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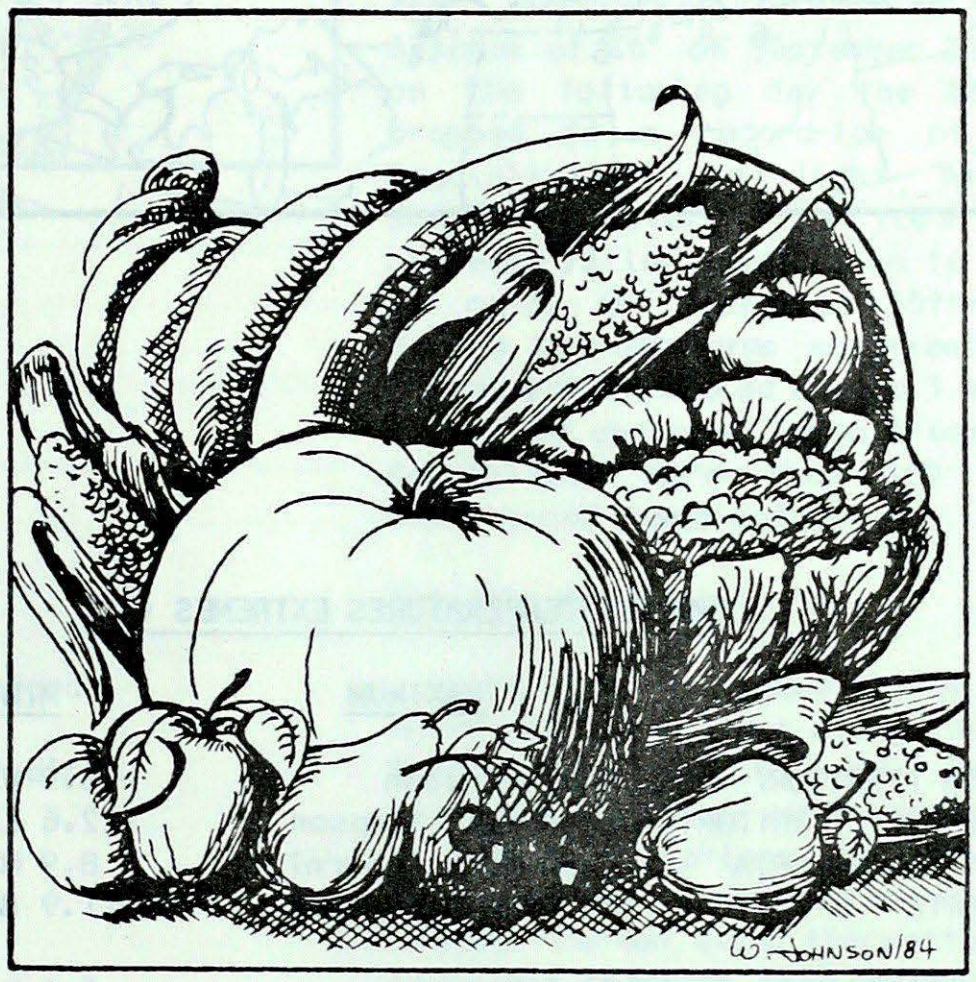
Climatic Perspectives

A WEEKLY REVIEW OF CANADIAN CLIMATE

OCTOBER 5, 1984 | (Aussi disponible en français) | VOL. 6 NO. 39

FOR THE PERIOD SEPTEMBER 25 TO OCTOBER 1, 1984

Harvest is nearly in as frosty temperatures cover the Nation



Frosty weather covered the Nation this week. Killing frost occurred from British Columbia to the St. Lawrence Valley as the temperatures registered 2 to 4 degrees below normal. Just before the Thanksgiving weekend, harvest was nearly in across most of the Provinces. Apple harvest was in full swing in the Okanagan Valley, however, frost damaged some vineyards in the interior of British Columbia. Harvesting was complete in the grainbelt of the Prairies, but lagged a few weeks in central Alberta. From the Great Lakes to the Maritimes, relatively dry weather allowed harvesting to progress rapidly.

- ***Cool and wet weather delays field work in Central Alberta***
- ***Autumn weather trends in Atlantic Canada***

