

Climatic Perspectives

A WEEKLY REVIEW OF CANADIAN CLIMATE



Canadian Climate Centre

OCTOBER 19, 1984

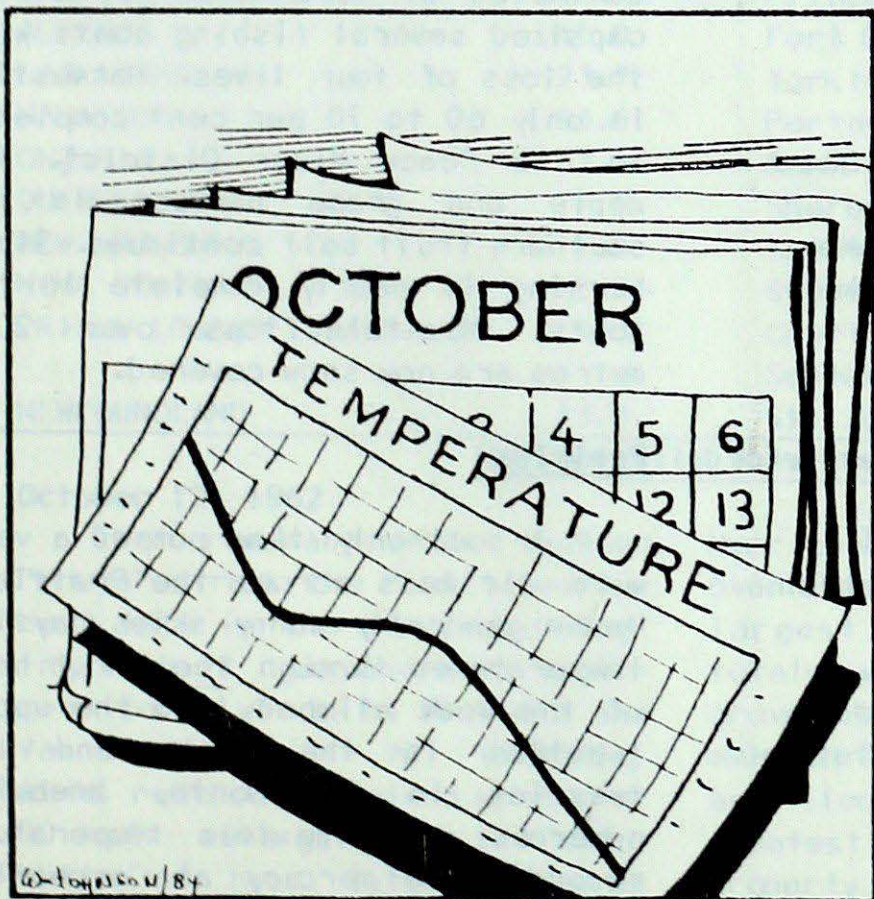
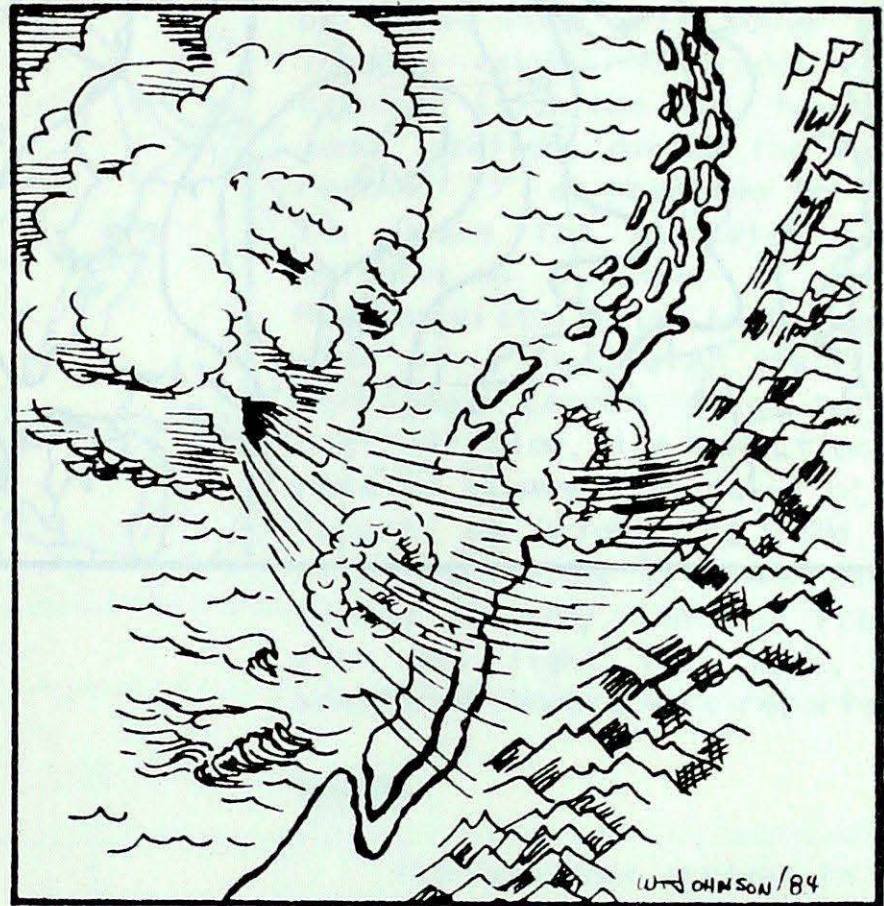
(Aussi disponible en français)

