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Atmospheric Environment / Environnement atmosphérique

**A WEEKLY REVIEW OF CANADIAN CLIMATE**

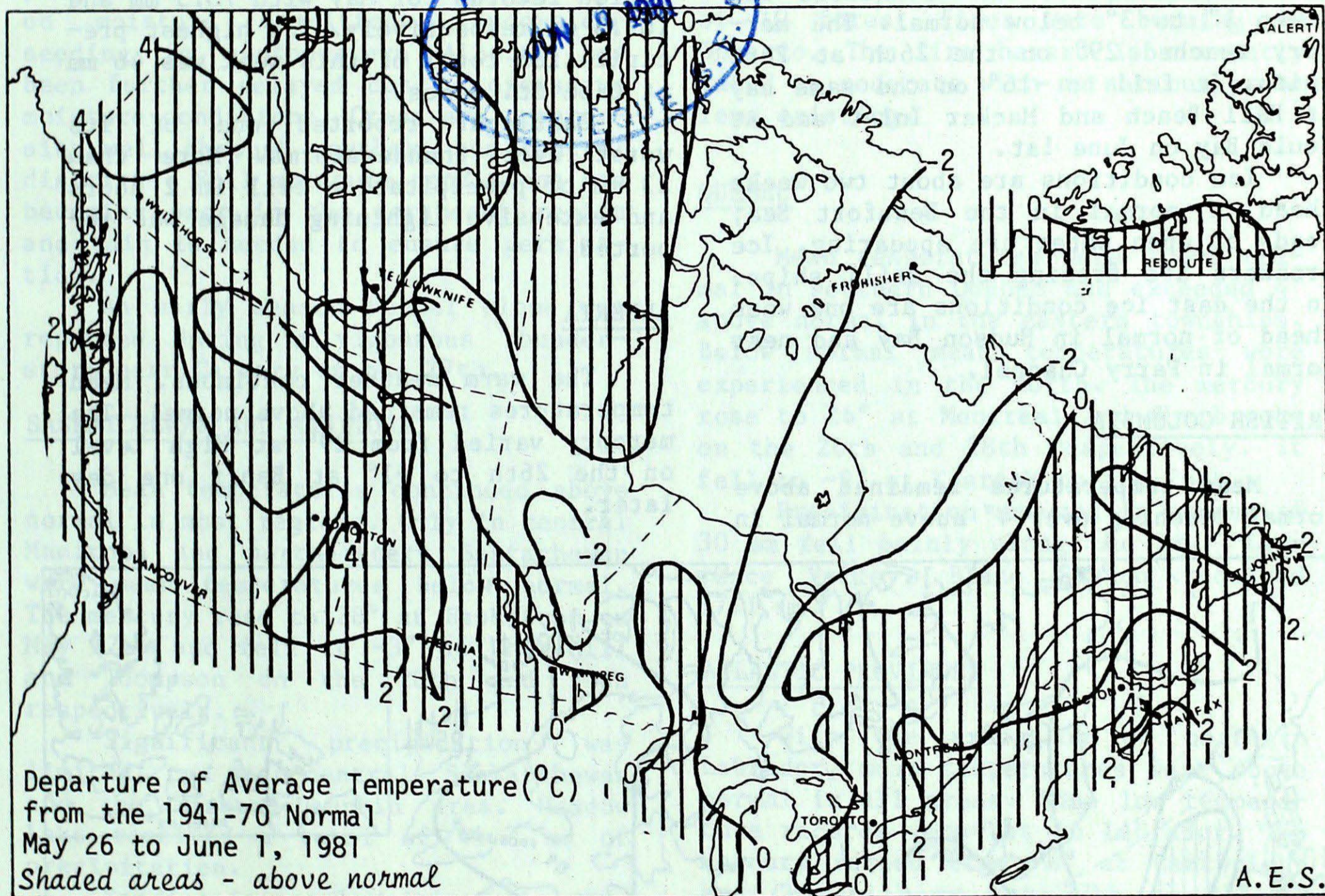
**CLIMATIC PERSPECTIVES**

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

JUNE 5, 1981

(Aussi disponible en français)

VOL.3 NO.22



**WEATHER HIGHLIGHTS FOR THE PERIOD - MAY 26 TO JUNE 1, 1981**

**Fire hazard moderates in Ontario**

The rains in Ontario helped the forest fire situation. The fire hazard is rated as moderate with no serious problems existing.

Spring precipitation is 30% of normal in the Regina-Moose Jaw area and 35% to 50% of normal in northern Manitoba. In contrast, southwestern Alberta has problems with excessive moisture.

Ideal weather prevailed for the Appleblossom Festival in Nova Scotia this week and over 40,000 people enjoyed the festival.

The mercury reached a maximum of 30° at Lytton, B.C. and a minimum of -16° at Hall Beach, N.W.T. Whitecourt, Alberta recorded the highest weekly total, 71.3 mm.

**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 was above normal in Baffin Island and in the southern Yukon. Cape Dyer received 48.1 mm. In contrast, little or no precipitation fell at most other stations.

Mean temperatures were above normal with the exception of Baffin Island and the north of the District of Franklin where temperatures oscillated between 1° to 3° below normal. The mercury reached 29° on the 26th at Fort Smith. It fell to -16° on the same day at Hall Beach and Mackar Inlet and at Mould Bay on June 1st.

Ice conditions are about two weeks ahead of normal in the Beaufort Sea; leads of open water are appearing. Ice breakers are freeing the drill ships. In the east ice conditions are one week ahead of normal in Hudson Bay and near normal in Parry Channel.

