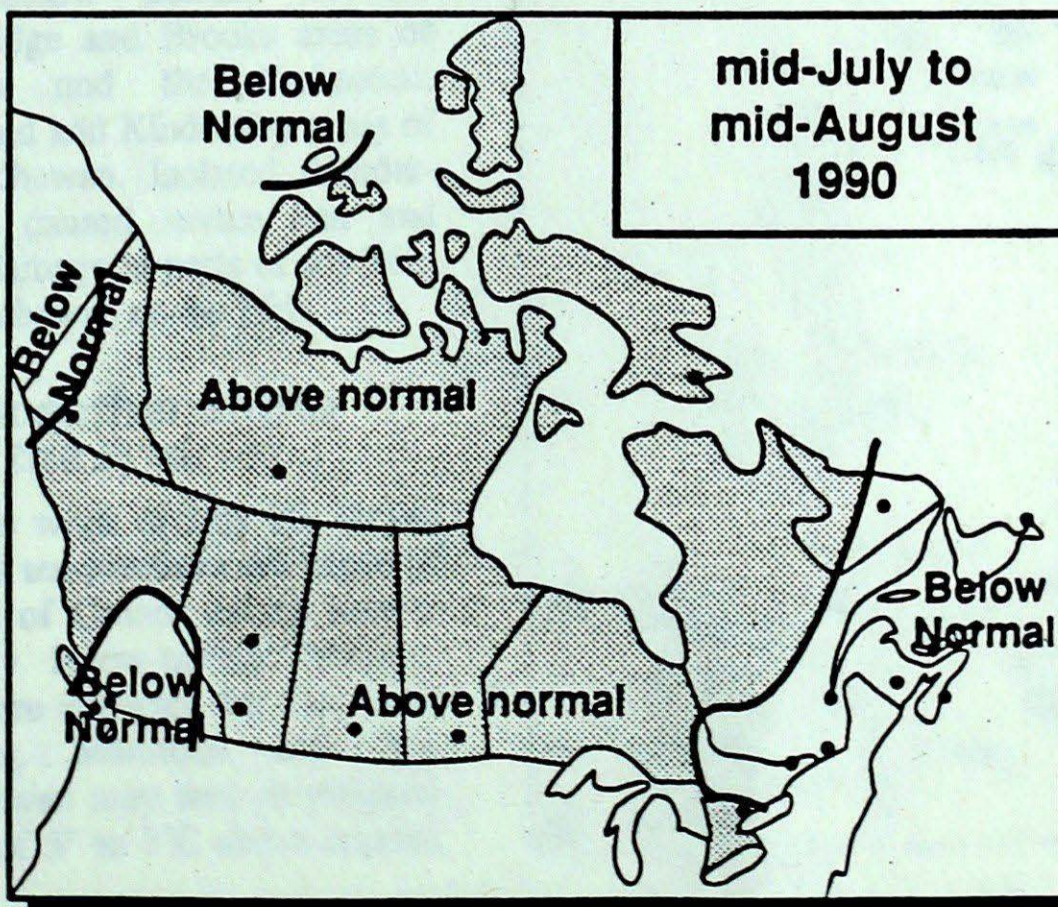
Service  
de l'environnement  
atmosphérique

### MONTHLY TEMPERATURE FORECAST

*Normal temperatures for  
mid-July to mid-August, °C*

Whitehorse	13	Toronto	20
Yellowknife	15	Ottawa	20
Iqaluit	7	Montréal	20
Vancouver	17	Québec	18
Victoria	16	Fredericton	19
Calgary	16	Halifax	18
Edmonton	16	Charlottetown	18
Regina	18	Goose Bay	15
Winnipeg	19	St. John's	15

