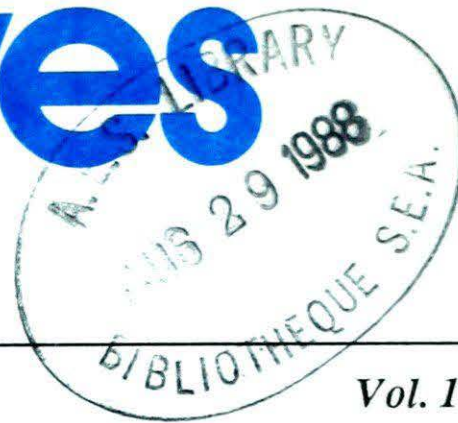


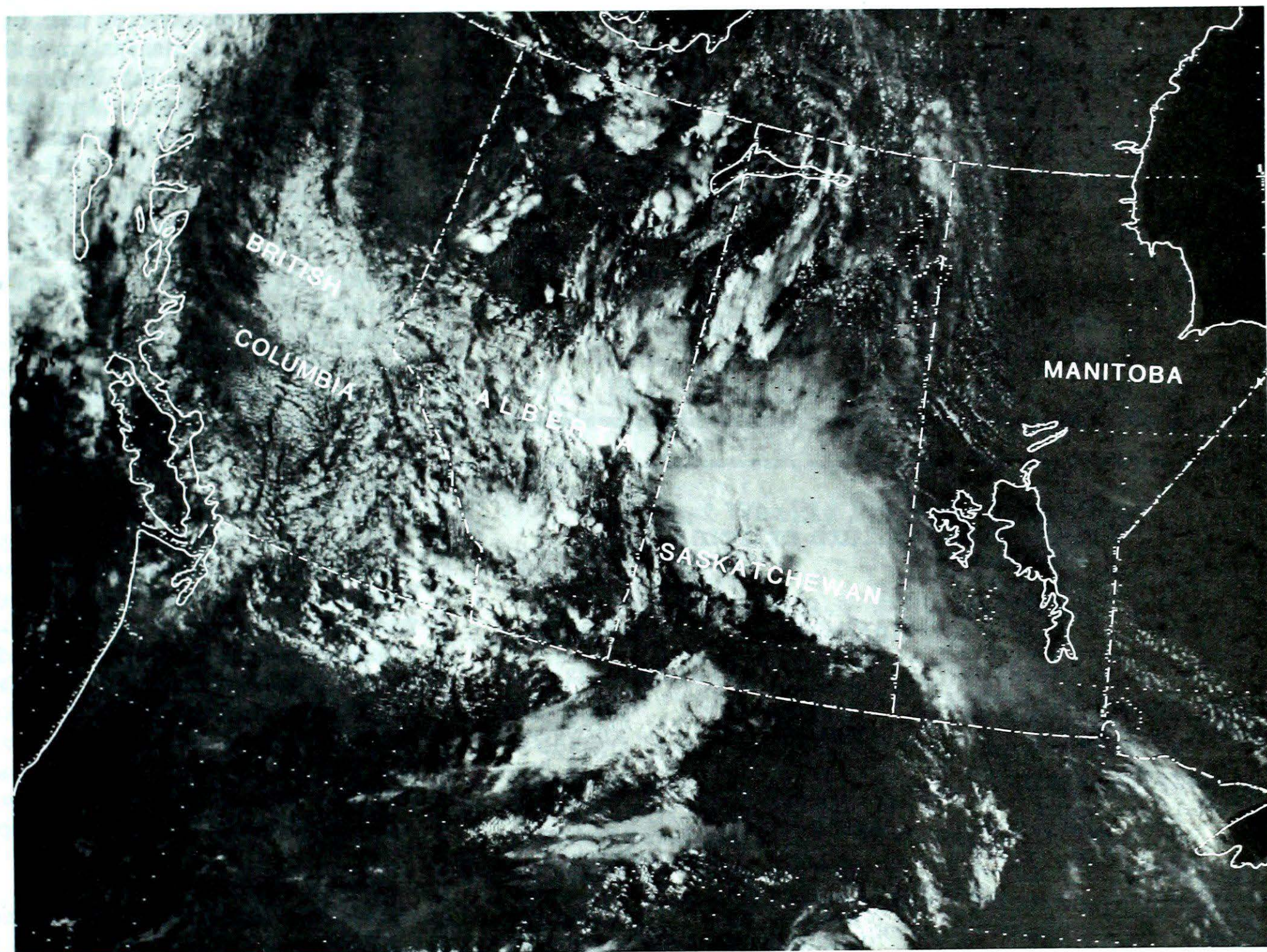
Climatic Perspectives



August 16 to 22, 1988

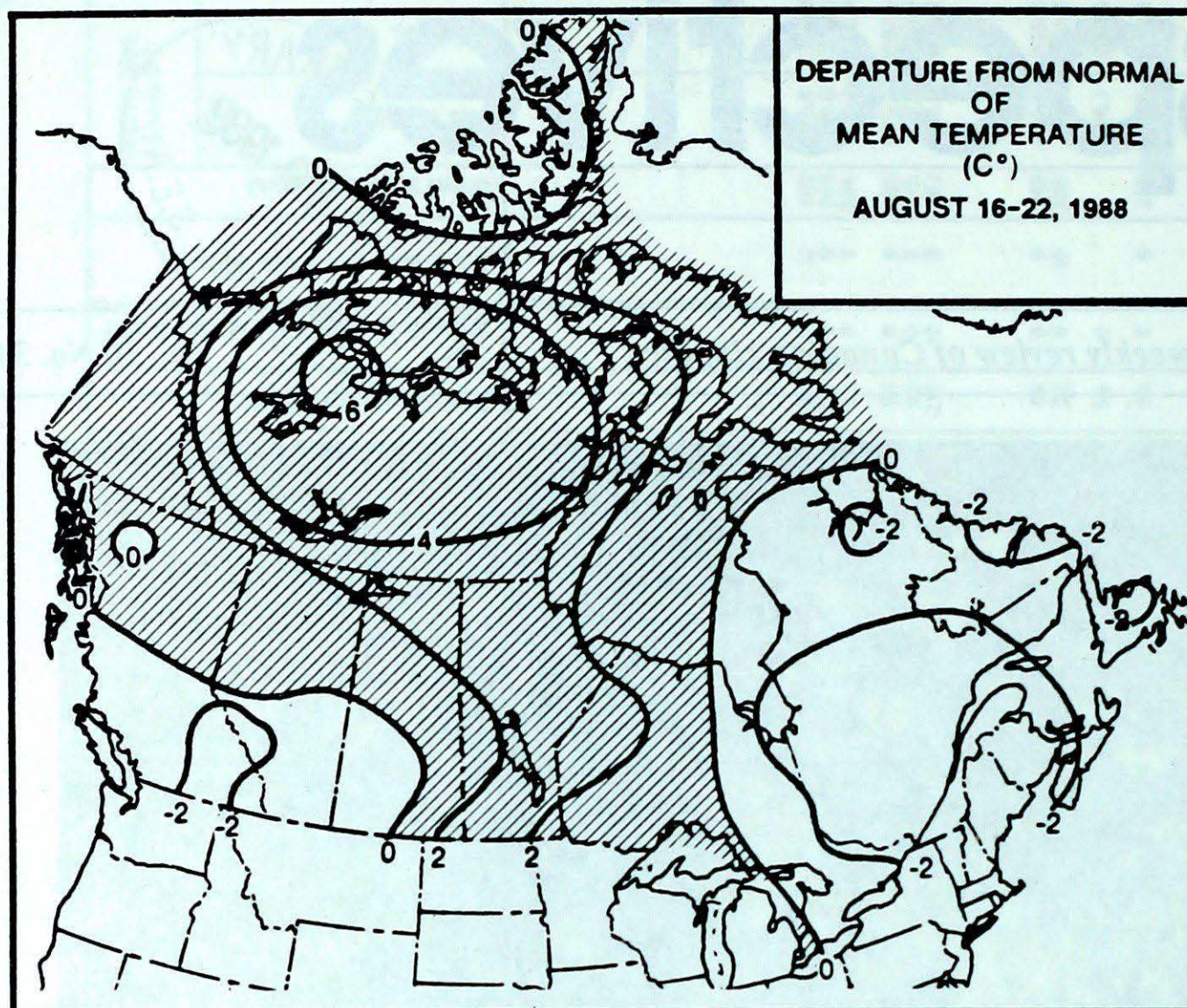
A weekly review of Canadian climate

Vol. 10 No. 34



An area of low pressure dominated the weather over the Prairies, producing widespread shower and thundershower activity, as seen in this GOES satellite photo of August 20, 1988. Heavy downpours were observed in the central and northern portions of the prairies. Hail damaged crops in the central and southern agricultural districts.

- **Rain delays harvest on the Prairies**
- **Cool weather ends heat wave
in Ontario and Quebec**



ACROSS THE COUNTRY ...

Yukon and the Northwest Territories

For the first time since the end of May all areas in the Yukon reported above normal temperatures. During the early part of the week, an atmospheric ridge gave warm, sunny weather conditions, but by week's end cloudy skies and cooler temperatures moved in from the west. Except in the Ogilvie Mountains, precipitation was quite light. The Mackenzie District enjoyed pleasant summer weather with a few scattered thundershowers. The thunderstorm activity reached northward to the Hall Region. In the Territories, a strong southerly flow resulted in a number of new daily maximum temperature records. Daytime readings along the southern Arctic coastline reached the high teens and low twenties. A storm crossing northern Quebec produced gales in the Ungava and Resolution regions of the eastern Arctic. Resupply operations are well underway in the Arctic.

British Columbia

Except for the northeast corner of the province it was a cool, dull and damp week, with some improvement in the weather conditions towards the weekend. In the interior, because of the showery nature of the precipitation, rainfall amounts varied but were significantly above normal. The moisture was welcomed in the southern parts of the province, but ranchers had to delay cutting the hay crop.

