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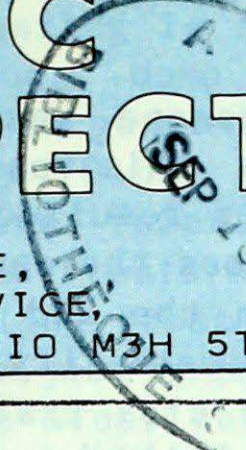
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A WEEKLY REVIEW OF CANADIAN CLIMATE

CLIMATIC PERSPECTIVES

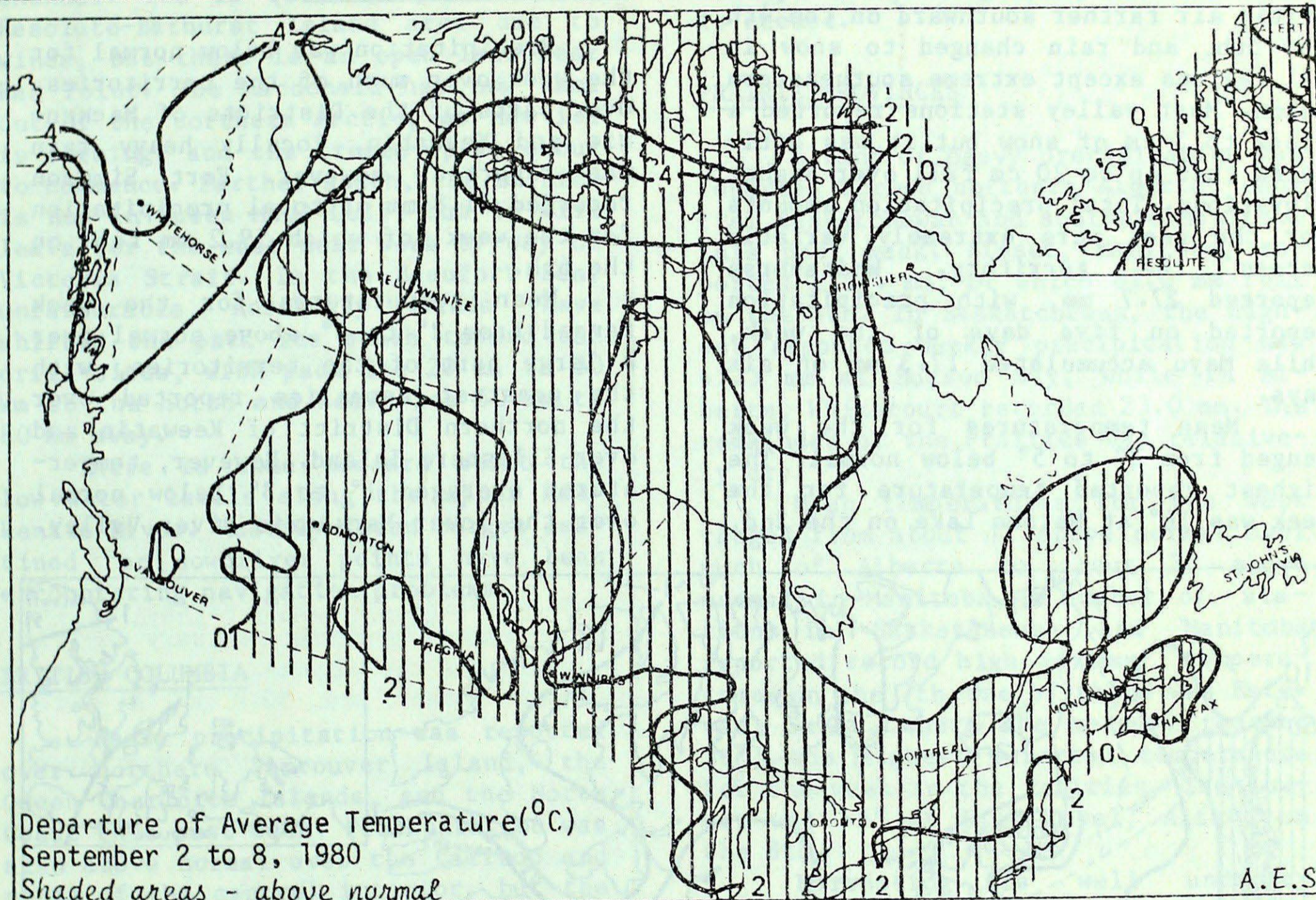
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SEPTEMBER 12, 1980

(Aussi disponible en français)

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WEATHER HIGHLIGHTS FOR THE WEEK - SEPTEMBER 2 - 8, 1980

Winter comes to the Yukon

Cloudy, showery weather is still hampering harvesting in parts of British Columbia and the Prairies.

Winter came to the Yukon as many localities reported their first snowfall. On the 3rd, Dawson City received 6 cm of snow, and the temperature never rose above 3°, making it the coldest early September day there in over 80 years.

Hurricane Georges crossed the Grand Banks on the 8th. An off-shore drill rig reported gusts to 130 km/h.

A severe squall line crossed southern Ontario on the 3rd. Considerable damage was reported in Metropolitan Toronto, and three lives were lost.

The highest reported temperature in Canada this week was 36° at Estevan, Sask., on the 7th, while the lowest was -12° at Komakuk Beach, Yukon, on the 3rd. The greatest weekly precipitation was 253.7 mm at Cape Scott, B.C. Of this total, 224.6 fell on two days, the 5th and 6th.