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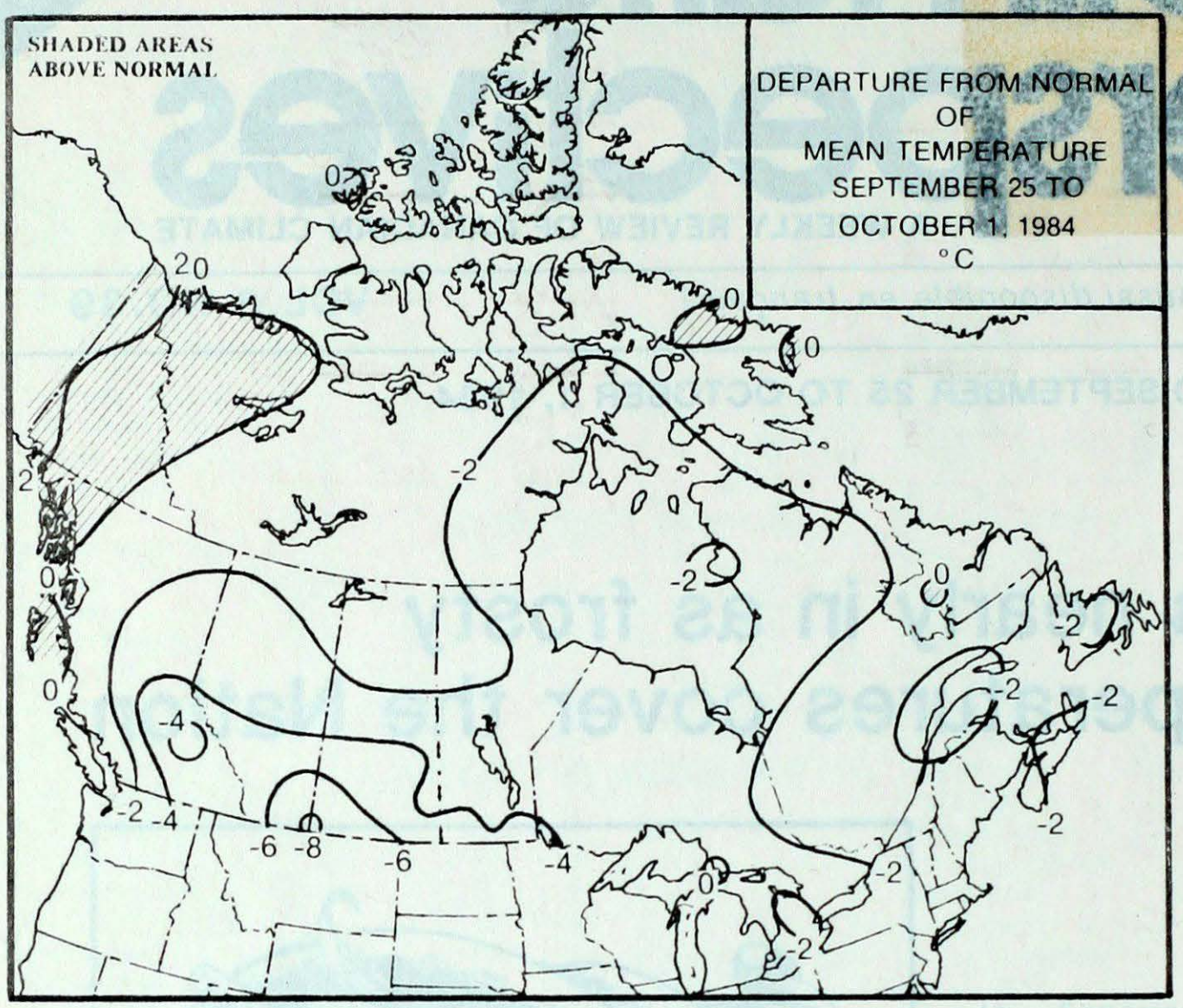
NOTE: The data shown in this publication are based on unverified reports from approximately 225 Canadian synoptic stations.

Canada



WEEKLY TEMPERATURES EXTREMES (°C)

	MAXIMUM		MINIMUM	
YUKON TERRITORY	14.7	Burwash	- 8.9	Watson Lake
NORTHWEST TERRITORIES	15.0	Fort Simpson	-22.6	Eureka
BRITISH COLUMBIA	22.4	Port Alberni	- 8.9	Mackenzie
ALBERTA	21.4	Medicine Hat	-11.9	Banff
SASKATCHEWAN	21.5	Estevan	- 6.6	Regina
MANITOBA	21.3	Brandon Pilot Mound	- 5.5	Gretna
ONTARIO	25.2	Toronto Wairton	- 5.5	Atikokan
QUÉBEC	26.0	Sherbrooke	- 6.1	Kuujjuaq
NEW BRUNSWICK	23.6	Chatham	- 2.6	Chatham
NOVA SCOTIA	26.3	Greenwood	- 0.4	Truro
PRINCE EDWARD ISLAND	22.3	Summerside	3.0	Charlottetown
NEWFOUNDLAND	22.7	Daniels Harbour	- 7.7	Badger

ACROSS THE NATION

Warmest mean temperature	12.5	Cape St James, BC
Coolest mean temperature	-16.2	Eureka, NWT

ACROSS THE COUNTRY...

