

Climatic Perspectives

A WEEKLY REVIEW OF CANADIAN CLIMATE

Canadian Climate Centre

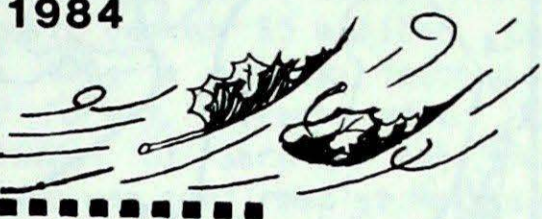
SEPTEMBER 7, 1984

(Aussi disponible en français)

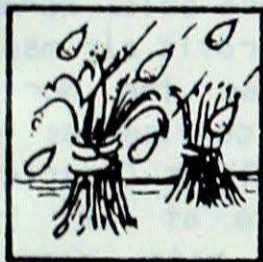
VOL. 6 NO. 35

FOR THE PERIOD AUGUST 28 TO SEPTEMBER 3, 1984

A TOUCH OF AUTUMN.....



Cold and snow in the Yukon



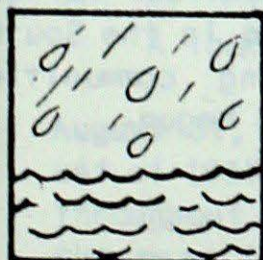
Cool and wet weather delays harvest in central British Columbia



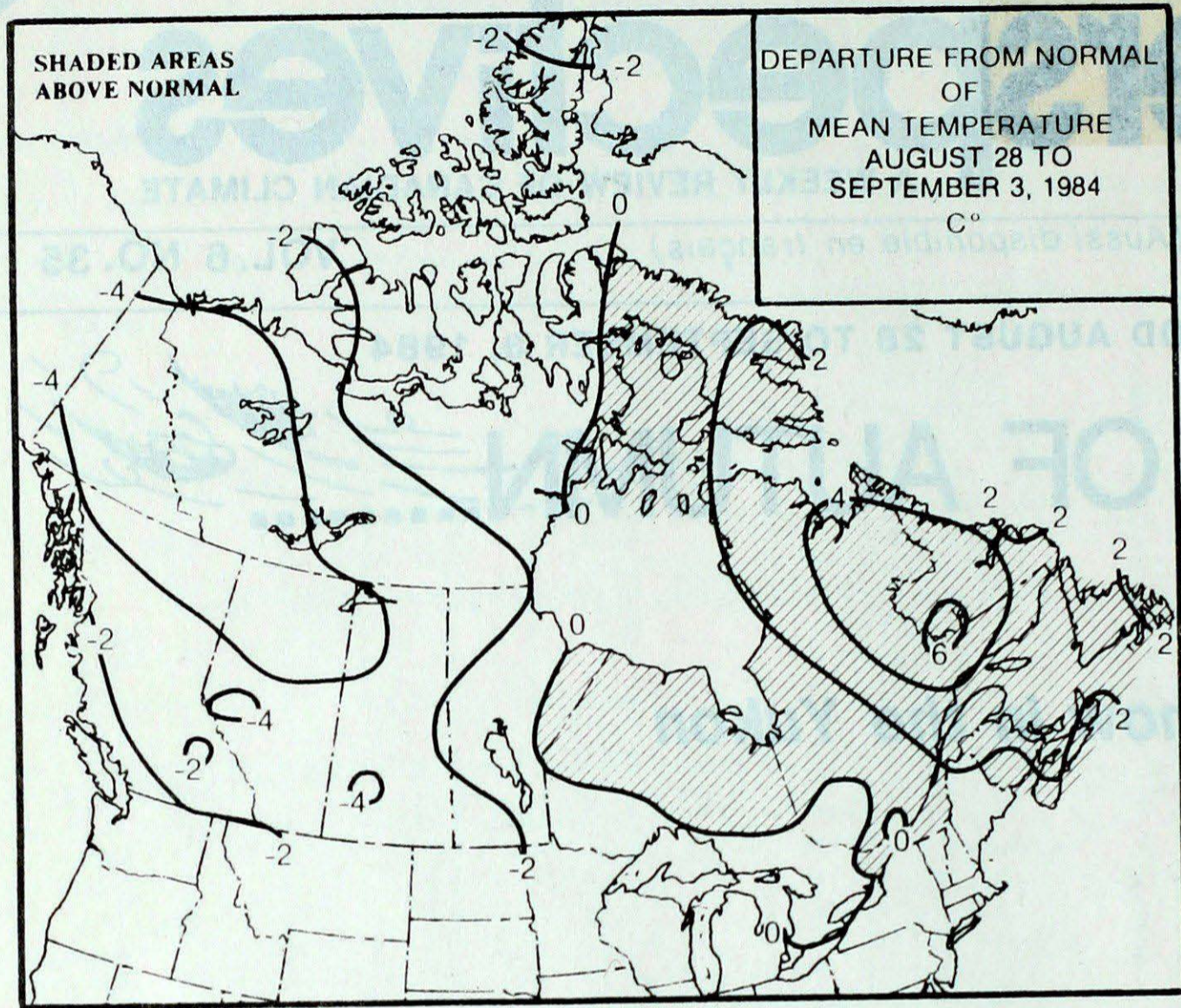
Snow caps the Rockies, widespread frost in Alberta



