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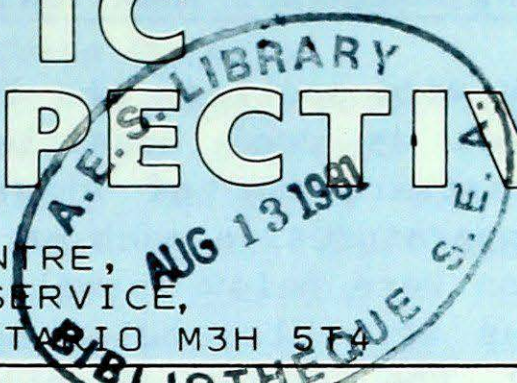
Atmospheric
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A WEEKLY REVIEW OF CANADIAN CLIMATE

CLIMATIC PERSPECTIVES

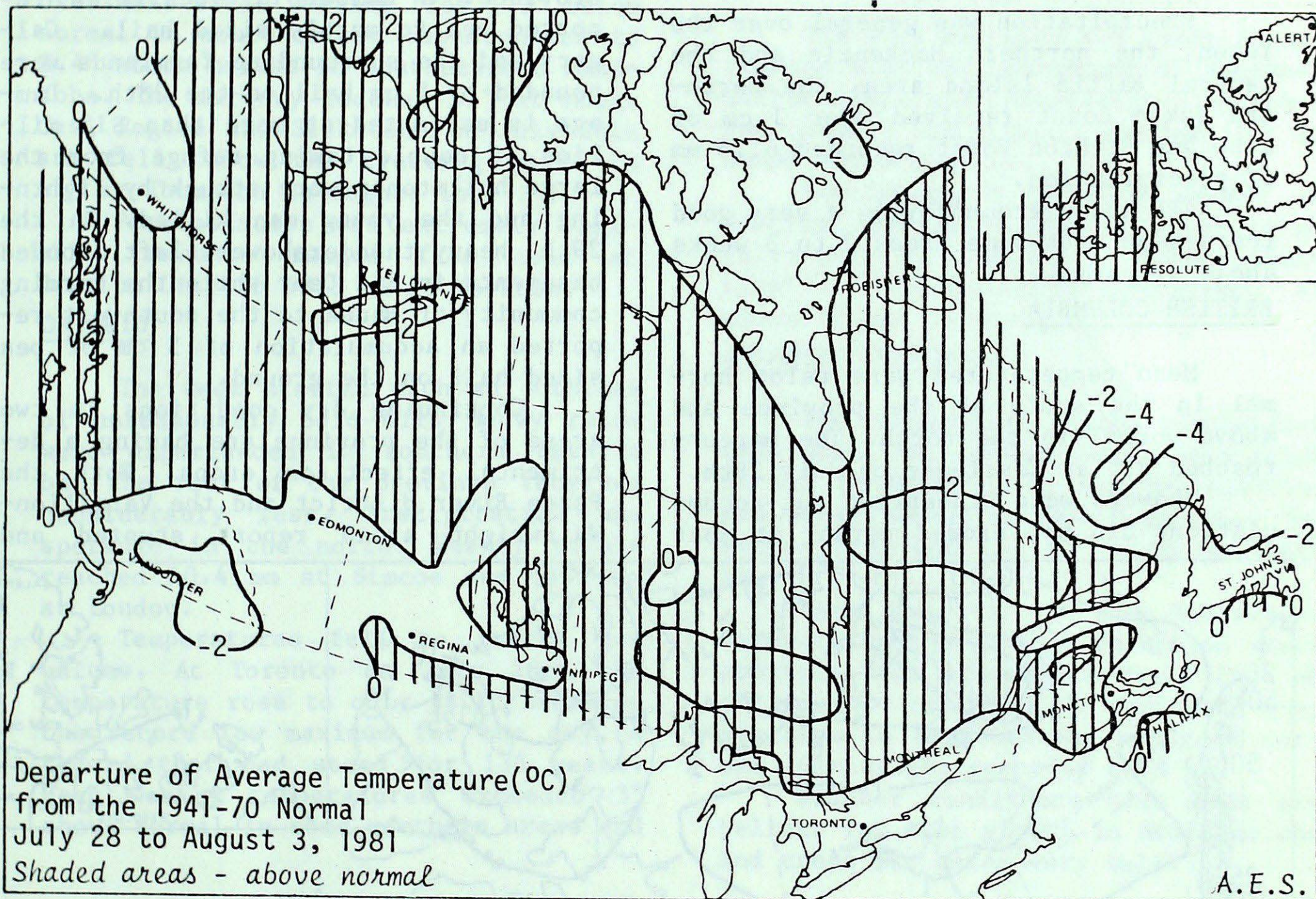
THE CANADIAN CLIMATE CENTRE,
ATMOSPHERIC ENVIRONMENT SERVICE,
4905 DUFFERIN ST., DOWNSVIEW, ONTARIO M3H 5T4



AUGUST 7, 1981

(Aussi disponible en français)

VOL.3 NO.31



WEATHER HIGHLIGHTS FOR THE PERIOD - JULY 28 - AUGUST 3, 1981

Severe thunderstorm strikes Calgary

Calgary and some surrounding farm areas were pounded by 5 cm hail on July 28th. Damage from this storm is estimated at more than \$15 million. A couple taking refuge from the large hailstones were struck by lightning. The young man was killed and his companion seriously injured.

The mercury reached its highest reading of the week, 33°, at Chatham, New Brunswick and its lowest reading, -3°, at Hall Beach N.W.T. The highest weekly precipitation total was 66.8 mm as recorded at Cartwright, Labrador although Clinton Point, N.W.T. with 61.5 mm was close behind.

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

The warm spell in the Yukon ended this week as cool unsettled weather swept eastward out of Alaska. Weekly mean temperatures in much of the southern Yukon were below normal. Mean temperatures were also below normal over much of the Arctic Archipelago and Baffin Island. The mercury reached 29° at Hay River on July 30.

Precipitation was general over the Yukon, the northern Mackenzie and the central Baffin Island area. The northern Yukon coast received over 3 cm of snow and Clinton Point recorded 61.5 mm of precipitation.

All areas are enjoying a very good ice season with some areas 2 to 3 weeks ahead of normal.

BRITISH COLUMBIA

Mean temperatures were below normal in the south of the province and above normal in the north. The mercury reached 32° at Castlegar on July 28th.

