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# A WEEKLY REVIEW OF CANADIAN CLIMATE

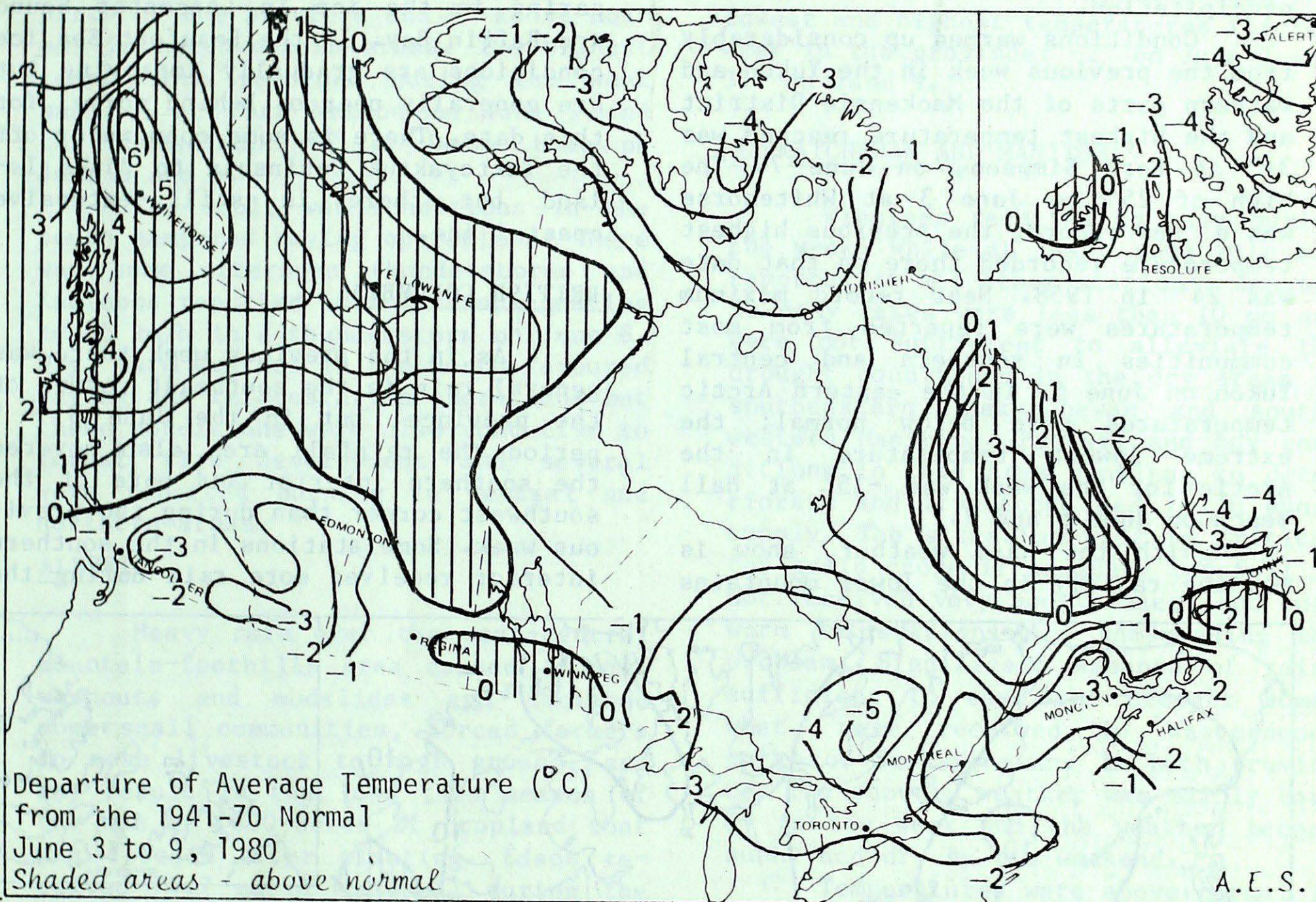
# CLIMATIC PERSPECTIVES NON CIRCULATING

THE CANADIAN CLIMATE CENTRE  
ATMOSPHERIC ENVIRONMENT SERVICE,  
4905 DUFFERIN ST., DOWNSVIEW, ONTARIO M3H 5T4

JUNE 13, 1980

(Aussi disponible en français)

VOL. 2 NO. 23



## WEATHER HIGHLIGHTS FOR THE WEEK - JUNE 3 - 9, 1980

Prairie drought continues - Cold and wet elsewhere

Although there was some relief to the drought in western Saskatchewan, very little rain was received in central and eastern Saskatchewan or in Manitoba and the agricultural situation continues to deteriorate there.

Except for Manitoba, the most populated parts of all provinces were colder than normal. Local flooding occurred near Edson, Alberta and St. Williams, Ontario. A tornado was reported at Norwich, near Woodstock, Ontario on June 7.

Many forested areas received showers which improved the forest fire situation somewhat.

Record low maximum temperatures were reported for various days at several locations in Ontario, Quebec and Newfoundland. The extreme highest and lowest temperatures for the week were both recorded in the North:  $34^{\circ}$  at Fort Simpson on June 7 and  $-15^{\circ}$  at Hall Beach on June 6 and 7. More than 160 mm of precipitation fell in the Alberta foothills.

