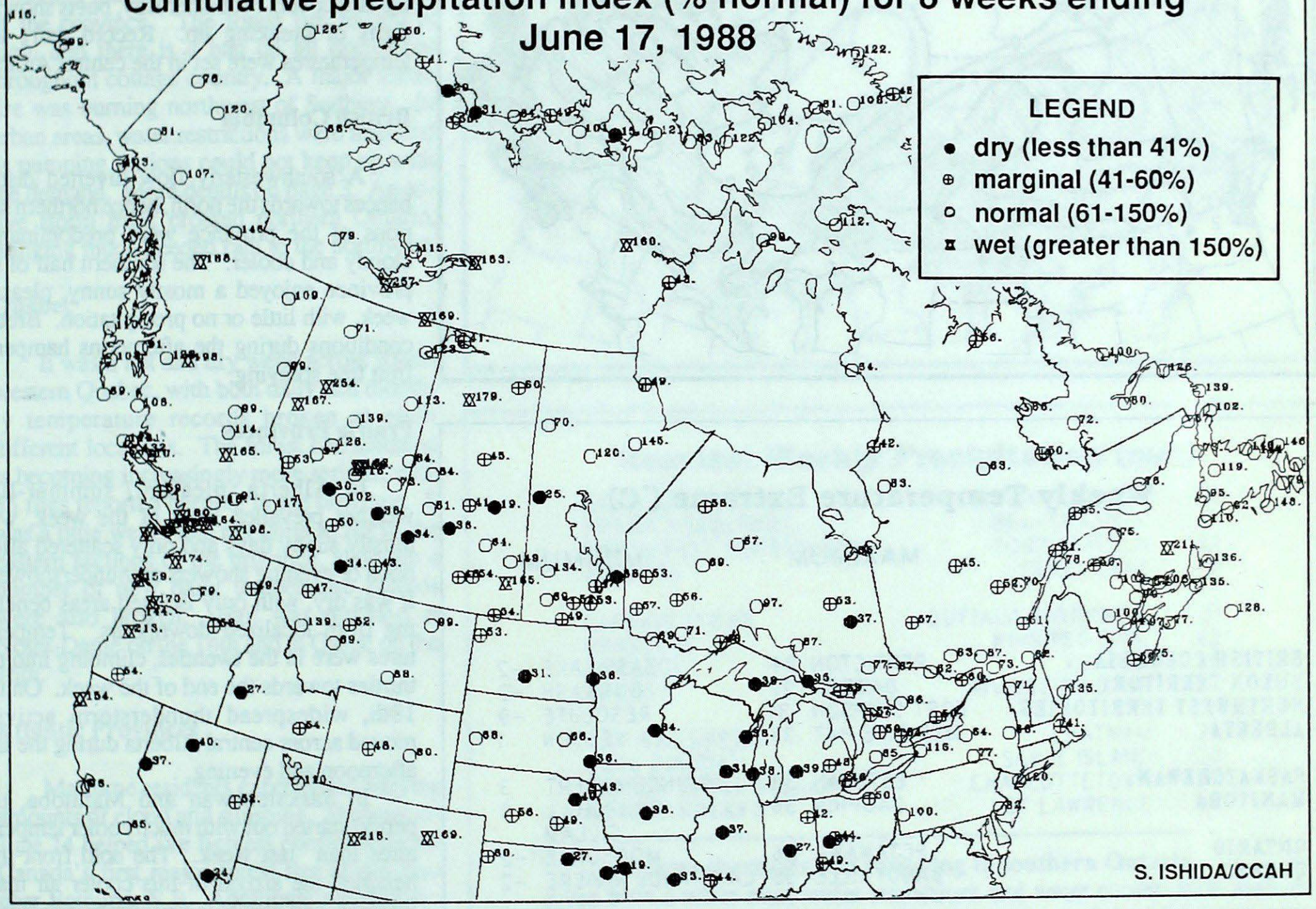
Environment Canada Environnement Canada

Climatic Perspectives

MONTHLY SUPPLEMENT INCLUDED

June 14 to 20, 1988 *A weekly review of the Canadian climate* *Vol. 10 No. 25*

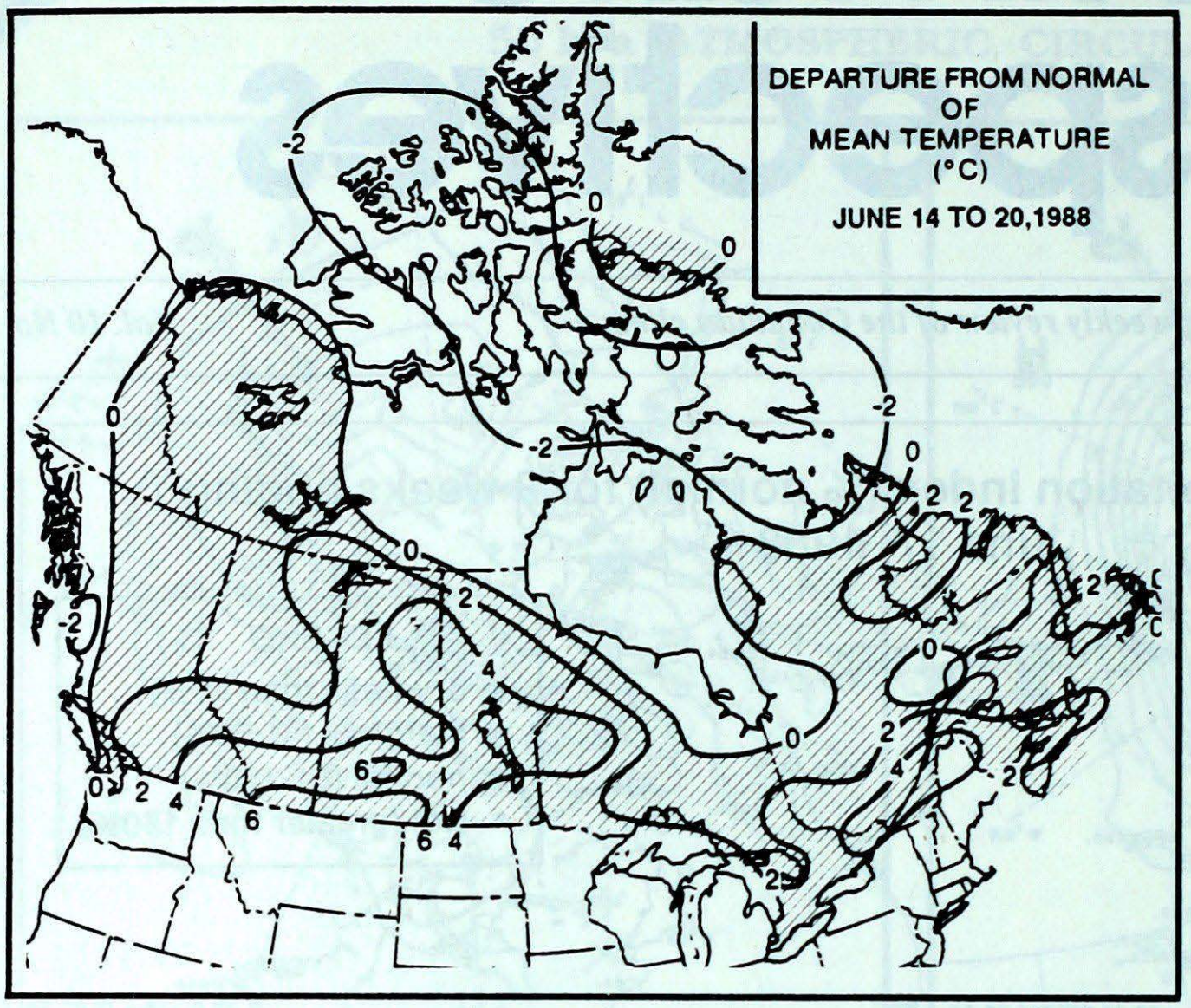
Cumulative precipitation index (% normal) for 8 weeks ending June 17, 1988



