

Climatic Perspectives

Archives

Ref 2

June 25 to July 1, 1990

A weekly review of Canadian climate and water

Vol.12 No.26

Severe weather plagues Prairies

It's that time of year again when tornados, funnel clouds and especially hail make appearances at various localities in the Prairie provinces. Overall this season there has been little in the way of severe activity even though precipitation is running generally above normal.

Warm, humid unstable air covered most of the Prairies this past week creating ideal conditions for severe thunderstorms. Tornados, hail and heavy rain accompanied many of these storms. One storm on June 27 spawned an intense tornado near Saskatoon which, luckily, crossed a relatively remote area. Some barns were flattened, but, had it slashed across a populated area, widespread damage could have resulted. On the same day, baseball size hail was reported at Arran, Saskatchewan, golf ball size hail near Saskatoon and numerous reports of smaller hail which covered the ground throughout various locations in Saskatchewan. Strong winds, funnel clouds and heavy rain were also widespread on the June 27.

The next day, Manitoba was hard hit with Shoal Lake reporting heavy hail, which resulted in extensive crop damage and also stripping trees of their leaves. The following day, the ground was still covered by 5cm of hail. Another storm created havoc at Russell, Manitoba which was deluged by 39mm of rain in one hour. Over the long weekend heavier thundershowers produced unofficial totals of 75 to 100mm of rain in parts of southern Saskatchewan

Quiet year for forest fires

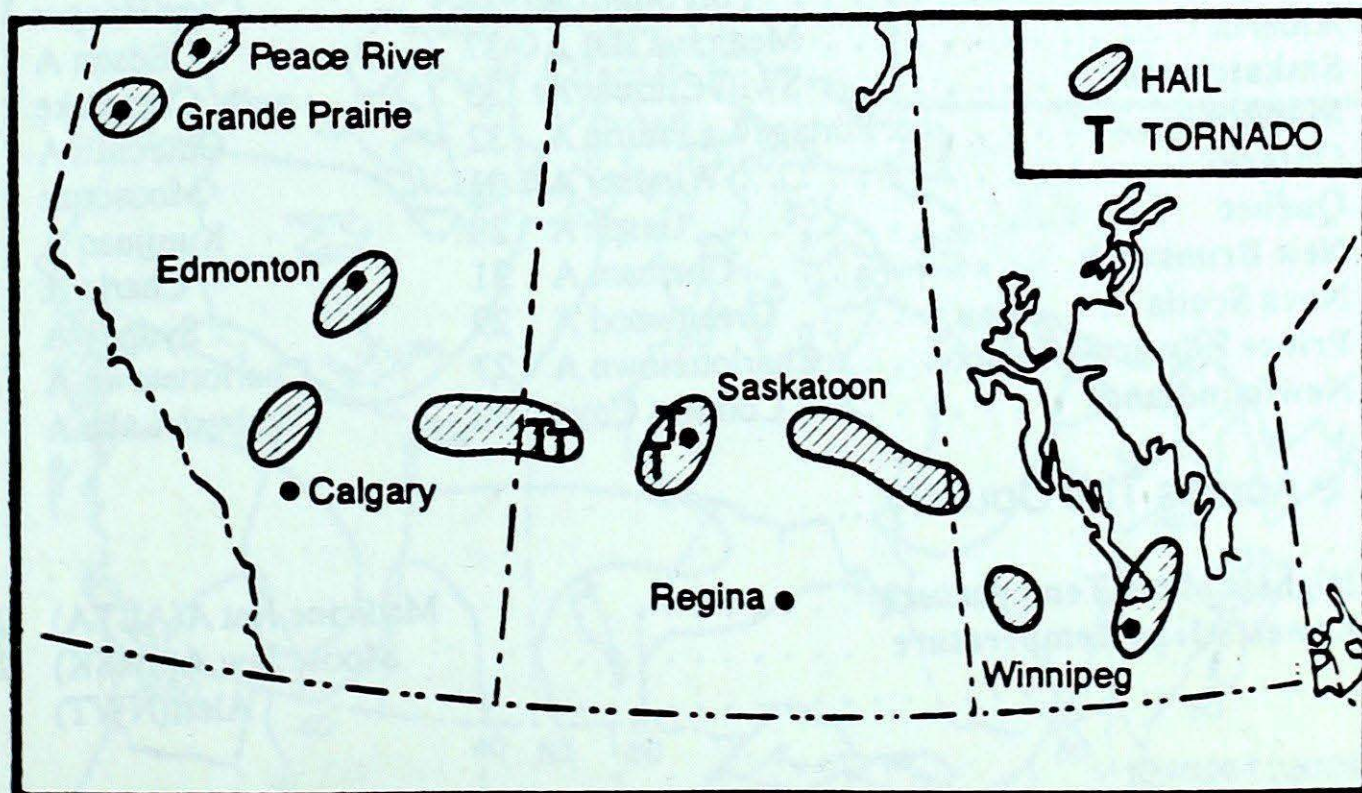
As a result of all the moisture across the country, damp forests have resulted in a quiet fire season so far. This is in sharp contrast to last year when huge fires raged across Northwest Ontario and Manitoba. New Brunswick fires, which had been a problem this year, are now under control.

The only fire of major concern is one near Mayo, Yukon where temperatures have been above normal. Hot, dry weather across the Northwest Territories may result in a fire problem.