Record-cold and rain covers the Great Lakes Basin - Destructive tornadoes near London



Heavy rains cause minor flooding in Newfoundland



ACROSS THE COUNTRY...

Yukon and Northwest Territories

Wintry temperatures and snow-fall dominated the weather over the Yukon and the Mackenzie District. Mean temperatures were 3 to 6 degrees below normal; at Whitehorse, record-low daytime readings were established on 5 consecutive days. Only southern Baffin Island experienced unseasonable warmth this week. In the Yukon, rain mixed with snow fell on numerous occasions, up to 9 cm of snow fell in the central Yukon but higher amounts were recorded in the mountainous areas.

British Columbia

Approaching weather systems gave predominantly cool and unsettled weather, especially along the North Coast. The South received a significant amount of sunshine, but mean temperatures were below normal everywhere. A cold Arctic air mass, which brushed across the North, deposited several centimetres of snow in the Peace River District. The mean temperature at Fort St. John was almost 7° below normal. The harvest is progressing reasonably well in the South, but continues to be delayed by cool and wet conditions in central and southern British Columbia.

Prairies

Much cooler weather slipped southward early in the week. Frost was widespread in many central and northern communities, but only scattered ground frost was reported in the South. Minimum temperatures dropped to record-low values in Alberta. The mercury at both Red Deer and Rocky Mountain House plummeted to -4°; elsewhere, night time temperatures hovered near freezing. Snow fell at the higher elevations in the Rockies. Harvest is nearing completion in the South, and in some farming communities Autumn field work has begun.

