



Environment
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Climatic Perspectives

MONTHLY
SUPPLEMENT
INCLUDED

May 17 to 23, 1988

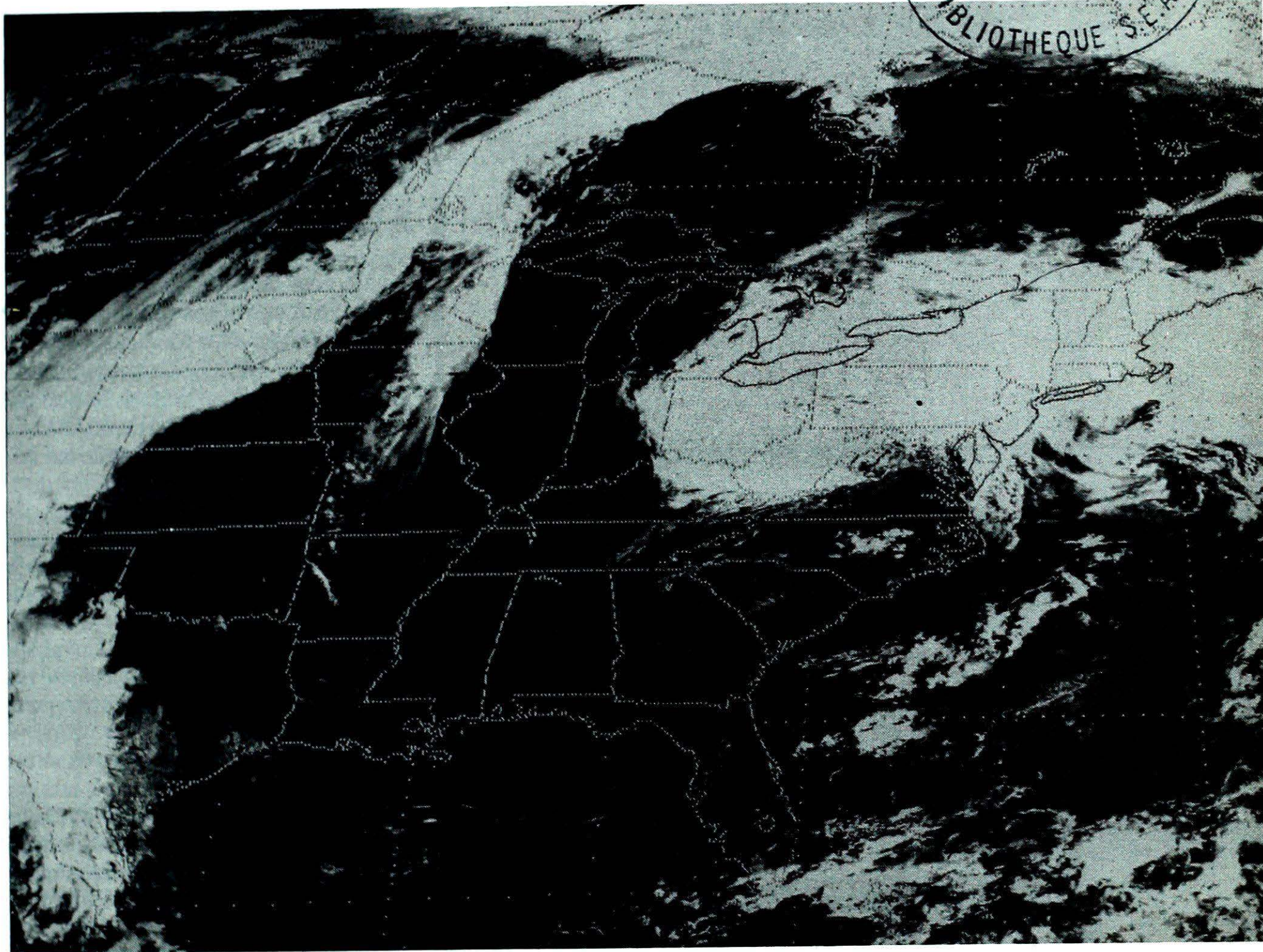
A weekly review of Canadian climate

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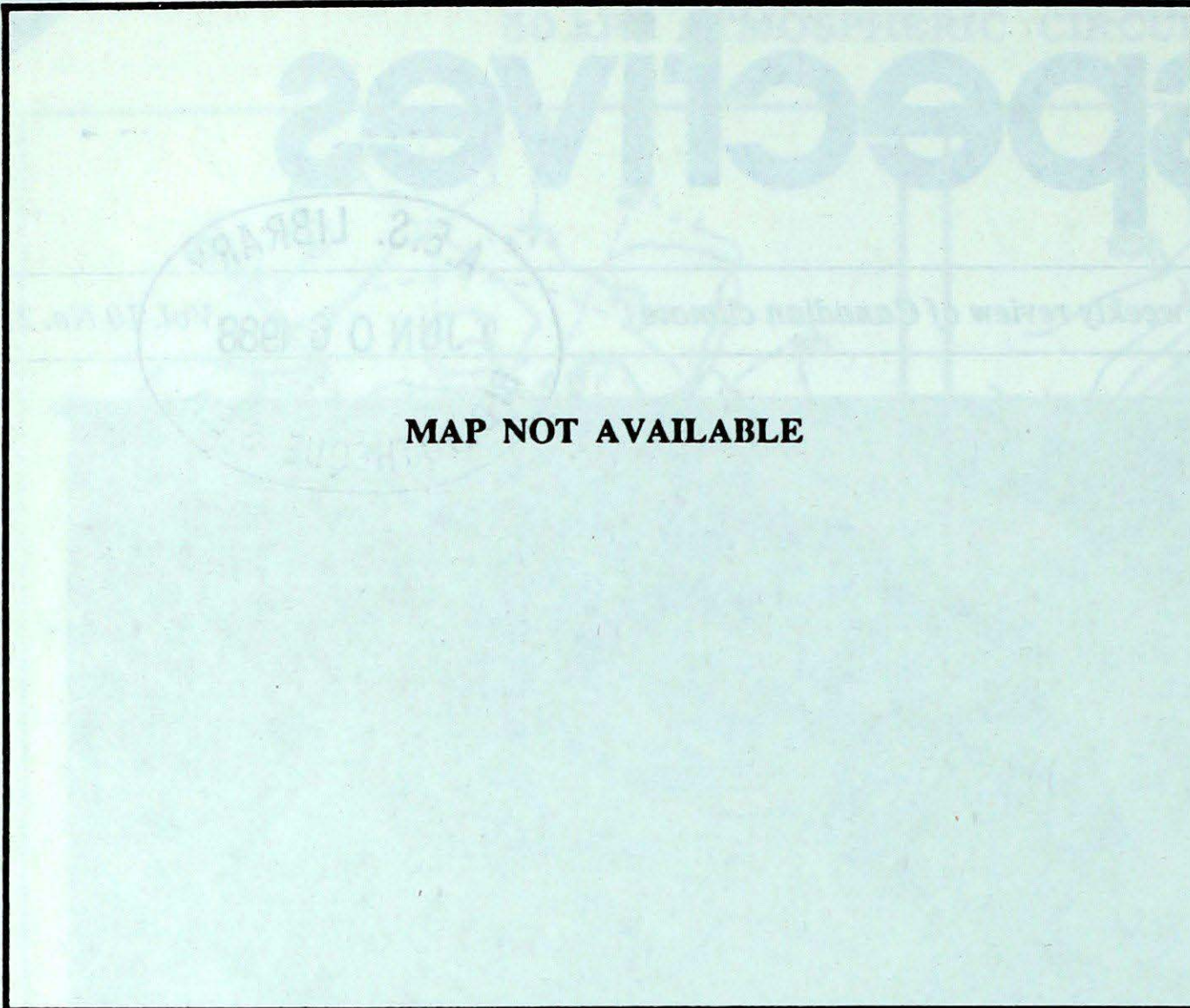
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This GOES satellite photo of May 19, 1988, shows the nearly stationary area of cloud and showers, which moved in and plagued the lower Great Lakes for most of the week. The band of cloud stretching across Manitoba and northwestern Ontario is associated with the cold front, which produced showers, thunderstorms, funnel clouds and tornados in a number of southern agricultural districts of the prairies, during the middle of the period.

- **Dust storm and squally winds hit Alberta**
– **tornados in Saskatchewan and Manitoba**
- **Outbreak of forest fires in Newfoundland**

Canada 



MAP NOT AVAILABLE

Weekly Temperature Extreme (°C)

DATA NOT AVAILABLE AT THIS TIME

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ACROSS THE COUNTRY ...

Yukon and Northwest territories

Cooler weather returned to the Yukon. Precipitation was widespread, with a good portion of it falling as snow in the southwest. Heavy snow also fell in the southern Mackenzie district, with lesser amounts in the Great Slave Lake region. Amounts ranged from 15 to 30 centimetres. After a late start to the spring season, ice is finally breaking up on Great Slave Lake. Although temperatures have climbed to the teens, a significant amount of snow still covers the southern portions of the Territories.

British Columbia

It was basically an unsettled spring week as a trough of low pressure off the coast affected the province for most of the period. Except in the Okanagan, it was a generally cloudy week. Precipitation was showery; however, more substantial amounts of rain were reported along the coast and in the central interior. Seeding has started in the Peace River district, but was delayed because of wet conditions. As of the beginning of the month, the snow pack in the southern interior was only 60 to 65 percent of its long term average. It has already disappeared from the low and many of the mid-level measuring sites.

Prairie Provinces

For the most part, the week was sunny and dry, with maximum readings climbing to the record high twenties and thirties by the weekend. Early morning frost was reported at the beginning of the week. On May 23, a squall line and fierce dust storm moved across the agricultural districts of central Alberta, briefly disrupting many outdoor afternoon activities. It was all over in thirty minutes, but it left a trail of damage and fear in many Albertans. See page 3 for more details.