Yukon and Northwest Territories

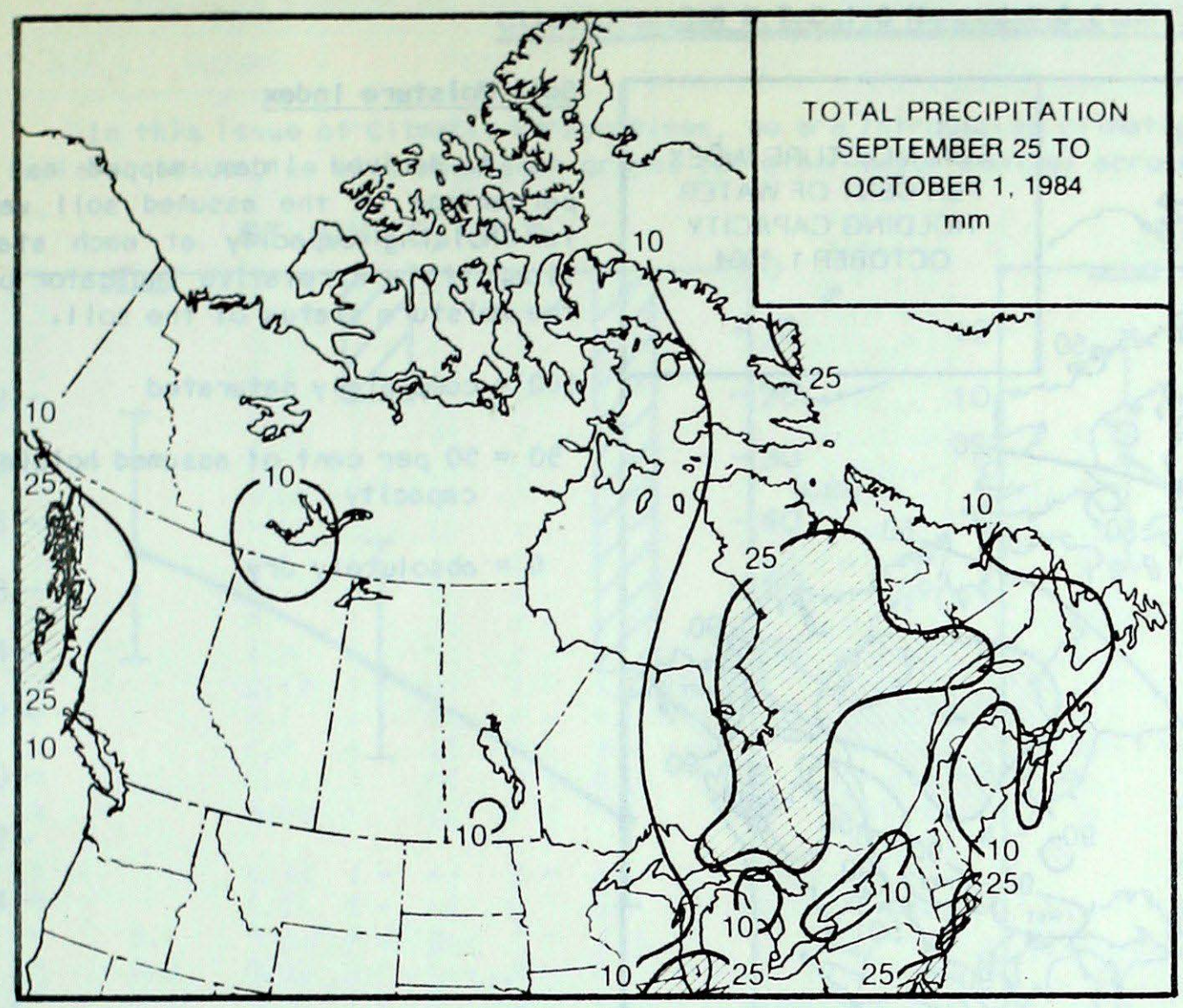
Mild air covered most of the Yukon and the Mackenzie District this week. Mean maximum temperatures in the Yukon were about 10°. Although this is normal for the southern portions of the territory, it is 7 to 8 degrees above the seasonable value for the North. Eastern Arctic was generally cooler than average, and in the Far North the readings remained below -10° all week. Precipitation was light across the Territories, but 15 to 35 mm fell over Baffin Island.

British Columbia

Fine autumn weather prevailed under mostly sunny skies. Mean temperatures were significantly below normal, especially in the southern interior, where many daily minimum temperature records were set. Castlegar established a new monthly minimum temperature record of -4.3° on September 28. A killing frost has occurred in most interior districts of the Province. The apple harvest was in full swing in the Okanagan fruit belt, but almost two weeks behind schedule. Local frost has damaged some vineyards, but the grape harvest is underway. In the southern Peace River District 30 per cent of the fields have been harvested. Extensive slash burning continues in all areas of the Province.

Prairies

Unsettled conditions gave way to a pleasant but cool weather regime throughout most of the week. Overnight temperatures frequently dropped to well below freezing and a killing frost was reported everywhere. On Sept. 27, the overnight temperature at Banff dropped to -12°. Daytime temperatures moderated significantly over the weekend, reaching the low twenties in the South. Harvesting is almost completed in the South, but still continues in central Alberta and in the Peace River District. The cool and wet conditions of the past few weeks have rapidly deteriorated the quality of the remaining grain crops.



HEAVIEST WEEKLY PRECIPITATION (mm)

YUKON	2.8	Dawson
NORTHWEST TERRITORIES	49.8	Cape Dyer
BRITISH COLUMBIA	39.7	Langara
ALBERTA	7.4	Banff
SASKATCHEWAN	7.0	North Battleford
MANITOBA	13.3	Portage la Prairie
ONTARIO	35.0	Wawa
QUEBEC	34.3	Schefferville
NEW BRUNSWICK	11.0	Moncton
NOVA SCOTIA	15.8	Greenwood
PRINCE EDWARD ISLAND	10.8	Summerside
NEWFOUNDLAND	23.5	Daniels Harbour

New climatic Atlas

The Atmospheric Environment Service has released the first series of maps in its Climatic Atlas Climatique - Canada. Series 1, Temperature and Degree Days, contains 59 maps based on the 1951-1980 climate normals. Over the next 2 years AES will issue nine more series charting precipitation, wind, solar radiation and bright sunshine, cloud cover, atmospheric pressure, humidity, soil temperature and evaporation, snow and ice cover, and fog and hail. The completed series will be the first new edition of Canadian climatic maps in 17 years.

