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dian Climate Centre

Climatic Perspectives

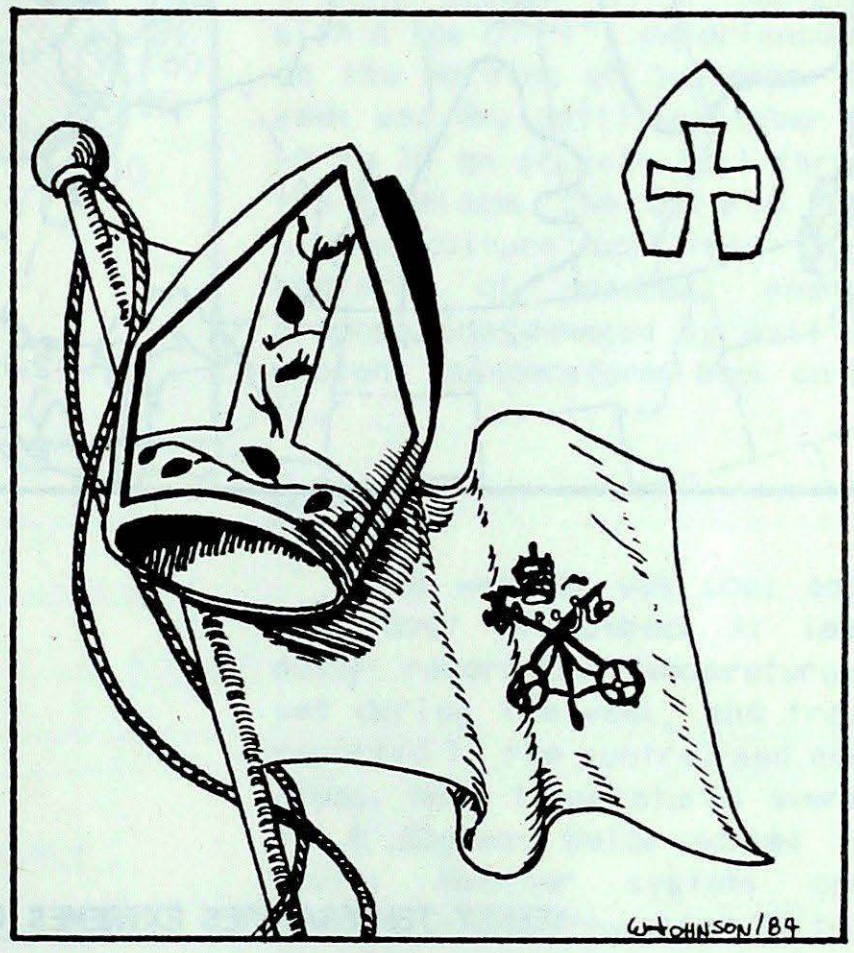
A WEEKLY REVIEW OF CANADIAN CLIMATE

SEPTEMBER 14,1984 (Aussi disponible en français) VOL.6 NO.36

FOR THE PERIOD SEPTEMBER 4 TO 10, 1984

• *Fine weather welcomes the Pope to Canada*

The Pope arrived at Québec City under sunny skies on September 9. A warm 24° and a comfortable 50% relative humidity provided near perfect weather. However, the winds were brisk from the southwest at 19 km/h. The weather deteriorated on the second day of the papal visit. At Trois Rivières, the weather was raw. It was windy with light to moderate rain and cooling temperatures. During the mass, the temperature was near 16° and the winds were from the southwest at 20 km/h and gusting. Rainfall for that day was 19.4 mm.



• *Harvest Update*

• East Coast

Dry weather allowed harvest to progress rapidly throughout the Maritimes. Barley nearly harvested in PEI.

• Quebec/Ontario

Second hay harvest 85 per cent complete in Abitibi. August 14th storm damaged about 800 hectares of fruit crops in Ontario.

• Prairies

Harvest nearly complete in the South but delayed in the North.