Ontario

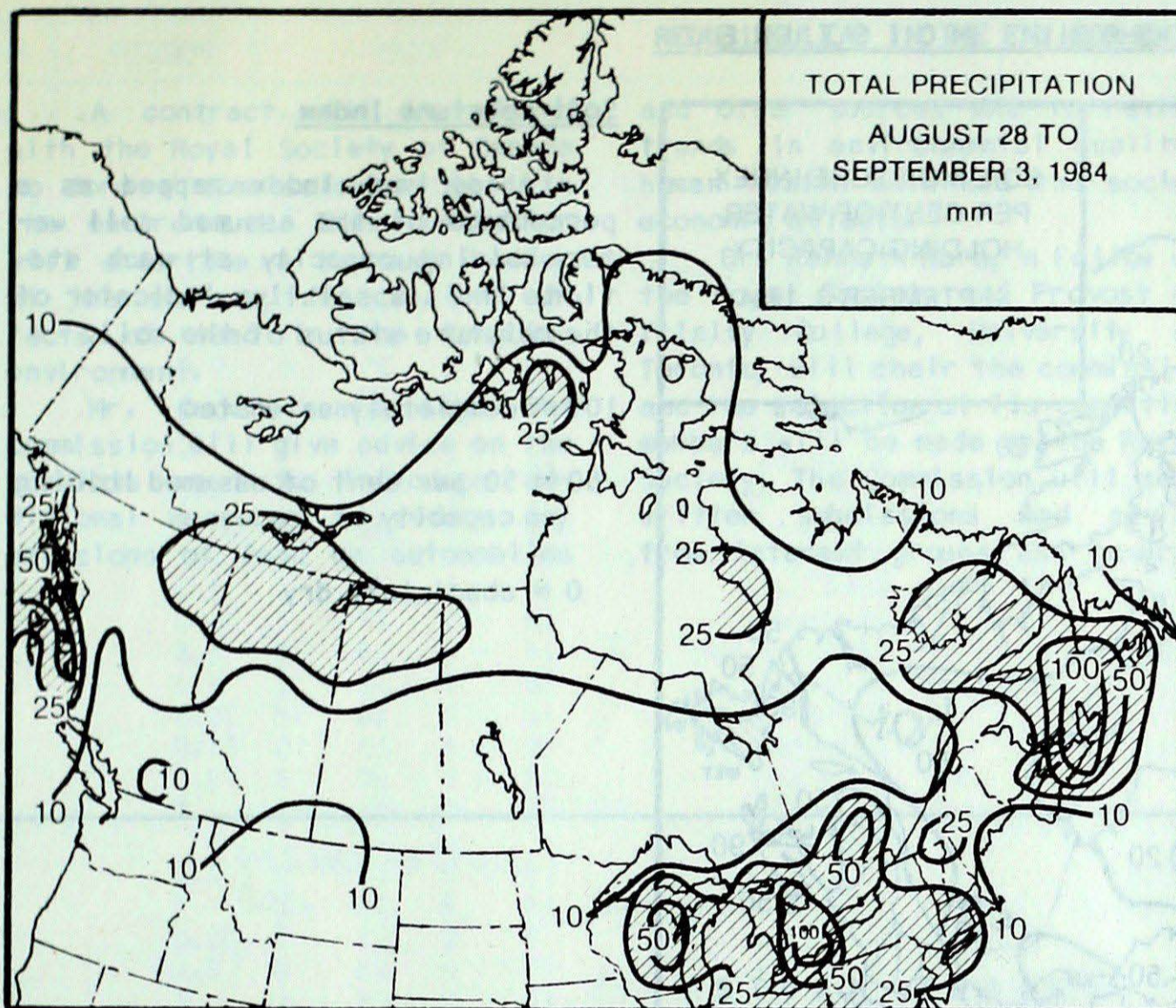
Violent storms highlighted Ontario's weather. Severe thunderstorms and tornadoes struck south-

WEEKLY TEMPERATURES EXTREMES (°C)

	<u>MAXIMUM</u>	<u>MINIMUM</u>
YUKON TERRITORY	14.6 Dawson	-6.5 Dawson
NORTHWEST TERRITORIES	17.1 Coral Harbour	-10.6 Alert
BRITISH COLUMBIA	28.1 Lytton	-4.7 Puntzi Mountain
ALBERTA	22.3 Lethbridge Medicine Hat	-3.9 Rocky Mountain House
SASKATCHEWAN	27.4 Estevan	-2.0 Meadow Lake
MANITOBA	34.9 Gretna	-3.5 Thompson
ONTARIO	34.9 Kenora	0.6 Atikokan
QUÉBEC	29.0 Gaspé	1.4 La Grand Rivière
NEW BRUNSWICK	30.7 Chatham	7.6 Miscou Island
NOVA SCOTIA	28.1 Greenwood	4.0 Shelburne
PRINCE EDWARD ISLAND	26.5 Charlottetown	11.1 Charlottetown
NEWFOUNDLAND	28.3 Badger	3.8 Badger

ACROSS THE NATION

Warmest mean temperature	21.3	Windsor, Ont
Coollest mean temperature	-5.6	Alert, NWT



western Ontario on several occasions. On August 30, destructive winds caused considerable property damage in London, large trees were uprooted and roofs were torn off some houses. And on September 2, a tornado cut a wide path of destruction through south London. At least 33 persons were injured from flying debris and property damage was estimated to be near \$5 million. On the same day, a tornado touched down near Forest, Ontario about 30 km northeast of Sarnia. Yet another tornado was confirmed at Melrose, 20 km west of London. Two barns and one house were flattened and damaging hail destroyed some tobacco crops near Tilsonberg. Otherwise, the week was very cool and wet. Record-low daytime temperatures were set in the South including 16° at Hamilton on September 3.

Quebec

August ended on a warm note. Many daily record-high temperatures were set as the mercury climbed near 30° in the South. However, over the weekend, a cold front swept the Province and the readings dropped several degrees. The North was especially cold. Precipitation was light. The dry weather allowed harvest to progress around Trois-Rivières and Estrie. In Abitibi and Temiscamisque, cereal crops have ripened and the hay harvest was nearly 50 per cent complete.

