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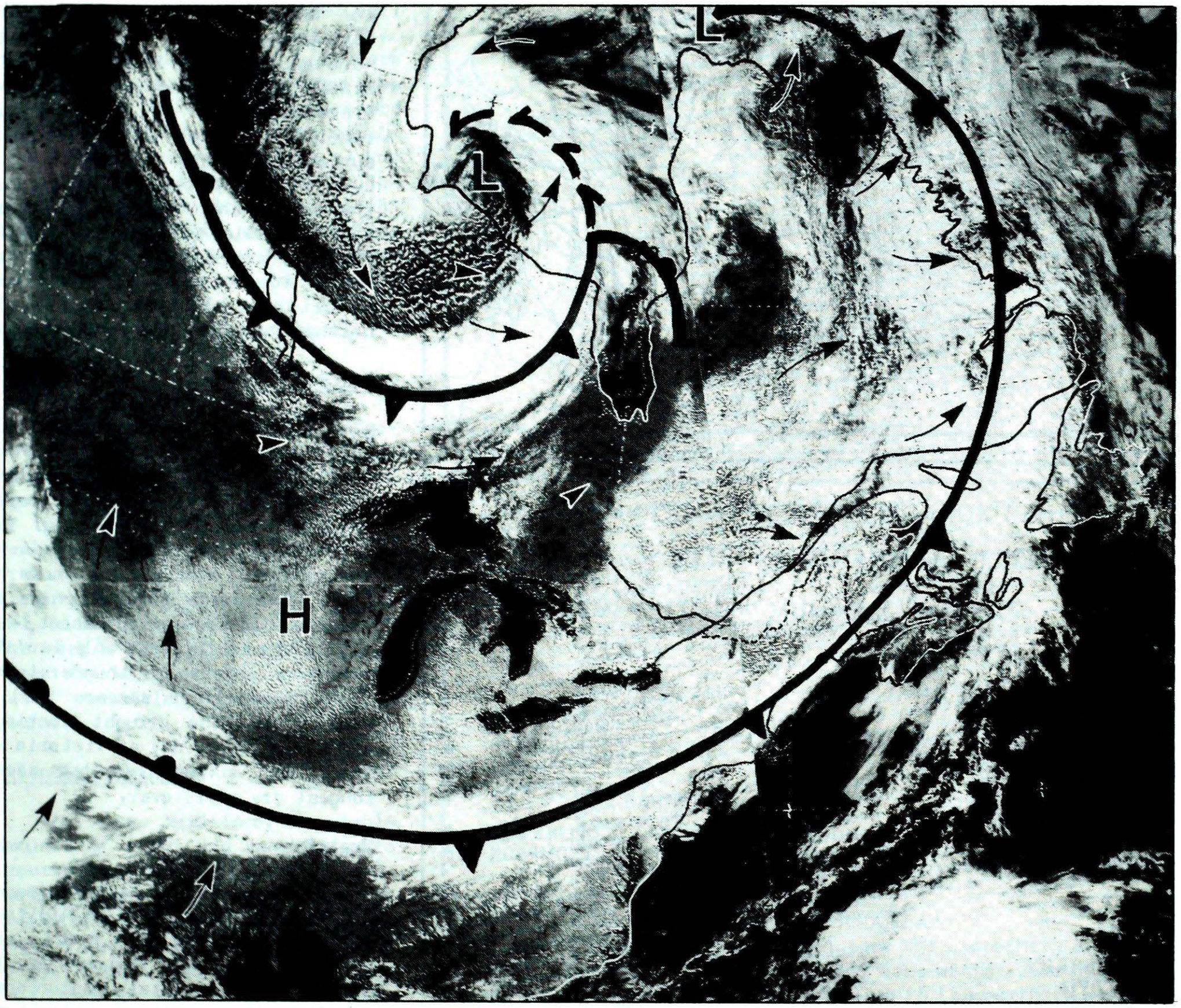
Climatic Perspectives