Although it was warm in Saskatchewan and Manitoba, with highs in the twenties, there was a fair amount of cloud associated with a frontal disturbance crossing the region at the beginning of the week. Thunderstorms spawned a number of tornadoes and funnel clouds in the agricultural districts on May 19 and 20. Winter maintained its grip in northern Manitoba. Churchill had freezing rain, and still reports more than 25 cm of snow on the ground.

Ontario

Except for the early and latter parts of the period, overcast, wet and clammy weather plagued most of southern and central Ontario, as a nearly stationary atmospheric disturbance positioned itself just south of the lower Great Lakes. Surprisingly, weather conditions improved over the Victoria Day holiday weekend, as sunshine tried to break through the morning fog and low cloud. In contrast, it was sunny and very warm in the northwest, with temperatures approaching the mid- to high twenties. Some light rain fell over the weekend, but it still remains very dry. Although the threat of frost in southern Ontario is pretty well over, the recent unsettled weather has delayed the planting of frost-sensitive crops.

Quebec

Weather conditions were variable, with alternating periods of cloud and sun, as a ridge of high pressure exerted its influence over most of the province. A frontal disturbance, edging southeastwards across the region during the weekend, triggered heavy thunderstorms over southwestern Quebec. Marble size hail was reported south of Montreal and Val d'Or on May 21 and 23, respectively. Temperatures were mild, climbing to the record high twenties and thirties in western Quebec. Thirteen forest fires were reported burning in the province.

Atlantic Provinces

In the Maritimes, it was mainly cloudy and cool to begin with, although the holiday weekend was sunny and warmer. Up to 60 mm of rain fell during the first half of the period.

In Newfoundland, clouds and periods of rain gave way to a warm and sunny regime by mid-week. Temperatures climbed to the mid- to high twenties by the weekend. During the middle of the week, four forest fires burned out of control, but were eventually contained. Contrasting weather conditions affected Labrador. Rain and snow gave way to sunny and warm conditions by mid-week, with inclement weather returning for the weekend. Rainfalls ranged from 15 to 25 millimetres. Nain received 24 cm of snow. During the middle of the week a forest fire burned out of control near Goose Bay. Residents at the base had to be evacuated from their homes until the fire was brought under control.