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

YUKON

A winter landscape was painted over much of Yukon this past week. Unseasonably cold air resulted in measurable snowfall across the western and central territory on the 2nd and 3rd. On the latter day, Dawson City reported 6 cm. A low pressure area tracking inland from the Gulf of Alaska drove the Arctic air farther southward on the 4th and 5th, and rain changed to snow in all regions except extreme southeastern Yukon. Most valley stations reported a trace to 3 cm of snow but it was estimated that up to 20 cm fell over higher elevations. Total precipitation amounts for the week were extremely variable across the territory. Whitehorse reported 27.7 mm, with precipitation reported on five days of the week, while Mayo accumulated 17.3 mm on six days.

Mean temperatures for the week ranged from 3° to 5° below normal. The highest reported temperature for the week was 16° at Watson Lake on the 2nd,

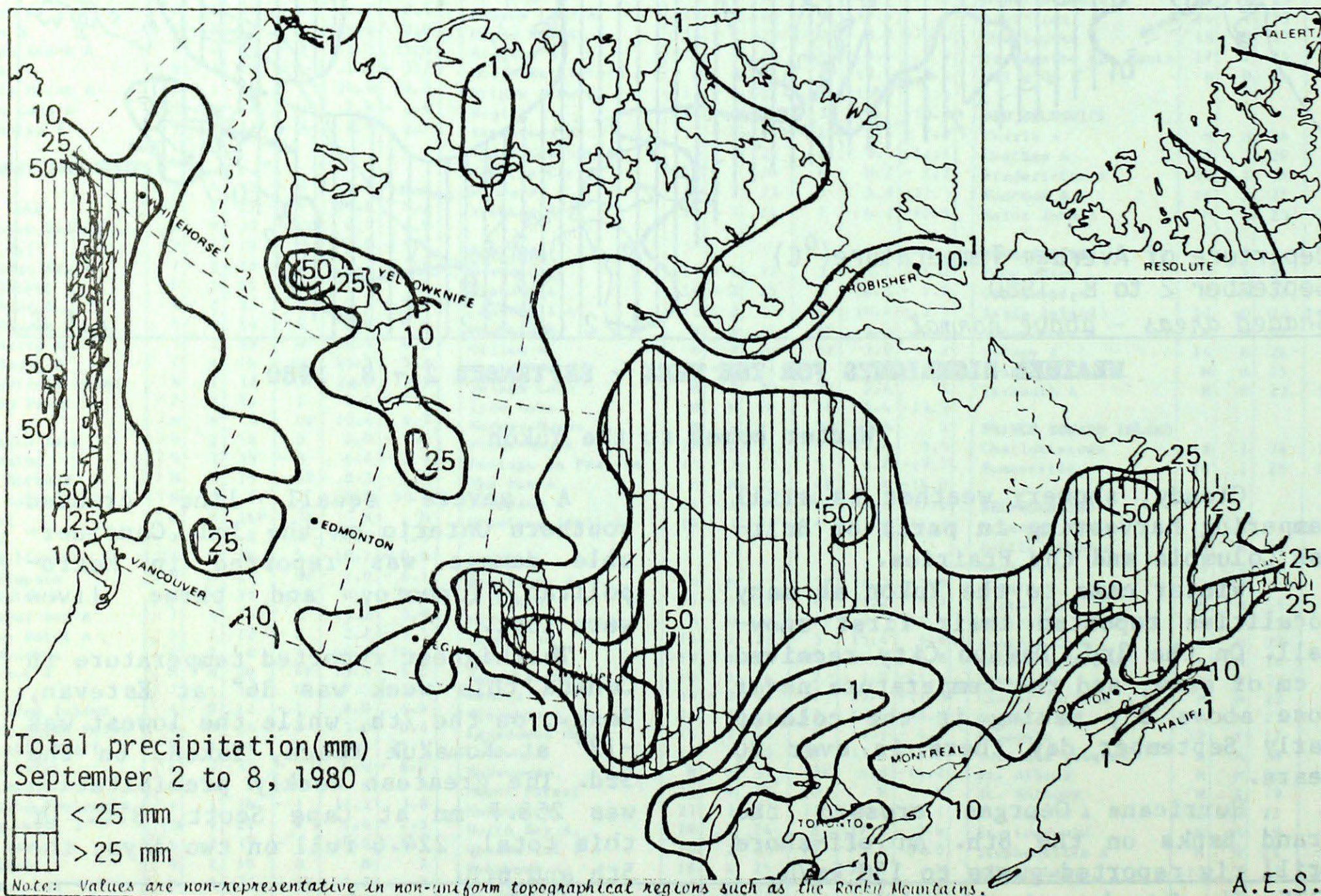
while the lowest was -12° at Komakuk Beach on the 3rd. On this date, the temperature at Dawson City did not rise above 3°, making it the coldest early September day there in over 80 years.

As of September 8th there was still a snow cover over northern Yukon.

NORTHWEST TERRITORIES

Precipitation was below normal for the week over much of the territories. Over parts of the Districts of Mackenzie and Keewatin, locally heavy rain was reported, however. Fort Simpson recorded 71.8 mm of total precipitation for the week, of which 59.2 mm fell on the 6th.

Mean temperatures for the week ranged from 2° to 5° above normal over a large part of the territories, with the greatest anomalies reported over the northern District of Keewatin and over Ellesmere Island. However, temperatures averaged 1° to 3° below normal over the lower Mackenzie River Valley.



The highest reported temperature for the week was 20° at Fort Smith on the 6th, while the lowest was -11° at Mould Bay on the 7th.

There is now a snow cover over much of the northern and central archipelago. Resolute reported 6 cm on the ground on the morning of the 8th.