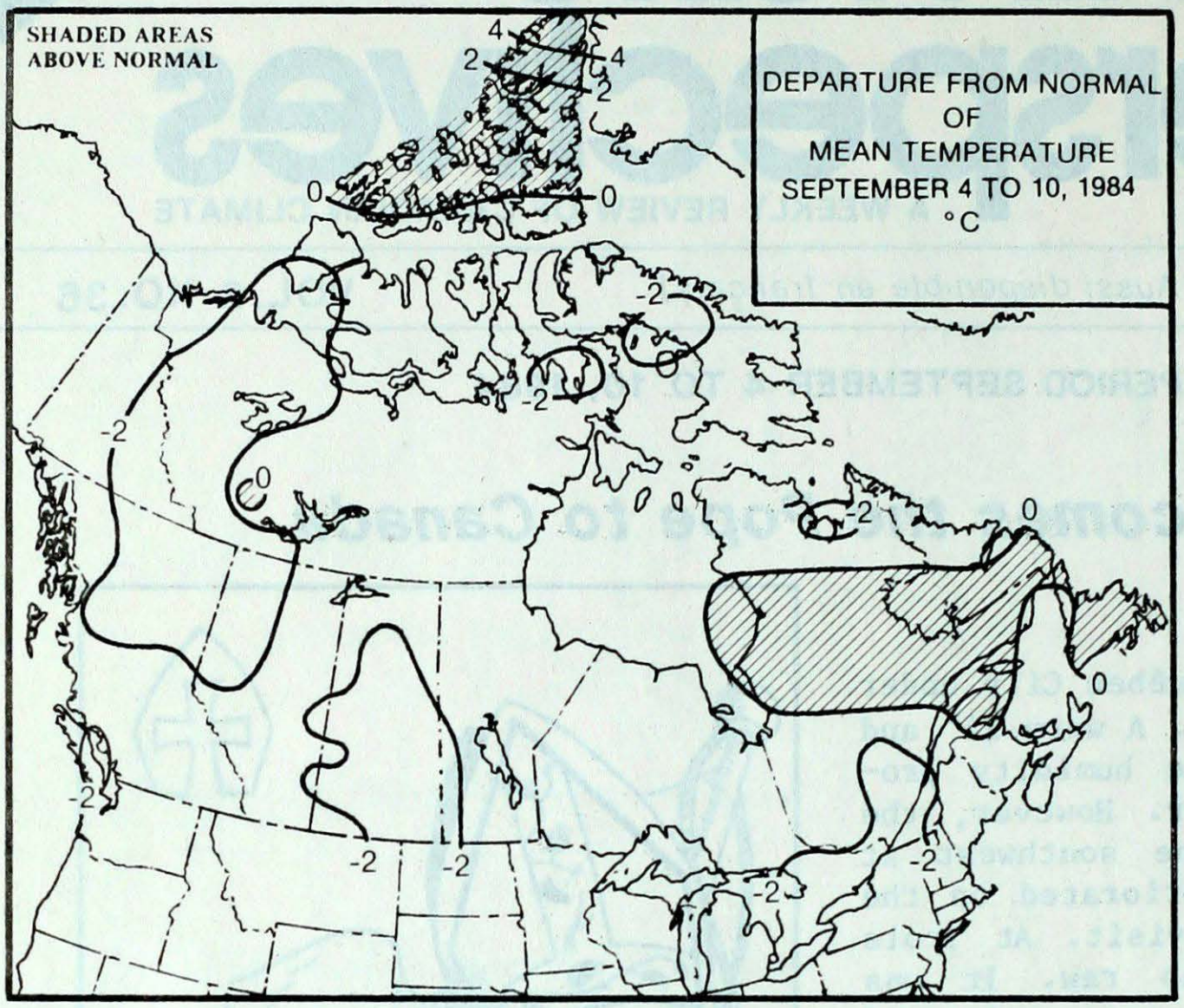
• British Columbia

Heavy rains slowed harvest in the Peace River District, and spraying of fruit trees in the southern interior.

ISSN 0225-5707
UDC: 551.506.1(71)

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	17.7	Dawson	-6.1	Dawson
NORTHWEST TERRITORIES	16.2	Fort Smith	-10.2	Alert
BRITISH COLUMBIA	27.6	Cranbrook	-2.5	Puntzi Mountain
ALBERTA	33.7	Medicine Hat	-0.3	High Level
SASKATCHEWAN	33.3	Elbow	-0.6	Yorkton
MANITOBA	29.1	Brandon	0.0	Lynn Lake Thompson
ONTARIO	27.5	Petawawa	-1.6	Upsala
QUEBEC	27.6	Gaspé	-0.7	Baie Comeau
NEW BRUNSWICK	29.4	Chatham	0.5	St. Stephen
NOVA SCOTIA	24.3	Sydney	2.4	Truro
PRINCE EDWARD ISLAND	24.0	Summerside	8.2	Charlottetown
NEWFOUNDLAND	26.3	Comfort Cove	-1.6	Badger

ACROSS THE NATION

Warmest mean temperature	16.0	Windsor, Ont
Coolest mean temperature	-4.2	Macker Inlet, NWT

ACROSS THE COUNTRY...

