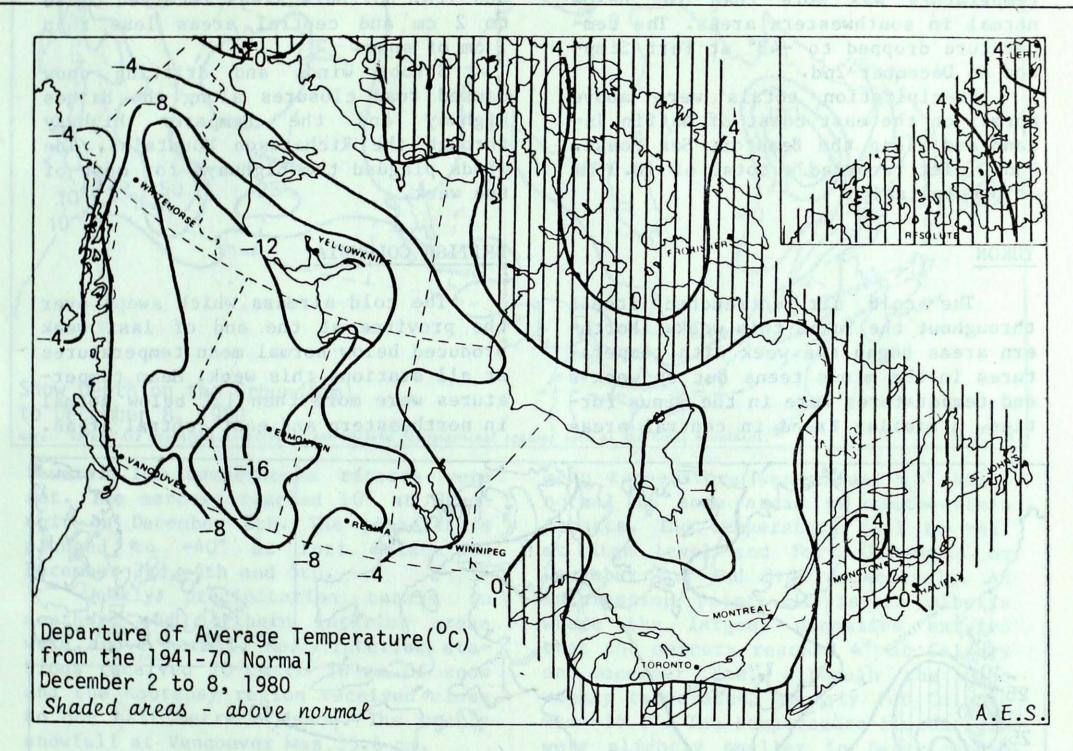
THE CANADIAN CLIMATE CENTRE, ATMOSPHERIC ENVIRONMENT SERVICE, 4905 DUFFERIN ST., DOWNSVIEW, ONTARIO M3H 5T4

DECEMBER 12, 1980

(Aussi disponible en français)

VOL.2 NO.49



WEATHER HIGHLIGHTS FOR THE WEEK - DECEMBER 2 TO 8, 1980

Very cold in the West, warm along the Atlantic

The very cold airmass covering the prairies intensified at the beginning of the period. The mean temperature in some areas of Alberta was almost 18° below normal. This cold air established many low temperature records, but by the end of the period, warm air intruded and set many high temperature records.

A storm which traversed the east at the beginning of the week dropped snow over all of Ontario and Québec. During the last 6 days of the week Sept.-Iles received 61.4 cm of snow.

The temperature varied between a maximum of 14° (Windsor) and a minimum of -49° (Ross River). Gaspé received a total of 104.7 mm of precipitation.

NOTE: The data shown in this publication are based on unverified reports from approximately 225

Canadian and 115 northern United States Synoptic stations.

NORTHWEST TERRITORIES

Mild weather still inhabits the Franklin district. Mean temperatures were more than 4° above normal in Baffin Island and Ellesmere Island. The temperature reached -2° at Cape Dyer on December 2nd. Cold air invaded the Mackenzie and Keewatin districts. The mean temperature was more than 10° below normal in southwestern areas. The temperature dropped to -43° at Fort Simpson on December 2nd.

Precipitation totals were above normal on the east coast of Baffin Island and along the Beaufort Sea coast. Pond Inlet recorded a total of 18.3 mm of precipitation.

YUKON

The cold air entrenched itself throughout the Yukon this week. Northern areas began the week with temperatures in the minus teens but by week's end temperatures were in the minus forties. A similar trend in central areas

resulted in a mean weekly temperature more than 12° below normal. Several low temperature records were set in southern areas. The mercury reached -8° at Komakuk Beach on December 2nd. The temperature fell to -49° at Ross River on December 8th.