Ice-breakers are working in Perry Channel. Ice is quite compact in the Resolute-Bathurst Island area due to winds, but there is an open lead near Rea Point. The Macdonald has now come out of the northern Arctic, as new ice is forming, and the freeze-up is about to commence. Farther south, the Bernier is now in Queen Maud Gulf, but it will leave for the east next week by way of Victoria Strait. In the Beaufort Sea, unfavourable northerly winds have shifted the pack ice south toward the drill sites, with pack ice 20 km to 30 km to the north and heavy ice 50 km to 80 km away.

There is some concern about the low water levels along the upper Mackenzie River. Heavily-laden barges destined for downriver points have been encountering navigation problems.

BRITISH COLUMBIA

Heavy precipitation was reported over northern Vancouver Island, the Queen Charlotte Islands, and the North Coast this past week. Precipitation was also above normal over the Cariboo and parts of the central interior, but the remainder of the province reported below-normal precipitation. The heaviest rain was reported at Cape Scott. Out of a weekly total of 253.7 mm, 130.7 mm fell on the 5th and 93.9 mm on the 6th.

Mean temperatures for the week ranged from 1° to 2° below normal over most of the province, although a few places were near normal. The highest reported temperature for the week was 29° at Lytton on the 8th and at Penticton on the 5th and 6th. The lowest was -2°, reported at Dease Lake on the 6th and 7th, Smithers on the 7th, and at Williams Lake on the 8th.

Snow has now occurred in the mountains of northern B.C.

Harvesting is still underway. In the Cariboo, damp conditions have caused hay to go to seed, and harvesting is only 70 per cent completed. In the southern interior valleys, some light ground frosts have been reported, but no killing frost as yet. The apple harvest has just begun in the Okanagan. In the same area, there is going to be a bumper crop of grapes, but more sun is needed.

PRAIRIE PROVINCES

A band of heavy precipitation was reported across northern Alberta, central Saskatchewan and southern Manitoba this past week. Bisset, Manitoba, reported 115.4 mm, of which 81.0 mm fell on the 4th. In Saskatchewan, the highest reported weekly precipitation was 42.3 mm at Hudson Bay, while in Alberta, Whitecourt recorded 23.0 mm. The remainder of the Prairies was relatively dry.

Mean temperatures for the week ranged from about 1° above normal over much of Alberta to about 3° above normal in Manitoba. A number of stations in Saskatchewan and Manitoba reported record high maximum temperatures on the 7th. One of these was Estevan, Sask., where the mercury reached 36°, the highest reported temperature for the week in the Prairies. The lowest was -5° at High Level, Alta., on the 8th.

Harvesting is well underway across the agricultural south, but rain has caused a slowdown in operations in those areas that have had considerable rain.

Some grape-size hail was reported over parts of southern Alberta on the 2nd.

ONTARIO

Heavy precipitation was reported across most of northwestern Ontario this past week, but it was relatively dry over the remainder of the province. A number of stations in the Rainy River and Kenora Regions reported more than 50 mm of rain over the week. Most of the precipitation fell on the 3rd, 4th

and 8th. Pickle Lake reported the largest weekly amount, 73.6 mm, but Atikokan received 70.8 mm and Trout Lake 68.8 mm.

Mean temperatures for the week across the province generally ranged from just about normal to about 2° above normal. The highest reported temperature for the week was 28° at Ottawa on the 2nd and at Atikokan and Kenora on the 7th. The lowest was -2° at Moosonee on the 8th.

On the morning of the 2nd, a tornado touched down on Houghton Centre and Cultus, on the north shore of Lake Erie. Some light property and tree damage was reported. Later in the same day, a severe squall line crossed southern Ontario with wind gusts to close to 100km/h. Considerable damage was reported in Metropolitan Toronto, and three lives were lost as a result of a collapse of a building under construction. Strong winds were also recorded at Lindsay and Kitchener, where trees were reported down.

Spring grain and corn yields appear to be average or slightly above average this year.

QUÉBEC

Heavy precipitation fell over eastern Québec and the Gaspé this past week, but below-normal amounts were reported over most of the remainder of the province. Port-Menier recorded the most, 79.3 mm, of which 66.3 mm fell on the 3rd.

Mean temperatures for the week generally ranged within 1° of normal. The highest reported temperature for the week was 27° at Montréal, Roberval and Sherbrooke on the 2nd and again at Montréal on the 9th. The lowest was -1° at Koartak on the 2nd and 4th.

On the 2nd, Montréal International Airport received 27.0 mm of rain. Underpasses were flooded, and there was one associated death.

MARITIME PROVINCES

Below-normal precipitation was reported across most of the Maritimes this past week. A few showers were reported on the 2nd, 5th, and 6th, but

only a few stations recorded more than 10 mm total precipitation over the week. Summerside, P.E.I., reported 28.0 mm, of which 17.8 mm occurred on the 6th.

Mean temperatures for the week ranged from about near normal to 1° above normal. The highest reported temperature for the week was 30° at Fredericton, N.B., on the 2nd, while the lowest was 3° at Greenwood, N.S., on the 5th.

Fine, sunny weather helped to boost attendance to record levels this year at the Nova Scotia Fisheries Exposition at Halifax.

Harvesting is progressing well under sunny skies. The Prince Edward Island cereal crop is now more than half harvested.

