



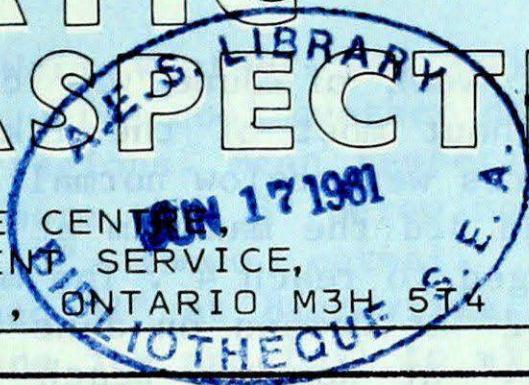
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Atmospheric Environment / Environnement atmosphérique

A WEEKLY REVIEW OF CANADIAN CLIMATE

CLIMATIC PERSPECTIVES

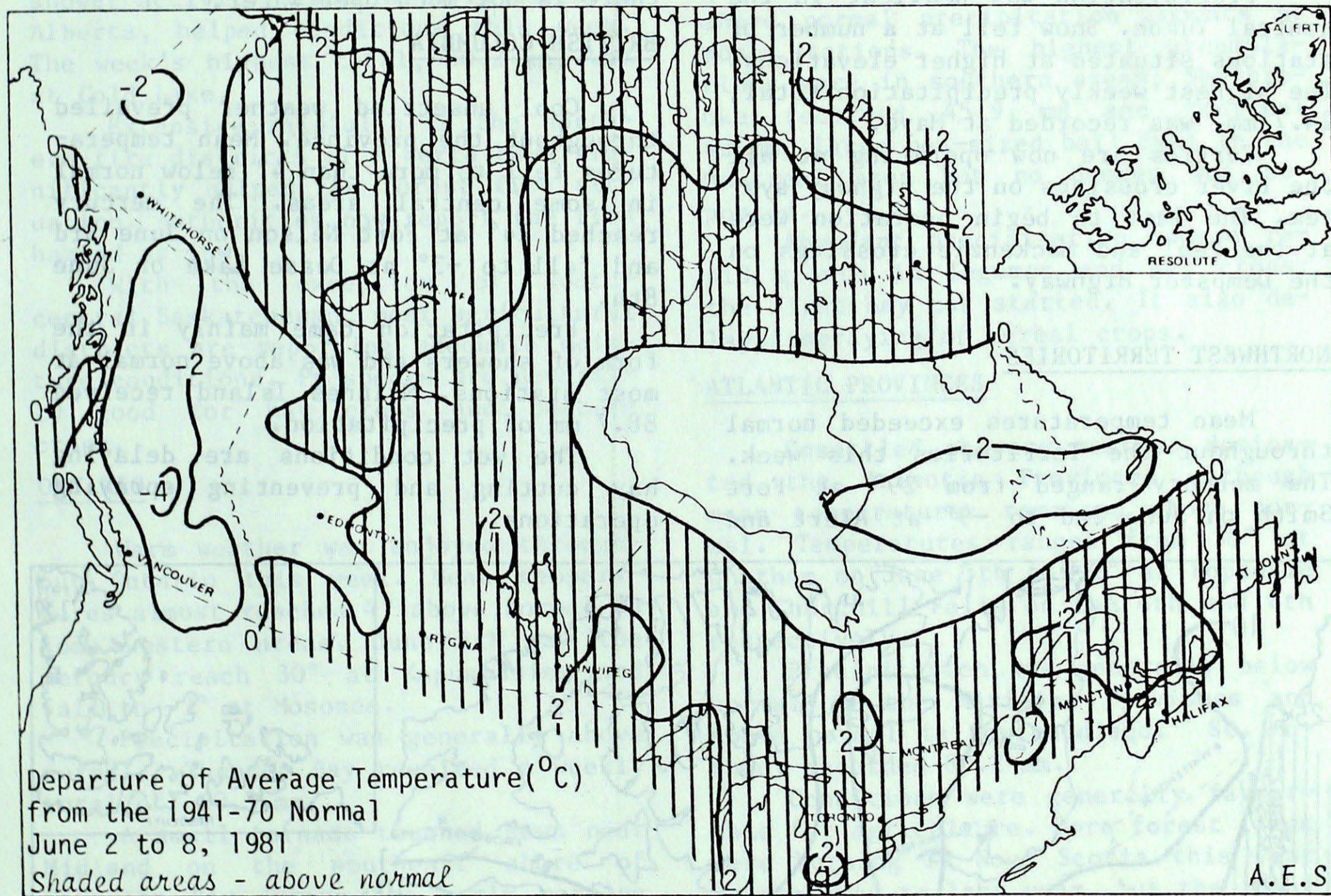
THE CANADIAN CLIMATE CENTRE
ATMOSPHERIC ENVIRONMENT SERVICE,
4905 DUFFERIN ST., DOWNSVIEW, ONTARIO M3H 5T4



JUNE 12, 1981

(Aussi disponible en français)

VOL.3 NO.23



Departure of Average Temperature ($^{\circ}\text{C}$)
from the 1941-70 Normal
June 2 to 8, 1981
Shaded areas - above normal

WEATHER HIGHLIGHTS FOR THE PERIOD - JUNE 2 TO JUNE 8, 1981

Showers reduce the forest fire hazard in Alberta

Extensive rainfalls in the northern districts of Alberta this week have significantly helped the forest fire situation. Authorities now report the forest fire hazard as low.

With the exception of southcentral Saskatchewan, most agricultural districts are reporting adequate moisture conditions. Prospects are generally good for hay and pasture crops.

A small tornado touched down near Midland, Ontario during the early morning of June 4th. No significant damage was done.

Temperatures varied from a maximum of 31° at Bagotville and Roberval, Québec to a minimum of -9° at Alert, Northwest Territories. The highest weekly precipitation total, 88.7 mm, was received at McInnes Island.

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

YUKON

The first week of June was cool and wet throughout most of the Yukon. Mean temperatures were below normal and on June 2nd and 3rd the maximum at Old Crow only managed to reach 4°. The mercury reached 22° at Dawson on June 7th and fell to -4° at Komakuk Beach and Shingle Point on June 3rd.

Precipitation was heaviest in the central Yukon. Snow fell at a number of stations situated at higher elevations. The highest weekly precipitation total, 24.7 mm, was recorded at Mayo.

Ferries are now operating at all the river crossings on the highway system. The last to begin operation were at the Peel and Mackenzie crossings on the Dempster Highway.

NORTHWEST TERRITORIES

Mean temperatures exceeded normal throughout the Territories this week. The mercury ranged from 29° at Fort Smith on June 2nd to -9° at Alert and

Hall Beach on June 4th. Most of the southern and central Mackenzie district enjoyed a frost-free week.

Significant precipitation occurred mainly in the Great Slave Lake area. Fort Reliance recorded 44.4 mm.