Despite the significant rainfalls of the past few weeks, in which several western provincial locations have recorded above normal accumulative precipitation amounts, there are still areas on the Canadian Prairies that have not recovered from the drought. Note the severity and extent of the dry conditions in the American mid-west cornbelt. The eastward spread of the dry spell into Ontario, Quebec and the Maritimes is also indicated.

- **More rain dampens Prairie drought**
- **Hot weather increases forest fire hazard and water shortages in Ontario and Quebec**

Canada



Weekly Temperature Extreme (°C)

	MAXIMUM		MINIMUM	
BRITISH COLUMBIA	PENTICTON	34	DEASE LAKE	-2
YUKON TERRITORY	DAWSON	27	BURWASH	-2
NORTHWEST TERRITORIES	FORT SIMPSON	31	RESOLUTE	-9
ALBERTA	MEDICINE HAT	35	EDSON	1
SASKATCHEWAN	ESTEVAN	38	PRINCE ALBERT	3
MANITOBA	DAUPHIN	36	CHURCHILL	0
			GILLAM	
ONTARIO	PETAWAWA	36	MOOSONEE	-2
QUEBEC	BAGOTVILLE	35	LA GRANDE RIVIERE	-2
NEW BRUNSWICK	FREDERICTON	34	CHARLO	5
NOVA SCOTIA	GREENWOOD	34	TRURO	4
PRINCE EDWARD ISLAND	CHARLOTTETOWN	31	CHARLOTTETOWN	4
NEWFOUNDLAND	DEER LAKE	32	WABUSH LAKE	0

ACROSS THE NATION

WARMEST MEAN TEMPERATURE	24	WINDSOR	ONT
COOLEST MEAN TEMPERATURE	-4	MACKAR INLET	NWT
		LANGARA	BC

Across the country . . .

Yukon and Northwest Territories

In the Yukon, sunny and warm weather conditions gave way to an unsettled weekend, as a disturbance moved into the Gulf of Alaska. Conditions in the southern Mackenzie were much the same; weekend rainfalls were as high as 61 mm. It was cool and cloudy in the eastern Arctic, where readings were only a few degrees above freezing. Ice still covers Frobisher Bay, but is showing signs of breaking up. Record daily low temperatures were set in the central Arctic.

British Columbia

A southwesterly flow diverted disturbances towards the north, hence northern sections of the province were predominantly cloudy and cooler. The southern half of the province enjoyed a mostly sunny, pleasant week, with little or no precipitation. Breezy conditions during the afternoons hampered fruit tree spraying.

Prairie Provinces

In Alberta, pleasant, summer-like weather prevailed most of the week, with mostly sunny days and only scattered afternoon or evening showers or thundershowers. It was dry, with only isolated areas benefiting from localized downpours. Temperatures were in the twenties, climbing into the thirties towards the end of the week. On the 18th, widespread thunderstorm activity moved across central Alberta during the late afternoon and evening.

In Saskatchewan and Manitoba, the period started out with much cooler temperatures than last week. The cold front that heralded the arrival of this cooler air mass lingered, and was accompanied by numerous showers and thunderstorms throughout the first half of the period. There were a few reports of severe weather, however all occurrences were during the first few days of the period. Most areas benefited from the rain. Friday night thunderstorms dumped 50 mm of rain on Winnipeg. A lightning strike touched off a fire in the south end of the city.

Ontario

A dry cold front crossed the province June 15 and 16, and while it brought temporary relief from the record heat, which began more than a week ago, the frontal pas-

sage did little to end the prolonged dry spell. Temperatures at the beginning of the week soared to the mid-thirties. On the afternoon of June 14, Toronto hit 35.2C, the hottest day in the city since June 15 1983. Thirty degree temperatures returned the last two days of the period, causing farmers grave concern about what the current heat wave is doing to their crops. Many areas in southern and central Ontario have been without rain for weeks, and vegetation and forests are tinder dry. Total rainfall since the beginning of the year is running much below normal in many areas of the province. The forest fire hazard is high, and there is a ban on all open fires throughout cottage country. A major forest fire was burning northwest of Sudbury. In urban areas, water restrictions were imposed as pumping stations could not keep up with the demand. More details on page 3. An active storm track crossed northern Ontario, bringing much needed rain to the northwest.