Showers were widespread but accumulations did not exceed normal at most

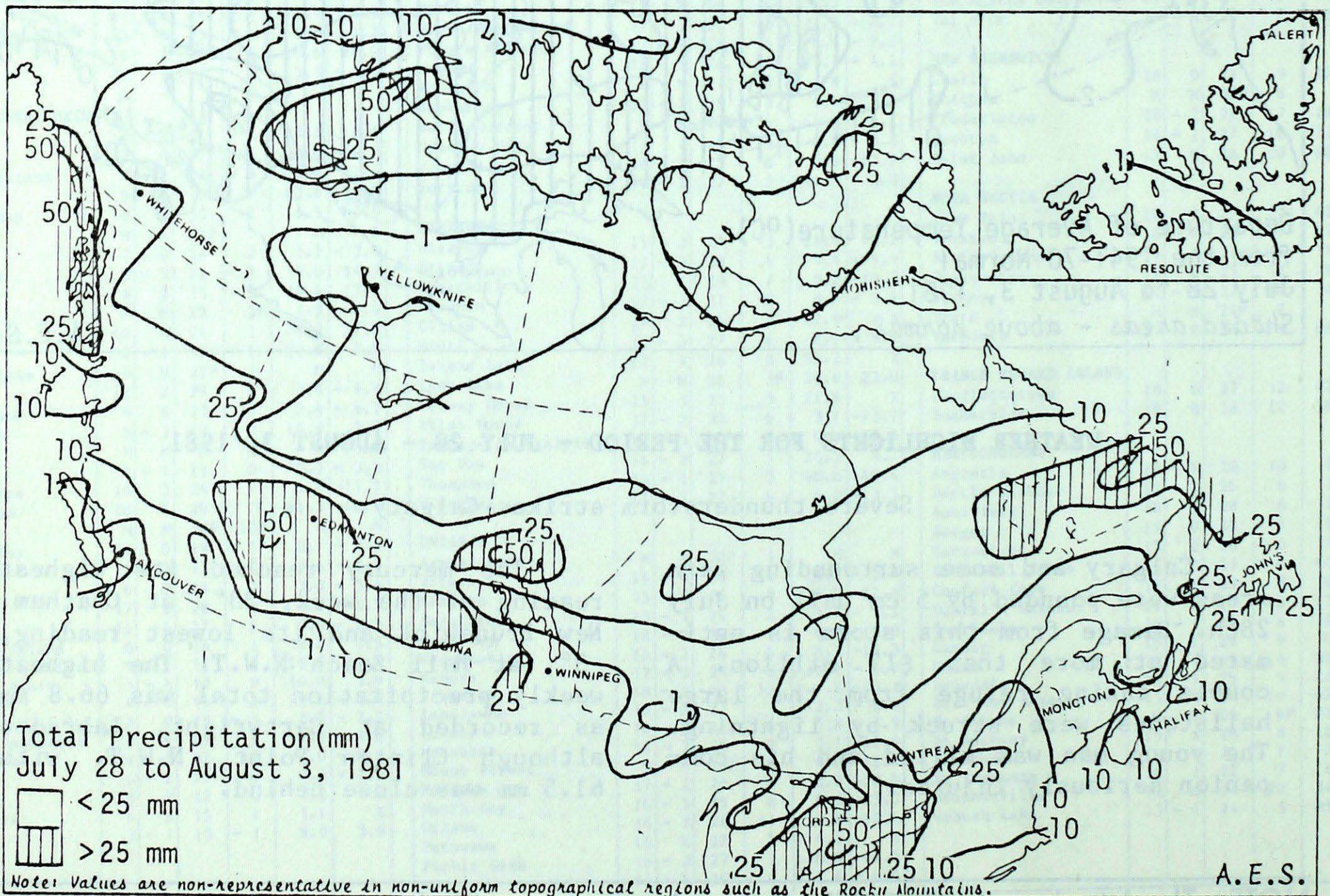
stations. One of the exceptions, Fort St. John, received 32.4 mm.

In contrast to southern areas of the province, Fort Nelson recorded the second driest July on record since 1947.

ALBERTA

Severe summer thunderstorms were again reported in various parts of the province. A number of localities reported pea to marble sized hail. Calgary and the surrounding farmlands were pounded by 5 cm hail on the 28th. Damage is estimated at more than \$15 million. A couple taking refuge from the large hailstones were struck by lightning and the young man killed. On the 29th, heavy thundershowers left flooded basements in Red Deer while the farming community of Hanna to the southwest reported an accumulation of 5 cm of pea sized hail on the ground.

Continuing dry conditions in two areas of the province are having a detrimental effect on crops. Both the Peace River district and the Vermilion-Wainwright areas report stunted and



thin drop growth due to a lack of adequate moisture. Crops in south-central and southwestern Alberta are excellent but with the cooler and wetter than normal condition are late in development. Sunshine and heat are required to speed maturity.

SASKATCHEWAN AND MANITOBA

Mean temperatures were near normal over most areas varying from 1.3° below normal in southwestern Saskatchewan to 2.4° above normal in southeastern Manitoba. The mercury reached 32° at Moose Jaw, Regina and Saskatoon on July 28th and fell below the freezing point to -1° at Thompson on August 1st.

Precipitation was extremely variable. Amounts ranged from none at Uranium City to 58.8 mm at Yorkton.

ONTARIO

The week started with an outbreak of unseasonably cold air. Heavy rains were experienced in southern Ontario but the rest of the province received considerably less. Precipitation was sporadic in the north. Weekly totals reached 50.4 mm at Simcoe and 51.2 mm at London.

Temperatures fell to record low values. At Toronto on July 28th the temperature rose to only 18.1° breaking the record low maximum for the day, a record that had stood for 135 years. Mean weekly temperatures exceeded 3° above normal in some northern areas and

reached 2° below normal in some areas of southern Ontario.

The regions bordering southern Georgian Bay received the rainfall gratefully, ending a very dry spell dating back to the last week of June. In contrast, the forest fire hazard remained moderate to high in the north as little rain fell.

QUÉBEC

The week was warm and sunny in all regions with the exception of southern Québec where mean temperatures were below normal. The mercury reached 32° at Gaspé and Sept-Îles.

Precipitation exceeded normal at Montréal and at Sherbrooke where rainfalls were 31.2 mm and 33.2 mm respectively. Schefferville received an amount close to normal.

ATLANTIC PROVINCES

The temperature regime intensified this week. Mean temperatures were below normal in Nova Scotia and Newfoundland and above normal in New Brunswick. The mercury reached the 33° mark at Chatham.

Rain was rare in the Maritimes. Yarmouth was the single exception where precipitation exceeded normal; 25.4 mm of rain was recorded. In contrast, many stations in Newfoundland exceeded normal. Cartwright recorded 66.8 mm.

Weather conditions have been excellent for crop growth in Newfoundland and crops are doing very well.