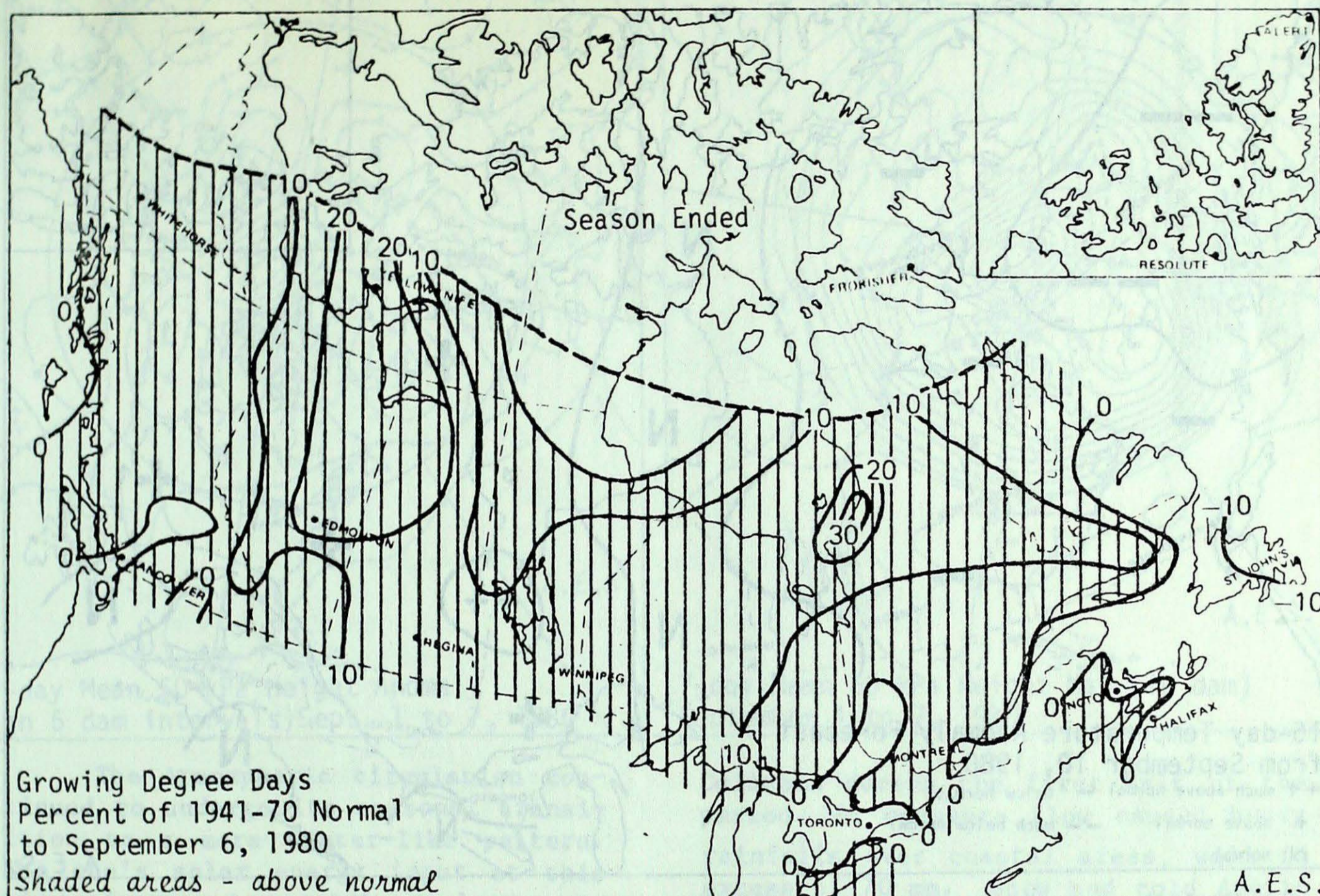
NEWFOUNDLAND AND LABRADOR

Precipitation was above normal across most of the province this past week, although a few stations in the central Island of Newfoundland reported below-normal totals. In Labrador, the greatest recorded amount was 63.7 mm at Goose, of which 36.3 mm occurred on the 3rd. It rained at Goose on every day of the week. On the Island, the greatest recorded amount was 50.0 mm at St. Anthony.

Mean temperatures for the week ranged from about near normal to 1° below normal. The highest reported temperature for the week was 23° at Goose on the 2nd, while the lowest was 1° at Deer Lake on the 8th.