MONTHLY SUPPLEMENT INCLUDED

A weekly review of Canadian climate Septembre 2 to 8, 1986 Vol.8 No.36

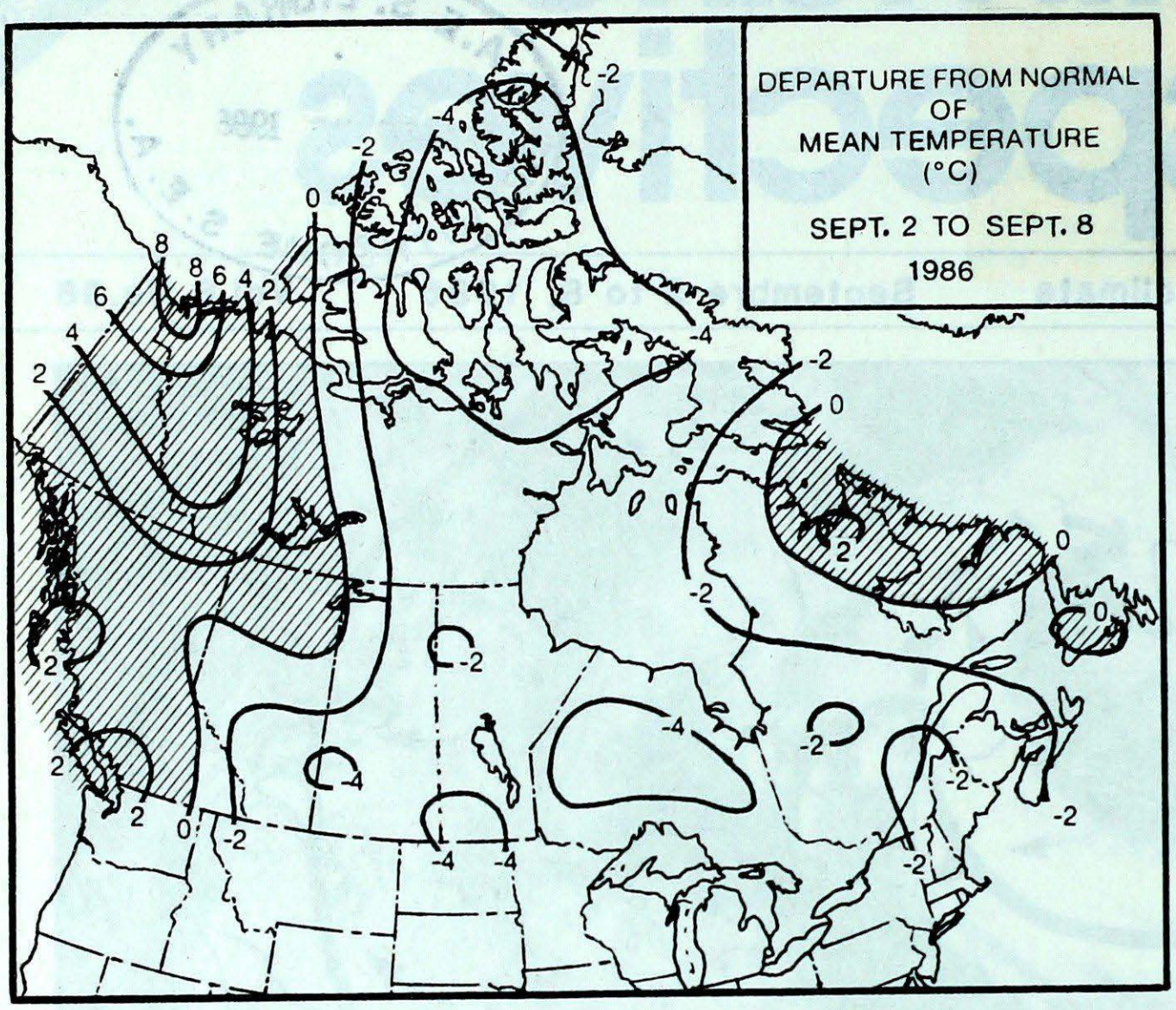


A number of frontal disturbances affected the eastern half of the country as evident by this NOAA 9 satellite photograph of September 7, 1986. For more information see page 3.

- ***Second longest dry spell continues in Vancouver and Victoria***
- ***Arctic ice proves too much for cruise ship***
- ***Frosty autumn-like weather comes early to Eastern Canada***

Canada

TEMPERATURE



WEEKLY TEMPERATURE EXTREME (C)

	MAXIMUM		MINIMUM	
BRITISH COLUMBIA	LYTTON	31	DEASE LAKE	−3
YUKON TERRITORY	KOMAKUK BEACH A	24	BURWASH	−6
NORTHWEST TERRITORIES	INUVIK	24	EUREKA	−14
ALBERTA	MEDICINE HAT	27	EDMONTON INT'L	−5
SASKATCHEWAN	MOOSE JAW	26	COLLINS BAY	−4
MANITOBA	DAUPHIN	23	THOMPSON	−6
	GRETNA			
ONTARIO	WINDSOR	28	ARMSTRONG	−6
QUEBEC	LA GRANDE RIVIERE	23	LA GRANDE RIVIERE	−1
NEW BRUNSWICK	FREDERICTON	25	CHATHAM	0
NOVA SCOTIA	GREENWOOD	25	TRURO	0
PRINCE EDWARD ISLAND	CHARLOTTETOWN	23	CHARLOTTETOWN	4
NEWFOUNDLAND	BADGER	23	WABUSH LAKE	−2

ACROSS THE NATION

WARMEST MEAN TEMPERATURE	21	LYTTON	BC
COOLEST MEAN TEMPERATURE	−9	EUREKA	NWT

ACROSS THE COUNTRY...

Yukon and Northwest Territories

In the Yukon and Mackenzie District, cloudy and cool weather gave way to sunshine and record warmth for the weekend. Even though day time readings registered in the low twenties frost was widespread during the nights. Fresh snowfalls were quite general in in the Arctic. Baffin Island was cool and wet. Since September 1, Frobisher has received 52.6 mm of rain already surpassing their monthly normal. Even with ice breaker assistance, the cruise ship 'World Discoverer' was not able to make any headway through Peel Sound because of the heavy ice conditions, and as a result the quest through the northwest passage was terminated.

British Columbia

Changeable weather conditions were encountered in central and northern B.C. due to the proximity of the storm track, but overall precipitation amounts were very light. Slash burning has begun in the central interior, and smoke has been observed drifting through the valleys. It was a pleasant week across the south, with only isolated afternoon showers or thunderstorms. Even though light showers fell in some areas, the drought continues and is in its 53 day at Victoria and Vancouver, making this the second longest dry spell ever.

Prairies

In the wake of a low pressure system which moved out of Manitoba, a record breaking cool Arctic air-mass covered the region. Several more weaker frontal disturbances rippled across southern agricultural districts, giving partly cloudy and sometimes showery weather conditions for part of the period. Rainfalls were generally less than 15 mm, although there were some higher amounts. Widespread frost occurred in many agricultural districts, as overnight minimums dipped well below freezing, breaking many daily temperature records. Harvesting of the bumper grain crop is in full swing in all areas.