Atlantic Provinces

The weather was warm but wet along the East Coast. Record-warm temperatures were established at several locations; for example 27° at Cartwright on September 1. Deluges of rain in the 25 to 140 mm range inundated eastern Nova Scotia and southern Newfoundland. At Sydney, nearly 100 mm of rain washed out roads and raging waters in the Mira River flattened a few houses near the banks. The heavy rains caused some potato blight in Newfoundland. Owing the warm July and August weather, a bumper corn crop was expected in Nova Scotia. Because of the cool nights, cold crops such as broccoli and cauliflowers were suffering from "Downy mildew" in New Brunswick.

HEAVIEST WEEKLY PRECIPITATION (mm)

YUKON	17.8	Burwash
NORTHWEST TERRITORIES	27.6	Hay River
BRITISH COLUMBIA	87.9	Prince Rupert
ALBERTA	42.8	High Level
SASKATCHEWAN	24.2	Uranium City
MANITOBA	24.8	Lynn Lake
ONTARIO	115.8	London
QUEBEC	72.4	Maniwaki
NEW BRUNSWICK	30.7	Moncton
NOVA SCOTIA	139.8	Eddy Point
PRINCE EDWARD ISLAND	36.1	Charlottetown
NEWFOUNDLAND	111.2	Port Aux Basques

Historically this week...

A look into the past reveals some extreme weather events...

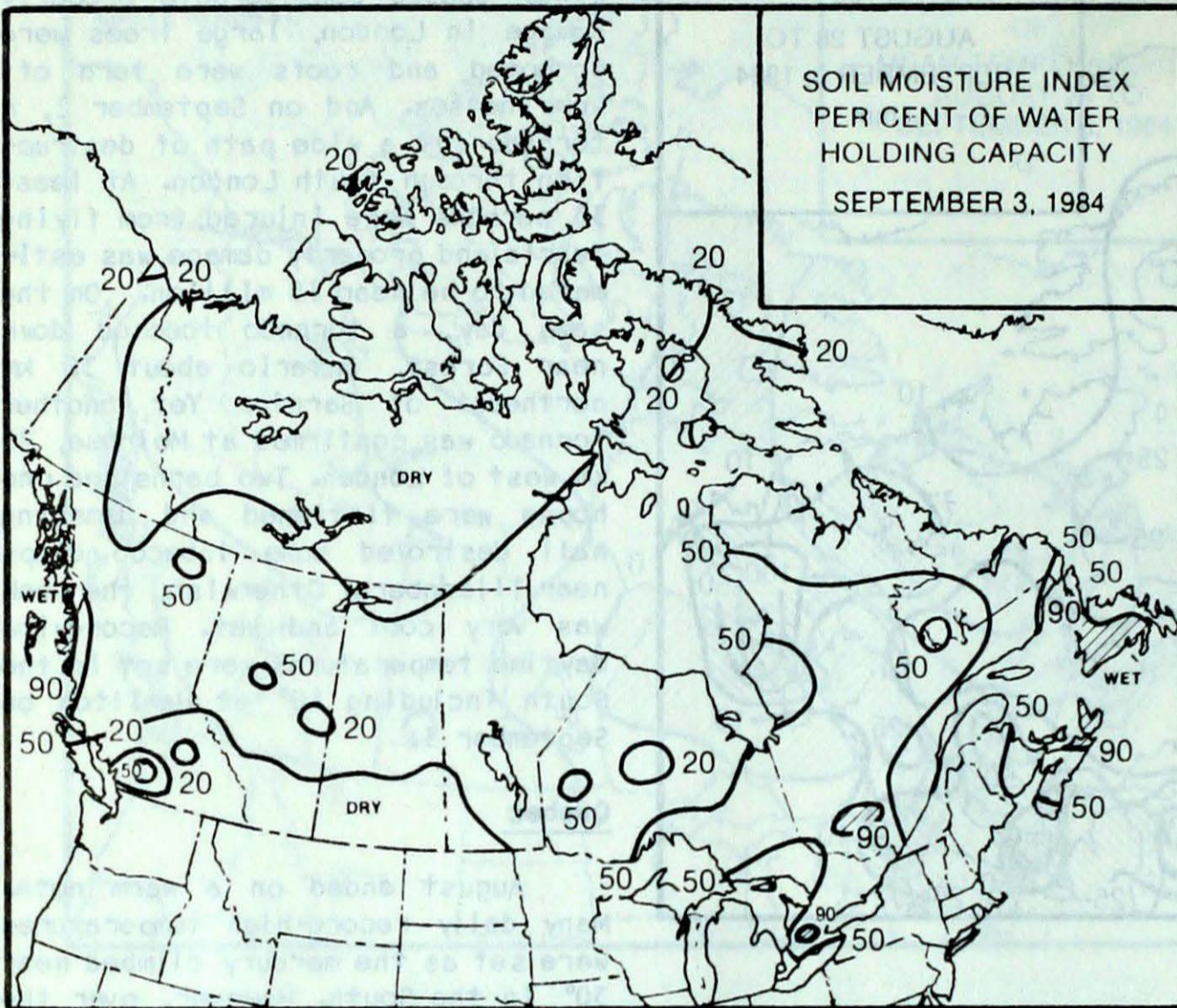
August 31, 1955 - July and August of 1955 were exceedingly warm throughout most of Ontario with the mean for the two months exceeding 24° throughout southern Ontario.