BRITISH COLUMBIA

Mean temperatures remained above normal reaching over 4° above normal in

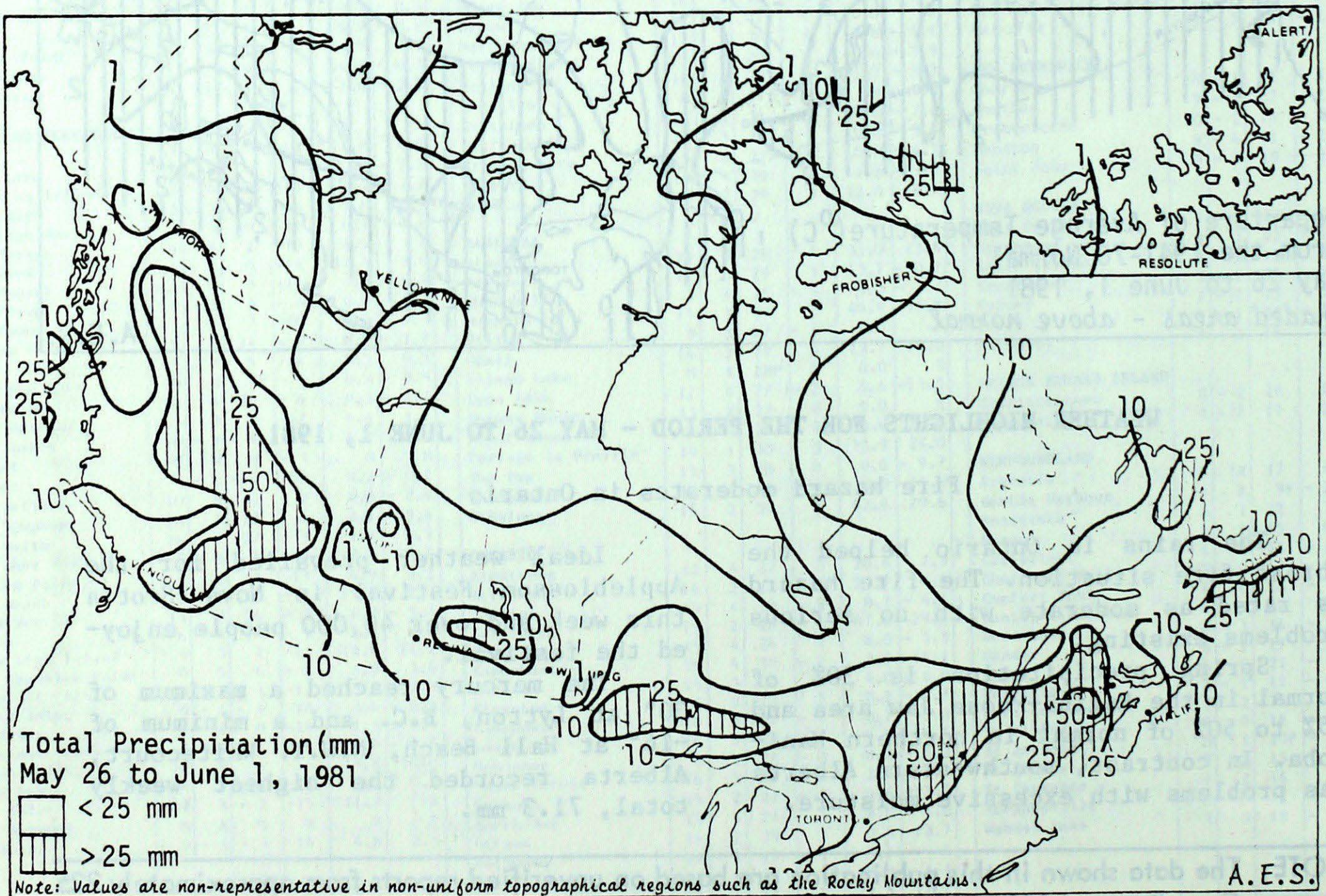
some northeastern areas. Fort Nelson set a new all time record mean temperature for May. The mercury oscillated on May 29th from a high of 30° at Lytton to a low of 0° at Dease Lake.

May was a wet month for most stations in central and southern B.C. Monthly precipitation totals ranged from 150% to 250% of normal. Penticton and Castlegar set new all time precipitation records for May with 73.3 mm and 102.8 mm respectively. The highest precipitation total of this week was 46 mm at Cape St. James.

Castlegar reported one of its worst ever thunderstorms. More than 23 mm of precipitation fell in 2 hours and extensive lightning damage was reported.

ALBERTA

The warm weather continues. Mean temperatures remained above normal. The mercury varied from 29° at High Level on the 26th to -1° at Banff one day later.



Most precipitation occurred in west-central areas. Whitecourt recorded 71.3 mm.

Spotty showers during the past week have reduced the fire hazard considerably in the northwest forest districts. The hazard still remains high to extreme in the dry northeastern districts.

Provincially, spring seeding has progressed well but has been dependent on moisture conditions. Incomplete seeding in southwestern Alberta has been further delayed due to excessive moisture conditions. Crops are progressing well through southern and central districts. Soil moisture conditions are becoming poor in the northeast region and rain is needed to ensure germination.

An early season funnel cloud was reported during a vigorous thunderstorm near Calgary on the 27th.

#### SASKATCHEWAN AND MANITOBA

Mean temperatures continued above normal in most regions. Only in central Manitoba and northeastern Saskatchewan were mean temperatures below normal. The mercury rose to 28° at Saskatoon on May 27th and fell to -3° at Churchill and Thompson on the 28th and 30th respectively.

Significant precipitation was limited to west-central Saskatchewan and the Yorkton-Dauphin area. Meadow Lake received a total of 44.7 mm of precipitation.

Seeding is completed in Saskatchewan and almost complete in Manitoba. Dry conditions prevail in the Regina-Moose Jaw area with 30% of normal spring precipitation. Northern Manitoba is at 35% to 50% of normal.

#### ONTARIO

Mean temperatures dropped to below normal values in central and extreme western Ontario this week. The mercury rose to 27° at Toronto and Moosonee on the 28th and 29th respectively. It fell

to -3° at Moosonee on the 26th and at Geraldton on the 27th.

Heavy rains fell mid-week especially in eastern Ontario. The greatest amounts were recorded in the Lanark, Kingston and Ottawa regions. The highest weekly total, 60.2 mm, was recorded at Ottawa.

As a result of the rains farm field work slowed down and fruit spraying was delayed. As of June 1st a total of 10 forest fires were burning in Ontario. The fire hazard is currently rated as moderate with no serious problems existing.

#### QUÉBEC

Mean temperatures were above normal in southern Québec and exceeded 4° above normal in the eastern townships. Below normal mean temperatures were experienced in the north. The mercury rose to 26° at Montréal and Sherbrooke on the 26th and 28th respectively. It fell to -9° at Koartak on the 26th.

Precipitation amounts in excess of 30 mm fell mainly along the St. Lawrence Valley. Blanc Sablon received 37.1 mm.