CLIMATIC PERSPECTIVES

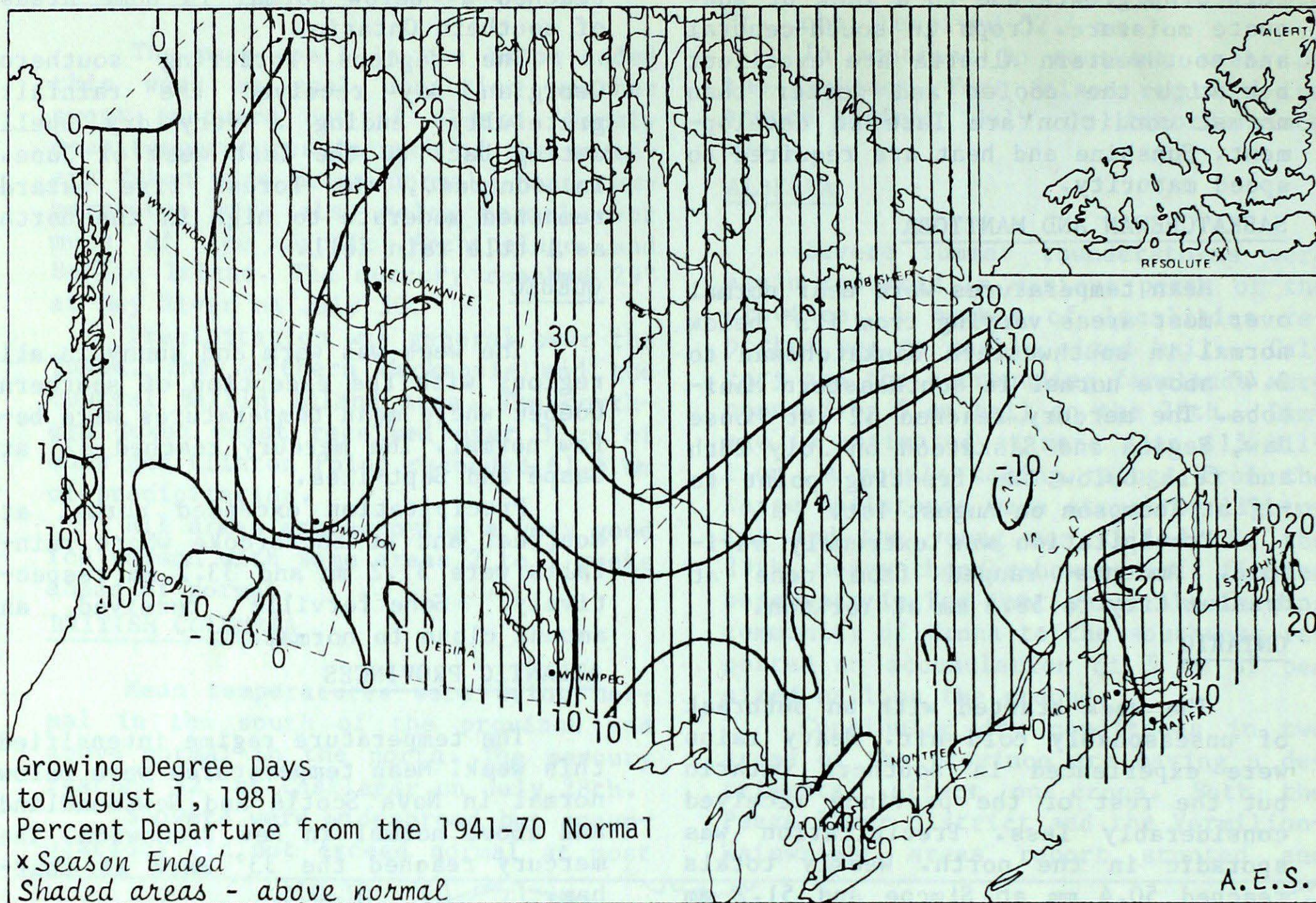
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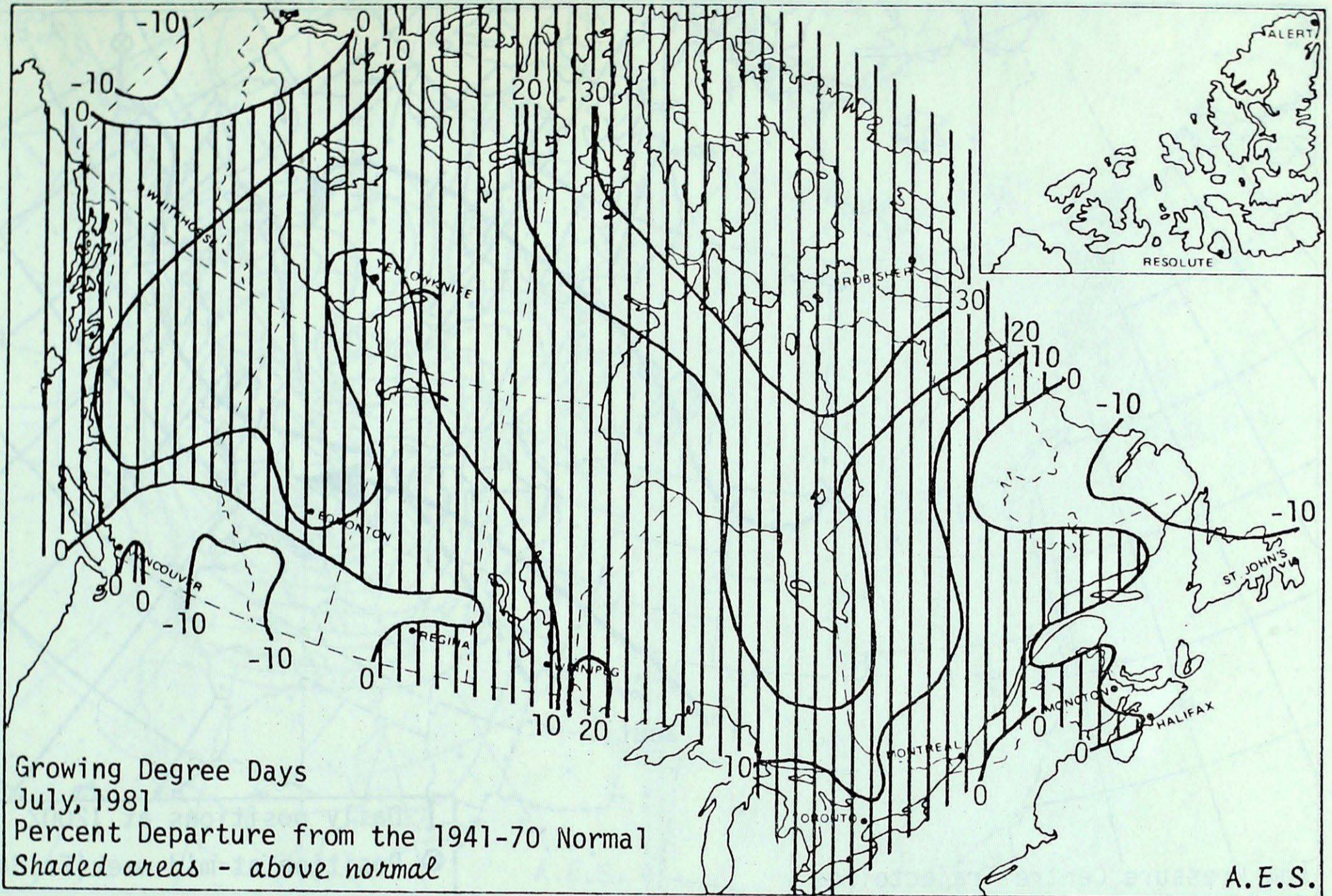
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GROWING DEGREE-DAY SUMMARY TO AUGUST 1, 1981