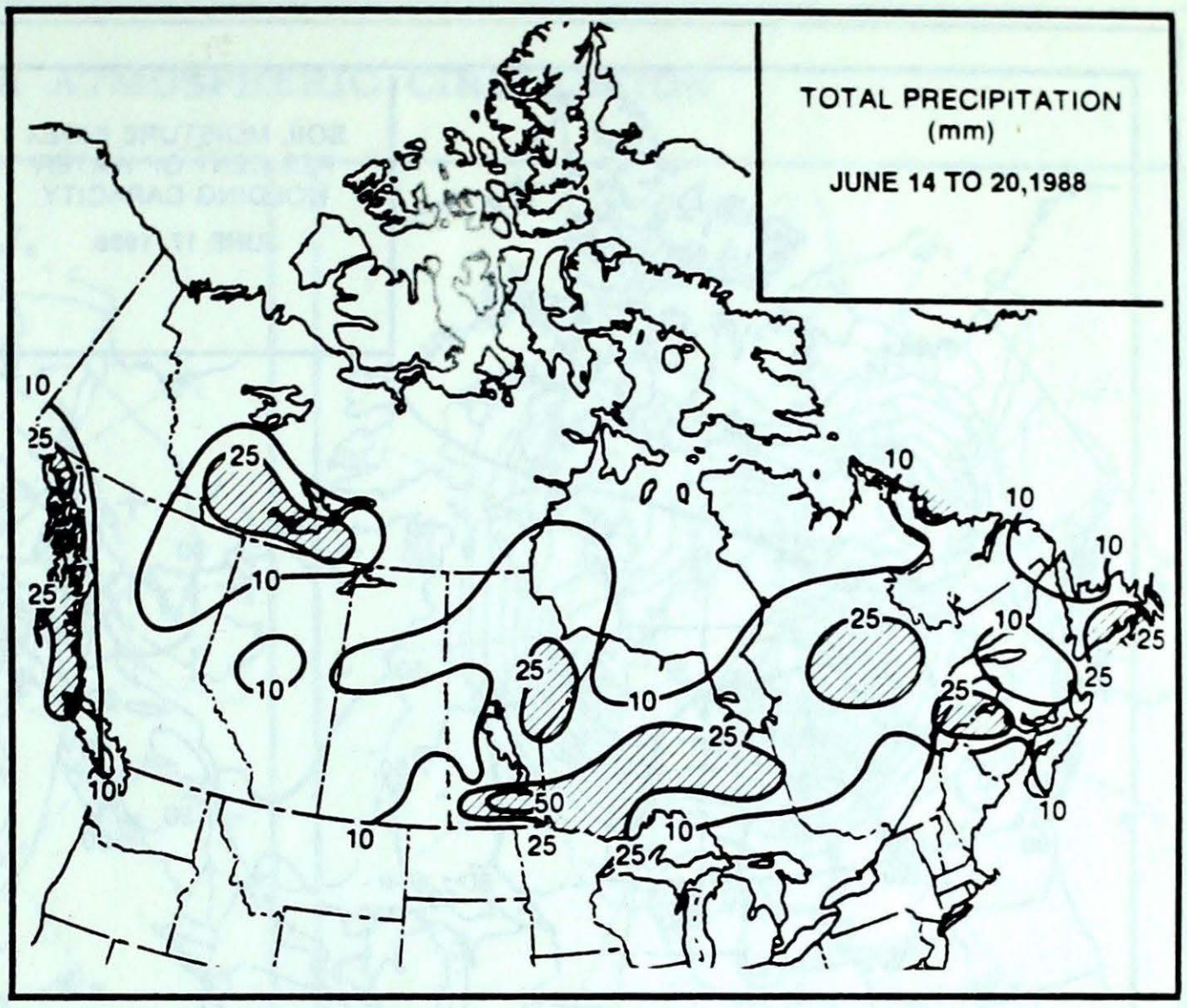
Quebec

It was a hot and dry week across southwestern Quebec, with both daily and monthly temperature records broken at eight different locations. The forest fire situation is becoming increasingly more serious, with 55 fires reported burning in the province. It was a little wetter and not quite as hot in the eastern sections of the province, although a number of new daily temperature records were also broken. Hail was reported at Notre-Dame on the 14th and at Gaspé on the 16th.

Atlantic Provinces

Maritime residents experienced varying amounts of cloud and sunshine. Showers on June 14 helped fire fighters contain Atlantic Canada's first major forest fire of the year near Bathurst, N.B. Additional rainfalls occurred on the 17th and 18th. Although very cool temperatures, in the teens, occurred on June 14 and 15, daytime highs at inland locations climbed to the low to mid thirties this week, breaking daily temperature records.

It was a relatively settled period over Newfoundland, with temperatures on June 16, reaching the record low thirties. The heat triggered a few afternoon showers and thunderstorms. A disturbance on the 18th gave as much as 55 mm of rain to the Island. In Labrador, it was fair, with daytime readings in the twenties. Rain and cooler temperatures were experienced during the middle of the week.

