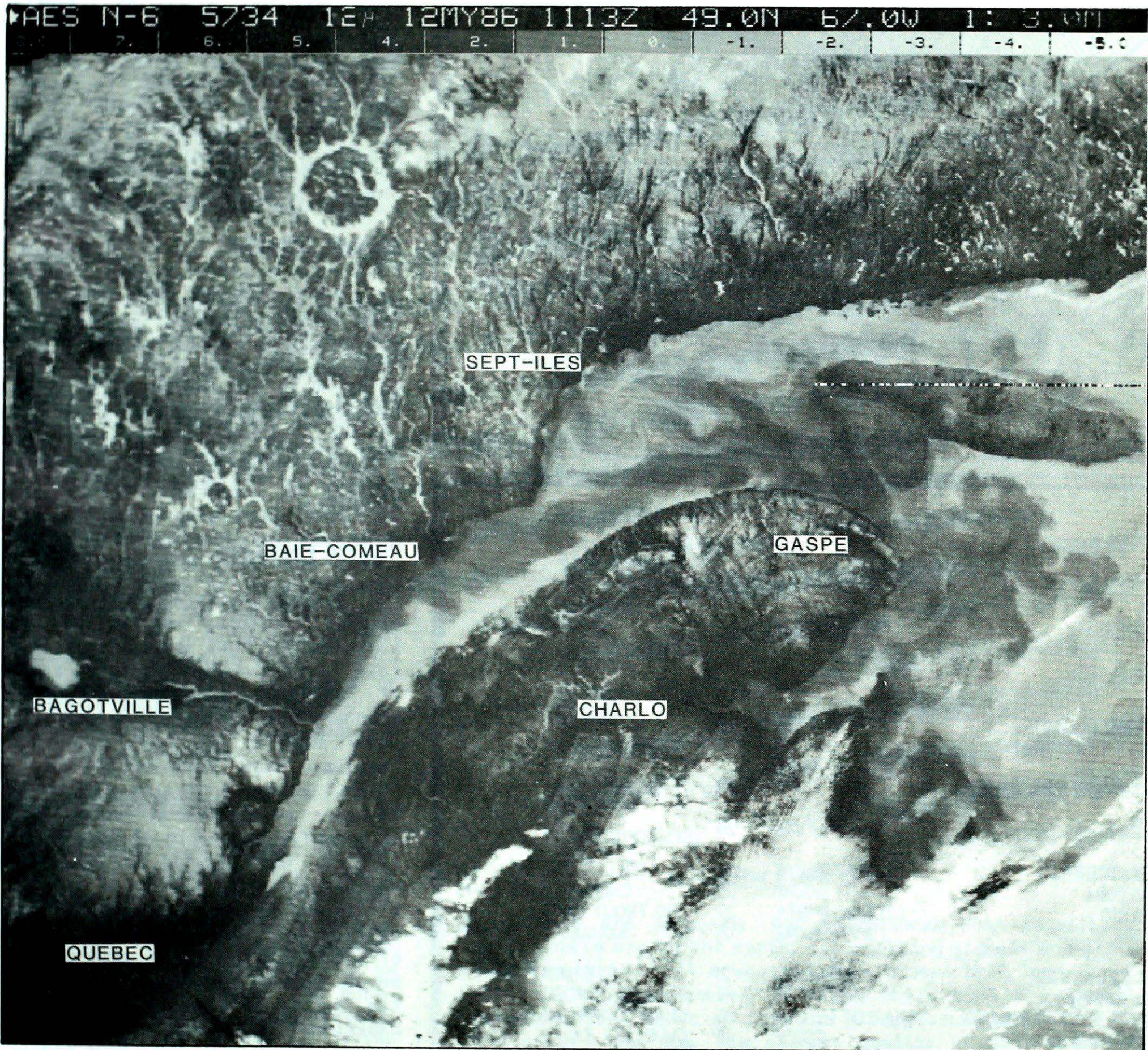


Climatic Perspectives

A weekly review of Canadian climate

May 6 to 12, 1986

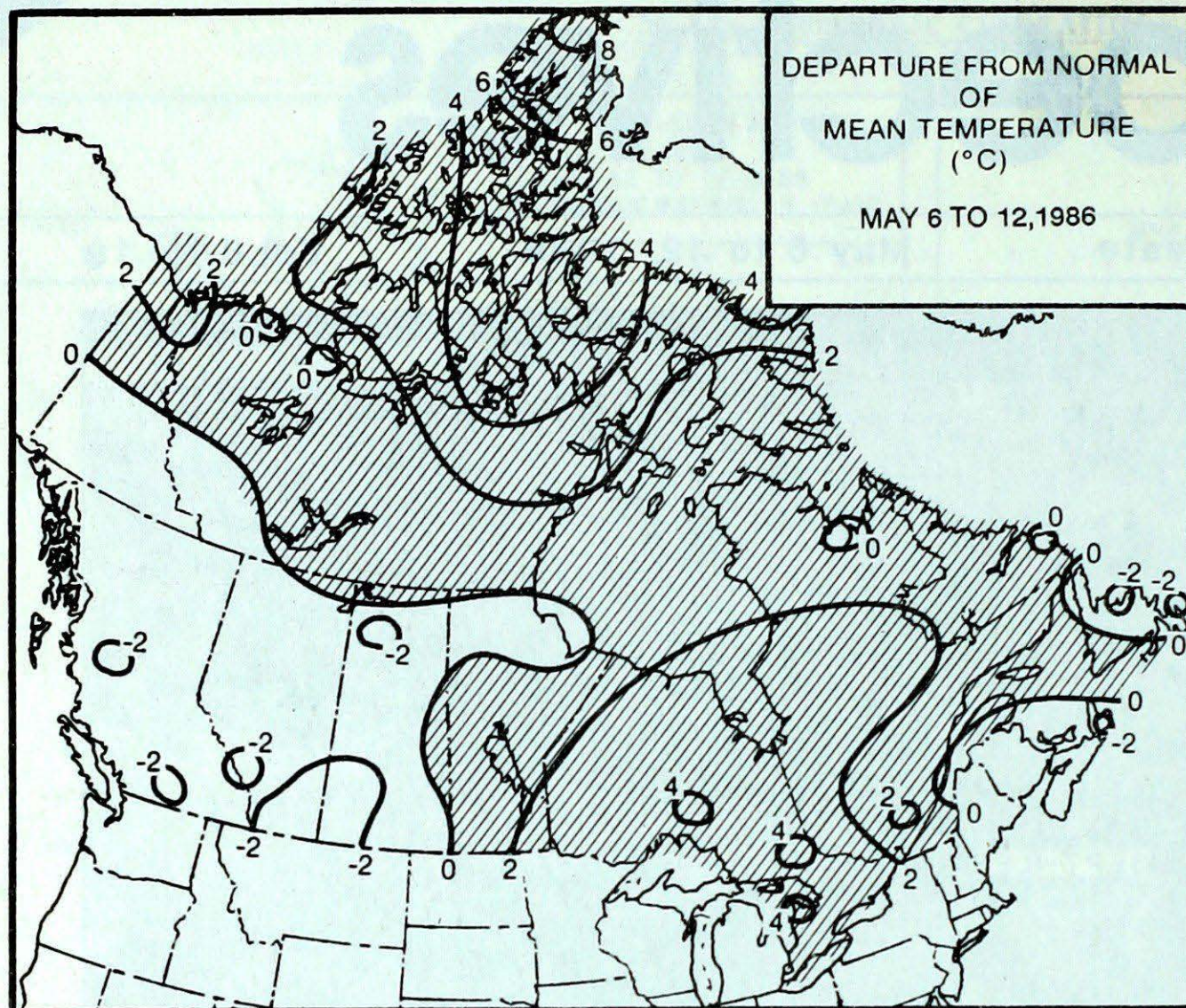
Vol.8 No.19



This NOAA 6 infrared satellite picture blowup of southern Quebec, taken on May 12, 1986, depicts the contrasting water temperatures in the St. Lawrence Estuary. For more detail see page 3.