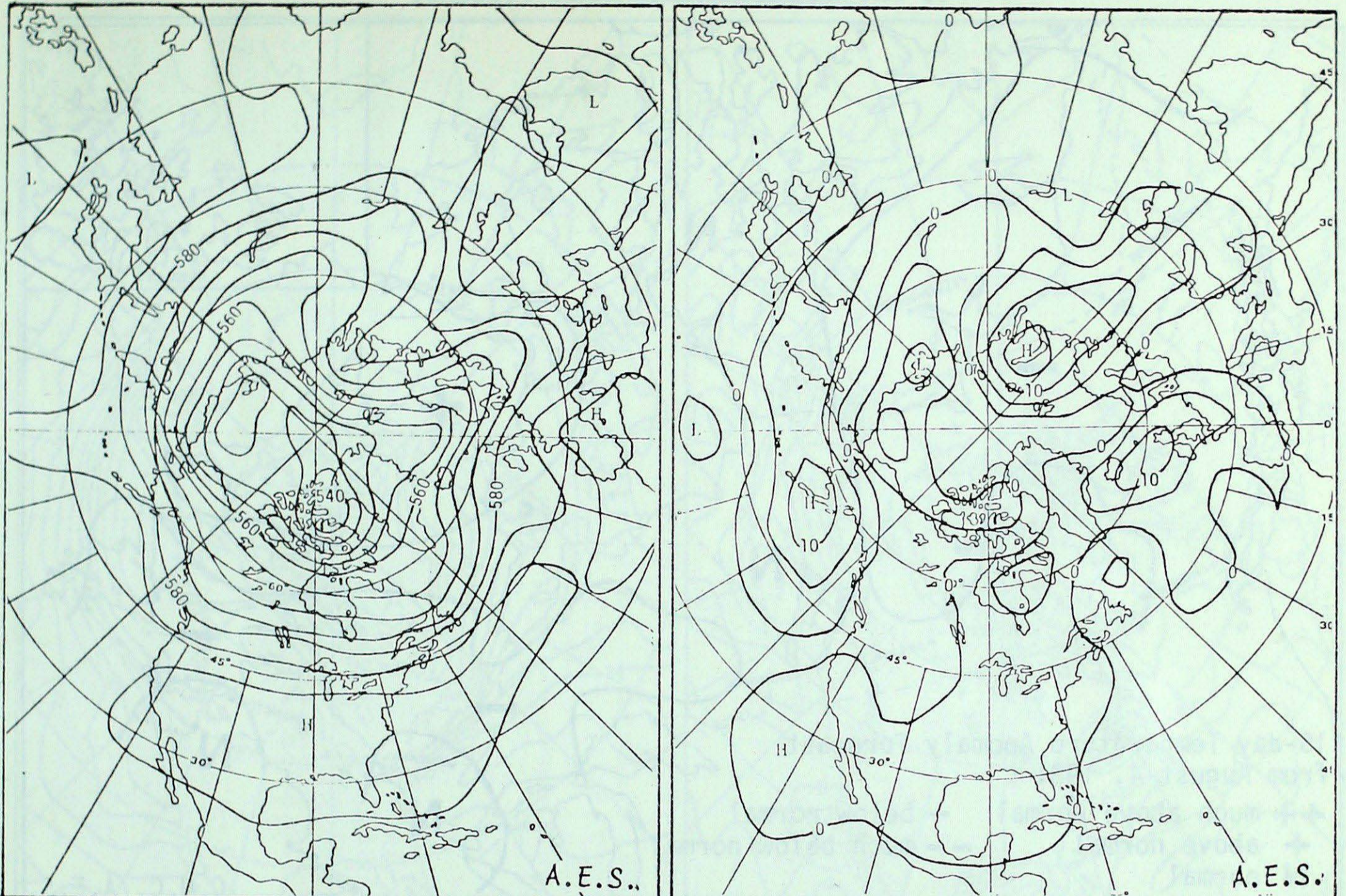
CITY	MONTHLY CUMULATIVE TOTAL	MONTHLY DIFF. FROM 1941-70 NORMAL	SEASONAL TOTAL	SEASONAL DIFF. FROM 1941-70 NORMAL	SEASONAL PERCENT OF NORMAL
Whitehorse	8.0	-1.0	598.5	23.5	104
Penticton	15.5	-0.5	1147.0	-96.0	92
Vancouver	13.0	0.0	1132.0	36.0	103
Edmonton	12.5	-0.5	1005.5	189.5	123
Calgary	10.5	-1.5	770.5	1.5	100
Regina	13.5	-1.5	1085.5	133.5	114
Saskatoon	12.5	-1.5	1044.5	95.5	110
Winnipeg	12.0	-4.0	1048.5	31.5	103
Thunder Bay	16.5	4.5	749.5	55.5	108
Windsor	17.0	0.0	1363.5	86.5	107
Toronto	15.0	0.0	1007.0	-71.0	93
Ottawa	18.0	3.0	1079.5	17.5	102
Montreal	17.5	1.5	1077.5	-8.5	99
Quebec	17.0	3.0	901.0	22.0	103
Fredericton	18.0	4.0	939.5	68.5	108
Halifax	18.5	5.5	752.5	18.5	103
Charlottetown	15.5	1.5	811.5	104.5	115
St John's	9.0	-3.0	560.5	107.5	124

GROWING DEGREE-DAY SUMMARY JULY 1981



CITY	MONTHLY CUMULATIVE TOTAL	MONTHLY DIFF. FROM 1941-70 NORMAL	MONTHLY PERCENT OF NORMAL
Whitehorse	294.0	13.0	105
Penticton	445.5	-24.5	95
Vancouver	374.0	-11.0	97
Edmonton	394.0	42.0	112
Calgary	316.0	-42.0	88
Regina	467.0	36.0	108
Saskatoon	435.5	7.5	102
Winnipeg	475.5	18.5	104
Thunder Bay	331.5	35.5	112
Windsor	436.0	22.0	105
Toronto	392.5	16.5	104
Ottawa	399.5	21.5	106
Montreal	391.0	3.0	101
Quebec	350.0	11.0	103
Fredericton	355.0	19.0	106
Halifax	305.5	-1.5	100
Charlottetown	311.0	-12.0	96
St John's	228.5	-19.5	92