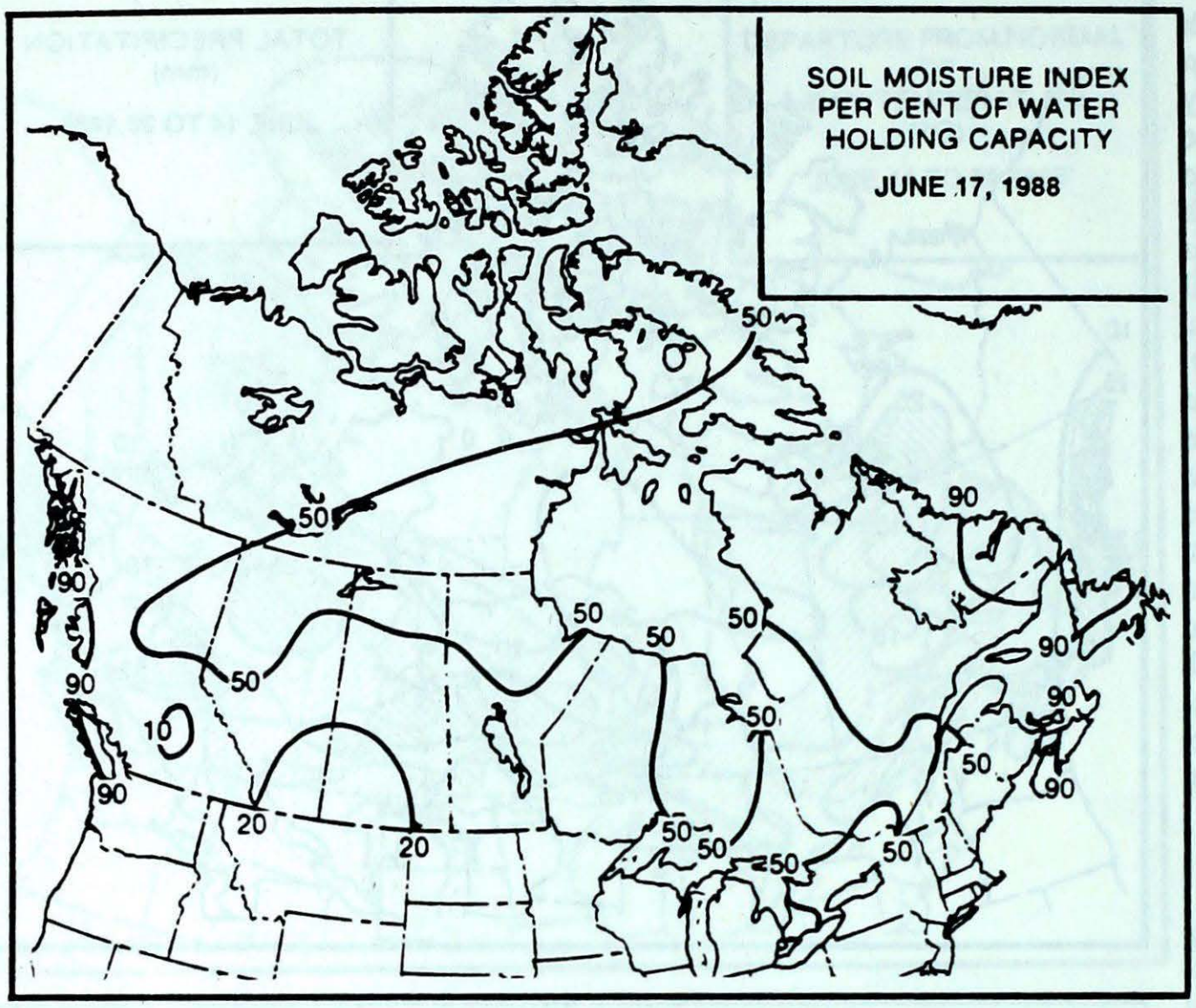


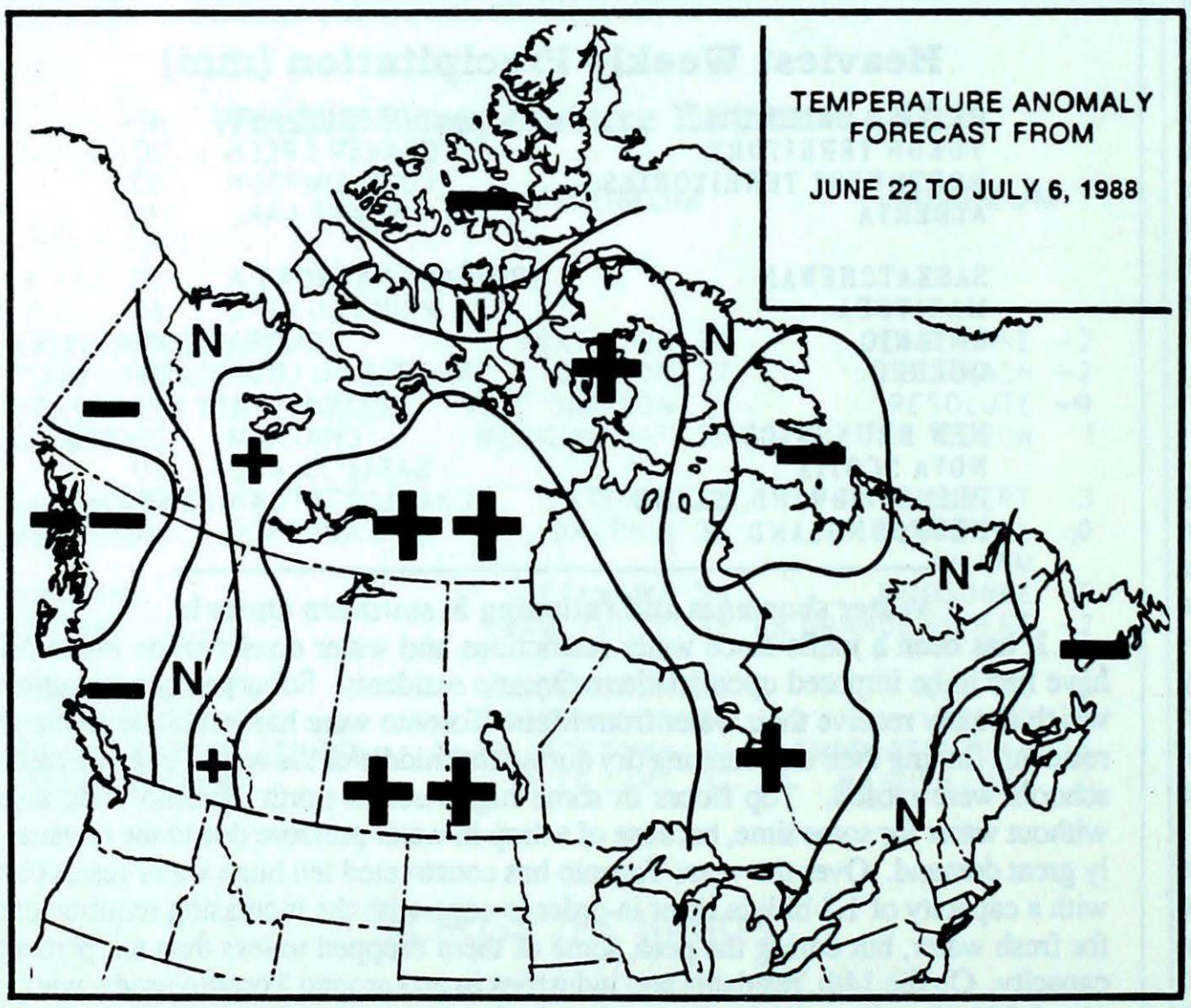
Heaviest Weekly Precipitation (mm)

BRITISH COLUMBIA	MCINNES ISLAND	46
YUKON TERRITORY	BEAVER CREEK	37
NORTHWEST TERRITORIES	FORT SIMPSON	52
ALBERTA	SLAVE LAKE	19
SASKATCHEWAN	BUFFALO NARROWS A	31
MANITOBA	WINNIPEG INT'L	65
ONTARIO	KENORA	45
QUEBEC	RIVIERE DU LOUP	34
NEW BRUNSWICK	CHATHAM	24
NOVA SCOTIA	SABLE ISLAND	20
PRINCE EDWARD ISLAND	CHARLOTTETOWN	24
NEWFOUNDLAND	ST LAWRENCE	54

Water shortages and rationing in southern Ontario

It has been a while since water restrictions and water conservation measures have had to be imposed upon southern Ontario residents. Suburban communities, which usually receive their water from Metro Toronto were hardest hit, with many residents finding their taps running dry during the middle of the week. In some cases schools were closed. Top floors in some high rises in north Toronto were also without water for some time, because of a drop in water pressure due to the unusually great demand. Over the years Toronto has constructed ten huge water reservoirs with a capacity of 1.3 billion litres in order to cope with the increasing requirement for fresh water, but during the peek some of them dropped to less than ten percent capacity. On the 14th, residents and industries in and around Toronto used a whopping 2.39 billion litres (525 million gallons) of water, quickly depleting the reserves. Appeals were made to stop watering lawns, gardens and filling swimming pools. In the surrounding regions, where there are many new housing developments, twice the usual amount of water was being pumped. Once water restrictions were imposed water supplies quickly stabilized.





++	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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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.