Canada

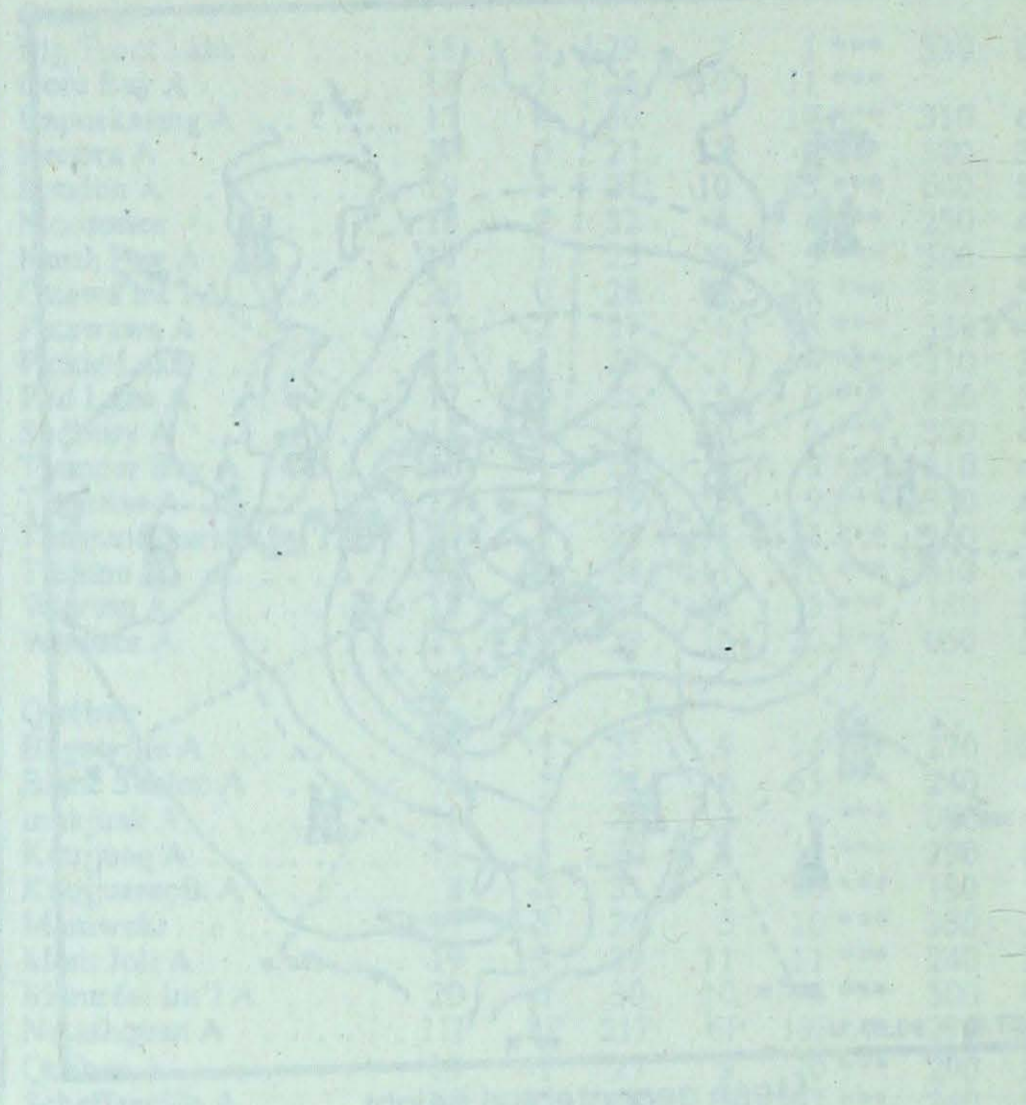
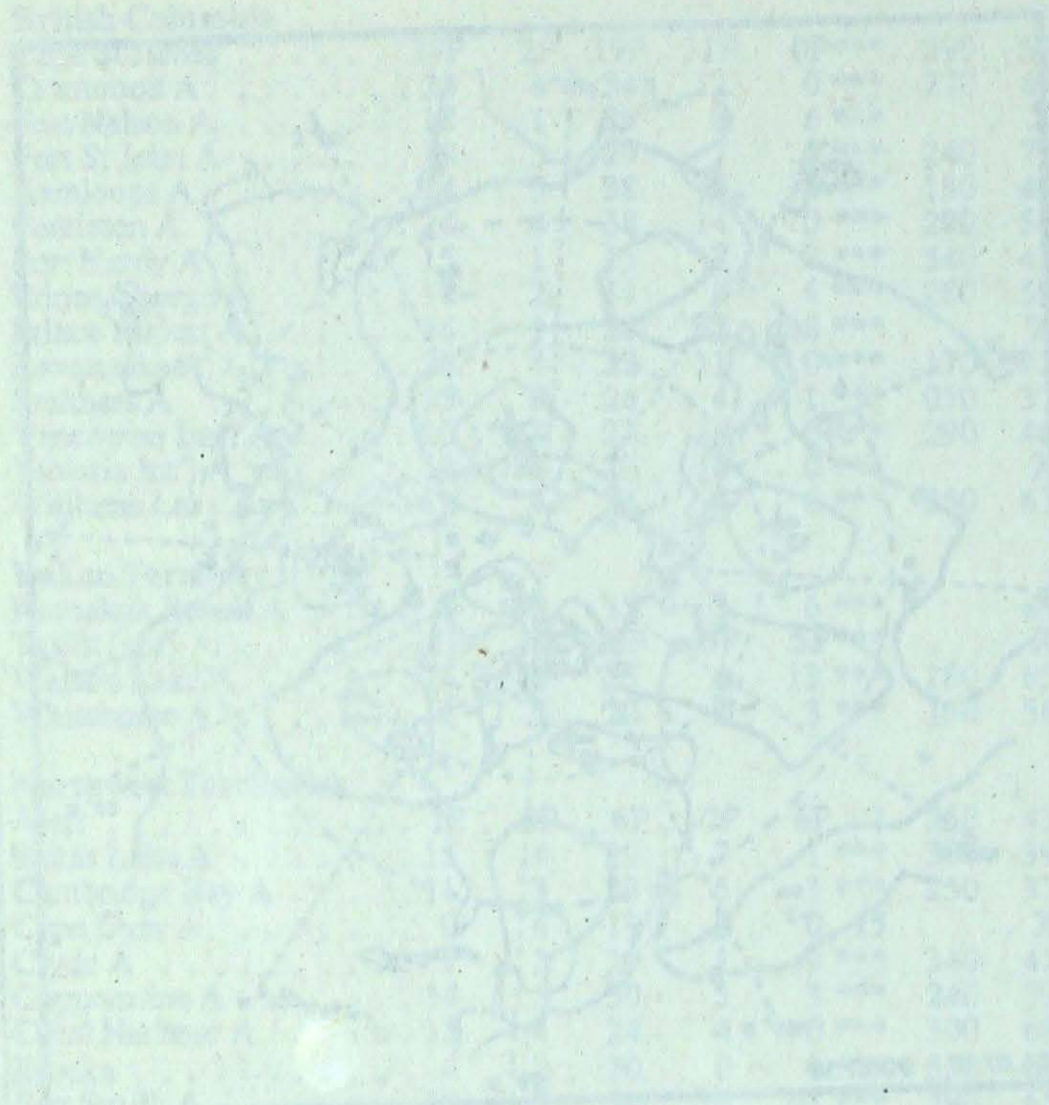