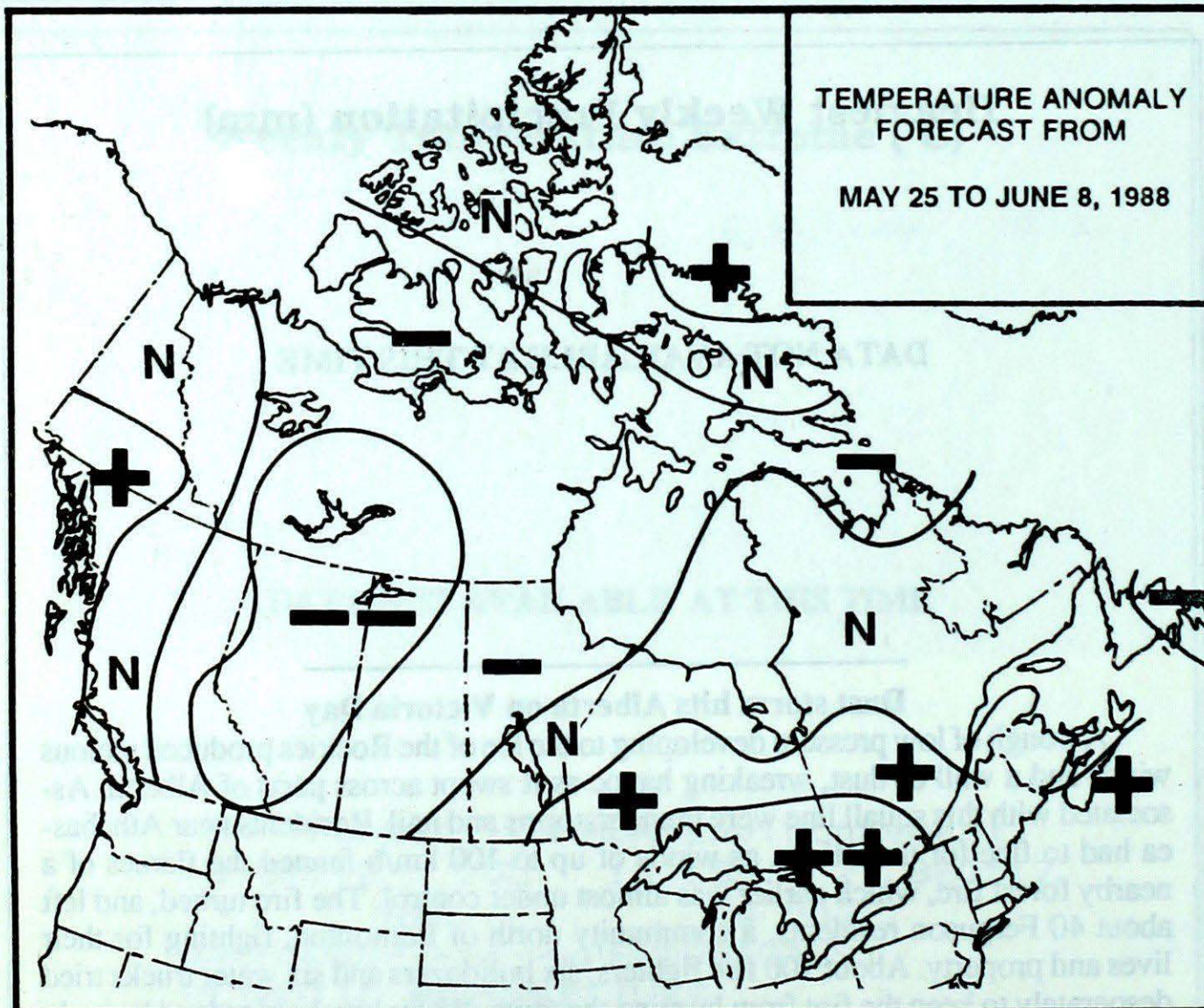
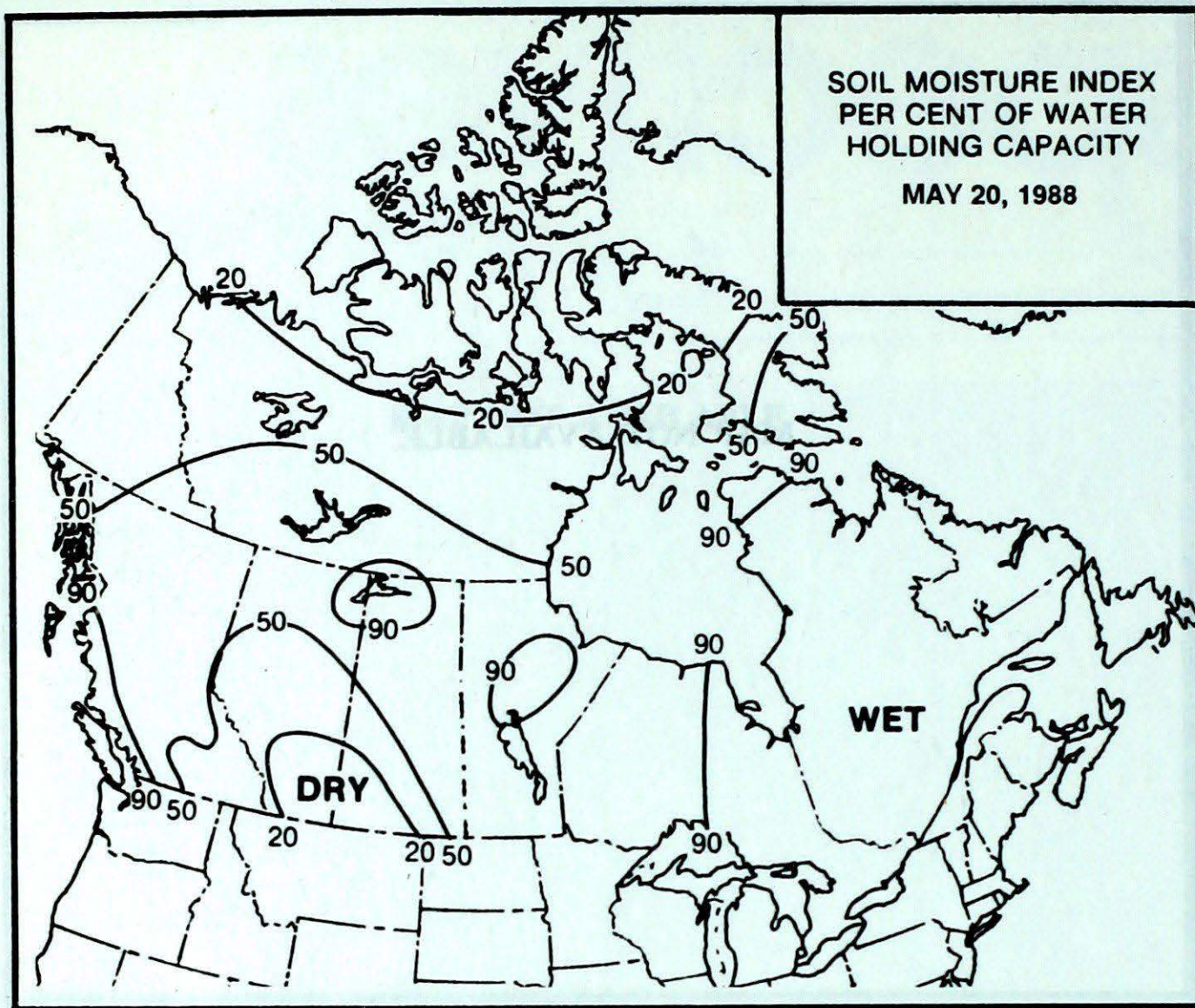
MAP NOT AVAILABLE