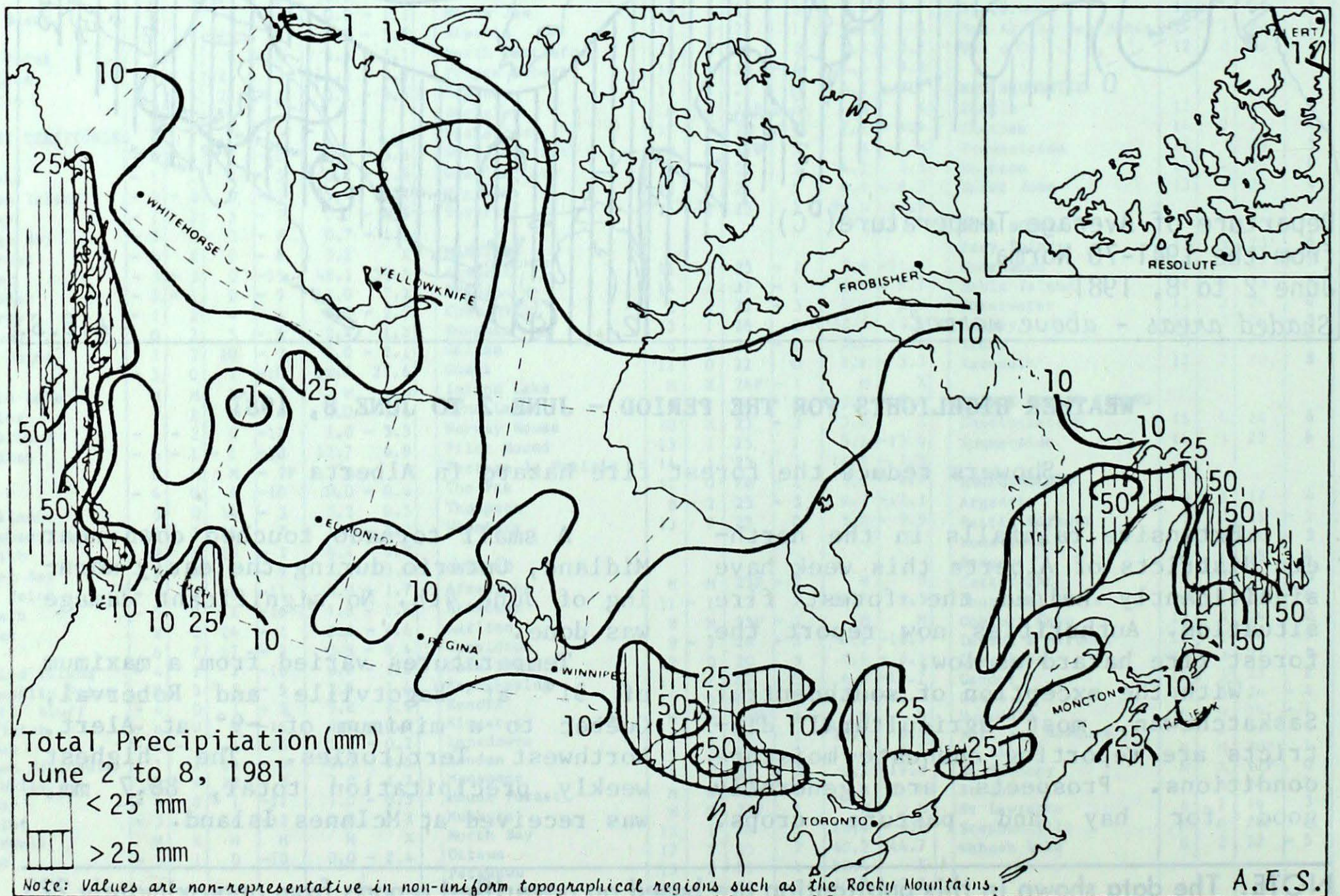
There is a fair amount of open water in the northern and western quadrants of Hudson Bay. Conditions remain favourable in the Beaufort Sea but there is not much open water.

BRITISH COLUMBIA

Cool unsettled weather prevailed throughout the province. Mean temperatures fell to more than 4° below normal in some central areas. The mercury reached 24° at Fort Nelson on June 3rd and fell to -3° at Dease Lake on June 8th.

Precipitation came mainly in the form of showers and was above normal at most stations. McInnes Island received 88.7 mm of precipitation.

The wet conditions are delaying hay cutting and preventing spraying operations.



PRAIRIE PROVINCES

Mean weekly temperatures were above normal with the exception of central Alberta. The mercury varied from a maximum of 30° at Thompson on the 3rd to a minimum of -3° at Churchill and Banff on the 6th and 7th respectively.

Dry conditions prevail across the northern prairies although extensive shower activity, especially in northern Alberta, helped conditions this week. The week's highest total, 30.2 mm, was at Cold Lake.

Extensive rainfalls in the northern fire districts of Alberta have significantly helped the forest fire situation. Authorities now report the fire hazard as low.

With the exception of south-central Saskatchewan, most agricultural districts are reporting adequate moisture conditions. Prospects are generally good for hay crops and pasture crops.

ONTARIO

Warm weather was enjoyed throughout Ontario this week. Mean temperatures almost reached 4° above normal in some western areas. June 4th saw the mercury reach 30° at Kapuskasing and fall to -3° at Mosonee.

Precipitation was generally above normal. Thunder Bay received a weekly total of 60.3 mm.

A small tornado touched down near Midland on the southeast shore of Georgian Bay during the early morning hours of June 4th. No significant damage was done.

The damp weather in Northern Ontario has reduced the frost fire hazard to low.

QUÉBEC

Warm weather was enjoyed in the south while cool weather dominated central regions. Mean temperatures varied from more than 3° below normal to more than 3° above normal. The mercury reached 31° at Bagotville and Roberval on June 5th and fell to -5° at Koartak on June 4th.

Showers and thundershowers gave above normal precipitation amounts at most stations. The highest accumulations were in southern areas; Sherbrooke recorded 45.9 mm and Montreal 43 mm. Large pea-sized hail fell in the Montreal area but no damage was reported.

Abundant precipitation caused rapid growth in legumes and hay crops; the first hay cut started. It also delayed spraying of cereal crops.

ATLANTIC PROVINCES

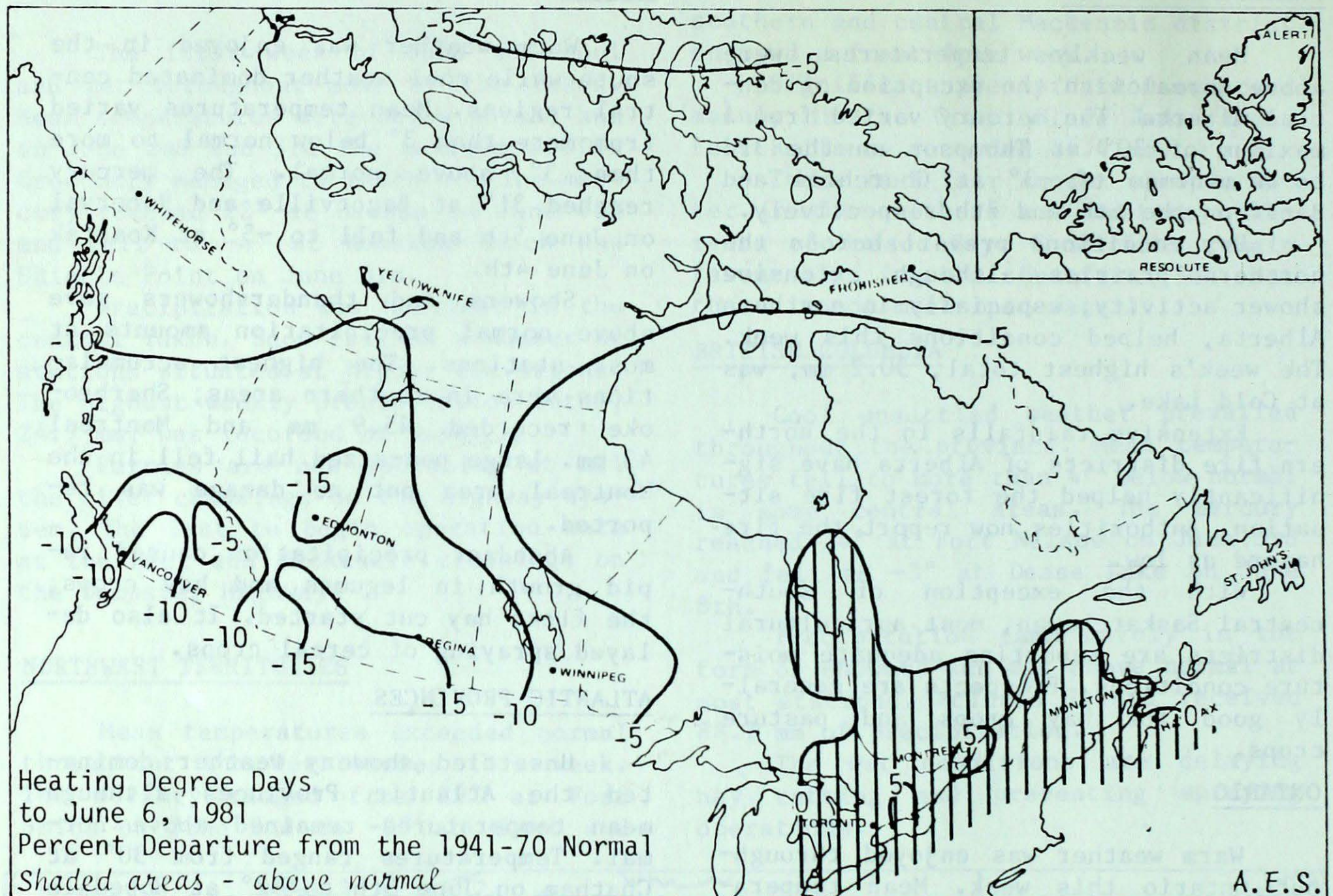
Unsettled showery weather dominated the Atlantic Provinces although mean temperatures remained above normal. Temperatures ranged from 30° at Chatham on June 5th to -2° at Hopedale and Churchill Falls on the 4th and 6th respectively.

Precipitation was generally below normal in the Maritime Provinces and above normal in Newfoundland. St. Anthony recorded 80.2 mm.