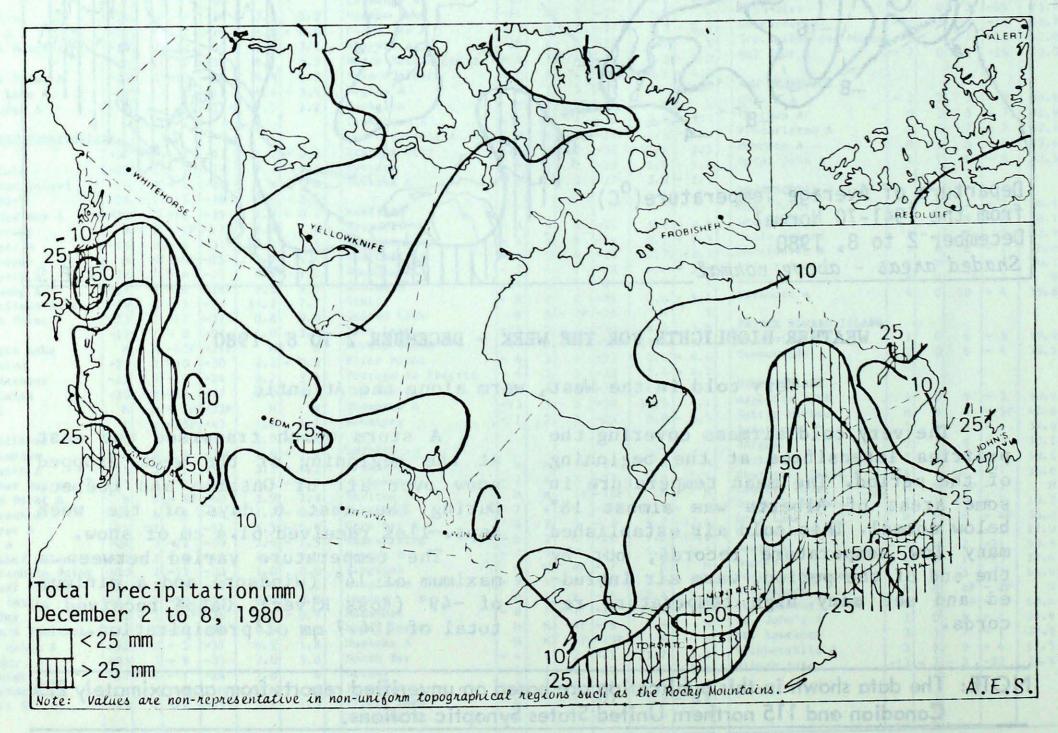
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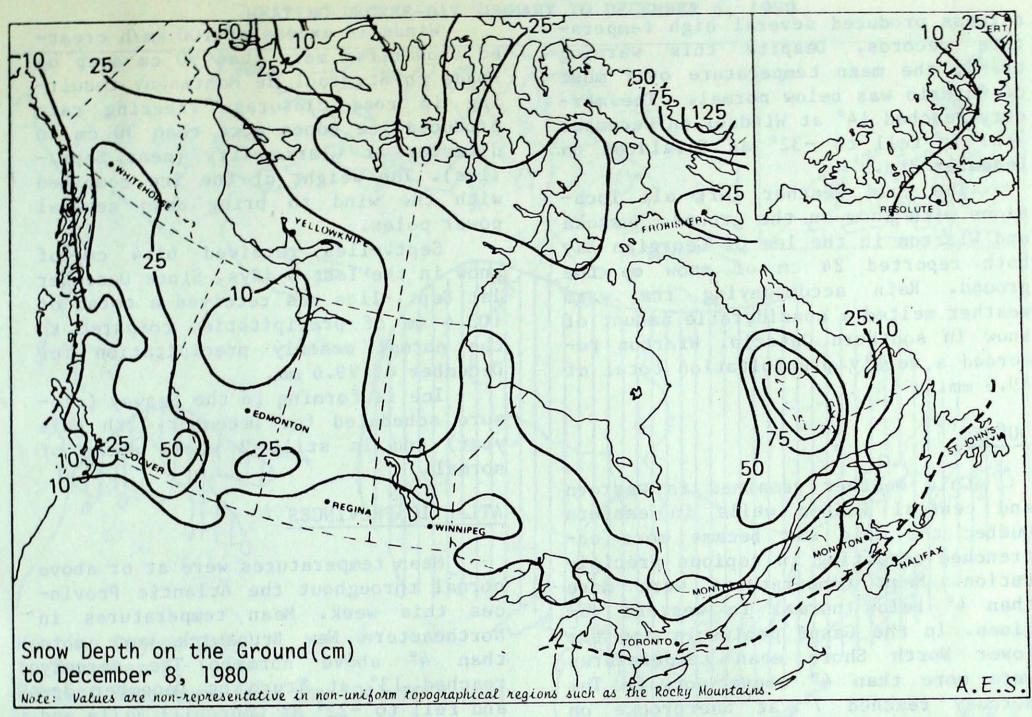
Four to six centimeters of snow fell on southern areas on December 6th and 7th. Northern areas received close to 2 cm and central areas less than 1 cm of snow.

Strong winds and drifting snow caused road closures along the Haines Highway and the Dempster Highway through the Richardson Mountains. The winds plagued the highways for most of the week.