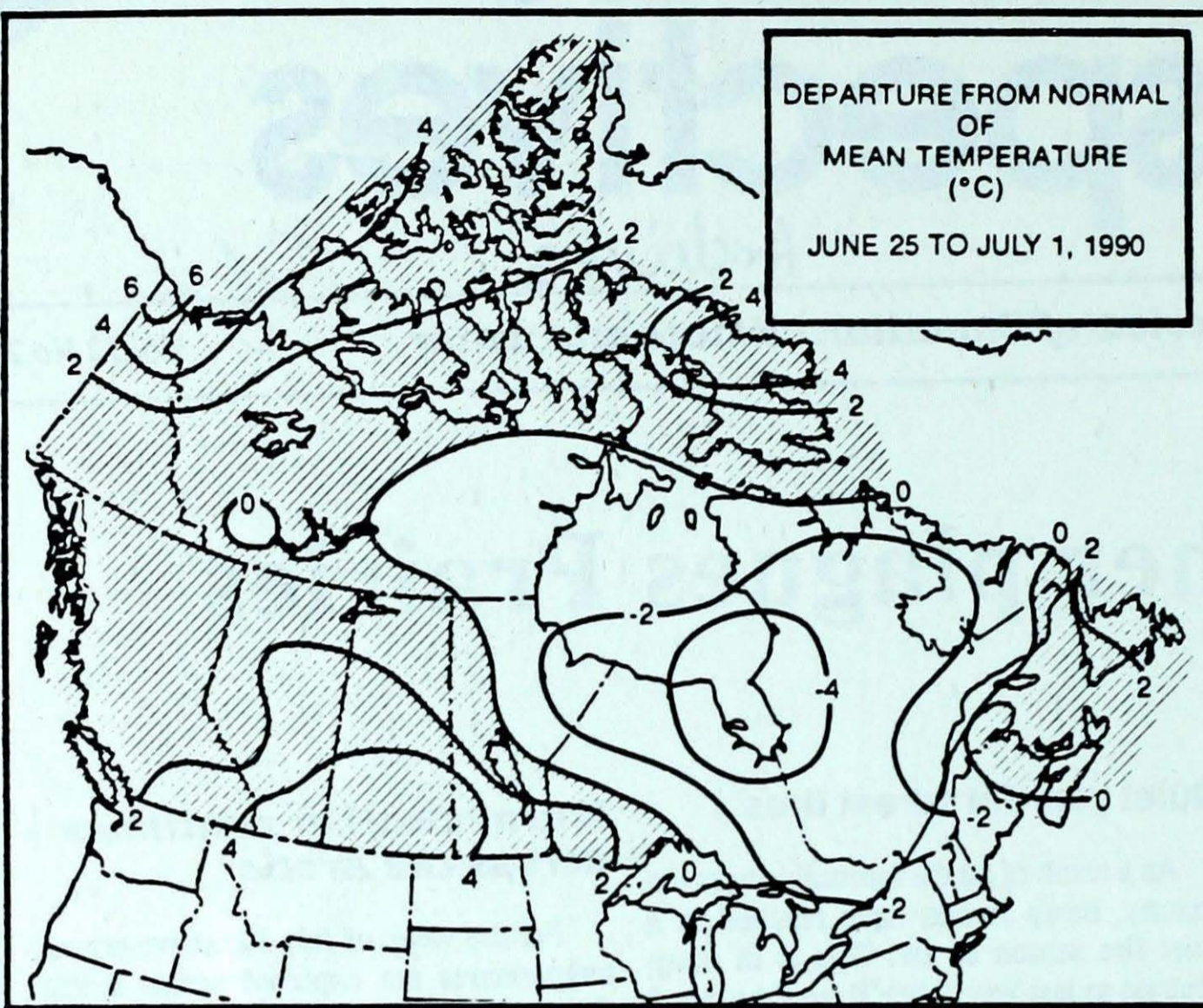
At the moment fire officials are focusing their attention on potential problems in the North.

Warm weather continues across the Arctic

For the week of July 12, above-normal temperatures are expected across British Columbia, Alberta, the northwestern parts of Saskatchewan, the northeastern parts of Manitoba, and the Northwest Territories, especially across the Arctic Islands, where temperatures will be 3 to 5 Celsius above normal. Below-normal temperatures are expected across the Atlantic provinces. Elsewhere, temperatures will be near to slightly above-normal. Precipitation is likely over the Yukon, northwestern B.C., the Atlantic region, and the extreme southern parts of the Prairies.



Extent of severe weather observed across the Prairies - June 25 to July 1, 1990



Weekly normal temperatures (°C)

	max.	min.
Whitehorse A	18.9	6.8
Iqaluit A	9.4	2.3
Yellowknife A	20.0	10.7
Vancouver Int'l A	19.5	11.3
Victoria Int'l A	19.4	9.9
Calgary Int'l A	20.3	7.6
Edmonton Int'l A	20.5	7.9
Regina A	23.6	10.4
Saskatoon A	23.1	10.1
Winnipeg Int'l A	24.8	12.7
Ottawa Int'l A	25.6	14.4
Toronto (Pearson Int'l A)	26.0	13.7
Montréal Int'l A	25.4	15.1
Québec A	23.8	12.2
Fredericton A	24.5	11.7
Saint John A	21.2	10.1
Halifax (Shearwater)	20.7	11.2
Charlottetown A	21.4	11.7
Goose A	18.8	7.7
St John's A	18.1	8.1