August 31 1957 - This August was the driest calendar month on

record at Montréal. Dorval airport reported only 0.5 mm

August 31, 1967 - This was the foggiest summer on record along the Atlantic coast of Nova Scotia where Yarmouth reported fog on 85 of the 92 days in June, July and August.

SOIL MOISTURE



Soil Moisture Index

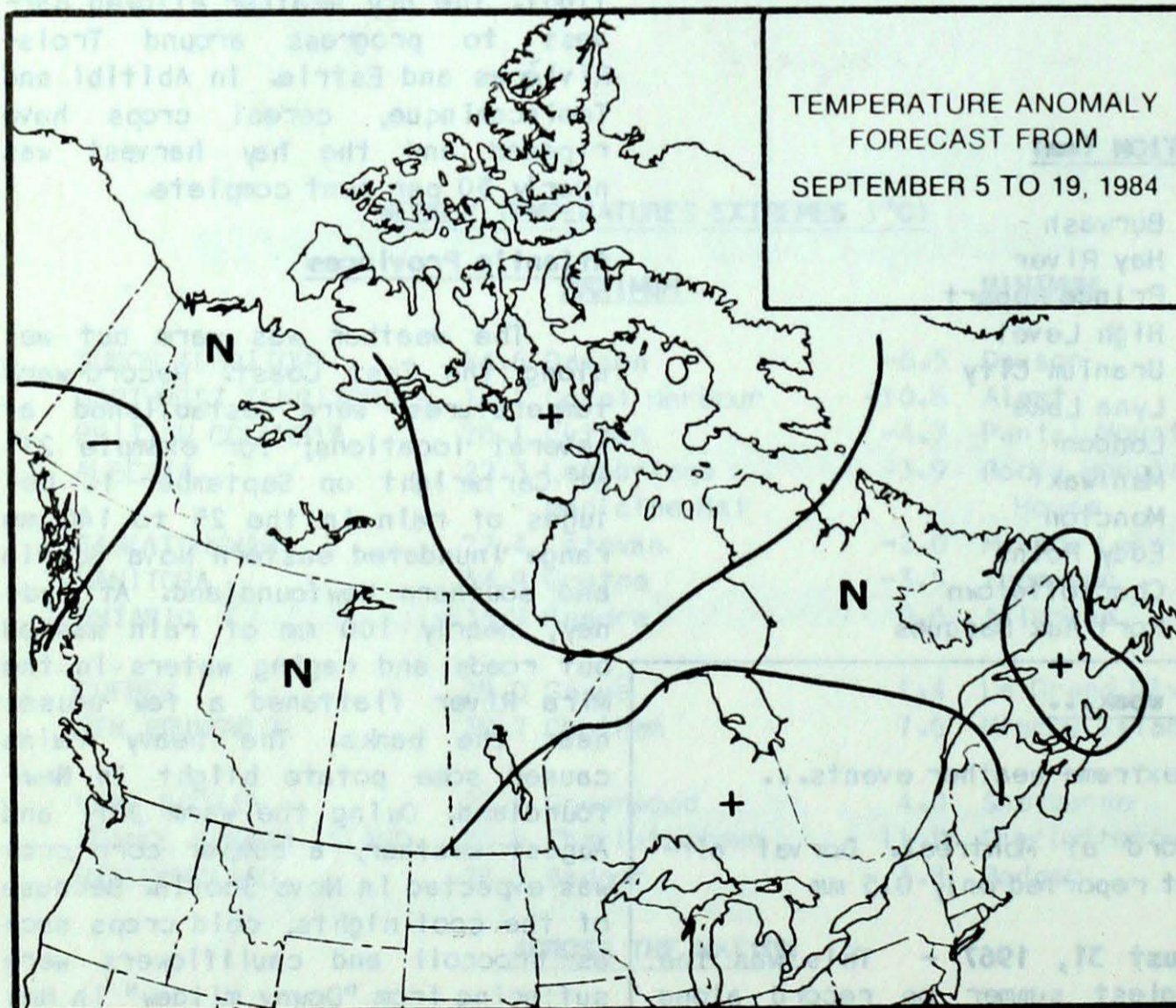
A derived index mapped as a percentage of the assumed soil water holding capacity at each station. It is a relative indicator of the moisture status of the soil.