PRECIPITATION

Ontario

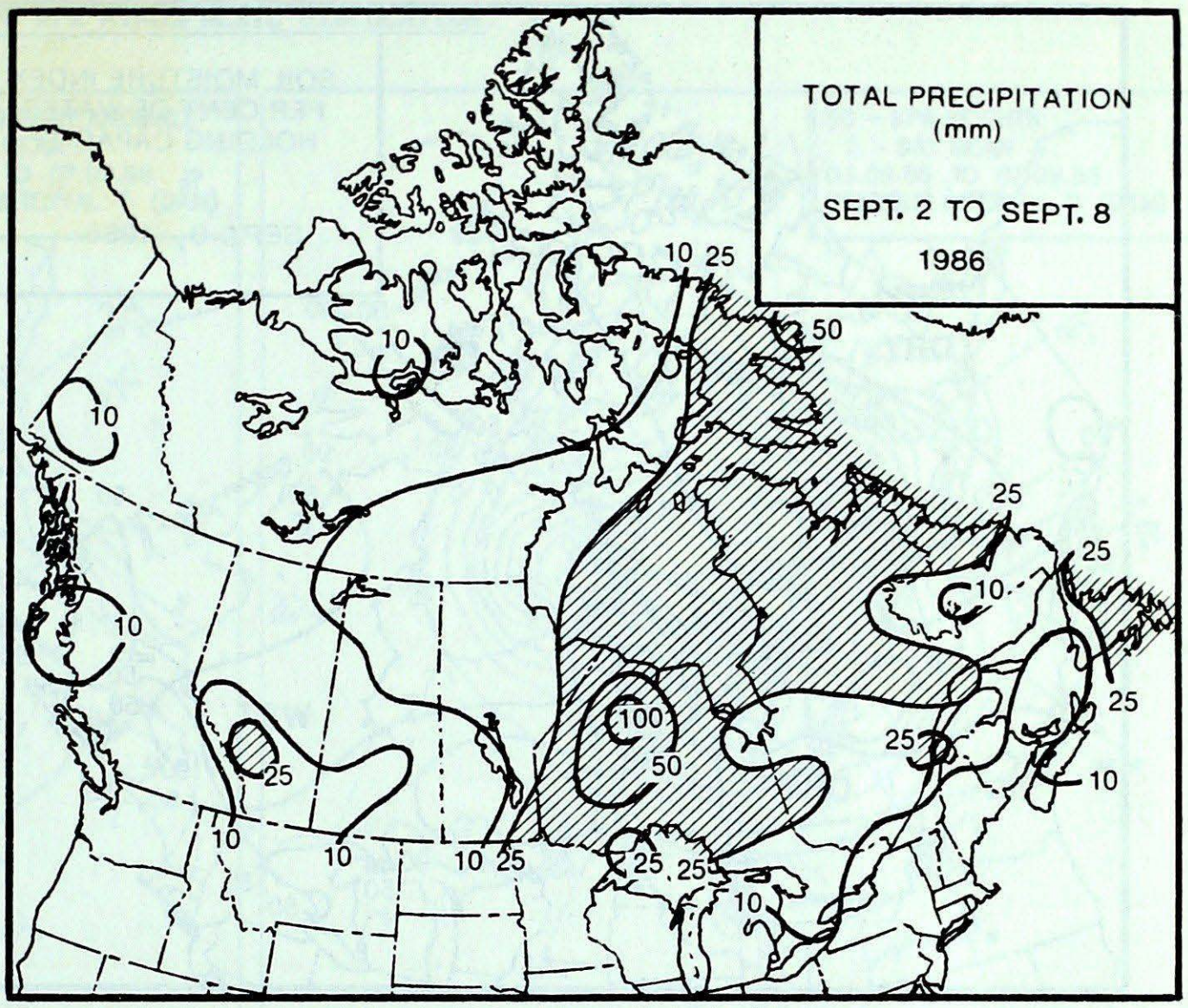
The period began sunny and seasonably warm. By mid-week cloudy, wet weather conditions affected the north, as an area of low pressure moved in from Manitoba. Heavy showers and thunderstorms developed in southern and eastern Ontario on September 4. Golf ball sized hail was reported east of Sault Ste. Marie. Unstable Arctic air once again swept southwards across the province by the weekend. New record low daily temperatures were established on September 6 through to the 8th. Ground frost occurred in southern Ontario on the morning of September 8. Much drier weather conditions this past week have allowed farmers to get on with the fall harvest. This year Niagara grape harvest is rated as superb.

Québec

Weather conditions were changeable and cool. Lowest readings occurred on September 6 and 7, with frost being reported in many areas of the province. In the south, many daily low temperature records were broken during this period, while readings in the north were seasonably mild. During the latter half of the week a frontal trough moved in from the west, giving a predominantly unsettled, showery weather regime.

Atlantic Provinces

In the Maritimes, variable amounts of cloud and sunshine were reported during the period. Temperatures dipped to daily record low values at several locations on September 4 and 5, causing frost in some areas. A high pressure system gave fair weather to most of Labrador, but a frontal disturbance brought some cloud and showers in for the weekend. On the island of Newfoundland, an on-shore flow resulted in dull, damp weather conditions, and fog was widespread at night. Sunshine was more common over the western half of the Island. It became sunny everywhere over the weekend, when temperatures managed to climb into the low twenties. On September 3 winds gusted to 94 km/h at Twillingate.



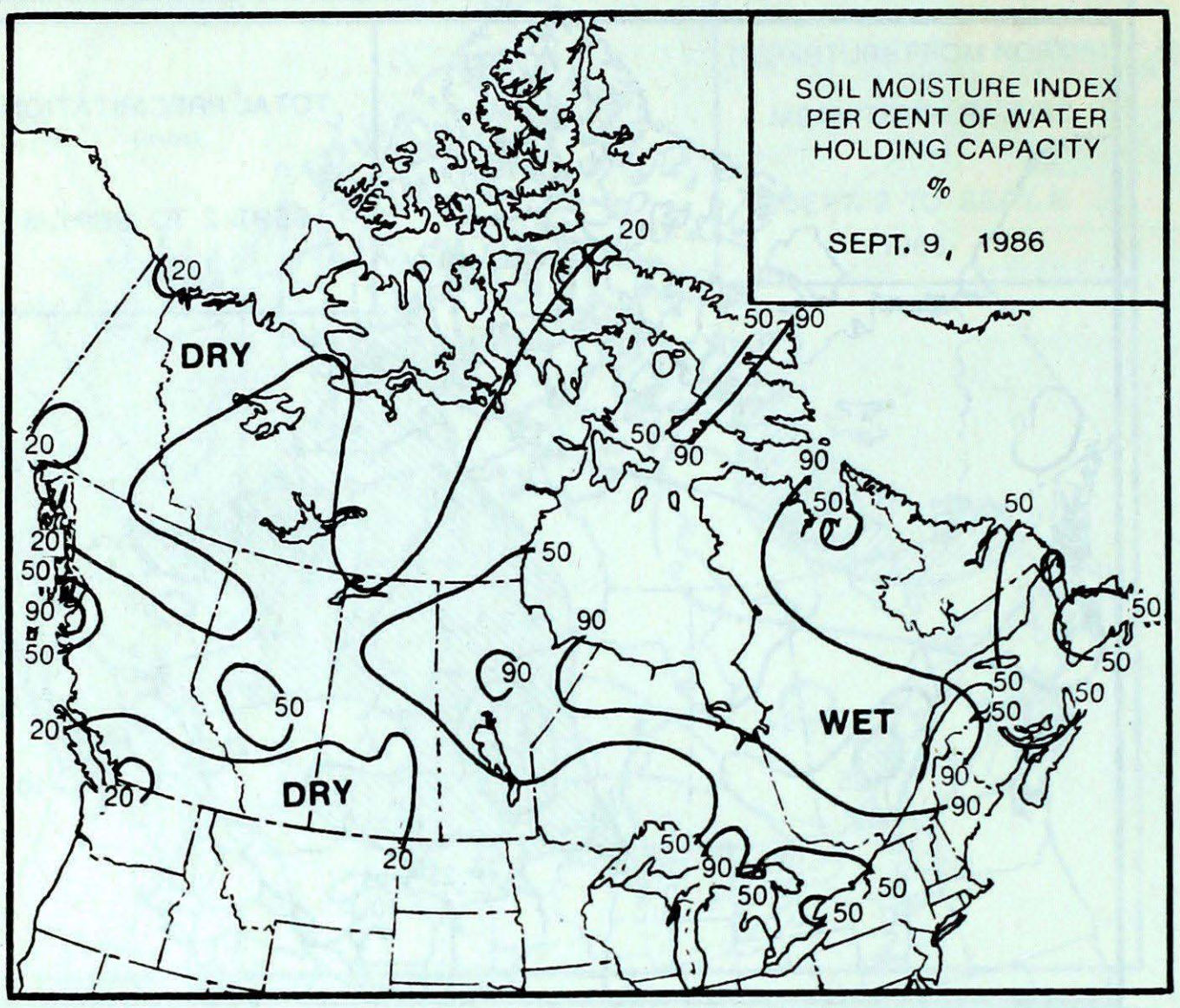
HEAVIEST WEEKLY PRECIPITATION (mm)