Conditions were generally favourable for agriculture. More forest fires were burning in Nova Scotia this year as compared to last year, but the total acreage was small.

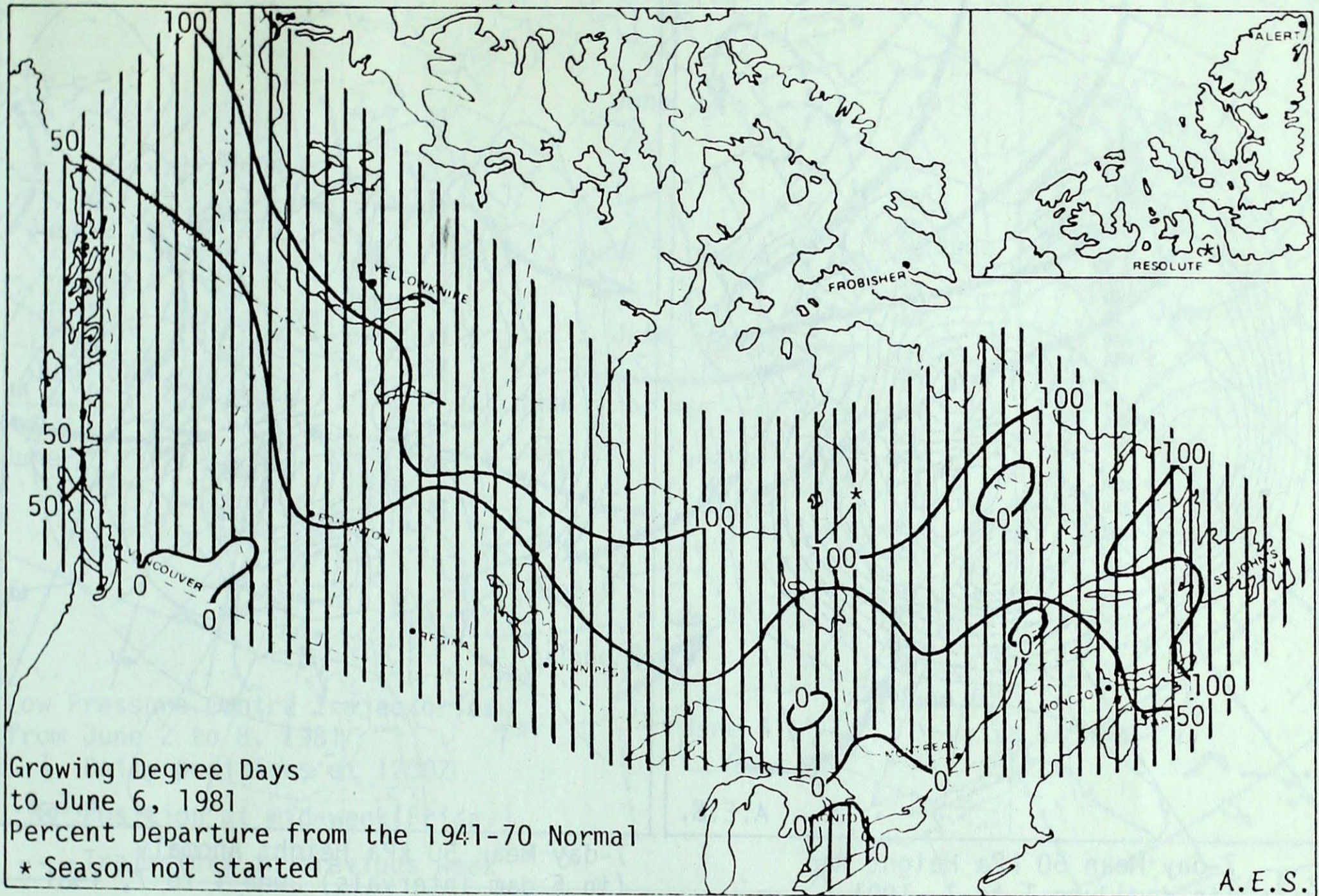
There was a marked improvement in ice conditions along the Labrador coast which are one to two weeks ahead of normal.

HEATING DEGREE-DAY SUMMARY TO JUNE 6, 1981



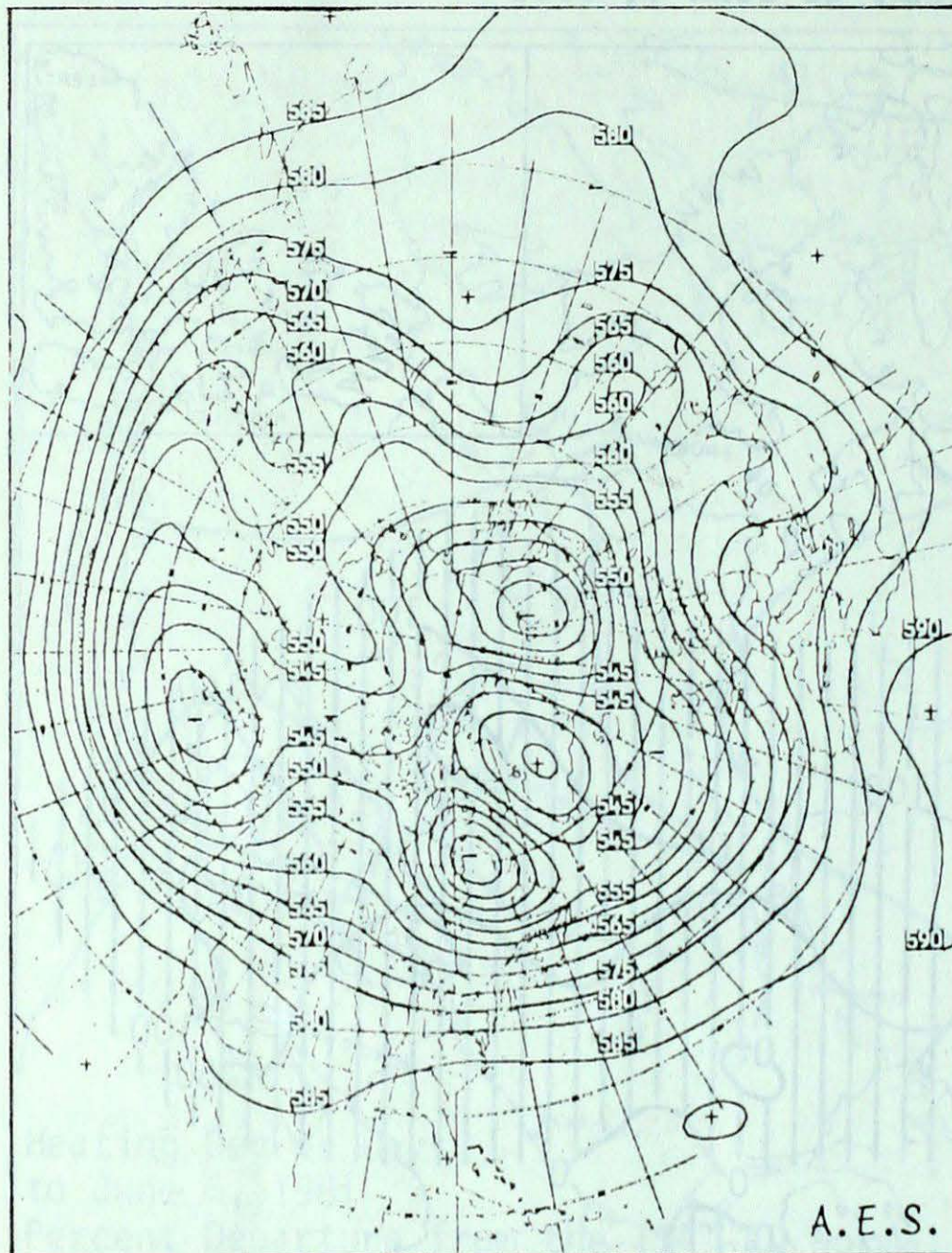
STATION	MONTHLY CUMULATIVE TOTAL	MONTHLY DIFF. FROM 1941-70 NORMAL	SEASONAL TOTAL	SEASONAL DIFF. FROM 1941-70 NORMAL	SEASONAL PERCENT OF NORMAL
Resolute	115.0	-13.0	11711.0	-417.0	97
Inuvik	83.5	16.5	9154.0	-843.0	92
Whitehorse	45.0	0.0	6249.5	-503.5	93
Vancouver	25.5	1.5	2731.5	-214.5	93
Edmonton Mun	17.0	-13.0	4621.5	-888.5	84
Calgary	23.0	-13.0	4412.5	-818.5	84
Regina	10.0	-14.0	4995.0	-852.0	85
Winnipeg	9.5	-10.5	5344.0	-489.0	92
Thunder Bay	24.0	-18.0	5450.5	-206.5	96
Windsor	4.0	-8.0	3663.5	90.5	103
Toronto	11.5	-0.5	4211.5	165.5	104
Ottawa	6.0	-9.0	4716.0	72.0	102
Montreal	5.0	-7.0	4696.5	251.5	106
Quebec	12.5	-17.5	5249.5	215.5	104
Saint John, N.B.	31.0	-5.0	4753.0	81.0	102
Halifax	29.0	-5.0	4182.0	158.0	104
Charlottetown	18.5	-17.5	4518.0	-15.0	100
St. John's, Nfld.	45.0	-15.0	4556.5	-78.5	98