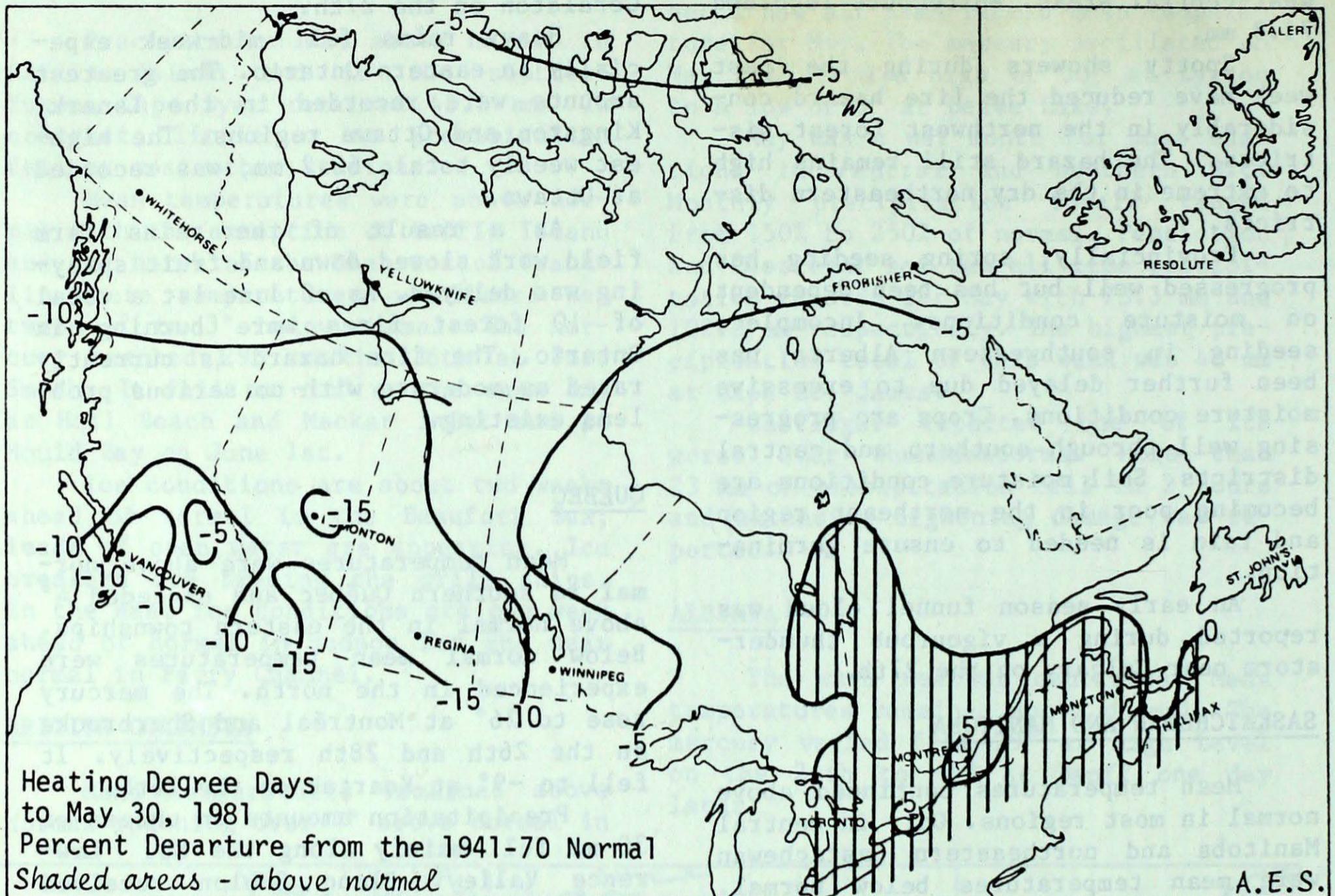
#### ATLANTIC PROVINCES

With the exception of northern Labrador, mean temperatures were above normal in all areas. Some low temperature records were set in Labrador. The mercury varied from -6° at Cartwright and Churchill on May 27th to 27° at Greenwood the next day.

Precipitation totals were above normal at most stations in New Brunswick and below normal almost everywhere else. The highest weekly total, 54.5 mm, occurred at Fredriktion.

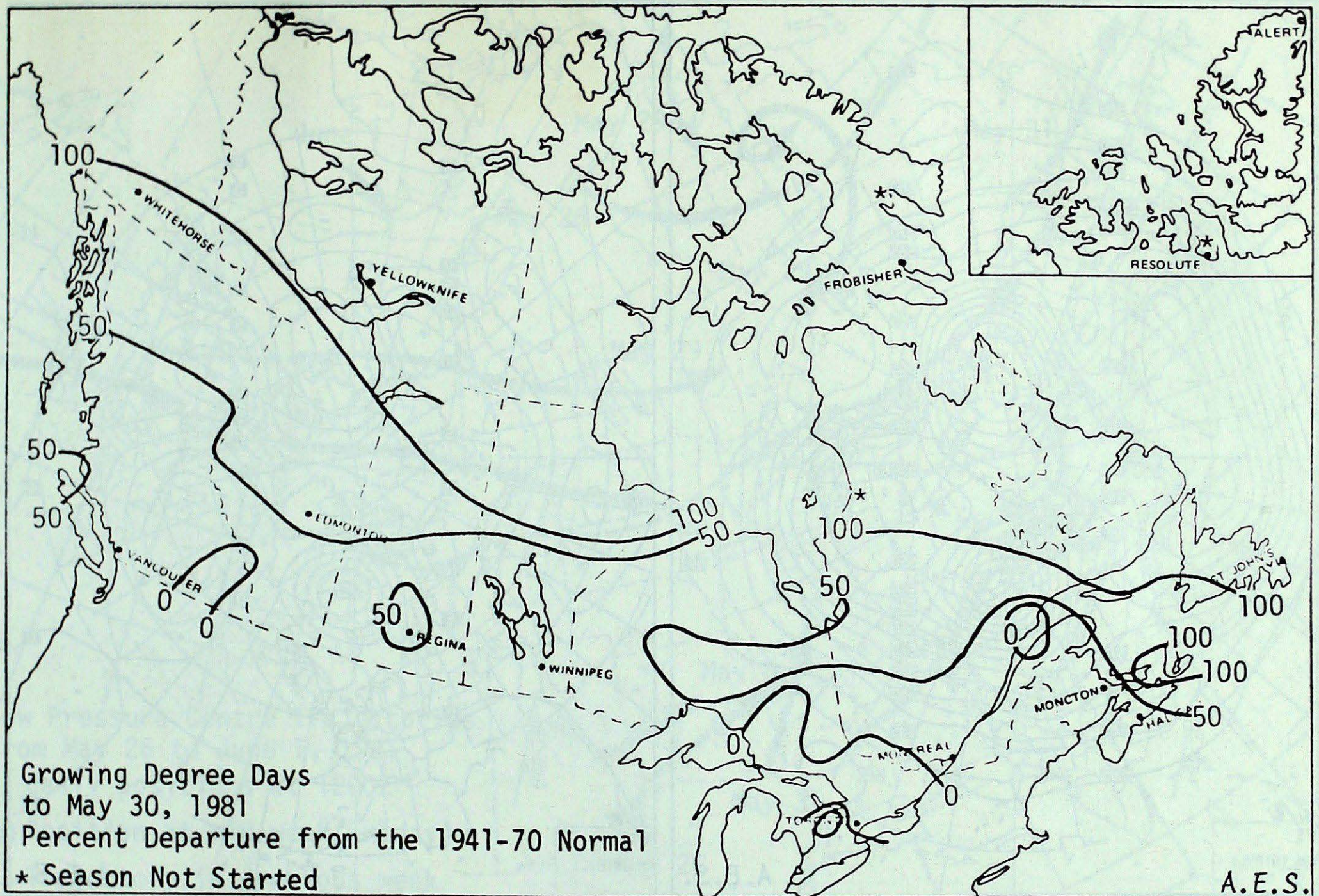
A severe thunderstorm in southern New Brunswick on the 28th dropped hail and caused considerable crop damage. Conditions seem good for the apple and transplant crops, but the next 10 days are critical with regards to the occurrence of frost.