Atmospheric Circulation



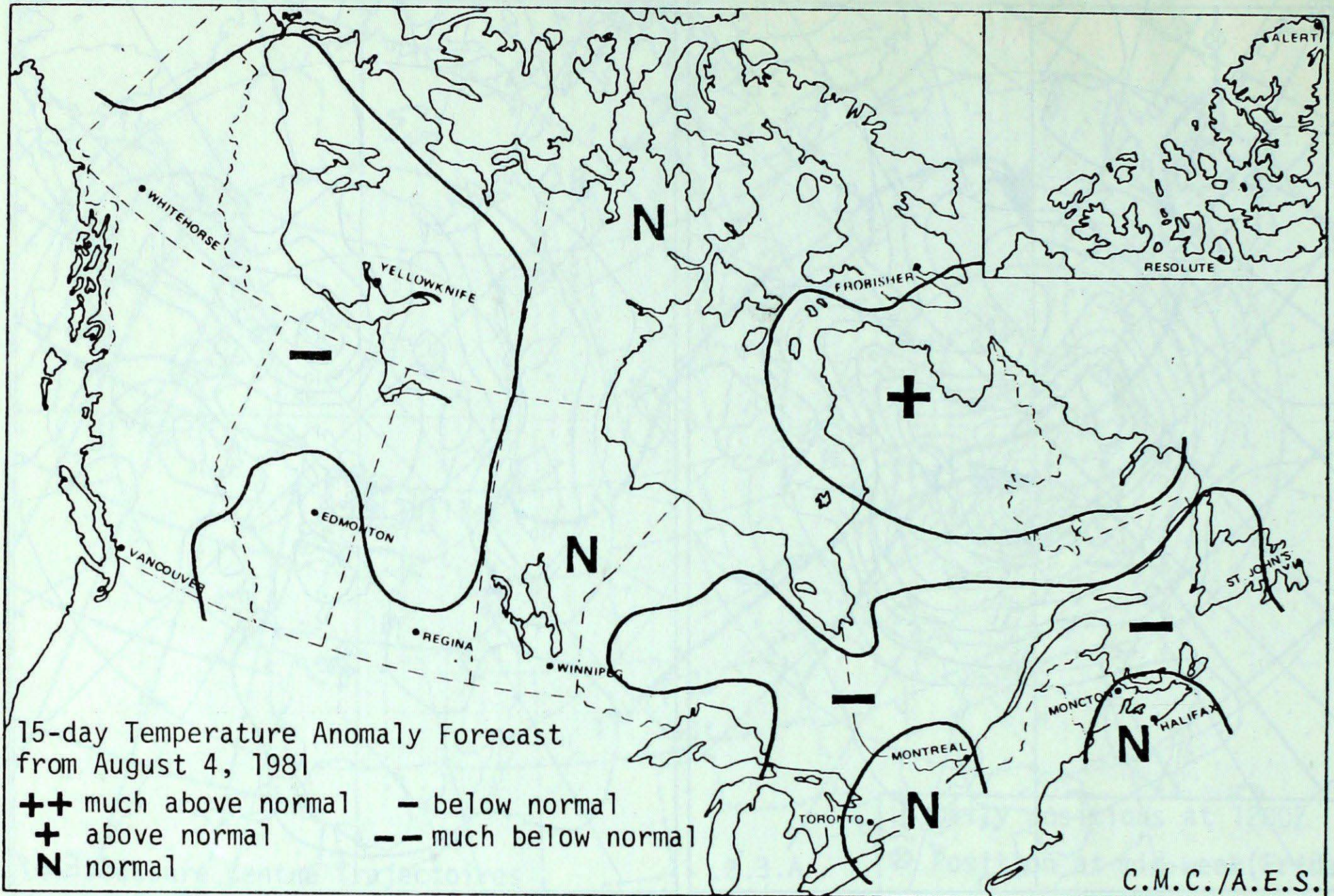
7-day Mean 50 kPa Height Map(in dam)
July 27 to August 2, 1981

7-day Mean 50 kPa Height Anomaly
(in 5 dam intervals) July 27 to August 2, 1981

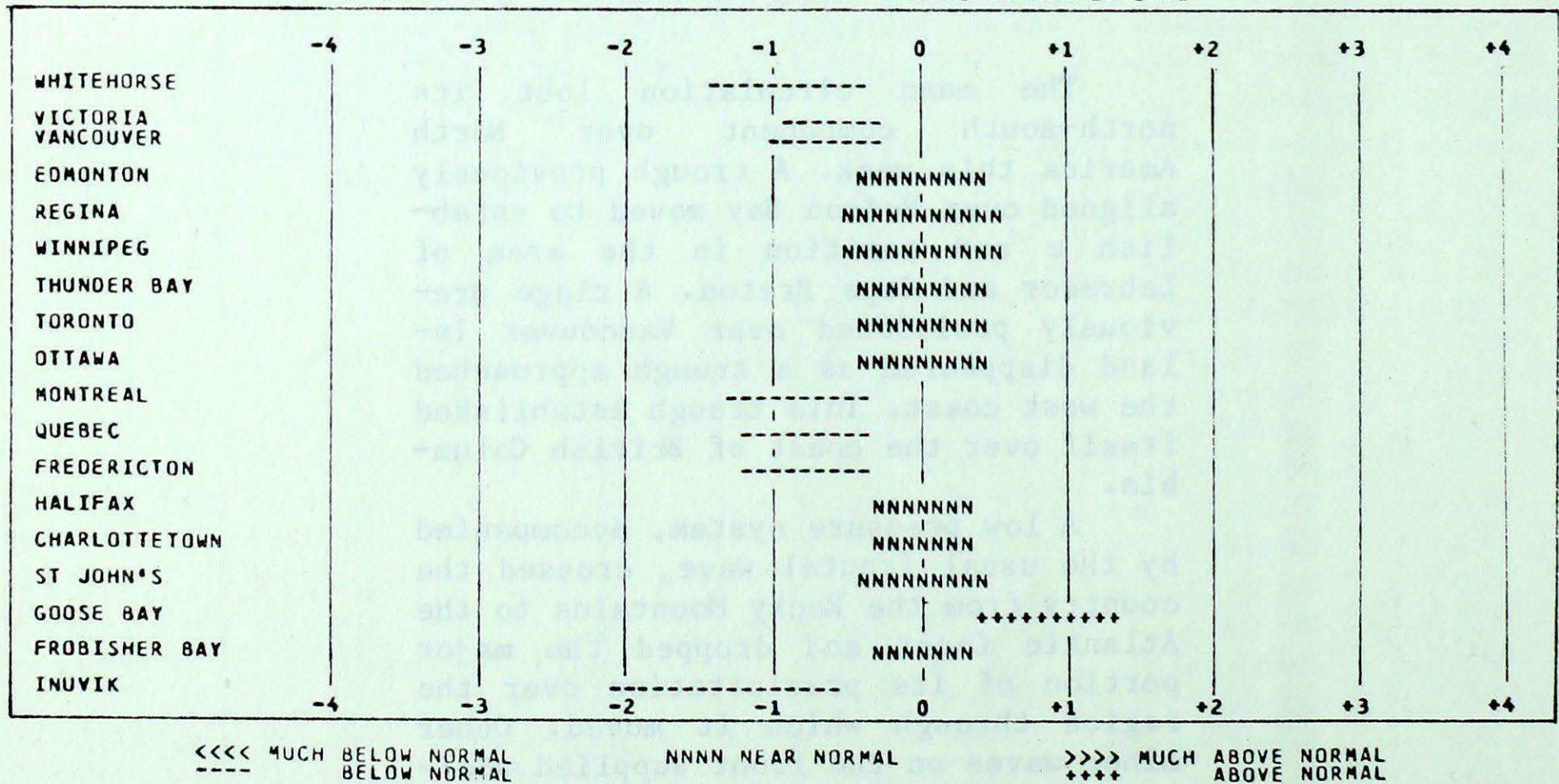
The mean circulation lost its north-south component over North America this week. A trough previously aligned over Hudson Bay moved to establish a new position in the area of Labrador and Cape Breton. A ridge previously positioned over Vancouver Island disappeared as a trough approached the west coast. This trough established itself over the coast of British Columbia.