Ontario

The first full week of fall was cool and unsettled across Ontario. The temperatures were 2 to 4 degrees below normal and the first killing frost of the season struck much of southern Ontario on the mornings on September 27th-28th. Storms systems crossing the upper Great Lakes deposited between 5 to 15 cm of snow in Northwestern Ontario; and on September 26, a vigorous cold front accompanied by gale force winds caused power disruptions for several hours in southern Ontario.

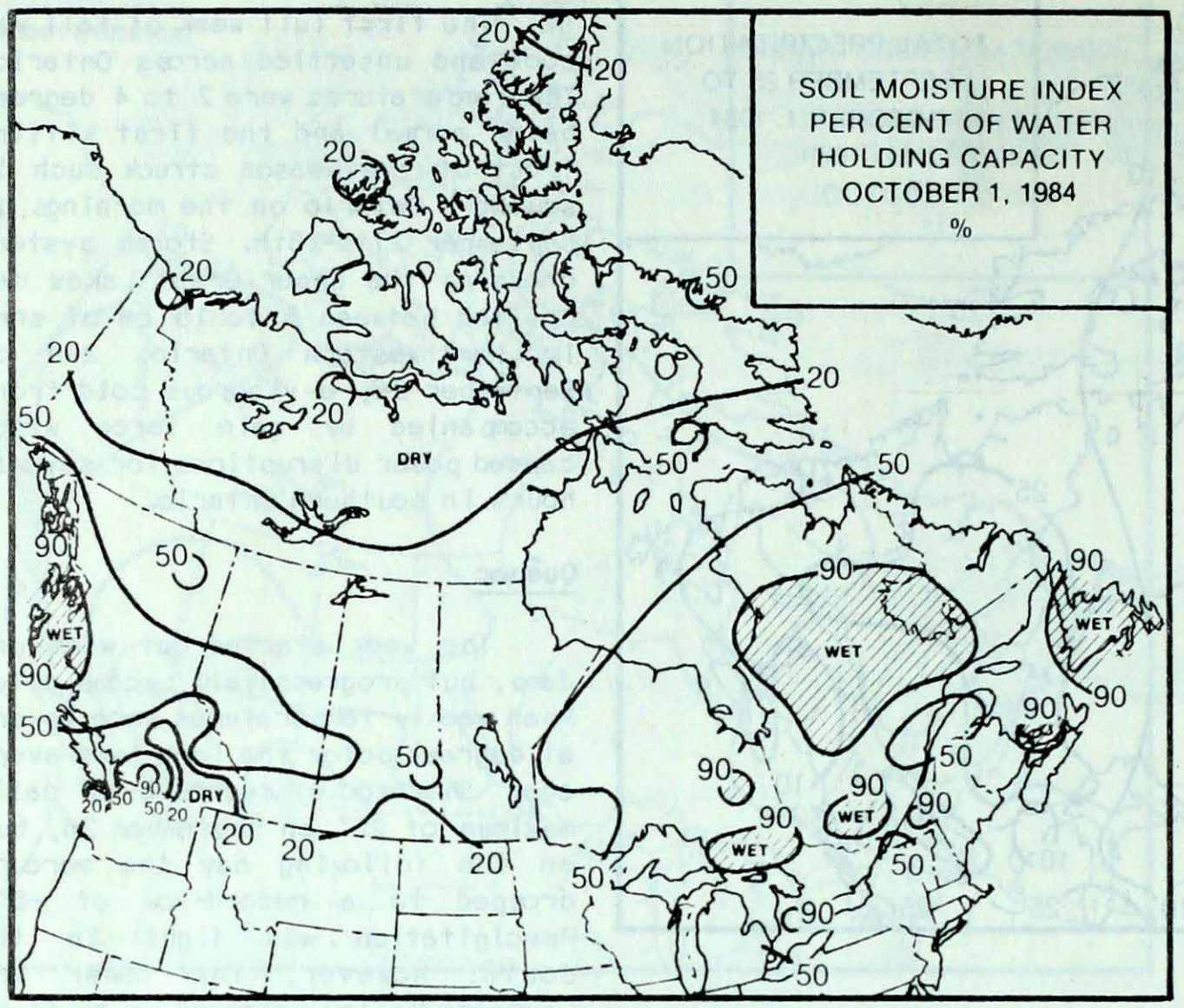
Québec

The week started out warm and damp, but progressively became cold. Mean weekly temperatures were several degrees below the long term average. Sherbrooke recorded a daily maximum of 26° on September 26, but on the following day the mercury dropped to a record-low of -5°. Precipitation was light in the South; however, the lower St. Lawrence Valley received up to 43 mm of rain. On September 25th-26th, severe thunderstorms accompanied by strong winds knocked downed 3 mobile homes and uprooted large trees near Bagotville. More than 300 homes experienced power outages.

Atlantic Provinces

Extremes in temperatures characterized the weather along the East Coast. Early in the week, record-high temperatures were established at several locations including 26° at Greenwood on September 26. The weather turned cold thereafter and overnight readings fell below record levels at a few locations. For most of the week, the weather was dry, but 15 to 25 mm of rain fell on September 26. Owing to the dry weather, potato harvest was progressing rapidly in New Brunswick and the grain and tobacco harvest was nearly completed in Prince Edward Island.