Prairie Provinces

In Alberta, it was a cool, unsettled week. There were locally heavy rainfalls in the central portions of the province, particularly on Saturday. On the 16th, parts of Calgary received more than 30 mm of rain in less than two hours. Skies cleared from the west late Sunday, with breezy, mostly sunny weather thereafter.

In Saskatchewan and Manitoba, the first of several significant rainfalls approached from the west, and at a number of locations daily rainfall totals exceeded 50 mm. Thunderstorms produced hail, funnel clouds and wind gusts in excess of

Weekly Temperature extreme (°C)

	MAXIMUM	MINIMUM
BRITISH COLUMBIA	LYTTON 33	DEASE LAKE -1
YUKON TERRITORY	OLD CROW 29	ROSS RIVER -4
NORTHWEST TERRITORIES	INUVIK 29	MOULD BAY -4
ALBERTA	LETHBRIDGE 28	BANFF 3
	MEDICINE HAT	
SASKATCHEWAN	ESTEVAN 35	HUDSON BAY 5
MANITOBA	PORTAGE LA PRAIRIE 32	GRAND RAPIDS 2
ONTARIO	WINDSOR 38	MOOSONEE -1
QUEBEC	MANIWAKI 26	LA GRANDE RIVIERE 1
NEW BRUNSWICK	ST STEPHEN 23	FREDERICTON 3
NOVA SCOTIA	SHELburnE 26	AMHERST 6
PRINCE EDWARD ISLAND	SUMMERSIDE 20	SUMMERSIDE 8
NEWFOUNDLAND	STEPHENVILLE 27	BADGER 0

ACROSS THE NATION

WARMEST MEAN TEMPERATURE	22	WINDSOR	ONT
COOLEST MEAN TEMPERATURE	0	MOULD BAY	NWT

150 km/h. Hail storms are a common phenomena in this region of Canada during the summer months, and this week was no exception, with hail reported almost every day. In some localized areas, crops were completely wiped out and cars dented by golf ball size hail. Funnel clouds were sighted in Manson and Winnipeg, Manitoba, and Flaxcombe and Delisle, Saskatchewan. The period began with temperatures climbing to the mid- to upper thirties at the beginning of the week. By the end of the period it was substantially cooler in Saskatchewan, while warm muggy weather still lingered in Manitoba. Harvesting operations on the prairies were delayed due to the wet weather.