## HEATING DEGREE-DAY SUMMARY TO MAY 30, 1981



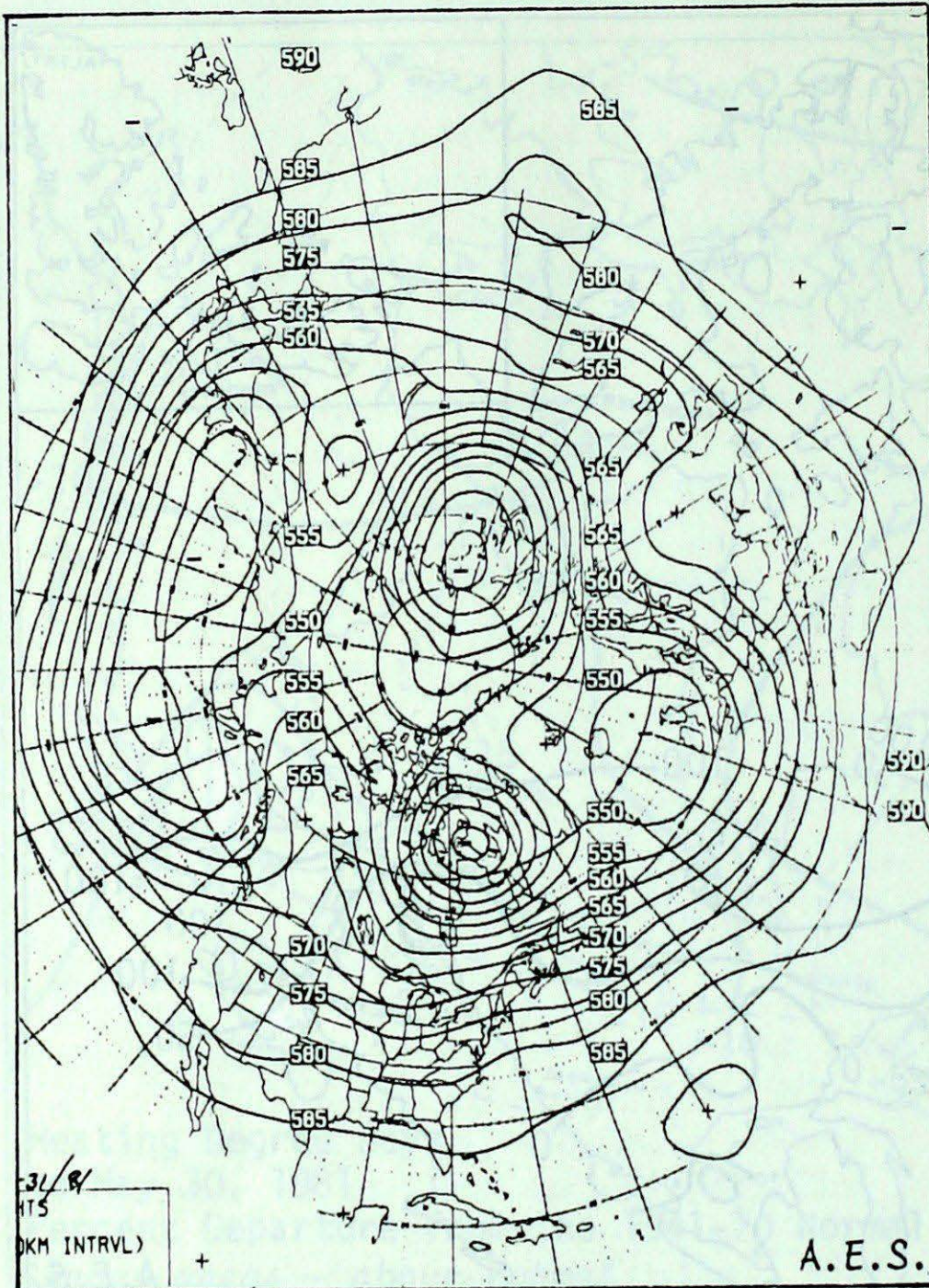
STATION	MONTHLY CUMULATIVE TOTAL	MONTHLY DIFF. FROM 1941-70 NORMAL	SEASONAL TOTAL	SEASONAL DIFF. FROM 1941-70 NORMAL	SEASONAL PERCENT OF NORMAL
Resolute	841.0	-25.0	11575.0	-402.0	97
Inuvik	433.5	-138.5	9055.0	-863.0	91
Whitehorse	274.5	-55.5	6198.0	-502.0	93
Vancouver	169.0	-1.0	2702.5	-215.5	93
Edmonton Mun	154.0	-63.0	4600.0	-875.0	84
Calgary	242.5	-20.5	4383.0	-806.0	84
Regina	173.0	-57.0	4984.5	-834.5	86
Winnipeg	218.0	-13.0	5330.5	-477.5	92
Thunder Bay	266.0	-27.0	5419.5	-187.5	97
Windsor	147.0	8.0	3654.0	95.0	103
Toronto	195.0	11.0	4193.5	162.5	104
Ottawa	157.5	-20.5	4706.0	80.0	102
Montreal	156.0	-10.0	4687.5	256.5	106
Quebec	219.5	-7.5	5230.5	231.5	105
Saint John, N.B.	237.5	-42.5	4714.0	84.0	102
Halifax	254.5	-17.5	4146.5	162.5	104
Charlottetown	219.5	-65.5	4494.0	4.0	100
St. John's, Nfld.	276.0	-101.0	4510.0	-55.0	99