SOIL MOISTURE



Soil Moisture Index

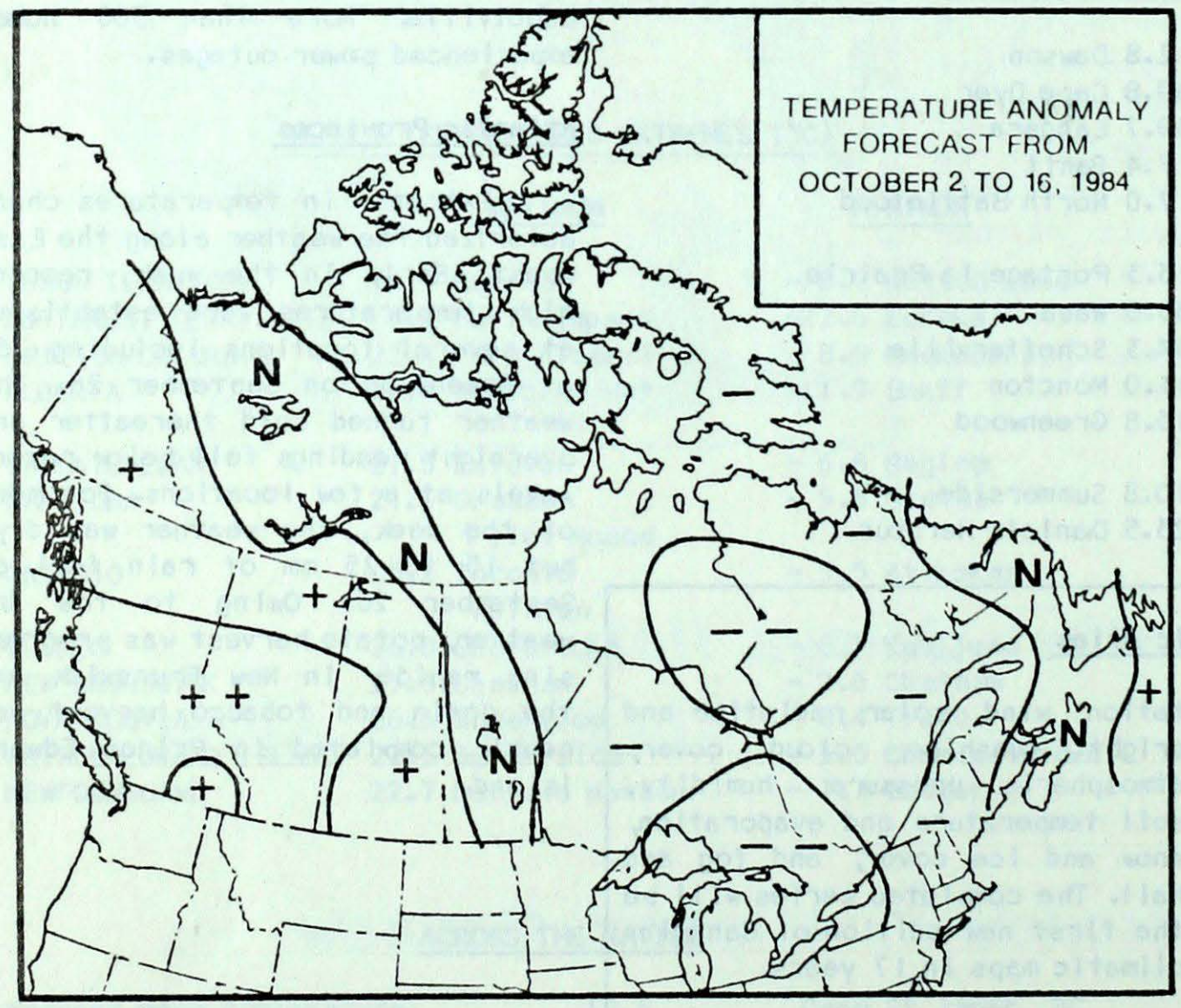
A derived index mapped as a percentage of the assumed soil water holding capacity at each station. It is a relative indicator of the moisture status of the soil.

100 = completely saturated

50 = 50 per cent of assumed holding capacity

0 = absolutely dry

TEMPERATURE ANOMALY FORECAST



Temperature Anomaly Forecast

The temperature anomaly forecast, for each of the 70 Canadian stations, is prepared by searching historical weather maps to find cases similar to the present one. The principle used is that a prediction for the next 15 days may be based on what is known to have actually happened during the 15-day anomaly periods. After the five best sets are selected, the surface temperature anomalies are calculated. This results in five separate forecasts, which are averaged to provide the consensus forecast depicted.