A low pressure system, accompanied by the usual frontal wave, crossed the country from the Rocky Mountains to the Atlantic Coast and dropped the major portion of its precipitation over the region through which it moved. Other minor waves on the front supplied additional showers and thunderstorms. Most of the country enjoyed sunny skies this week.

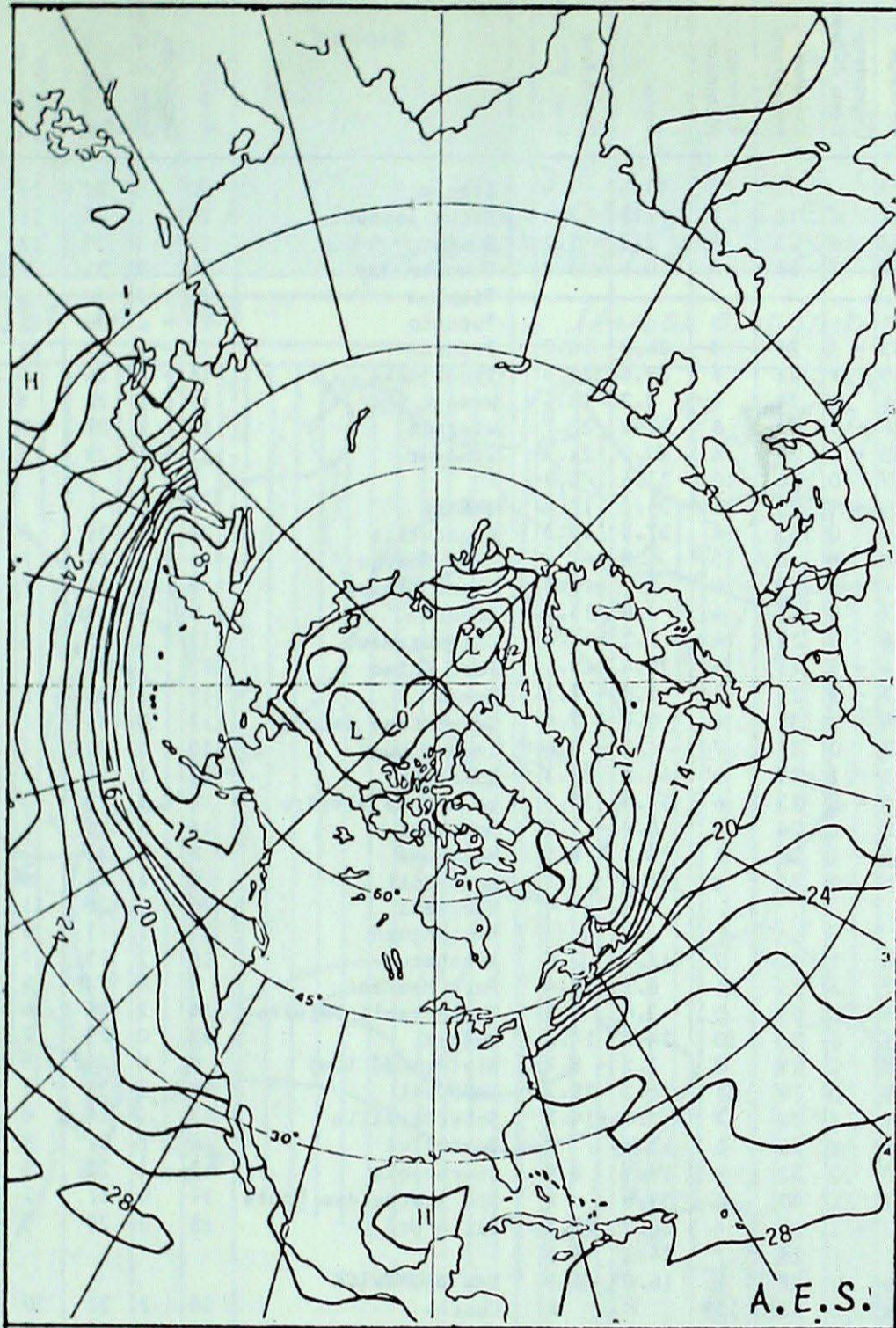
15 DAY TEMPERATURE ANOMALY FORECAST



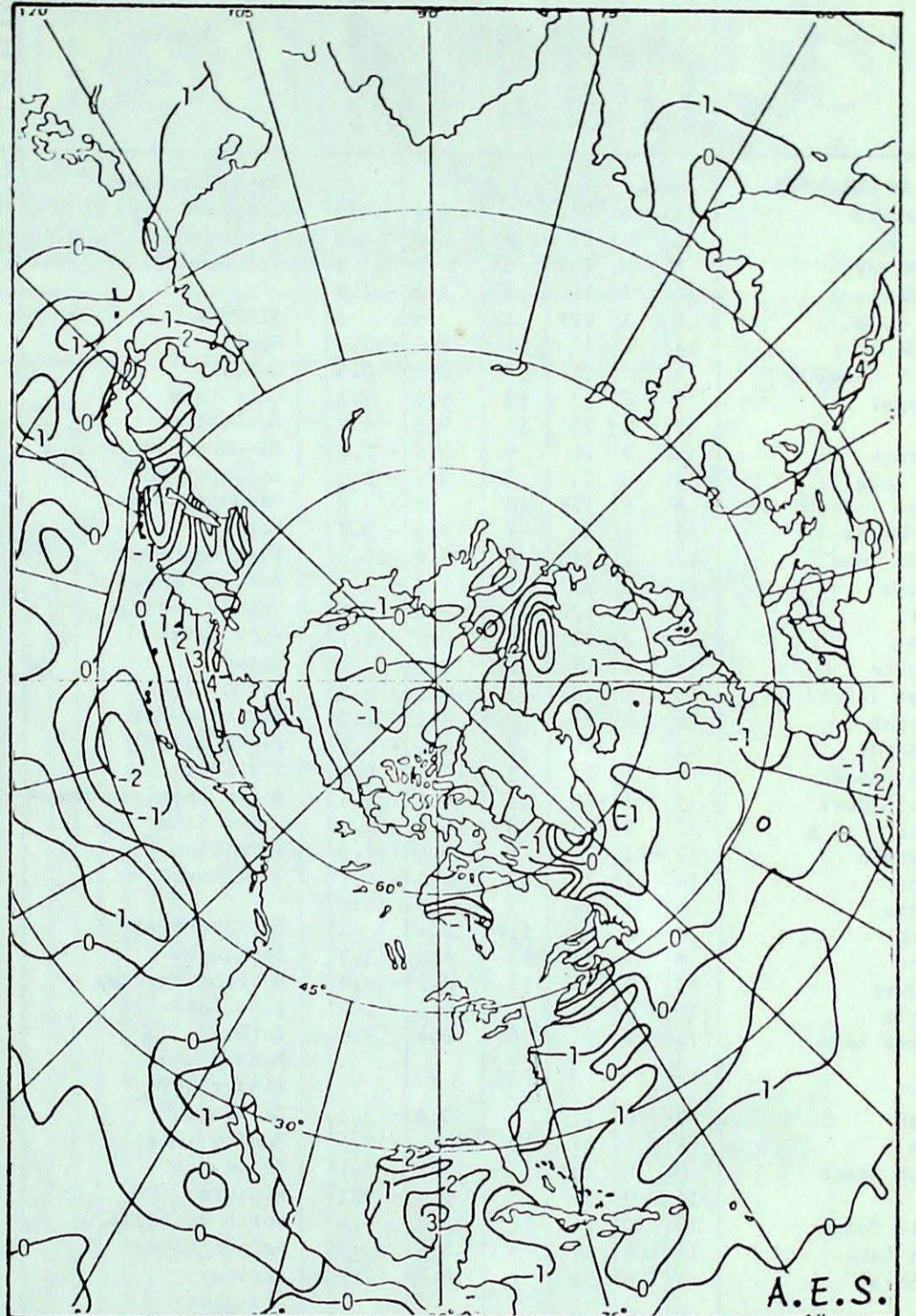
TEMPERATURE ANOMALY FORECAST FOR AUG 4 1981 TO AUG 18 1981