Ontario

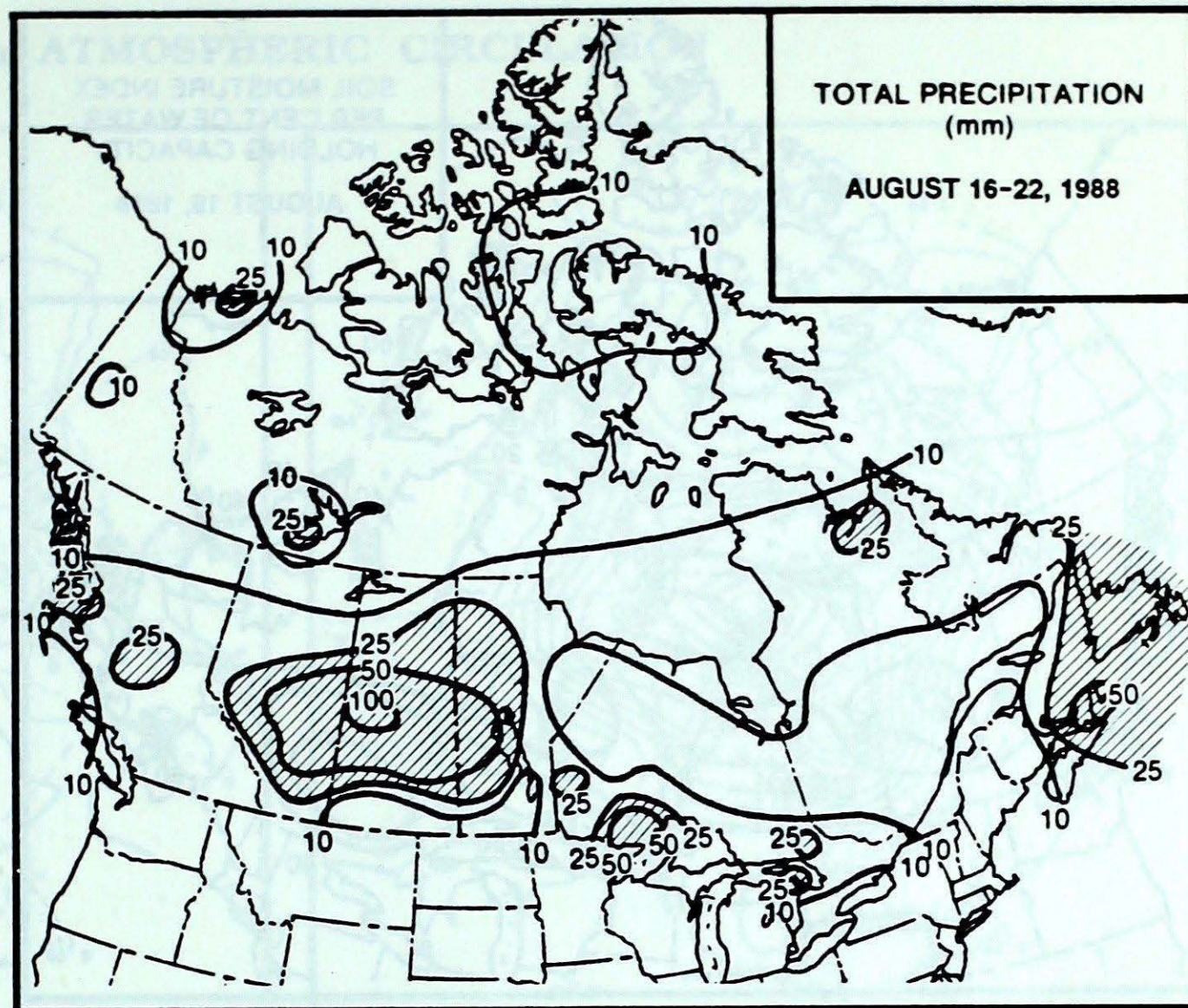
The hot and humid weather abated by the middle of the week, as a cold front slipped across the province, ushering in a much cooler regime. Thunderstorms associated with the frontal zone produced heavy downpours in the Lake Superior and Georgian Bay areas. Maximum readings ranged from the low to mid thirties at the beginning of the week to the low twenties by week's end. A daily record low temperature of -0.6C was reported at Moosonee on the 20th. Lightning caused a fire in Point Pelee National Park on August 17. The fire burned out of control until it was extinguished by rain later in the day.

Quebec

Uncomfortable, muggy weather came to an end by the middle of the week, as a cold front heralded the arrival of much cooler, but for the most part sunny weather. In rural areas overnight lows dropped to near freezing. Over the weekend cool, cloudy weather and thunderstorms affected the attendance at two fairs - The Milk Fest at Coaticook and The Farm Fair at Sherbrooke. The trans-Atlantic yacht race Transat-Tag from Quebec City to France began August 21, under sunny skies and light winds.

Atlantic Canada

Weather systems produced a mixture



Heaviest Weekly Precipitation (mm)