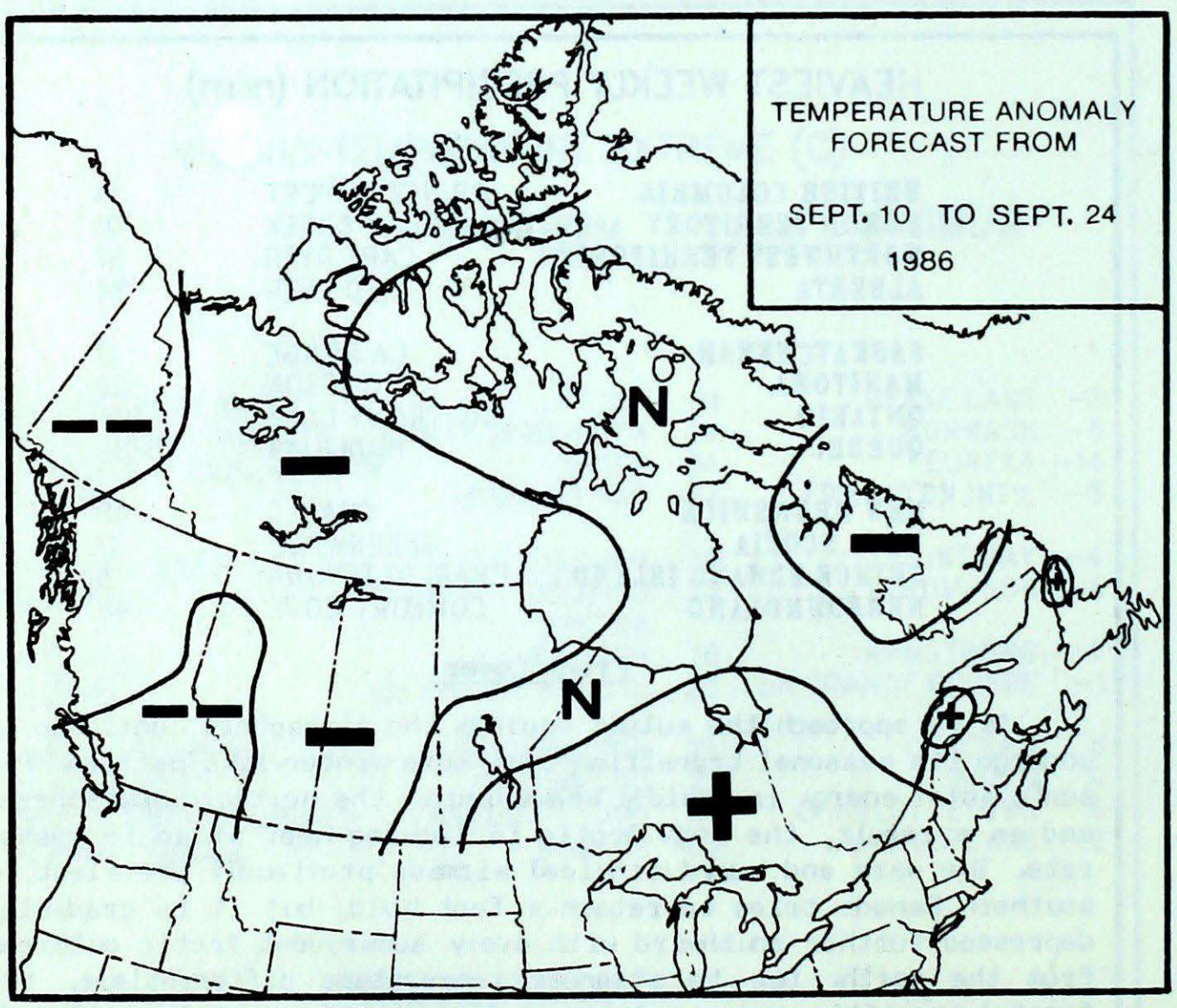
BRITISH COLUMBIA	PRINCE RUPERT	16
YUKON TERRITORY	DRURY CREEK	21
NORTHWEST TERRITORIES	CAPE DYER	57
ALBERTA	RED DEER	34
SASKATCHEWAN	LA RONGE	17
MANITOBA	THOMPSON	22
ONTARIO	BIG TROUT LAKE	104
QUEBEC	INUKJUAK	89
NEW BRUNSWICK	CHARLO	18
NOVA SCOTIA	GREENWOOD	17
PRINCE EDWARD ISLAND	CHARLOTTETOWN	5
NEWFOUNDLAND	COMFORT COVE	48

Front Cover

As we approach the autumn equinox the atmosphere continues to undergo its seasonal transition to a more winter-like pattern. The sun's solar energy is rapidly weakening in the northern hemisphere, and as a result, the high Arctic is loosing heat at an increased rate. The warm and humid tropical airmass previously prevalent in southern Canada tries to retain a foot hold, but it is gradually depressed further southward with every subsequent Arctic outbreak from the north. Due to stronger temperature differentials, the frontal transition zones between contrasting airmasses have already become more readily defined with increased cloud. The unstable Arctic airmass, which covered a large portion of eastern Canada over the weekend, is easily discernible in the photograph by the development of cell-like convective towering cumulus clouds.