BRITISH COLUMBIA

The cold airmass which swept over the province at the end of last week produced below normal mean temperatures at all stations this week. Mean temperatures were more than 12° below normal in northeastern and east central areas.





Several low temperature records were set. The mercury reached 10° at Sandspit on December 8th. The temperature plunged to -40° at Fort Nelson on December 3rd, 4th and 5th.

Weekly precipitation totals in southern and northern interior areas were above normal. Most interior stations received 20 cm to 30 cm of snow and the Kootenay region received close to one half metre of snow. The weekly snowfall at Vancouver was 35.6 cm.

In northern areas tree cutters began their work although the river ice was not yet thick enough to support logging trucks. Light trucks began using the rivers. In the south, the Trans-Canada highway was closed for one and one-half days in the mid Fraser Valley area due to drifting and blowing snow.

PRAIRIE PROVINCES

The very cold airmass remained over the prairies for most of the week. Milder conditions were experienced during the last two days of the week. The

mean temperature was almost 18° below normal in some areas of southwestern Alberta. The temperature fell to -42° at High Level and Fort Chipewyan on December 2nd and 3rd respectively. An interesting point: It is in Alberta where the largest anomalies existed that the mercury reached 4° at Calgary on December 8th, although the mean weekly temperature anomaly for Calgary was -16.1°. The temperature flucuations were slightly smaller in Saskatchewan and Manitoba.

Precipitation totals were above normal at most stations. Snowfall exceeded 10 cm at most Alberta and Saskatchewan stations. Banff recorded 30 cm of snowfall.

ONTARIO

This week was one of contrast. The cold wave which arrived at the end of the previous week invaded all of Ontario by the first day of this week. Several low temperature records were set. By weeks end the cold weather was replaced by warm weather. This warm

airmass produced several high temperature records. Despite this warming trend, the mean temperature over most of Ontario was below normal. The mercury reached 14° at Windsor on December 7th. It fell to -32° at Geraldton on December 3rd.

The cold weather left all locations with snow on the ground. Muskoka and Wiarton in the lea of Georgian Bay both reported 24 cm of snow on the ground. Rain accompanying the warm weather melted a considerable amount of snow in southern Ontario. Wiarton recorded a weekly precipitation total of 49.6 mm.

QUÉBEC

Cold weather remained in western and central Québec while in eastern Québec the mild air became more entrenched resulting in copious precipitation. Mean temperatures were more than 4° below normal in western regions. In the Gaspé peninsula and the lower North Shore mean temperatures were more than 4° above normal. The mercury reached 7° at Sherbrooke on December 2nd and 8th. It fell to -31° at Matagami on December 4th.

Precipitation totals were above normal along the St. Lawrence gulf. Gaspé received 104.7 mm of precipitation (mostly from a snowstorm on December 3rd). The storm which crossed the province on the 3rd gave snowfalls in excess of 40 cm in the La Vérendrye Park and the North Shore region (along with some freezing rain).

Winds in excess of 100 km/h created snowdrifts more than 90 cm deep on roads to St. Paul de Montmagny resulting in road closures. Freezing rain produced ice cones more than 30 cm in diameter at Clarke City (near Sept.-Iles). The weight of the ice combined with the wind to bring down several power poles.

Sept.-Iles received 61.4 cm of snow in the last 6 days. Since December 1st Sept.-Iles has received a total of 103.4 mm of precipitation compared to the normal monthly precipitation for December of 99.6 mm.

Ice is forming in the Seaway (closure scheduled for December 15th this year) and is still 2 weeks ahead of normal.

ATLANTIC PROVINCES

Mean temperatures were at or above normal throughout the Atlantic Provinces this week. Mean temperatures in northeastern New Brunswick were more than 4° above normal. The mercury reached 13° at Truro on December 3rd and fell to -22° at Churchill Falls and Wabush Lake on December 2nd.

With the exception of Newfoundland, weekly precipitation totals were above normal. Many areas received more than twice their normal precipitation. Moncton recorded a total of 81.6 mm.

During the period of December 3rd to 4th wind speeds of 98 km/h and 126 km/h were reported at Cap aux Meules (station Grindstone) and Port aux Basques respectively.