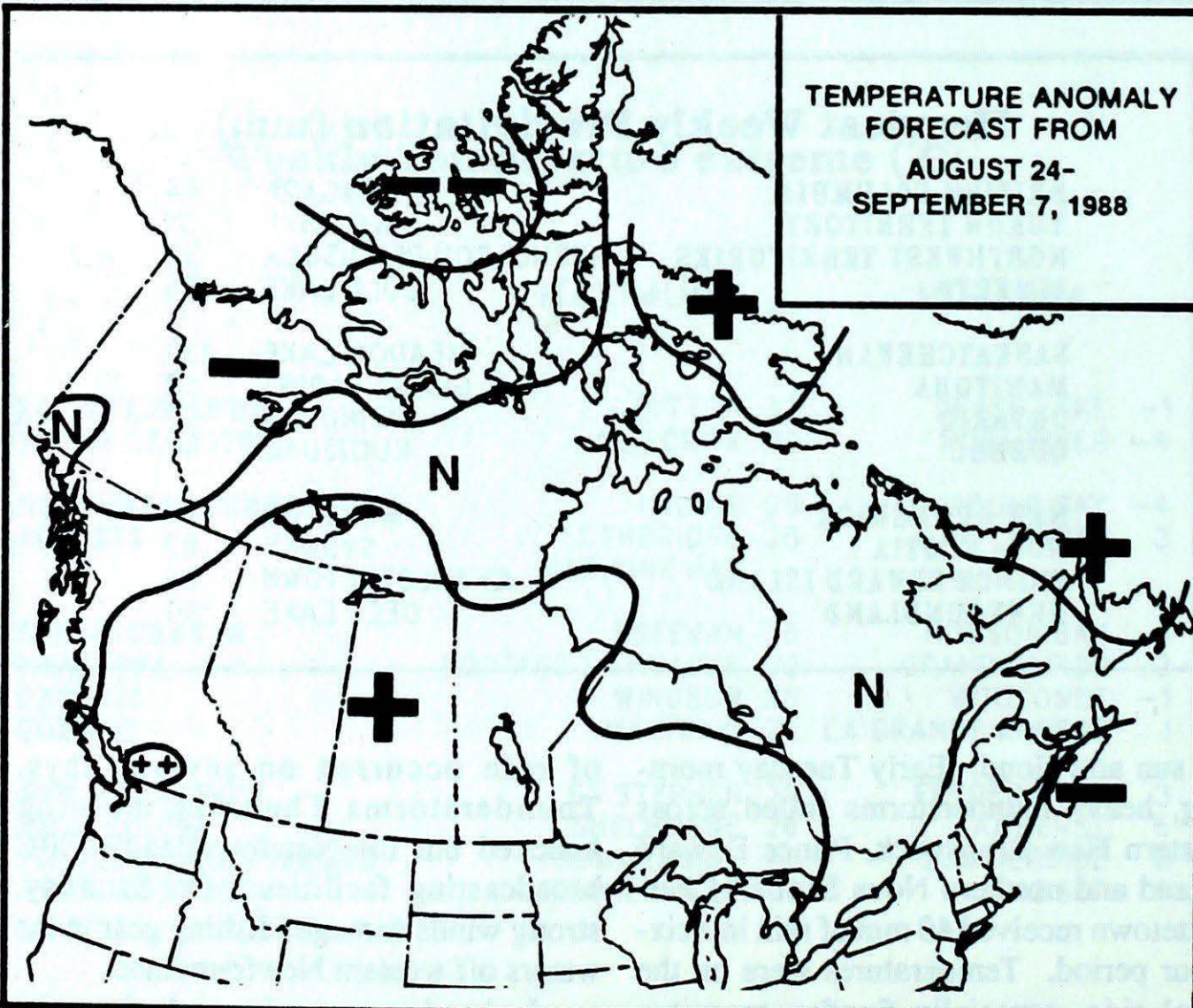
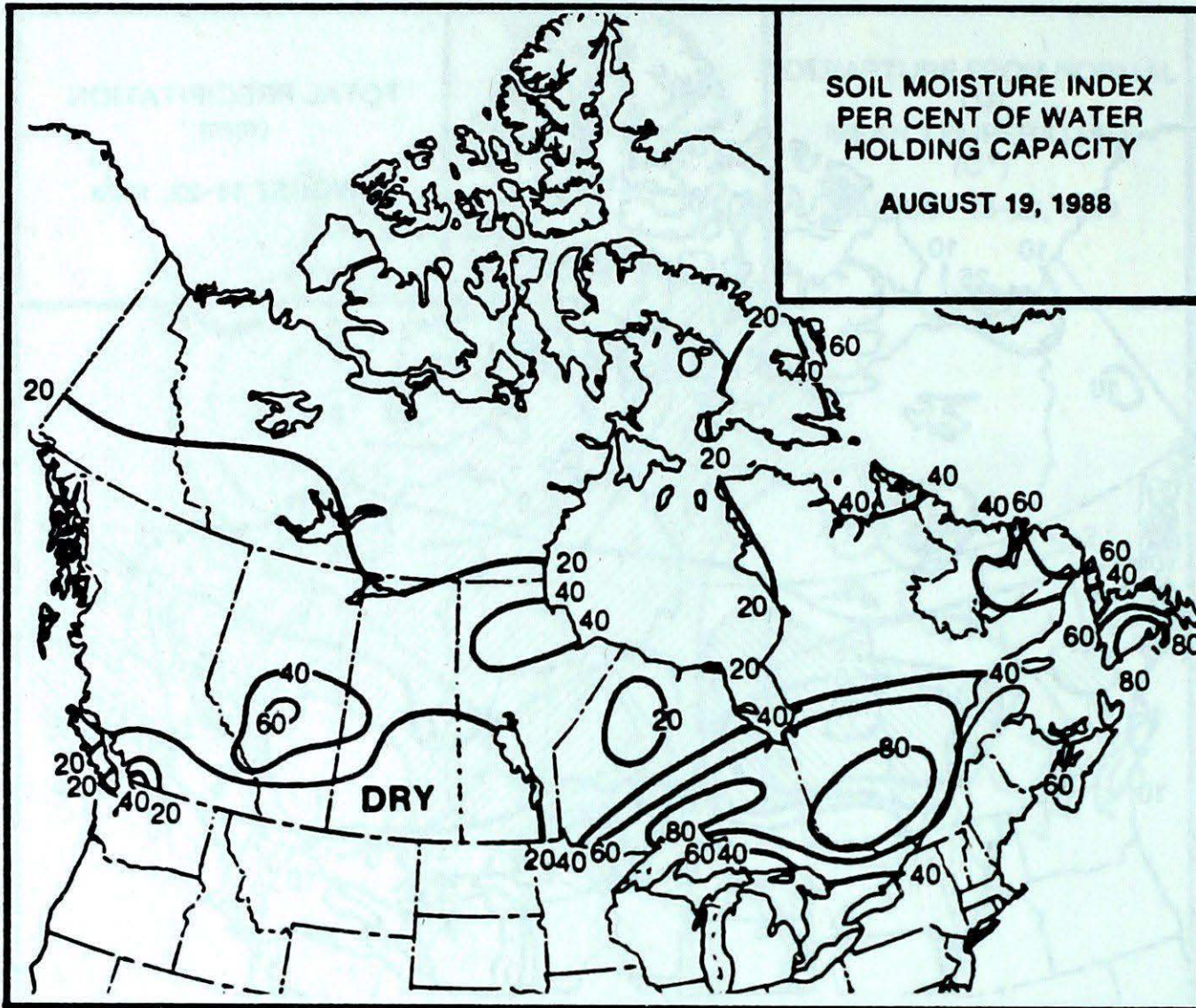
BRITISH COLUMBIA	LANGARA	44
YUKON TERRITORY	KLONDIKE	21
NORTHWEST TERRITORIES	NICHOLSON PENINSULA	30
ALBERTA	COLD LAKE	86
SASKATCHEWAN	MEADOW LAKE	135
MANITOBA	GRAND RAPIDS	58
ONTARIO	ATIKOKAN	72
QUEBEC	KUUJJUAQ	46
NEW BRUNSWICK	MONCTON	24
NOVA SCOTIA	SYDNEY	82
PRINCE EDWARD ISLAND	CHARLOTTETOWN	56
NEWFOUNDLAND	DEER LAKE	50

of sun and cloud. Early Tuesday morning, heavy thunderstorms rolled across eastern New Brunswick, Prince Edward Island and northern Nova Scotia. Charlottetown received 40 mm of rain in a six-hour period. Temperatures were on the cool side, especially Sunday morning, when several locations in New Brunswick set new daily low temperature records. Sunday evening waterspouts were sighted northwest of Sydney.

Newfoundland experienced near seasonal temperatures and changeable weather conditions. Showers or periods

of rain occurred on several days. Thunderstorms Thursday morning knocked out the Newfoundland's CBC broadcasting facilities. On Saturday, strong winds damaged fishing gear in the waters off western Newfoundland.

Labrador experienced showery weather conditions as well. Daytime temperatures in the northern areas remained in the single digits. In the south, seasonally warm values during the middle of the week cooled off significantly with the arrival of a much cooler air mass.



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

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.

CLIMATIC PERSPECTIVES VOLUME 10

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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.

