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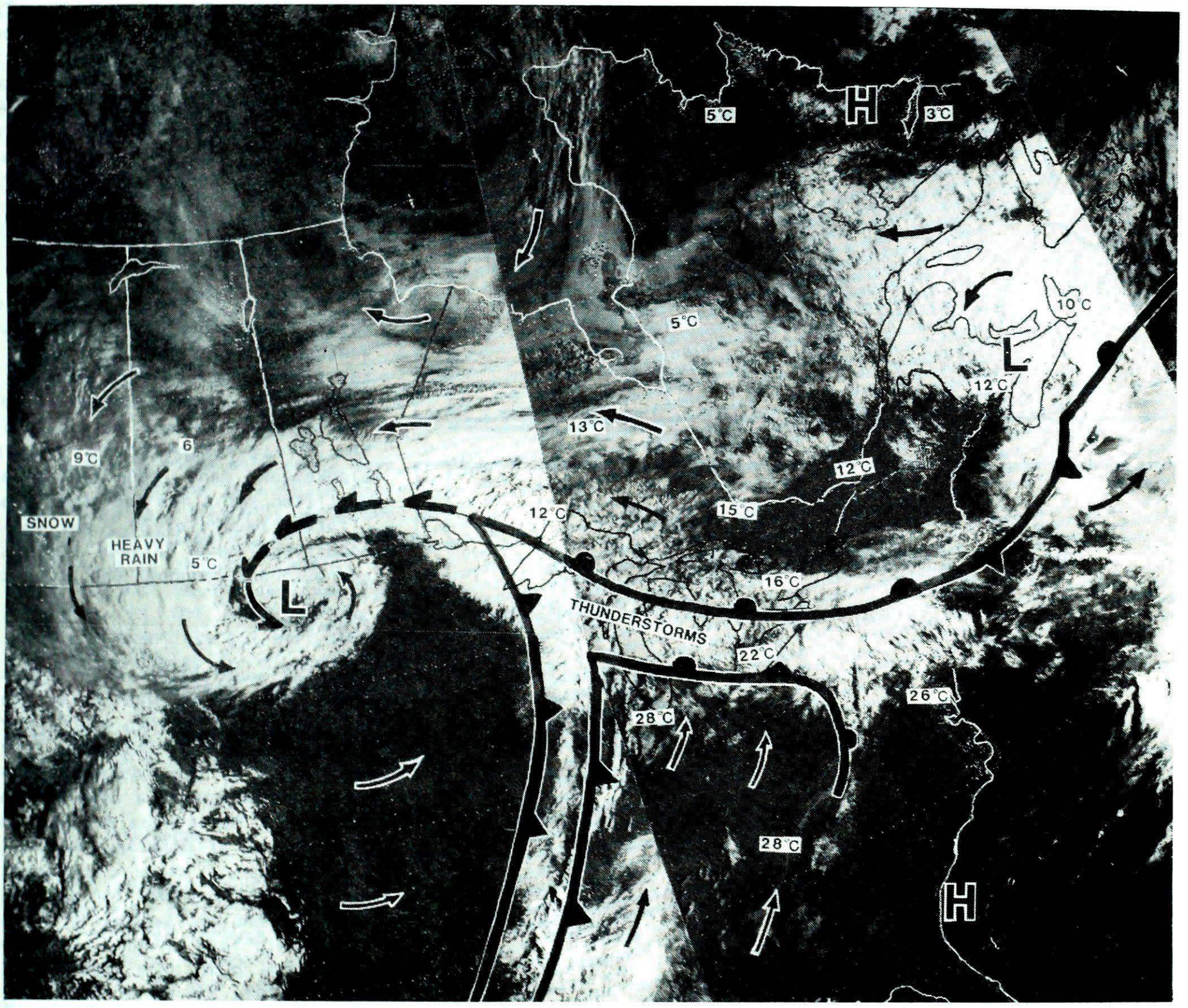
Climatic Perspectives