GROWING DEGREE-DAY SUMMARY TO JUNE 6, 1981

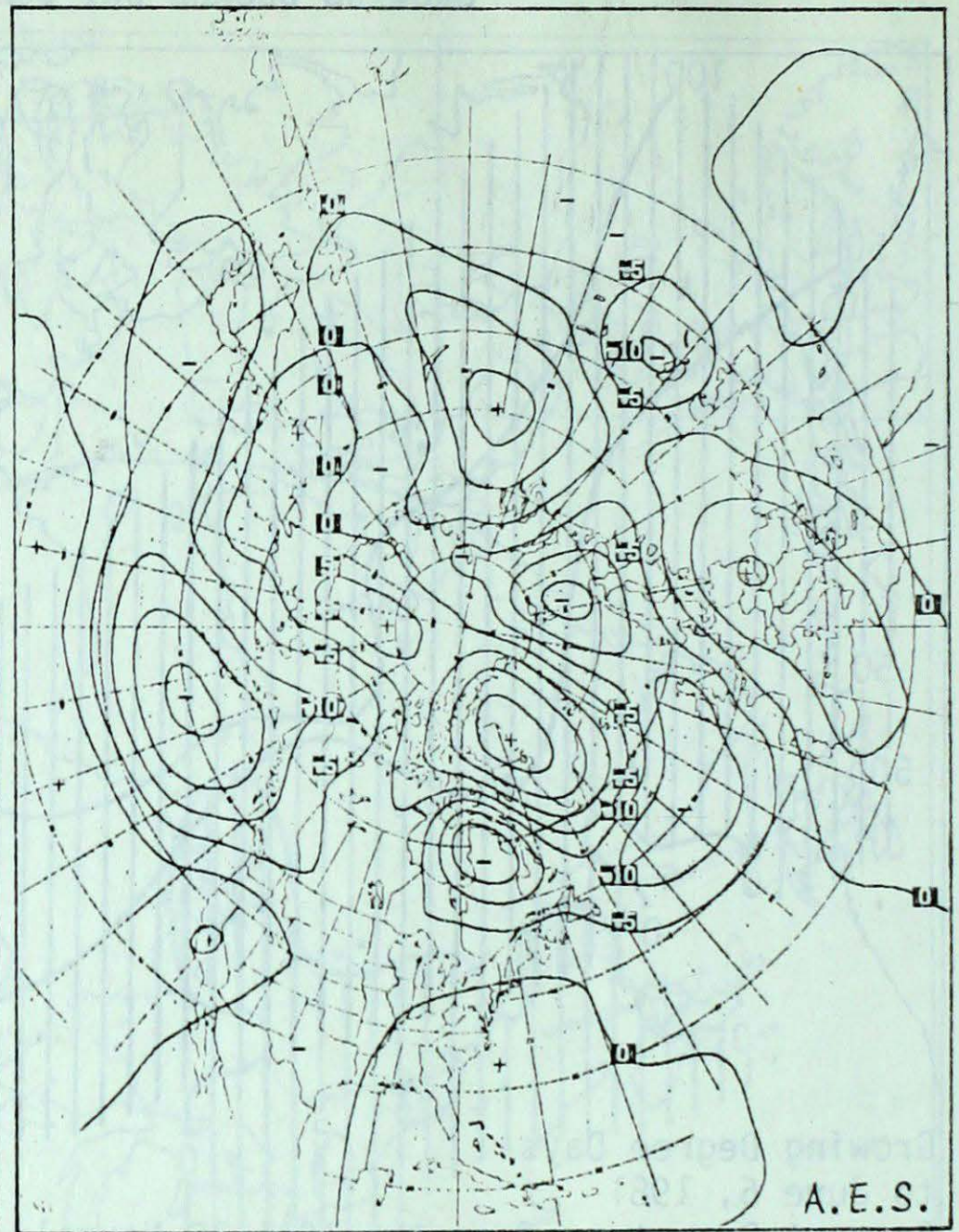


CITY	MONTHLY CUMULATIVE TOTAL	MONTHLY DIFF. FROM 1941-70 NORMAL	SEASONAL TOTAL	SEASONAL DIFF. FROM 1941-70 NORMAL	SEASONAL PERCENT OF NORMAL
Whitehorse	33.0	-7.0	155.0	52.0	150
Penticton	61.0	-9.0	454.0	-8.0	98
Vancouver	52.5	-1.5	531.5	88.5	120
Edmonton	61.5	9.5	373.5	147.5	165
Calgary	55.0	8.0	281.0	80.0	140
Regina	68.0	14.0	372.0	121.0	148
Saskatoon	71.0	20.0	362.0	113.0	145
Winnipeg	68.5	11.5	298.5	43.5	117
Thunder Bay	54.5	14.5	197.0	37.0	123
Windsor	87.0	12.0	537.0	64.0	114
Toronto	69.0	3.0	297.0	-61.0	83
Ottawa	76.0	1.0	349.0	0.0	100
Montreal	78.0	7.0	354.0	7.0	102
Quebec	68.0	16.0	268.0	28.0	112
Fredericton	67.5	15.5	298.5	57.5	124
Halifax	49.0	3.0	207.0	30.0	117
Charlottetown	59.5	13.5	253.5	111.5	179
St John's	33.0	15.0	173.5	128.5	386

Atmospheric Circulation



7-day Mean 50 kPa Height Map
(in dam) June 1 to 7, 1981



7-day Mean 50 kPa Height Anomaly
(in 5 dam intervals) June 1 to 7, 1981

The 50 KPa circulation went through a period of change this week.

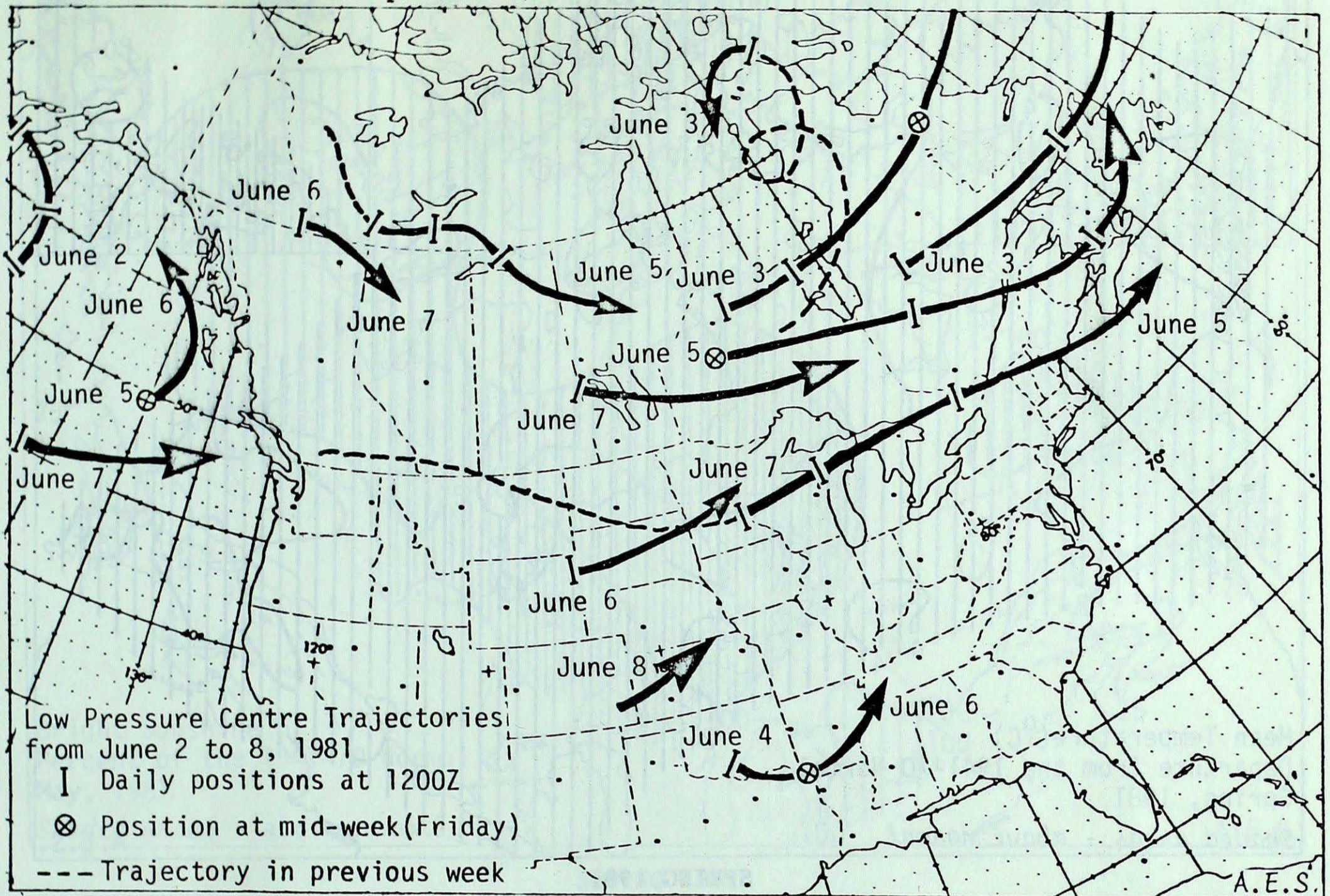
The ridge which presided over western Canada for many weeks broke down as much colder air rounding the base as the Aleutian low moved inland. Height anomalies over all of western Canada became negative, a sharp reversal from previous weeks. Mean temperatures in British Columbia and the Yukon and much of Alberta were below normal. Unsettled showery weather conditions were common.