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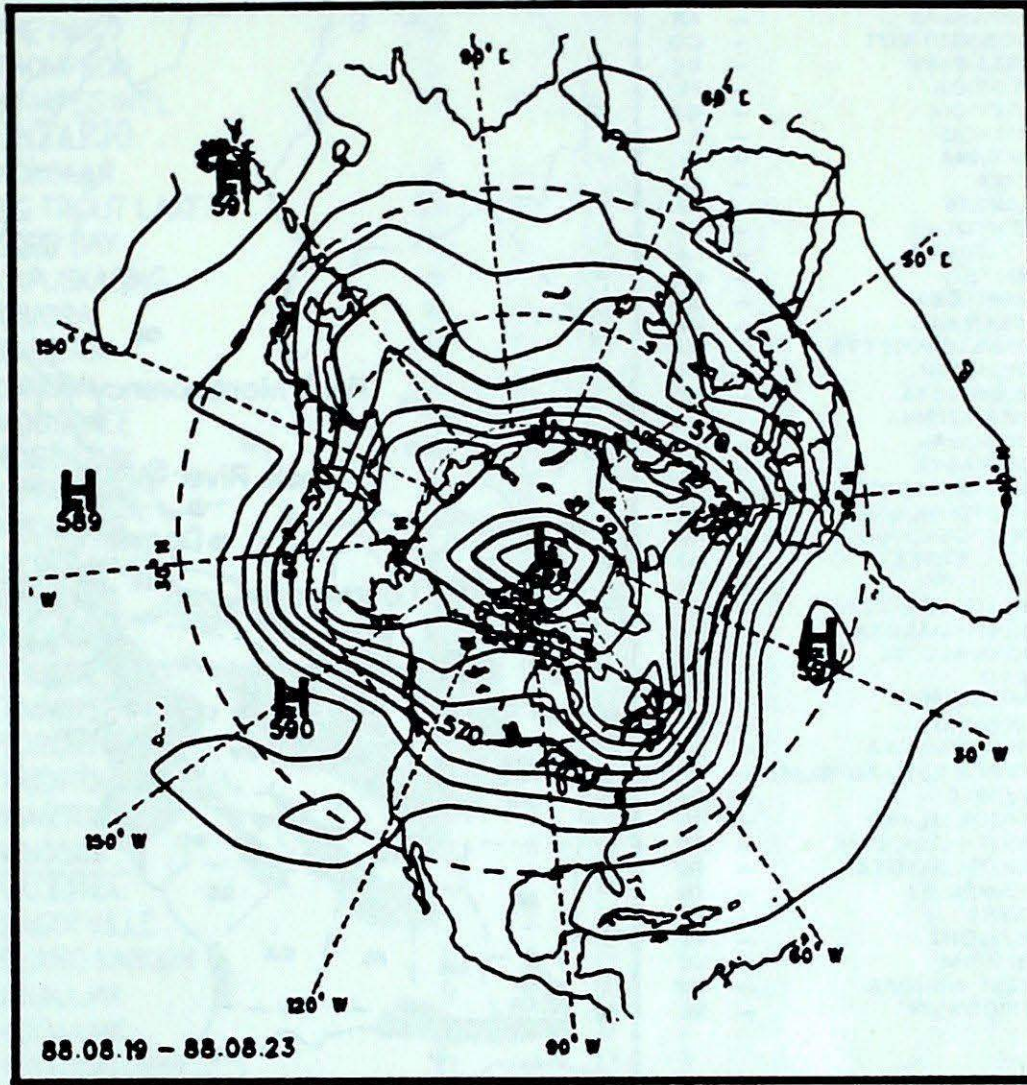
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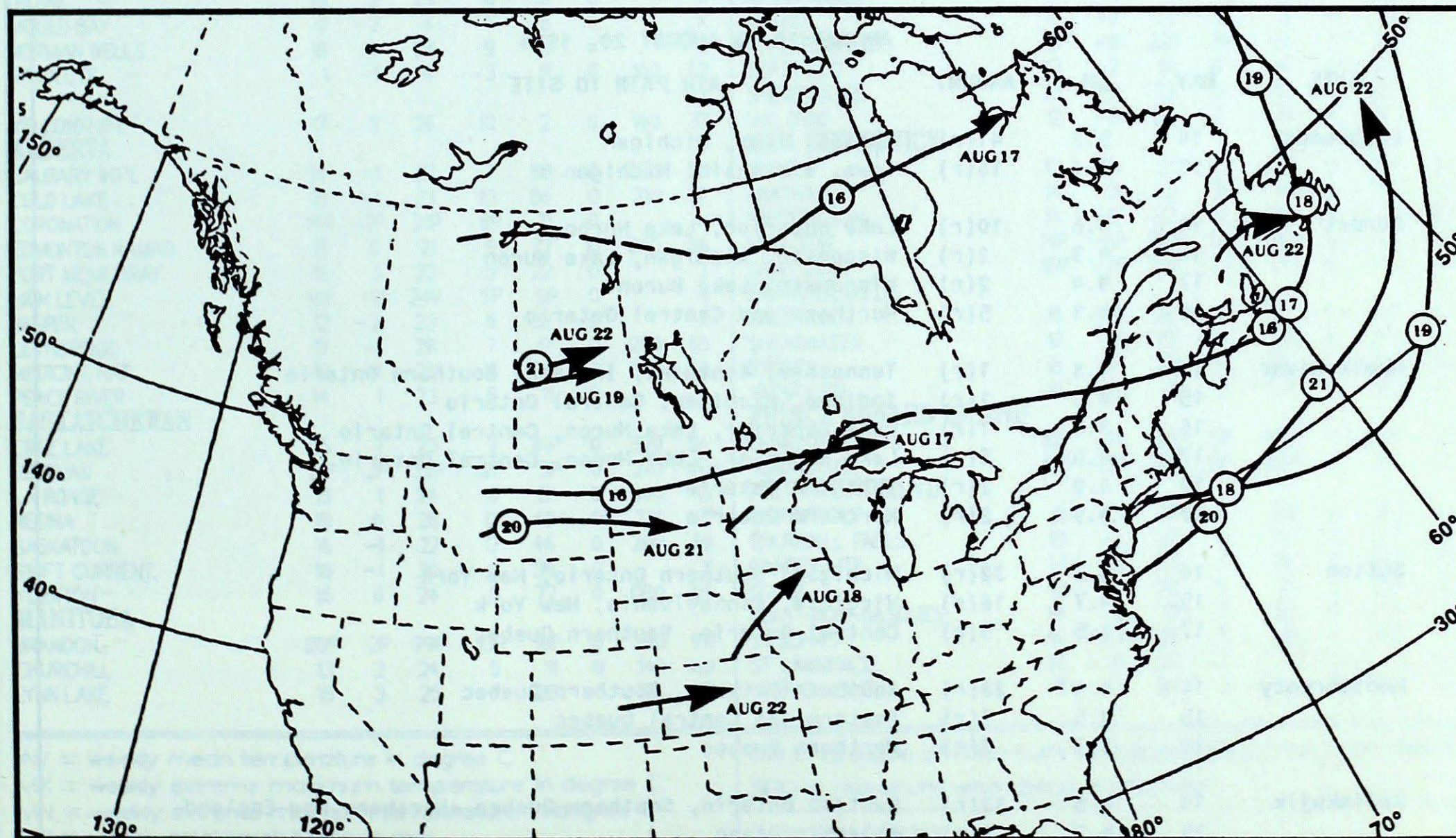
50 kPa ATMOSPHERIC CIRCULATION