FORECAST





Temperature Anomaly Forecast

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.

++	much above normal
+	above normal
N	normal
-	below normal
--	much below normal

CLIMATIC PERSPECTIVES VOLUME 8

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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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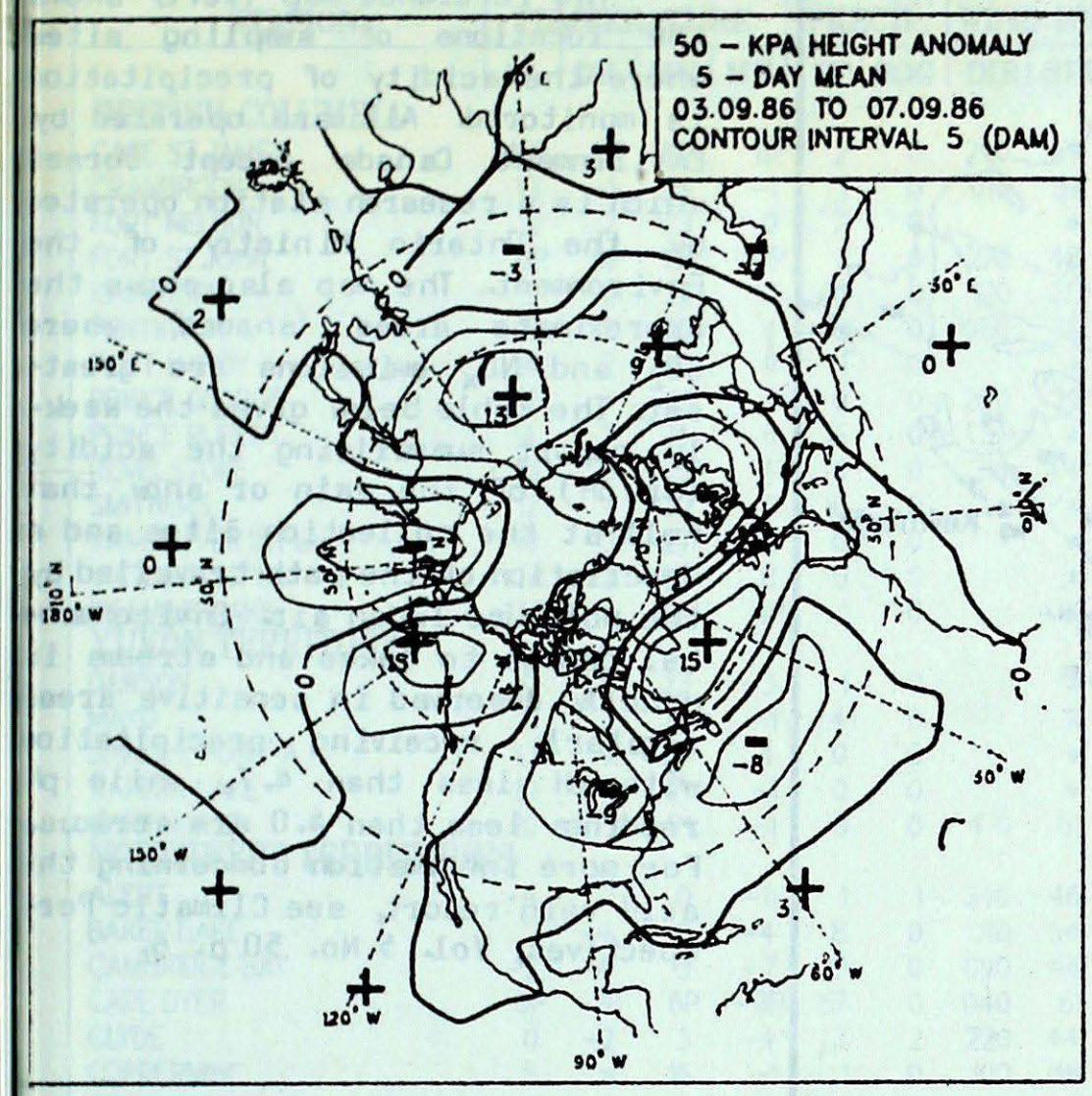
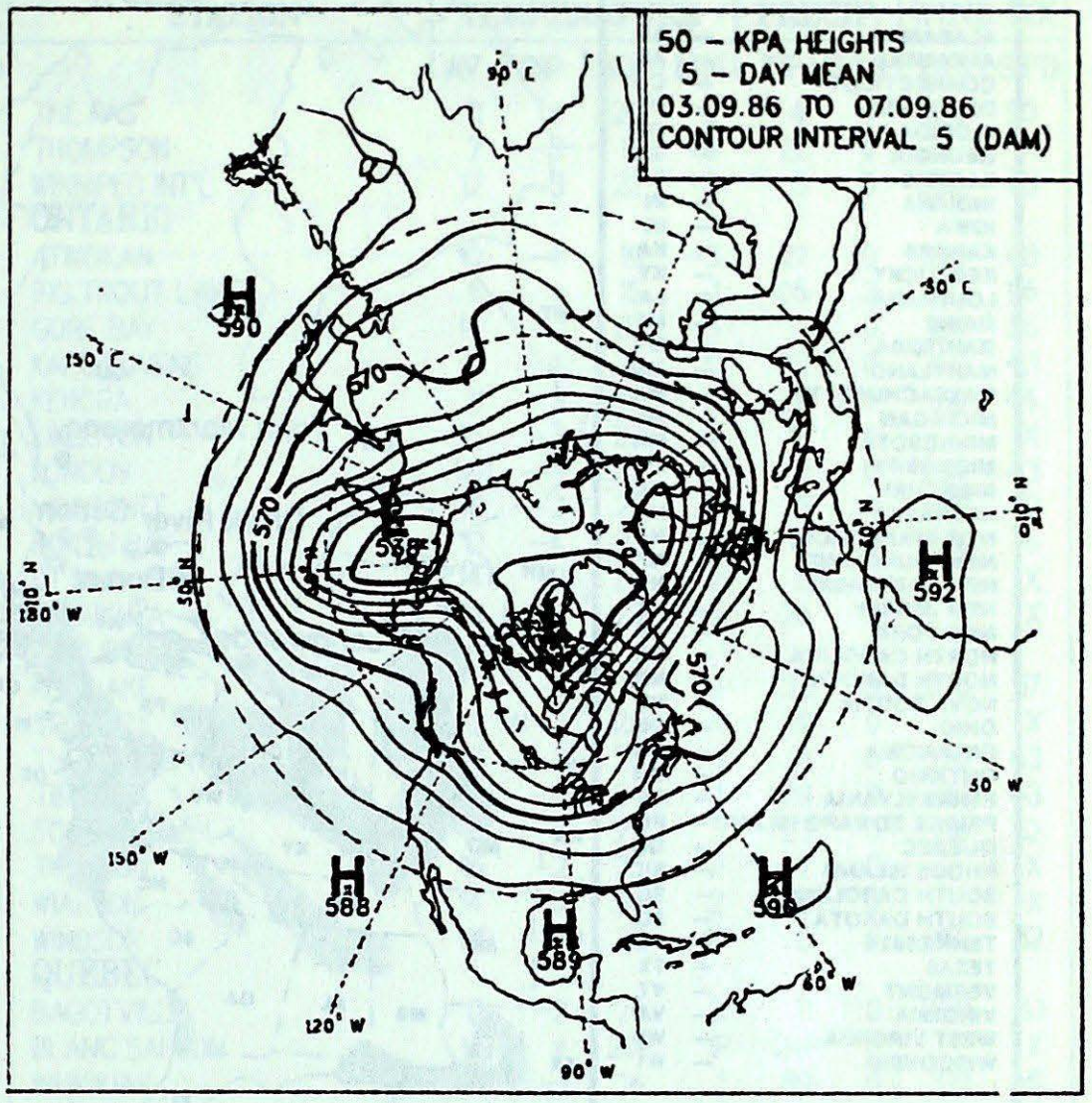
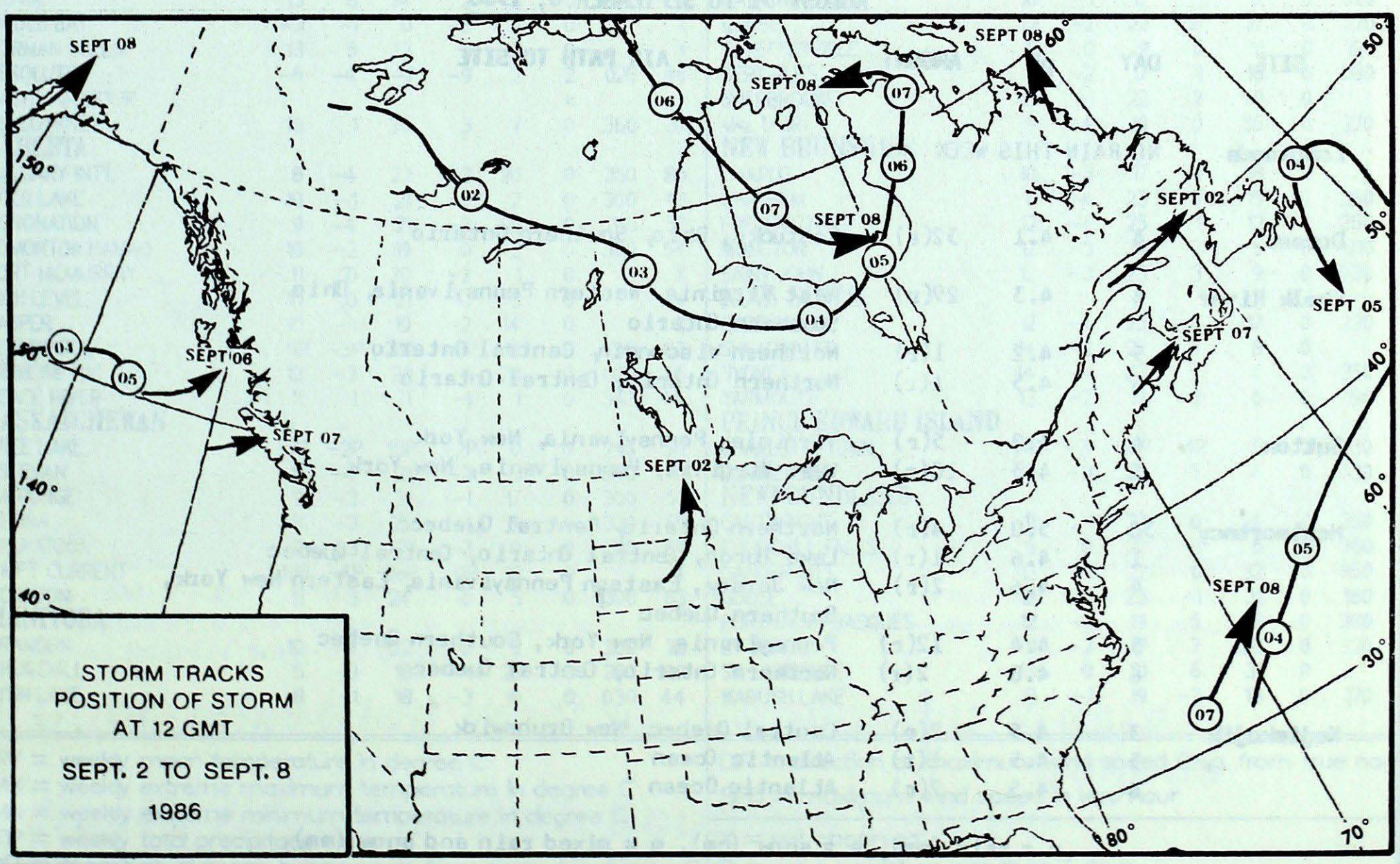
50 KPa ATMOSPHERIC CIRCULATION