A weekly review of Canadian climate | September 23 to 29, 1986 | Vol.8 No.39

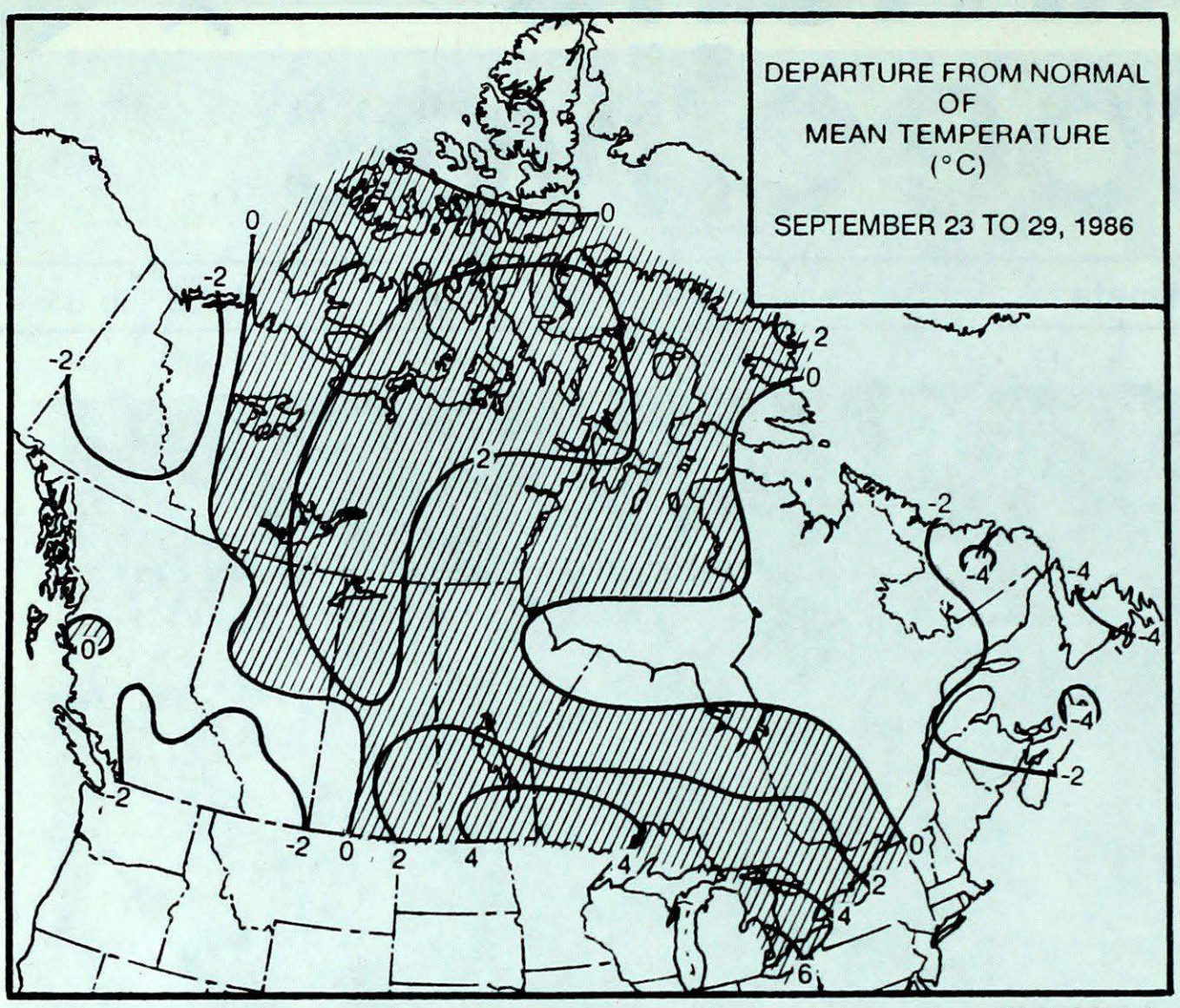


The weather picture across most of the country was unsettled, as seen by this NOAA 10 satellite photo of September 25, 1986. The weather system which gave heavy snow to southern Alberta this week is easily discernible. A very active warm front gave copious amounts of rain in the east.

- ***Major fall storm drenches the Prairies***
- ***Record rains continue over Southern Ontario***
- ***Heavy gales lash coastal Newfoundland***

Canada

TEMPERATURE



WEEKLY TEMPERATURE EXTREME (C)

		MAXIMUM		MINIMUM	
BRITISH COLUMBIA	LYTTON	19	PRINCE GEORGE	−3
YUKON TERRITORY	DRURY CREEK	15	BEAVER CREEK	−15
NORTHWEST TERRITORIES	FORT SMITH	14	EUREKA	−28
ALBERTA	MEDICINE HAT	21	ROCKY MTN. HOUSE	−3
SASKATCHEWAN	ESTEVAN	25	MEADOW LAKE	−1
MANITOBA	WINNIPEG	24	GILLAM	−2
ONTARIO	WINDSOR	30	MOOSONEE	−2
QUEBEC	SHERBROOKE	22	SCHEFFERVILLE	−5
NEW BRUNSWICK	FREDERICTON	19	CHARLO	−3
NOVA SCOTIA	GREENWOOD	20	TRURO	−1
PRINCE EDWARD ISLAND	CHARLOTTETOWN	16	CHARLOTTETOWN	2
NEWFOUNDLAND	ARGENTIA	13	WABUSH LAKE	−4

ACROSS THE NATION

WARMEST MEAN TEMPERATURE	22	WINDSOR	ONT
COOLEST MEAN TEMPERATURE	−16	EUREKA	NWT

ACROSS THE COUNTRY...

Yukon and Northwest Territories

Winter-like weather arrived in the Yukon at the beginning of the period. By mid-week, daytime temperatures didn't climb above freezing. Copious amounts of rain and snow fell in the south. Whitehorse received 30 cm of snow, a new snowfall record for the month of September. Wind warnings were posted for the Mackenzie District. In the eastern Arctic it was very windy. Winds were gusting to 100 km/h on Baffin Island on the 26th and 27th. Temperatures in the high Arctic failed to rise above the freezing.

British Columbia