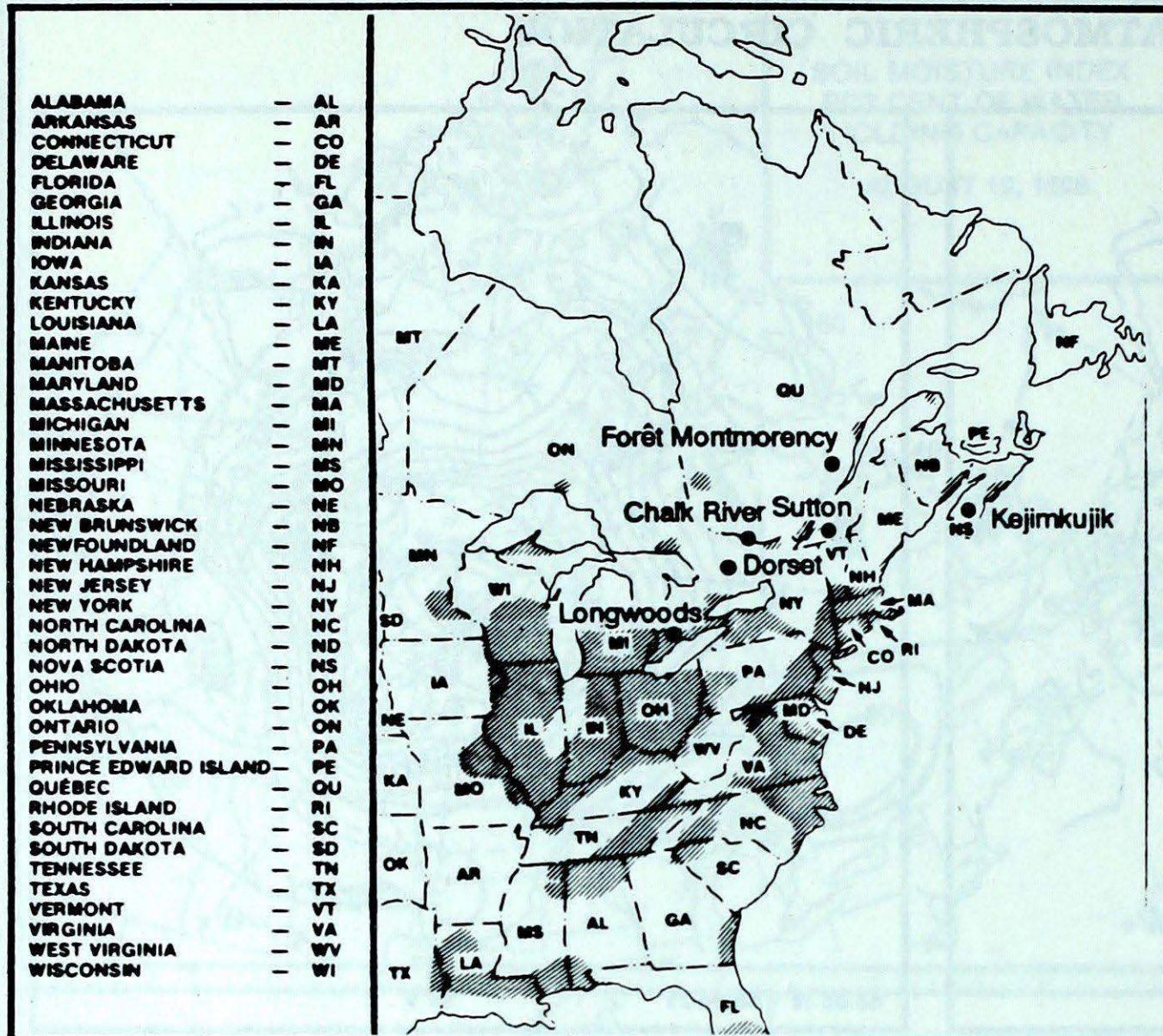
Mean geopotential height anomaly
50 kPa level (5 decameter intervals)



Mean geopotential height
50 kPa level (5 decameter intervals)



Storm track - Position of storm at 12 GMT during the period: August 16 to 22, 1988



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 SO₂ and NO_x emissions are greatest. The table below gives the weekly report summarizing the acidity (or pH) of the acid 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 readings less than 4.7, while pH readings less than 4.0 are serious.

For more information concerning the acid rain report, see Climatic Perspectives, Volume 5, Number 50, page 6.

AUGUST 14 TO AUGUST 20, 1988				
SITE	DAY	pH	AMOUNT	AIR PATH TO SITE
Longwoods	14	5.3	41(r)	Kansas, Iowa, Michigan
	17	5.6	16(r)	Iowa, Wisconsin, Michigan
Dorset	14	4.6	10(r)	Lake Superior, Lake Huron
	16	4.3	2(r)	Wisconsin, Michigan, Lake Huron
	17	4.4	2(r)	Wisconsin, Lake Huron
	20	4.1	5(r)	Northern and Central Ontario
Chalk River	14	4.3	1(r)	Tennessee, Kentucky, Indiana, Southern Ontario
	15	4.3	1(r)	Indiana, Michigan, Central Ontario
	16	3.9	1(r)	Lake Superior, Lake Huron, Central Ontario
	17	4.0	6(r)	Lake Superior, Lake Huron, Central Ontario
	19	4.9	2(r)	Northern Ontario
	20	4.9	2(r)	Northern Ontario
Sutton	14	3.7	32(r)	Michigan, Southern Ontario, New York
	15	4.7	16(r)	Virginia, Pennsylvania, New York
	17	4.5	5(r)	Central Ontario, Southern Quebec
Montmorency	14	4.4	28(r)	Southern Ontario, Southern Quebec
	15	4.5	1(r)	Eastern and Central Quebec
	19	3.7	2(r)	Northern Quebec
Kejimikujik	14	4.5	13(r)	Central Ontario, Southern Quebec, Northern New England
	15	4.2	6(r)	Atlantic Ocean