**NOTE:** The data shown in this publication are based on unverified reports from approximately 225 Canadian and 115 northern United States Synoptic stations.



YUKON AND NORTHWEST TERRITORIES

Precipitation for the week was generally below normal with amounts less than 10 mm, except in eastern Baffin Island, where Frobisher Bay received 45.6 mm and Cape Dyer 23.2 mm, and a few stations elsewhere such as Norman Wells, which received 18.2 mm. About a quarter of the stations reported no precipitation.

Conditions warmed up considerably from the previous week in the Yukon and western parts of the Mackenzie District and the highest temperature reached was 34° at Fort Simpson, on June 7. The high of 25° on June 3 at Whitehorse was a new record, the previous highest temperature recorded there on that date was 24° in 1958. Near record maximum temperatures were reported from most communities in southern and central Yukon on June 6. In the eastern Arctic temperatures were below normal; the extreme lowest temperature in the Arctic for the week was -15° at Hall Beach on June 6 and 7.

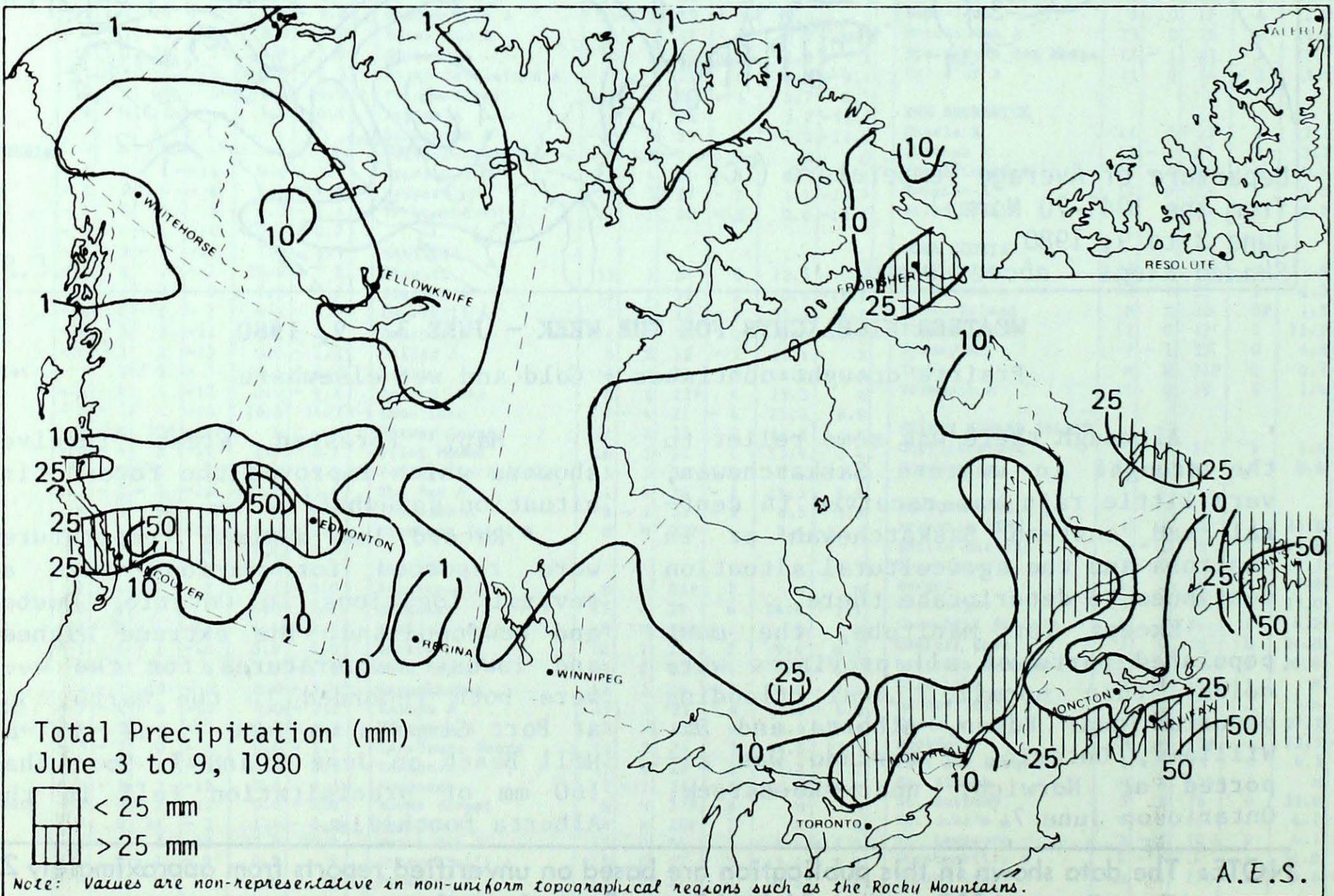
With the warm weather, snow is melting rapidly in the lower mountains

and most small rivers in the southern Yukon are running high. Lake levels are also rising rapidly.