Heaviest Weekly Precipitation (mm)

DATA NOT AVAILABLE AT THIS TIME

Dust storm hits Alberta on Victoria Day

A trough of low pressure developing to the lee of the Rockies produced vicious winds and a wall of dust, wreaking havoc as it swept across parts of Alberta. Associated with this squall line were thunderstorms and hail. Residents near Athabasca had to flee for their lives, as winds of up to 100 km/h fanned the flames of a nearby forest fire, which earlier was almost under control. The fire turned, and left about 40 Ferguson residents, a community north of Edmonton, fighting for their lives and property. About 100 fire fighters, six bulldozers and six water trucks tried desperately to keep the fire from burning the town. Water bombers arrived by early evening, but by that time three families had already lost their homes, livestock and farms. Elsewhere, the ominously dark line of threatening weather revived fears of another tornado, as severe thunderstorm warnings were issued. In Edmonton, the Namao Air Show had to be delayed. At the International Airport, a plane flipped on to its side. There were traffic pile-ups due to poor visibility in dust. Power outages were common in many districts. By evening the storm had passed to the east.



- ++ 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.

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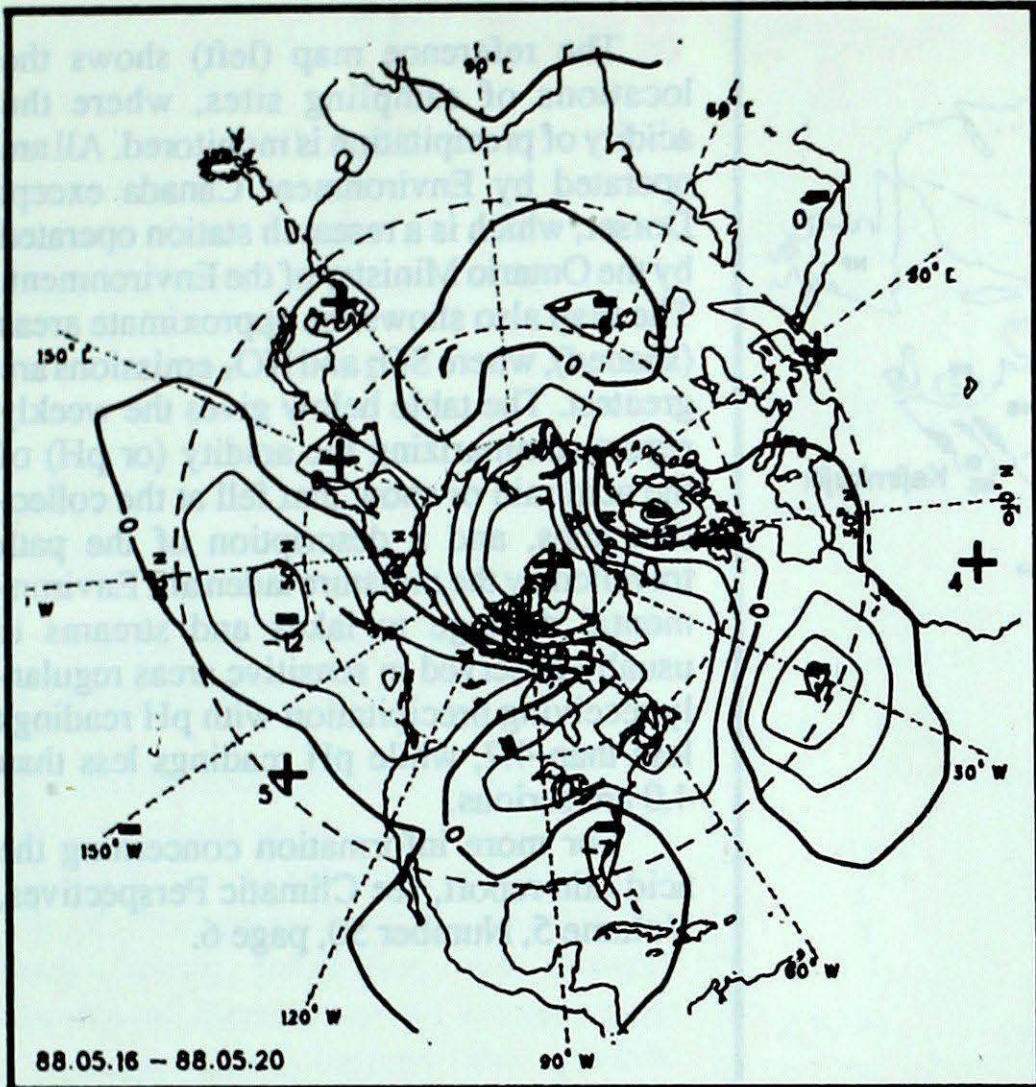
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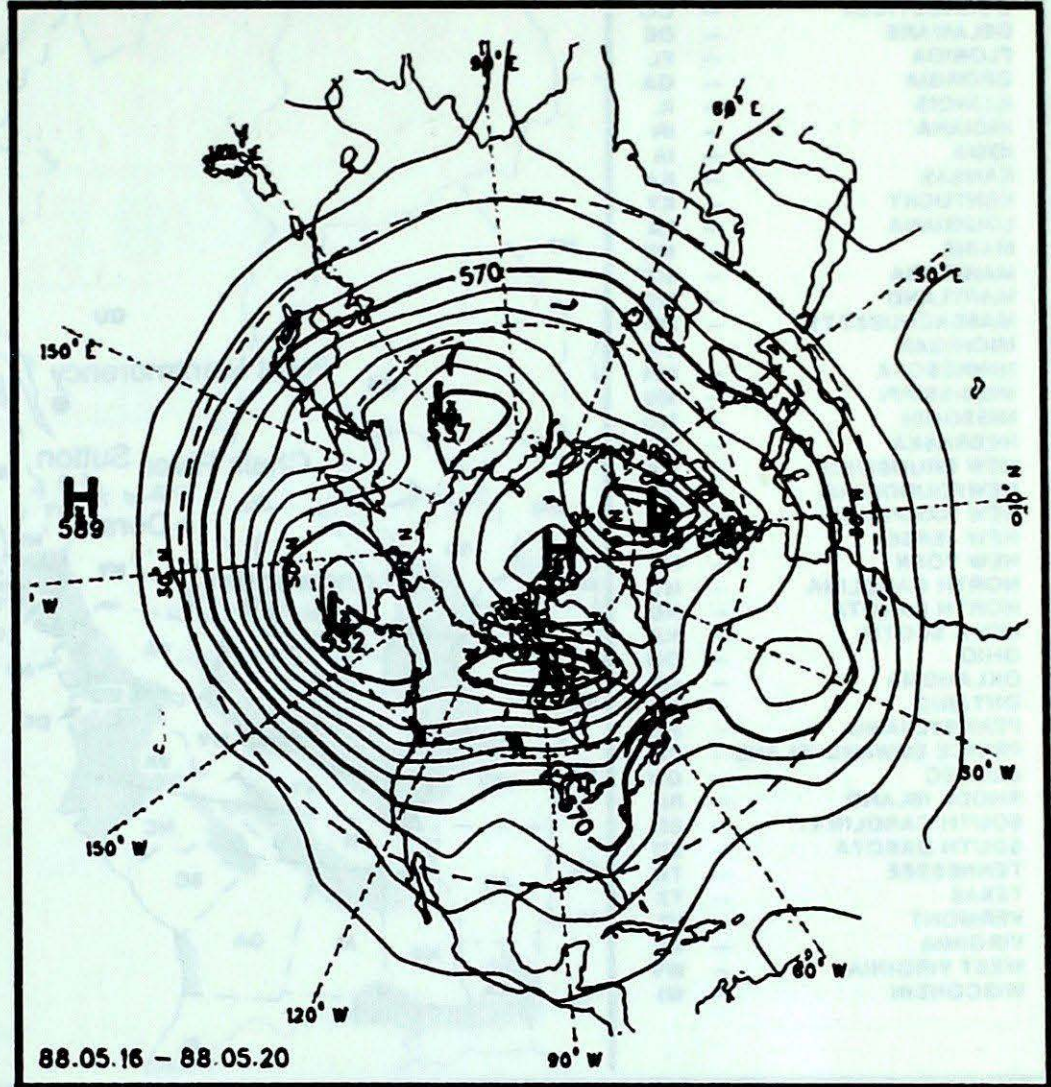
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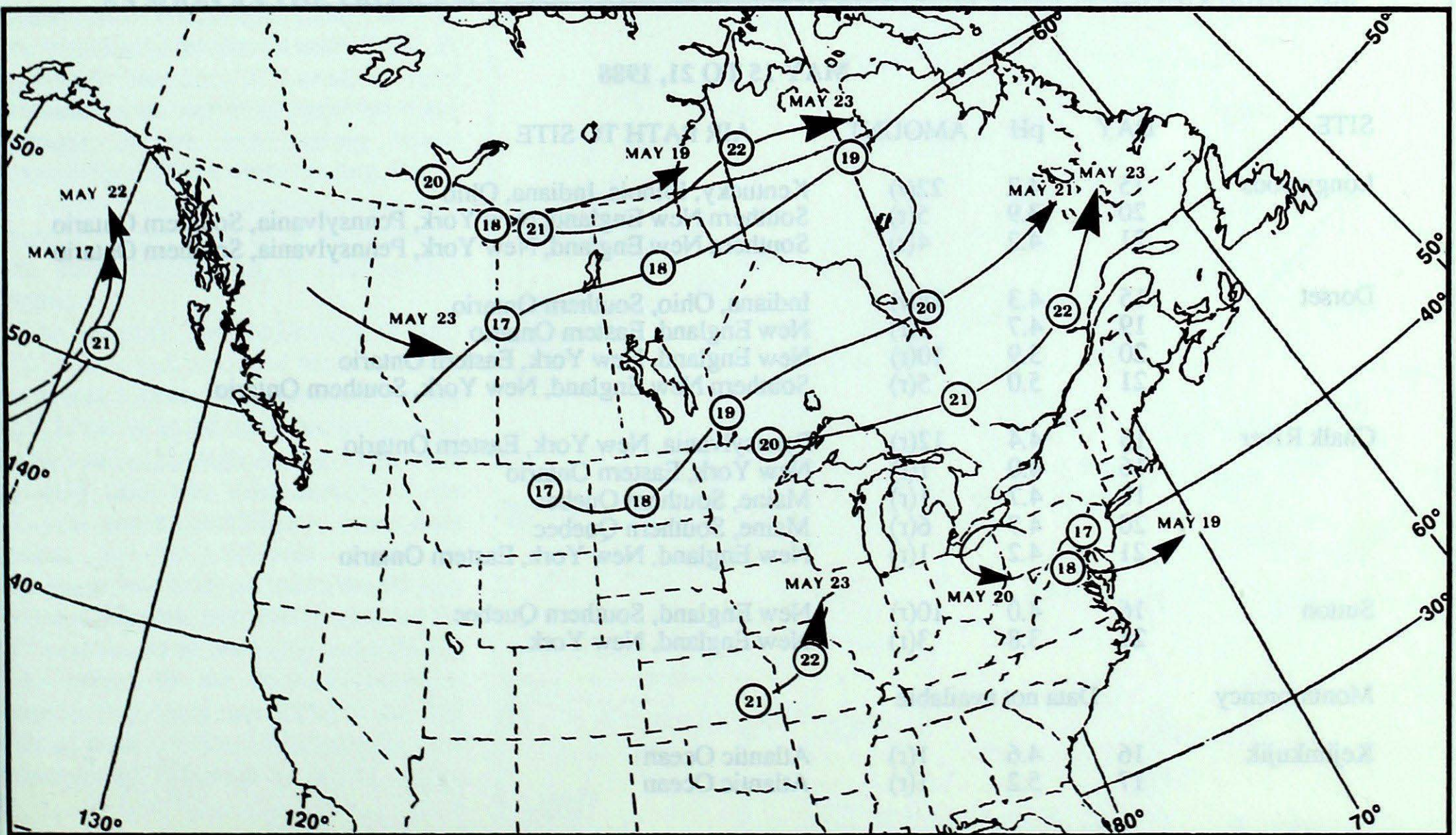
50 kPa ATMOSPHERIC CIRCULATION