CLIMATIC PERSPECTIVES

Staff

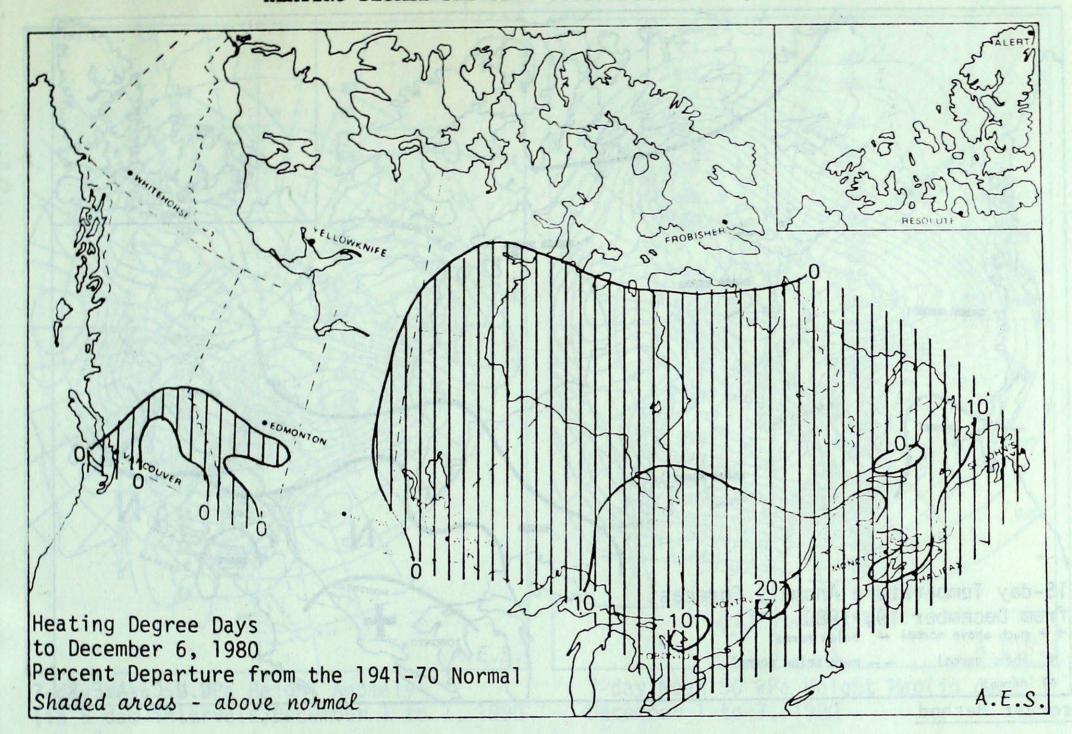
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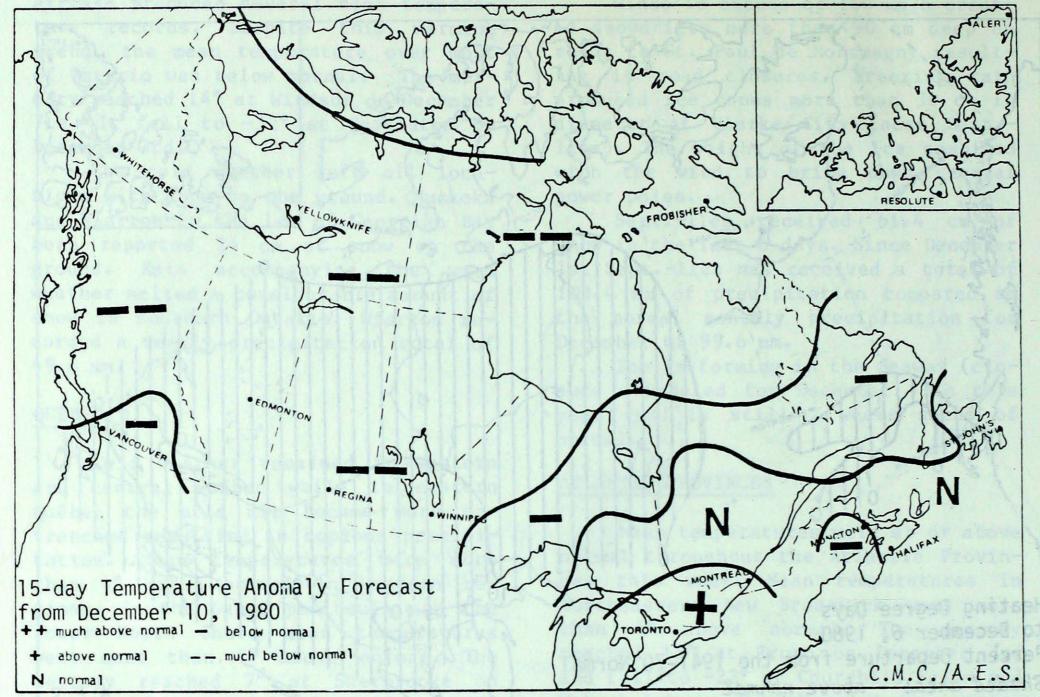
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HEATING DEGREE-DAY SUMMARY TO DECEMBER 6, 1980