The ice in Hudson Bay is in an advanced state of decay, about 2 weeks ahead of the normal for this date. There are extensive openings especially along the northwest and east shores and these are expanding rapidly. James Bay is mostly open water. Openings are appearing in the ice in Lancaster Sound and Baffin Bay. In the Beaufort Sea ice conditions are gradually improving but are generally near or behind normal for this date. There is some open water off the Tuktoyaktuk Peninsula to Banks Island but there is still extensive coastal ice.

BRITISH COLUMBIA

As in the previous week there was general rain in the southeast corner of the province, but in the June 3 - 9 period the rainfall area also covered the southern interior and more of the southwest corner than during the previous week. Some stations in the southern interior received more rain during the





week than they usually do in the whole month. Lytton, where the normal rainfall for the week is only 1.6 mm, received 54.5 mm during the week. In the northern part of the province the weather was generally sunny and dry. Dease Lake reported no precipitation and 92.7 hours of bright sunshine.

Temperatures were as much as 3° below normal in southeast and southern parts of the province and 4° above normal in northwestern areas. The highest temperature recorded during the week was 31° at Fort Nelson on June 9 and the lowest was -1° at Dease Lake on June 3 and 6.

The cool, wet conditions in the south hampered haying operations. There was some afternoon thunderstorms and Kamloops reported 60 km/h winds gusting to 85 km/h in a thunderstorm on June 8. Dry, warm weather in the north favoured haying and reforestation operations but these conditions were also conducive to forest fire development and several were reported burning in central and northern areas.

#### ALBERTA

Heavy rain over the west-central mountain-foothills area caused floods, washouts and mudslides and isolated some small communities, forced farmers to move livestock to high ground, and may result in the loss this season of the use of 1000 acres of cropland that was flooded after planting. Edson received 74.7 mm of rainfall during the first four days of the week, storm rainfall of 130 mm to 160 mm was reported from June 2 to 4 at some forestry stations, and amounts of 200 mm or more occurred in the May 31 to June 6 period at some locations.

Precipitation was generally above normal for the week throughout central and southern Alberta except in the southwest corner including Calgary and Lethbridge, where less than 10 mm fell. In northern Alberta precipitation was also light but there was sufficient shower activity to help forest fire control significantly. Thirteen fires were still burning, of which 9 were under control. So far this year 545 000 hectares of forest have burned in Alberta, as compared to only 1425 hec-

tares for the same period last year (the figure 80 000 hectares mentioned last week was an error). This is mainly a reflection of the severe forest fire risk conditions that prevailed earlier this season in the province.

Temperatures were 2 to 3° below normal in southern areas. In northern Alberta temperatures were near or above normal. Fort McMurray reported both the lowest and highest temperatures for the week in the province: -2° on June 7 and 31° on June 9.

#### SASKATCHEWAN AND MANITOBA

Winnipeg received no rain during the week. While at least some rain was reported at all other stations, amounts in many cases were less than 10 mm and were not sufficient to alleviate the drought conditions in the dry areas of southeastern Saskatchewan and southwestern Manitoba. Pasture and hay conditions in this area continue to deteriorate and livestock feed is in short supply. The situation will be critical for grain crops if adequate rainfall is not received very soon. Insect and cutworm infestations are compounding the problem. Significant amounts of rain, sufficient to ease the drought somewhat, were received in westernmost parts of Saskatchewan. In both provinces the showery weather was mainly early in the week and the weather became sunny and dry by the weekend.

Temperatures were above normal in northern Saskatchewan, where record high maximum temperatures for June 9 were reported at Meadow Lake, 31, La Ronge, 30 and Uranium City, 29. Previous records for June 9 were: 26 at Meadow Lake in 1934, 28 at La Ronge in 1944 and 22 at Uranium City in 1964. The highest temperature in Saskatchewan during the week was the 31° at Meadow Lake on June 9, and the lowest was -3° at Meadow Lake on June 6. In Manitoba temperatures were generally above normal in the south and below normal in the north, and the extremes were a high of 29° at Brandon on June 9 and a low of -4° at Churchill on June 6. Frost occurred in eastern Saskatchewan and western Manitoba on the morning of June 7.



The number of forest fires reported was down somewhat from the previous week. In Saskatchewan 27 were reported including 10 new ones, and in Manitoba 2 were reported.

#### ONTARIO

It was cloudy and wet in most of southern Ontario, especially in the latter part of the week. There were a number of thunderstorms. On June 7 a tornado was reported at Norwich, 16 km southeast of Woodstock and funnel clouds were seen at several locations including Lambeth, near London, and Woodbridge, just north of Toronto; at St. Williams, near Lake Erie, 64.8 mm of rain were received. In northwestern Ontario and in the eastern tip of Ontario including Ottawa rainfall was below normal. Snow fell in widespread areas of northern Ontario and as far south as Haliburton on June 8 and 9.

The week was colder than normal throughout the province except for a small area around Kenora. Toronto City reported a maximum of only 11.6° on June 8; the previous record low maximum for that date was 13.9° in 1842. On June 8 new record low maximum temperatures for June were set at Sudbury, 7°, in comparison with the previous record low of 6° on June 1, 1956, and at Earlton, 4°, where the old record for June was 5° in 1945. The highest temperature for the week in Ontario was 30° at Windsor on June 6, and the lowest was -3° at Armstrong on June 7 and 8. The lowest maximum temperature was 2° at Moosonee on June 9.