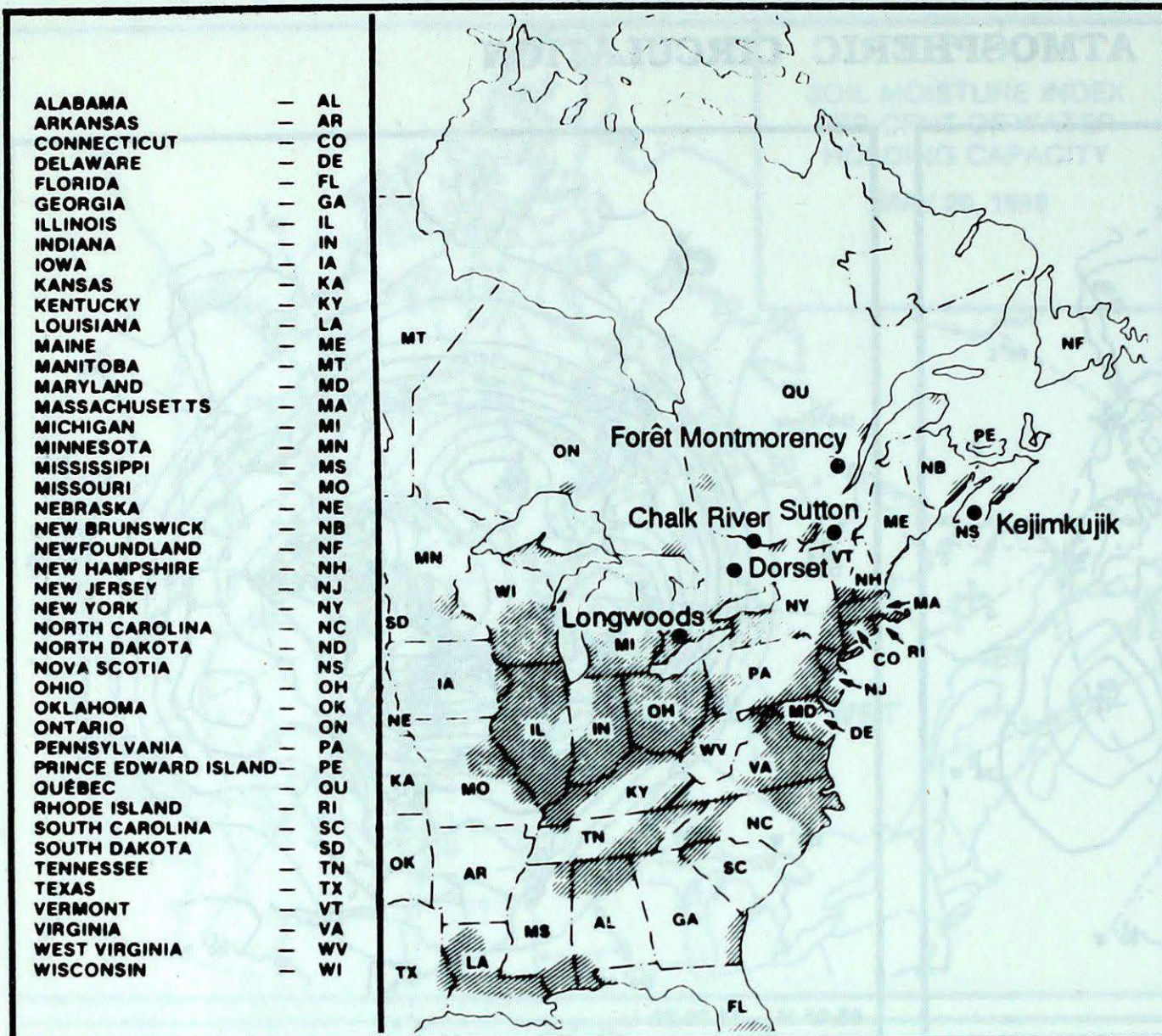
Mean geopotential height anomaly
50 kPa level (5 decameter intervals)



Mean geopotential height
50 kPa level (5 decameter intervals)



Storm track - Position of storm at 12 GMT during the period: May 17 to 23, 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.