Southern areas experienced their first week of typical autumn weather - cool, dull and damp. In the north, fall colours are off the trees. Most areas received at least double their normal precipitation. The first significant snowfall blanketted many mountain passes. Penticton set a new September precipitation record of 62.2 mm. The wet conditions have delayed harvesting operations throughout the province.

Prairies

The week began on a pleasant note, but the weather deteriorated thereafter. A major storm curved northward out of Colorado, giving heavy rain to the southwestern portions of the prairies from September 24 to 26. The system produced more than 150 mm of rain in southwestern Saskatchewan, while southeastern Alberta received over 100 mm. Consul Saskatchewan was swamped with 157.5 mm of rain in a 48-hour period ending on the 26th. This week, Medicine Hat received 116 mm of rain, making this the wettest month ever recorded, 194 mm. Records date back to the 1880s. Thunderstorms developed along a warm front stretching eastwards. On September 26, a cloudburst deluged Vogar, Manitoba, with 71 mm of rain in one hour. In Calgary more than 20 cm of snow fell during the evening of the 25th. In the foothills, snow depths were more than one metre. Two more week's of good weather is needed to complete this year's harvest.

PRECIPITATION

Ontario

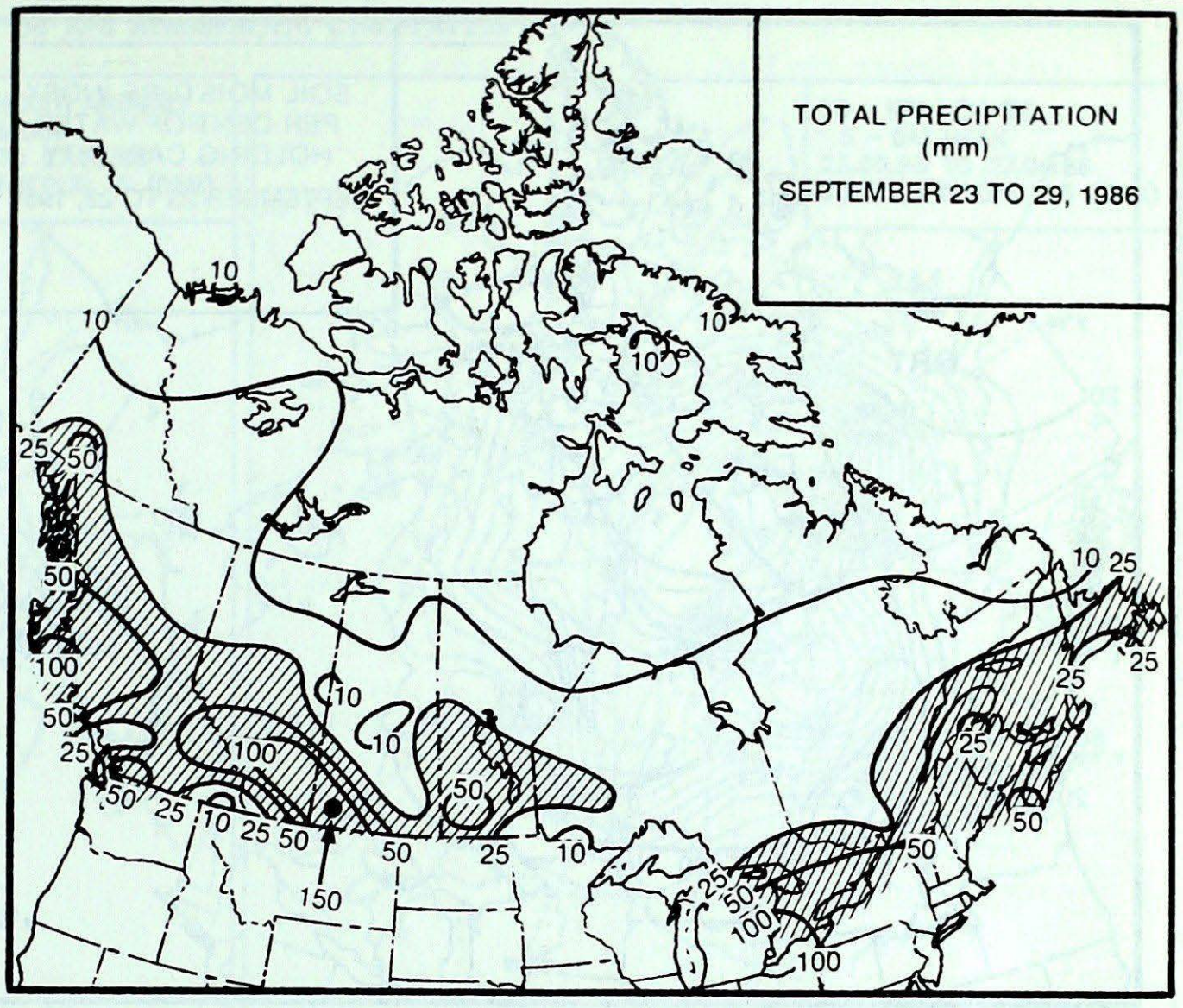
Although is was mild, disturbances continued to affect the province, producing substantial and unwanted rainfalls. The August-September period is the wettest on record at Toronto. Heavy thunderstorms occurred on a number of days. On September 23, Windsor was deluged with 69 mm of rain. On Friday the 26th, thunderstorms generating frequent lightning strikes, caused power outages in parts of southern Ontario. Severe thunderstorms on September 29 produced torrential downpours and hail. During the evening hours of the same day, storms redeveloped and a possible tornado touched down just west of Toronto. London was deluged with 89 mm of rain. Several weeks of dry weather are urgently needed if any crops are to be harvesting this fall. More details on this page.