Yukon and Northwest Territories

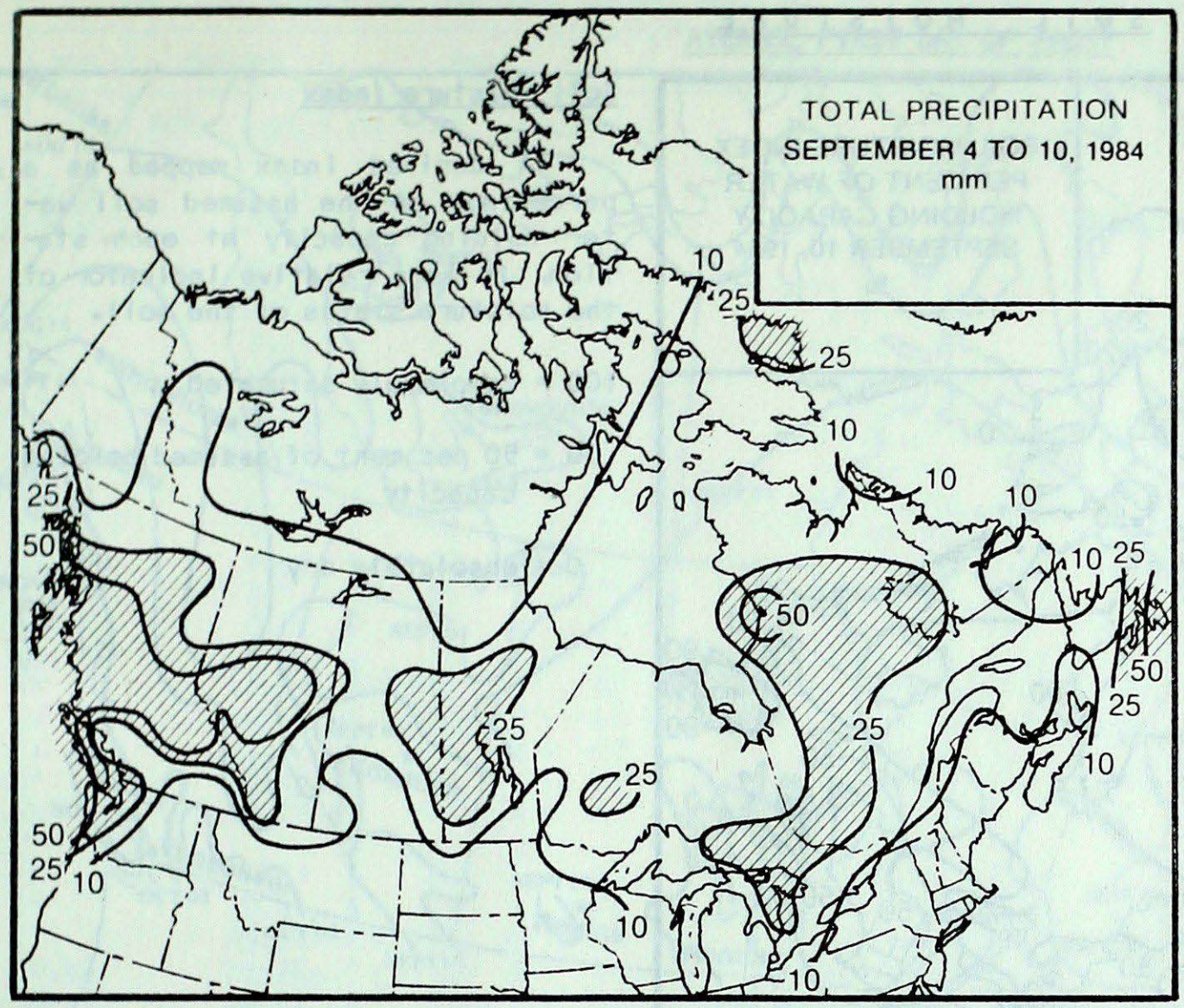
The approach of winter was evident across the Territories as the temperatures continued to cool down this week. The readings were 2 to 4 degrees below normal almost everywhere; and in the Far North, even the maximums remained below freezing all week. Snowfall accompanied the cool weather over the eastern Arctic where the depth of snow on the ground increased from a few centimetres to 15 centimetres this week.

British Columbia

The weather was cool, wet and autumn-like. Mean temperatures were below normal, as much as 4° below normal in the North. Several new daily minimum temperature records were set in the South. A series of weather systems gave above normal precipitation to all areas except the Kootanays of the southern interior. The inclement weather delayed the harvest in the Peace River District and autumn fruit tree spraying in the South. The wet conditions in the interior were favourable for slash burning.

Prairies

The week was unsettled and became progressively cooler. Daytime temperatures at most locations in Saskatchewan on September 8 and 9 failed to climb above the single digits. Numerous low maximum temperature records were broken throughout Saskatchewan and northern Manitoba. On September 9, the temperature at Wynyard never climbed above 6°, a new record for the date. Light snow was reported in the North and ground frost was widespread in the agricultural districts. Significant amounts of precipitation fell across the North. Up to 100 mm of precipitation inundated Alberta; heaviest amounts fell in the central agricultural district. Wet conditions in the Peace River District curtailed early harvesting, raising concerns about possible frost damage at a later date. In the South, the harvest was almost completed.



HEAVIEST WEEKLY PRECIPITATION (mm)

YUKON	38.8	Carcross
NORTHWEST TERRITORIES	36.8	Broughton Island
BRITISH COLUMBIA	102.0	McInnes Island
ALBERTA	97.0	Rocky Mountain House
SASKATCHEWAN	37.8	La Ronge
MANITOBA	45.5	The Pas
ONTARIO	45.2	North Bay
QUEBEC	53.4	Kujjuarapik
NEW BRUNSWICK	7.6	Moncton
NOVA SCOTIA	34.6	Sable Island
PRINCE EDWARD ISLAND	18.6	Summerside
NEWFOUNDLAND	56.4	Argentia