Weekly temperature and precipitation extremes

	Maximum temperature (°C)	Minimum temperature (°C)	Heaviest precipitation (mm)
British Columbia	Penticton A 31	Puntzi Mountain (aut) 0	Port Hardy A 62
Yukon Territory	Komakuk Beach A 27	Komakuk Beach A 3	Teslin (aut) 34
Northwest Territories	Fort Smith A 27	Cape Hooper -3	Shepherd Bay A 22
Alberta	Medicine Hat A 37	Edson A 4	Edmonton Namao A 58
Saskatchewan	Swift Current A 35	Cree Lake 7	Nipawin A 81
Manitoba	Portage La Prairie A 32	Churchill A 1	Norway House A 36
Ontario	Windsor A 31	Moosonee 1	Armstrong (aut) 53
Québec	Gaspé A 29	Kuujuuaq A -1	Sherbrooke A 45
New Brunswick	Chatham A 31	Charlo A 7	St Stephen (aut) 15
Nova Scotia	Greenwood A 29	Sydney A 9	Sable Island 68
Prince Edward Island	Charlottetown A 27	Charlottetown A 9	East Point (aut) 2
Newfoundland	Comfort Cove 30	Wabush Lake A 2	Goose A 47

Across The Country...

Highest Mean Temperature	Medicine Hat A(ALTA) 23
Lowest Mean Temperature	Moose Jaw A(SASK) 23
.	Alert(NWT) 3

CLIMATIC PERSPECTIVES
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Managing Editor Amir Shabbar
Editor-in-charge
- weekly/monthly S. Somerville
French version Alain Caillet
Data Manager M. Skarpathiotakis
Computer support Tommy Jang
Art Set-up K. Czaja
Translation D. Pokorn
Cartography T. Chivers