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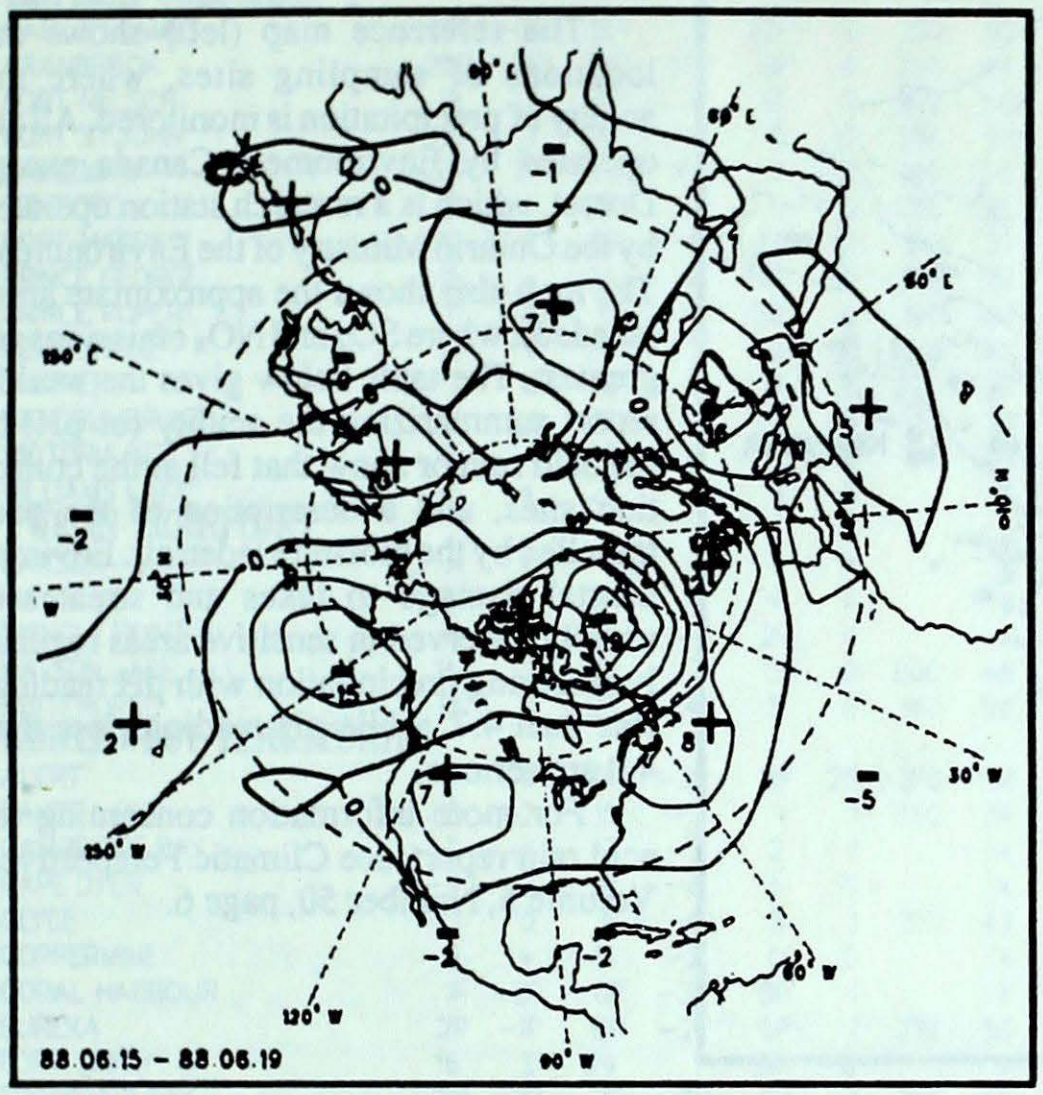
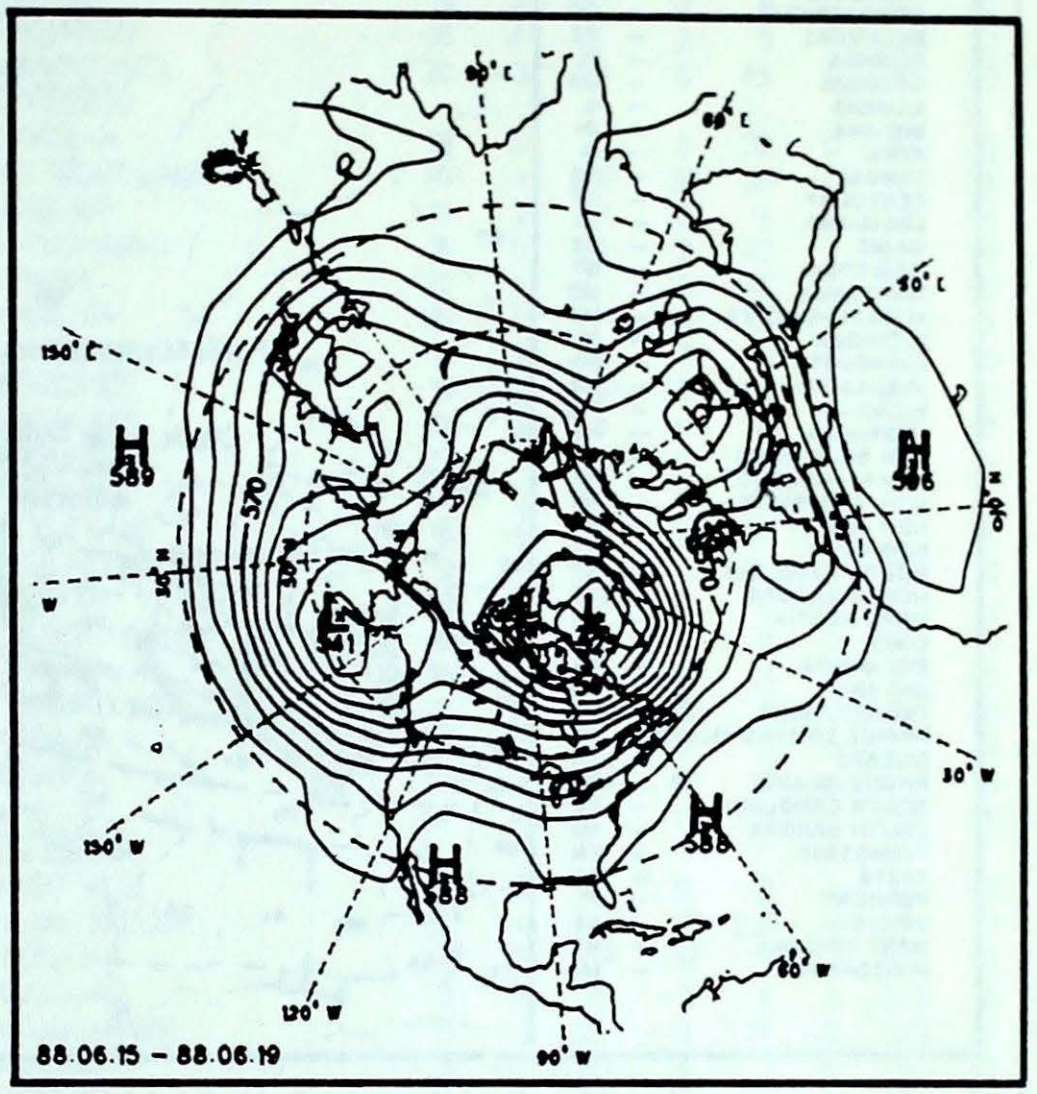
50 kPa ATMOSPHERIC CIRCULATION