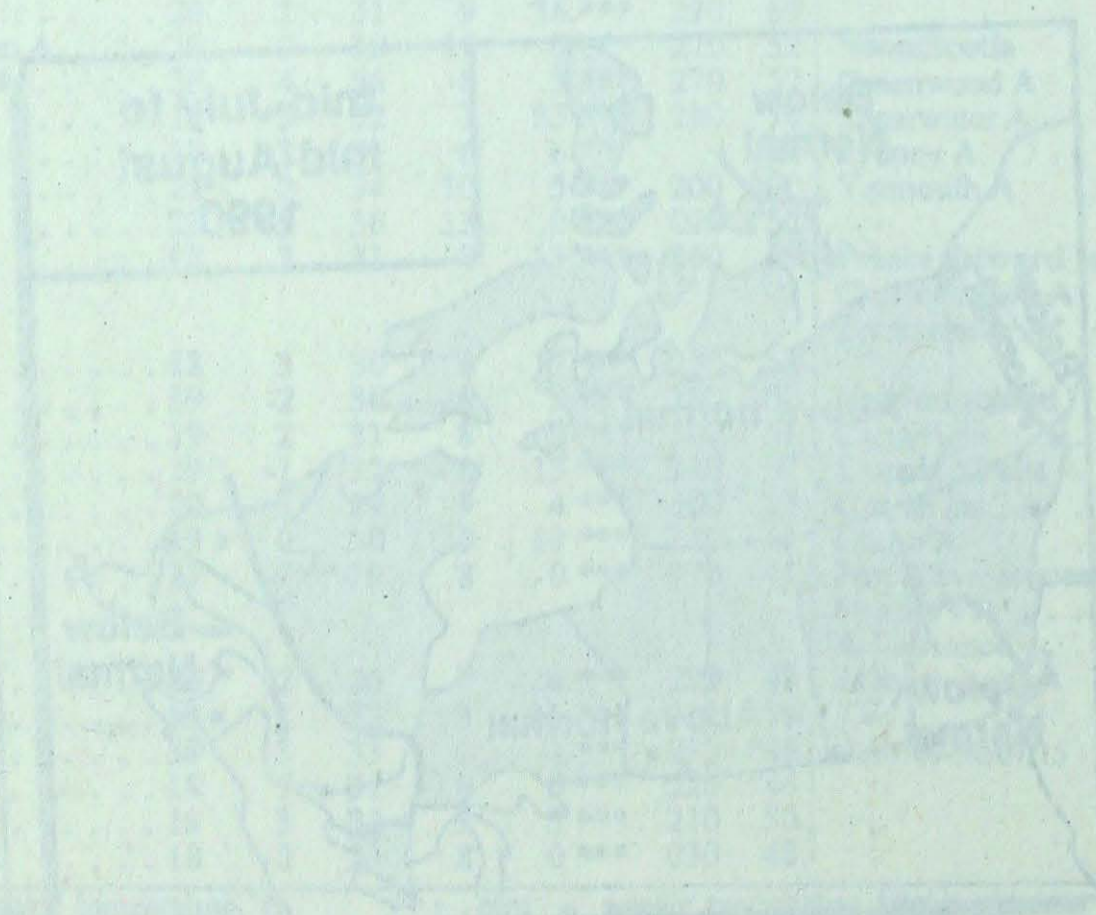
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ATMOSPHERIC CIRCULATION



MONTHLY TEMPERATURE FORECAST



City	Temperature (°C)
Halifax	10
St. John's	10
Montréal	15
Québec	15
Ottawa	15
Toronto	15
Windsor	15
Chicago	15
St. Louis	15
Indianapolis	15
Columbus	15
Richmond	15
Washington	15
Baltimore	15
Philadelphia	15
New York	15
Atlanta	15
Charlotte	15
Memphis	15
Little Rock	15
Fort Worth	15
Dallas	15
Phoenix	15
San Antonio	15
San Diego	15
Los Angeles	15
San Francisco	15
Seattle	15
Portland	15
Vancouver	15

Canada