- **Severe thunderstorm season has begun**
 - tornadoe touches down in Southern Manitoba
 - large hail from the Prairies to Quebec
- **Heavy rains welcomed in parched Saskatchewan**

TEMPERATURE



ACROSS THE COUNTRY...

Yukon and Northwest Territories

Record warm temperatures were experienced in the high Arctic, climbing above the freezing mark. Snow, freezing rain and low cloud were reported along the Arctic coast, the Keewatin District and on Baffin Island. Temperatures in the Mackenzie District climbed to the mid-teens, with some showers being reported. All major rivers and lakes are still ice covered. An ice jam on the Klondike River caused some local flooding at Dawson.

British Columbia

Sunny weather gave way to a more cloudy and showery regime by the middle of the week. Temperatures were on the cool side, generally hovering in the teens. A few daily low temperature records were broken in the province. In the interior, showery conditions have set back agriculture and gardening by nearly two weeks.

Prairie Provinces

Several major weather systems brought inclement weather to the southern Prairies. Much needed rain fell in the drought stricken areas of southern Saskatchewan. Heavy thunderstorms occurred during the early part of the week, producing localized heavy downpours of 30 to 50 mm. On May 5, Regina set a new 24-hour precipitation record of 60.4 mm for the month of May. Flood warnings were posted in parts of southern Manitoba because of swollen rivers and streams. The community of Ochre River, on the eastern slopes of the Riding Mountains, received 85 mm of rain on May 6. The same day, the Turtle River east of Dauphin overflowed its banks, flooding the town of St. Rose du Lac. More severe thunderstorm activity affected the region over the weekend, giving rainfall totals in Saskatchewan in the 20 to 45 mm range, and producing golfball sized hail in parts of southern Manitoba. On the evening of the 11th, a tornado touched down south of Morden, Manitoba, while baseball sized hail fell near MacGregor.

WEEKLY TEMPERATURE EXTREME (C)

	MAXIMUM		MINIMUM	
BRITISH COLUMBIA	LYTTON	22	DEASE LAKE	-6
YUKON TERRITORY	DAWSON	13	SHINGLE POINT A	-11
	MAYO			
NORTHWEST TERRITORIES	FORT SMITH	20	CAPE PARRY	-22
			MOULD BAY	
ALBERTA	HIGH LEVEL	20	JASPER	-4
SASKATCHEWAN	HUDSON BAY	20	COLLINS BAY	-4
MANITOBA	PILOT MOUND	25	CHURCHILL	-15
ONTARIO	TORONTO INT'L	27	BIG TROUT LAKE	-5
QUEBEC	SHERBROOKE	21	KUUJJUAQ	-18
NEW BRUNSWICK	CHATHAM	21	ST STEPHEN	-4
NOVA SCOTIA	GREENWOOD	19	GREENWOOD	-4
PRINCE EDWARD ISLAND	CHARLOTTETOWN	15	CHARLOTTETOWN	-3
NEWFOUNDLAND	GOOSE	19	CHURCHILL FALLS	-6

ACROSS THE NATION

WARMEST MEAN TEMPERATURE	15	WINDSOR	ONT
COOLEST MEAN TEMPERATURE	-12	MOULD BAY	NWT

Ontario

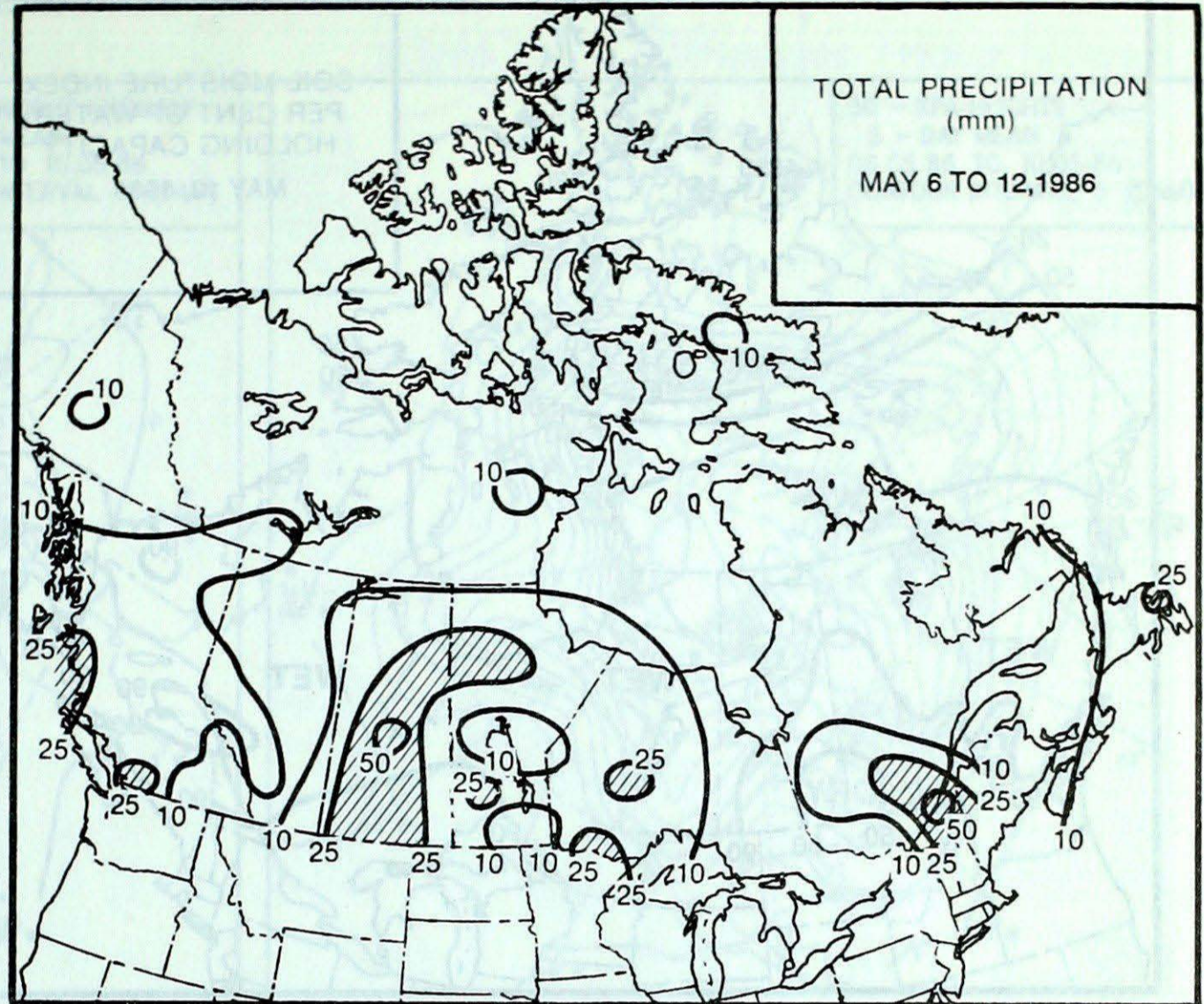
After an area of scattered thunderstorms, associated with gusty winds and hail, moved across southern Ontario on May 6, the weather became sunny and seasonably mild. In northern Ontario, it remained unsettled due to the proximity of an active storm track. Snow fell in the extreme northwest, while showers and thunderstorms occurred elsewhere. In the agricultural districts of the south, crop seeding is nearly complete. The past several weeks in the south have been very dry, and a good rainfall would be very beneficial.