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



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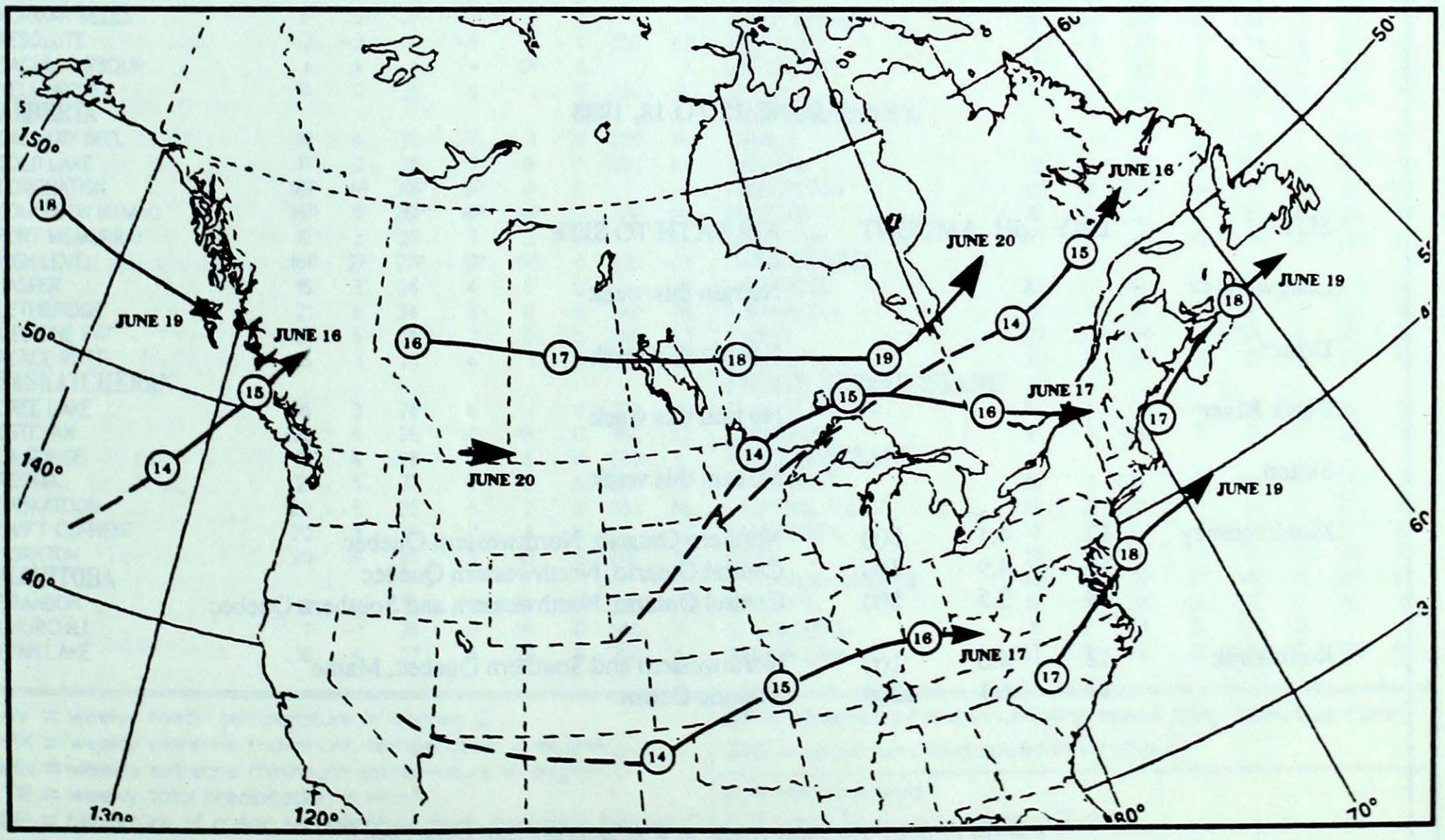
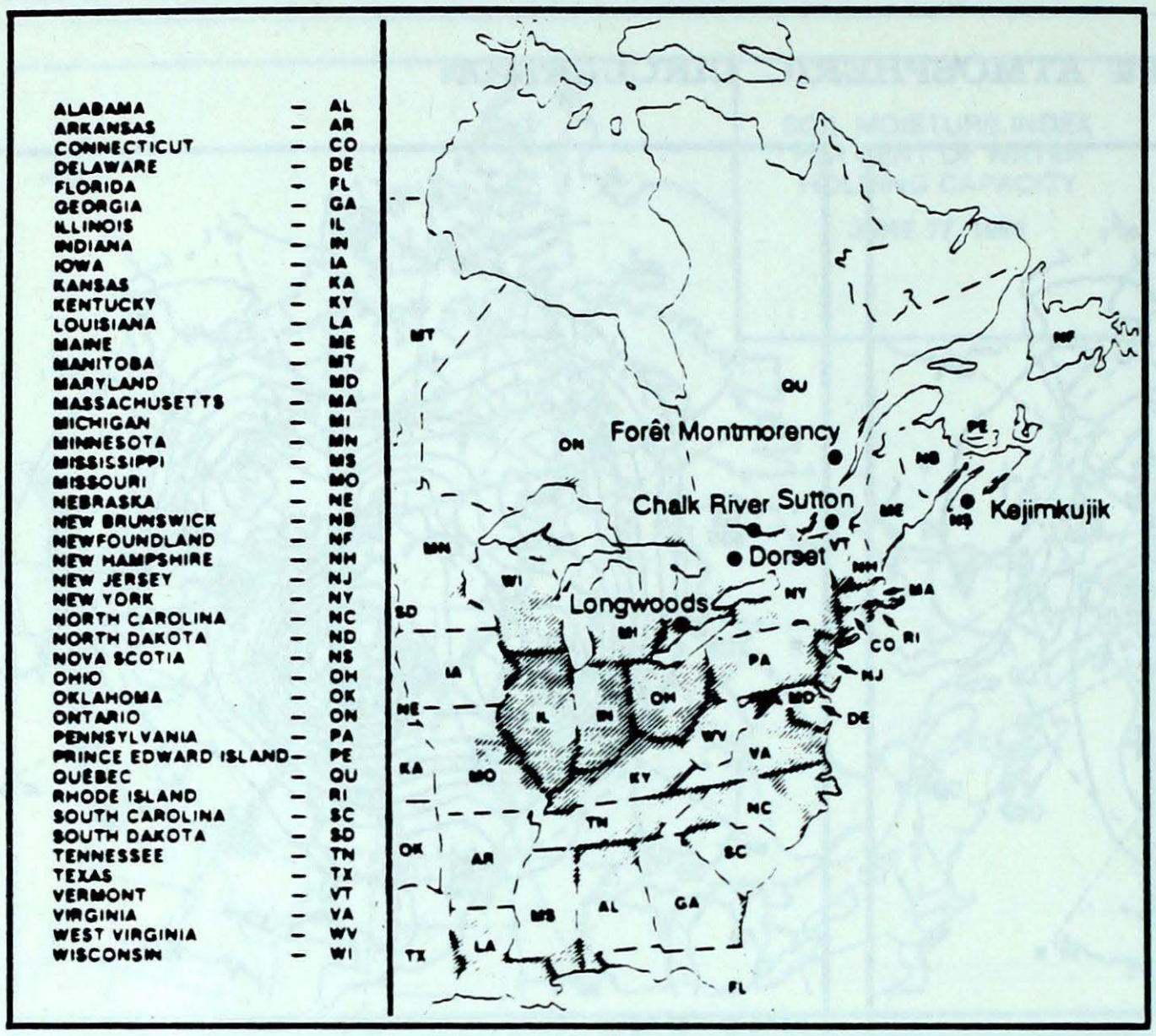


Storm track - Position of storm at 12 GMT during the period: June 14 to 20, 1988



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 SO_2 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.

JUNE 12 TO 18, 1988

SITE	DAY	pH	AMOUNT	AIR PATH TO SITE
Longwoods				No rain this week
Dorset				No rain this week
Chalk River				No rain this week
Sutton				No rain this week
Montmorency	12	4.1	9(r)	Northern Ontario, Northwestern Quebec
	16	4.9	1(r)	Central Ontario, Northwestern Quebec
	18	3.5	5(r)	Central Ontario. Northwestern and Southern Quebec
Kejimkujik	12	4.6	1(r)	Northwestern and Southern Quebec, Maine
	17	6.1	12(r)	Atlantic Ocean