Fall Frost

Location	Earliest date	Latest date
St. John's	Sept. 18	Oct. 26
Halifax	Sept. 14	Nov. 1
Fredericton	Sept. 8	Oct. 16
Montréal	Sept. 22	Oct. 21
Toronto	Sept. 15	Nov. 3
Winnipeg	Sept. 2	Oct. 27
Regina	Aug. 3	Oct. 14
Edmonton	July 25	Oct. 6
Vancouver	Oct. 2	Nov. 28

Ontario

After a brief introduction to Autumn-like temperatures, the weather turned warm and humid. A southerly flow of warm air allowed the temperatures to moderate considerably and towards the weekend, readings in the 24 to 26 degrees range were common across southern Ontario. Despite the warming trend, mean values still remained several degrees below the long term average. Early in the week, clear and cool nights resulted in the first frost of the season. Both Peterborough with a minimum of 0° and Muskoka with a low of -1°, experienced frost on the morning of September 6. The week was dry until September 9 when 10 to 20 mm of rain fell throughout the Province. The Ontario Ministry of Agriculture confirmed that 800 hectares of peaches, pears and grapes were damaged by hail during violent thunderstorms back on August 14.

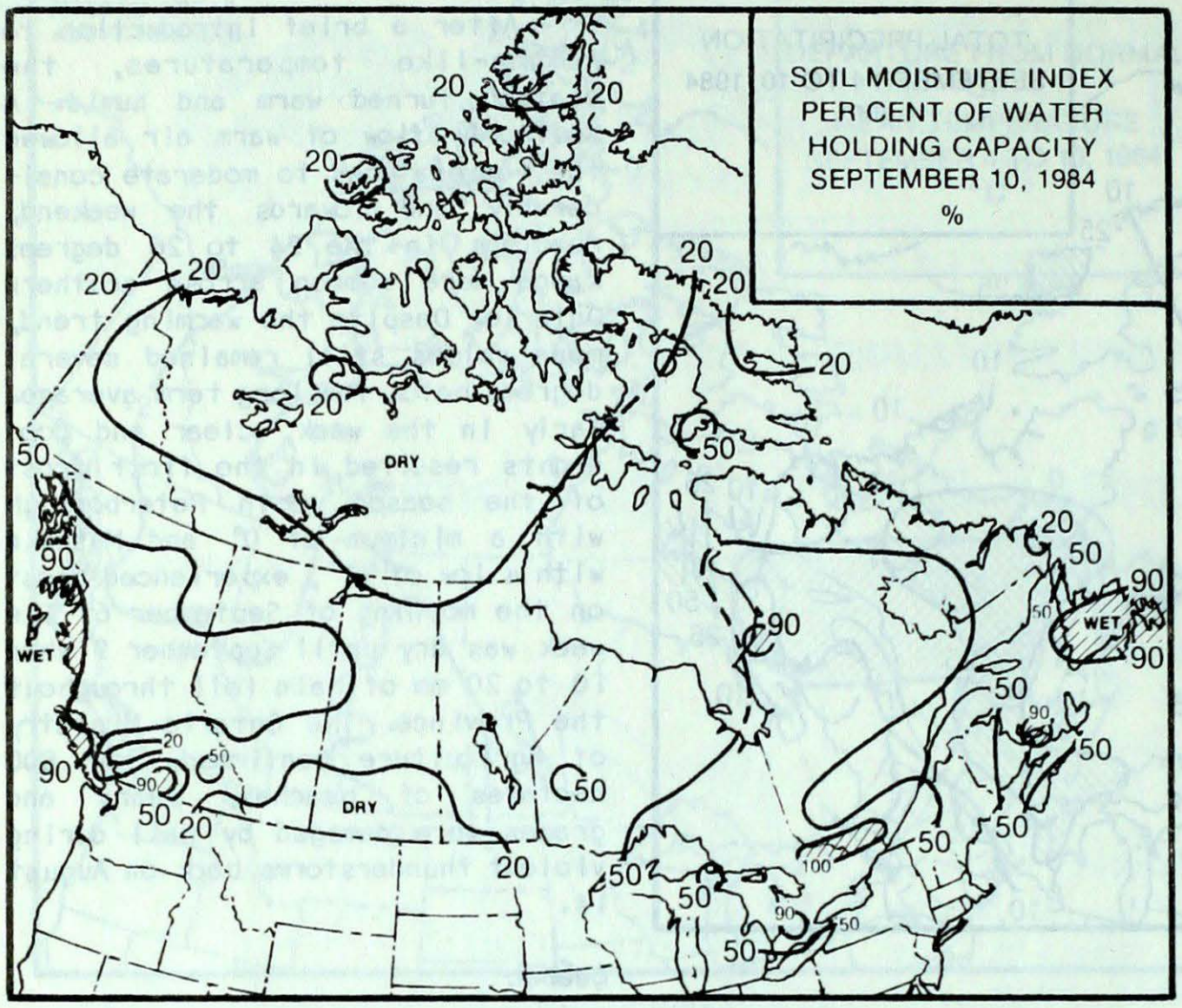
Québec

The weather was cool and dull over most of Québec. At least 10 daily record-low temperatures were set during the week, and frost was reported in the central and northern areas. Mean temperatures averaged 2 to 4 degrees below normal in the South. Weather systems crossing central Québec deposited 20 to 40 mm of rain. With the arrival of the Pope on the weekend, sunny skies returned to the St. Lawrence Valley. The second hay harvest was nearly 85 per cent complete in Abitibi and Temiscaminque, but the grain harvest was only 65 per cent complete.