## GROWING DEGREE-DAY SUMMARY TO MAY 30, 1981

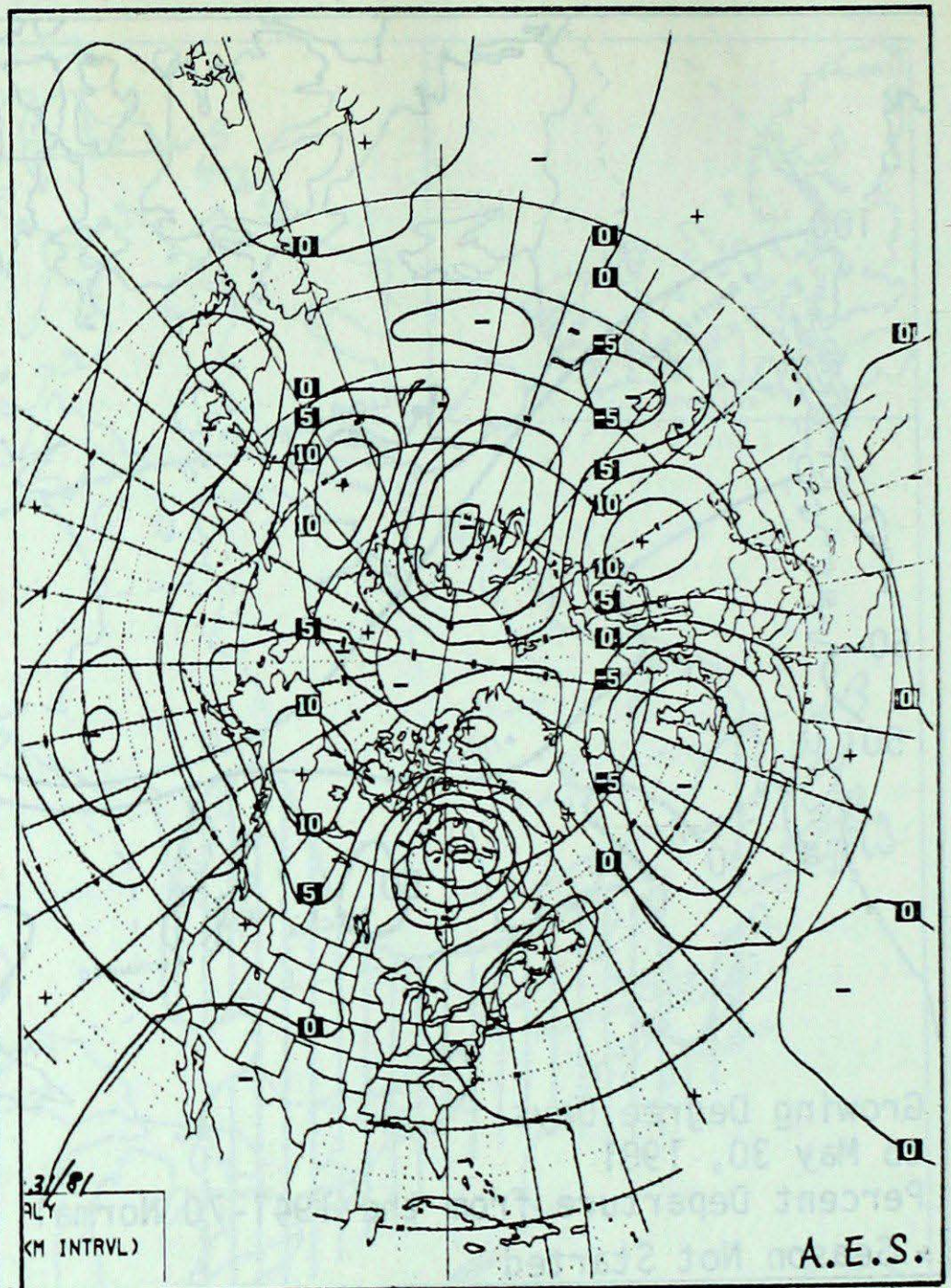


CITY	MONTHLY CUMULATIVE TOTAL	MONTHLY DIFF. FROM 1941-70 NORMAL	SEASONAL TOTAL	SEASONAL DIFF. FROM 1941-70 NORMAL	SEASONAL PERCENT OF NORMAL
Whitehorse	115.5	57.5	115.5	57.5	199
Penticton	253.5	4.5	384.5	3.5	101
Vancouver	221.0	0.0	469.5	89.5	124
Edmonton	237.5	84.5	303.5	137.5	183
Calgary	154.5	17.5	219.5	72.5	149
Regina	223.0	49.0	291.5	103.5	155
Saskatoon	229.5	55.5	280.0	90.0	147
Winnipeg	182.5	3.5	221.0	31.0	116
Thunder Bay	134.5	23.5	136.5	22.5	120
Windsor	261.5	-6.5	442.5	56.5	115
Toronto	201.0	-15.0	221.5	-60.5	79
Ottawa	237.5	14.5	264.0	0.0	100
Montreal	239.5	5.5	267.0	2.0	101
Quebec	174.5	3.5	193.5	13.5	108
Fredericton	207.0	44.0	224.0	43.0	124
Halifax	135.5	14.5	151.5	26.5	121
Charlottetown	176.5	87.5	186.5	97.5	210
St John's	117.5	92.5	129.0	104.0	516

## Atmospheric Circulation



7-day Mean 50 kPa Height Map  
(in dam) May 25 to 31, 1981



7-day Mean 50 kPa Height Anomaly  
(in 5 dam intervals) May 25 to 31, 1981

The split in the mean 50 kPa upper circulation over North America continued. Positive height anomalies were evident over western Canada and the Atlantic provinces.

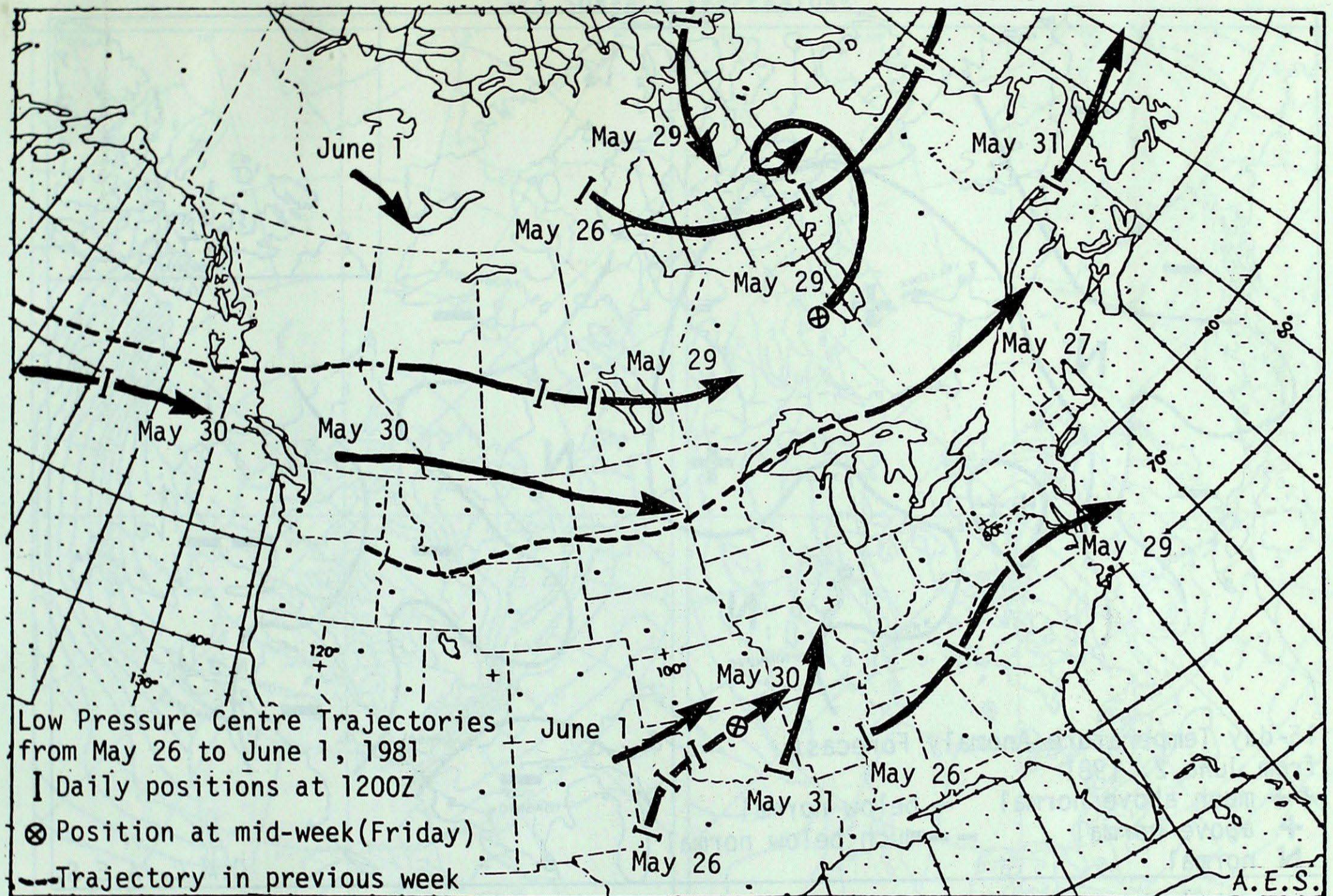
A strong anomalous Arctic vortex drifted southward, deepened and became nearly stationary over Hudson Bay. A northwesterly flow pushed modified but still cool Arctic air southward across Manitoba and Ontario dropping mean temperatures to below normal values. Warm, moist tropical air from the American Gulf states continued to move northward toward the Great Lakes. The interaction

of the contrasting air masses brought cloudy damp conditions to most southern areas of Ontario and eastern Canada.

A mean atmospheric ridge was the predominant feature over northwestern Canada resulting in a continuation of dry unseasonably warm weather. In contrast, southern areas of western Canada were under the influence of propagating frontal waves and multiple disturbances tracking eastwards from the Pacific. These active weather systems gave wet showery weather to British Columbia and Alberta and much needed moisture to the rest of the Canadian prairies and northwestern Ontario.