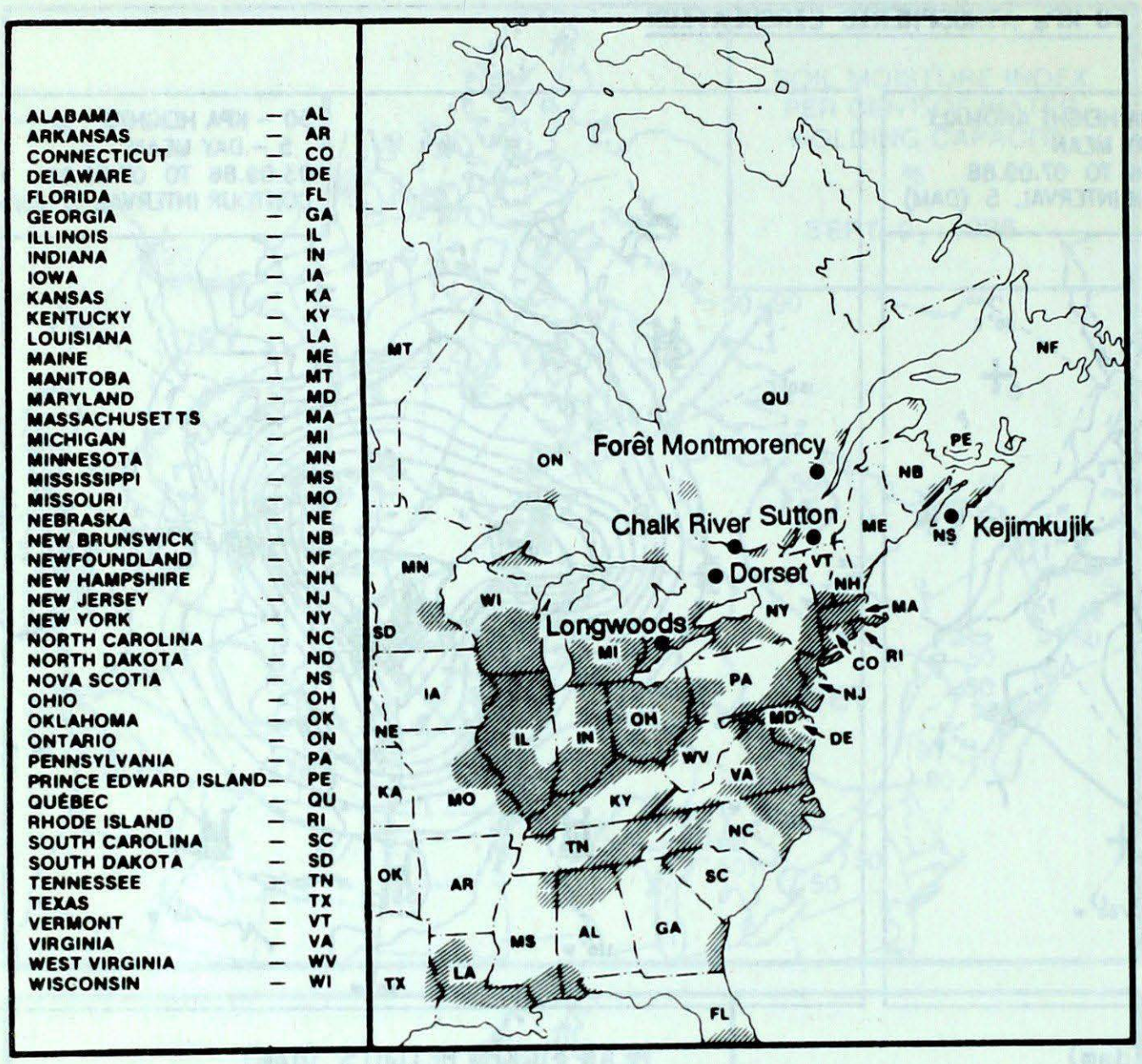
MEAN 50 KPa HEIGHT ANOMALY (dam)
September 3 to September 7, 1986