Québec

Although there were sunny days, weather conditions were quite variable. Heaviest rainfalls were confined to the Ottawa and St. Lawrence Valleys, with amounts ranging between 20 and 30 millimetres. Temperatures in the south manage to reach the twenties, but were only in the single digits in the north and east. The Montréal International Marathon was held on Sunday September 28 under mainly cloudy skies, with a few showers along the route.

Atlantic Provinces

The weather continued to be cool and wet, as a progression of a storm funnelled through the region. Heaviest rains occurred during the first half of the period in the Maritimes, but during the latter part in Newfoundland. Daily record low temperatures were also reported. An intensifying disturbance hit Newfoundland over the weekend. In addition to heavy rains, winds in the wake of the system gusted to 120 km/h at Port-aux-Basques; offshore drilling rigs on the Grand Banks were buffetted by winds reaching 157 km/h. As the system progressed eastwards, cooler and more settled weather conditions returned.



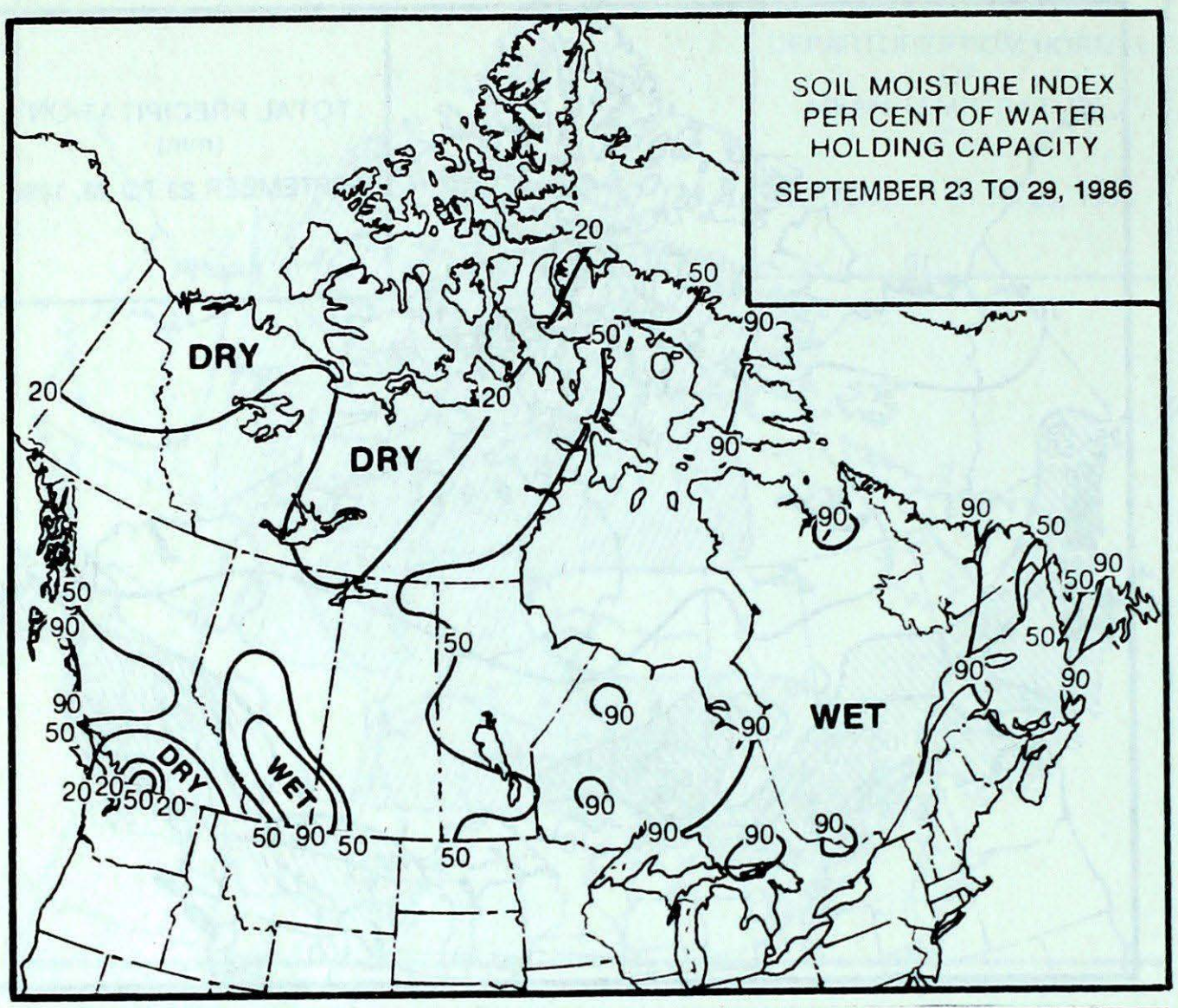
HEAVIEST WEEKLY PRECIPITATION (mm)