Quebec

A frontal disturbance triggered severe thunderstorms, which moved across western Québec during the early part of the week. Hail was reported in the Abitibi region on May 6. The community of Dubuison, west of Val d'Or, was hit with golfball sized hail which damaged a commercial greenhouse. On May 7, thunderstorms gave heavy downpours of up to 60 mm to the southern half of the province. Hail fell at Val des Monts, north of Ottawa. Conditions improved for the remainder of the period, as a large area of high pressure in northern Québec sagged southwards. Seeding is ahead of schedule in the Eastern Townships. Frost damaged some of the asparagus crop during the week.

Atlantic Provinces

A storm centred east of Newfoundland dominated the week's weather. In eastern Newfoundland, the week began with periods of snow and near freezing temperatures. Snow on May 6 totalled nearly 15 cm at St. John's, Gander and Bonavista. Northeasterly winds prevailed for much of the period, giving flurries or freezing drizzle at many locations. In Labrador, after some snow and freezing rain was experienced earlier in the week, an area of high pressure gave sunny skies and near seasonal temperatures. In the Maritimes, the period was frequently cloudy and cool. Frost occurred on a number of occasions, injuring apple fruit buds in the Annapolis Valley.

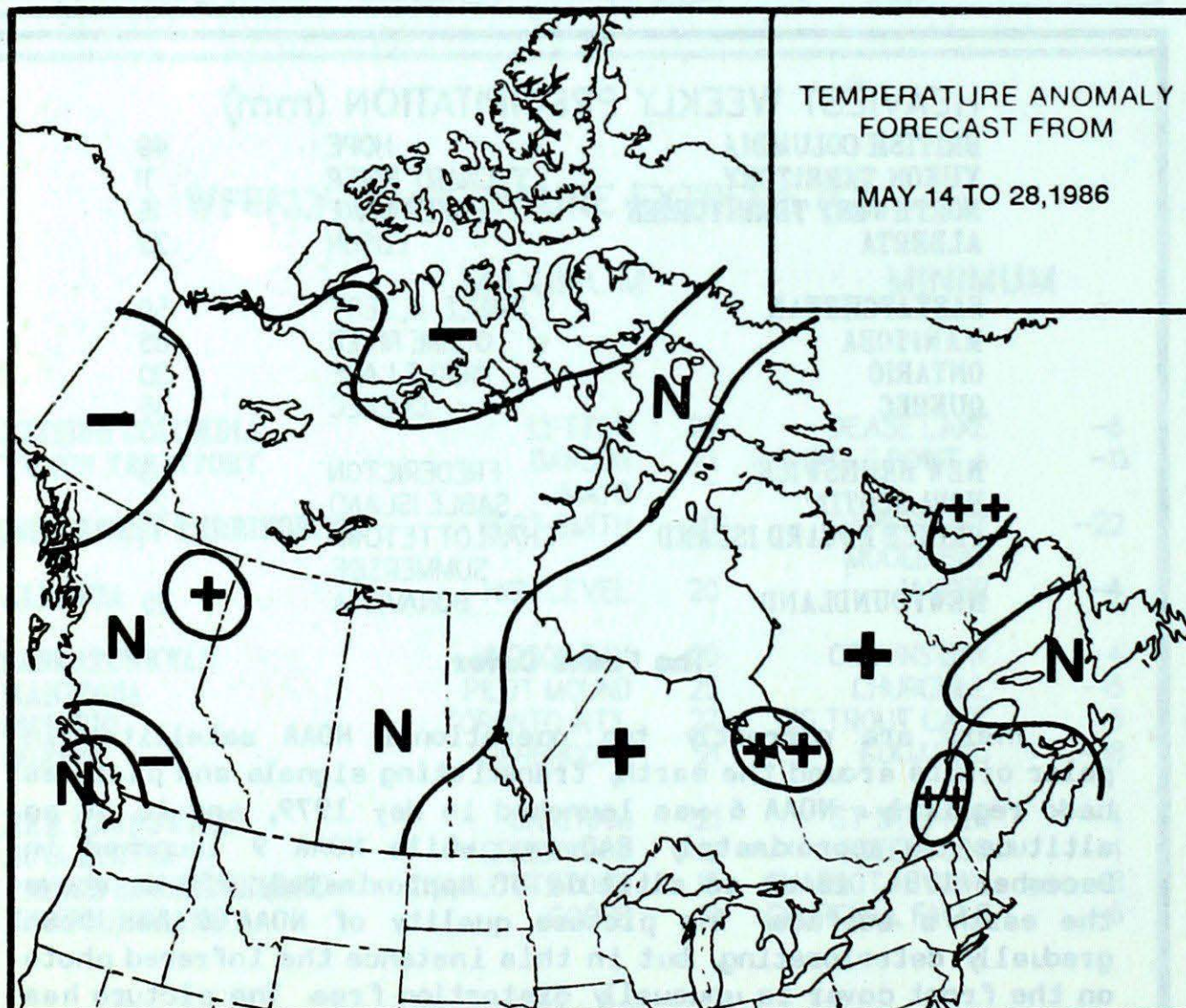
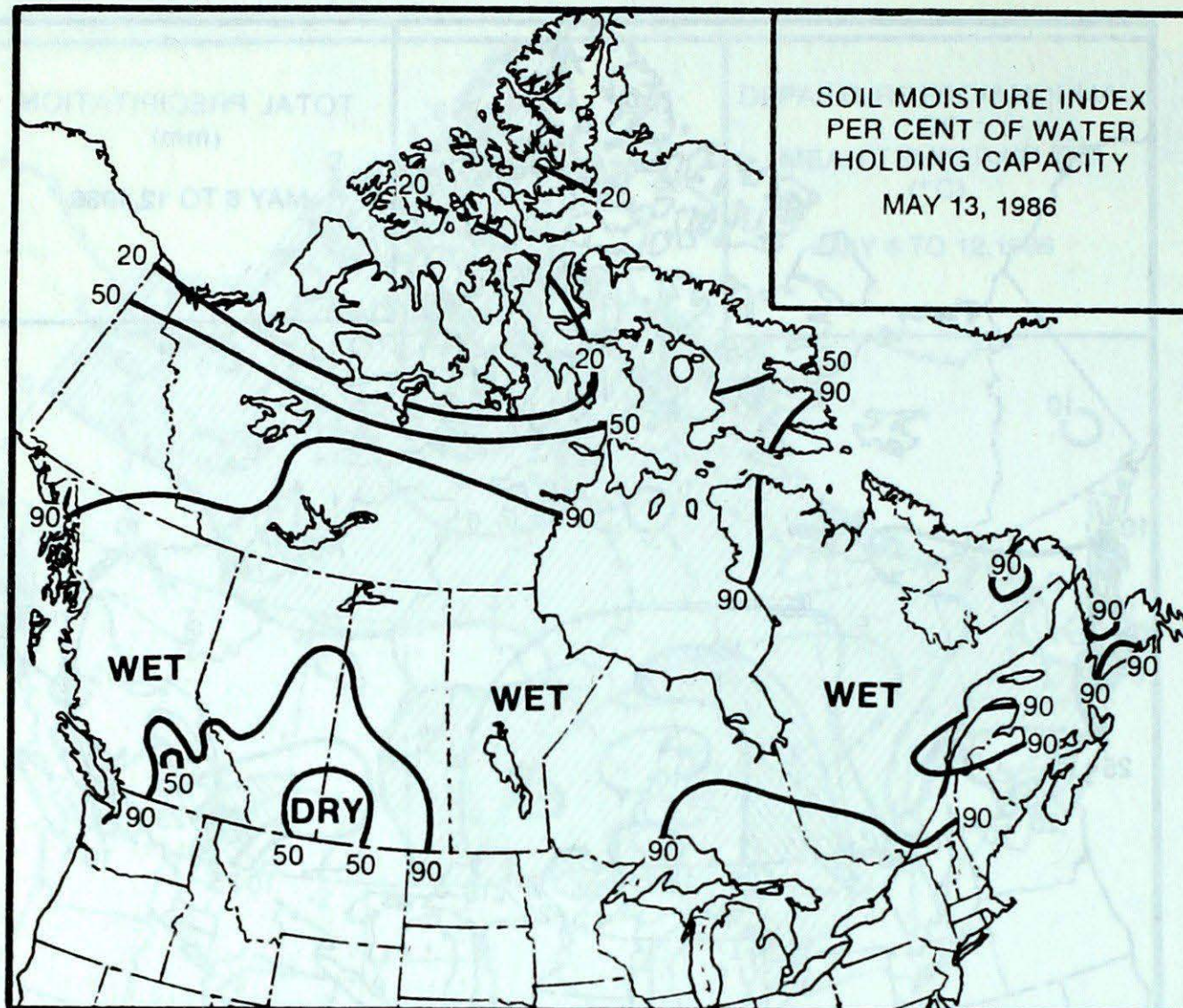
**HEAVIEST WEEKLY PRECIPITATION (mm)**