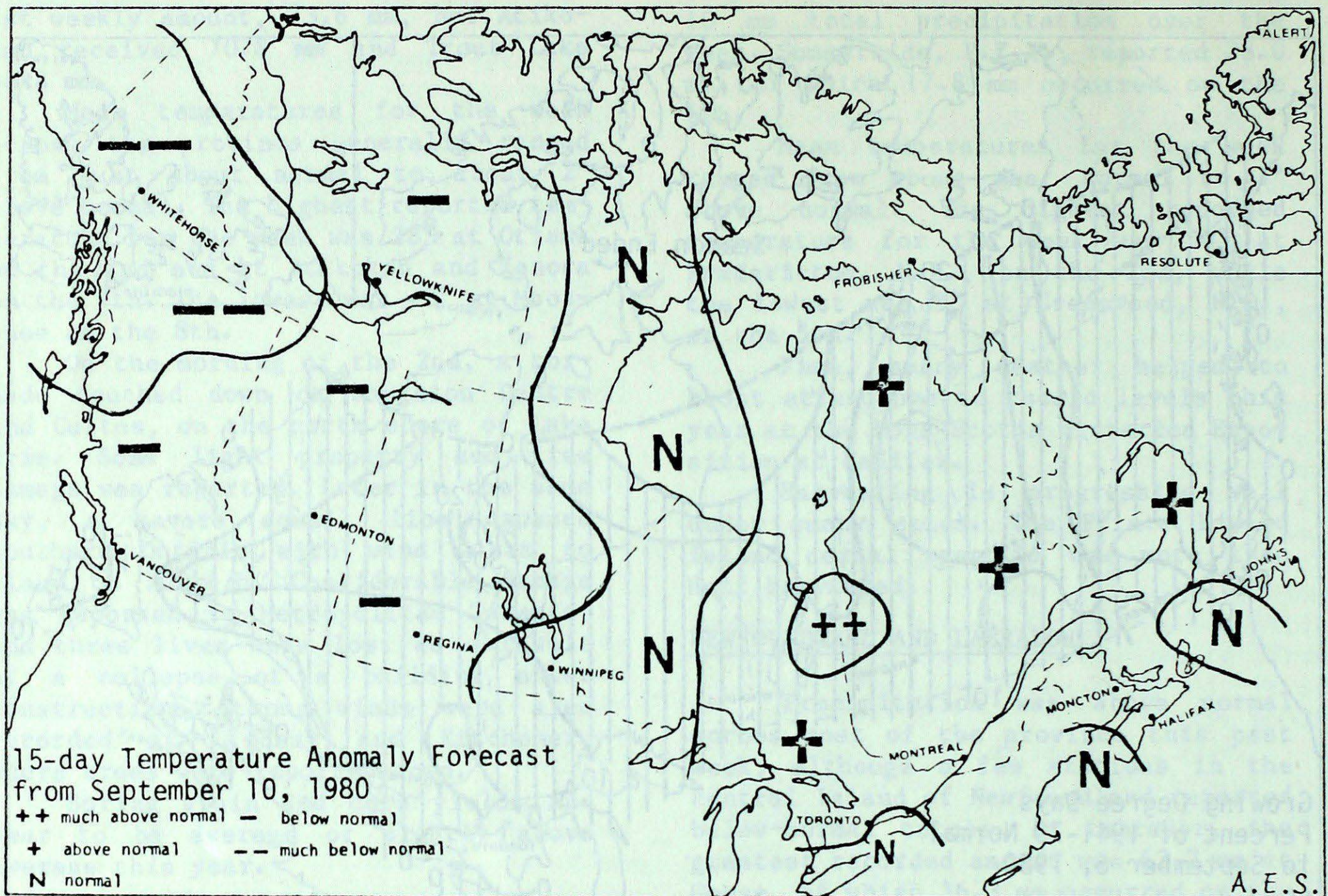
Hurricane Georges crossed the Grand Banks on the 8th, and rain and strong winds were reported over the Avalon Peninsula. An off-shore drill rig reported wind gusts to 130 km/h.

GROWING DEGREE-DAY SUMMARY TO SEPTEMBER 6, 1980



CITY	MONTHLY CUMULATIVE TOTAL	MONTHLY DIFF. FROM 1941-70 NORMAL	SEASONAL TOTAL	SEASONAL DIFF. FROM 1941-70 NORMAL	SEASONAL PERCENT OF NORMAL
Whitehorse	7.5	-20.5	832.5	10.5	101
Penticton	62.5	-7.5	1803.0	64.0	104
Vancouver	59.0	-7.0	1448.0	-75.0	95
Edmonton	52.5	11.5	1458.0	294.0	125
Calgary	52.0	4.0	1218.0	96.0	109
Regina	64.0	5.0	1644.0	247.0	118
Saskatoon	60.5	.5	1619.0	238.0	117
Winnipeg	68.0	3.0	1742.5	253.5	117
Thunder Bay	61.5	7.5	1366.5	182.5	115
Windsor	103.0	13.0	1994.0	16.0	101
Toronto	91.0	12.0	1699.0	-21.0	99
Ottawa	90.0	17.0	1724.5	53.5	103
Montréal	91.0	9.0	1693.5	-34.5	98
Québec	73.5	6.5	1453.5	23.5	102
Fredericton	82.5	18.5	1506.0	77.0	105
Halifax	81.0	14.0	1241.0	-42.0	97
Charlottetown	78.0	9.0	1228.5	-26.5	98
St John's	48.5	-3.5	788.0	-100.0	89

15 DAY TEMPERATURE ANOMALY FORECAST

Forecast Method

Analogue technique based on point prediction at 70 Canadian stations.