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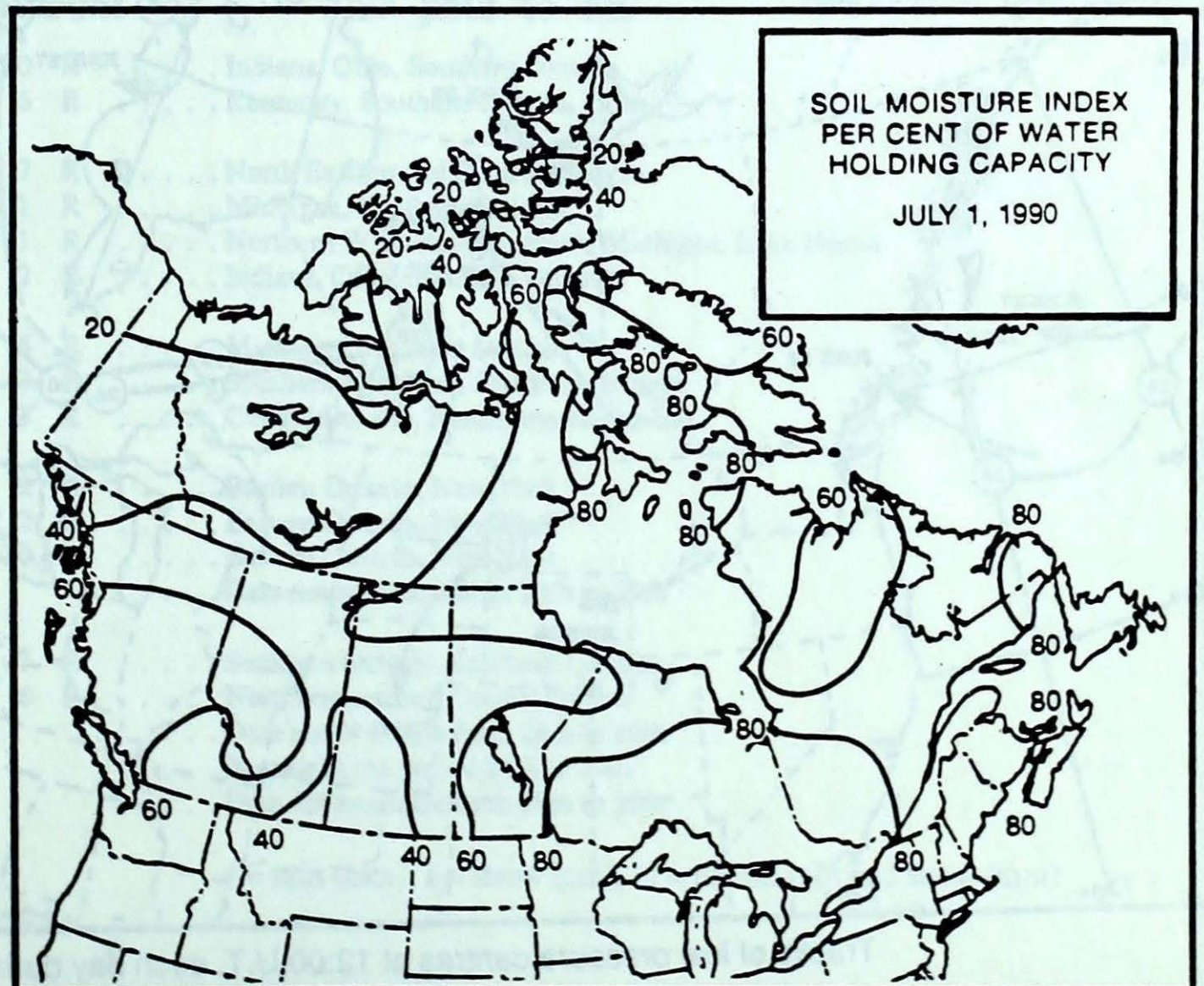
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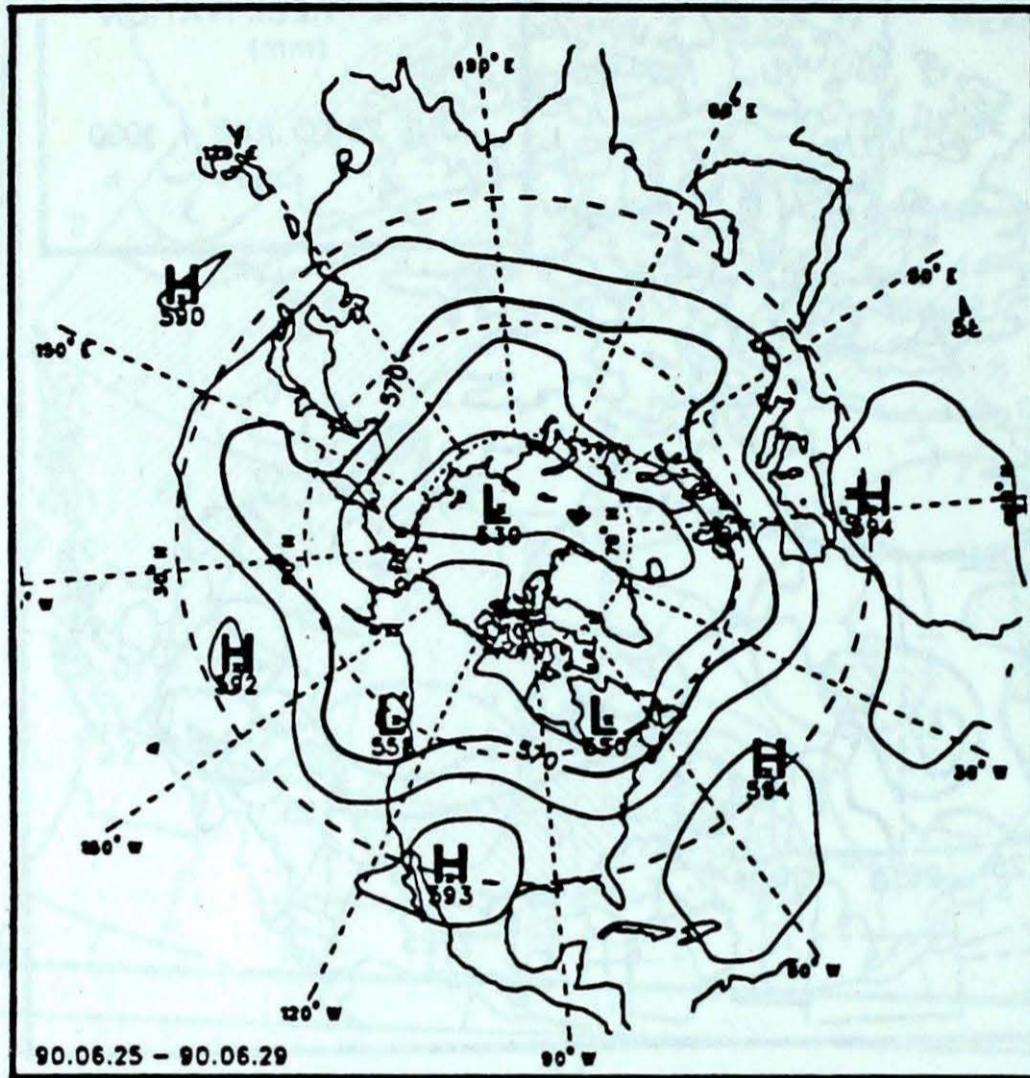