The upper closed low previously in the vicinity of Hudson Strait retrogressed slowly southwestward positioning itself over Hudson Bay. By the end of the period it had become a significant controlling factor in the surface weather pattern.

A strong west-east upper steering current was the predominant feature over southern Canada and the northern United States. Numerous triggering pulses in the upper atmosphere supported the development of rapidly moving weather systems around the upper Hudson Bay low. These disturbances and their associated frontal zones tracked eastwards across the upper Great Lakes Basin and into eastern Canada. Three different contrasting airmasses vied for supremacy. Warm humid tropical air penetrated northward for short periods of time only to be replaced by cooler and drier Pacific and Arctic airmasses. As a result temperature and humidity varied widely.

Andy Radomski

LOW PRESSURE CENTRE TRAJECTORIES



CLIMATIC PERSPECTIVES

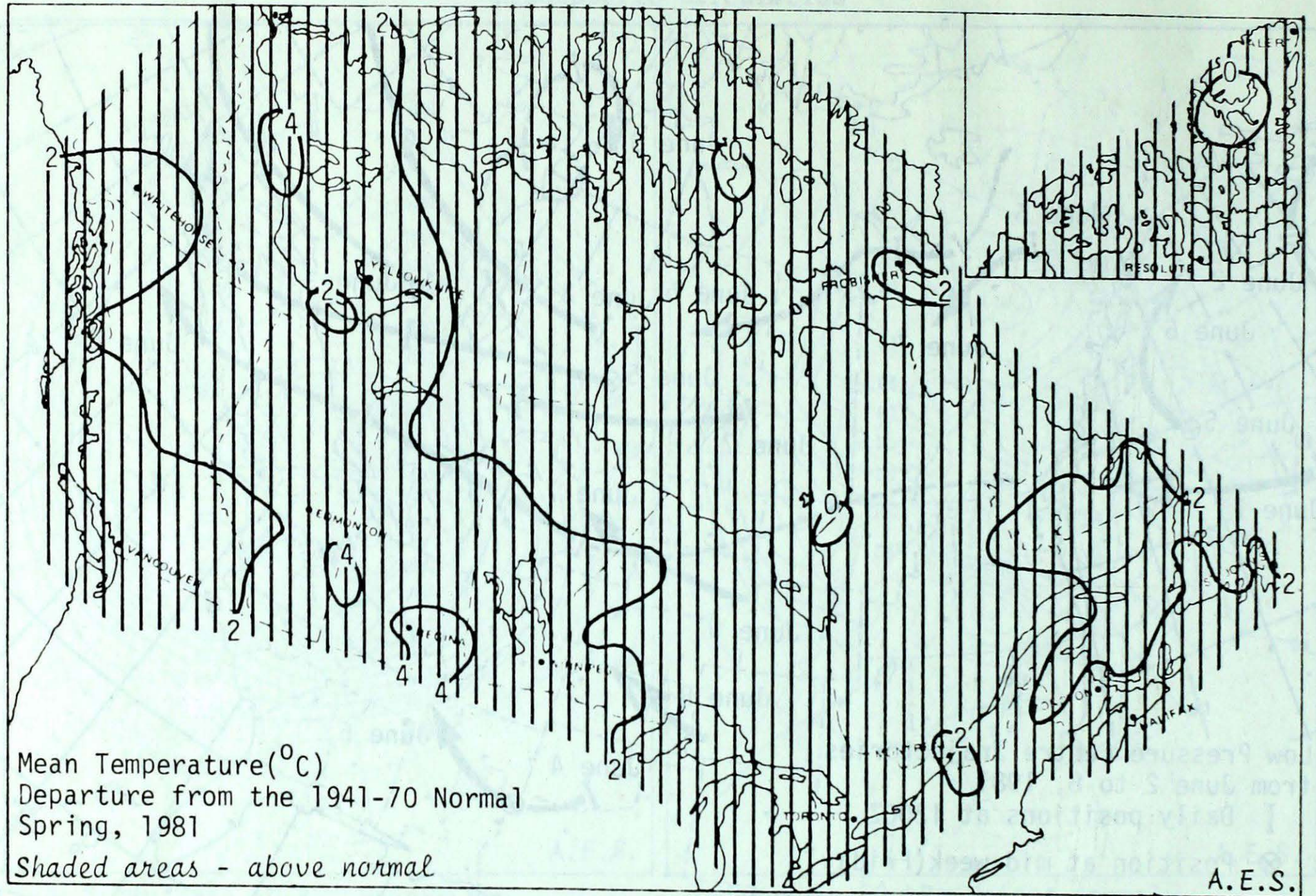
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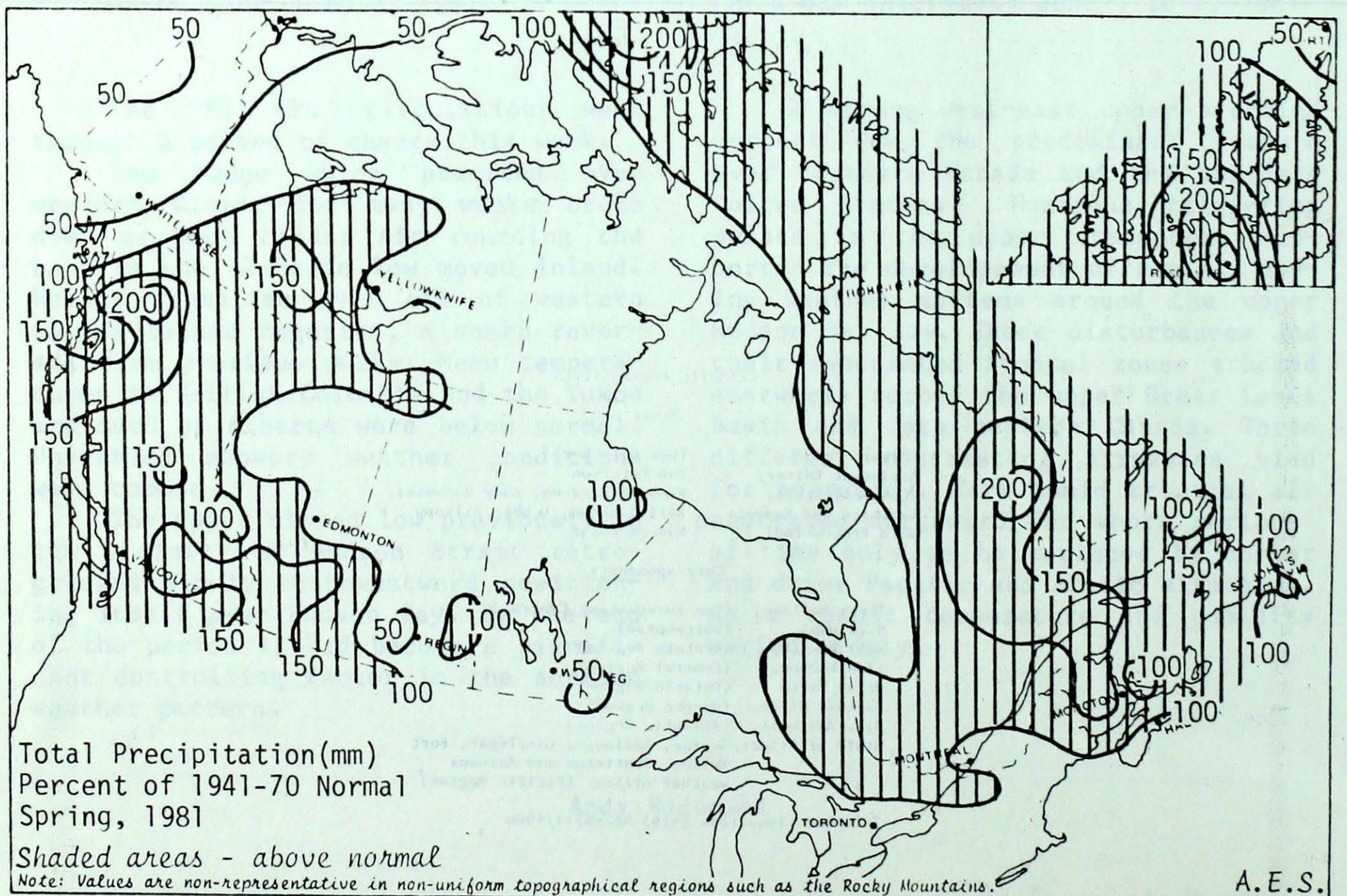
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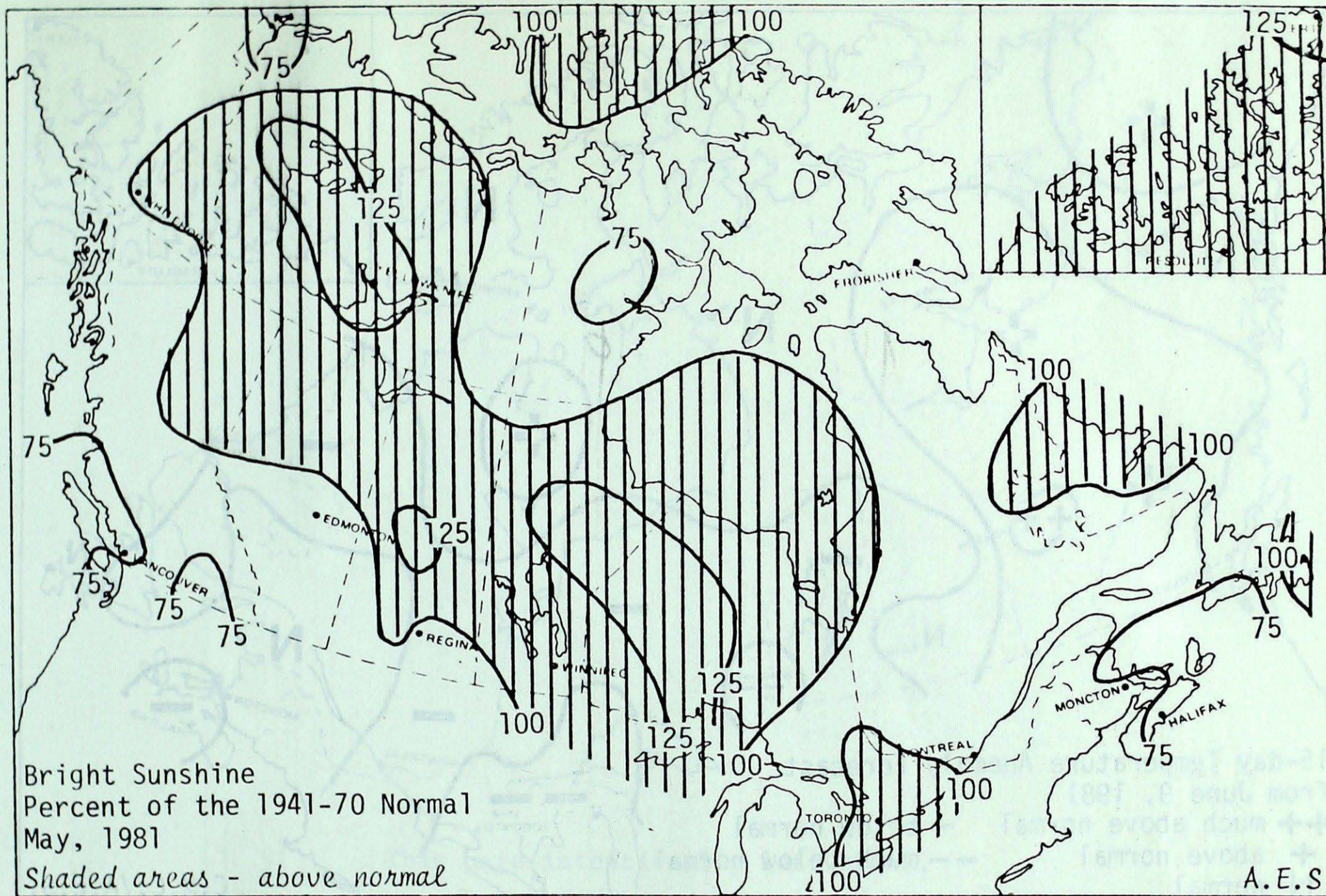
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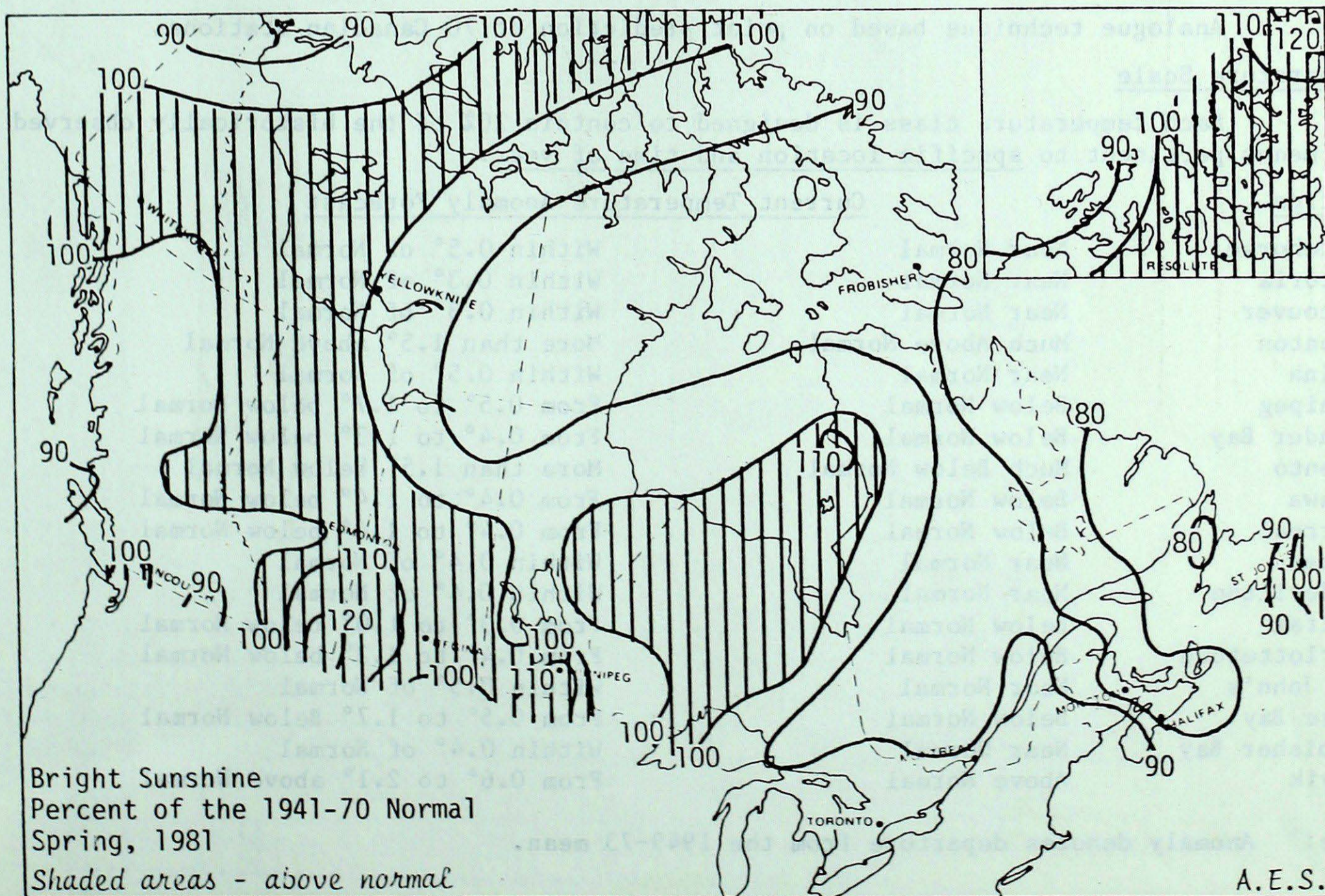