Damage from tornado activity appears to have been minimal but there was much local flooding from the heavy rain at St. Williams on June 7.

With the dry conditions in northwestern Ontario forest fires are a continuing problem, 29 were reported burning there including 4 new ones.

#### QUÉBEC

Precipitation for the week was above normal in the Quebec City area and the Laurentians; part of it fell as

snow flurries in the Laurentians and the Eastern Townships. Dry sunny weather prevailed for most of the week over the Gulf of St. Lawrence, and Gaspé had 73.5 hours of bright sunshine. The weather was also rather dry in the Montreal area and in much of northwestern Québec.

Temperatures were above normal in northeastern Québec in an area extending north from Anticosti Island to Ungava Bay, but temperatures to the southwest, south and west of this area were generally at least 1 or 2° below normal. Freezing temperatures were reported as far south as Ste. Agathe on June 8 and 9. The highest temperature in the province was 27° at Bagotville and Quebec City on June 7, and the lowest was -4° at La Grande Rivière on June 8 and Chibougamau on June 9. The 27° high at Quebec City on June 7 was a record, the previous highest for that date was 26° in 1974. Record lows were established in the Montréal and Québec City areas.

#### MARITIME PROVINCES

Precipitation was above normal for the week in southern coastal areas of Nova Scotia and New Brunswick. The highest amount was 55.1 mm on Sable Island. Farther inland and to the north precipitation was below normal.

Temperatures ranged from about 1 to 3° below normal. The highest temperature reported was 26° at Fredericton on June 7 and the lowest was 1° at Sydney June 3 and 4, Chatham June 7 and Charlo June 9. The temperature had not yet reached 20° at Halifax; the previous latest date for it to reach 20° was June 4, in 1917. The low temperature of 2° on June 7 at Charlo and Greenwood was a record low for both those stations, and the low of 1° at Chatham on June 7 was a tie with the previous lowest for that date.

Dry weather in Prince Edward Island and Nova Scotia has facilitated crop planting, which is now practically completed, and enabled haying to begin early. The cool weather has slowed growth but no significant frost damage is reported. One forest fire is reported burning in New Brunswick.



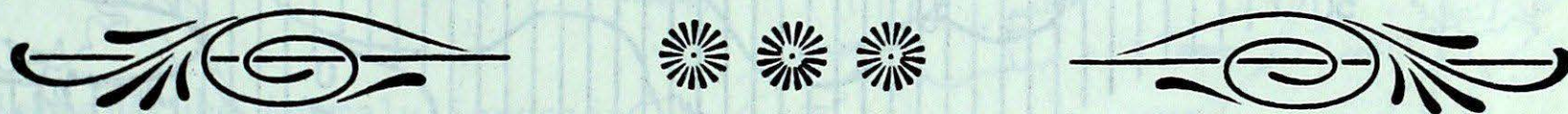
NEWFOUNDLAND AND LABRADOR

Precipitation was above normal in southeastern Newfoundland, where Argentia received 74.7 mm, and in parts of extreme western and eastern Labrador, and below normal in northwestern Newfoundland and central Labrador. Planting operations have been slowed in the wetter areas.

Temperatures were above normal in western Labrador and the southwest corner of Newfoundland but below normal in most of Newfoundland, by more than 4° at Comfort Cove, and below normal in eastern Labrador. The highest tempera-

ture during the week was 26° at Churchill Falls on June 8. The lowest was -4° at Goose on June 3. The previous lowest temperature at Goose on June 3 was -1° in 1949 and 1970. The low of -3° at Hopedale on June 4 tied with the previous record for that date. On June 3 the 4° maximum temperature at Gander tied with the previous record low maximum temperature there, and Cartwright's 3° maximum was a new record low maximum for Cartwright for that date.

Along the Labrador Coast the pack ice has now retreated to north of the approaches to Goose Bay.