++ much above normal

\+ above normal

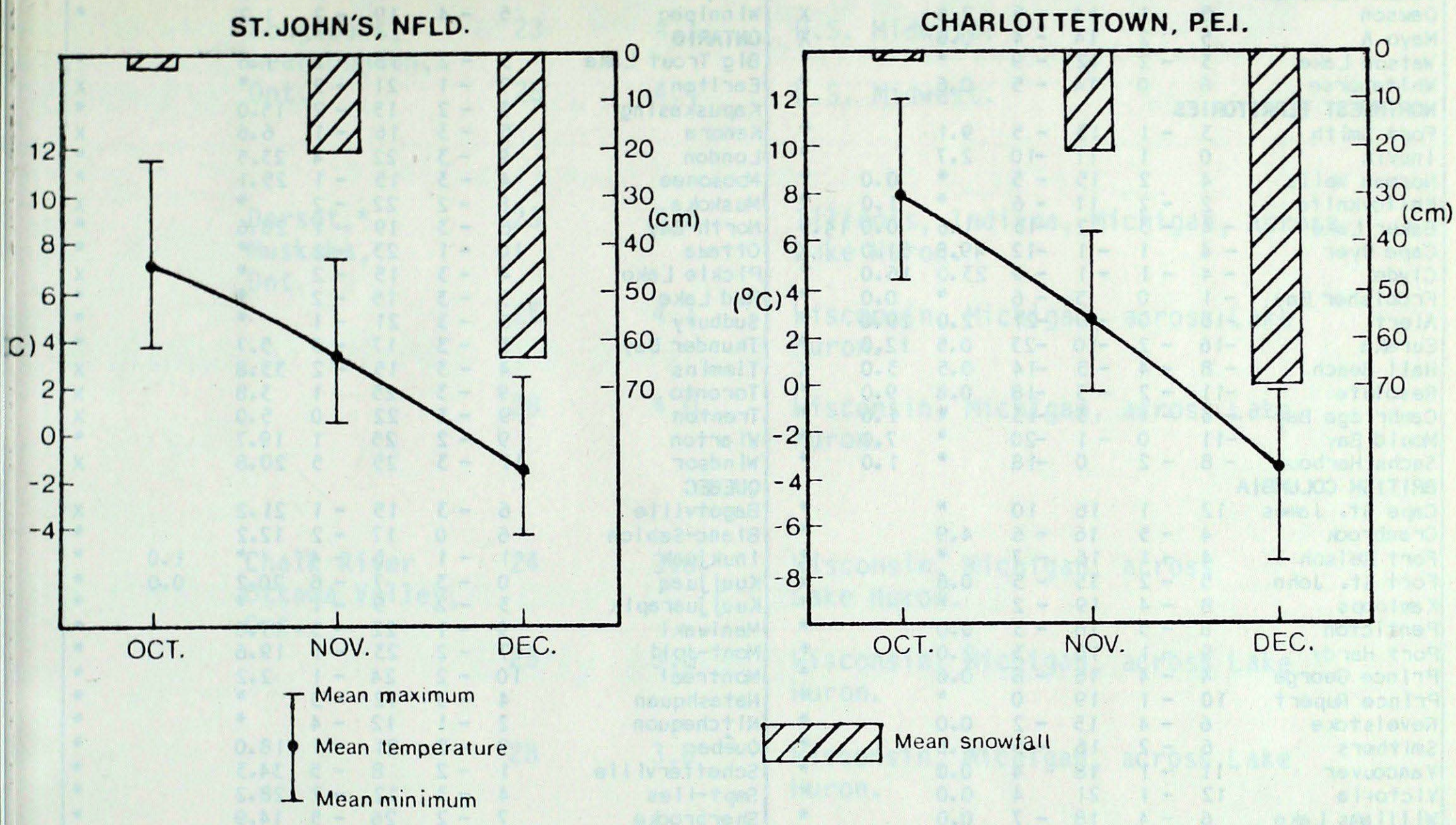
N normal

\- below normal

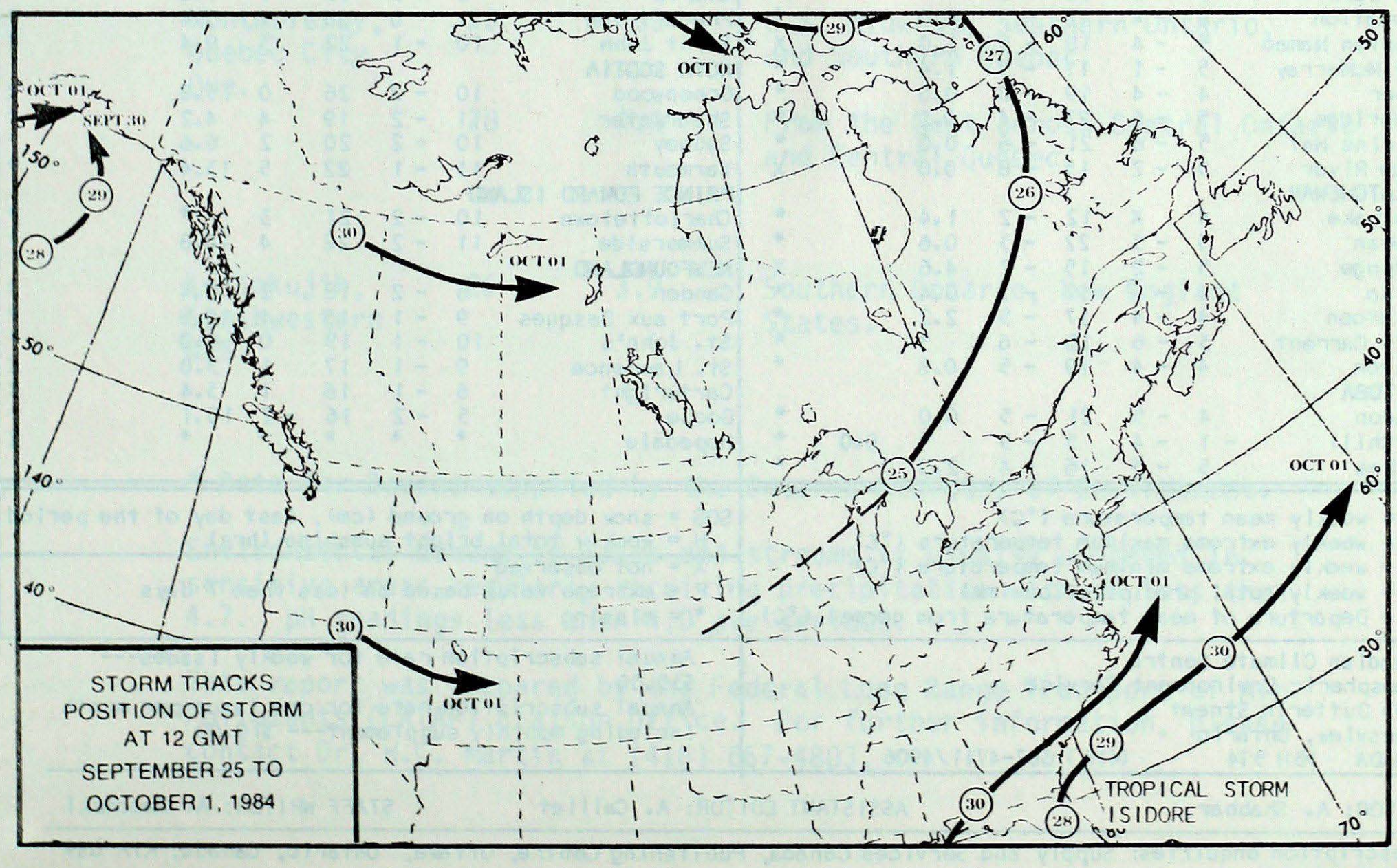
-- much below normal

Climatological trends in Temperature and Snowfall

In this issue of Climatic Perspectives, we are introducing climatic graphs of temperature and snowfall. In later issues, we will show such graphs for other major centres across Canada.