SPRING 1981

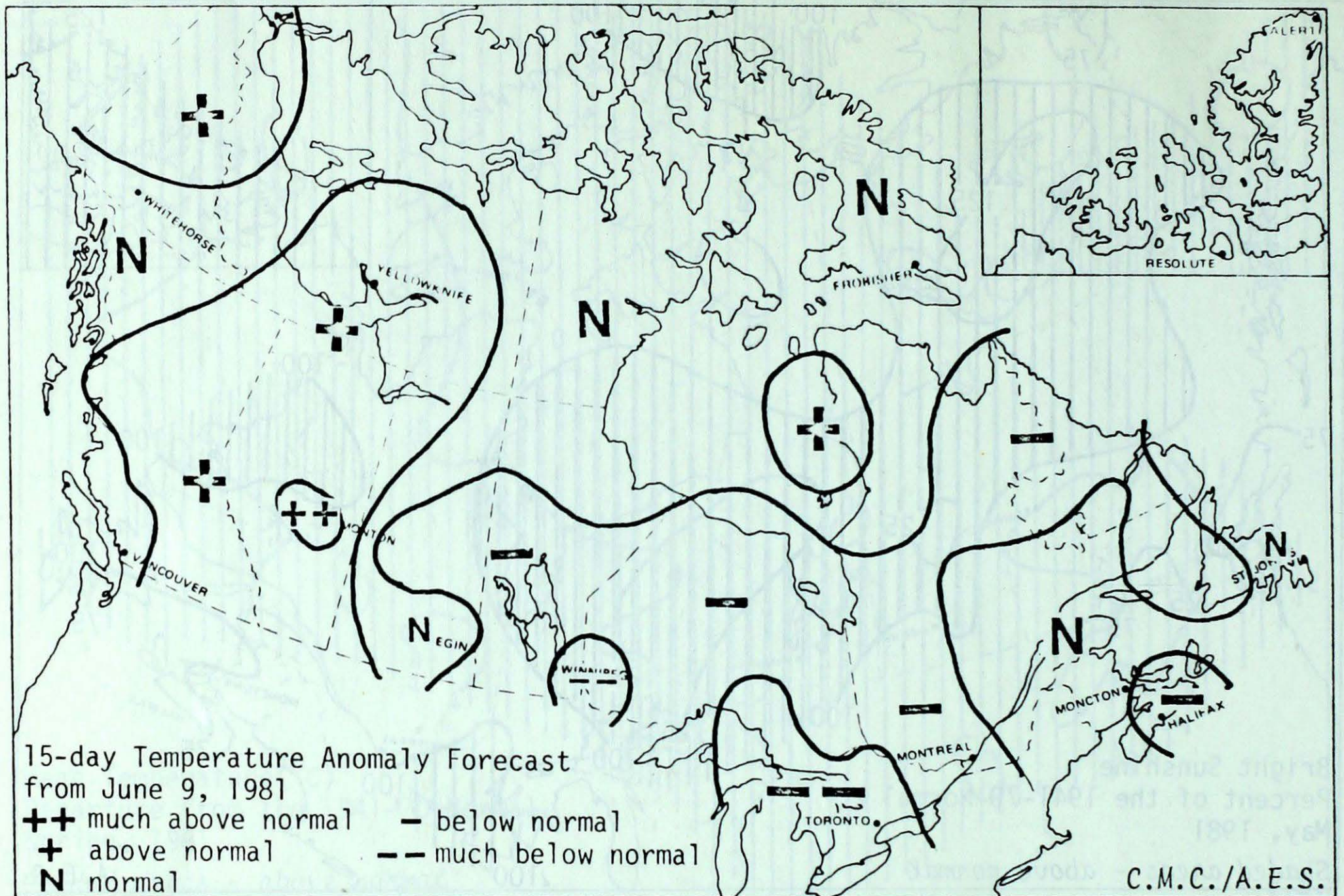




SPRING 1981



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	Near Normal	Within 0.5° of Normal
Victoria	Near Normal	Within 0.3° of Normal
Vancouver	Near Normal	Within 0.3° of Normal
Edmonton	Much Above Normal	More than 1.5° above Normal
Regina	Near Normal	Within 0.5° of Normal
Winnipeg	Below Normal	From 0.5° to 1.7° below Normal
Thunder Bay	Below Normal	From 0.4° to 1.3° below Normal
Toronto	Much Below Normal	More than 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	Near Normal	Within 0.4° of Normal
Fredericton	Near Normal	Within 0.4° of Normal
Halifax	Below Normal	From 0.3° to 1.0° below Normal
Charlottetown	Below Normal	From 0.4° to 1.3° below Normal
St. John's	Near Normal	Within 0.5° of Normal
Goose Bay	Below Normal	From 0.5° to 1.7° Below Normal
Frobisher Bay	Near Normal	Within 0.4° of Normal
Inuvik	Above Normal	From 0.6° to 2.1° above Normal

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

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TEMPERATURE AND PRECIPITATION DATA FOR THE WEEK ENDING 0600 G.M.T. JUNE 9, 1981

Station	Temperature (°C)				Precip. (mm)	
	Average	Departure from Normal	Extreme Maximum	Extreme Minimum	Total	Departure from Normal
BRITISH COLUMBIA						
Abbotsford	13	- 2	18	7	58.9	44.1
Alert Bay	12	0	19	6	27.6	16.0
Blue River	M	X	17P	2	M	X
Bull Harbour	10	- 1	15	4	34.8	22.7
Burns Lake	M	X	16P	1P	M	X
Cape Scott	11	0	15	7	61.4	41.6
Cape St James	10	0	16	6	33.9	17.4
Castlegar	14	- 3	21	6	29.5	18.0
Comox	13	- 1	17	9	10.0	1.6
Cranbrook	12	- 2	20	4	10.9	4.2
Dease Lake	8	- 3	17	- 3	23.6	18.2
Estevan Point	M	M	15P	8	M	M
Fort Nelson	13	- 0	24	3	14.6	2.2
Fort St John	13	- 1	20	5	0.0	- 8.8
Kamloops	15	- 2	23	7	2.8	- 5.7
Langara	10	0	14	6	32.6	15.2
Lytton	15	- 3	22	7	0.4	- 1.1
Mackenzie	M	X	19	- 2P	15.4	X
McInnes Island	11	- 1	16	7	88.7	64.1
Penticton	14	- 2	22	4	10.2	- 0.3
Port Hardy	11	- 1	16	4	48.5	34.7
Prince George	10	- 2	20	0	18.6	6.7
Prince Rupert	10	0	16	3	49.3	16.5
Quesnel	12	- 2	20	1	11.2	3.1
Revelstoke	13	- 2	20	4	35.2	22.8
Sandspit	10	- 1	14	5	30.0	19.0
Smithers	9	- 3	17	0	6.5	- 3.6
Stewart	M	X	20	3P	32.0	X
Terrace	10	- 3	16	4	6.5	- 1.2
Vancouver	13	- 2	17	9	36.3	25.0
Victoria	12	- 2	18	7	22.5	14.3
Williams Lake	10	- 4	18	0	7.6	1.9
YUKON						
Burwash	7	- 2	16	- 3	18.2	7.0
Dawson	10	- 3	22	0	21.1	14.7
Konakuk Beach	1	1	9	- 4	5.0	4.0
Mayo	11	- 1	21	1	24.7	16.9
Shingle Point	1	0	18	- 4	5.8	1.4
Watson Lake	10	- 2	18	- 1	5.6	- 3.1
Whitehorse	10	- 1	17	2	4.2	- 0.6
NORTHWEST TERRITORIES						
Alert	- 1	3	6	- 9	1.9	0.4
Baker Lake	1	1	10	- 5	0.0	- 3.0
Broughton Island	- 2	- 1	4	- 6	0.0	- 8.9
Byron Bay	2	4	9	- 5	12.8	11.2
Cambridge Bay	1	2	7	- 3	1.8	- 0.3
Cape Dorset	M	X	4P	- 3P	M	X
Cape Dyer	1	3	9	- 7	0.0	-10.3
Cape Hooper	- 2	1	3	- 6	0.0	- 5.4
Cape Parry	1	2	6	- 2	3.7	1.4
Cape Young	3	3	14	- 1	8.2	7.4
Clinton Point	3	2	14	- 2	3.8	- 0.4
Clyde	0	1	6	- 3	0.0	- 2.0
Contwoyto Lake	M	M	10	- 1P	17.7	6.1
Coppermine	4	3	13	0	14.9	10.5
Coral Harbour	0	1	5	- 6	0.0	- 6.3
Dewar Lakes	- 1	2	4	- 7	0.0	- 4.2
Ennadai	M	M	M	- 1	M	M
Eureka	3	4	7	- 1	0.4	0.1
Fort Reliance	9	2	22	2	44.4	39.5
Fort Simpson	14	1	25	5	0.0	-13.0
Fort Smith	15	3	29	7	2.8	- 4.1
Frobisher Bay	3	2	12	- 2	0.0	- 8.1
Gladman Point	- 2	1	3	- 8	0.0	- 2.0
Hall Beach	- 2	0	2	- 9	0.0	- 2.3
Hay River	12	3	28	5	1.6	- 3.0
Inuvik	7	0	24	- 3	0.4	- 6.7
Jenny Lind Island	- 1	1	4	- 7	0.0	- 0.7
Lady Franklin Point	3	4	8	- 1	16.0	14.6
Longstaff Bluff	1	2	6	- 6	0.0	- 1.8
Mackay Inlet	- 1	3	7	- 6	0.0	- 2.5
Mould Bay	0	3	6	- 6	0.5	- 2.0
Nicholson Peninsula	3	2	20	- 3	5.4	3.1
Norman Wells	12	0	21	2	7.4	- 1.6
Pelly Bay	- 3	1	3	- 6	7.0	4.6
Pond Inlet	M	X	5P	- 5	M	X
Port Burwell	M	X	M	M	M	X
Resolute	0	3	4	- 3	0.0	- 2.0