Atlantic Provinces

The weekend started out cool and dull but the weather became warm and sunny by mid-week. Several daily record high temperatures were set in Atlantic Canada this week, including 24° at St. John's on September 6. The dry weather allowed harvest to progress rapidly throughout the Maritimes; rains in the 15 to 50 mm range proved beneficial to crops in Newfoundland, but caused minor flooding in the southern areas.

SOIL MOISTURE



Soil Moisture Index

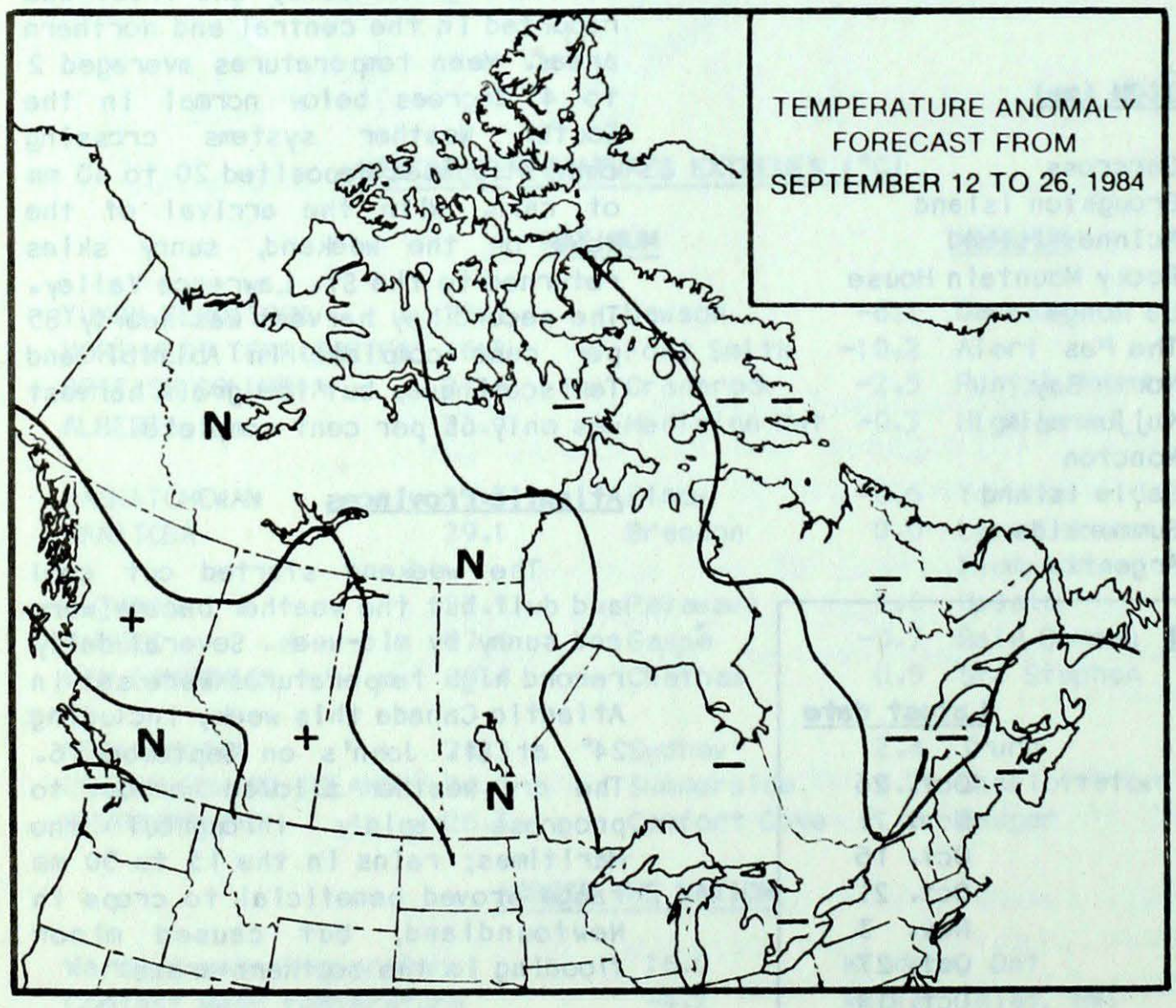
A derived index mapped as a percentage of the assumed soil water holding capacity at each station. It is a relative indicator of the moisture status of the soil.