VOL. 6 NO. 41

FOR THE PERIOD OCTOBER 9 TO 15, 1984

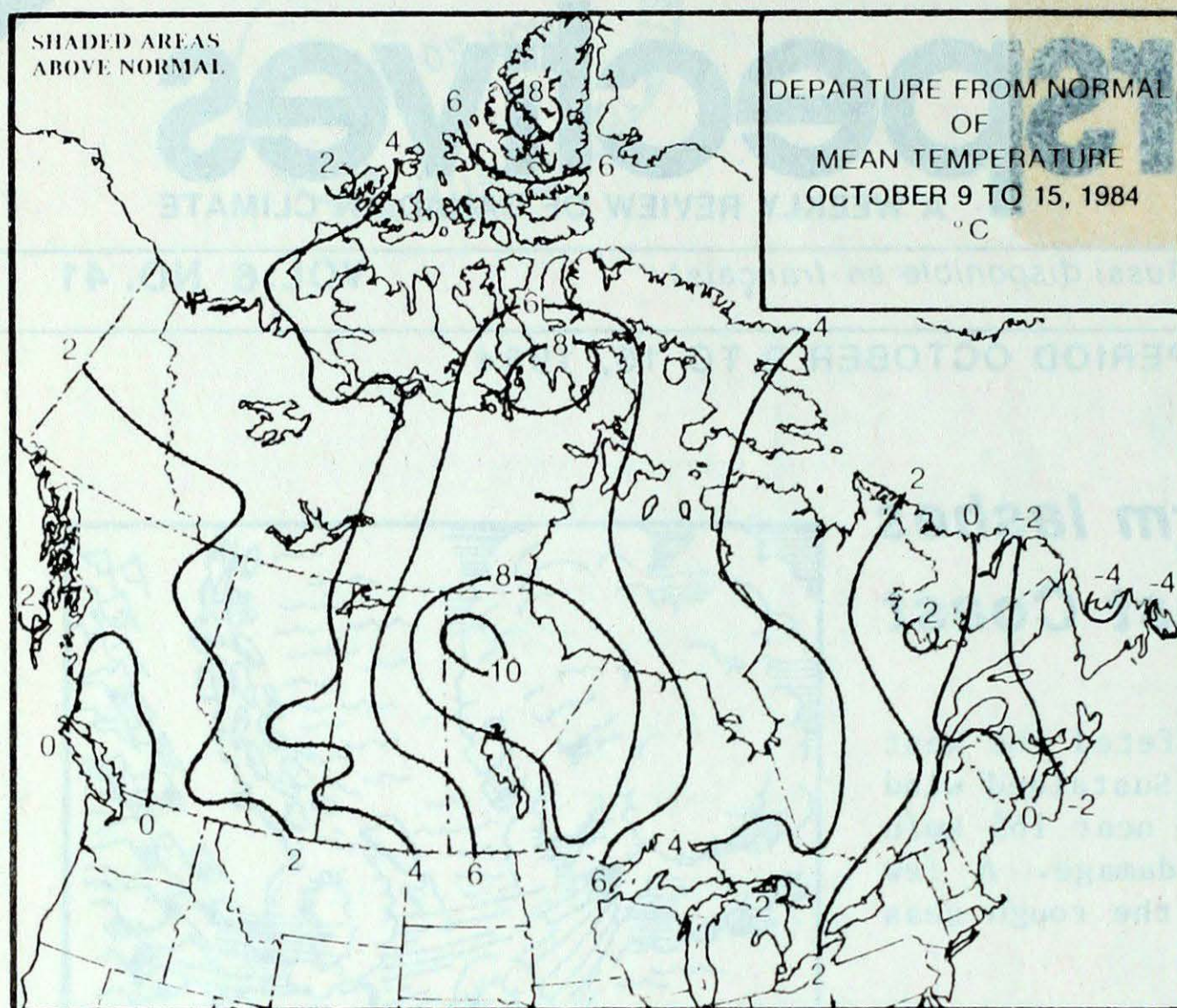
● Sudden wind storm lashes the West Coast

A major wind storm buffeted the West Coast on October 11th-12th. Sustained wind speed of 100 km/h with gust near 165 km/h caused extensive property damage. A few fishing vessels capsized in the rough seas and 4 people were drowned.



● Indian Summer embraces Central Canada

Sunny skies and warm temperatures dominated the weather over Ontario and Québec this week. Mean temperatures averaged 2 to 6 degrees above normal and precipitation was almost non-existent. The Prairies also enjoyed very warm weather early in the week where afternoon reading reached near 28°. In an otherwise cool October, this brief warmth has been termed Indian Summer. It usually occurs during mid-October after the first killing frost of the season.