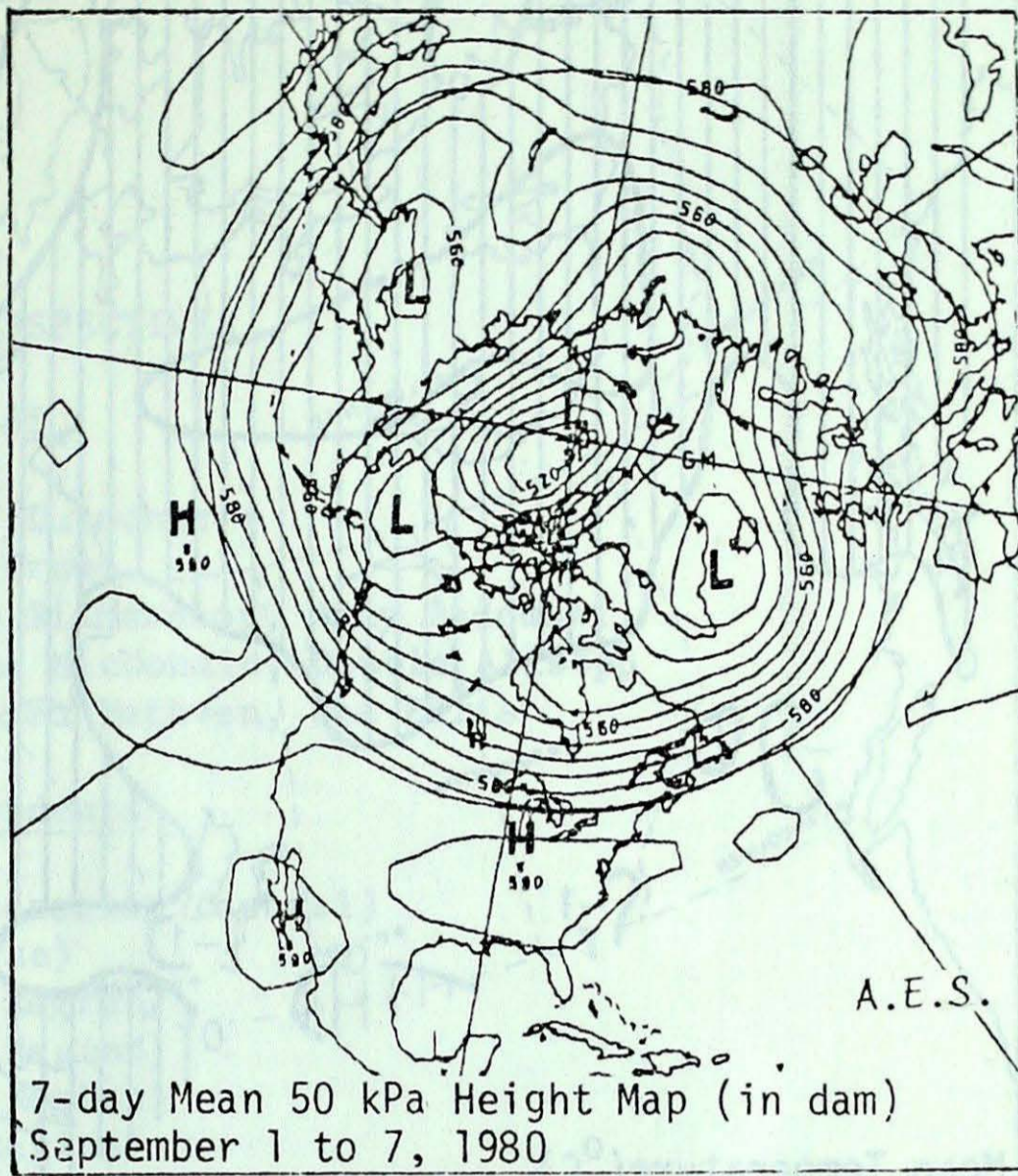
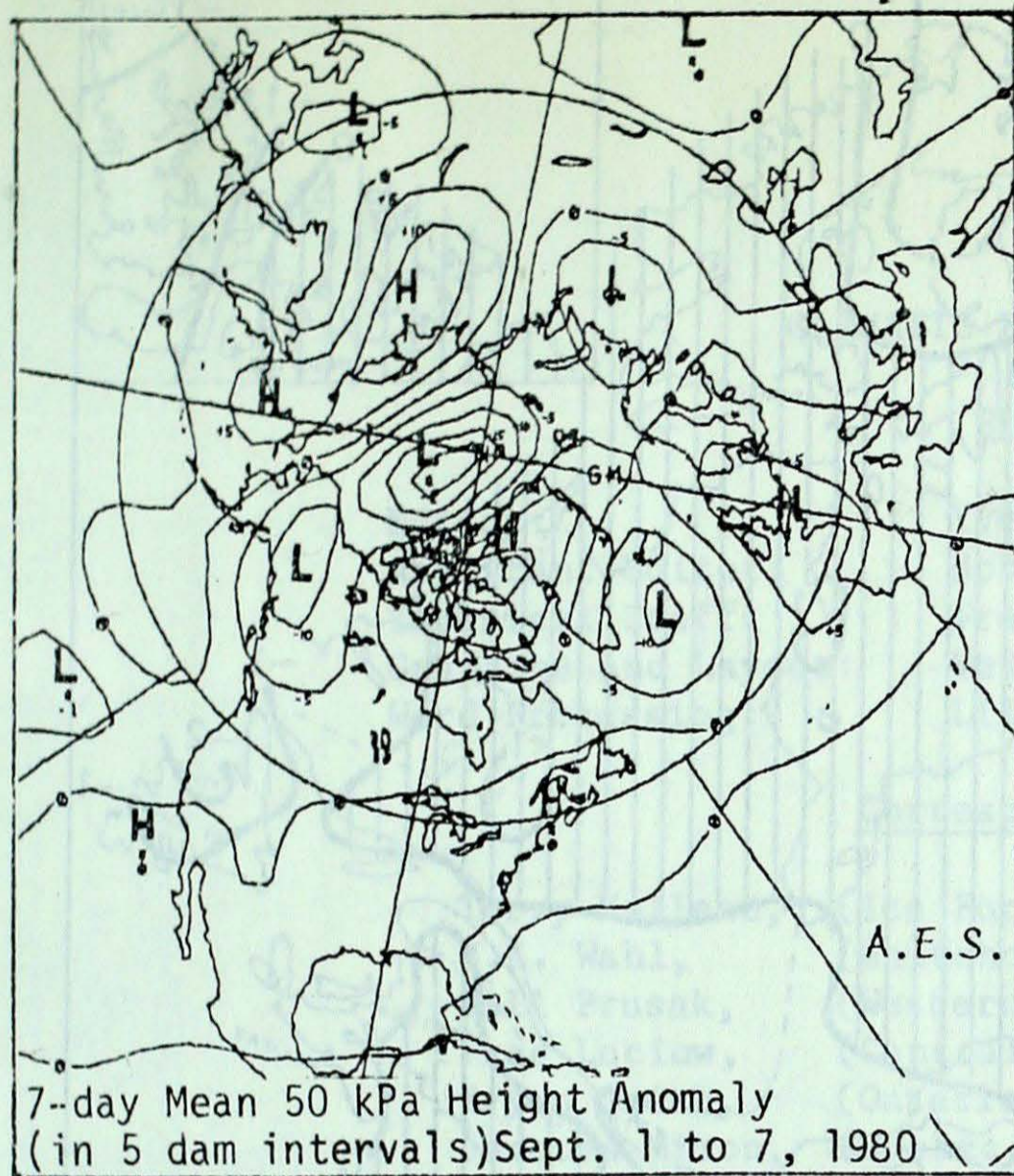
Temperature Scale