STATION	MONTHLY CUMULATIVE TOTAL	MONTHLY DIFF. FROM 1941-70 NORMAL	SEASONAL TOTAL	SEASONAL DIFF. FROM 1941-70 NORMAL	SEASONAL PERCENT OF NORMAL	
Resolute	261.0	-13.0	4084.0	-67.0	98	
Inuvik	255.5	-2.5	3075.5	-8.5	100	
Whitehorse	260.5	67.5	2041.5	-108.5	95	22200
Vancouver Int'l A	131.5	53.5	908.0	38.0	104	Vigit
Edmonton Mun A	225.5	68.5	1469.0	-86.0	94	Vacco
Calgary Int'l A	245.5	101.5	1504.5	-24.5	98	PORCIA
Regina	220.5	48.5	1485.0	-51.0	97	CI to sold
Winnipeg Int'l A	192.0	24.0	1494.0	62.0	104	E ST. ST. LOW
Thunder Bay	146.5	-8.5	1528.0	64.0	104	COL
Windsor	102.0	-7.0	895.0	96.0	112	LOTOL
Toronto Int'l A	132.5	16.5	1062.0	127.0	114	FE330
Ottawa Int'l A	150.0	11.0	1249.5	160.5	115	
Montreal Int'l A	142.0	12.0	1242.5	239.5	124	56 3 My
Quebec	146.0	0.0	1413.5	180.5	115	
Saint John, N.B.	108.5	-14.5	1266.0	93.0	115	
Halifax	93.5	-8.5	1057.5	141.5	110	
Charlottetown	99.5	-16.5	1149.5	221.0	118	
St. John's, Nfld.	105.5	5.5	1466.0	ELLIN ZZI.U	110	1

15 DAY TEMPERATURE ANOMALY FORECAST



Forecast Method

Analogue technique based on point prediction at 70 Canadian stations.

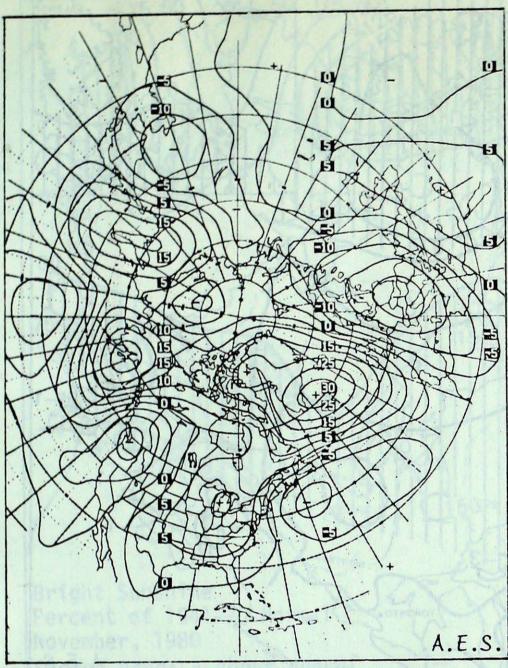
Temperature Scale

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
Whitehorse	Much Below Normal	More than 6.0° below Normal
Victoria	Below Normal	From 0.5° to 1.7° below Normal
Vancouver	Below Normal	From 0.6° to 2.0° below Normal
Edmonton	Much Below Normal	More than 5.0° below Normal
Regina	Much Below Normal	More than 4.2° below Normal
Winnipeg	Much Below Normal	More than 3.5° below Normal
Thunder Bay	Below Normal	From 0.8° to 2.8° below Normal
Toronto	Above Normal	From 0.7° to 2.3° above Normal
Ottawa	Above Normal	From 0.8° to 2.8° above Normal
Montreal	Above Normal	From 0.8° to 2.8° above Normal
Quebec	Near Normal	Within 0.8° of Normal
Fredericton	Below Normal	From 0.8° to 2.6° below Normal
Halifax 801	Near Normal	Within 0.7° of Normal
Charlottetown	Near Normal	Within 0.7° of Normal
St. John's	Near Normal	Within 0.5° of Normal
Goose Bay	Below Normal	From 1.1° to 3.6° below Normal
Frobisher Bay	Much Below Normal	More than 4.3° below Normal
Inuvik	Much Below Normal	More than 4.3° below Normal

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

Atmospheric Circulation



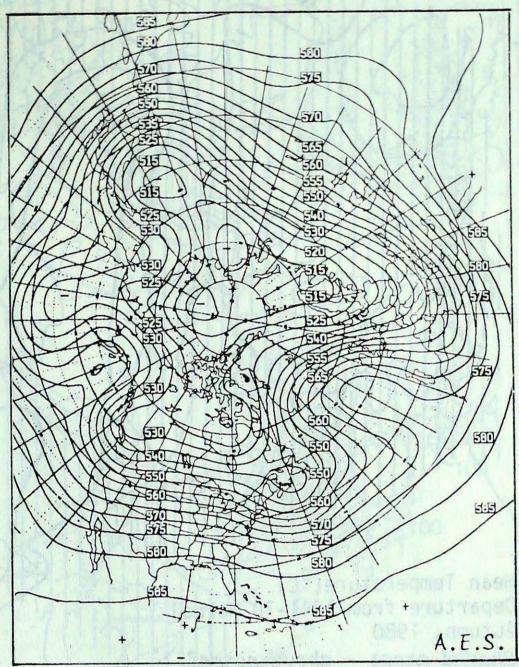
7-day Mean 50 kPa Height Anomaly (in 5 dam intervals) December 1 to 7, 1980

An anomalous 50 kPa ridge situated in the Gulf of Alaska ridged strongly northward across the Yukon early in the week. With height anomalies of more than 25 dam above the 30 year normal, it effectively tapped the very cold air stagnating over the western Arctic.

Mean temperatures were more than 12° below normal in western Canada. This contrasted sharply from previous weeks due to the strong northwesterly flow which permitted the very cold Arctic airmass to penetrate southward.