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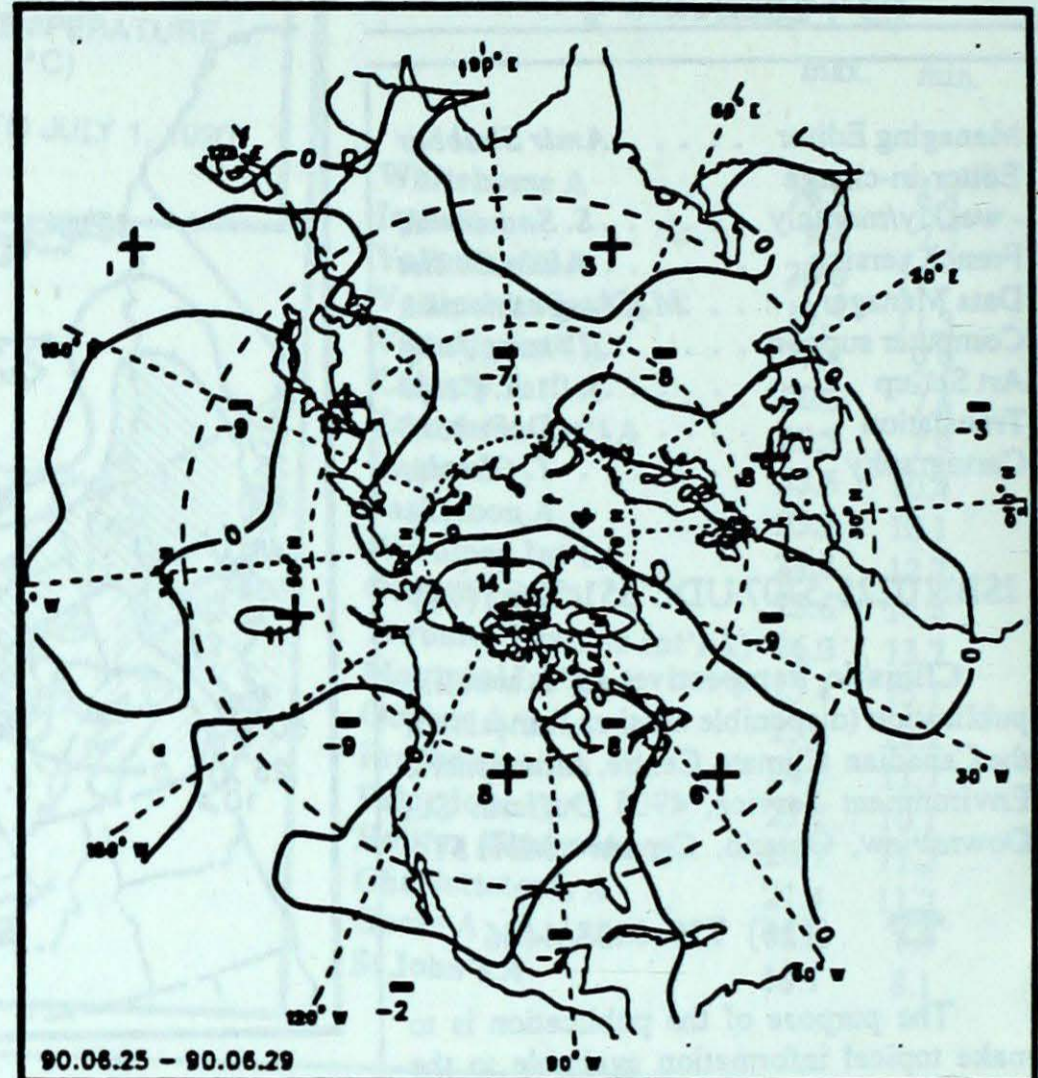
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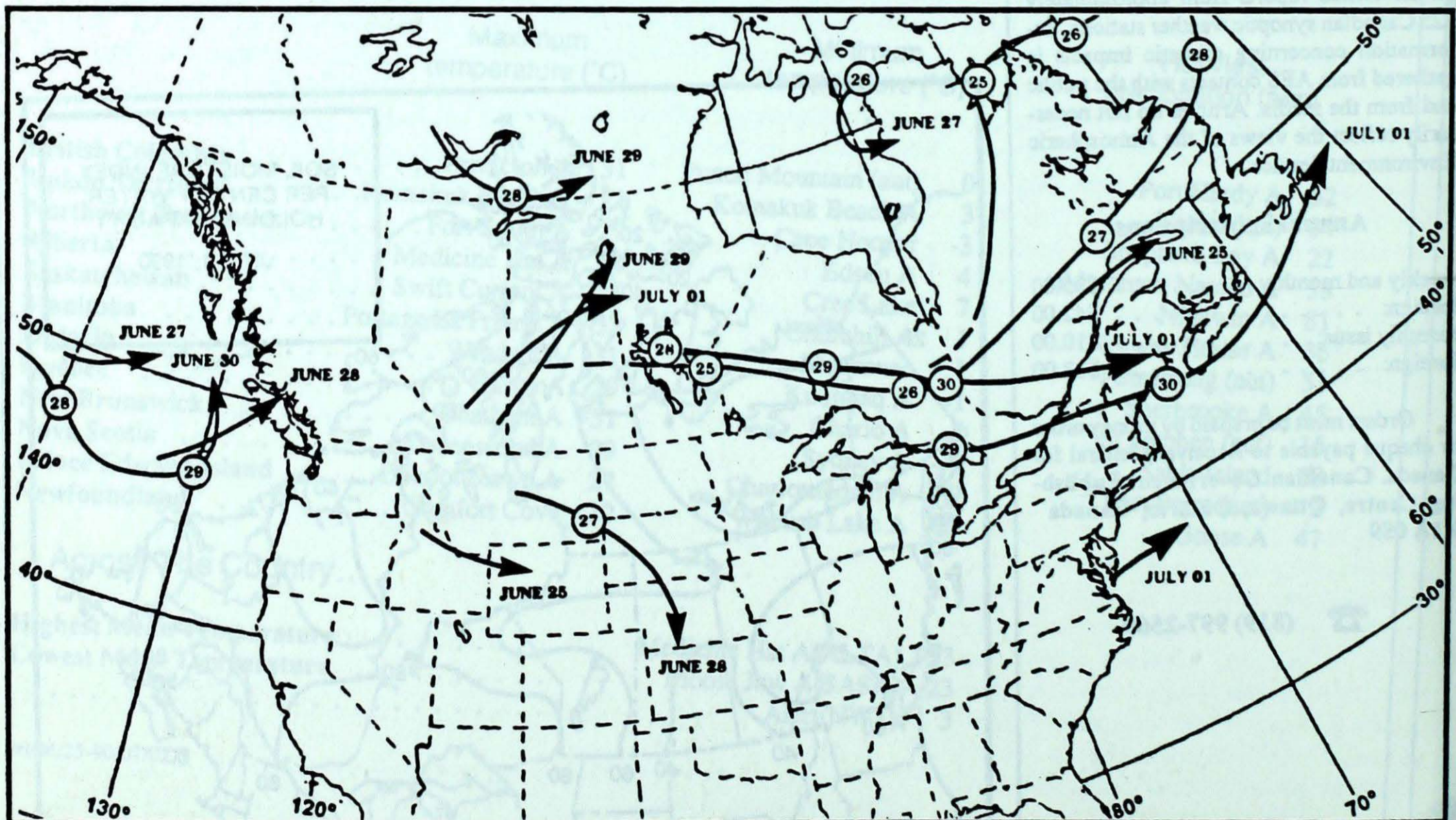
ATMOSPHERIC CIRCULATION