CLIMATIC PERSPECTIVES

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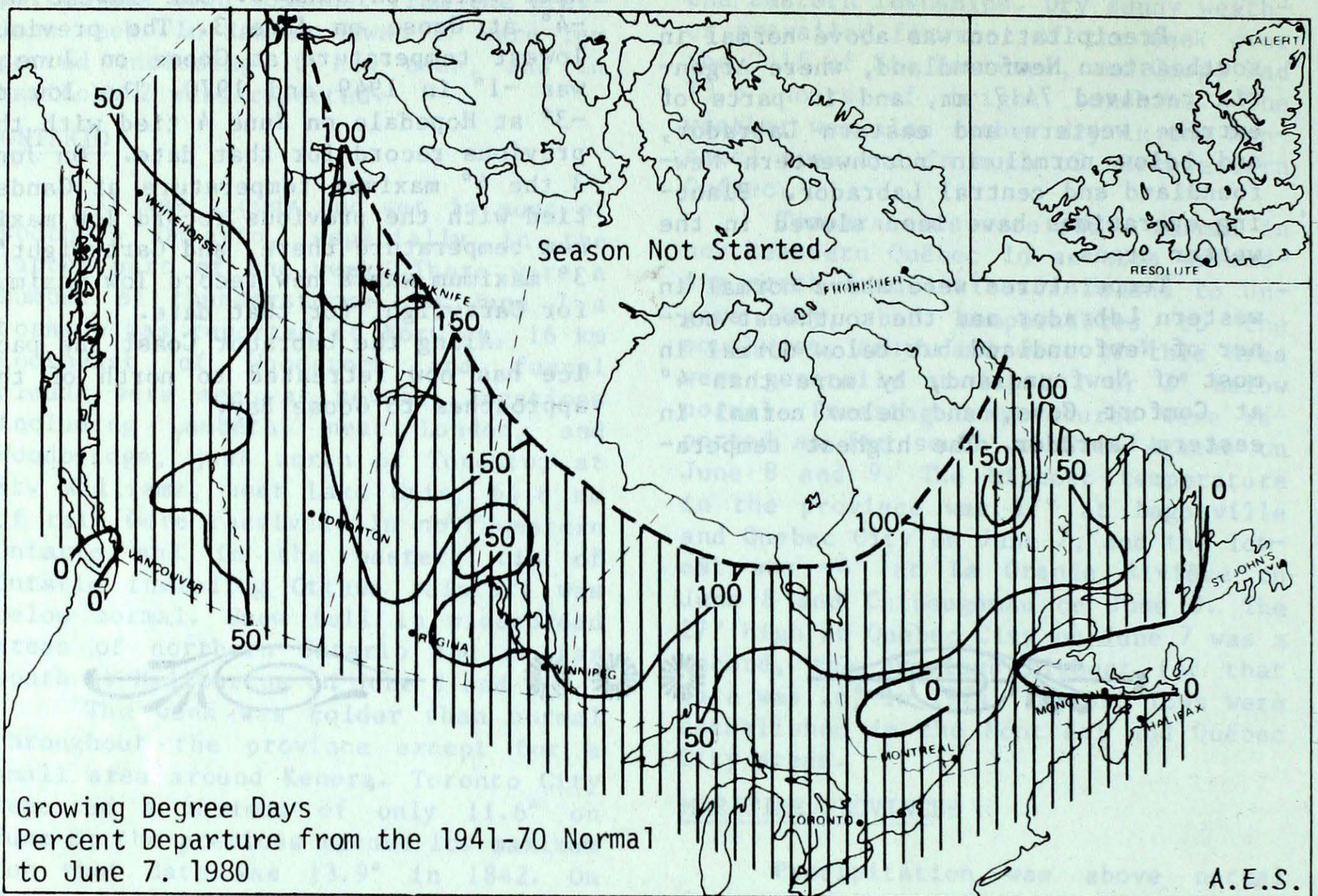
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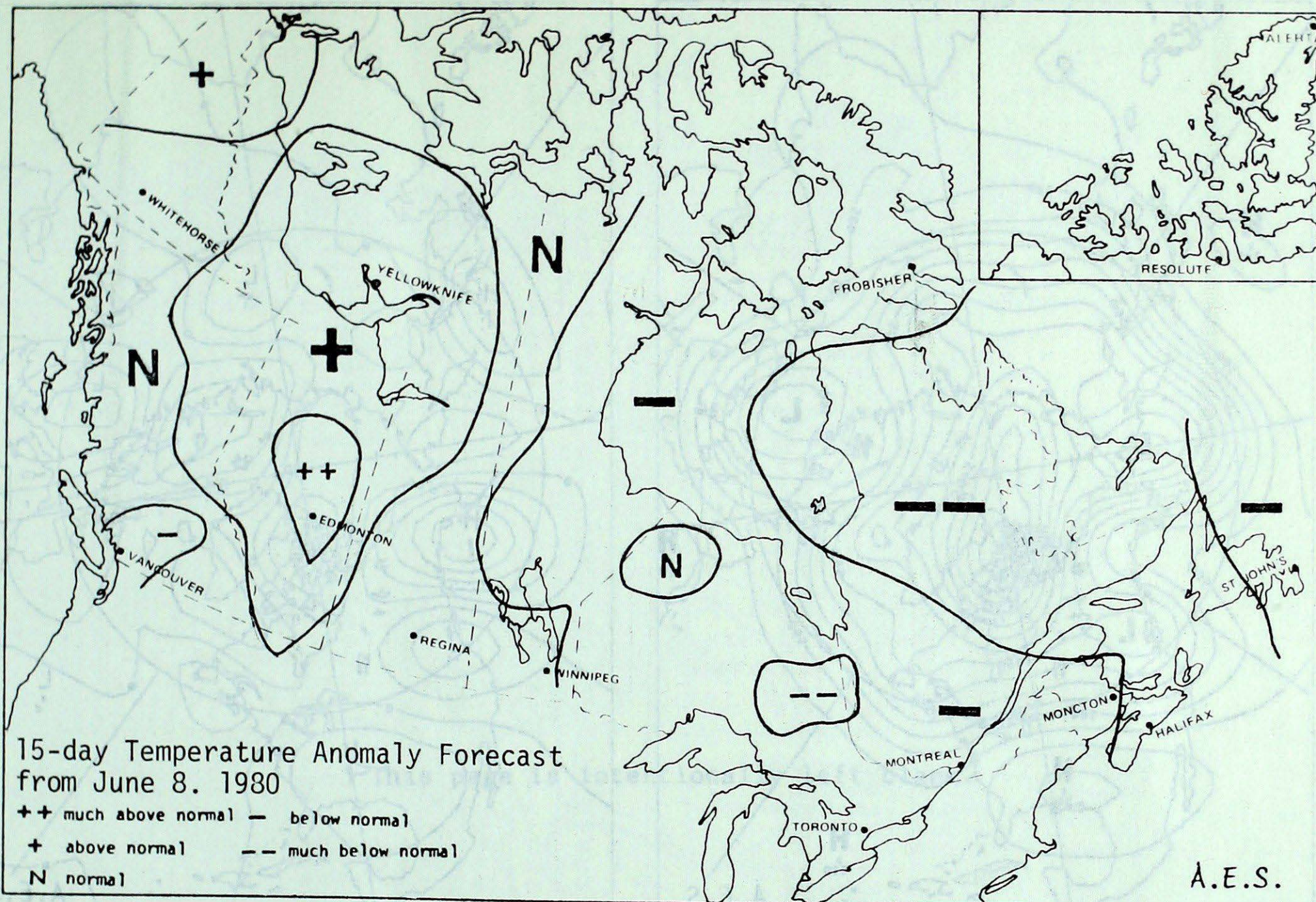
GROWING DEGREE-DAY SUMMARY TO JUNE 7, 1980