MAY 15 TO 21, 1988

SITE	DAY	pH	AMOUNT	AIR PATH TO SITE
Longwoods	15	4.2	22(r)	Kentucky, Illinois, Indiana, Ohio
	20	3.9	5(r)	Southern New England, New York, Pennsylvania, Southern Ontario
	21	4.2	4(r)	Southern New England, New York, Pennsylvania, Southern Ontario
Dorset	15	4.3	28(r)	Indiana, Ohio, Southern Ontario
	19	4.7	3(r)	New England, Eastern Ontario
	20	3.9	10(r)	New England, New York, Eastern Ontario
	21	5.0	5(r)	Southern New England, New York, Southern Ontario
Chalk River	15	4.4	12(r)	Pennsylvania, New York, Eastern Ontario
	16	4.0	1(r)	New York, Eastern Ontario
	19	4.7	1(r)	Maine, Southern Quebec
	20	4.7	6(r)	Maine, Southern Quebec
	21	4.2	1(r)	New England, New York, Eastern Ontario
Sutton	16	4.0	10(r)	New England, Southern Quebec
	21	3.8	3(r)	New England, New York
Montmorency	Data not available			
Kejimikujik	16	4.6	1(r)	Atlantic Ocean
	17	5.2	1(r)	Atlantic Ocean

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

STATISTICS FOR THE WEEK ENDING 0600 GMT May 24, 1988

Climatic Perspectives

APRIL - 1988

CLIMATIC HIGHLIGHTS

P. Scholten, Meteorology and Prediction Division

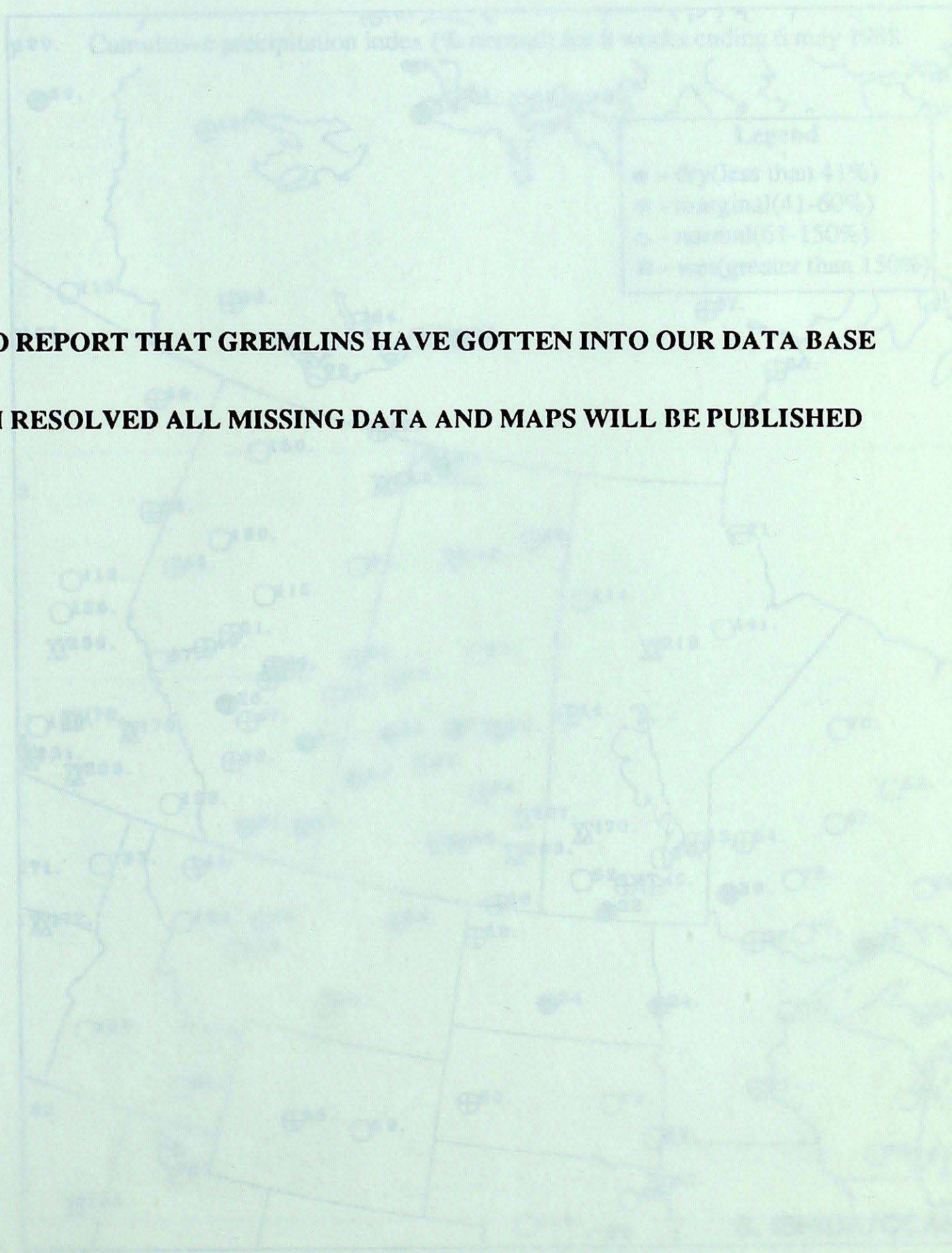
Another Dry Month Across the Prairies and Northwestern Ontario

As can be seen on the map on page 3, large areas across the Prairies and northwestern Ontario received less than 25% of their normal April precipitation, which further intensified the drought concerns of those involved in managing agriculture, water, forestry and wildlife resources.

As reported, early loss of snow cover over much of the plain has exposed the soil to a rapid spread wind erosion on many fields. A significant number of smaller rural communities are reporting projected water shortages or are experiencing heavy demands for on-farm water hauling. Forest and prairie fires have been occurring with greater frequency and there have already been some major fires in northwestern Ontario.