BRITISH COLUMBIA	HOPE	49
YUKON TERRITORY	STEWART RIVER	11
NORTHWEST TERRITORIES	BAKER LAKE	15
ALBERTA	EDSON	32
SASKATCHEWAN	PRINCE ALBERT	50
MANITOBA	OCHRE RIVER	85
ONTARIO	PICKLE LAKE	30
QUEBEC	QUEBEC	56
NEW BRUNSWICK	FREDERICTON	3
NOVA SCOTIA	SABLE ISLAND	25
PRINCE EDWARD ISLAND	CHARLOTTETOWN	1
NEWFOUNDLAND	SUMMERSIDE	
	BONAVISTA	25

The Front Cover

There are currently two operational NOAA satellites in polar orbits around the earth, transmitting signals and pictures back regularly. NOAA 6 was launched in May 1979, and is at an altitude of approximately 840 km, while NOAA 9 launched in December 1984, is at an altitude of approximately 850 km above the earth's surface. The picture quality of NOAA 6 has been gradually deteriorating, but in this instance the infrared photo on the front cover is unusually distortion free. The picture has been enlarged to a scale of 1:3 million. Clearly, the relatively warm (darker) current of the St. Lawrence River can be followed, mixing with the much colder (lighter) water of the Gulf of St. Lawrence. Where the two contrasting bodies of water meet, the current is swirled into eddies, much like low pressure systems, which develop between differentiating airmasses in our atmosphere. Also evident is an upwelling of cold water (lighter shading) along the south shore of the St. Lawrence River.