ACROSS THE COUNTRY...Yukon and Northwest Territories

Above normal temperatures prevailed across the North and as a result the freeze up in the Arctic has slowed down and is now considered to be near normal. The icebreaker **John A. MacDonald** remains in the eastern Arctic awaiting the arrival of the ore carrier **M.V. Arctic** in a weeks time. In the Yukon, mean temperatures over the weekend gradually dropped back to near normal, accompanied by some snow. All higher terrain is now snow covered, but it is still too mild in the valleys for a continuous snow cover.

British Columbia

Overall changeable and unsettled weather conditions prevailed, even though in the interior sunshine was frequent during the first half of the week. On October 11 and 12, a major wind storm hit the West Coast. Extremely strong gale force winds pounded and ravaged the northwest corner of Vancouver Island, the Queen Charlottes and parts of the North Coast. At Cape St. James, hurricane-force winds were recorded at 120 km/h with gusts to 165 km/h. Wind damage extent inland and as far south as Victoria. Wave heights, estimated at more than 10 metres, capsized several fishing boats with the loss of four lives. Harvesting is only 60 to 70 per cent completed in the Peace River District. The apple and grape harvest in the southern fruit belt continues. Slash burning is nearly complete in the South. Mountain tops over 2000 metres are now snow covered.

WEEKLY TEMPERATURES EXTREMES (°C)

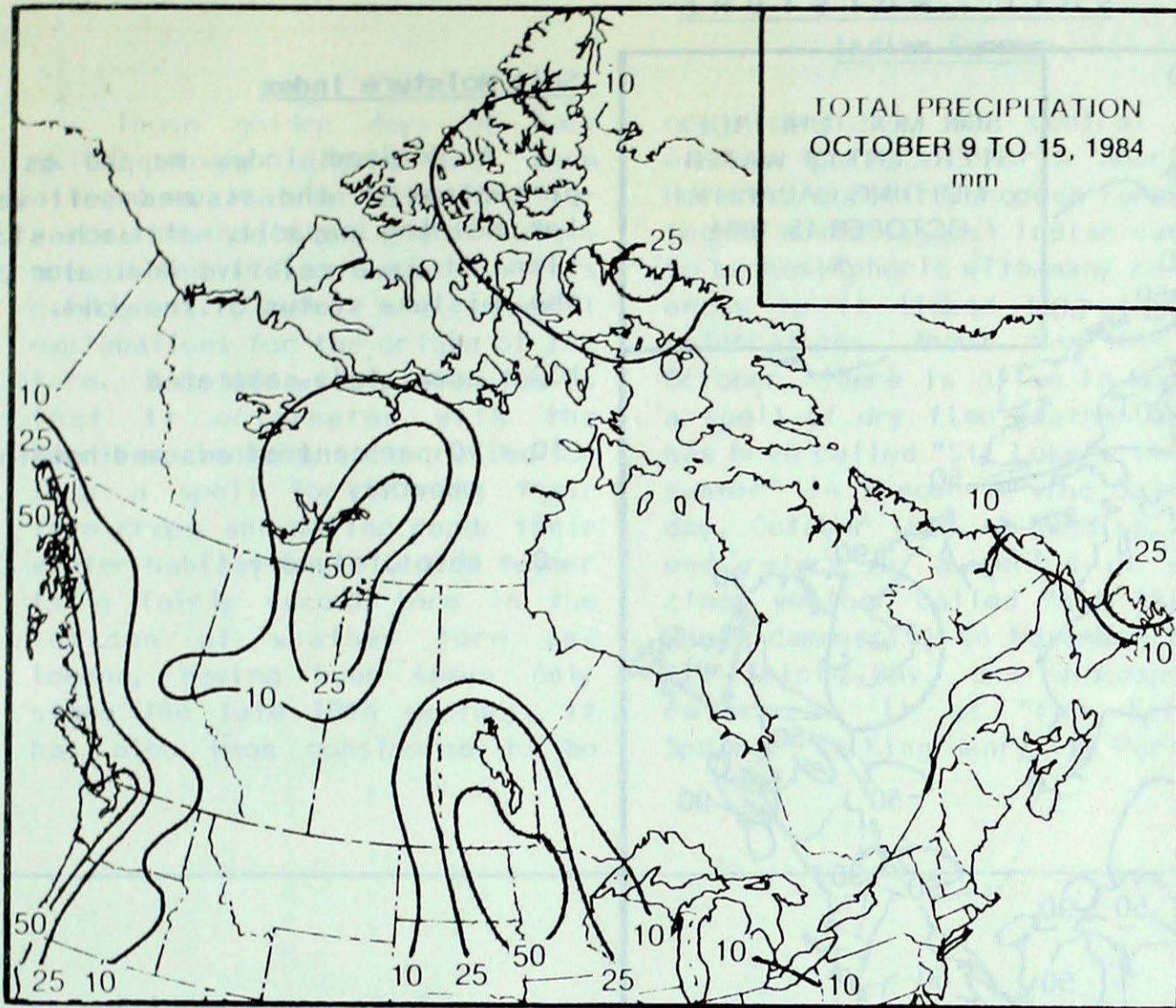
		<u>MAXIMUM</u>		<u>MINIMUM</u>	
YUKON TERRITORY	11.6	Mayo	-15.0	Komakuk Beach	
NORTHWEST TERRITORIES	17.3	Fort Smith	-31.9	Eureka	
BRITISH COLUMBIA	21.4	Kamloops	-5.1	Burns Lake Dease Lake	
ALBERTA	27.8	Medicine Hat	-5.9	Banff	
SASKATCHEWAN	28.1	North Battleford	-4.0	North Battleford	
MANITOBA	24.6	Thompson	-1.9	The Pas	
ONTARIO	23.4	Moosonee	-3.2	Nagagami	
QUEBEC	23.6	Roberval	-6.0	Blanc Sablon	
NEW BRUNSWICK	20.0	Fredericton	-3.4	Moncton	
NOVA SCOTIA	20.2	Yarmouth	-2.4	Greenwood	
PRINCE EDWARD ISLAND	16.9	Summerside	-0.2	Charlottetown	
NEWFOUNDLAND	13.8	Wabush Lake	-8.3	Badger	