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

STATISTICS FOR THE WEEK ENDING 0600 GMT June 20, 1988

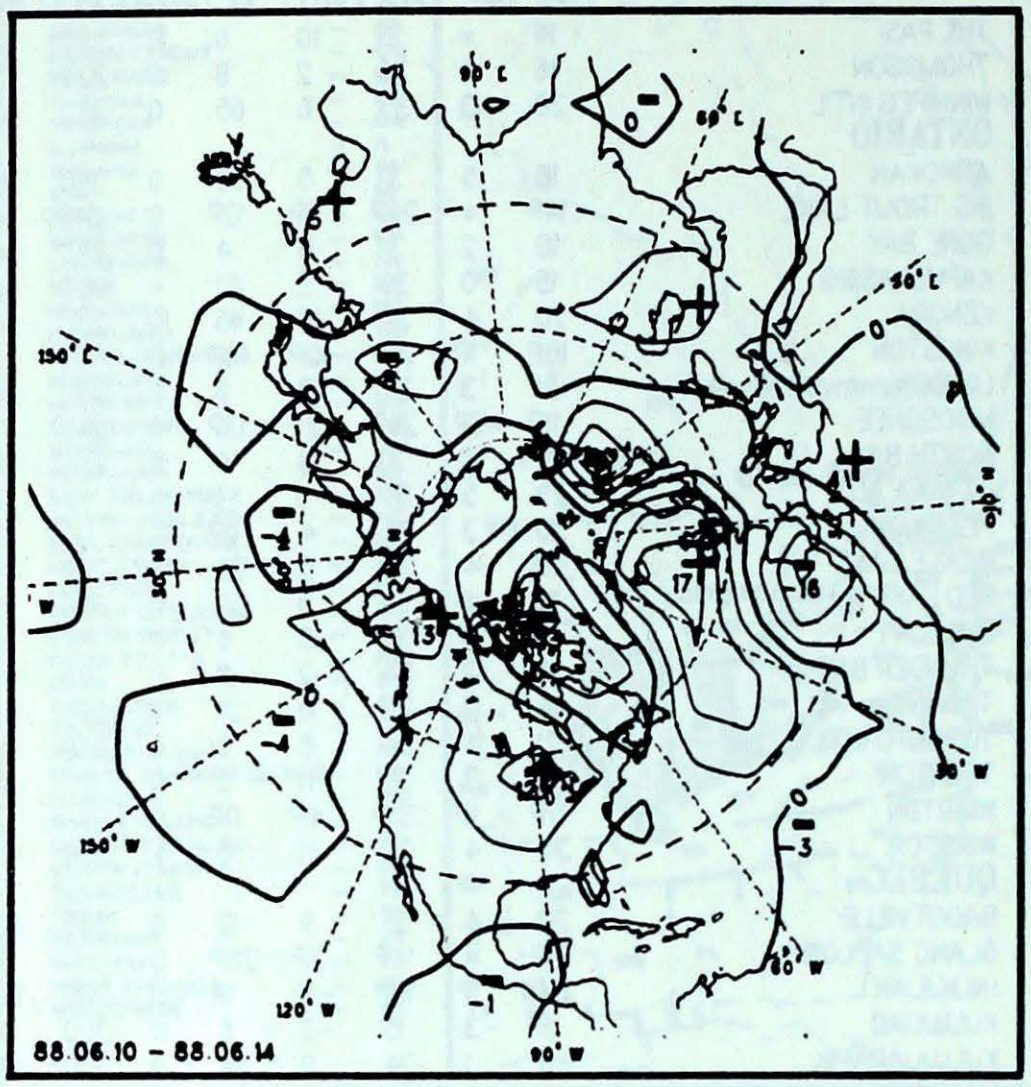
STATION	TEMPERATURE				PRECIP.		WIND MX	
	AV	DP	MX	MN	TP	SOG	DIR	SPD
BRITISH COLUMBIA								
CAPE ST JAMES	10P	-1P	15P	1P	32P	0	150	57
CRANBROOK	20P	5P	30P	10P	3P	0	200	44
FORT NELSON	16	1	27	4	13	0	260	50
FORT ST JOHN	15	1	24	6	0	0	240	59
KAMLOOPS	22P	3P	33	10P	0	0	190	56
PENTICTON	21	4	34	9	0	0	030	35
PORT HARDY	12	0	18	5	13	0	120	37
PRINCE GEORGE	15	*	26	6	14	0	240	61
PRINCE RUPERT	11	0	15	5	38	0	190	41
REVELSTOKE	19	3	30	7	2	0	110	46
SMITHERS	13	0	28	0	8	0	230	41
VANCOUVER INT'L	17	1	25	11	3	0	120	31
VICTORIA INT'L	16	1	27	8	1	0	140	33
WILLIAMS LAKE	16	*	27	4	1	0		X
YUKON TERRITORY								
DAWSON	*	*	*	*	*	*	*	*
MAYO	14	0	24	4	4	0		X
SHINGLE POINT A	6	0	20	-1	2P	0		*
WATSON LAKE	14	1	26	7	3	0	200	48
WHITEHORSE	12	0	23	4	5	0	140	50
NORTHWEST TERRITORIES								
ALERT	-1P	-1P	0P	-3P	3P	25	310	31
BAKER LAKE	3	-2	15	-2	1	1	330	74
CAMBRIDGE BAY	2	-1	7	-3	2	1		*
CAPE DYER	-2	-2	3	-6	5	71		*
CLYDE	1	0	6	-4	3	1	310	43
COPPERMINE	5	*	16	-2	0	0		*
CORAL HARBOUR	1P	-2P	6P	-3P	8P	1		X
EUREKA	2P	-1P	8P	-2P	0P	1	270	50
FORT SMITH	16	3	29	1	26	0		X
FROBISHER BAY	2P	-2P	7P	-2P	2P	1	270	44
HALL BEACH	1P	0P	4P	-3P	2P	3	320	72
INUVIK	13	1	22	4	2P	0		X
MOULD BAY	-2	-2	2	-5	2	7		X
NORMAN WELLS	17	2	27	7	2	0		X
RESOLUTE	-3	-3	1	-9	1	4	350	63
SACHS HARBOUR	*	*	*	*	0P	0		X
YELLOWKNIFE	14	0	25	5	1	0	160	41
ALBERTA								
CALGARY INT'L	18	4	30	7	1	0	280	74
COLD LAKE	17	2	28	7	8	0	280	69
CORONATION	18P	4P	29P	5P	0	0		*
EDMONTON NAMAO	16P	1P	26P	4P	4P	0	320	54
FORT MCMURRAY	17	3	27	7	3	0		X
HIGH LEVEL	16P	2P	27P	5P	0P	0	330	43
JASPER	15	-3	26	4	0	0		X
LETHBRIDGE	21	6	34	5	0	0	240	78
MEDICINE HAT	21	5	35	7	0	0	260	63
PEACE RIVER	15	1	25	4	1	0	260	81
SASKATCHEWAN								
CREE LAKE	16	3	26	6	1	0	270	57
ESTEVAN	22	6	38	10	18	0	180	63
LA RONGE	18	4	29	6	5	0	290	61
REGINA	21	5	37	6	3	0	250	61
SASKATOON	20	5	35	5	2	0	350	56
SWIFT CURRENT	20	5	34	7	0	0		X
YORKTON	20	4	36	9	18	0	290	61
MANITOBA								
BRANDON	19	3	35	7	37	0	220	80
CHURCHILL	7	-1	26	0	16	0	040	37
LYNN LAKE	16	4	27	5	22	0	250	41
THE PAS	19	*	31	10	0	0	290	52
THOMPSON	16	4	26	2	8	0	230	52
WINNIPEG INT'L	20	3	33	6	65	0	220	63
ONTARIO								
ATIKOKAN	18	5	31	5	32	0	190	52
BIG TROUT LAKE	14P	*	26P	3P	12P	0	310	76
GORE BAY	18	2	31	6	4	0	290	56
KAPUSKASING	15	0	29	3	42	*	300	56
KENORA	20	4	30	10	45	0	230	50
KINGSTON	18P	1P	27P	10P	0P	0		X
LONDON	21	3	34	7	0	0	230	50
MOOSONEE	11P	-2P	25P	-2P	13P	0	290	41
NORTH BAY	19	3	31	6	4	0	240	50
OTTAWA INT'L	23	5	35	11	1	0		X
PETAWAWA	20	3	36	4	0P	0		X
PICKLE LAKE	18	4	30	5	30	0	280	74
RED LAKE	19	4	31	3	10	0	300	70
SUDBURY	19	3	32	6	0	0		X
THUNDER BAY	16	2	34	2	11	0	280	59
TIMMINS	16	2	30	0	21	0	270	65
TORONTO INT'L	21	4	34	8	0	0	240	48
TRENTON	21	3	32	11	0	0		X
WIARTON	17P	1P	31P	4P	0P	0		X
WINDSOR	24	4	36	11	0	*	230	48
QUEBEC								
BAGOTVILLE	20	4	35	9	12	0	280	63
BLANC SABLON	8P	*	14P	2P	28P	0		X
INUKJUAK	5P	1P	18P	-1P	1P	0	200	80
KUUJJUAQ	5	-3	15	-2	6	0	300	78
KUUJJUARAPIK	8	1	24	0	14	0	200	67
MANIWAKI	19	4	33	4	1	0	290	59
MONT JOLI	18	2	29	10	11	0	280	70
MONTREAL INT'L	23	4	33	11	0	0	240	48
NATASHQUAN	13	2	19	7	16	0	020	43
QUEBEC	22	5	34	10	3	0	230	50
SCHEFFERVILLE	12P	2P	22P	2P	18P	0	300	72
SEPT-ILES	12	-1	21	3	13	0	230	48
SHERBROOKE	20	4	33	6	1	0	260	48
VAL D'OR	17	2	30	2	19	0	210	65
NEW BRUNSWICK								
CHARLO	17	1	31	5	12	0	240	57
CHATHAM	19	2	33	5	24	0	290	56
FREDERICTON	20P	3P	34P	10P	9P	0	190	44
MONCTON	18	2	32	7	8P	0	210	67
SAINT JOHN	16	2	28	8	9	0	200	48
NOVA SCOTIA								
GREENWOOD	20	4	34	10	19	0	220	56
SHEARWATER	15	1	27	9	17	0	220	41
SYDNEY	16P	3P	33P	6P	18P	0	210	56
YARMOUTH	15	2	25	9	10	0	210	52
PRINCE EDWARD ISLAND								
CHARLOTTETOWN	17	2	31	4	24	0	260	37
SUMMERSIDE	17	1	29	7	13	0	210	57
NEWFOUNDLAND								
CARTWRIGHT	10	1	24	2	10	0	210	59
CHURCHILL FALLS	13	2	26	0	19	0	220	65
GANDER INT'L	13	1	30	1	18	0	230	87
GOOSE	13	0	27	1	17	0	210	59
PORT-AUX-BASQUES	10P	1P	17P	6P	14P	0	300	54
ST JOHN'S	12	1	28	3	22	0	220	61
ST LAWRENCE	11	2	21	5	54	0		X
WABUSH LAKE	13	2	24	0	20	0	220	44