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

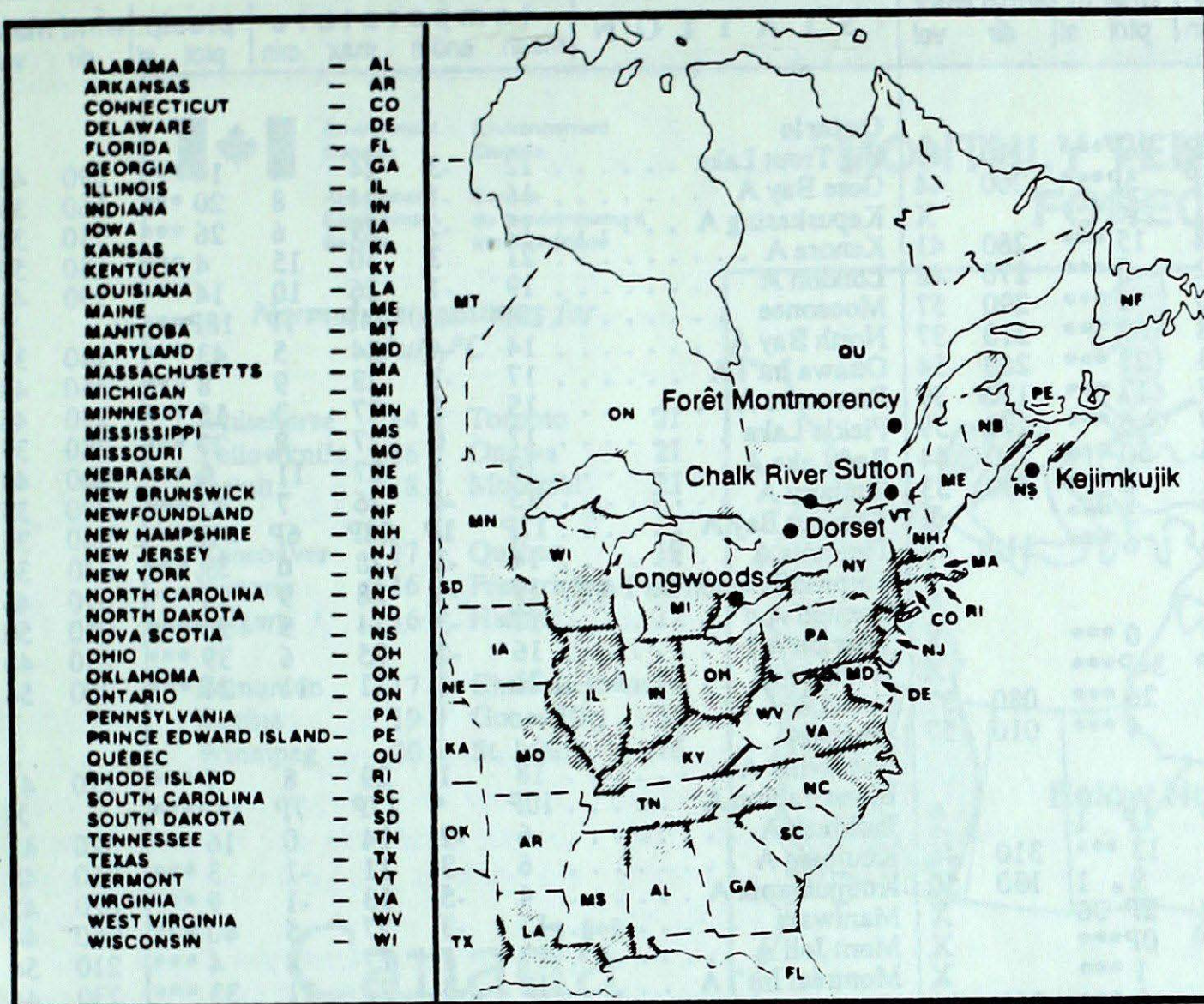


Mean geopotential height anomaly
50-kPa level (10-decametre intervals)



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.

Site	day	pH	amount	air path to site	June 24 to 30, 1990
Longwoods	26	3.5	10 R	..... Indiana, Ohio, Southern Ontario	
	30	4.6	6 R	..... Kentucky, Southern Ontario, Ohio	
Dorset *	24	4.3	7 R	..... North Eastern and Central Ontario	
	26	3.6	1 R	..... Michigan, Southern Ontario	
	28	3.9	1 R	..... Northern Wisconsin, Northern Michigan, Lake Huron	
	29	3.9	2 R	..... Indiana, Ohio, Southern Ontario	
Chalk River	26	3.7	5 R	..... Michigan, Southern Ontario	
	29	4.0	7 R	..... Southern Michigan, Southern Ontario	
	30	4.7	3 R	..... Central Ontario, Northwestern Quebec	
Sutton	24	4.0	2 R	..... Eastern Ontario, New York	
	25	4.4	2 R	..... Eastern Ontario, New York	
	27	3.9	10 R	..... Eastern Ontario, New York	
				..... Data not available from 28th to 30th	
Montmorency	26	4.2	7 R	..... Southern Ontario, Southern Quebec	
	27	4.5	6 R	..... Northwestern and Central Québec	
Kejimikujik				..... Data not available from 28th to 30th	
				..... No rain in the period 24th to 27th	
				..... Data not available from 28th to 30th	