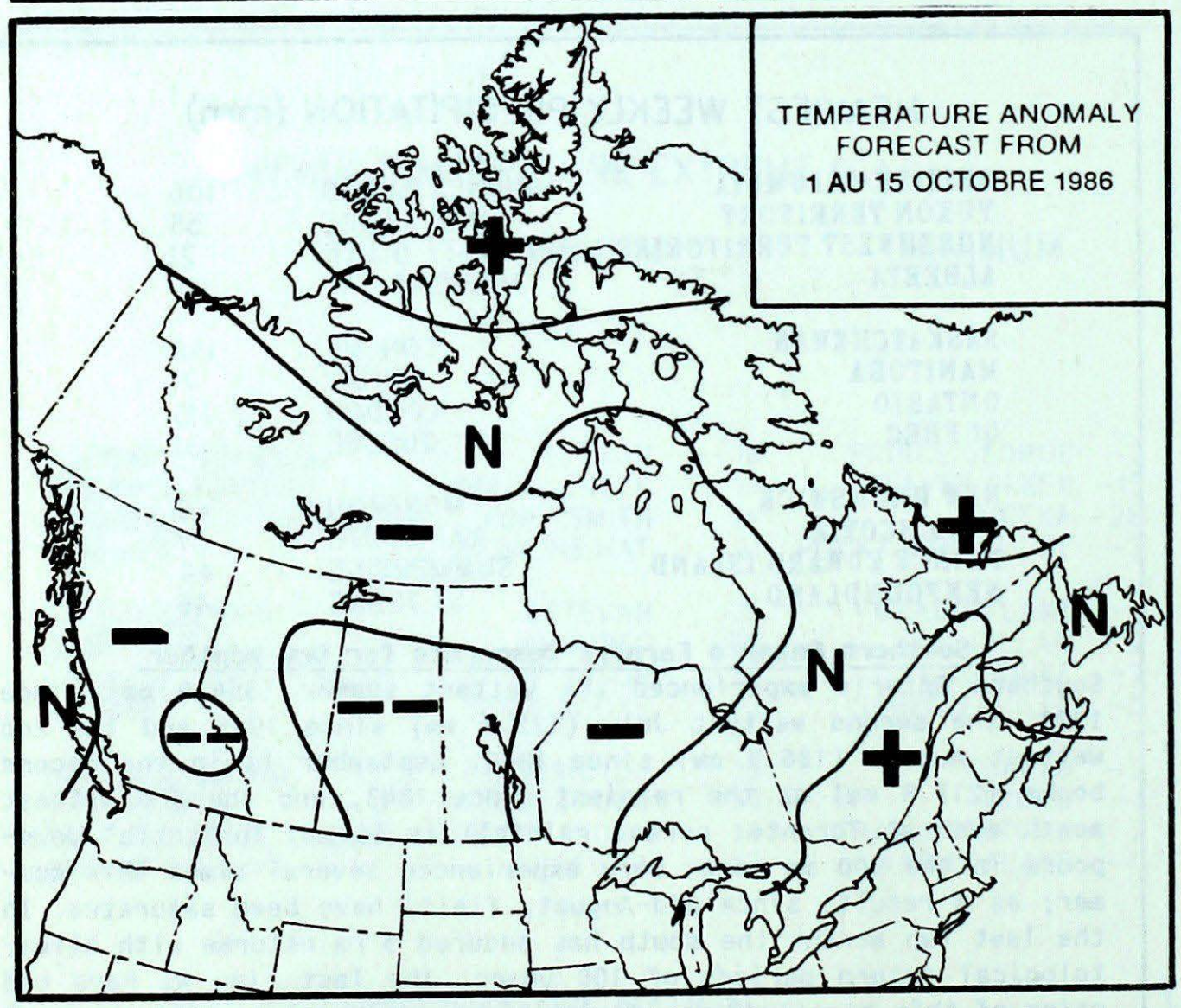
BRITISH COLUMBIA	MCINNES ISLAND	106
YUKON TERRITORY	QUEIT LAKE	55
NORTHWEST TERRITORIES	LONGSTAFF BLUFF	21
ALBERTA	MEDICINE HAT	116
SASKATCHEWAN	CONSUL	158
MANITOBA	VOGAR	71
ONTARIO	LONDON	115
QUEBEC	QUEBEC	31
NEW BRUNSWICK	MONCTON	40
NOVA SCOTIA	YARMOUTH	57
PRINCE EDWARD ISLAND	SUMMERSIDE	44
NEWFOUNDLAND	ST JOHNS	46

Southern Ontario Farmers Desperate for Dry Weather

Southern Ontario experienced the wettest summer (354.9 mm) since 1928, the second wettest July (122.3 mm) since 1938 and the 2nd wettest August (186.9 mm) since 1840. September is in the record books (217.8 mm) as the rainiest since 1843, and the 3rd wettest month ever at Toronto; normal rainfall is 66 mm. Torrential downpours in the 100 mm range were experienced several times this summer; as a result, since mid-August, fields have been saturated. In the last two months the south has endured 3 rainstorms with climatological return periods of 100 years. The last time we have had rains of this magnitude was during hurricane Hazel in 1954. Most of Ontario's bumper harvest still remains in the fields, the quality deteriorating as the weeks go by. Many low lying fields have been underwater for weeks, while others are too soggy to support any farm machinery. Crop losses are now running into the millions. Niagara grapes remain unharvested. Corn is starting to mold. Holland Marsh field crops are rotting in the soil. Half of Ontario's bean harvest has been destroyed after anticipated record yields.

FORECAST





Temperature Anomaly Forecast

++	much above normal
+	above normal
N	normal
–	below normal
––	much below normal

This forecast is prepared by searching historical weather maps to find cases similar to the present. The historical outcome during the 15 days subsequent to the chosen analogues is assumed to be a forecast for the next 15 days from now.

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Managing Editor	P.R. Scholefield
Editor (English)	A.K. Radomski
Editor (French)	A.A. Caillet
Staff Writer	M. Skarpathiotakis
Art Layout	K. Czaja
Cartography	G. Young/T. Chivers
Word Processing	N. Khaja, U. Ellis

Regional Correspondents
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The purpose of the publication is to make topical information available to the public concerning the Canadian Climate and its socio-economic impact.

Unsolicited articles are welcome but should be at maximum about 1500 words in length. They will be subject to editorial change without notice due to publishing time constraints. The contents may be reprinted freely with proper credit.

The data shown in this publication are based on unverified reports from approximately 225 Canadian synoptic weather stations. Information concerning climatic impacts is gathered from AES contacts with the public and from the media. Articles do not necessarily reflect the views of the Atmospheric Environment Service.