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

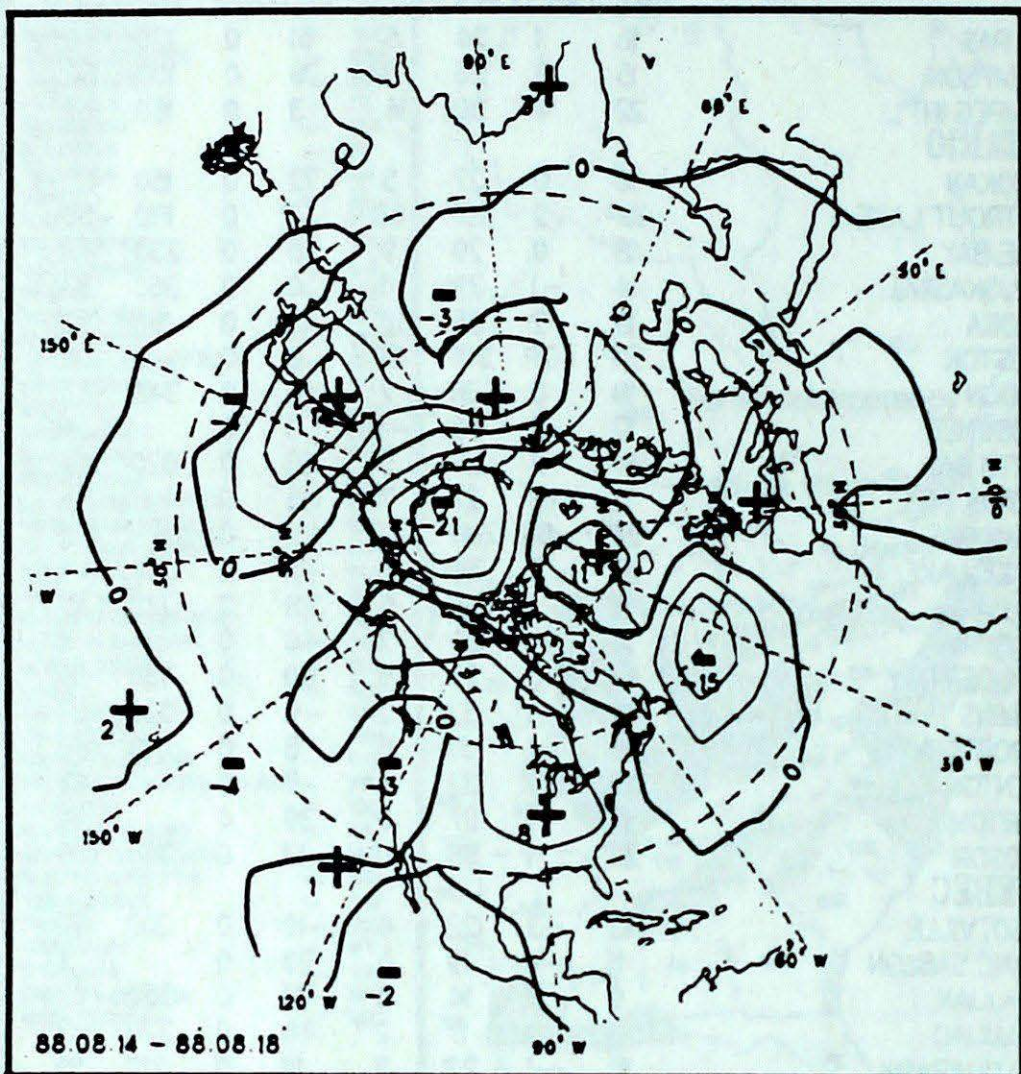
STATISTICS FOR THE WEEK ENDING 0600 GMT August 23, 1988

STATION	TEMPERATURE				PRECIP.		WIND MX		STATION	TEMPERATURE				PRECIP.		WIND MX	
	AV	DP	MX	MN	TP	SOG	DIR	SPD		AV	DP	MX	MN	TP	SOG	DIR	SPD
BRITISH COLUMBIA																	
CAPE ST. JAMES	13P	-1P	16P	11P	1P	0	300	85	THE PAS	16	1	24	5	51	0	120	48
CRANBROOK	15	-2	26	4	10P	0	270	52	THOMPSON	15	3	26	3	28	0	100	56
FORT NELSON	16	1	24	6	0	0	130	43	WINNIPEG INT'L	22	4	30	14	3	0	160	67
FORT ST. JOHN	14	0	24	7	13	*	240	52	ONTARIO								
KAMLOOPS	18	-2	30	8	22	0	320	83	ATIKOKAN	16	0	27	5	72	0	150	33
PENTICTON	17	-2	27	6	15	0	020	33	BIG TROUT LAKE	16P	2	25P	6P	2P	0	180	50
PORT HARDY	13	-1	17	7	19	0		*	GORE BAY	18	0	29	9	16	0	230	43
PRINCE GEORGE	14P	0	25P	7P	17P	0	280	33	KAPUSKASING	14	-1	29	1	0	0	360	33
PRINCE RUPERT	13P	1P	21P	7P	35P	0	170	37	KENORA	19	2	26	10	15	0	150	52
REVELSTOKE	15P	-2P	25P	7P	26P	0	010	37	KINGSTON	17P	-2P	30P	8P	8	0		X
SMITHERS	13	0	23	5	17	0		*	LONDON	19	0	31	7	0	0	340	63
VANCOUVER INT'L	17	0	22	11	18	0	280	52	MOOSONEE	12	-2	29	-1	1	0		*
VICTORIA INT'L	15P	-1P	26P	7P	22P	0		*	NORTH BAY	14	-2	26	5	18	0	020	44
WILLIAMS LAKE	13P	-1	25P	4P	16P	0		X	OTTAWA INT'L	17	-2	27	7	16	0		X
YUKON TERRITORY									PETAWAWA	15P	-3P	29P	4P	13P	0		X
MAYO	14	2	28	3	4	0		X	PICKLE LAKE	17	2	26	5	11	0	040	44
SHINGLE POINT A	9	0	27	0	9	0		*	RED LAKE	17	1	28	5	28	0	220	61
WATSON LAKE	14	1	24	1	0	0	250	59	SUDBURY	16	-1	30	7	40	0		X
WHITEHORSE	13	1	24	2	1	0	160	63	THUNDER BAY	16	0	26	6	60	0	130	59
NORTHWEST TERRITORIES									TIMMINS	14	-1	32	2	0	0	020	37
ALERT	3P	3P	14P	-5P	4P	3	200	67	TORONTO INT'L	18	-1	31	6	8	0	010	48
BAKER LAKE	14	4	25	4	2	0		*	TRENTON	18	-1	32	6	7	0		X
CAMBRIDGE BAY	10	4	19	4	9	0	030	37	WIARTON	16	-1	27	6	39	0		X
CAPE DYER	5	0	15	-1	18	0	300	65	WINDSOR	22	1	38	11	13	0	360	76
CLYDE	4	1	12	-1	9	0	330	48	QUEBEC								
COPPERMINE	16	9	28	9	2	0	200	35	BAGOTVILLE	13	-3	22	4	10	0	310	33
CORAL HARBOUR	9	2	19	2	1	0		X	BLANC SABLON	11	*	19	4	23	0		X
EUREKA	2P	-1P	10P	-3P	1P	0	160	85	INUKJUAK	9	0	14	5	22	0	350	63
FORT SMITH	17P	3P	24P	6P	4P	0		X	KULUJUAQ	8	-2	17	2	46	0	320	63
IQUALUIT	8	1	16	3	2	0	310	50	KULUJUAPIK	10	-1	23	3	19	0	210	59
HALL BEACH	7P	2P	18P	2P	9P	0	330	59	MANIWAKI	15	-2	26	6	13	0	350	39
INUVIK	13	2	29	6	15	0		X	MONT JOLI	12	-3	21	2	4	0	240	52
MOULD BAY	0	-2	4	-4	6	0		X	MONTREAL INT'L	16P	-3P	23P	9P	6P	0	290	43
NORMAN WELLS	18	4	28	9	0	*		X	NATASHQUAN	11	-2	19	5	4	0	280	52
RESOLUTE	1	-1	4	-3	11	0	140	52	QUEBEC	15	-2	23	6	5	0	230	52
								X	SCHIEFFERVILLE	9P	-1P	22P	2P	14	0	330	61
YELLOWKNIFE	17	3	26	10	2	0	140	37	SEPT-ILES	12	-2	19	4	11	0	330	54
ALBERTA									SHERBROOKE	13	-3	23	3	10	0	280	33
CALGARY INT'L	14	-1	22	7	58	0	230	56	VAL D'OR	12	-3	26	3	4	0	360	35
COLD LAKE	15	-1	23	10	86	0	310	57	NEW BRUNSWICK								
CORONATION	14P	-2P	21P	8P	71	0		*	CHARLO	13	-3	21	4	4	0	260	41
EDMONTON NAMAQ	15	0	21	9	72	0	340	56	CHATHAM	14	-3	23	6	7	0	340	48
FORT MCMURRAY	16	1	22	5	22	0		X	FREDERICTON	14	-4	22	3	8P	0	320	48
HIGH LEVEL	14P	1P	24P	5P	9P	0		*	MONCTON	14P	-3P	22P	5P	24P	0	350	48
JASPER	12	-2	23	5	32	0		X	SAINT JOHN	15P	-2P	22P	6P	8P	0	340	46
LETHBRIDGE	17	-1	28	7	17	0	280	65	NOVA SCOTIA								
MEDICINE HAT	18	-1	28	8	28	0	320	56	GREENWOOD	16	-2	24	7	10	0	230	52
PEACE RIVER	14	1	23	5	11	0		*	SHEARWATER	17	-1	23	9	9	0	350	46
SASKATCHEWAN									SYDNEY	15	-3	22	8	82	0	110	48
CREE LAKE	15	1	23	7	49	0	320	54	YARMOUTH	15	-1	21	9	2	0	340	44
ESTEVAN	21P	2P	35P	12P	3P	0	270	78	PRINCE EDWARD ISLAND								
LA RONGE	15	1	24	6	31	0	300	43	CHARLOTTETOWN	15P	-3P	20P	9P	56P	0	330	41
REGINA	18	0	28	12	40	0	310	91	SUMMERSIDE	15P	-3P	20P	8P	46P	0	310	48
SASKATOON	16	-1	22	12	46	0	290	69	NEWFOUNDLAND								
SWIFT CURRENT	16	-1	30	9	36	0		X	CARTWRIGHT	8	-3	19	3	23	0	360	52
YORKTON	16	0	24	8	72	0	080	65	CHURCHILL FALLS	10	-2	22	4	34	0	310	48
MANITOBA									GANDER INT'L	13	-2	23	7	38	0	240	65
BRANDON	20P	2P	29P	13P	16P	0	280	78	GOOSE	13	-1	26	6	13	0	260	57
CHURCHILL	13	2	24	5	11	0	140	43	PORT-AUX-BASQUES	14	0	19	7	37	0	090	70
LYNN LAKE	16	3	25	7	28	0	130	37	ST JOHN'S	14	-1	22	8	28	0	230	61
									ST LAWRENCE	14	0	20	7	21	0		X
									WABUSH LAKE	9	-2	24	3	12	0	320	56