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

STATION	temperature				precip.		wind max		STATION	temperature				precip.		wind max								
	mean	anom	max	min	ptot	st	dir	vel		mean	anom	max	min	ptot	st	dir	vel							
British Columbia								Ontario																
Cape St James	13P	2P	18P	10P	26P***		110	61	Big Trout Lake	12	-3	24	4	14	***	090	43							
Cranbrook A	19P	4P	29P	9P	3P***		200	44	Gore Bay A	16	-1	24	8	20	***	160	33							
Fort Nelson A	16	0	23	8	34	***		X	Kapuskasing A	15	-2	29	6	26	***	210	32							
Fort St John A	14	0	23	8	15	***	260	41	Kenora A	21	3	30	15	4	***	180	50							
Kamloops A	20	2	29	12	0	***	270	48	London A	19	-1	26	10	14	***	190	41							
Penticton A	20	3	31	10	8	***	290	57	Moosonee	10P	-4P	24P	1P	18P***		X								
Port Hardy A	13	1	19	8	62	***	210	37	North Bay A	14	-4	24	5	43	***	240	37							
Prince George A	14	1	23	3	27	***	260	54	Ottawa Int'l A	17	-3	28	9	8	***	350	48							
Prince Rupert A	14	2	18	7	17	***	150	39	Petawawa A	15	-3	27	3	15	***	280	46							
Revelstoke A	17	1	27	9	6	***	170	59	Pickle Lake	17	0	27	8	27	***	280	37							
Smithers A	13	0	21	5	50	***	250	44	Red Lake A	19	1	27	11	9	***	200	48							
Vancouver Int'l A	17	1	22	11	6	***	130	33	Sudbury A	15	-4	26	7	42	***	230	35							
Victoria Int'l A	15	1	22	7	3	***		X	Thunder Bay A	17P	1P	28P	6P	41P***		340	35							
Williams Lake A	14	2	23	6	6	***	110	43	Timmings A	14	-3	28	6	39	***	340	35							
Yukon Territory								Toronto (Pearson Int'l A)																
Komakuk Beach A	12	7	27	3	0	***		X	Trenton A	17	-3	24	9	26	***	030	50							
Teslin (aut)	14P	*	24P	6P	34P***			X	Warton A	16	-2	25	6	39	***	230	46							
Watson Lake A	14	0	25	6	26	***	080	37	Windsor A	21	-1	31	11	21	***	260	54							
Whitehorse A	14	1	23	5	4	***	010	57	Québec															
Northwest Territories								Bagotville A																
Alert	3P	1P	8P	-1P	1P	1		X	Blanc Sablon A	10P	*	17P	7P	15P***		X								
Baker Lake A	6	-2	18	0	13	***	310	46	Inukjuak A	6	-2	14	0	16	***	320	41							
Cambridge Bay A	7	2	14	1	2	1	130	50	Kuujuuaq A	6	-3	11	-1	3	***	260	48							
Cape Dyer A	7P	4P	11P	1P	2P	30		X	Kuujuuarapik A	4	-5	13	-1	9	***	020	41							
Clyde A	4P	1P	10P	-2P	0P***			X	Maniwaki	15	-3	27	5	40	***	260	44							
Coppermine A	9	3	17	2	1	***		X	Mont Joli A	17	1	27	8	4	***	210	54							
Coral Harbour A	6	0	14	1	9	***	060	50	Montréal Int'l A	18	-3	27	11	33	***	230	44							
Eureka	8	3	16	2	0	***	290	41	Natashquan A	12	0	21	7	1	***	270	46							
Fort Smith A	17P	2P	27P	9P	4P***		300	41	Québec A	17	-1	26	9	14	***	240	43							
Hall Beach A	4	1	10	1	0	1		X	Schefferville A	9	-3	17	1	12	***	260	54							
Inuvik A	15	3	27	2	0	***		X	Sept-Îles A	14	0	21	7	4	***	270	41							
Iqaluit A	7	1	14	2	3	***	100	48	Sherbrooke A	15P	-2P	26P	5P	45P***		260	41							
Mould Bay A	8	5	14	2	2	1		X	Val-d'Or A	14	-3	26	3	21	***	190	44							
Norman Wells A	16	0	25	7	20	***	250	43	New Brunswick															
Resolute A	6	3	10	1	0	1		X	Charlo A	18	2	30	7	6	***	280	74							
Yellowknife A	16	1	23	8	1	***	320	41	Chatham A	19	1	31	10	2	***	270	41							
Alberta								Fredericton A																
Calgary Int'l A	17	3	28	7	10	***	280	70	Moncton A	19	1	29	8	11	***	200	44							
Cold Lake A	19	4	28	11	10	***	300	50	Saint John A	18	1	28	8	7	***	220	61							
Edmonton Namao A	17	2	27	10	58	***	310	56		15	-1	23	8	6	***	200	39							
Fort McMurray A	18	2	28	9	36	***	280	33	Nova Scotia															
High Level A	16	1	23	7	11	***		X	Greenwood A	19	1	29	11	7	***	250	59							
Jasper	15	2	24	4	5	***		X	Shearwater A	17	1	24	11	27	***	210	48							
Lethbridge A	21	5	33	8	0	***	220	50	Sydney A	17	2	28	9	2	***	260	50							
Medicine Hat A	23	6	37	9	0	***	180	52	Yarmouth A	15	0	20	9	20	***	210	48							
Peace River A	15	1	25	5	36	***	240	41	Prince Edward Island															
Saskatchewan								Charlottetown A																
Cree Lake	17	1	27	7	32	***	330	32	Summerside A	18	1	26	10	1	***	190	56							
Estevan A	22	4	34	11	46	***	280	91	Newfoundland															
La Ronge A	19	3	29	10	8	***	300	46	Cartwright	10	0	17	3	39	***	300	52							
Regina A	22	5	33	11	7	***	150	83	Churchill Falls A	9	-3	20	3	18	***	240	65							
Saskatoon A	22	5	32	12	8	***	120	74	Gander Int'l A	17	3	28	5	13	***	250	41							
Swift Current A	22	6	35	10	13	***	170	69	Goose A	13	0	21	5	47	***	240	44							
Yorkton A	21	4	31	9	7	***	250	76	Port Aux Basques	12	1	20	7	20	***	080	44							
Manitoba								St John's A																
Brandon A	21	4	31	11	4	***	290	50	St Lawrence	13	3	22	7	19	***		X							
Churchill A	8	-1	21	1	15	***	030	67	Wabush Lake A	10	-2	19	2	14	***	240	65							
Lynn Lake A	16	1	27	9	22	***	360	37	90/06/25-90/07/01															
The Pas A	18	2	28	12	11	***		X																
Thompson A	15	0	28	3	16	***	270	67																
Winnipeg Int'l A	22	3	30	12	1	***	030	56																