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**

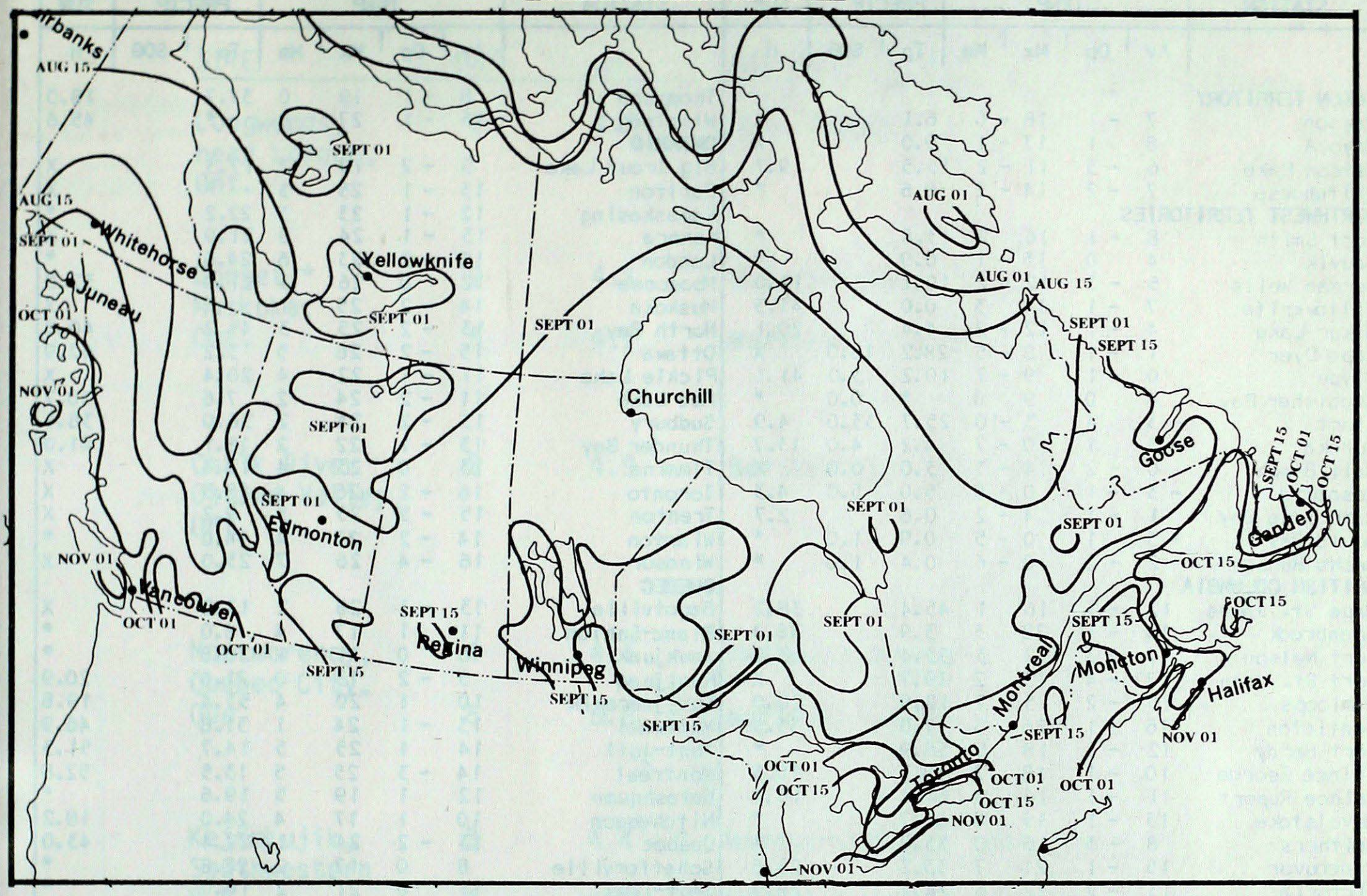
+ **above normal**

N **normal**

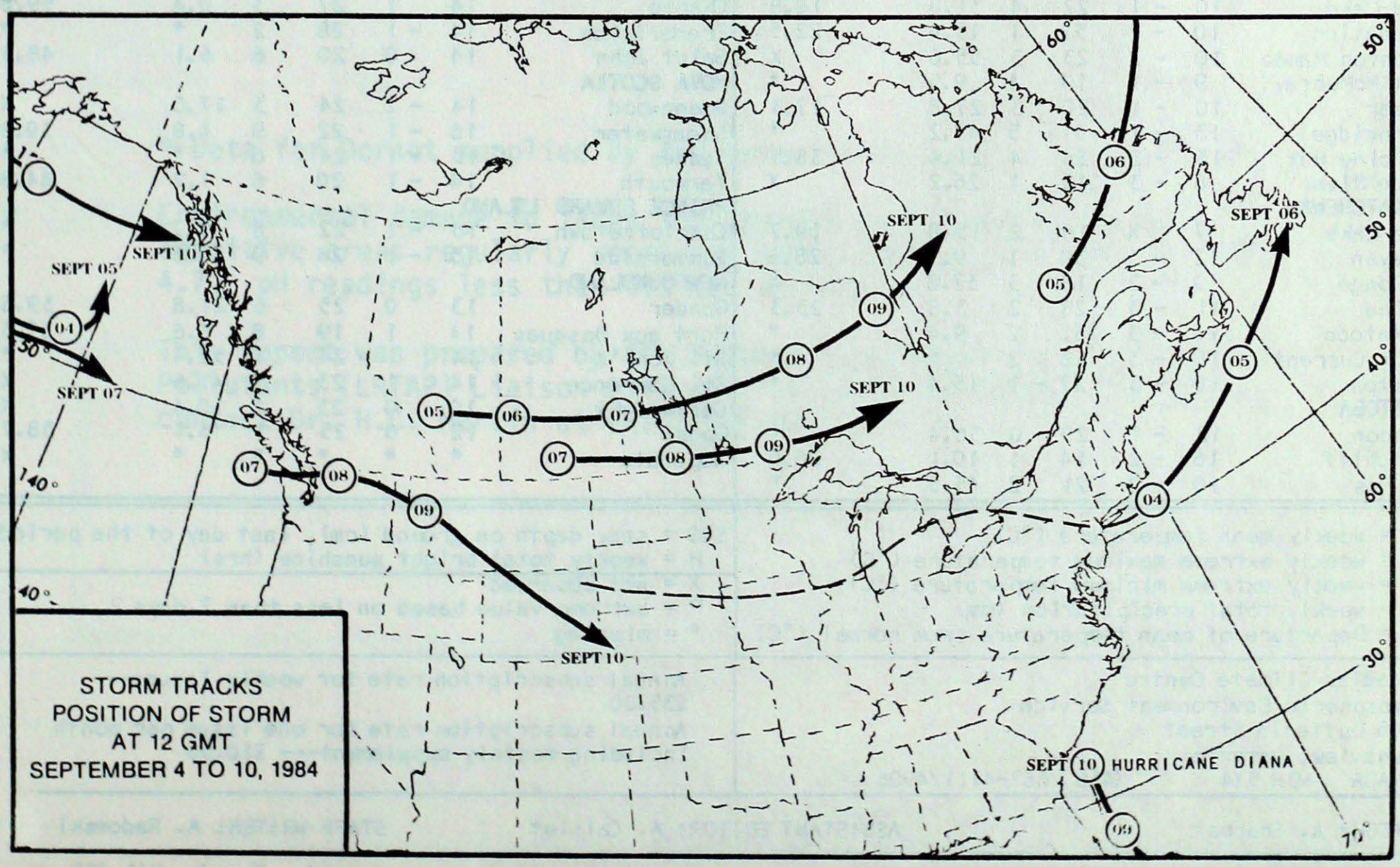
- **below normal**

-- **much below normal**

AVERAGE FIRST DAY OF FROST



STORM TRACKS



TEMPERATURE, PRECIPITATION AND BRIGHT SUNSHINE DATA FOR THE WEEK ENDING 0600 GMT SEPTEMBER 11, 1984

STATION	TEMP				PRECIP		SUN
	Av	Dp	Mx	Mn	Tp	SOG	H
YUKON TERRITORY							
Dawson	7	-1	18	-6	6.1		X
Mayo A	8	1	17	-1	9.0		X
Watson Lake	6	-3	11	-2	15.5		9.7
Whitehorse	7	-2	14	-2	8.6		*
NORTHWEST TERRITORIES							
Fort Smith	8	-1	16	2	13.8		*
Inuvik	4	0	13	-1	0.9		*
Norman Wells	5	-3	12	-2	10.1		12.0
Yellowknife	7	-1	14	3	0.0		41.3
Baker Lake	4	-1	12	-2	4.4		20.1
Cape Dyer	1	-1	8	-5	28.2	18.0	X
Clyde	0	-1	9	-7	10.2	3.0	41.1
Frobisher Bay	4	0	9	0	*	0.0	*
Alert	-3	4	3	-10	25.7	33.0	4.9
Eureka	-3	1	0	-7	4.2	4.0	13.7
Hall Beach	0	-2	4	-3	3.0	0.0	X
Resolute	-3	-1	0	-9	5.0	5.0	4.3
Cambridge Bay	1	-1	4	-2	0.6		2.7
Mould Bay	-3	1	0	-5	0.9	1.0	*
Sachs Harbour	-2	-2	0	-6	0.4	1.0	*
BRITISH COLUMBIA							
Cape St. James	12	-1	16	1	45.4		38.2
Cranbrook	13	-1	28	3	3.9		38.0
Fort Nelson	7	-3	12	3	33.4		3.2
Fort St. John	7	-4	13	2	19.7		X
Kamloops	15	-2	23	7	12.9		20.0
Penticton	16	-1	26	3	7.0		33.9
Port Hardy	12	-1	18	5	56.9		*
Prince George	10	-1	18	2	38.3		10.5
Prince Rupert	11	-1	16	5	64.4		15.4
Revelstoke	13	-1	19	8	56.7		*
Smithers	8	-3	16	0	53.8		*
Vancouver	15	-1	21	7	33.2		23.6
Victoria	13	-2	22	6	24.2		28.9
Williams Lake	10	-2	18	0	63.7		*
ALBERTA							
Calgary	10	-2	28	0	46.9		22.3