Andy Radomski

## LOW PRESSURE CENTRE TRAJECTORIES



## CLIMATIC PERSPECTIVES

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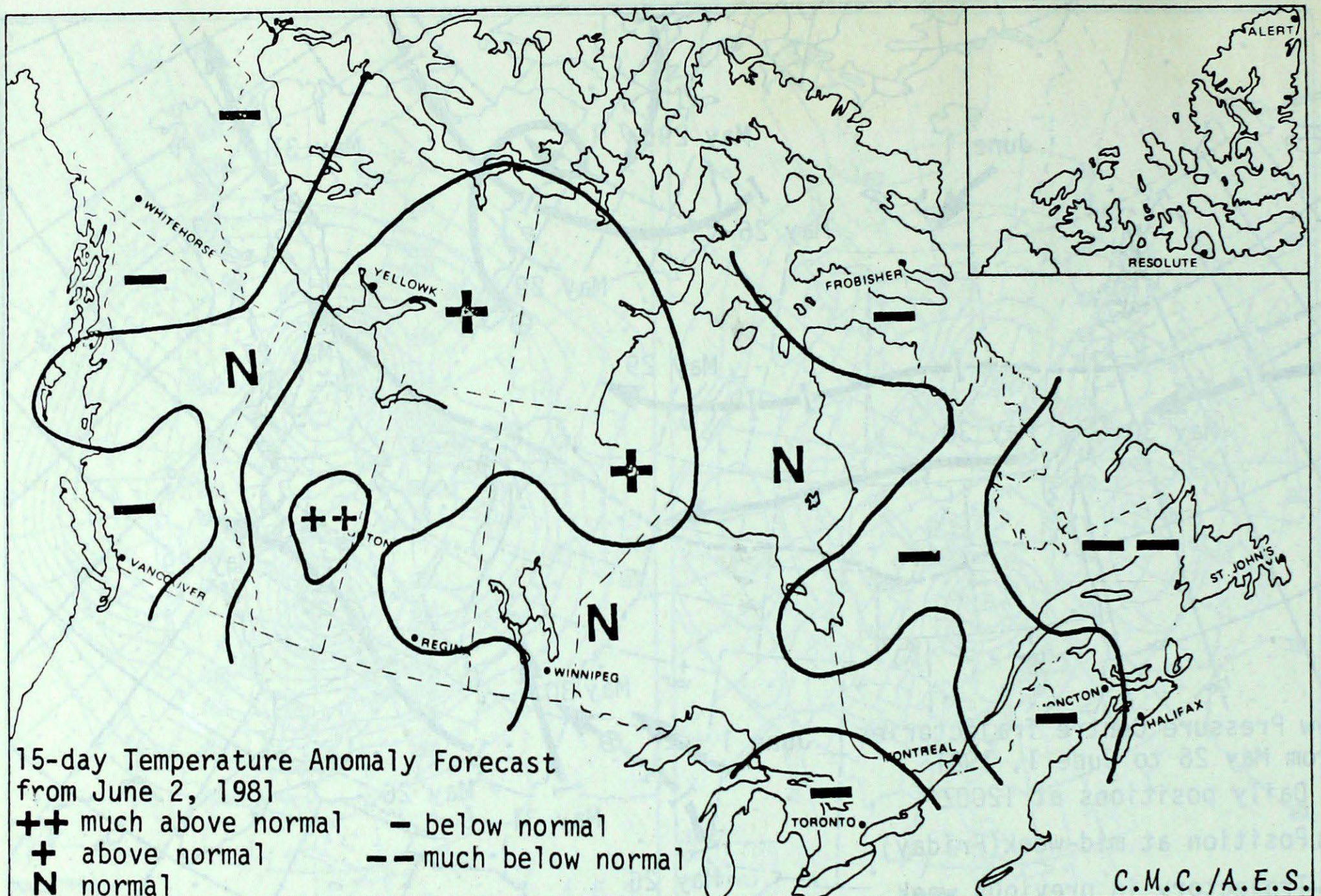
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## 15 DAY TEMPERATURE ANOMALY FORECAST

Forecast Method

Analogue technique based on point prediction at 70 Canadian stations.

Temperature Scale

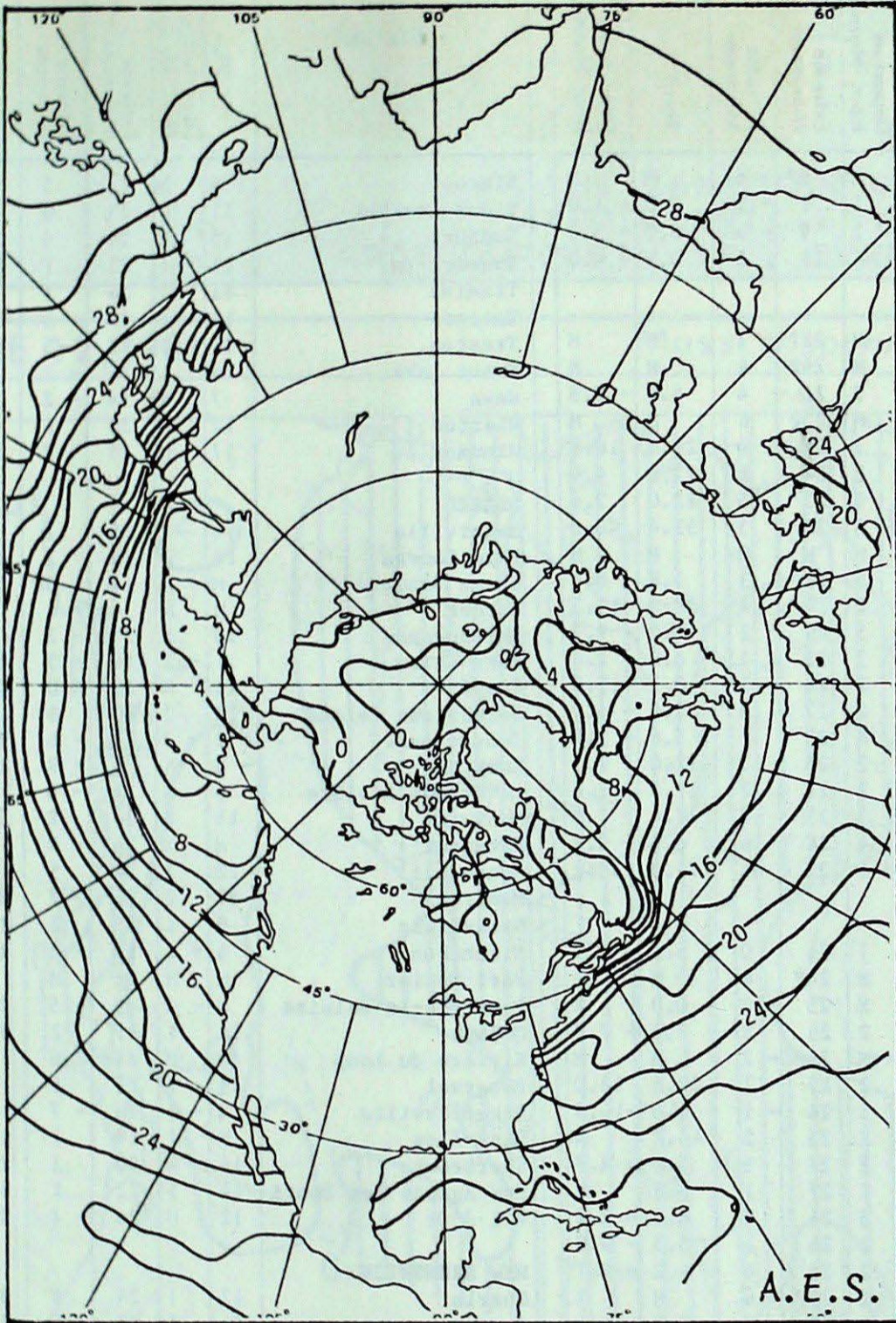
Each temperature class is designed to contain 20% of the historically observed 15 day means pertinent to specific location and time of year:

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

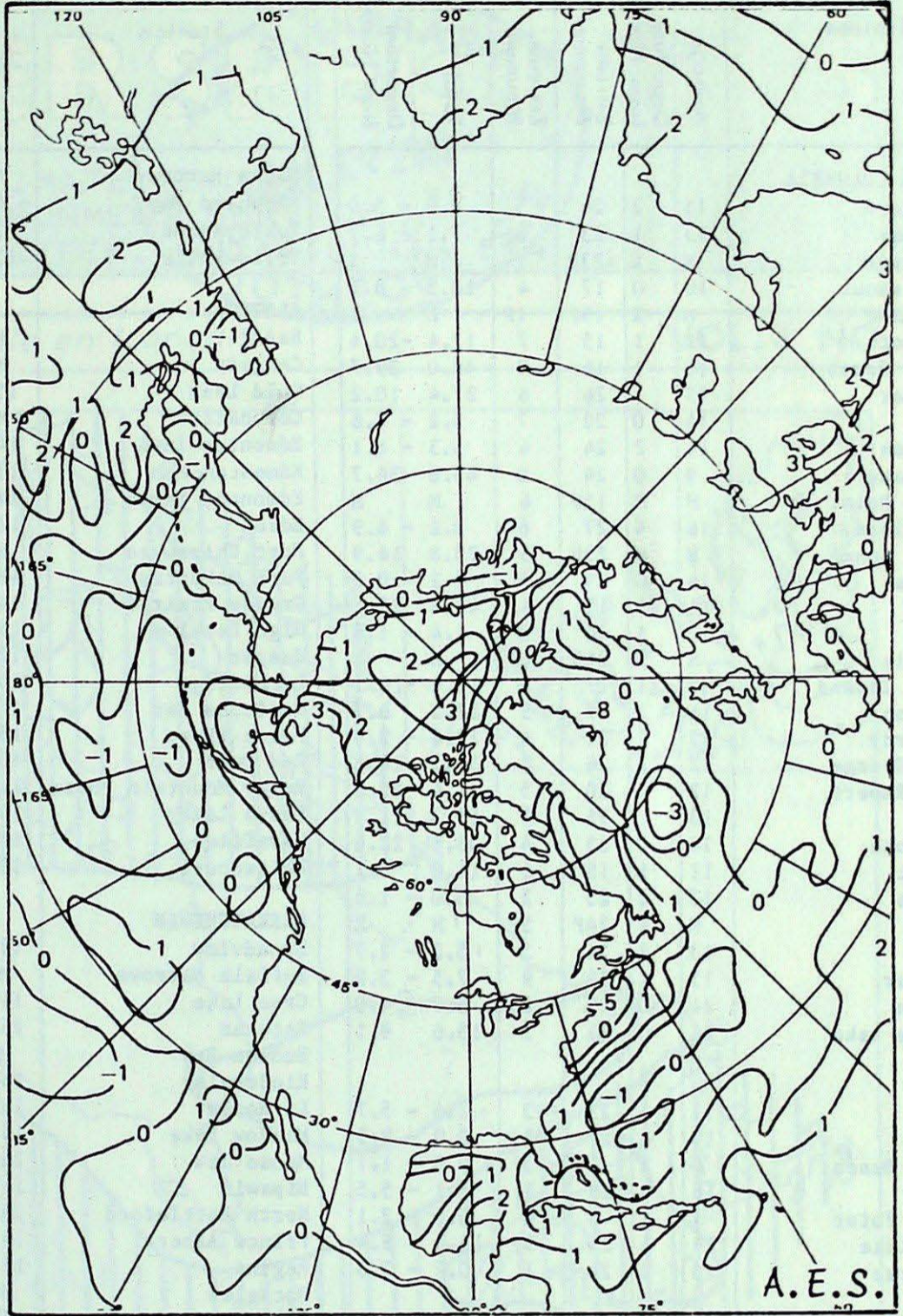
Note: Anomaly denotes departure from the 1949-73 mean.



SEA SURFACE TEMPERATURE



Monthly Mean Sea Temperature for the month of May, 1981



Sea Surface Temperature Anomalies for the month of May, 1981

TEMPERATURE AND PRECIPITATION DATA FOR THE WEEK ENDING 0600 G.M.T. JUNE 2, 1981

Station	Temperature (°C)				Precip. (mm)	
	Average	Departure from Normal	Extreme Maximum	Extreme Minimum	Total	Departure from Normal
<b>BRITISH COLUMBIA</b>						
Abbotsford	15	2	26	5	8.5	- 5.9
Alert Bay	13	1	23	6	7.1	- 6.7
Blue River	M	X	23P	2	M	X
Bull Harbour	10	0	17	4	10.3	- 3.7
Burns Lake	M	X	19P	1P	M	X
Cape Scott	11	1	15	7	12.4	-20.4
Cape St James	11	1	16	8	46.0	29.7
Castlegar	15	1	26	6	27.4	10.2
Comox	14	0	22	7	5.2	- 4.6
Cranbrook	14	2	24	4	5.3	- 6.1
Dease Lake	9	0	24	0	43.6	36.7
Estevan Point	M	M	15P	6	M	M
Fort Nelson	16	4	27	6	5.2	- 6.9
Fort St John	M	M	23P	6	25.8	16.9
Kamloops	16	0	29	5	4.2	- 0.2
Langara	11	1	15	4	41.4	23.5
Lytton	17	1	30	8	1.4	- 1.6
Mackenzie	M	X	24P	OP	M	X
McInnes Island	12	1	17	8	15.4	-14.1
Penticton	16	1	27	5	12.2	6.7
Port Hardy	12	1	21	4	12.4	- 3.9
Prince George	12	1	24	2	36.5	26.8
Prince Rupert	12	2	20	5	11.4	-25.9
Quesnel	13	1	25	3	19.3	11.1
Revelstoke	14	0	25	4	33.6	22.6
Sandspit	11	1	15	5	14.0	3.1
Smithers	13	2	23	2	5.0	- 1.6
Stewart	M	X	24P	5P	M	X
Terrace	13	1	24	5	5.2	- 2.7
Vancouver	15	1	21	9	7.5	- 3.9
Victoria	14	0	22	6	3.7	- 4.9
Williams Lake	11	0	23	2	15.6	9.1
<b>YUKON</b>						
Burwash	11	4	23	- 3	2.6	- 5.7
Dawson	15	4	27	2	0.0	- 8.5
Komakuk Beach	0	1	4	- 3	0.0	- 1.1
Mayo	16	6	28	3	1.1	- 5.5
Shingle Point	1	1	6	- 3	0.6	- 2.1
Watson Lake	14	4	25	3	16.5	8.4
Whitehorse	13	3	24	1	0.2	- 3.6
<b>NORTHWEST TERRITORIES</b>						
Alert	- 6	- 1	1	-12	0.0	- 3.6
Baker Lake	- 1	1	3	- 5	0.2	- 1.9
Broughton Island	- 6	- 2	0	-11	35.4	31.2
Byron Bay	- 1	3	5	- 7	0.0	- 0.9
Cambridge Bay	- 3	2	3	- 8	0.7	- 1.1
Cape Dorset	- 3	X	0	- 8	5.2	X
Cape Dyer	- 5	- 3	0	-15	48.1	39.5
Cape Hooper	- 5	- 1	0	- 9	12.0	7.2
Cape Parry	- 1	2	4	- 4	0.0	- 2.7
Cape Young	0	3	5	- 5	2.4	1.2
Clinton Point	1	3	10	- 3	0.0	- 2.1
Clyde	- 3	0	1	-10	30.0	27.6
Cottwoyto Lake	M	M	9P	- 7	M	M
Coppermine	1	2	5	- 4	0.0	- 1.6
Coral Harbour	- 4	- 2	0	-12	1.0	- 3.3
Dewar Lakes	- 6	- 1	- 1	-10	12.7	6.8
Ennadai	M	M	M	- 2P	M	M
Eureka	- 4	0	4	-10	0.0	- 0.6
Fort Reliance	5	0	14	- 3	5.2	2.5
Fort Simpson	15	3	26	7	1.8	- 7.7
Fort Smith	12	2	29	- 1	4.1	- 1.8
Frobisher Bay	- 2	- 3	4	- 9	7.4	3.0
Gladman Point	- 5	0	0	-11	0.0	- 1.7
Hall Beach	- 5	0	- 1	-16	1.8	- 1.6
Hay River	9	0	24	- 1	0.4	- 4.6
Inuvik	6	2	17	- 3	0.8	- 6.4
Jenny Lind Island	- 4	1	2	-10	0.0	- 1.6
Lady Franklin Point	0	3	5	- 5	2.8	1.4
Longstaff Bluff	- 4	0	1	- 9	9.8	7.1
Mackay Inlet	- 6	0	0	-16	0.8	- 0.2
Mould Bay	- 6	- 1	1	-16	1.2	- 0.2
Nicholson Peninsula	1	2	14	- 4	0.0	- 2.5
Norman Wells	13	4	22	5	7.0	1.2
Pelly Bay	- 6	0	- 1	-11	1.0	- 0.5
Pond Inlet	- 3	X	6	-12	0.0	X
Port Burwell	M	X	M	M	M	X
Resolute	- 5	1	0	-10	0.0	- 2.4