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.

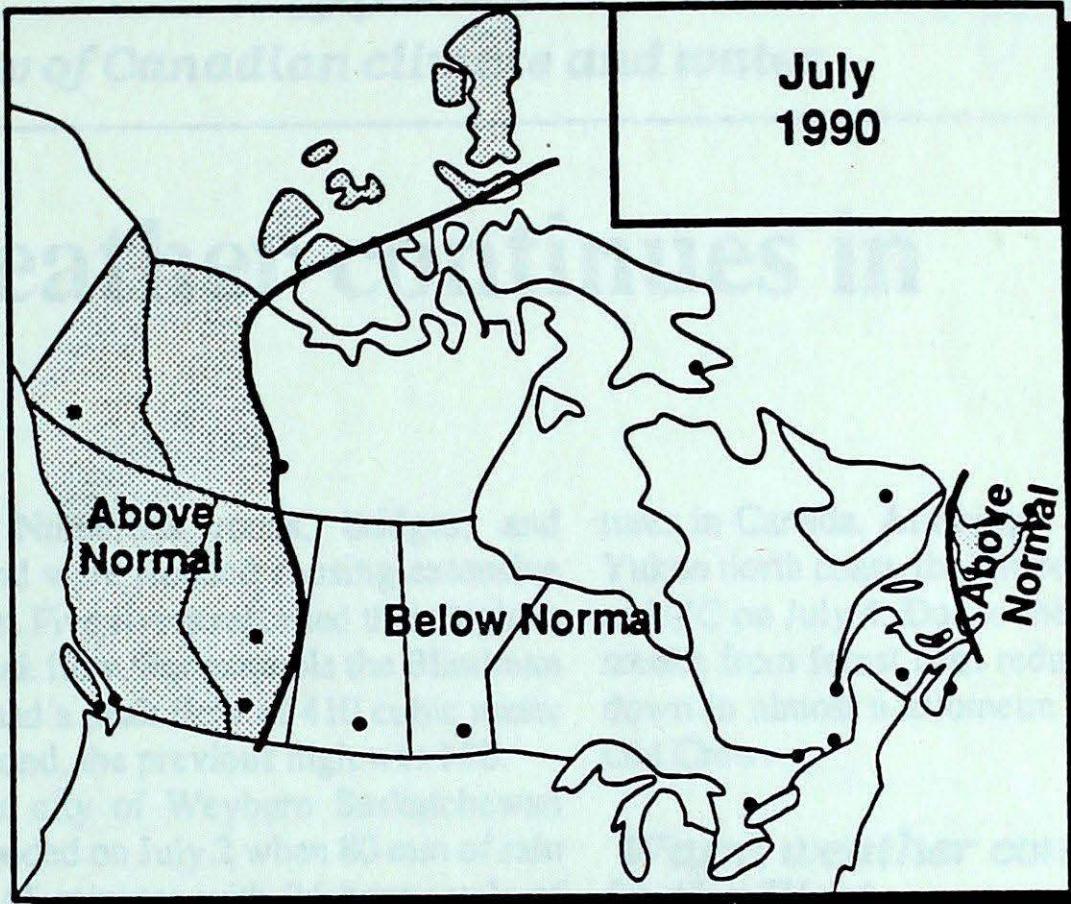


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MONTHLY TEMPERATURE FORECAST

Normal temperatures for July, °C

Whitehorse	14	Toronto	21
Yellowknife	16	Ottawa	21
Iqaluit	8	Montréal	21
Vancouver	17	Québec	19
Victoria	16	Fredericton	19
Calgary	16	Halifax	17
Edmonton	17	Charlottetown	18
Regina	19	Goose Bay	16
Winnipeg	20	St. John's	16



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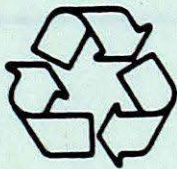
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