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

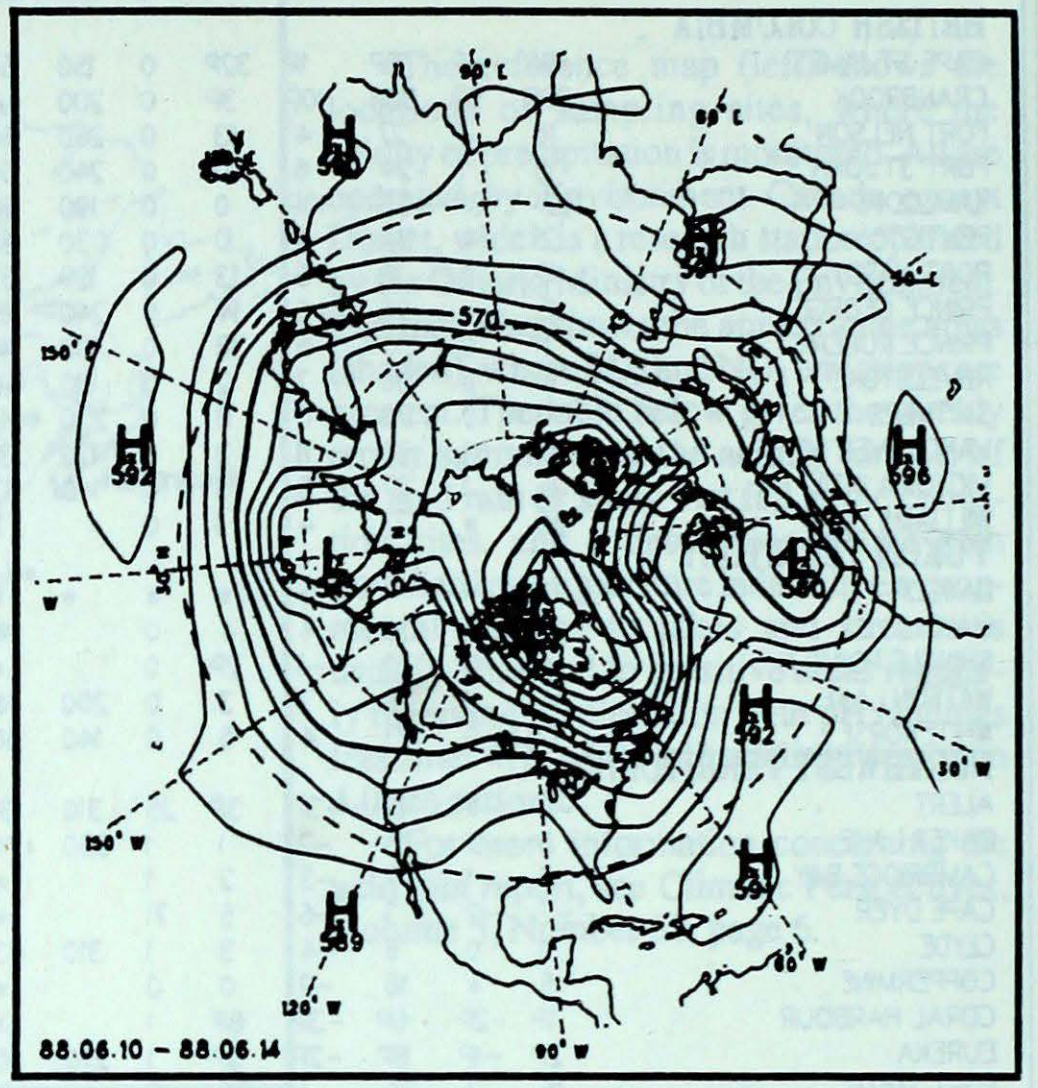
DIR = direction of maximum wind speed (deg. from true north)
SPD = maximum wind speed in km/hour

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)



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