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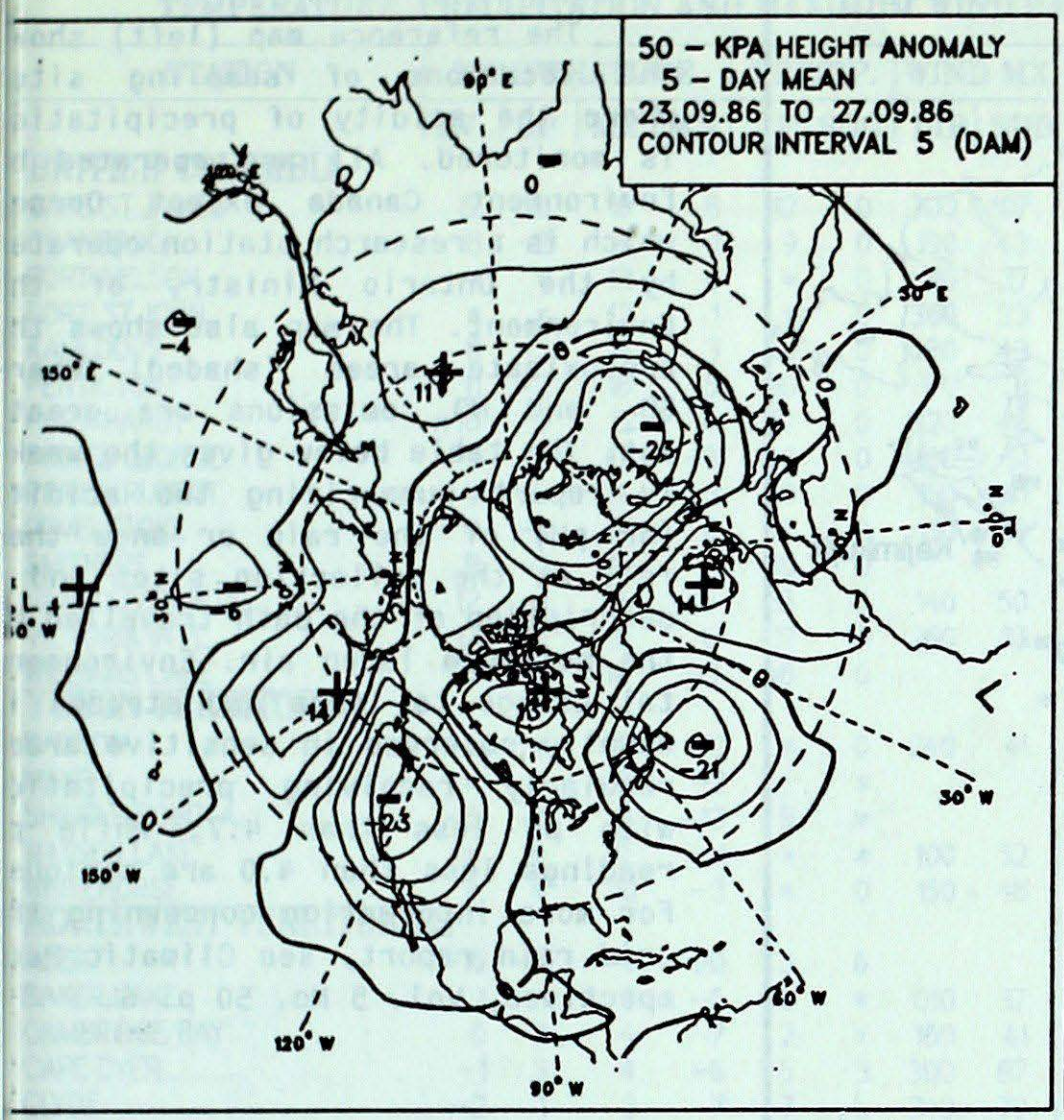
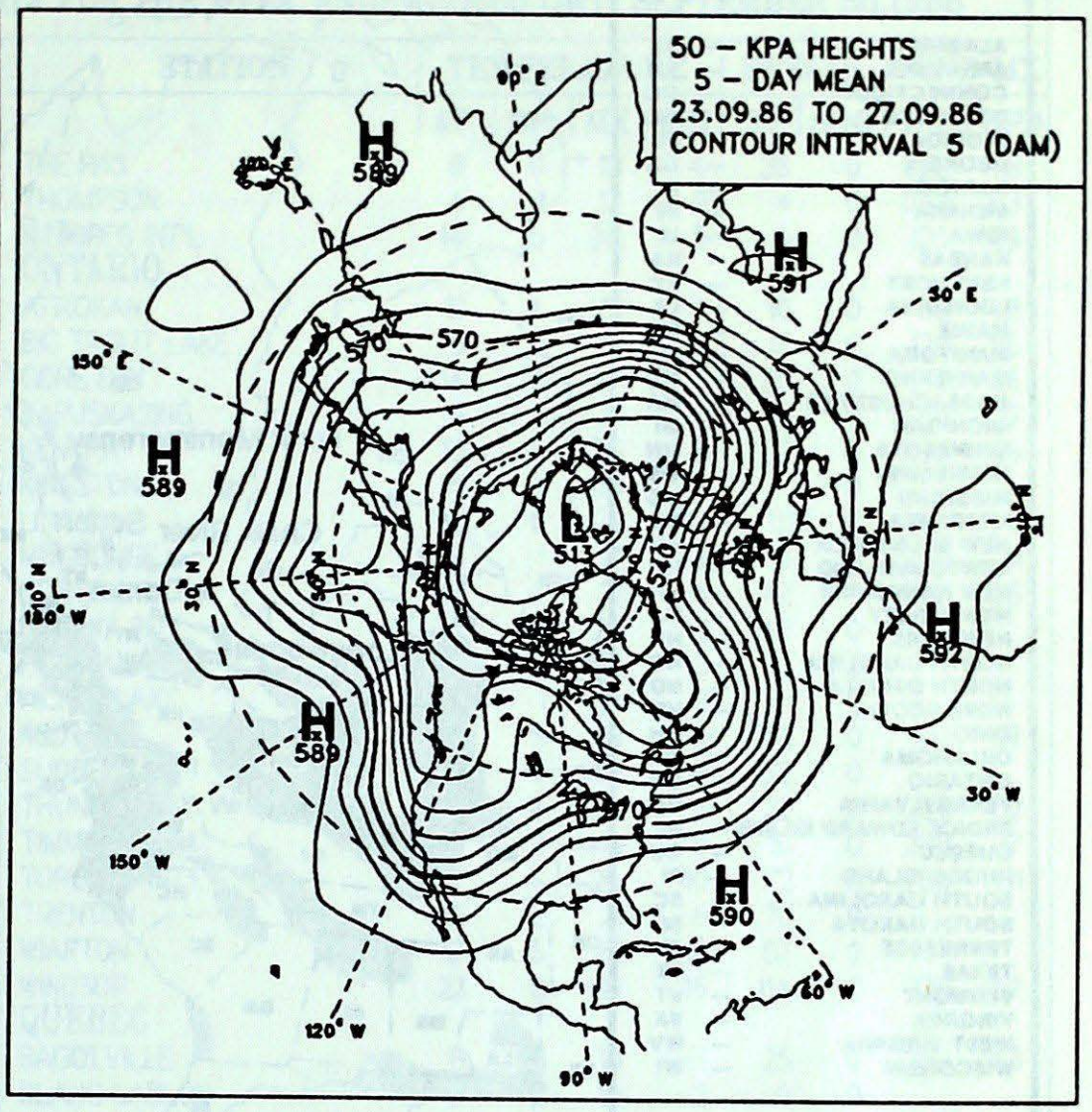
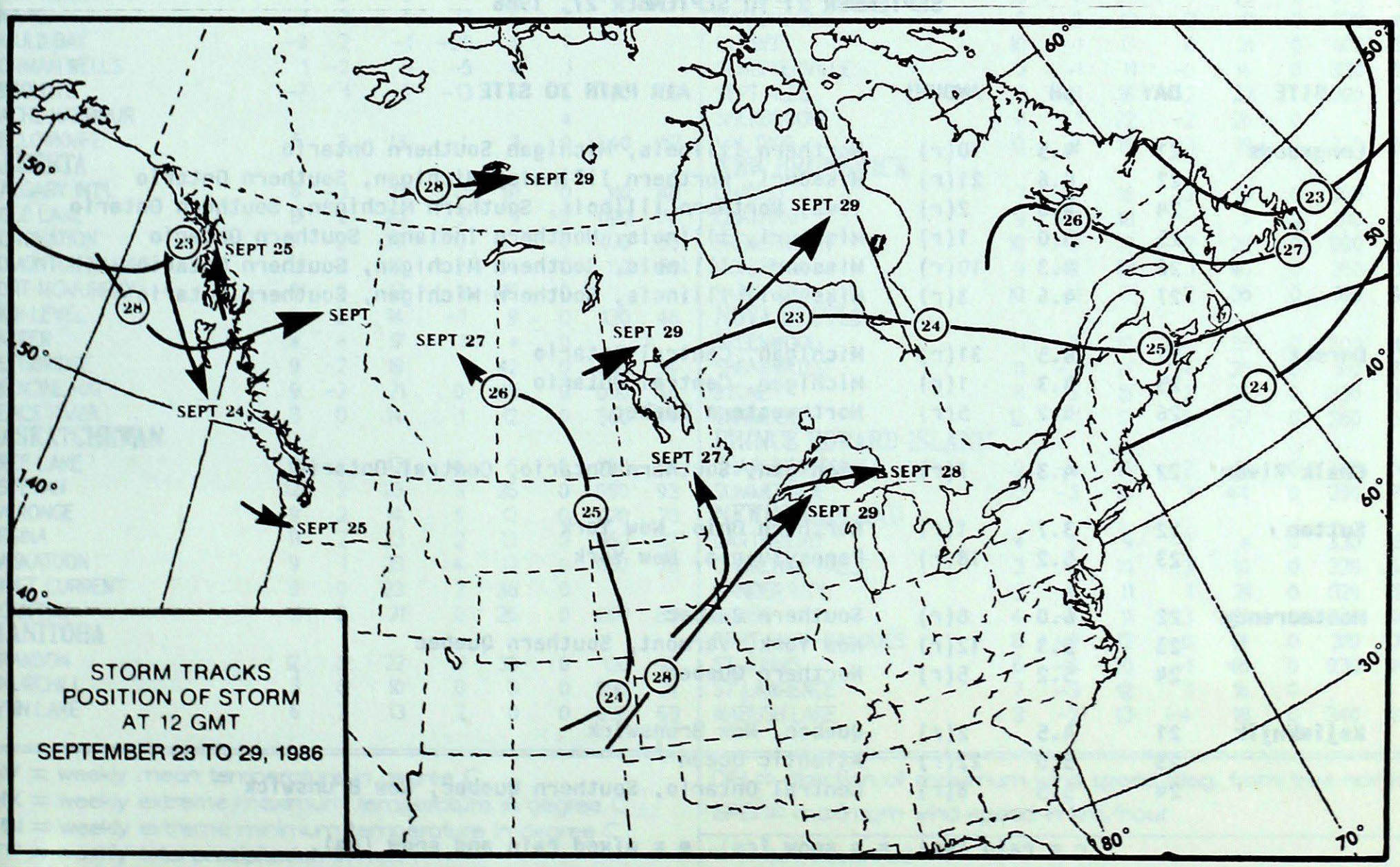
50 KPa ATMOSPHERIC CIRCULATION