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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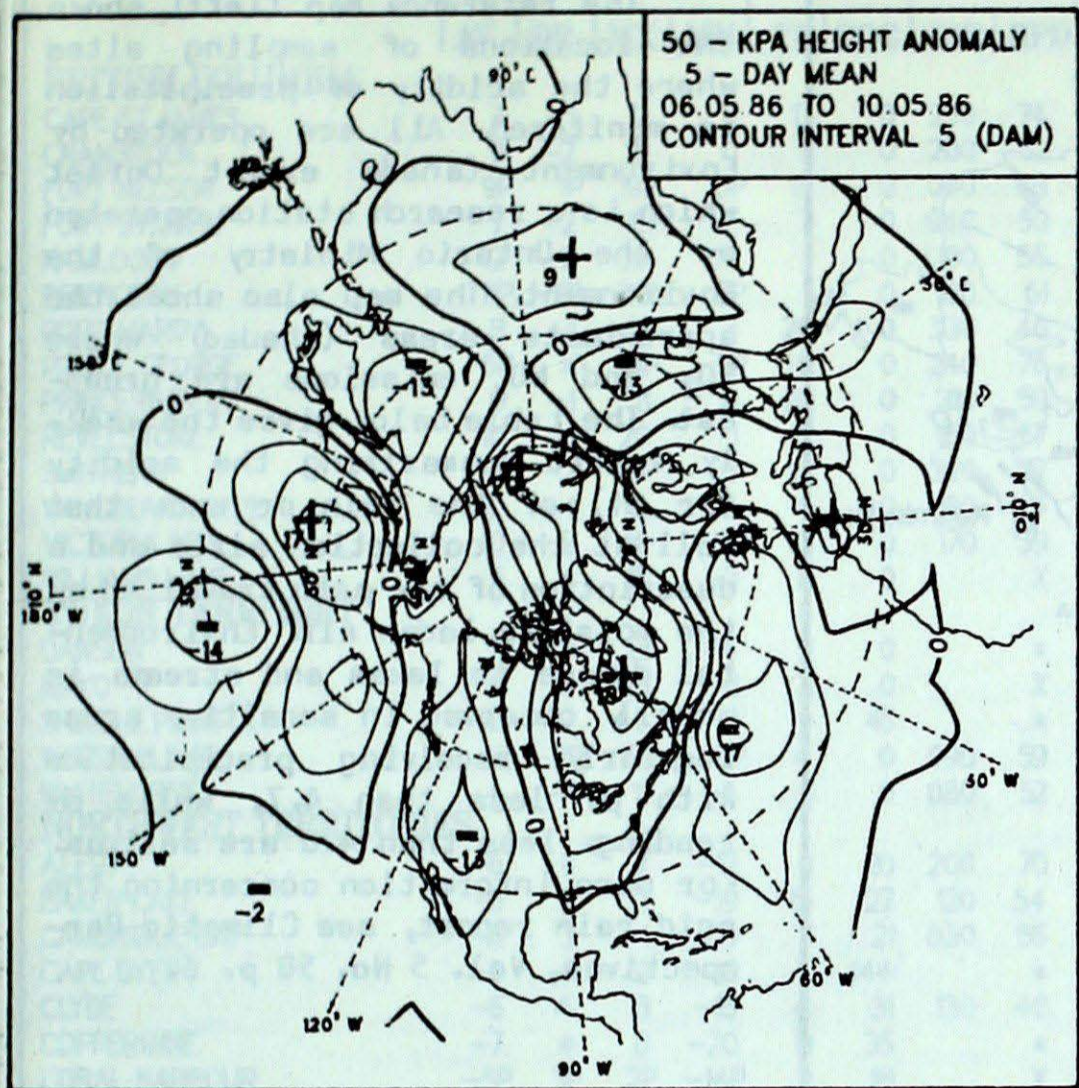
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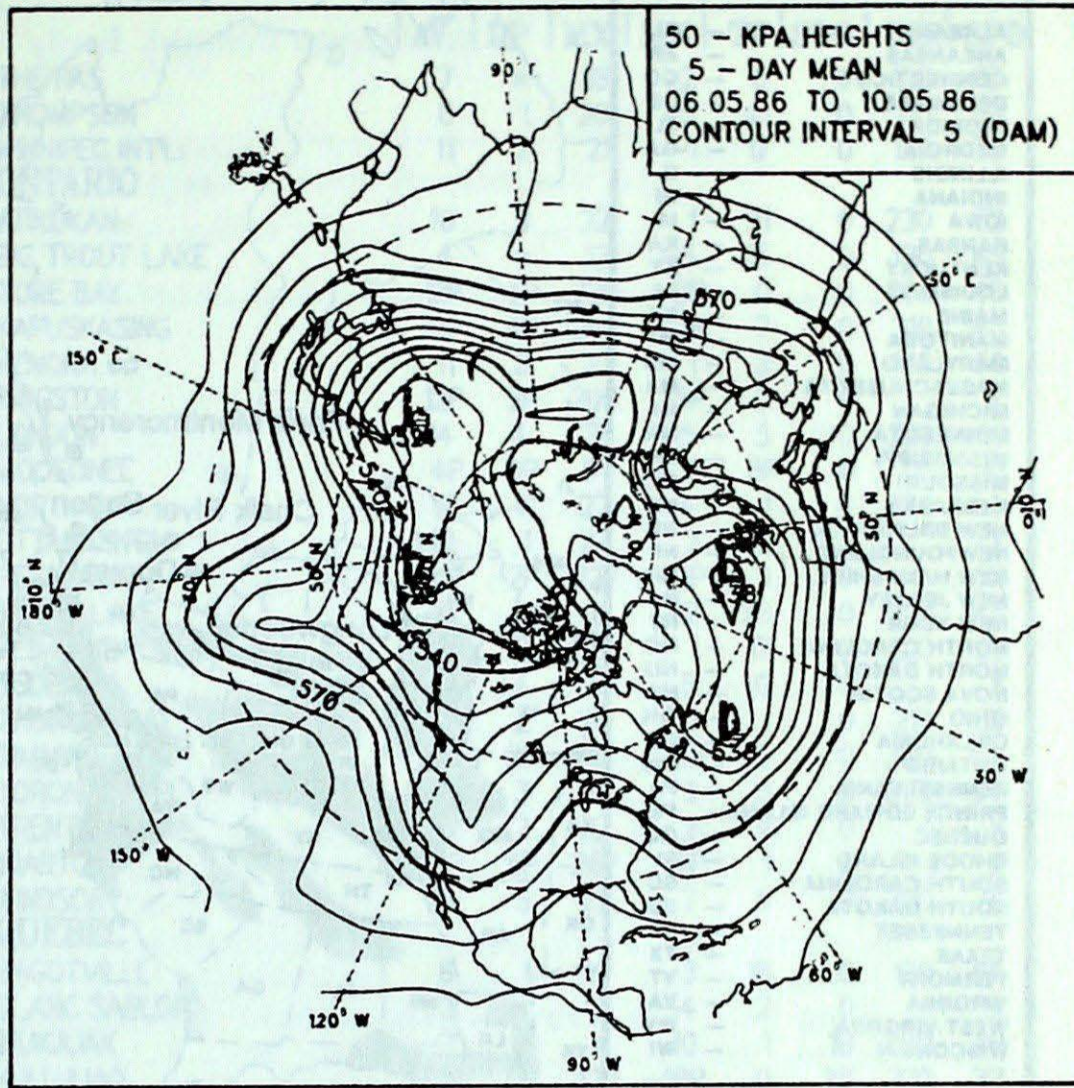
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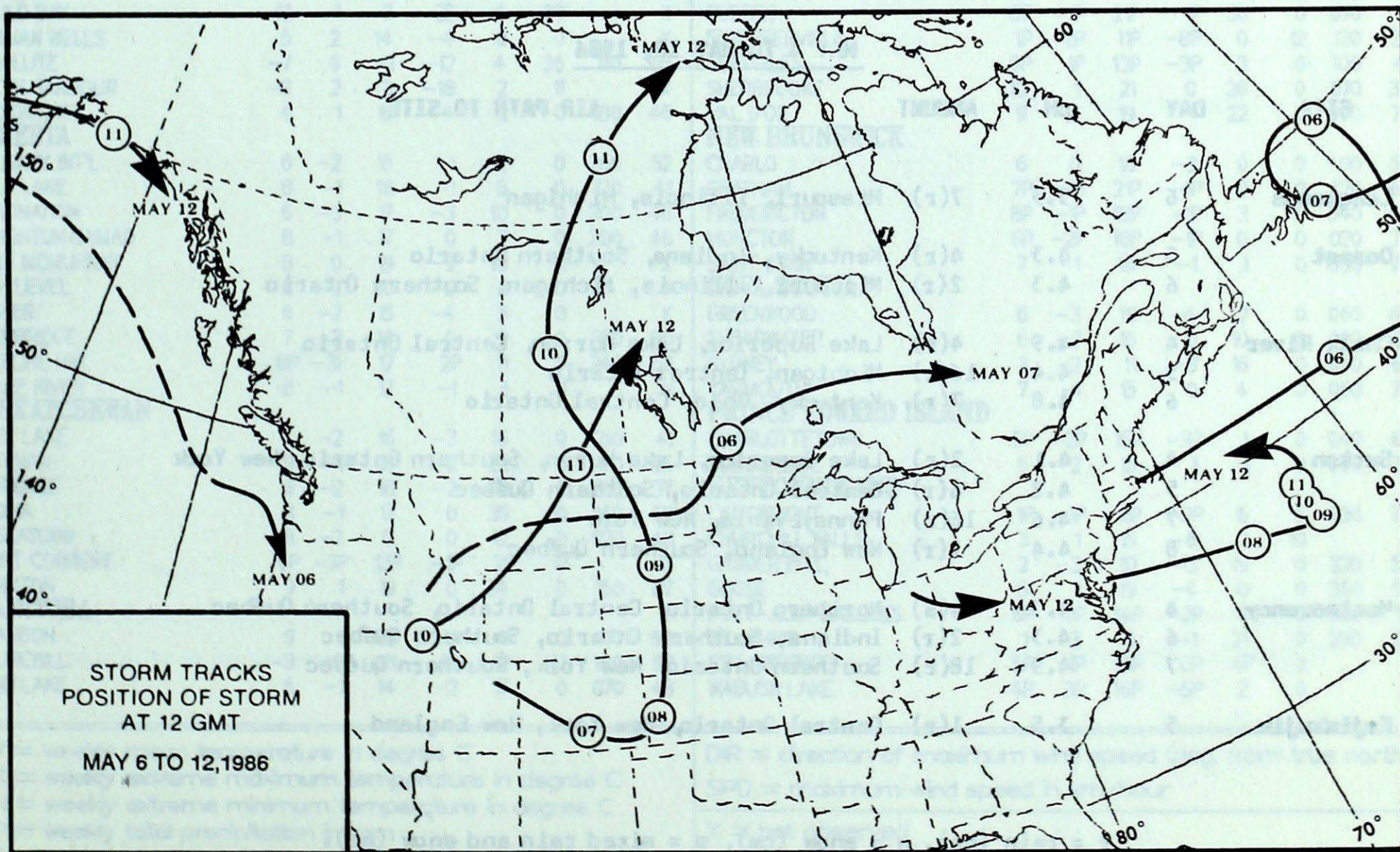
50 KPa ATMOSPHERIC CIRCULATION