CITY	MONTHLY CUMULATIVE TOTAL	MONTHLY DIFF. FROM 1941-70 NORMAL	SEASONAL TOTAL	SEASONAL DIFF. FROM 1941-70 NORMAL	SEASONAL PERCENT OF NORMAL
Whitehorse	69.0	22.0	152.0	42.0	138
Penticton	62.5	-19.5	580.0	106.0	122
Vancouver	52.0	-12.0	448.0	-5.0	99
Edmonton	48.5	-12.5	462.0	227.0	197
Calgary	32.5	-21.5	357.5	149.5	172
Regina	60.5	-2.5	514.0	254.0	198
Saskatoon	62.5	1.5	528.0	269.0	204
Winnipeg	66.0	-2.0	529.5	263.5	199
Thunder Bay	47.5	-0.5	304.0	136.0	181
Windsor	87.5	-0.5	484.0	-2.0	100
Toronto	65.0	-13.0	381.0	11.0	103
Ottawa	79.0	-9.0	416.5	54.5	115
Montréal	80.0	-2.0	412.5	54.5	115
Québec	68.0	8.0	299.5	51.5	121
Fredericton	60.0	-1.0	278.5	28.5	111
Halifax	40.0	-14.0	188.5	3.5	102
Charlottetown	34.5	-18.5	122.0	-27.0	82
St John's	16.0	-6.0	39.5	-9.5	81



15 DAY TEMPERATURE ANOMALY FORECAST



Forecast Method

Analogue technique based on point prediction at 70 Canadian stations.