Slow moving cyclonic disturbances moving in from the Pacific delivered heavy snow across most of British Columbia and part of Alberta. New snow depths of 20 cm were not uncommon.

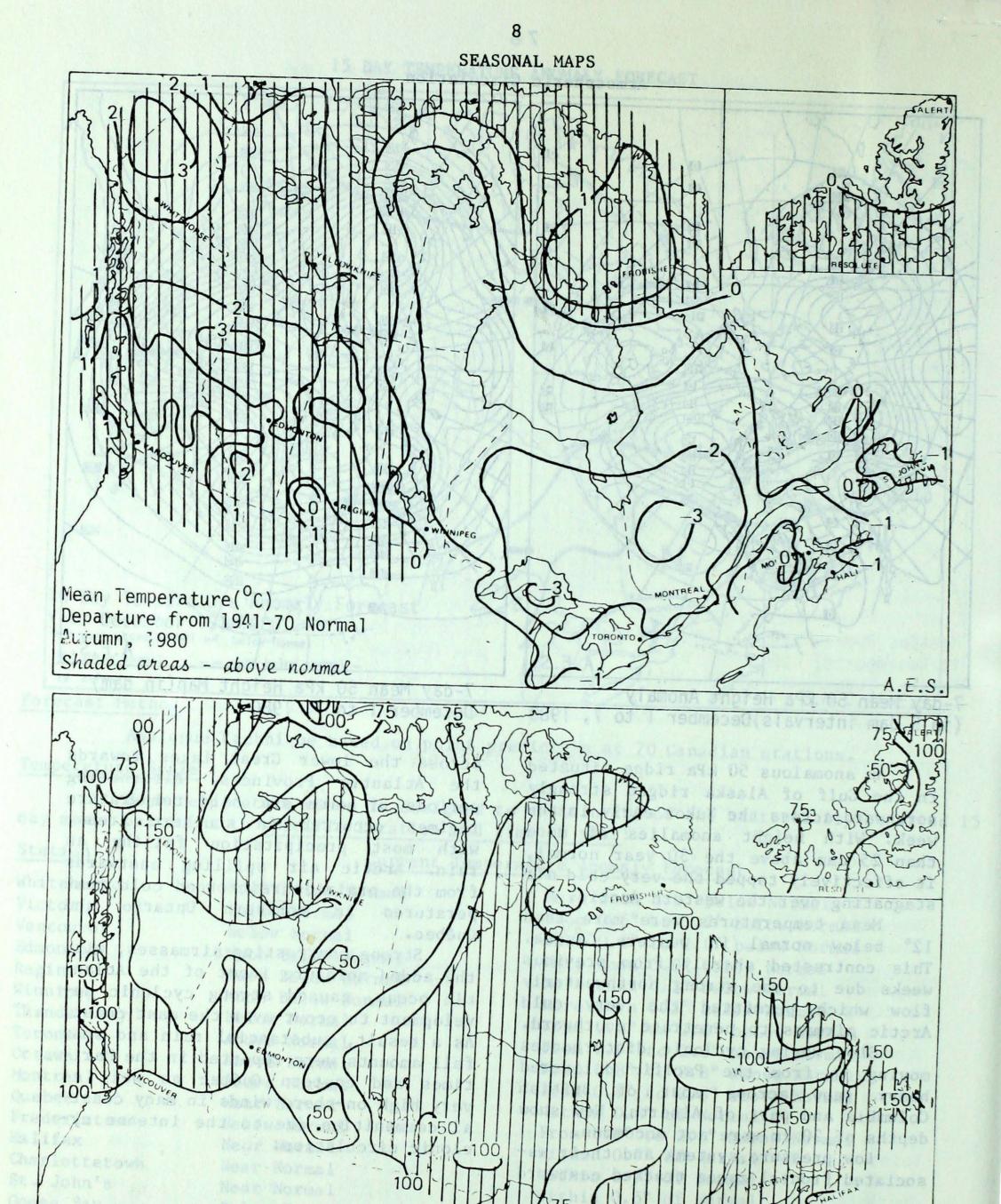
Low pressure systems and their associated frontal zones tracked eastward



7-day Mean 50 kPa Height Map(in dam) December 1 to 7, 1980

across the lower Great Lakes towards the Atlantic Provinces. Alternating periods of warm and cold temperature regimes occurred in southern areas, with most precipitation falling as rain. Arctic air spilling eastwards from the prairies reinforced cold temperatures in northern Ontario and Québec.