MEAN 50 KPa HEIGHT ANOMALY (dam)
September 23 to September 27, 1986

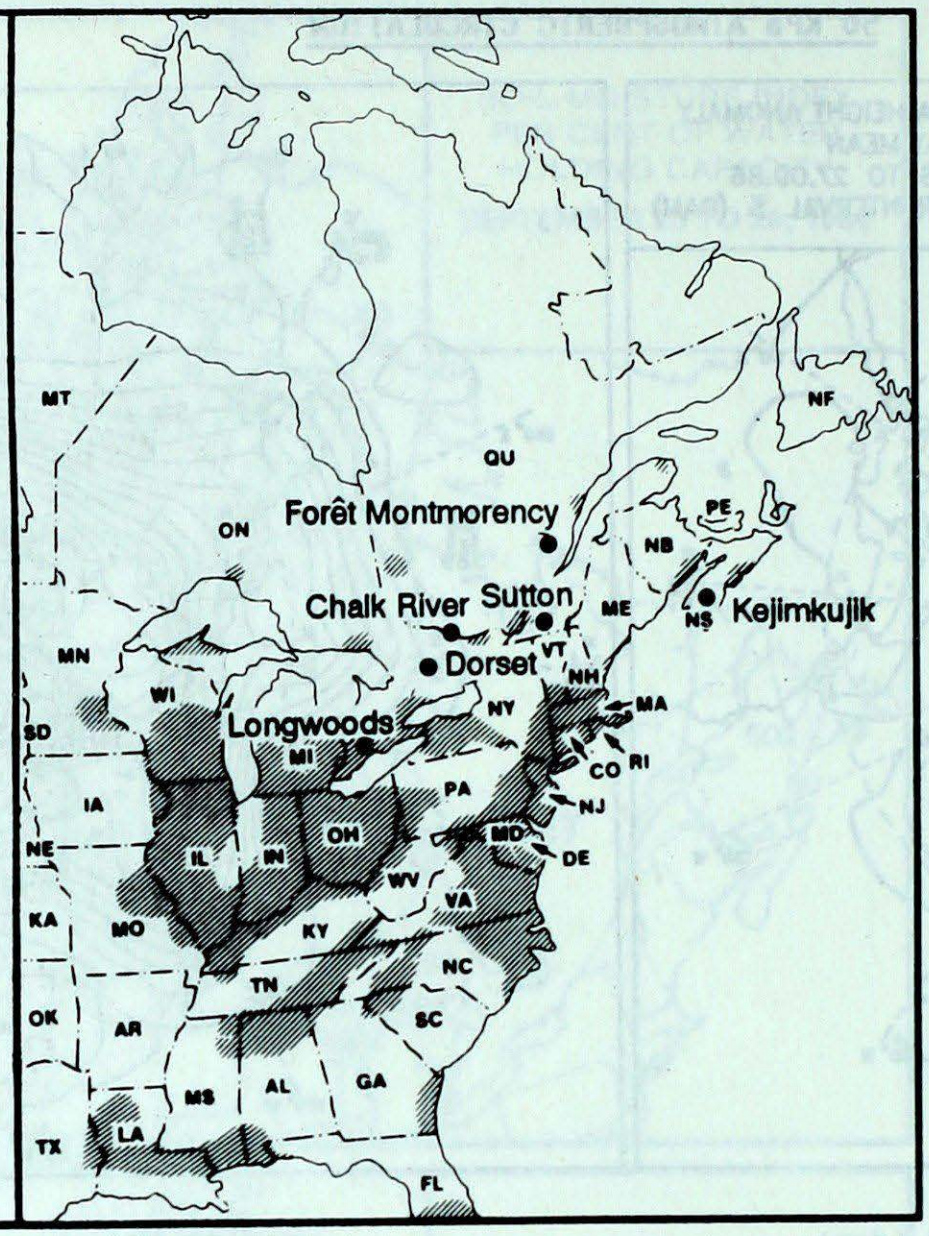


MEAN 50 KPa HEIGHTS (dam)
September 23 to September 27, 1986



ACID RAIN

ALABAMA	—	AL
ARKANSAS	—	AR
CONNECTICUT	—	CO
DELAWARE	—	DE
FLORIDA	—	FL
GEORGIA	—	GA
ILLINOIS	—	IL
INDIANA	—	IN
IOWA	—	IA
KANSAS	—	KA
KENTUCKY	—	KY
LOUISIANA	—	LA
MAINE	—	ME
MANITOBA	—	MT
MARYLAND	—	MD
MASSACHUSETTS	—	MA
MICHIGAN	—	MI
MINNESOTA	—	MN
MISSISSIPPI	—	MS
MISSOURI	—	MO
NEBRASKA	—	NE
NEW BRUNSWICK	—	NB
NEWFOUNDLAND	—	NF
NEW HAMPSHIRE	—	NH
NEW JERSEY	—	NJ
NEW YORK	—	NY
NORTH CAROLINA	—	NC
NORTH DAKOTA	—	ND
NOVA SCOTIA	—	NS
OHIO	—	OH
OKLAHOMA	—	OK
ONTARIO	—	ON
PENNSYLVANIA	—	PA
PRINCE EDWARD ISLAND	—	PE
QUÉBEC	—	QU
RHODE ISLAND	—	RI
SOUTH CAROLINA	—	SC
SOUTH DAKOTA	—	SD
TENNESSEE	—	TN
TEXAS	—	TX
VERMONT	—	VT
VIRGINIA	—	VA
WEST VIRGINIA	—	WV
WISCONSIN	—	WI



ACID RAIN REPORT

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 SO_2 and NO_x emissions are greatest. The table below gives the weekly report summarizing the acidity (or pH) of the 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 less than 4.7, while pH readings less than 4.0 are serious. For more information concerning the acid rain report, see Climatic Perspectives, Vol. 5 No. 50 p. 6.

SEPTEMBER 21 TO SEPTEMBER 27, 1986

SITE	DAY	pH	AMOUNT	AIR PATH TO SITE
Longwoods	21	4.5	10(r)	Northern Illinois, Michigan Southern Ontario
	22	4.6	21(r)	Missouri, Northern Illinois, Michigan, Southern Ontario
	24	4.0	2(r)	Iowa, Northern Illinois, Southern Michigan, Southern Ontario
	25	5.0	1(r)	Missouri, Illinois, Northern Indiana, Southern Ontario
	26	4.3	10(r)	Missouri, Illinois, Southern Michigan, Southern Ontario
	27	4.6	3(r)	Missouri, Illinois, Southern Michigan, Southern Ontario
Dorset	22	4.5	31(r)	Michigan, Central Ontario
	25	4.3	1(r)	Michigan, Central Ontario
	26	4.2	5(r)	Northwestern Quebec
Chalk River	22	4.3	7(r)	Michigan, Southern Ontario, Central Ontario
Sutton	22	3.7	1(r)	Northern Ohio, New York
	23	5.2	18(r)	Pennsylvania, New York
Montmorency	22	6.0	8(r)	Southern Quebec
	23	5.3	12(r)	New York, Vermont, Southern Quebec
	24	5.2	5(r)	Northern Quebec
Kejimkujik	21	4.5	2(r)	Quebec, New Brunswick
	23	5.0	22(r)	Atlantic Ocean
	24	5.5	8(r)	Central Ontario, Southern Quebec, New Brunswick