STORM TRACKS



TEMPERATURE, PRECIPITATION AND BRIGHT SUNSHINE DATA FOR THE WEEK ENDING 0600 GMT OCTOBER 02, 1984

STATION	TEMP				PRECIP		SUN
	Av	Dp	Mx	Mn	Tp	SOG	H
YUKON TERRITORY							
Dawson	5	1	14	- 5	2.8		X
Mayo A	5	2	14	- 4	0.8		X
Watson Lake	3	- 2	12	- 9	*		*
Whitehorse	6	0	14	- 5	0.6		*
NORTHWEST TERRITORIES							
Fort Smith	3	- 1	13	- 5	9.1		*
Inuvik	0	1	11	-10	2.7		*
Norman Wells	4	2	15	- 5	*	0.0	*
Yellowknife	2	- 2	11	- 6	*	1.0	*
Baker Lake	- 4	- 3	2	-13	1.6	0.0	14.5
Cape Dyer	- 4	1	- 1	-12	49.8	51.0	X
Clyde	- 4	- 1	- 1	- 9	23.0	16.0	*
Frobisher Bay	- 1	0	3	- 6	*	0.0	*
Alert	-15	0	- 9	-21	2.0	29.0	*
Eureka	-16	- 2	-10	-23	0.5	12.0	*
Hall Beach	- 8	- 4	- 3	-14	0.5	3.0	X
Resolute	-11	- 2	- 3	-18	0.8	9.0	*
Cambridge Bay	- 6	- 1	3	-13	*	1.0	*
Mould Bay	-11	0	- 1	-20	*	7.0	*
Sachs Harbour	- 8	- 2	0	-18	*	1.0	*
BRITISH COLUMBIA							
Cape St. James	12	1	16	10	*		*
Cranbrook	4	- 5	16	- 6	4.9		*
Fort Nelson	4	- 1	16	- 7	*		*
Fort St. John	5	- 2	15	- 5	0.6		X
Kamloops	8	- 4	19	- 2	*		*
Penticton	8	- 5	18	- 3	0.0		*
Port Hardy	9	- 1	18	3	2.0		*
Prince George	4	- 4	16	- 8	0.6		*
Prince Rupert	10	- 1	19	0	*		*
Revelstoke	6	- 4	15	- 2	0.0		*
Smithers	6	- 2	16	- 5	2.6		*
Vancouver	11	- 1	18	4	0.0		*
Victoria	12	- 1	21	4	0.0		*
Williams Lake	6	- 4	18	- 7	0.0		*
ALBERTA							
Calgary	3	- 6	18	- 8	1.4		*
Cold Lake	5	- 3	18	- 5	*		*
Coronation	4	- 4	16	- 5	0.0		*
Edmonton Namao	5	- 4	18	- 5	1.0		X
Fort McMurray	5	- 1	17	- 5	1.4		*
Jasper	4	- 4	19	- 8	0.0		*
Lethbridge	5	- 6	21	- 4	0.2		*
Medicine Hat	5	- 6	21	- 6	0.0		*
Peace River	5	- 2	15	- 8	0.0		X
SASKATCHEWAN							
Cree Lake	4	X	12	- 2	1.4		*
Estevan	5	- 5	22	- 3	0.6		*
La Ronge	5	- 2	15	- 2	4.6		X
Regina	4	- 5	19	- 7	0.4		*
Saskatoon	4	- 4	17	- 5	2.2		*
Swift Current	3	- 6	18	- 6	*		*
Yorkton	4	- 4	19	- 5	0.8		*
MANITOBA							
Brandon	4	- 5	21	- 5	0.0		*
Churchill	- 1	- 4	5	- 5	*	0.0	*
The Pas	5	- 3	16	- 4	2.0		*
Thompson	3	- 1	15	- 5	0.5		*
Winnipeg	5	- 4	19	- 2	1.2		*
ONTARIO							
Big Trout Lake	3	- 2	12	- 2	1.6		*
Earlton	7	- 1	21	- 2	*		X
Kapuskasing	5	- 2	15	- 2	15.0		*
Kenora	5	- 3	16	- 1	6.6		X
London	9	- 3	22	4	23.5		*
Moosonee	4	- 3	15	- 1	25.1		*
Muskoka	8	- 2	22	- 2	*		X
North Bay	6	- 3	19	- 1	28.6		*
Ottawa	10	- 1	23	- 1	*		*
Pickle Lake	4	- 3	15	- 2	*		X
Red Lake	5	- 3	15	- 2	*		*
Sudbury	6	- 3	21	- 1	*		*
Thunder Bay	5	- 3	17	- 3	5.7		*
Timmins	4	- 3	15	- 2	33.8		X
Toronto	9	- 3	25	1	3.8		X
Trenton	9	- 3	22	0	5.0		X
Wiarton	9	- 2	25	1	19.7		*
Windsor	11	- 3	25	5	20.8		X
QUEBEC							
Bagotville	6	- 3	15	- 1	21.2		X
Blanc-Sablon	6	0	17	- 2	12.2		*