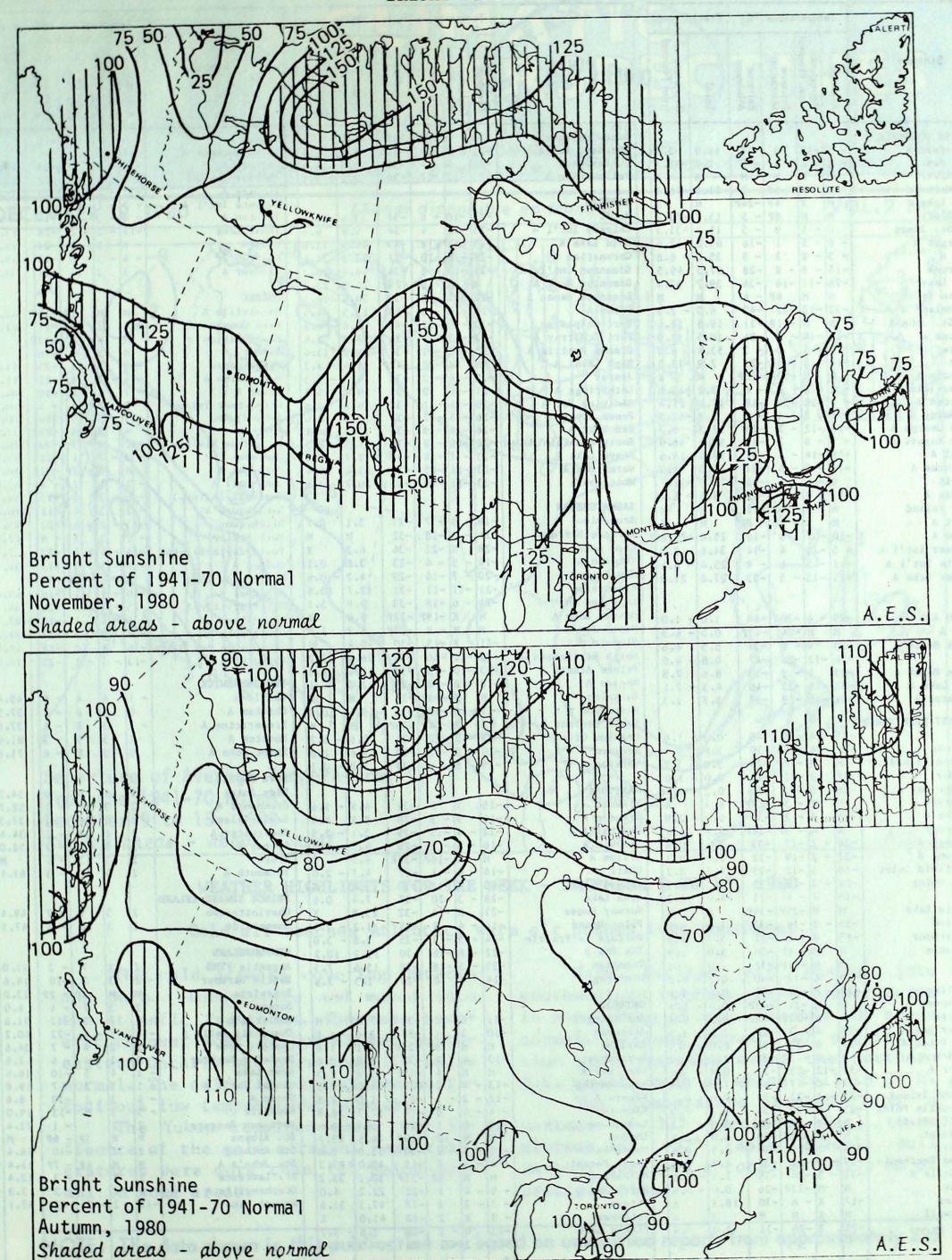
Strong contrasting airmasses, with the added moisture input of the Atlantic ocean, caused strong cyclonic development to occur over the east coast. As a result, substantial rain and snow fall amounts were reported in the Maritimes and eastern Québec as well as very high on-shore winds in many coastal communities due to the intense cyclonic circulation.



A.E.S.