SEA SURFACE TEMPERATURE



Monthly Mean Sea Temperature
for the month of July, 1981



Sea Surface Temperature Anomalies
for the month of July, 1981

TEMPERATURE AND PRECIPITATION DATA FOR THE WEEK ENDING 0600 G.M.T. AUGUST 4, 1981

Station	Temperature (°C)				Precip. (mm)		Station	Temperature (°C)				Precip. (mm)		Station	Temperature (°C)				Precip. (mm)	
	Average	Departure from Normal	Extreme Maximum	Extreme Minimum	Total	Departure from Normal		Average	Departure from Normal	Extreme Maximum	Extreme Minimum	Total	Departure from Normal		Average	Departure from Normal	Extreme Maximum	Extreme Minimum	Total	Departure from Normal
BRITISH COLUMBIA							ALBERTA							QUÉBEC						
Abbotsford	16	-1	25	9	5.1	-0.8	Sachs Harbour	6	2	13	1	12.6	7.4	Simcoe	20	0	27	11	46.6	16.3
Alert Bay	15	1	21	8	0.2	-6.8	Shepherd Bay	7	0	16	1	2.2	-7.4	Sioux Lookout	20	1	27	11	5.6	-15.4
Blue River	M	X	23P	8	M	X	Tuktoyaktuk	12	2	23	4	2.7	-7.2	Sudbury	20	1	29	12	4.6	-6.9
Bull Harbour	14	1	19	9	1.2	-7.9	Yellowknife	17	1	26	9	0.6	-4.9	Thunder Bay	20	2	31	8	0.4	-17.1
Burns Lake	M	X	22P	8P	M	X							Timmins	20	2	30	8	1.4	-20.5	
Cape Scott	14	1	17	11	6.0	-12.4	ALBERTA						Toronto	20	-1	30	11	36.6	18.4	
Cape St James	15	2	21	12	10.2	0.5	Banff	13	-1	25	3	26.8	16.2	Trenton	19	-2	27	11	29.4	20.5
Castlegar	19	-3	32	10	9.6	3.2	Calgary	15	-1	23	8	39.6	23.9	Trout Lake	15	-1	25	8	32.9	9.5
Comox	17	-1	25	11	9.6	4.8	Cold Lake	16	0	24	8	8.2	-13.4	Wawa	17	X	26	5	4.2	M
Cranbrook	16	-3	26	9	5.5	-1.8	Coronation	16	-1	27	8	32.2	20.7	Warton	18	-1	27	10	45.2	27.8
Dease Lake	14	0	23	4	3.4	-6.5	Edmonton Intl	15	-1	25	6	40.0	24.7	Windsor	21	-1	29	13	33.0	18.1
Estevan Point	M	M	17P	10	M	M	Edmonton Mun	17	0	26	10	31.6	6.3							
Fort Nelson	18	1	28	7	1.8	-9.7	Edmonton Namao	16	-1	25	10	34.1	17.6	QUÉBEC						
Fort St John	17	0	26	9	32.4	20.6	Edson	15	0	25	6	37.3	16.2	Bagotville	19	1	31	7	9.2	-17.6
Kamloops	21	0	31	11	1.8	-1.3	Fort Chipewyan	M	M	M	5	M	M	Baie Comeau	16	0	24	7	9.0	-13.0
Langara	M	M	17P	11	9.6	-6.5	Fort McMurray	17	1	27	4	1.7	-17.3	Blanc Sablon	M	M	16	7P	23.6	-2.7
Lytton	21	-3	30	12	0.4	-1.1	Grande Prairie	17	0	27	4	1.0	-13.4	Border	M	M	9P	6	M	M
Mackenzie	M	X	25	6P	14.6	X	High Level	16	0	28	4	1.2	-17.0	Chibougamau	17	X	29	6	12.9	X
McInnes Island	15	1	18	12	10.8	-6.9	Jasper	14	-1	23	5	29.4	19.6	Fort Chimo	13	1	29	2	1.8	-12.9
Penticton	20	0	31	10	3.6	-1.2	Lethbridge	17	-2	27	5	3.0	-7.3	Gaspé	19	X	32	8	7.1	X
Port Hardy	15	1	21	9	0.0	-7.9	Medicine Hat	19	-1	31	8	0.0	-7.6	Grindstone Island	17	0	24	11	0.0	-10.5
Prince George	16	1	25	8	13.4	0.6	Peace River	17	0	27	7	1.0	-8.8	Inoucdjouac	10	0	21	2	1.2	-11.3
Prince Rupert	15	1	18	11	6.6	-9.5	Red Deer	15	-1	24	6	45.8	28.3	Koartak	11	X	25	3	3.0	X
Quesnel	17	0	26	8	14.2	2.5	Rocky Mountain House	15	-1	23	6	57.4	35.9	La Grande Rivière	16	X	29	3	15.8	X
Revelstoke	17	-2	26	9	0.0	-8.5	Slave Lake	16	0	24	6	0.2	-12.9	Maniwaki	18	0	28	8	4.3	-14.0
Sandspit	16	1	20	12	8.6	-1.7	Vermilion	16	-1	26	6	25.7	8.5	Matagami	M	X	30	3P	42.5	X
Smithers	16	1	25	7	13.6	4.8	Whitecourt	15	0	24	8	32.0	8.7	Mont-Joli	18	1	29	8	6.4	-8.6
Stewart	M	X	22	11P	10.4	X							Montréal	20	-2	29	11	31.2	15.3	
Terrace	M	M	23P	13	6.0	-3.5	SASKATCHEWAN						Natashquan	15	1	23	8	9.2	-17.3	
Vancouver	17	0	23	12	0.2	-4.9	Broadview	19	1	31	7	12.4	7.6	Nithecun	16	2	25	7	19.4	-10.4
Victoria	16	-1	22	10	0.0	-3.9	Buffalo Narrows	17	1	23	11	6.7	-12.4	Port Menier	M	M	22P	6	M	M
Williams Lake	15	-1	24	8	16.4	7.6	Cree Lake	15	X	25	5	3.0	X	Poste-de-la-Baleine	14	2	27	6	20.2	-1.7
							Estevan	21	0	31	10	24.0	14.8	Québec	19	0	29	7	14.9	-12.4
YUKON							Hudson Bay	18	1	29	9	7.2	-8.7	Rivière du Loup	M	M	24P	9	M	M
Burwash	12	0	24	1	8.0	-3.2	Kindersley	19	0	29	11	36.2	29.3	Roberval	18	0	30	8	5.8	-17.6