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

REDUCING LEAD IN THE ENVIRONMENT

A contract will be signed with the Royal Society of Canada to form a commission on lead in the environment. This commission will undertake a thorough review of the sources, impacts and effects of lead in the Canadian environment.

Mr. Cacchia said that the commission will give advice on the possible need to introduce additional measures to reduce any emissions of lead by automobiles

and other sources and to review trends in environmental quality, human health data and the socio-economic effects.

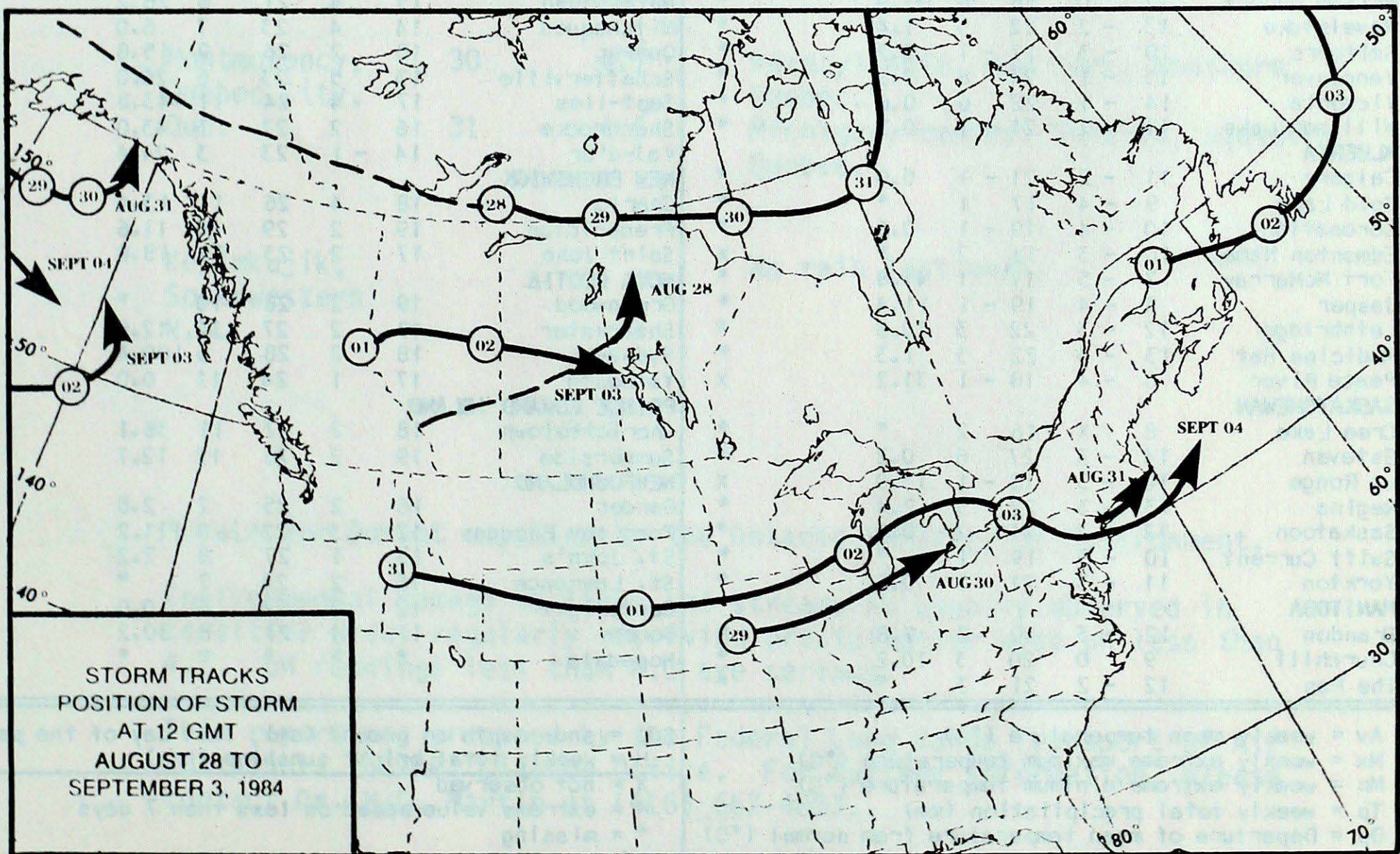
Dr. Kenneth Hare, a Fellow of the Royal Society and Provost of Trinity College, University of Toronto, will chair the commission and the selection of its committee members will be made by the Royal Society. The Commission will seek written submissions and advice from interest groups and govern-