ACROSS THE NATION

Warmest mean temperature	15.4	Bissett, MAN
Coollest mean temperature	-15.0	Mould Bay, NWT

Prairies

A southerly flow pumped a very warm air mass across the Prairies. Under generally sunny skies daytime temperatures through the first half of the week climbed into the upper twenties in the South and low twenties in the North, breaking numerous daily maximum temperature records. The mercury at Coronation and Saskatoon rose to 27 and 28 degrees, respectively. During the weekend much cooler and deteriorating conditions approached from



the West. By the week's end, daytime temperatures failed to climb above the single digits. Harvesting is almost complete in central Alberta but field work continues. In the Peace River District damp conditions have delayed the harvest.

Ontario

A slow moving high pressure cell that extended across the Province produced summer-like weather. Under mainly sunny skies, the temperatures rose well above the seasonal values. Afternoon readings climbed into the low twenties at some locations during the week and reached 23° at Moosonee on October 10. Dense fog blanketed southern Ontario on a number of mornings. Reduced visibilities in fog contributed to a few fatal traffic accidents near London. Owing to a stagnant air flow, the pollution index rose to a very high level of 49 in Toronto on October 13, and people with respiratory problems were cautioned to stay indoors. Precipitation was light this week, a few scattered showers were reported.

Québec

Indian summer arrived in Québec during the latter half of the week. Nine record-high maximums and 5 high minimums were established. In Val-d'Or and Abitibi, afternoon temperatures remained above 20° for 4 consecutive days. Eastern Québec was cold however, and mean temperatures were slightly below normal. The weather was dry and none of the stations received more than 5 mm of rain. Dense fog set in southwestern Québec during the weekend. In Montréal, visibilities were reduced to near zero and numerous traffic accidents occurred on October 13.

Atlantic Provinces

Northwesterly flow of cold air kept the temperatures below normal along the East Coast. The weather was especially cold in Newfoundland where the readings registered 3 to 5 degrees below normal. As well, numerous record-low minimums were established including -3° at St.

...continued on page 5

HEAVIEST WEEKLY PRECIPITATION (mm)

YUKON	10.6	Watson Lake
NORTHWEST TERRITORIES	56.4	Fort Reliance
BRITISH COLUMBIA	116.7	Prince Rupert
ALBERTA	45.0	Fort Chipewyan
SASKATCHEWAN	23.7	Yorkton
MANITOBA	63.6	Portage la Prairie
ONTARIO	37.9	Kenora
QUEBEC	1.6	Sherbrooke
NEW BRUNSWICK	1.0	Saint John
NOVA SCOTIA	2.2	Sydney
PRINCE EDWARD ISLAND	0.0	Charlottetown
		Summerside
NEWFOUNDLAND	33.0	St. John's