Dawson	14	-1	25	3	8.4	-5.6	La Ronge	17	1	26	7	2.4	-14.2	Schefferville	13	1	24	6	27.6	2.8
Komakuk Beach	M	M	18P	1	17.2	5.1	Meadow Lake	16	X	26	5	13.6	X	Sept-Iles	18	2	32	9	8.1	-16.4
Mayo	14	0	25	5	9.5	-0.3	Moose Jaw	20	0	32	9	18.1	8.8	Sherbrooke	17	-1	28	5	33.2	8.9
Shingle Point	10	0	21	2	15.9	4.4	Nipawin	17	X	30	8	39.8	X	Ste Agathe des Monts	17	0	27	7	8.2	-21.2
Watson Lake	15	0	24	5	9.8	0.8	North Battleford	17	-1	28	8	31.8	20.1	Val d'Or	18	2	29	5	11.0	-13.2
Whitehorse	14	0	25	6	10.3	2.7	Prince Albert	17	-1	28	7	24.3	9.5							
							Regina	19	0	32	9	16.0	4.6	NEW BRUNSWICK						
NORTHWEST TERRITORIES							Rockglen	M	X	31P	13P	M	X	Charlo	20	2	32	10	9.5	-13.2
Alert	2	-2	10	-1	3.5	-0.4	Saskatoon	19	0	32	8	15.2	-3.5	Chatham	21	1	33	9	6.8	-9.8
Baker Lake	11	1	18	4	0.5	-9.8	Swift Current	19	0	30	10	13.2	3.3	Fredericton	20	1	32	9	1.6	-21.0
Broughton Island	5	-1	15	-1	16.0	12.3	Uranium City	16	1	26	7	0.0	-9.6	Moncton	19	0	30	7	1.8	-16.2
Byron Bay	8	0	18	0	6.6	-2.4	Wynyard	18	0	28	10	26.0	13.2	Saint John	18	1	28	11	8.8	-17.7
Cambridge Bay	7	-1	19	1	7.9	0.3	Yorkton	18	-1	29	7	58.8	49.3							
Cape Dorset	6	X	13	1	18.8	X							NOVA SCOTIA							
Cape Dyer	8	1	18	2	4.0	-8.5	MANITOBA						Eddy Point	18	X	29	12	10.2	X	
Cape Hooper	M	M	12P	-2	18.5	13.5	Bissett	19	2	26	8	6.9	-12.0	Greenwood	18	-1	30	10	10.4	-5.3
Cape Parry	6	1	13	2	5.6	0.2	Brandon	19	0	30	9	10.6	-5.5	Sable Island	M	M	22P	14P	4.6	-11.7
Cape Young	9	3	18	5	21.7	13.8	Churchill	13	1	27	3	2.1	-11.1	Shearwater	18	0	30	11	1.8	-18.6
Clinton Point	8	2	15	3	61.5	55.7	Dauphin	19	1	29	9	14.7	1.9	Sydney	18	-1	30	9	11.5	-6.6
Clyde	M	M	13P	0	9.1	2.7	Gillam	14	X	27	5	17.4	X	Truro	M	M	27P	8	M	M
Contwoyto Lake	M	M	20P	1	4.4	-2.2	Gimli	18	-1	26	10	18.5	6.0	Yarmouth	16	-1	24	11	25.4	11.7
Coppermine	11	1	22	1	10.8	1.7	Island Lake	17	X	27	9	19.6	X							
Coral Harbour	8	-2	17	1	13.5	2.9	Lynn Lake	14	-1	24	4	8.6	-1.3	PRINCE EDWARD ISLAND						
Dewar Lakes	4	-2	9	0	26.0	14.5	Norway House	16	X	26	7	25.6	X	Charlottetown	18	-1	28	10	0.0	-14.2
Ennadai	M	M	M	M	M	M	Pilot Mound	20	1	30	9	25.1	13.8	Summerside	20	0	30	11	0.0	-10.5
Eureka	5	-1	10	1	6.8	4.8	Portage la Prairie	20	0	28	12	30.8	17.4							
Fort Reliance	15	2	28	6	0.2	-4.8	The Pas	18	0	30	7	50.2	38.6	NEWFOUNDLAND						
Fort Simpson	18	1	28	7	0.0	-3.7	Thompson	15	1	28	-1	13.0	0.4	Argentia	15	X	19	11	16.8	X
Fort Smith	16	0	28	4	0.0	-9.7	Winnipeg	19	0	30	9	14.4	-1.0	Battle Harbour	9	-3	15	6	26.9	9.1
Frobisher Bay	10	2	17	5	7.6	-6.3							Bonavista	16	-1	29	9	14.7	4.8	
Gladman Point	6	0	15	0	6.4	-6.1	ONTARIO						Burgee	15	0	21	9	24.2	-4.6	
Hall Beach	5	0	12	-3	6.6	-2.1	Armstrong	M	M	29P	4	M	M	Cartwright	9	-5	17	4	66.8	50.5
Hay River	18	3	29	8	1.6	-4.6	Atikokan	18	2	27	7	0.2	-20.9	Churchill Falls	13	-2	24	7	18.8	-12.6
Inuvik	12	0	25	3	6.5	-7.2	Earlton	M	M	32	7P	2.3	-18.7	Comfort Cove	15	-3	29	8	33.8	12.1
Jenny Lind Island	5	-1	16	0	4.8	-1.4	Geraldton	18	3	28	4	1.4	-15.9	Daniel's Harbour	15	-1	21	10	15.4	-7.0
Lady Franklin Point	7	2	14	3	11.7	5.8	Gore Bay	20	0	27	12	6.6	-11.7	Deer Lake	16	-2	27	10	13.4	-4.2
Longstaff Bluff	6	-2	15	0	1.5	-5.5	Kapuskasing	19	3	30	7	0.0	-18.6	Gander	16	-1	29	7	17.0	0.4
Mackay Inlet	4	-2	11	-1	17.4	8.4	Kenora	20	1	27	12	14.4	-8.7	Goose	12	-5	22	9	52.1	29.8
Mould Bay	5	1	12	-1	0.0	-5.4	Kingston	19	-1	26	12	27.4	3.6	Hopedale	8	-4	16	5	23.0	4.0
Nicholson Peninsula	10	3	19	2	10.0	3.8	Lansdowne	18	2	28	9	14.6	-5.9	Port aux Basques	14	-1	21	9	3.3	-14.0
Norman Wells	16	0	27	4	42.0	31.3	London	19	-1	29	10	51.2	32.4	St Albans	17	-1	24	9	11.4	-19.6
Pelly Bay	6	0	14	0	22.2	10.9	Moosonee	18	2	30	4	0.0	-21.2	St Anthony	11	X	18	6	30.1	X
Pond Inlet	5	X	10	1	3.2	X	Mount Forest	18	0	27	8									