MEAN 50 KPa HEIGHT ANOMALY (dam)
May 6 to May 10, 1986

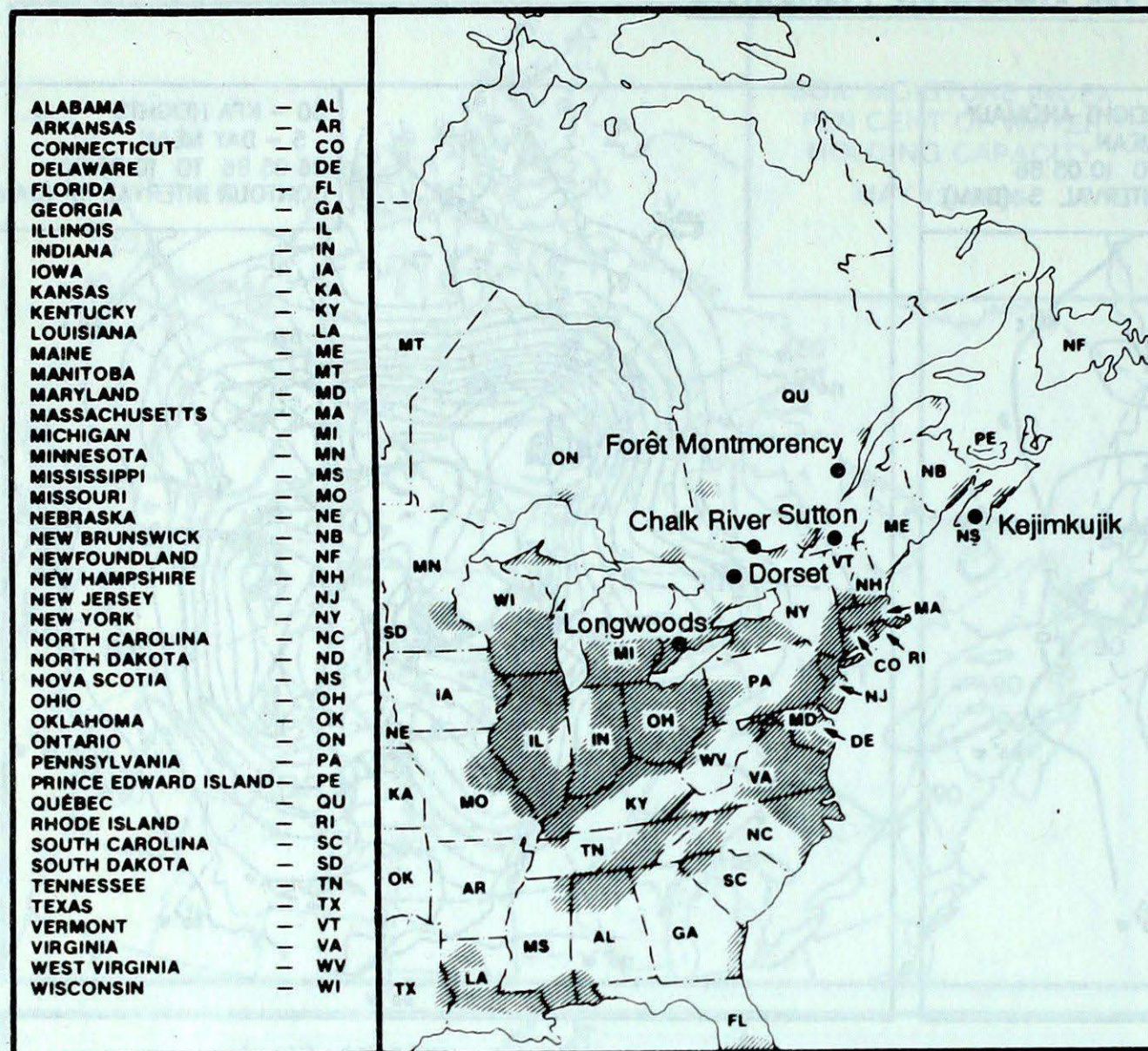


MEAN 50 KPa HEIGHTS (dam)
May 6 to May 10, 1986



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.

MAY 4 TO MAY 10, 1986

SITE	DAY	pH	AMOUNT	AIR PATH TO SITE
Longwoods	6	5.3	7(r)	Missouri, Illinois, Michigan
Dorset	5	4.3	4(r)	Kentucky, Indiana, Southern Ontario
	6	4.3	2(r)	Missouri, Illinois, Michigan, Southern Ontario
Chalk River	4	4.9	4(r)	Lake Superior, Lake Huron, Central Ontario
	5	4.4	16(r)	Michigan, Central Ontario
	6	4.8	7(r)	Kentucky, Ohio, Central Ontario
Sutton	4	4.1	2(r)	Lake Superior, Lake Huron, Southern Ontario, New York
	5	4.2	6(r)	Central Ontario, Southern Québec
	7	4.6	16(r)	Pennsylvania, New York
	8	4.4	1(r)	New England, Southern Québec
Montmorency	4	4.7	4(s)	Northern Ontario, Central Ontario, Southern Québec
	6	4.3	2(r)	Indiana, Southern Ontario, Southern Québec
	7	4.9	18(r)	Southern Ontario, New York, Southern Québec
Kejimikujik	5	3.5	1(r)	Central Ontario, New York, New England