ment agencies across the country and report the findings and recommendations to the Minister of the Environment in 1986.

In December 1983, Mr. Cacchia announced plans to reduce lead levels in gasoline from the existing level of 0.77 g/l, to the standard currently in effect in the United States of 0.29 g/l by January 1, 1987.

- Information Directorate

STORM TRACKS



TEMPERATURE, PRECIPITATION AND BRIGHT SUNSHINE DATA FOR THE WEEK ENDING 0600 GMT SEPTEMBER 4, 1984

STATION	TEMP				PRECIP		SUN	STATION	TEMP				PRECIP		SUN
	Av	Dp	Mx	Mn	Tp	SOG	H		Av	Dp	Mx	Mn	Tp	SOG	H
YUKON TERRITORY								Thompson	10	0	25	-4	6.6		*
Dawson	4	-6	15	-7	6.7		X	Winnipeg	14	-2	33	4	3.6		*
Mayo A	6	-3	14	-1	11.9		X	ONTARIO							
Watson Lake	6	-5	14	1	11.6		*	Big Trout Lake	13	0	31	4	5.6		X
Whitehorse	5	-5	13	-2	17.2		*	Earlton	16	1	27	8	*		X
NORTHWEST TERRITORIES								Kapuskasing	15	1	30	3	1.4		*
Fort Smith	8	-4	14	-3	M		*	Kenora	16	0	35	8	0.0		X
Inuvik	3	-4	14	-6	0.0		*	London	19	0	27	12	115.8		*
Norman Wells	4	-6	14	-2	2.0		*	Moosonee	15	2	29	2	2.4		*
Yellowknife	8	-3	15	0	1.0		*	Muskoka	16	-1	24	7	*		X
Baker Lake	6	-1	13	0	18.0		*	North Bay	15	-1	25	8	18.0		*
Cape Dyer	4	1	12	-3	9.6		X	Ottawa	18	0	28	10	21.2		*
Clyde	4	1	10	0	M		*	Pickle Lake	14	0	32	0	9.2		X
Frobisher Bay	3	-2	10	0	2.4		*	Red Lake	14	-1	34	1	2.8		*
Alert	-6	-2	-1	-11	9.6	6.0	*	Sudbury	16	-1	27	7	38.6		*
Eureka	-2	-2	1	-5	2.8	2.0	*	Thunder Bay	14	-1	25	3	2.8		*
Hall Beach	3	0	9	0	22.1	0.0	X	Timmins	16	1	30	6	4.4		X
Resolute	-2	-2	3	-6	1.0		*	Toronto	18	-1	28	10	39.8		X
Cambridge Bay	3	-1	9	-1	4.6		*	Trenton	18	-1	25	10	21.0		X
Mould Bay	-2	0	1	-5	*	1.0	0.2	Warton	17	-1	28	9	72.7		*
Sachs Harbour	-2	-3	2	-5	*	1.0	*	Windsor	21	0	31	13	*		X
BRITISH COLUMBIA								QUEBEC							
Cape St. James	13	-1	16	10	20.6		*	Bagotville	17	2	27	5	5.8		X
Cranbrook	13	-2	22	3	0.8		*	Blanc-Sablon	14	2	23	8	*		*
Fort Nelson	6	-6	15	0	28.4		*	Inukjuak	9	2	21	3	46.6		*
Fort St. John	8	-5	14	1	2.4		X	Kuujuuaq	13	4	25	4	0.0		*
Kamloops	15	-2	25	5	3.8		*	Kuujuarapik	12	2	25	1	*		*
Penticton	15	-2	25	4	*		*	Maniwaki	16	0	25	7	72.4		*
Port Hardy	14	1	20	5	15.7		*	Mont-Joli	17	3	27	10	21.3		*
Prince George	10	-2	19	-2	*		*	Montréal	18	0	29	9	16.6		*
Prince Rupert	12	0	18	8	87.9		*	Natashquan	15	4	21	6	26.2		*