MEAN 50 KPa HEIGHTS (dam)
September 3 to September 7, 1986



ACID RAIN



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.

AUGUST 31 TO SEPTEMBER 6, 1986

SITE	DAY	pH	AMOUNT	AIR PATH TO SITE
Longwoods	NO RAIN THIS WEEK			
Dorset	4	4.1	32(r)	Kentucky, Ohio, Southern Ontario
Chalk River	4	4.3	29(r)	West Virginia, Western Pennsylvania, Ohio Southern Ontario
	5	4.2	1(r)	Northern Wisconsin, Central Ontario
	6	4.5	1(r)	Northern Ontario, Central Ontario
Sutton	4	3.8	5(r)	Virginia, Pennsylvania, New York
	5	4.3	10(r)	West Virginia, Pennsylvania, New York
Montmorency	30	5.0	4(r)	Northern Ontario, Central Quebec
	1	4.6	1(r)	Lake Huron, Central Ontario, Central Quebec
	4	4.6	2(r)	New Jersey, Eastern Pennsylvania, Eastern New York, Southern Quebec
	5	4.4	12(r)	Pennsylvania, New York, Southern Quebec
	6	4.8	2(r)	Northern Ontario, Central Quebec
Kejimkujik	3	4.5	2(r)	Central Quebec, New Brunswick
	5	4.5	1(r)	Atlantic Ocean
	6	4.5	7(r)	Atlantic Ocean