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

TEMPERATURE, PRECIPITATION AND MAXIMUM WIND DATA FOR THE WEEK ENDING 0600 GMT MAY 13, 1986

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									THE PAS	7	*	18	-2	6	0	150	63
CAPE ST. JAMES	7	-1	12	2	17	0	230	74	THOMPSON	6	1	20	-5	41	0	170	59
CRANBROOK	9	-2	18	0	3	0	200	52	WINNIPEG INT'L	11	2	21	-1	17	0	120	72
FORT NELSON	9P	1P	19P	0P	15	0	040	48	ONTARIO								
FORT ST. JOHN	7	-2	15	-1	7	0	240	50	ATIKOKAN	10	3	22	1	31	0	230	52
KAMLOOPS	12	-2	20	4	1	0	190	56	BIG TROUT LAKE	4	*	13	-5	15	0	130	43
PENTICTON	11P	-2P	21P	2P	1	0	180	61	GORE BAY	12P	4P	22P	3P	0	0	260	46
PORT HARDY	8	-1	13	3	26	0	330	46	KAPUSKASING	10P	4P	25P	1P	7	0	310	43
PRINCE GEORGE	6P	*	16P	-5P	11	0	240	76	KENORA	11	3	20	1	3	0	130	50
PRINCE RUPERT	6	-1	11	0	20	0	210	59	KINGSTON	12P	2P	20P	5P	2	0		X
REVELSTOKE	10	-1	20	1	12	0	160	67	LONDON	14	4	25	5	5	0	220	69
SMITHERS	6	-2	17	-3	10	0	320	37	MOOSONEE	4P	0P	17P	-3P	8P	0	110	41
VANCOUVER INT'L	10	-1	16	5	4	0	180	44	NORTH BAY	12	4	23	4	1	0	280	44
VICTORIA INT'L	10	-2	16	3	13	0	170	39	OTTAWA INT'L	12	1	23	2	3	0		X
WILLIAMS LAKE	5	*	15	-3	6	0		X	PETAWAWA	11P	2P	22P	1P	11	0		X
YUKON TERRITORY									PICKLE LAKE	9	4	21	-2	30	0	030	43
DAWSON	5	*	13	-4	5	0		*	RED LAKE	9	2	20	1	17	0	220	59
MAYO	6	0	13	-1	3	0		X	SUDBURY	13	4	26	5	0	0		X
SHINGLE POINT A	-5	2	6	-11	9	45		*	THUNDER BAY	9	2	20	1	1	0	210	65
WATSON LAKE	4P	-2P	12P	-6P	4	0	090	59	TIMMINS	10P	3P	26P	2P	2	0	340	44
WHITEHORSE	4	-1	11	-4	1	0	060	52	TORONTO INT'L	13	3	27	3	0	0	260	54
NORTHWEST TERRITORIES									TRENTON	13	2	22	2	9	0		X
ALERT	-6	9	7	-17	1	20	200	70	WIARTON	13P	5P	26P	4P	1	0		X
BAKER LAKE	-6	2	2	-19	15	27	120	54	WINDSOR	15	3	25	7	5	0	300	91
CAMBRIDGE BAY	-8	3	1	-19	3	21	030	56	QUEBEC								
CAPE DYER	-3	4	2	-12	4	144		*	BAGOTVILLE	8	1	19	-3	18	0	100	46
CLYDE	-6	4	3	-15	4	31	130	48	BLANC SABLON	3	*	13	-4	2	0		X
COPPERMINE	-7	*	0	-20	8	35		*	INUKJUAQ	-2	1	4	-10	1	18	080	48
CORAL HARBOUR	-5P	3P	2P	-14P	3	18		X	KULUJUAQ	-1P	0P	12P	-18P	0	38	220	33
EUREKA	-7	6	3	-16	1	14	140	52	KULUJUAPIK	3P	4P	16P	-12P	0	0	120	44
FORT SMITH	9	2	20	-4	8	0		X	MANIWAKI	10P	2P	21P	1P	7P	0	300	41
FROBISHER BAY	-4P	1P	5P	-12P	1	20	230	43	MONT JOLI	6P	0P	16P	-3P	0P	0	060	70
HALL BEACH	-7P	4P	2P	-18P	9	47	140	54	MONTREAL INT'L	11P	0P	21P	5P	17P	0	040	44
INUVIK	-1	3	13	-12	5	18		X	NATASHQUAN	5	1	14	-3	0	0	270	48
MOULD BAY	-12	1	-7	-22	4	29		X	QUEBEC	8P	-1P	21P	1P	56	0	070	61
NORMAN WELLS	5	2	14	-4	0	0		X	SCHEFFERVILLE	1P	2P	11P	-8P	0	12	120	37
RESOLUTE	-7	6	-1	-12	4	36	110	65	SEPT-ILES	5P	1P	13P	-3P	3	0	100	41
SACHS HARBOUR	-8	2	-3	-18	2	11		X	SHERBROOKE	10	1	21	0	26	0	070	33
YELLOWKNIFE	4	1	15	-4	2	0	180	46	VAL D'OR	9	2	19	1	22	0	300	72
ALBERTA									NEW BRUNSWICK								
CALGARY INT'L	6	-2	15	1	12	0	260	52	CHARLO	6	0	18	-3	0	0	110	59
COLD LAKE	8	-1	18	-1	6	0	120	41	CHATHAM	7P	-1P	21P	-1P	0	0	070	69
CORONATION	6	-3	17	-3	10	0	200	46	FREDERICTON	8P	-1P	18P	-1P	3	0	040	63
EDMONTON NAMAO	8	-1	17	0	2	0	200	46	MONCTON	6P	-2P	18P	-1P	0	0	020	78
FORT MCMURRAY	8	0	19	-2	10	0		X	SAINT JOHN	7	-1	16	-1	1	0	030	74
HIGH LEVEL	8	-2	20	-2	3	0		*	NOVA SCOTIA								
JASPER	6	-2	15	-4	5	0		X	GREENWOOD	6	-3	19	-4	2	0	060	89
LETHBRIDGE	7	-3	14	0	2	0	270	80	SHEARWATER	6	-2	16	0	10	0	060	67
MEDICINE HAT	8P	-3P	17	2P	11	0	240	52	SYDNEY	3	-2	11	-3	16	0	050	69
PEACE RIVER	8	-1	17	-1	3	0		*	YARMOUTH	7	-1	15	0	4	0	050	74
SASKATCHEWAN									PRINCE EDWARD ISLAND								
CREE LAKE	4	-2	16	-3	16	0	210	41	CHARLOTTETOWN	5P	-2P	15P	-3P	1	0	040	65
ESTEVAN	9	-1	19	-2	22	0	170	96	SUMMERSIDE	6	-2	15	1	1	0	050	72
LA RONGE	6	-2	18	-2	40	0	240	37	NEWFOUNDLAND								
REGINA	8	-1	17	0	35	0	140	59	CARTWRIGHT	1P	-1P	6P	-2P	6	6	330	74
SASKATOON	8	-2	17	0	42	0	020	43	CHURCHILL FALLS	3	1	15	-6	1	10		*
SWIFT CURRENT	6P	-3P	12P	-1P	21	0		X	GANDER INT'L	2	-3	10	-3	19	0	320	59
YORKTON	9	1	19	0	24	0	150	87	GOOSE	5	1	19	-4	0	0	360	52
MANITOBA									PORT-AUX-BASQUES	6P	2P	14P	-2P	0	0	360	78
BRANDON	9	1	23	-1	11	0	170	80	ST JOHN'S	1	-3	5	-1	21	0	290	67
CHURCHILL	-3	0	11	-15	19	2	180	52	ST LAWRENCE	5P	1P	10P	0P	4P	0		X
LYNN LAKE	5	-1	14	-2	17	0	070	48	WABUSH LAKE	4P	3P	16P	-5P	2	0		*

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

FORECAST

The Forage Drought Early Warning System Report (FoDEWS)

J.A. Dyer
Resources and Environment Section
Regional Development Branch
Agriculture Canada

BACKGROUND

This report projects possible drought stricken areas for the Prairies Provinces by the end of May. It includes weather based estimates of soil moisture reserves for silty clay loam, under a perennial forage. Weather records from three selected past years are used as proxy future weather. At each update historical records are replaced by the most recent daily weather observations.

Two contour maps show the dryness relative to past years. In Figure 1, various percent of normal classes are shown. Figure 2 shows areas with reserves below the lowest levels at several different frequencies of occurrence. To illustrate; in the "below one year in three" area, 20 out of a sample of 30 years can be expected to have more moisture reserves than given. The report now includes 58 weather stations, but should only be interpreted as a general outlook or reconnaissance. The Agrometeorology Section, Research Branch is acknowledged for providing the weather data used in this report.

As of May 4, 1986, conditions in eastern Manitoba have improved slightly, changing to just above the driest year in two. Both maps show slight increases in moisture reserves in southern Saskatchewan, and a slight drop in projected reserves around Strasbourg. North-Central Saskatchewan (Kindersley to Nipawin) still has a large, area which is relatively dry. Slight changes have also taken place in Alberta.