Cold Lake	10	-1	22	4	31.8		18.8
Coronation	10	-2	31	1	13.4		22.5
Edmonton Namao	10	-2	23	3	55.6		X
Fort McMurray	9	-1	19	4	9.5		*
Jasper	10	-1	20	3	27.8		17.3
Lethbridge	13	-1	31	5	48.2		*
Medicine Hat	13	-2	34	4	21.4		38.5
Peace River	8	-3	15	1	26.2		X
SASKATCHEWAN							
Cree Lake	7	X	16	2	15.0		19.7
Estevan	12	-3	30	1	9.3		28.8
La Ronge	9	-2	18	3	37.8		X
Regina	11	-3	28	2	3.8		23.3
Saskatoon	11	-3	31	2	9.4		*
Swift Current	11	-3	32	2	*		*
Yorkton	10	-3	27	-1	15.4		*
MANITOBA							
Brandon	12	-1	29	0	36.4		*
Churchill	16	-2	14	1	10.1		26.0
The Pas	10	-2	21	2	45.5		*
Thompson	8	-1	19	0	37.7		18.0
Winnipeg	13	-1	27	5	*		45.6
ONTARIO							
Big Trout Lake	9	-2	19	2	17.3		X
Earlton	13	-1	25	3	*		X
Kapuskasing	12	-1	23	3	22.2		*
Kenora	13	-1	24	8	21.9		X
London	16	-2	23	6	24.6		*
Mbosonee	12	0	26	3	21.0		32.0
Muskoka	14	-2	25	-1	*		X
North Bay	13	-2	25	3	45.2		40.8
Ottawa	15	-2	26	5	3.2		62.9
Pickle Lake	11	-1	22	4	20.4		X
Red Lake	11	-2	24	2	7.6		30.7
Sudbury	13	-2	24	2	36.0		38.1
Thunder Bay	13	-1	22	2	18.1		41.0
Timmins	13	0	23	4	17.4		X
Toronto	16	-2	26	4	18.5		X
Trenton	15	-3	25	5	9.2		X
Wiarton	14	-2	27	4	14.0		*
Windsor	16	-4	26	7	23.0		X
QUEBEC							
Bagotville	13	-1	28	2	13.2		X
Blanc-Sablon	11	1	17	4	8.0		*
Inukjuak	6	0	11	1	20.8		*
Kuujjuaq	5	-2	13	0	21.6		20.9
Kuujjuarapik	10	1	20	4	53.4		19.8
Maniwaki	13	-1	24	1	31.8		46.9
Mont-Joli	14	1	25	5	14.7		51.3
Montréal	14	-3	25	5	13.5		52.8
Natashquan	12	1	19	5	19.6		*
Nitchequon	10	1	17	4	24.0		18.2
Québec	13	-2	24	1	22.4		43.0
Schefferville	8	0	17	2	28.8		*