Historically this week

October 12, 1962

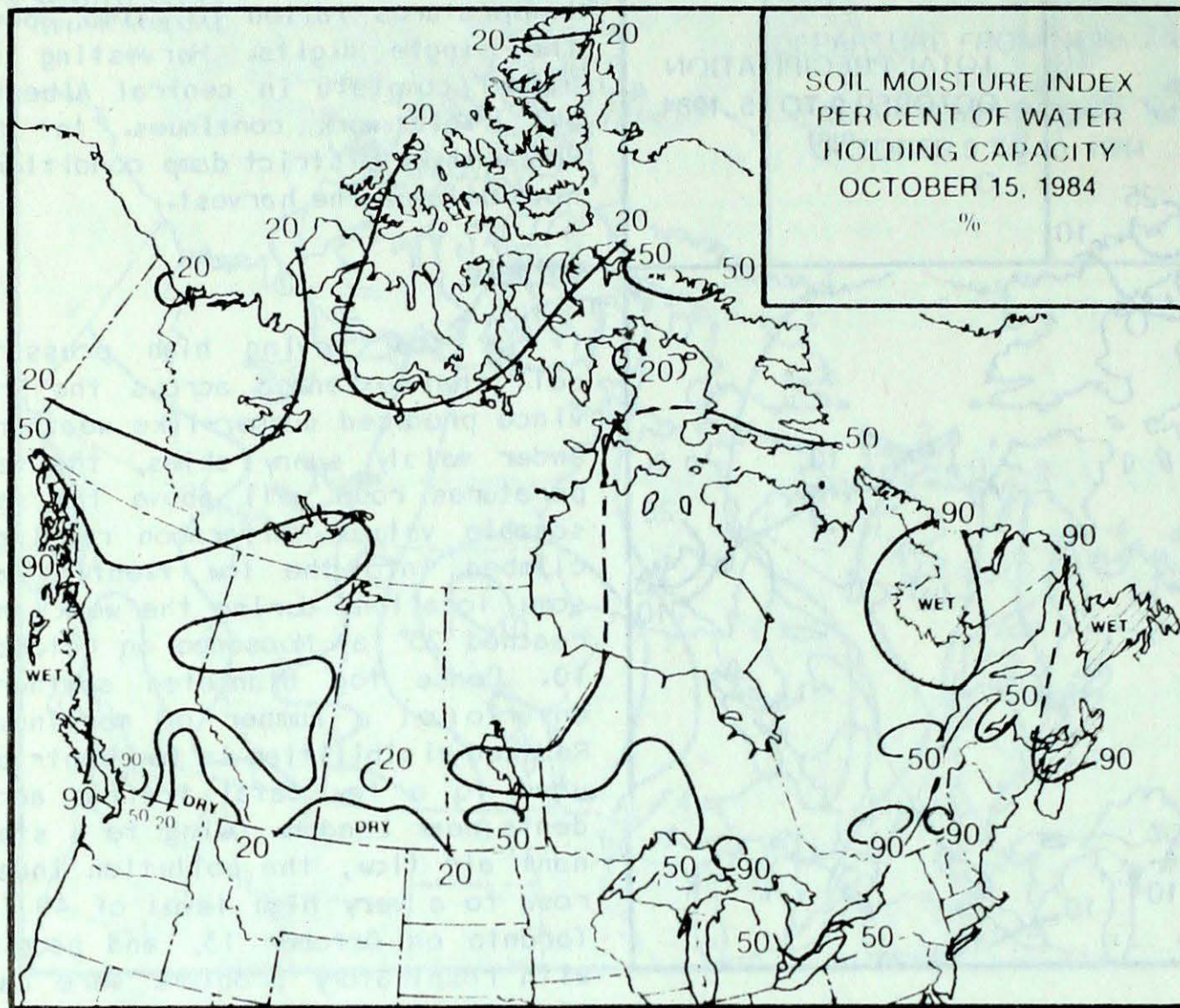
The remnants of typhoon "Freda" struck the Pacific northeast late in the evening, bringing with it rain and near hurricane force winds to Victoria and Vancouver, B.C. At Victoria, winds reached sustained speeds of 90 km/h with gusts to 144 km/h, while an hour later Vancouver recorded sustained speeds of 86 km/h with gusts to 125 km/h.

October 15-16, 1954

The extra tropical phase of

Hurricane Hazel moved northward over central southern Ontario. The largest one-day precipitation totals were reported from Snelgrove (182 mm) and Brampton (178 mm). On October 15 widespread wind and flood damages occurred. The greatest destruction of life and property was in the river valleys west and north of Toronto. There were more than 80 casualties and property damage amounted to more than 24 million dollars.