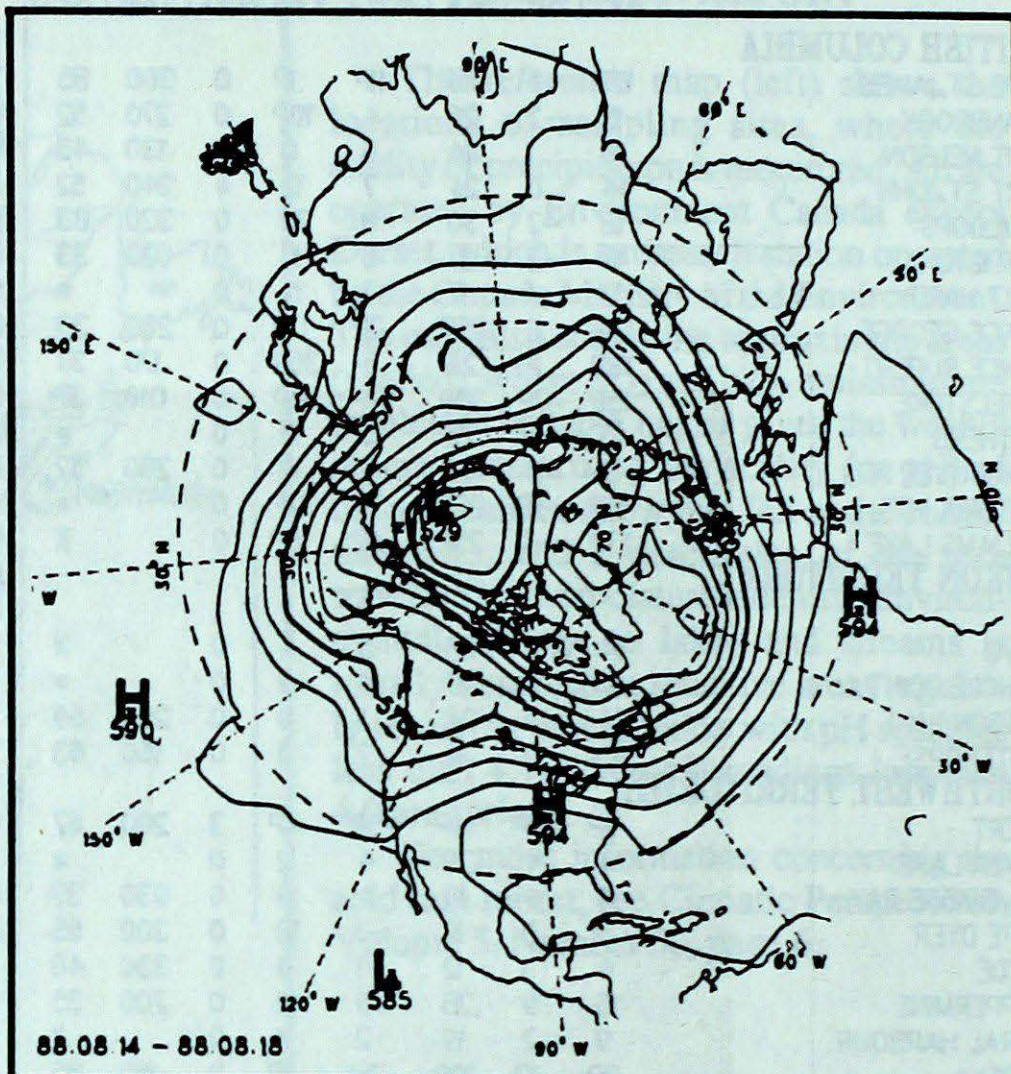
AV = weekly mean temperature in degree C
 MX = weekly extreme maximum temperature in degree C
 MN = weekly extreme minimum temperature in degree C
 TP = weekly total precipitation in mm
 DP = departure of mean temperature from normal in degree C
 SOG = snow depth on ground in cm, last day of the period

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

50 kPa ATMOSPHERIC CIRCULATION



Mean geopotential height anomaly
50 kPa level (5 decameter intervals)



Mean geopotential height
50 kPa level (5 decameter intervals)