Temperature Scale

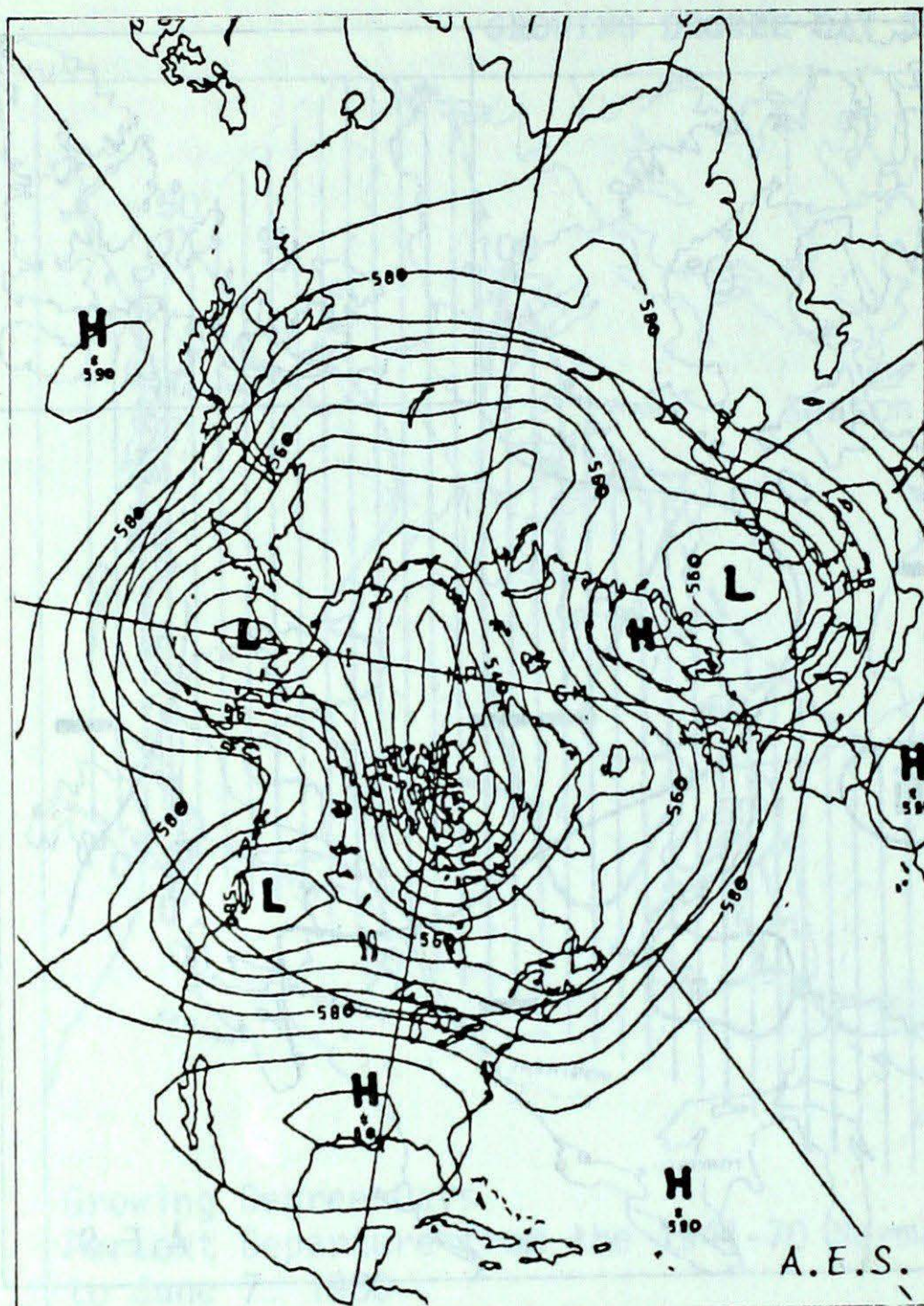
Each temperature class is designed to contain 20% of the historically observed 15 day means pertinent to specific location and time of year:

Station	Current Temperature Anomaly Forecast	Temperature Anomaly Forecast
Whitehorse	Near Normal	Within 0.5° of Normal
Victoria	Below Normal	From 0.3° to 1.1° below Normal
Vancouver	Below Normal	From 0.3° to 1.2° below Normal
Edmonton	Much Above Normal	More than 1.5° above Normal
Regina	Near Normal	Within 0.5° of Normal
Winnipeg	Near Normal	Within 0.5° of Normal
Thunder Bay	Below Normal	From 0.4° to 1.3° below Normal
Toronto	Below Normal	From 0.5° to 1.5° below Normal
Ottawa	Below Normal	From 0.4° to 1.4° below Normal
Montreal	Below Normal	From 0.4° to 1.4° below Normal
Quebec	Below Normal	From 0.4° to 1.3° below Normal
Fredericton	Below Normal	From 0.4° to 1.4° below Normal
Halifax	Much Below Normal	More than 1.0° below Normal
Charlottetown	Much Below Normal	More than 1.3° below Normal
St. John's	Near Normal	Within 0.5° of Normal
Goose Bay	Much Below Normal	More than 1.7° below Normal
Frobisher Bay	Below Normal	From 0.4° to 1.4° below Normal
Inuvik	Above Normal	From 0.6° to 2.0° above Normal

Note: Anomaly denotes departure from the 1949-73 mean.