SOIL MOISTURE

Soil Moisture Index

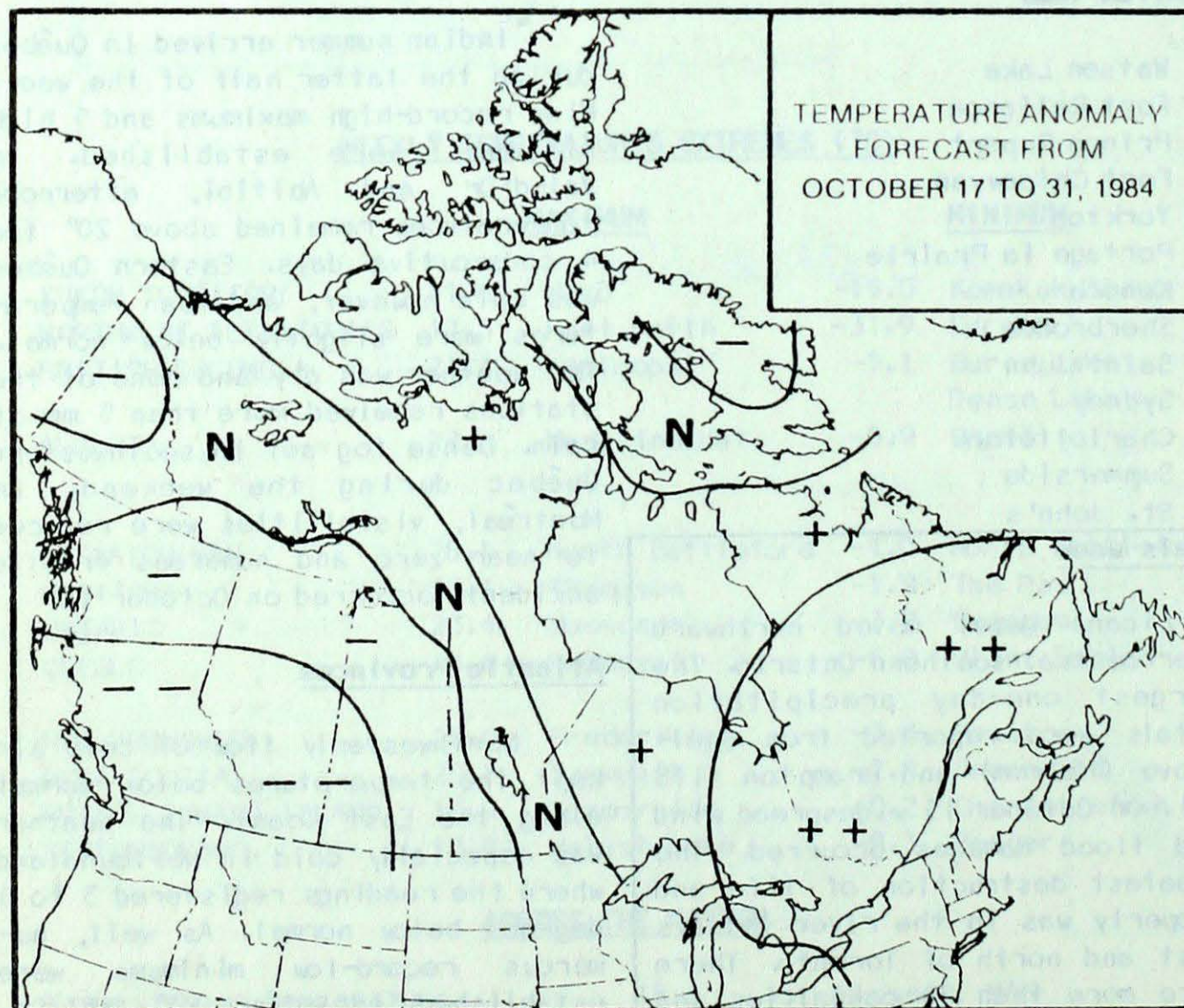
A derived index mapped as a percentage of the assumed soil water holding capacity at each station. It is a relative indicator of the moisture status of the soil.

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

Indian Summer

Those golden days of hazy skies, foggy nights and warm afternoons that we often get towards the middle and end of Autumn are called Indian Summer on this continent. There are several explanations for the origin of the term. A belief widely accepted is that it originated with the American Indians, who relied on such a spell for storing their late crops and making ready their winter habitations. Indian summer is a fairly recent term in the lexicon of weather lore and legend, having been known only since the late 18th century. It has also been considered to be

restricted to the central and eastern parts of North America. However, earlier European lore and legend would suggest Indian summer to be hemispheric with many references to it linked to religious celebrations. About the 18th of October, there is often in Europe a spell of dry fine weather which has been called "St. Luke's little summer" in honour of the Saint's day, October 18th. A Swedish legend refers to a period of warm clear weather called "All Saints Rest" commencing on November 1st. All Saints Day, and Shakespeare refers to it as "the latter Springs" in King Henry IV- Part I.

On St. Martin's Day, November 11th, French legend indicates the beginning of another period of warm weather called "St. Martin's summer". Searching Toronto City's long and precious record, we find that warm spells of 5 successive days or more do seem to begin about mid-October, although "St. Luke's little summer" occurs some days earlier, about October 11th. However, since the fall months lose on average 12° of heat we cannot expect Indian Summer to occur every year. Enjoy its fragile visit when it comes.