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

<u>Station</u>	<u>Current Temperature Anomaly Forecast</u>	
Whitehorse	Much Below Normal	More than 1.7 C below Normal
Victoria	Below Normal	From 0.3° to 1.0° below Normal
Vancouver	Below Normal	From 0.3° to 1.0° below Normal
Edmonton	Below Normal	From 0.7° to 2.2° below Normal
Regina	Below Normal	From 0.6° to 2.0° below Normal
Winnipeg	Near Normal	Within 0.5° of Normal
Thunder Bay	Near Normal	Within 0.4° of Normal
Toronto	Above Normal	From 0.5° to 1.6° above Normal
Ottawa	Above Normal	From 0.5° to 1.6° above Normal
Montreal	Above Normal	From 0.5° to 1.5° above Normal
Quebec	Above Normal	From 0.4° to 1.4° above Normal
Fredericton	Above Normal	From 0.4° to 1.4° above Normal
Halifax	Above Normal	From 0.3° to 1.1° above Normal
Charlottetown	Above Normal	From 0.4° to 1.2° above Normal
St. John's	Above Normal	From 0.3° to 1.1° above Normal
Goose Bay	Above Normal	From 0.4° to 1.4° below Normal
Frobisher Bay	Above Normal	From 0.4° to 1.3° below Normal
Inuvik	Below Normal	From 0.7° to 2.2° below Normal

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

Atmospheric Circulation



The Atmospheric circulation continued to undergo its seasonal transition to a more winter-like pattern. The sun's solar energy input at this time of year is rapidly weakening in the Northern Hemisphere letting the atmosphere in the Arctic cool rapidly and expand to the south. At the same time little temperature variation occurs in the tropics. This increased latitudinal temperature contrast intensifies both the atmospheric circulation, and the development of cyclonic storms at the surface.

Triggering pulses, moving across the continent in the upper flow, resulted in wave amplitudes increasing in intensity and hence a stronger north-south component from previous weeks. These atmospheric troughs and ridges drifted slowly eastward across the continent, a pattern not depicted very well on the 7-day mean height map.

An anomalous Arctic Vortex, nearly stationary over the Arctic Ocean, continued to be significantly deeper than normal.

A major trough and associated 50 KPa upper closed low over the Pacific coast gave cool, unsettled weather to the Yukon and British