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

STATISTICS

TEMPERATURE, PRECIPITATION AND MAXIMUM WIND DATA FOR THE WEEK ENDING 0600 GMT SEPTEMBER 30,1986

STATION	TEMPERATURE				PRECIP.		WIND MX	
	AV	DP	MX	MN	TP	SOG	DIR	SPD
BRITISH COLUMBIA								
CAPE ST.JAMES	12	0	16	8	42	0	300	107
CRANBROOK	8	−2	14	−1	9	0	190	43
FORT NELSON	*	*	13	0	*	0	110	37
FORT ST.JOHN	*	*	13	1	*	0	360	33
KAMLOOPS	11	−2	16	3	*	0	080	43
PENTICTON	11	−2	16	5	36	0	170	31
PORT HARDY	10	0	15	4	67	0	120	46
PRINCE GEORGE	7	−1	13	−3	40	0	180	61
PRINCE RUPERT	9	−2	14	3	80	0	150	41
REVELSTOKE	9	−1	13	6	58	0	150	59
SMITHERS	8	−1	13	1	39	0		
VANCOUVER INT'L	12	−1	16	6	65	0	140	50
VICTORIA INT'L	12	0	19	6	17	0	260	37
WILLIAMS LAKE	6	−3	14	−1	48	0		
YUKON TERRITORY								
DAWSON	*	*	9	−10	*	0	240	41
MAYO	*	*	10	−2		*		
SHINGLE POINT A	−3	−2	2	−13	8	*		
WATSON LAKE	*	*	9	1	*	*	100	52
WHITEHORSE	*	*	10	−3	*	0	150	48
NORTHWEST TERRITORIES								
ALERT	−16	−2	−9	−20	3	6		
BAKER LAKE	1	1	7	−5	0	*	010	37
CAMBRIDGE BAY	0	3	4	−7	2	*	160	41
CAPE DYER	−1	3	4	−6	5	3	300	87
CLYDE	−2	1	3	−7	7	5	340	70
COPPERMINE	1	2	7	−8	11	4	340	57
CORAL HARBOUR	0	2	5	−4	14	*		
EUREKA	−16	−3	−9	−28	2	9	310	35
FORT SMITH	8	3	14	0		*		
FROBISHER BAY	0	0	4	−7	0	*	330	87
HALL BEACH	−1	2	2	−5	3	0	330	78
INUVIK	−3	−3	4	−13	5	1		
MOULD BAY	−9	2	−1	−20	4	7		
NORMAN WELLS	1	−2	8	−5	*	1		
RESOLUTE	−7	1	−2	−13	4	6	130	59
SACHS HARBOUR						*		
YELLOWKNIFE	6	3	13	−1	3	0	340	52
ALBERTA								
CALGARY INT'L	6	−3	15	0	81	0	310	48
COLD LAKE	8	0	20	3	9	0	090	74
CORONATION	7	−2	20	0	43	0	070	50
EDMONTON NAMAO	8	−1	19	2	34	0	110	50
FORT MCMURRAY	9	3	17	1	12	0		
HIGH LEVEL	6	0	14	−1	9	0	130	46
JASPER	*	*	17	1	*	0		
LETHBRIDGE	9	−2	19	1	42	0	260	54
MEDICINE HAT	9	−2	21	0	116	0	060	46
PEACE RIVER	8	0	14	1	12	0	360	44
SASKATCHEWAN								
CREE LAKE	8	*	12	4	6	0	080	81
ESTEVAN	12	2	25	3	26	0	080	93
LA RONGE	9	2	14	5	12	0	070	70
REGINA	11	2	23	2	13	0	060	87
SASKATOON	9	1	18	4	12	0	060	78
SWIFT CURRENT	9	0	23	2	38	0		
YORKTON	11	3	21	0	26	0	060	83
MANITOBA								
BRANDON	12	3	22	1	35	0	120	93
CHURCHILL	3	0	10	0	3	0	090	37
LYNN LAKE	6	2	13	2	0	0	090	63

STATION	TEMPERATURE				PRECIP.		WIND MX	
	AV	DP	MX	MN	TP	SOG	DIR	SPD
THE PAS	8	0	13	4	36	0	090	78
THOMPSON	6	1	12	0	*	0	080	63
WINNIPEG INT'L	14	5	24	5	*	0	120	69
ONTARIO								
ATIKOKAN	12	4	23	4	10	0	110	48
BIG TROUT LAKE	5	0	11	0	13	0	120	56
GORE BAY	14	3	22	7	20	0	210	56
KAPUSKASING	9	1	17	0	*	0	110	37
KENORA	13	5	24	8	22	0	130	65
KINGSTON	15	2	20	7		0		
LONDON	18	6	26	12	115	0	270	44
MOOSONEE	8	1	17	−2	16	0	050	31
NORTH BAY	13	4	21	4	42	0	060	35
OTTAWA INT'L	13	2	23	3	40	0		
PETAWAWA	12	*	22	3	27	0		
PICKLE LAKE	8	1	15	0		0		
RED LAKE	10	3	18	4	33	0	100	57
SUDBURY	13	3	22	4	22	0		
THUNDER BAY	12	4	23	5	22	0	080	52
TIMMINS	9	2	18	0	10	0	280	37
TORONTO INT'L	17	4	24	10	72	0	230	81
TRENTON	15	2	21	8	70	0		
WIARTON	17	5	25	10	57	0		
WINDSOR	22	8	30	16	114	0	220	67
QUEBEC								
BAGOTVILLE	8	−1	15	−3	25	0	280	43
BLANC SABLON	5	−2	10	−2	0	0		
INUKJUAK	4	0	11	−1	3	0	100	43
KUUJJUAQ	3	0	11	−3	0	0	010	37
KUUJJUARAPIK	4	−1	11	−4	5	0	120	48
MANIWAKI	11	1	21	−2	18	0		
MONT JOLI	7	−3	14	0	28	0	120	43
MONTREAL INT'L	13	0	22	3	25	0	030	37
NATASHQUAN	6	−2	12	−2	11	0	020	48
QUEBEC	10	−1	17	0	31	0	070	52
SCHEFFERVILLE	2	−1	11	−5	14	0	330	52
SEPT-ILES	6	−1	16	−2	22	0	300	56
SHERBROOKE	11	1	22	−2	26	0		
VAL D'OR	10	2	19	−3	19	0	320	50
NEW BRUNSWICK								
CHARLO	7	−2	16	−3	15	0	300	70
CHATHAM	9	−3	18	0	*	0	310	41
FREDERICTON	10	−2	19	−2	26	0	090	39
MONCTON	9	−2	18	1	40	0	250	52
SAINT JOHN	10	−1	17	2	36	0	100	48
NOVA SCOTIA								
GREENWOOD	11	−2	20	1	35	0	300	61
SHEARWATER	11	−2	17	4	25	0	100	74
SYDNEY	8	−5	15	2	26	0	330	91
YARMOUTH	12	−1	17	5	57	0	360	59
PRINCE EDWARD ISLAND								
CHARLOTTETOWN	9	−3	16	2	42	0	340	56
SUMMERSIDE	10	−3	16	3	44	0	350	78
NEWFOUNDLAND								
CARTWRIGHT	*	*	9	−2	*	0	330	81
CHURCHILL FALLS	3	0	10	−3	10	0	320	63
GANDER INT'L	5	−6	11	1	31	0	020	52
GOOSE	4	−4	11	−3	10	0	320	50
PORT-AUX-BASQUES	8	−3	12	0	14	0	310	106
ST JOHN'S	6	−6	10	−1	46	0	030	74
ST LAWRENCE	7	−3	12	1	16	0		
WABUSH LAKE	3	−2	13	−4	18	0	340	48

AV = weekly mean temperature in degree C
MX = weekly extreme maximum temperature in degree C
MN = weekly extreme minimum temperature in degree C
TP = weekly total precipitation in mm
DP = departure of mean temperature from normal in degree C
SOG = snow depth on ground in cm, last day of the period

DIR = direction of maximum wind speed (deg. from true north)
SPD = maximum wind speed in km/hour

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