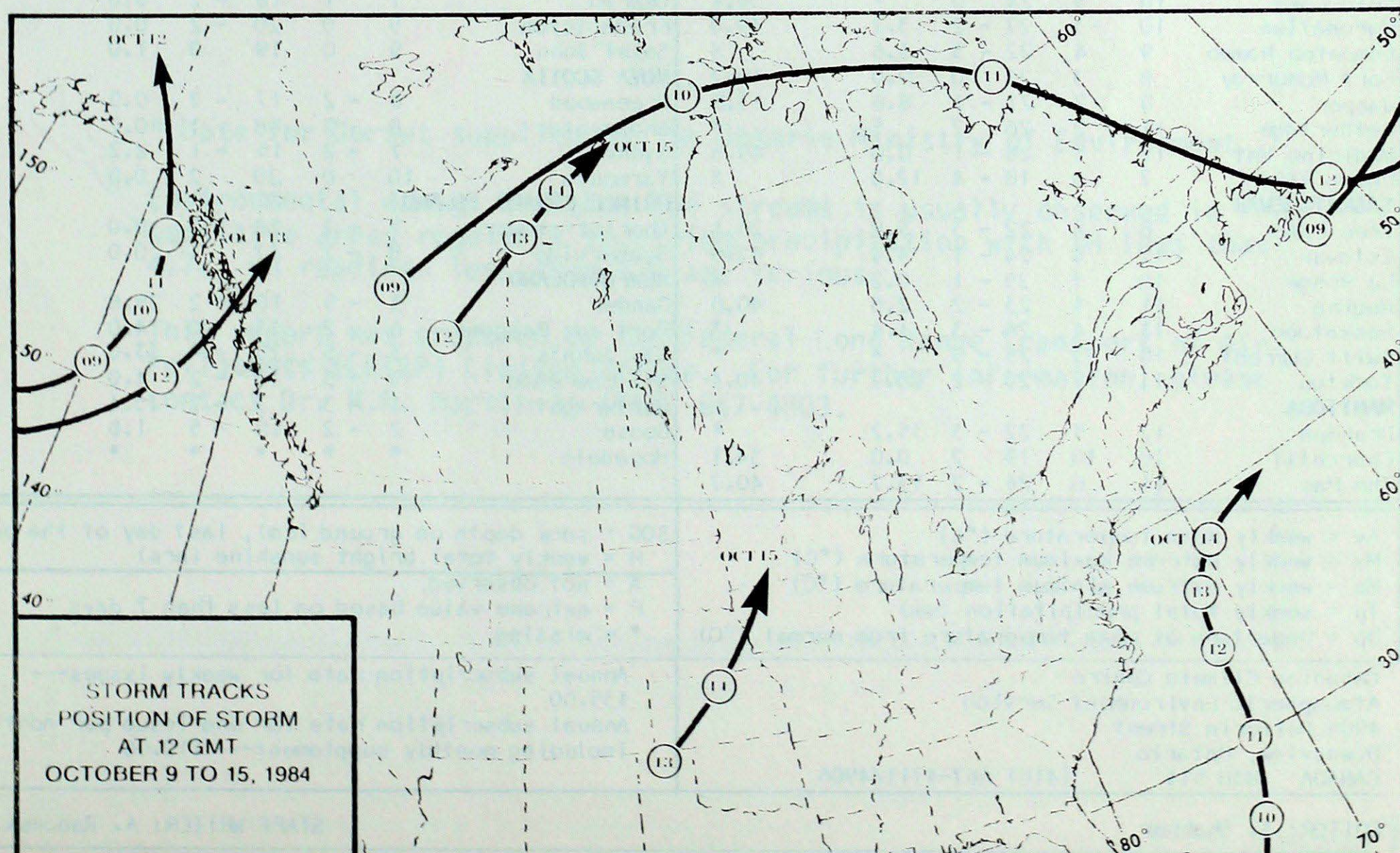
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John's on October 14. Snow fell in central Newfoundland; at Gander, snowfall accumulation has reached 16 cm so far this month whereas the normal amount for October is

only 12 cm. In the Maritimes, the week was cool but sunny. Although an early October frost damaged 10 to 15 per cent of the tobacco crop in Prince Edward

Island, tobacco growers in Nova Scotia and Prince Edward Island were expecting a good quality crop this year.