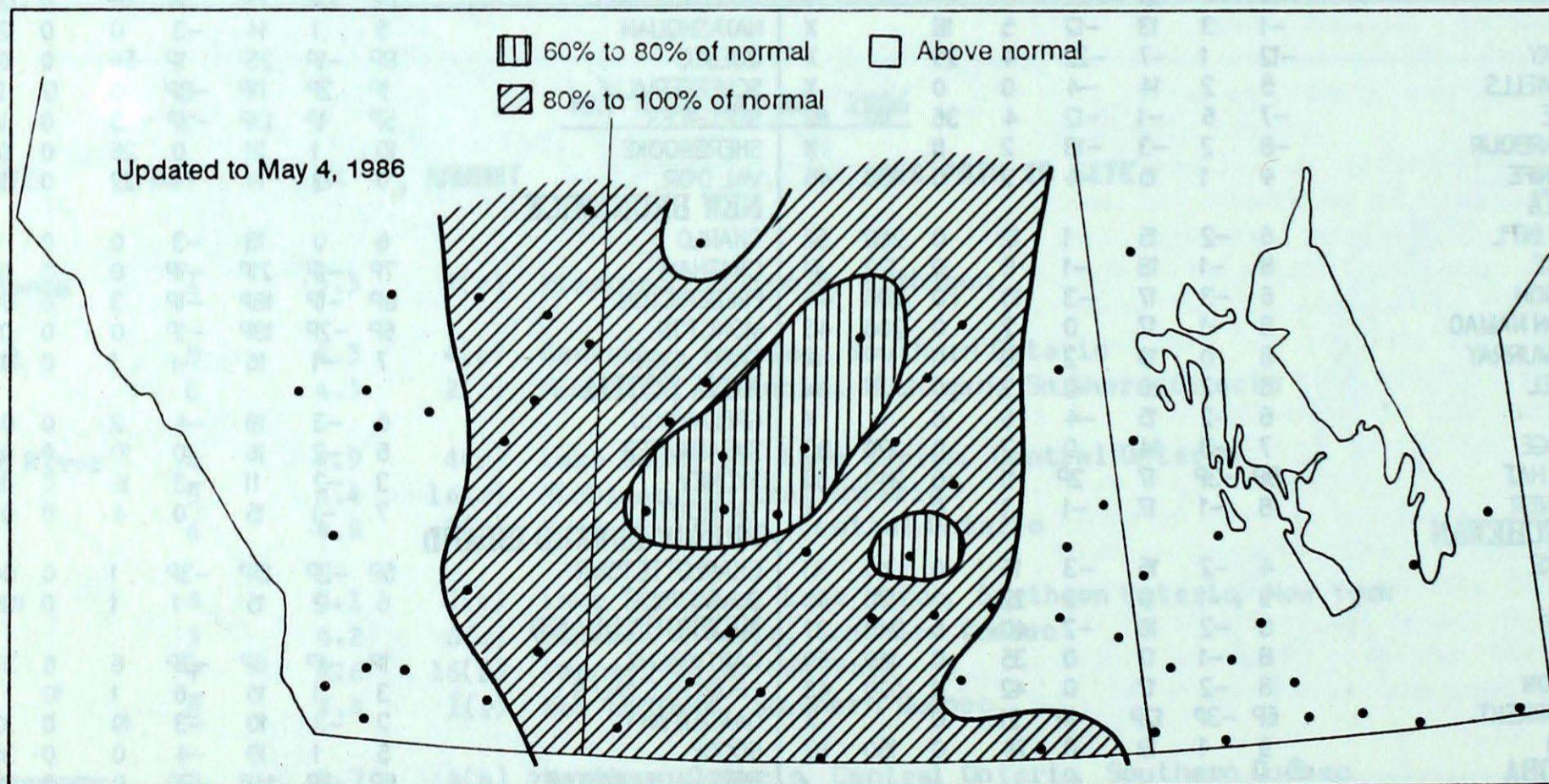


Figure 1: Projected soil moisture reserves under perennial by May 31, expressed as % of normal

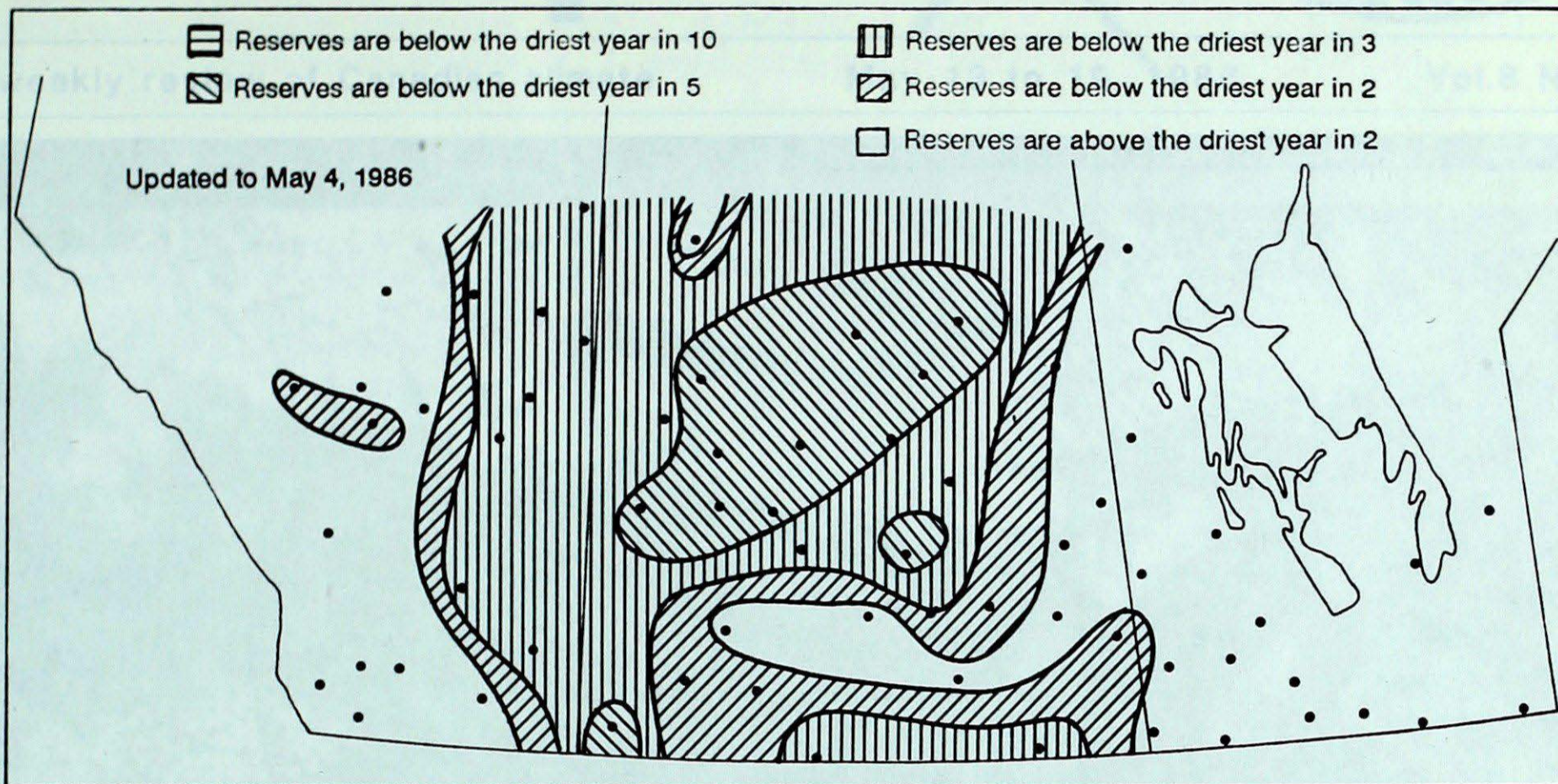
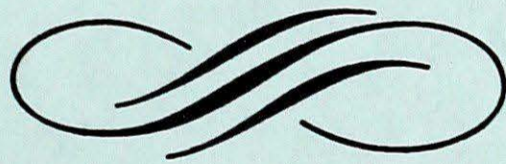


Figure 2: Zones showing the frequency at which the projected moisture conditions for May 31, can be expected to return in future years.



This NOAA 9 visual satellite photograph of May 16, 1986, shows dense smoke being streamed southwards from the source of several major forest fires, which were burning out of control in New Brunswick and Newfoundland. For more information about the forest fires see page 5.

• Thousands flee forest fires in Atlantic Canada

• Southern Alberta crippled by severe spring snowstorm