Sept-Iles	11	0	21	2	18.0		*
Sherbrooke	12	-2	25	2	3.6		38.3
Val-d'Or	12	-1	25	0	21.4		33.1
NEW BRUNSWICK							
Charlo	14	1	27	3	0.4		59.8
Fredericton	14	-1	28	2	*		*
Saint John	14	0	20	6	6.1		48.3
NOVA SCOTIA							
Greenwood	14	-2	24	3	17.0		X
Shearwater	16	-1	22	9	4.8		39.8
Sydney	15	-1	24	6	*		*
Yarmouth	14	-1	20	6	1.2		44.8
PRINCE EDWARD ISLAND							
Charlottetown	15	-1	22	8	9.7		*
Summerside	15	-1	24	9	18.6		*
NEWFOUNDLAND							
Gander	13	0	25	6	21.8		39.6
Port aux Basques	14	1	19	8	6.6		37.5
St. John's	14	1	24	7	52.4		*
St. Lawrence	14	1	23	5	41.6		X
Cartwright	10	0	23	1	10.4		X
Goose	12	0	25	-1	6.1		38.7
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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Annual subscription rate for weekly issues---
$35.00
Annual subscription rate for one issue per month
including monthly supplement--- $10.00

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Subscription enquiries: Supply and Services Canada, Publishing Centre, Ottawa, Ontario, Canada, K1A 0S9

ACID RAIN REPORT ISSUED BY ENVIRONMENT CANADA FOR SEPT. 2 - SEPT. 8, 1984

SITE	DAY	pH	AIR PATH TO SITE
Longwoods, near London, Ont.	2	4.2	U.S. Midwest.
Dorset,* Muskoka, Ont.	2	4.1	U.S. Midwest.
	5	4.7	Northern Ontario.
Chalk River Ottawa Valley, Ont.	2	4.9	Northeastern Ontario.
Montmorency, Quebec City, Que.	4	4.6	Northern Quebec.
	5	5.8	Northern Quebec.
Kejimkujik, Southwestern N.S.	3	4.4	Northern Quebec, New Brunswick.
	4	4.3	Northern Quebec, New Brunswick.

* 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.