STORM TRACKS



TEMPERATURE, PRECIPITATION AND BRIGHT SUNSHINE DATA FOR THE WEEK ENDING 0600 GMT OCTOBER 15, 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															
Dawson	1	3	11	-4	0.7		X	Thompson	12	12	25	-1	3.3		34.9
Mayo A	2	2	12	-5	0.2		X	Winnipeg	15	7	23	8	40.8		23.6
Watson Lake	3	1	10	-4	10.6		12.9	ONTARIO							
Whitehorse	2	0	10	-5	*	0.0	*	Big Trout Lake	13	9	21	7	0.8		X
NORTHWEST TERRITORIES															
Fort Smith	6	3	17	-2	43.4	2.0	*	Earlton	10	3	22	1	*		X
Inuvik	-3	3	0	-12	4.8	5.0	*	Kapusking	12	5	22	-2	0.0		*
Norman Wells	-3	-1	1	-6	6.9	7.0	0.0	Kenora	15	7	20	9	37.9		X
Yellowknife	4	3	9	-2	19.4	2.0	*	London	15	4	21	8	6.6		24.7
Baker Lake	1	6	6	-5	4.0		*	Mosonsee	11	5	23	-2	0.0		45.7
Cape Dyer	-7	-1	7	-19	1.0	50.0	X	Muskoka	13	4	22	3	*		X
Clyde	-1	4	10	-12	5.8	15.0	*	North Bay	12	4	21	4	0.0		41.0
Frobisher Bay	-4	0	3	-12	8.4	7.0	28.7	Ottawa	12	2	23	5	*		*
Alert	-11	8	-3	-25	6.6	23.0	*	Pickle Lake	14	9	20	7	0.0		X
Eureka	-12	9	1	-32	12.8	27.0	*	Red Lake	14	8	21	7	19.7		17.1
Hall Beach	-1	8	3	-5	10.6	3.0	X	Sudbury	12	4	21	4	0.0		*
Resolute	-8	5	1	-17	12.2	5.0	9.8	Thunder Bay	11	4	16	5	11.4		3.7
Cambridge Bay	-4	5	0	-12	*	3.0	*	Timmins	10	3	23	-3	0.0		X
Mould Bay	-15	1	-7	-25	1.0	5.0	*	Toronto	12	2	19	5	1.6		X
Sachs Harbour	-5	5	0	-12	5.3	5.0	6.6	Trenton	12	1	19	3	0.0		X
BRITISH COLUMBIA															
Cape St. James	10	0	15	7	43.4		33.0	Warton	12	2	20	6	0.2		16.8
Cranbrook	8	3	21	-4	4.8		36.2	Windsor	15	2	18	9	21.5		X
Fort Nelson	6	3	18	-2	2.0		33.4	QUEBEC							
Fort St. John	6	1	15	-3	11.0		X	Bagotville	9	2	21	-1	0.2		X
Kamloops	11	2	21	3	4.2		17.0	Blanc-Sablon	2	-3	8	-6	1.4		42.5
Penticton	10	0	21	-3	19.2		14.3	Inukjuak	5	4	9	1	*	0.0	0.1
Port Hardy	8	-1	12	1	*		*	Kuujuuaq	3	2	9	-3	*	0.0	10.8
Prince George	6	1	16	-3	15.3		11.2	Kuujuuarapik	9	5	18	1	0.0	0.0	33.8
Prince Rupert	9	1	16	4	116.7		*	Maniwaki	12	4	23	3	0.0		41.3
Revelstoke	9	3	18	2	24.2		12.0	Mont-Joli	7	-1	16	-2	0.0		45.1
Smithers	5	0	12	-5	9.0		*	Montréal	11	1	20	2	0.2		31.4
Vancouver	10	-1	16	4	29.3		18.6	Natashquan	2	-3	11	-5	*		*
Victoria	10	-1	15	2	37.8		14.5	Nitchequon	4	2	14	-2	1.4		*
Williams Lake	6	0	16	-2	5.0		19.7	Québec	10	2	19	2	0.0		53.4
ALBERTA															
Calgary	10	3	24	-3	3.0		*	Schefferville	2	2	8	-6	1.6		8.5
Cold Lake	10	5	24	0	*		34.4	Sept-Îles	5	0	17	-3	0.0		49.0
Coronation	10	3	27	-2	3.2		39.0	Sherbrooke	9	1	21	0	1.6		31.3
Edmonton Namao	9	4	22	-3	3.6		X	Val-d'Or	11	5	22	-2	0.0		49.2
Fort McMurray	8	3	21	0	29.0		19.7	NEW BRUNSWICK							
Jasper	8	2	21	-1	8.6		13.8	Charlo	7	1	18	-2	0.0		44.3
Lethbridge	11	2	26	2	*		*	Fredericton	9	0	20	-2	0.0		*
Medicine Hat	12	3	28	-1	0.0		49.8	Saint John	9	0	19	0	1.0		56.0
Peace River	7	3	18	-4	12.0		X	NOVA SCOTIA							
SASKATCHEWAN															
Cree Lake	8	X	22	-3	5.8		26.1	Greenwood	8	-2	17	-2	0.0		X
Estevan	12	4	24	-1	4.4		42.9	Shearwater	8	-2	18	1	0.2		47.4
La Ronge	10	7	25	-1	0.2		X	Sydney	7	-2	15	-1	2.2		48.5
Regina	11	4	23	-2	2.6		40.0	Yarmouth	10	0	20	2	0.0		45.5
Saskatoon	11	4	26	-3	1.4		*	PRINCE EDWARD ISLAND							
Swift Current	10	3	25	-3	*		*	Charlottetown	7	-2	16	0	0.0		*
Yorkton	11	5	23	-2	23.7		40.4	Summerside	8	-2	17	1	0.0		40.9
MANITOBA															
Brandon	12	5	22	-3	35.2		*	NEWFOUNDLAND							
Churchill	10	10	19	2	0.0		34.1	Gander	3	-5	10	-2	25.8		*
The Pas	11	6	24	-2	13.7		40.7	Port aux Basques	6	-2	11	0	4.0		40.7
								St. John's	3	-5	10	-4	33.0		*
								St. Lawrence	5	-3	13	-2	4.0		X
								Cartwright	1	-3	3	-2	15.4		X
								Goose	2	-2	10	-5	1.6		25.9
								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 OCTOBER 7-13, 1984

SITE	DAY	pH	AIR PATH TO SITE
Longwoods, near London, Ont.	7	3.8	Kentucky, Ohio.
Dorset,* Muskoka, Ont.	7	3.8	Ohio Valley, southern Ontario.
Chalk River Ottawa Valley, Ont.	7	3.8	Michigan, Ohio, New York, southern Ontario.
Montmorency, Quebec City Que.	7	4.1	From west across Wisconsin, Michigan central Ontario and southern Quebec.
Kejimkujik, 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.