Station	Temperature (°C)				Precip. (mm)	
	Average	Departure from Normal	Extreme Maximum	Extreme Minimum	Total	Departure from Normal
Sachs Harbour	3	4	12	- 4	0.0	- 1.3
Shepherd Bay	- 2	2	2	- 6	0.0	- 1.7
Tuktoyaktuk	2	1	14	- 3	0.4	- 4.0
Yellowknife	12	2	25	3	9.8	5.6
ALBERTA						
Banff	M	M	17P	- 3	1.4	-11.2
Calgary	14	1	22	6	5.4	- 7.9
Cold Lake	14	0	25	4	30.2	16.4
Coronation	13	0	24	4	7.2	- 1.8
Edmonton Intl	13	- 2	24	2	12.0	4.6
Edmonton Mun	15	0	25	6	19.4	9.6
Edmonton Namao	14	- 1	24	5	20.2	14.8
Edson	11	1	22	0	22.8	3.8
Fort Chipewyan	M	M	M	7P	M	M
Fort McMurray	16	3	28	6	14.7	4.1
Grande Prairie	13	0	20	5	2.6	-10.0
High Level	13	0	28	5	28.4	21.1
Jasper	11	- 1	20	1	3.8	- 5.0
Lethbridge	15	1	25	4	3.4	-17.7
Medicine Hat	16	0	26	5	10.9	- 2.9
Peace River	14	1	24	2	1.6	- 5.3
Red Deer	13	0	23	1	11.2	- 1.3
Rocky Mountain House	11	- 1	21	- 1	12.9	- 4.5
Slave Lake	13	0	24	1	20.0	8.6
Vermilion	14	1	24	3	8.2	- 3.8
Whitecourt	12	0	23	1	11.1	- 2.1
SASKATCHEWAN						
Broadview	14	0	27	- 1	15.4	9.7
Buffalo Narrows	15	1	28	6	29.8	19.2
Cree Lake	13	X	27	4	11.6	X
Estevan	16	1	26	4	16.4	- 1.0
Hudson Bay	15	2	28	2	7.0	- 7.6
Kindersley	15	- 1	23	5	11.4	4.2
La Ronge	14	1	28	5	11.7	- 4.0
Meadow Lake	15	X	26	2	7.8	X
Moose Jaw	16	1	26	7	8.5	- 7.4
Nipawin	16	X	29	4	8.6	X
North Battleford	15	1	25	7	13.6	4.7
Prince Albert	15	1	27	1	7.3	- 0.9
Regina	16	1	27	3	4.0	-14.0
Rockglen	M	X	22P	8	M	X
Saskatoon	16	1	26	5	18.0	9.9
Swift Current	13	- 1	23	6	21.6	8.5
Uranium City	13	1	28	4	10.6	5.8
Wynyard	16	2	28	6	3.8	- 5.3
Yorkton	16	2	27	6	14.7	0.7
MANITOBA						
Bissett	16	1	28	2	7.3	- 5.9
Brandon	15	1	28	1	19.4	- 2.0
Churchill	2	- 1	17	- 3	2.1	- 8.4
Dauphin	16	2	27	2	11.9	- 7.0
Gillam	8	X	26	- 2	4.1	X
Gimli	16	1	25	4	19.2	4.1
Island Lake	13	X	28	4	1.2	X
Lynn Lake	12	0	28	1	3.2	-12.2
Norway House	13	X	25	3	10.2	X
Pilot Mound	16	0	26	7	8.0	- 6.5
Portage la Prairie	16	1	27	4	14.8	- 3.3
The Pas	14	2	28	5	22.1	12.7
Thompson	12	1	30	2	12.0	- 2.2
Winnipeg	17	2	28	5	13.6	- 3.7
ONTARIO						
Armstrong	12	1	29	- 2	15.8	- 4.2
Atikokan	16	1	26	8	47.4	27.2
Earlton	16	2	26	4	34.7	16.9
Geraldton	13	1	28	- 1	30.2	10.7
Gore Bay	14	0	24	5	25.1	15.0
Kapuskasing	13	1	30	0	34.3	16.7
Kenora	18	4	28	11	16.8	- 2.2
Kingston	16	1	25	9	11.6	- 1.8
Lansdowne	13	2	29	2	15.2	- 0.1
London	18	1	27	7	31.4	19.6
Moosonee	9	0	29	- 3	17.2	- 3.5
Moose Forest	16	1	24	5	17.5	4.0
Muskoka	16	2	26	5	47.6	33.6
North Bay	15	1	24	4	26.6	11.1
Ottawa	17	1	27	8	30.4	19.9
Petawawa	15	X	29	3	12.0	X
Pickle Lake	13	1	29	2	24.6	5.9
Red Lake	15	2	28	1	13.8	1.2

Station	Temperature (°C)				Precip. (mm)	
	Average	Departure from Normal	Extreme Maximum	Extreme Minimum	Total	Departure from Normal
Simcoe	19	1	26	9	M	M
Sioux Lookout	16	3	28	7	25.4	1.2
Sudbury	15	1	25	4	14.3	- 4.6
Thunder Bay	14	2	27	4	60.6	42.3
Timmins	14	1	28	1	8.9	- 6.0
Toronto	17	1	26	6	12.8	2.4
Trenton	17	1	27	6	1.8	- 9.8
Trout Lake	11	1	28	0	20.3	9.9
Wawa	11	X	24	- 2	13.1	X
Warton	15	0	25	5	14.1	3.9
Windsor	21	3	29	11	33.6	16.2
QUÉBEC						
Bagotville	15	2	31	4	25.4	1.4
Baie Comeau	11	0	20	- 1	20.5	- 0.2
Blanc Sablon	M	M	14	0P	23.4	8.7
Border	M	M	M	- 3	M	M
Chibougamau	13	X	28	0	12.6	X
Fort Chimo	3	- 2	9	- 3	18.6	9.9
Gaspé	14	X	28	- 1	18.3	X
Grindstone Island	12	3	18	7	18.8	4.2
Inoucdjouac	1	- 1	7	- 4	8.2	4.1
Koartak	0	X	3	- 5	20.6	X
La Grande Rivière	6	X	19	- 3	17.6	X
Maniwaki	15	0	27	3	38.3	25.0
Matagami	12	X	27	- 2	30.3	X
Mont-Joli	15	3	29	4	6.8	-12.8
Montréal	17	1	27	7	43.0	27.5
Natashquan	11	3	20	4	22.4	6.1
Nitchecon	4	- 2	12	- 2	12.8	1.3
Port Menier	M	M	M	M	M	M
Poste-de-la-Baleine	1	- 3	13	- 4	21.2	