The Scientific Service Division of AES in Winnipeg has produced some statistics that give a historical perspective to this dry spell. Looking at the total precipitation for the November through April period, there has only been two drier periods in the 103-year record at Calgary, three drier periods in the 105-year record at Edmonton, one drier period in the 50-year record at Estevan, two drier periods in the 73-year record at Winnipeg and only one drier period in the 46-year record at Flander Bay. Only two (22%) of the total one of these previous drier periods was subsequently followed by a wet spring.

...continued page 4, Highlights



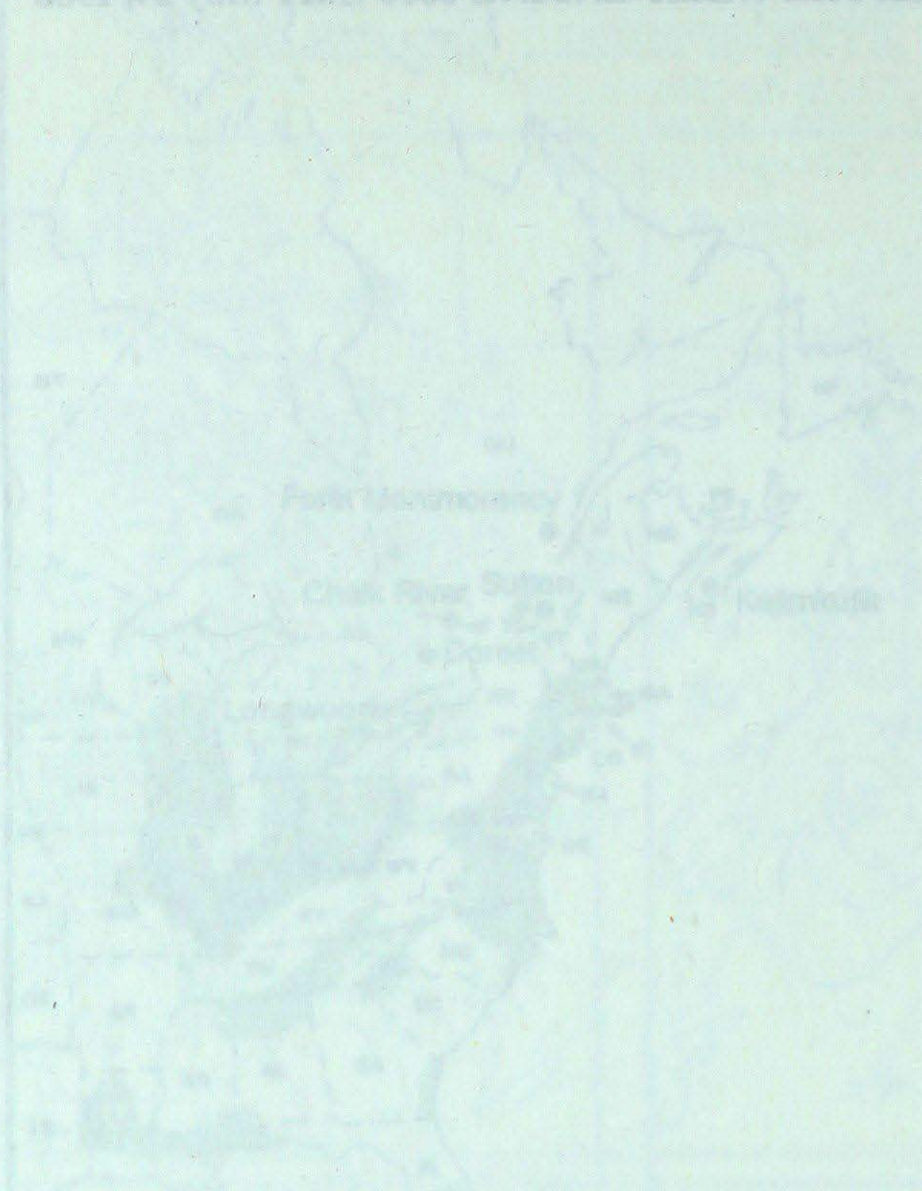
WE ARE SORRY TO HAVE TO REPORT THAT GREMLINS HAVE GOTTEN INTO OUR DATA BASE

AS SOON AS THE PROBLEM RESOLVED ALL MISSING DATA AND MAPS WILL BE PUBLISHED

STATISTICS FOR THE WEEK-ENDING END OF MAY 24 1988

ACID RAIN REPORT

Acid rain is a natural phenomenon that occurs when sulphur dioxide and nitrogen oxides are released into the atmosphere by factories, power plants, and motor vehicles. These pollutants react with water vapour in the air to form sulphuric acid and nitric acid. When these acids fall to the ground as rain, snow, or ice, they are called acid rain. Acid rain can be harmful to plants, animals, and buildings. It can also damage lakes and streams, making them more acidic and less able to support fish and other aquatic life. The map shows the locations of monitoring stations 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; with pH readings less than 4.0 are serious.



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MAY 15 TO 21 1988

SITE	DAY	pH	AMOUNT	AIR PATH TO SITE
Lansdowne	15	4.2	220)	Kentucky, Illinois, Indiana, Ohio
	20	4.9	50)	Southern New England, New York, Pennsylvania, Southern Ontario
	21	4.2	40)	Southern New England, New York, Pennsylvania, Southern Ontario
Dorset	15	4.3	280)	Indiana, Ohio, Southern Ontario
	19	4.7	30)	New England, Eastern Ontario
	20	3.8	100)	New England, New York, Eastern Ontario
	21	5.0	50)	Southern New England, New York, Southern Ontario
Chalk River	15	4.6	120)	Pennsylvania, New York, Eastern Ontario
	16	4.5	10)	New York, Eastern Ontario
	19	4.7	10)	Maine, Southern Quebec
	20	4.7	50)	Maine, Southern Quebec
	21	4.2	10)	New England, New York, Eastern Ontario
Chalk Falls	16	4.6	100)	New England, Southern Quebec
	21	3.8	30)	New England, New York
Lansdowne	Data not available			
		4.6	10)	Atlantic Ocean
		4.8	10)	Atlantic Ocean

Note: - = snow, + = mixed rain and snow, (mm) = precipitation