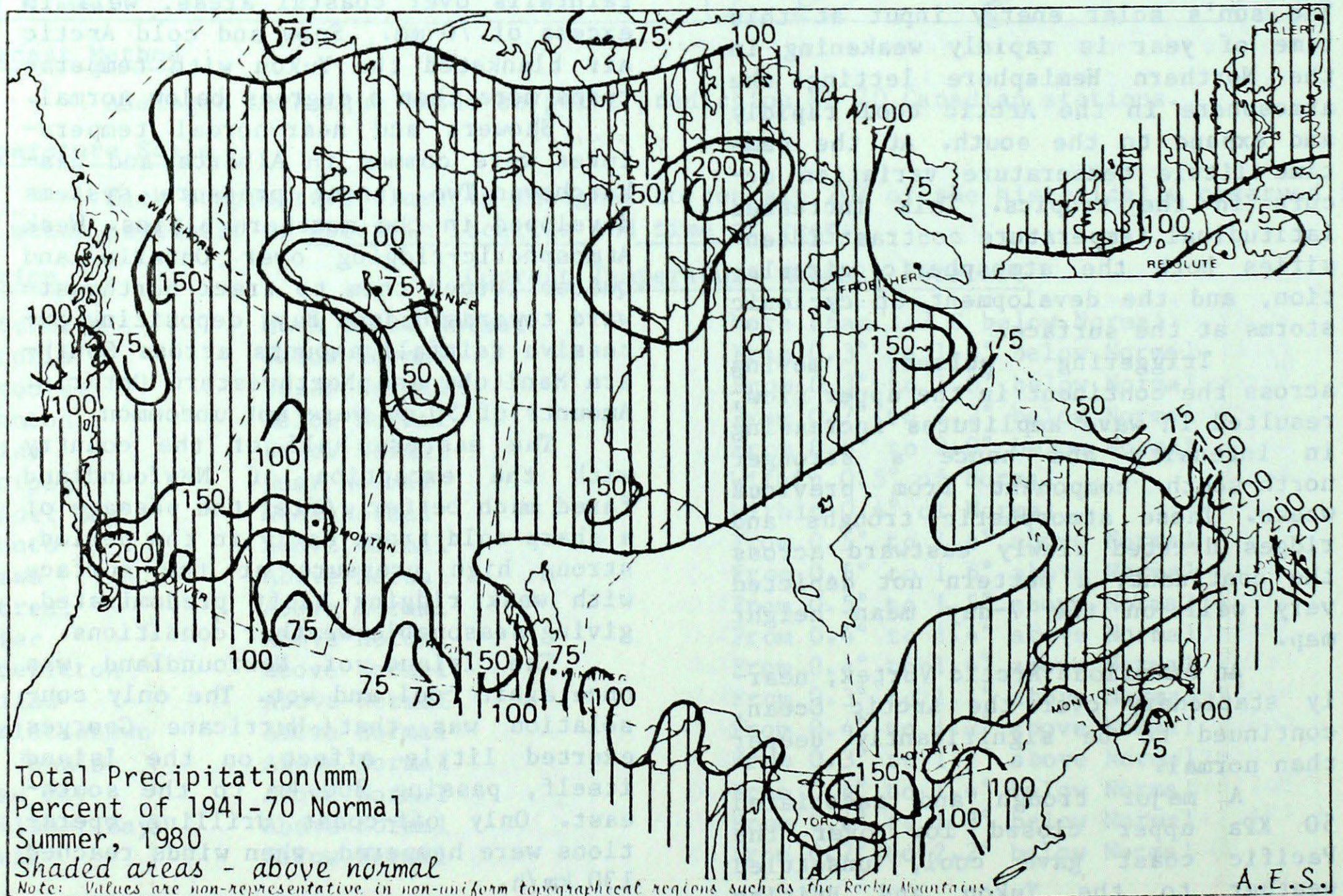
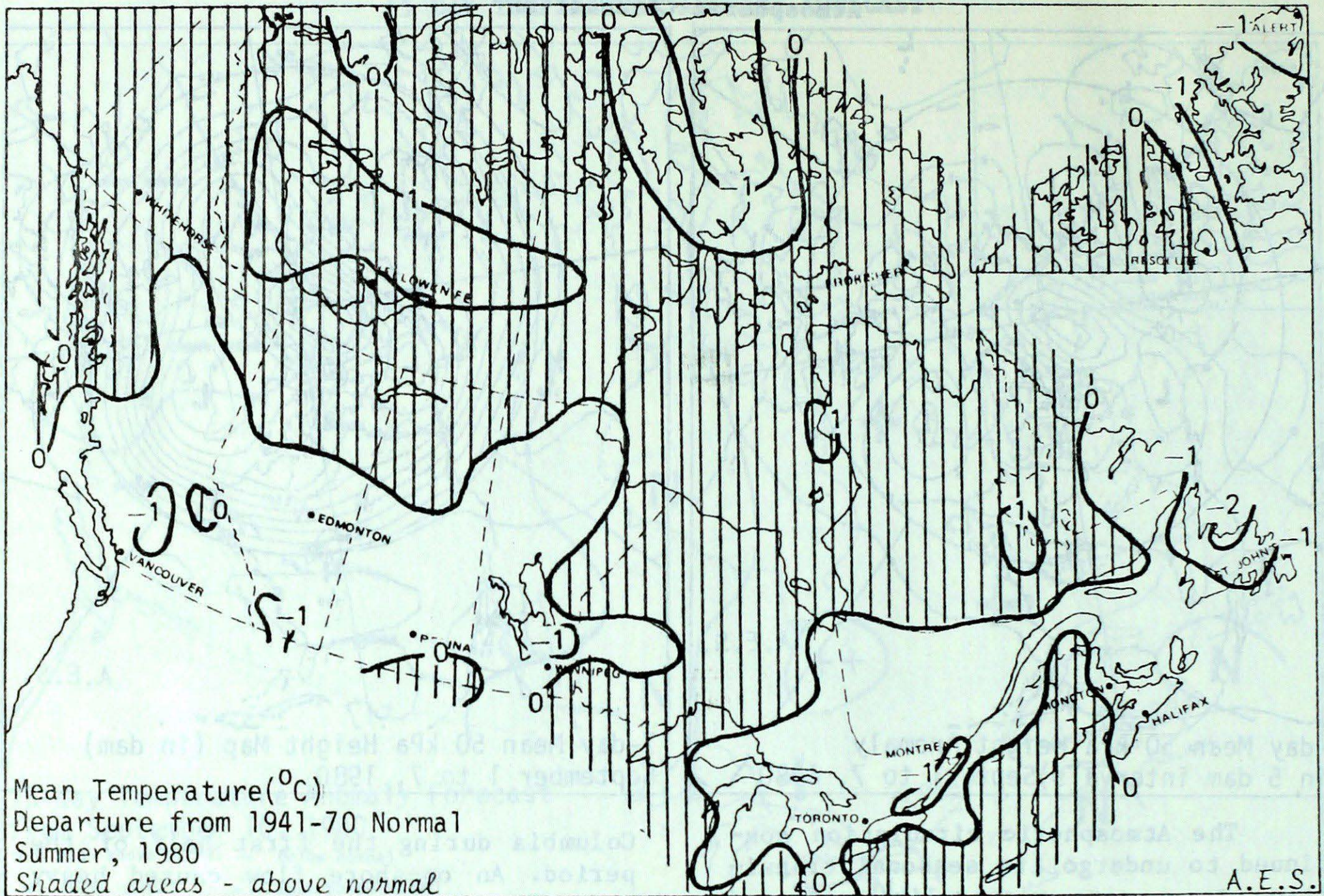
Columbia during the first half of the period. An on-shore flow caused heavy rainfalls over coastal areas, well in excess of 70 mm. Snow and cold Arctic air blanketed the Yukon with temperatures more than 5 degrees below normal.

Showers and near-normal temperatures were common in Alberta and Saskatchewan. Two strong pressure systems developed in the northern plains. Weak Atmospheric-ridging over Ontario and Québec forced them to track northeastward towards Hudson Bay, depositing excessive rainfall amounts across Southern Manitoba and Northwestern Ontario. Amounts of 50 mm were not uncommon.

The eastern half of the country with the exception of Newfoundland fared much better. After the passage of a sharp cold front early in the period, strong high pressure at the surface with weak ridging aloft predominated, giving seasonable weather conditions.

The Island of Newfoundland was once again cool and wet. The only consolation was that Hurricane Georges exerted little effect on the Island itself, passing 300 km to the southeast. Only off-coast drilling operations were hampered, when winds reached 130 km/h.

Andy Radomski



CLIMATIC PERSPECTIVES

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