## Atmospheric Circulation

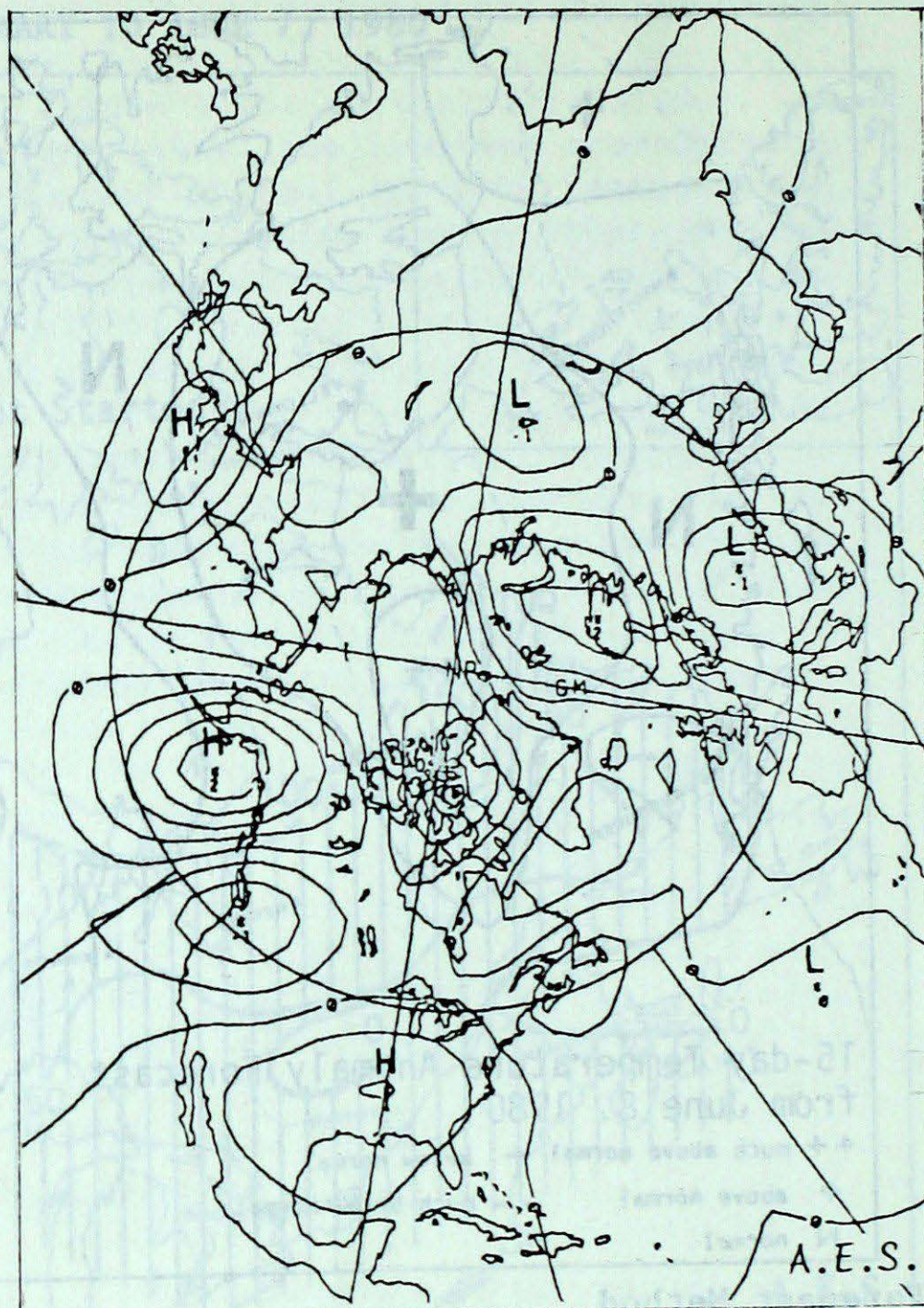


7-day Mean 50 kPa Height Map (in dam.)  
from June 2 to 8, 1980

The upper flow pattern kept its vigorous north-south component across North America. A large atmospheric ridge weakened while remaining in the vicinity of the Gulf of Alaska and the Yukon with height anomalies exceeding 20 dam. Resultant very warm and sunny weather was the predominant feature across northern British Columbia and the Yukon with day time temperatures readings in the 30 degree range.

The southern interior of British Columbia and southern Alberta remained under the influence of a weak upper closed low. Surface weather systems associated with an upslope flow and occasional thunderstorm activity deposited copious amounts of rain, in some instances exceeding 100 mm east of the Continental Divide, while relatively dry fair weather continued in Saskatchewan and Manitoba.

Changeable weather dominated the eastern half of the country as weather



7-day Mean 50 kPa Height Anomaly  
(in 5 dam intervals)  
from June 2 to 8, 1980

systems and sharp frontal zones moved eastwards. Several regions received above normal precipitation. The eventual confrontation of the very warm moist Maritime Tropical Air mass just south of the border and cold Arctic air poised to the north resulted in severe thunderstorms and tornado activity in the northern United States and southwestern Ontario. This surge of record breaking Arctic Air penetrated southwards encompassing all of Ontario and Quebec during the weekend and reaching the Maritimes Monday. Numerous long standing temperature records were broken, with frost reported in agricultural area, and snow falling in northern and central Ontario and Quebec.

The resultant formation of a nearly stationary upper cold low near James Bay, ensured cold cloudy showery weather in all areas for the next few days.

Andy Radomski



Date		Time		Location		Remarks	
Day	Month	Hour	Minute	Lat	Long	Altitude	Notes
1	1980	00	00	00	00	00	Blank page
2	1980	00	00	00	00	00	Blank page
3	1980	00	00	00	00	00	Blank page
4	1980	00	00	00	00	00	Blank page
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30	1980	00	00	00	00	00	Blank page
31	1980	00	00	00	00	00	Blank page

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TEMPERATURE AND PRECIPITATION DATA FOR THE WEEK ENDING 0600 G.M.T. JUNE 10, 1980

Table with columns: Station, Temperature (°C) (Average, Departure from Normal, Extreme Maximum, Extreme Minimum, Total), and Precip. (mm) (Departure from Normal). Rows include British Columbia, Yukon, Northwest Territories, and Ontario stations.

Table with columns: Station, Temperature (°C) (Average, Departure from Normal, Extreme Maximum, Extreme Minimum, Total), and Precip. (mm) (Departure from Normal). Rows include Alberta, Saskatchewan, Manitoba, and Ontario stations.

Table with columns: Station, Temperature (°C) (Average, Departure from Normal, Extreme Maximum, Extreme Minimum, Total), and Precip. (mm) (Departure from Normal). Rows include Quebec, New Brunswick, Nova Scotia, Prince Edward Island, and Newfoundland stations.

P - extreme value based on less than 7 days X - no normal due to short period M - not available at press time