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

TEMPERATURE, PRECIPITATION AND MAXIMUM WIND DATA FOR THE WEEK ENDING 0600 GMT SEPTEMBER 9,1986

STATION	TEMPERATURE				PRECIP.		WIND MX	
	AV	DP	MX	MN	TP	SOG	DIR	SPD
BRITISH COLUMBIA								
CAPE ST.JAMES	15P	2P	20P	11P	2	0	290	59
CRANBROOK	13	−1	25	−1	1	0	010	59
FORT NELSON	12	2	23	0	2	0		*
FORT ST.JOHN	11P	0P	19P	−1P	1	0	270	48
KAMLOOPS	19	2	27	10	0	0	120	35
PENTICTON	18	2	30	6	8	0	060	39
PORT HARDY	14	2	20	9	1	0		*
PRINCE GEORGE	12	*	21	0	8	0	280	39
PRINCE RUPERT	14	2	24	6	16	0		*
REVELSTOKE	15	0	25	4	5	0	310	44
SMITHERS	12	1	22	0	16	0		*
VANCOUVER INT'L	18	3	27	13	0	0		*
VICTORIA INT'L	17	2	28	8	0	0		*
WILLIAMS LAKE	13P	*	22P	4P	1	0		X
YUKON TERRITORY								
DAWSON	10	*	23	−3	1	0		*
MAYO	11	3	24	−1	4	0		X
SHINGLE POINT A	13	9	24	4	0	0		*
WATSON LAKE	10	1	21	−1	0	0		*
WHITEHORSE	10	1	21	−1	0	0	170	61
NORTHWEST TERRITORIES								
ALERT	−6	0	0	−11	1	1	340	46
BAKER LAKE	2	−4	11	−4	8	0	010	54
CAMBRIDGE BAY	−2	−4	3	−7	13	0	090	46
CAPE DYER	0P	−2P	6P	−3P	57	0	040	61
CLYDE	0	−2	3	−4	7	2	220	44
COPPERMINE	5	*	16	−1	1	0	100	48
CORAL HARBOUR	0	−3	8	−5	18	0		X
EUREKA	−9	−6	−3	−14	1	5	270	46
FORT SMITH	10	1	21	1	14	0		X
FROBISHER BAY	4	−1	10	−1	45	0	150	59
HALL BEACH	−1P	−3P	1P	−4P	3	2	040	48
INUVIK	13	8	24	2	0	0		X
MOULD BAY	−3	−1	0	−8	2	0		X
NORMAN WELLS	13	5	23	3	2	0		X
RESOLUTE	−6	−4	−1	−9	2	2	020	46
SACHS HARBOUR						*		
YELLOWKNIFE	10	1	20	3	7	0	360	37
ALBERTA								
CALGARY INT'L	8	−4	22	−2	20	0	350	85
COLD LAKE	10	−1	21	0	2	0	300	48
CORONATION	9	−4	21	−3	5	0	310	52
EDMONTON NAMAO	10	−2	19	0	2	0	300	54
FORT MCMURRAY	11	0	20	−2	1	0		X
HIGH LEVEL	10	0	21	−1	3	0		*
JASPER	10	−1	19	−2	14	0		X
LETHBRIDGE	11P	−3P	26P	−2P	13	0	010	63
MEDICINE HAT	12	−3	27	1	28	0	020	65
PEACE RIVER	11	1	21	−1	1	0	340	44
SASKATCHEWAN								
CREE LAKE	7P	−2P	18P	−2P	0	0	290	50
ESTEVAN	11	−4	21	−2	3	0	340	61
LA RONGE	9	−3	21	−1	17	0	300	57
REGINA	11	−3	25	−1	4	0	320	65
SASKATOON	11	−3	21	−2	0	0	310	57
SWIFT CURRENT	10P	−4P	26P	0P	10	0		X
YORKTON	11	−3	24	0	5	0	300	63
MANITOBA								
BRANDON	10	−4	22	−2	2	0	300	70
CHURCHILL	5	−3	18	−1	22	0	350	100
LYNN LAKE	8	−1	18	−3	16	0	030	44
THE PAS	11	*	20	−2	4	0	300	50
THOMPSON	7	−3	19	−6	22	0	310	61
WINNIPEG INT'L	12	−3	22	3	5	0	330	48
ONTARIO								
ATIKOKAN	10	−4	19	−3	27	0	290	48
BIG TROUT LAKE	6	*	15	−1	105	3	310	96
GORE BAY	14	−2	23	5	17	0	180	56
KAPUSKASING	9	−4	26	0	32	0	250	43
KENORA	11	−3	18	3	38	0	310	44
KINGSTON	15	−3	23	4	3	0		X
LONDON	14P	−4P	25P	4P	0	0	290	43
MOOSONEE	10	−2	25	0	25	0	250	52
NORTH BAY	12	−4	22	−1	12	0	170	76
OTTAWA INT'L	14	−3	24	2	8	0		X
PETAWAWA	13	−3	23	−3	26	0		X
PICKLE LAKE						0		
RED LAKE	9	−4	18	−1	32	0	300	57
SUDBURY	12	−3	23	−1	14	0		X
THUNDER BAY	11	−3	20	−1	6	0	320	63
TIMMINS	9	−4	24	−1	29	0	310	43
TORONTO INT'L	16	−2	25	3	23	0	190	52
TRENTON	16	−2	25	2	7	0		X
WIARTON	14	−2	26	2	6	0		X
WINDSOR	17P	−3P	28	4P	0	0	260	52
QUEBEC								
BAGOTVILLE	12	−2	20	3	11	0	080	41
BLANC SABLON	11P	*	20P	1P	24P	0		X
INUKJUAK	6	−1	14	1	89	0	310	56
KUUJJUAQ	10P	2P	23P	0P	0	0	200	48
KUUJJUARAPIK	8P	−1P	22P	0P	42P	0	170	67
MANIWAKI	13	−2	22	0	18	0	270	43
MONT JOLI	12	−2	21	2	37	0	160	43
MONTREAL INT'L	15	−3	23	5	8	0	150	41
NATASHQUAN	10	−1	17	1	12	0	020	50
QUEBEC	13	−2	22	6	37	0	270	52
SCHEFFERVILLE	8	0	19	0	11	0	190	52
SEPT-ILES	9	−2	17	1	18	0	080	56
SHERBROOKE	13	−1	22	2	9	0		*
VAL D'OR	9	−4	19	0	36	0	270	54
NEW BRUNSWICK								
CHARLO	10	−3	17	1	18	0		*
CHATHAM	11	−4	23	0	15	0	360	33
FREDERICTON	12	−4	25	1	12	0	350	33
MONCTON	12	−3	24	2	5	0	010	44
SAINT JOHN	12	−3	23	3	9	0	030	35
NOVA SCOTIA								
GREENWOOD	12	−4	25	1	17	0	230	59
SHEARWATER	14	−2	22	5	8	0		*
SYDNEY	14	−1	23	7	4	0	350	56
YARMOUTH	13	−2	19	3	6	0	190	41
PRINCE EDWARD ISLAND								
CHARLOTTETOWN	14P	−2P	23P	4P	5	0	030	37
SUMMERSIDE	13	−3	22	5	4	0	030	56
NEWFOUNDLAND								
CARTWRIGHT	11	1	22	0	24	0	350	59
CHURCHILL FALLS	9	0	22	−1	6	0	360	44
GANDER INT'L	12	−1	22	6	32	0	350	46
GOOSE	12	0	23	−1	31	0	180	39
PORT-AUX-BASQUES	12	−1	19	5	5	0	280	67
ST JOHN'S	11	−2	17	7	28	0	320	74
ST LAWRENCE	13	0	21	6	31	0		X
WABUSH LAKE	8	−1	19	−2	13	0	170	41

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