Inukjuak	1	- 1	5	- 4	*	1.0	*
Kuujjuaq	0	- 3	7	- 6	20.2	0.0	*
Kuujjuarapik	3	- 2	9	- 1	*		*
Maniwaki	9	- 1	22	- 3	17.6		*
Mont-Joli	7	- 2	23	- 1	19.6		*
Montréal	10	- 2	24	- 1	2.2		*
Natashquan	4	- 3	12	- 3	*		*
Nitchequon	2	- 1	12	- 4	*		*
Québec	9	- 2	21	- 1	18.0		*
Schefferville	1	- 2	8	- 5	34.3		*
Sept-Iles	4	- 3	12	- 2	28.2		*
Sherbrooke	7	- 2	26	- 5	14.9		*
Val-d'Or	6	- 2	21	0	*		*
NEW BRUNSWICK							
Charlo	6	- 3	19	- 1	7.8		*
Fredericton	11	0	23	1	5.4		*
Saint John	10	- 1	22	3	9.4		*
NOVA SCOTIA							
Greenwood	10	- 2	26	0	15.8		X
Shearwater	11	- 2	19	4	4.2		*
Sydney	10	- 2	20	2	6.6		*
Yarmouth	11	- 1	22	5	13.4		*
PRINCE EDWARD ISLAND							
Charlottetown	10	- 2	21	3	*		*
Summerside	11	- 2	22	4	10.8		*
NEWFOUNDLAND							
Gander	8	- 2	18	2	6.4		*
Port aux Basques	9	- 1	15	4	10.8		*
St. John's	10	- 1	19	0	6.0		*
St. Lawrence	9	- 1	17	1	3.0		X
Cartwright	6	- 1	16	1	3.4		X
Goose	5	- 2	16	- 2	10.1		*
Hopedale	*	*	*	*	*		X

Av = weekly mean temperature (°C)
Mx = weekly extreme maximum temperature (°C)
Mn = weekly extreme minimum temperature (°C)
Tp = weekly total precipitation (mm)
Dp = Departure of mean temperature from normal (°C)

SOG = snow depth on ground (cm), last day of the period
H = weekly total bright sunshine (hrs)

X = not observed
P = extreme value based on less than 7 days
* = missing

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ACID RAIN REPORT ISSUED BY ENVIRONMENT CANADA FOR SEPTEMBER 23-29, 1984

SITE	DAY	pH	AIR PATH TO SITE
Longwoods, near London, Ont.	23	4.1	U.S. Midwest.
	25	4.4	U.S. Midwest.
Dorset,* Muskoka, Ont.	23	3.8	Illinois, Indiana, Michigan, across Lake Huron.
	25	4.1	Wisconsin, Michigan, across Lake Huron.
	28	4.0	Wisconsin, Michigan, across Lake Huron.
Chalk River Ottawa Valley, Ont.	24	3.8	Wisconsin, Michigan, across Lake Huron.
	25	3.8	Wisconsin, Michigan, across Lake Huron.
	28	3.6	Wisconsin, Michigan, across Lake Huron.
Montmorency, Quebec City Que.	25	4.3	U.S. Midwest, Southern Ontario, and Southern Quebec.
	28	4.4	From the West across Central Ontario and Central Quebec.
Kejimkujik, Southwestern N.S.	26	3.9	Southern Ontario, New England States.

* Data for Dorset supplied by the Ontario Ministry of Environment.

Environmental damage to lakes and streams is usually observed in sensitive areas regularly receiving precipitation with pH less than 4.7. pH readings less than 4.0 are serious.

This report was prepared by the Federal Long Range Transport of Air Pollutants (LRTAP) Liaison Office. For further information, please contact Dr. H.C. Martin at (416) 667-4803.