Station	Temperature (°C)				Precip. (mm)	
	Average	Departure from Normal	Extreme Maximum	Extreme Minimum	Total	Departure from Normal
Sachs Harbour	M	M	6P	- 6	M	M
Shepherd Bay	- 4	1	1	-12	0.0	- 1.0
Tuktoyaktuk	2	2	9	- 4	0.0	- 5.0
Yellowknife	12	4	21	3	0.2	- 4.0
<b>ALBERTA</b>						
Banff	M	M	22P	- 1	M	M
Calgary	M	M	24P	4	M	M
Cold Lake	15	2	26	4	8.4	- 0.8
Coronation	M	M	23P	6	M	M
Edmonton Intl	14	1	24	4	29.1	18.6
Edmonton Mun	15	2	24	8	17.6	4.9
Edmonton Namao	14	1	23	5	12.0	2.4
Edson	12	3	22	3	52.4	40.8
Fort Chipewyan	M	M	M	0	M	M
Fort McMurray	16	5	28	3	1.8	- 8.5
Grande Prairie	14	2	24	4	28.3	15.3
High Level	15	5	29	2	1.0	- 9.7
Jasper	12	2	23	1	8.8	- 2.6
Lethbridge	15	2	26	7	0.7	-13.8
Medicine Hat	16	2	27	8	4.8	- 5.7
Peace River	15	4	23	2	5.6	- 3.9
Red Deer	13	2	25	3	22.0	7.1
Rocky Mountain House	12	2	21	2	37.8	22.6
Slave Lake	14	3	23	7	7.4	- 7.0
Vermilion	16	4	24	6	0.6	- 8.6
Whitecourt	13	2	22	4	71.3	58.2
<b>SASKATCHEWAN</b>						
Broadview	13	1	24	0	6.1	- 1.9
Buffalo Narrows	M	M	24P	4	M	M
Cree Lake	11	X	25	- 2	0.0	X
Estevan	15	2	26	2	3.0	- 7.8
Hudson Bay	M	M	26P	- 2	M	M
Kindersley	16	2	25	7	23.6	18.0
La Ronge	13	1	26	- 1	1.0	-14.9
Meadow Lake	13	X	25	2	44.7	X
Moose Jaw	16	2	27	6	5.6	- 4.7
Nipawin	14	X	27	1	3.8	X
North Battleford	15	3	26	5	8.8	- 2.2
Prince Albert	14	2	26	- 1	5.3	- 9.8
Regina	15	2	25	6	4.2	- 9.1
Rockglen	M	X	25P	6	M	X
Saskatoon	17	4	28	8	7.8	- 4.4
Swift Current	M	M	24P	5	M	M
Uranium City	11	1	27	1	4.2	1.5
Wynyard	15	3	25	5	9.6	- 6.2
Yorkton	14	1	25	2	29.6	12.2
<b>MANITOBA</b>						
Bissett	11	- 3	23	- 1	7.9	-11.6
Brandon	14	1	27	- 1	8.6	- 6.2
Churchill	2	1	22	- 3	0.0	- 8.0
Dauphin	13	1	26	2	31.5	13.9
Gillam	6	X	23	- 1	2.2	X
Gimli	12	0	22	0	8.6	- 5.3
Island Lake	M	X	26P	- 1	M	X
Lynn Lake	8	- 2	24	- 3	0.0	-18.6
Norway House	10	X	23	- 3	3.8	X
Pilot Mound	13	1	25	1	3.2	-13.6
Portage la Prairie	14	1	23	1	14.3	- 1.5
The Pas	11	0	26	- 2	5.2	- 6.2
Thompson	8	- 2	25	- 3	0.2	-12.1
Winnipeg	13	0	23	0	5.0	- 9.9
<b>ONTARIO</b>						
Armstrong	M	M	23P	- 2	M	M
Atikokan	11	- 1	22	2	34.7	9.5
Earlton	M	M	25P	- 1	M	M
Geraldton	9	- 3	26	- 3	4.2	-16.1
Gore Bay	12	0	20	5	6.6	- 6.5
Kapuskasing	11	1	27	0	6.2	-14.7
Kenora	13	1	21	2	0.9	-16.3
Kingston	M	M	24P	8	M	M
Lansdowne	9	1	25	- 1	20.7	6.3
London	15	1	25	2	10.4	- 5.3
Moosonee	8	0	27	- 3	0.2	-19.8
Mount Forest	M	M	23P	1	M	M
Muskoka	M	M	25P	1	M	M
North Bay	13	1	24	1	16.4	- 4.9
Ottawa	17	2	25	7	60.2	44.7
Petawawa	15	X	23	1	29.4	X
Pickle Lake	10	0	23	- 2	10.8	-10.5
Red Lake	10	- 2	23	- 2	9.0	- 3.9

Station	Temperature (°C)				Precip. (mm)	
	Average	Departure from Normal	Extreme Maximum	Extreme Minimum	Total	Departure from Normal
Simcoe	M	M	25P	5	M	M
Sloux Lookout	11	0	23	0	10.4	-12.9
Sudbury	13	0	24	4	7.7	-11.9
Thunder Bay	11	1	23	1	28.9	10.0
Timmins	11	- 1	26	- 1	13.4	- 2.2
Toronto	15	1	27	3	18.6	2.4
Trenton	16	1	23	5	35.2	19.4
Trout Lake	8	1	24	- 1	8.8	- 2.2
Wawa	7	X	18	- 2	26.9	X
Wlarton	12	0	23	1	1.3	-11.2
Windsor	17	0	25	7	16.0	- 3.2
<b>QUÉBEC</b>						
Bagotville	14	2	25	1	7.6	-11.8
Baie Comeau	10	0	20	2	13.1	- 9.8
Blanc Sablon	M	M	11	3P	37.1	22.2
Border	M	M	4P	- 6	M	M
Chibougamau	10	X	25	- 3	3.0	X
Fort Chimo	1	- 3	14	- 5	11.2	4.7
Gaspé	11	X	22	0	13.1	X
Grindstone Island	10	2	20	6	8.8	- 9.6
Inouéjouac	- 2	- 3	4	- 6	18.2	13.0
Koartak	- 3	X	1	- 9	11.1	X
La Grande Rivière	6	X	25	- 6	6.3	X
Maniwaki	15	2	24	2	26.4	9.6
Matagami	M	X	26P	- 4	M	X
Mont-Joli	12	2	24	5	2.8	-17.4
Montréal	17	2	26	7	31.2	15.9
Natashquan	9	1	15	2	15.4	- 7.6
Nitchecon	4	- 1	19	- 5	18.4	- 0.5
Port Menier	M	M	M	M	M	M
Poste-de-la-Baleine	0	- 4	9	- 5	22.0	12.2
Québec	14	1	21	2	31.1	9.7
Rivière du Loup	M	M	21P	6	M	M
Rob						