Revelstoke	13	-2	22	5	1.4		*	Nitchequon	14	4	23	7	6.0		36.0
Smithers	10	-3	17	-1	5.2		*	Québec	18	2	26	9	15.8		*
Vancouver	15	-1	24	8	2.9		*	Schefferville	13	5	23	6	20.0		*
Victoria	14	-1	22	6	0.6		*	Sept-Îles	17	4	24	11	43.8		*
Williams Lake	11	-2	21	-1	0.2		*	Sherbrooke	16	2	27	3	43.0		*
ALBERTA								Val-d'Or	14	-1	23	3	24.4		*
Calgary	11	-2	21	-1	0.0		*	NEW BRUNSWICK							
Cold Lake	9	-4	17	1	*		*	Charlo	18	4	26	11	13.4		*
Coronation	10	-4	19	-1	0.6		*	Fredericton	19	2	29	10	11.6		*
Edmonton Namao	10	-3	18	2	*		X	Saint John	17	2	23	12	18.8		*
Fort McMurray	7	-5	17	1	41.8		*	NOVA SCOTIA							
Jasper	8	-4	19	-1	11.4		*	Greenwood	19	2	28	10	*		X
Lethbridge	12	-3	22	3	10.8		*	Shearwater	19	2	27	12	12.0		*
Medicine Hat	13	-3	22	3	1.3		*	Sydney	18	2	28	6	100.4		*
Peace River	8	-4	18	-1	31.2		X	Yarmouth	17	1	24	11	0.0		*
SASKATCHEWAN								PRINCE EDWARD ISLAND							
Cree Lake	8	X	16	2	*		*	Charlottetown	18	2	27	11	36.1		*
Estevan	14	-3	27	6	0.2		*	Summerside	19	2	26	12	12.7		*
La Ronge	10	-3	18	-1	13.0		X	NEWFOUNDLAND							
Regina	13	-3	22	5	2.4		*	Gander	16	2	25	7	2.8		*
Saskatoon	12	-3	21	2	0.6		*	Port aux Basques	17	3	22	9	111.2		*
Swift Current	10	-5	19	1	*		*	St. John's	15	1	27	8	2.2		*
Yorkton	11	-3	21	1	0.8		*	St. Lawrence	16	2	24	7	*		X
MANITOBA								Cartwright	12	2	27	6	0.0		X
Brandon	12	-3	30	2	2.8		*	Goose	17	4	27	8	30.2		*
Churchill	9	0	20	3	10.2		*	Hopedale	*	*	*	*	*		X
The Pas	12	-2	21	3	*		*								

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 AUG. 26 - SEPT. 1, 1984

SITE	DAY	pH	AIR PATH TO SITE
Longwoods, near London, Ont.	28	4.1	U.S. Midwest.
	29	4.3	Indiana, Ohio, southern Ontario.
	1	3.9	Wisconsin, Michigan.
Dorset,* Muskoka, Ont.	28	3.6	U.S. Midwest.
	29	4.1	Indiana, Michigan, central Ontario.
	30	4.3	Ohio, across Lake Huron and Georgian Bay.
Chalk River Ottawa Valley, Ont.	27	3.7	Ohio, Michigan, central Ontario.
	28	4.0	U.S. Midwest.
	29	4.0	Indiana, Michigan, central Ontario.
	30	4.1	Ohio, central Ontario.
Montmorency, Quebec City, Que.	30	4.1	Pennsylvania, New York, southern Quebec.
	31	4.5	Michigan, central Ontario, southern Quebec.
Kejimikujik, Southwestern N.S.			No rain last week.

* 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.