Total Precipitation(mm)
Percent of 1941-70 Normal
Autumn, 1980

Shaded areas - above normal



	Temperature (°C) Precip. (mm)							
Station	Average	Departure from, Normal	Extreme Moximum	Extreme Minimum	Total	Departure from Normal		
BRITISH COLUMBIA Abbotsford A Alert Bay Blue River Bull Harbour Burns Lake Cape Scott Cape St. James Castlegar A Comox A Cranbrook Dease Lake Estevan Point Fort Nelson A Fort St. John A Kamloops A Langara Lytton Mackenzie A McInnes Island Penticton A Port Hardy A Prince George A Prince Rupert A Quesnel A Revelstoke A Sandspit Smithers A Spring Island Stewart A Terrace A Vancouver Int'l A Victoria Int'l A Williams Lake A	- 5 - 1	M -13 M -14 - 3 -12 X - 6 -10 - 5 -12 - 8 -14 - 7 - 4 - 9 M X - 7 -10 - 5	4P 8P 9 1 2 -8 -16 6P -22 -11P -8 9 -6 -10P 9 -1 4 -3 7 -3 -6 10 0P -3P 3 4	-17 - 6 M - 7 -24P - 5 - 16 - 9 -28 -36 - 4 -40 -31 -26 - 3 -21 -25P - 8 -15 - 9 -28 -15 - 9 -28 -15 - 9 -28 -15 - 14 - 4 -33	65.2 35.3 57.5 39.7 M 4.0 19.5 18.5 53.4 7.9 M 9.2 17.1 5.9 17.2 87.4 29.3 28.0 17.0 3.5 M 4.0 17.0 3.5 M 4.0 17.2	X -46.8 X -70.7 -31.3 42.6 - 8.8 49.5 32.4 M - 2.6 12.4 12.9 6.0 -12.5 X -69.6 11.4 -62.5 5.7 16.9 19.6 1.3 -31.7 - 8.7 M		
YUKON Burwash A Dawson A Komakuk Beach A Mayo A Shingle Point A Watson Lake A Whitehorse A	-20 -36 -22 -37	M 4 -12 2 -16	-20 -24 - 8 -26 - 9 -23 -19	-44 -43P -31 -47 -33 -46 -37	0.3 5.5 0.8 8.6	- 4.0 7.8 - 7.1		
NORTHWEST TERRITORIE Alert Baler Lake Broughton Island Byron Bay Cambridge Bay A Cape Dorset Cape Dorset Cape Dorset Cape Parry A Cape Hooper Cape Young A Chesterfield Inlet Clinton Point Clyde Contwovto Lake Coppermine Coral Harbour Dewar Lakes Ennadat Eureka Fort Reliance Fort Simpson Fort Simpson Fort Smith A Frebisher Bay A Gladain Point A Hall Beach A Hay River A Innvik A Jenay Lind Island Lady Franklin Point Lon;staff Bluff Mackar Inlet Mould Bay Nicholson Peninsula Norman Wells A Pelly Bay Pond Inlet Port Burwell Resolute A	-25 -22 M -27 -28 M -19 M -26 -27 -18 -26 -15 M -29 -29 M M	4 M O O O X 2 M A A A A A A A A A A A A A A A A A A	-22 - 3P - 2 - 9P -17 -19 -16 - 6 -25P -16 - 6 - 8P -21P -13 -22 -24 -25P - 3 -23 - 5P -23 -17 -23 -20 - 7P -10P -18 -24 -12P -10P -	-35 -35 -37 -31 -24P -33 -33 -25 -35 -21 -34P -33 -27 -24 -32 -40 -35 -43P -40P -28 -33 -33 -37 -42 -33 -33 -37 -39	5.8 5.0 0.0 0.2 6.3 6.0 5.9 2.6 1.0 7.7 1.2 4.0 1.6 5.3 3.0 M 0.2 0.6 0.6 0.2 1.8 0.0	3.7 -1.0 -1.6 X -2.9 1.0 0.8 0.3 3.2 -0.5 2.2 M -0.6 1.6 2.9 M -0.2 -3.1 -4.9 -6.9 -3.9 -0.5 1.0 -5.6 2.9 -0.5 1.0 -0.5 1.0 -0.5 1.0 -0.5 1.0 -0.5 1.0 -0.5 1.0 -0.5 1.0 -0.5 1.0 -0.5 1.0 -0.5 1.0 -0.5 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0		

	Temperature (°C)			Precip. (mm)		
Station	Average	Departure from Normal	Extreme Moximum	Extreme Minimum	Total	Departure from Normal
Sachs Harbour Shepherd Bay A Tuktoyaktuk Yellowknife A	-26 -25 -24 -33	3	-14 -14	-35 -35 -35 -38	0.4 1.4 6.0 0.2	0.4
ALBERTA Banff Calgary Int'l A Cold Lake A Coronation A Edmonton Int'l. A Edmonton Mun. A Edmonton Namao A Edson A Fort Chipewyan Fort McMurray A Grande Prairie A High Level A Jasper Lethbridge A Medicine Hat A Peace River A Red Deer A Rocky Mountain House Slave Lake A Vermilion A	-23 -24 -23 M -22 -25 -32 -27 -25 M -22 -21 -20 -26 -26 -23 -23	-12 -10 -13 -13 M -14 -16 -14 -13 -16 -18 -7	4 -18 -10 - 8 - 8P - 8 - 8 -22 -19 -11 -22 - 2 0 1 -17 - 9 - 9 -14 -15	-32 -40 -42 -34 -37 -42P -34 -33 -32 -33 -36 -38 -33 -35	4.4 9.7 6.8 12.5 12.5 11.5 12.7 23.4	6.9 11.6 21.6 16.2 23.2 16.1 4.3 - 4.6 3.6 13.4 - 3.2 - 2.5 5.4 3.8 8.6 10.1 8.3 2.3 20.4
Whitecourt SASKATCHEWAN Broadview Buffalo Narrows Cree Lake Estevan A Hudson Bay Kindersley La Ronge A Meadow Lake A Moose Jaw A Nipawin A North Battleford A Prince Albert Regina A Rockglen Saskatoon A Swift Current A Uranium City Wynyard Yorkton A	-18 -24 -28 -14 -20 -21 -24 M -21 -23 -18 M -21 M -29 -29	- 8 - 5 X - 5 - 7 -11 - 6 X M X -12 -10 - 8 X -10 M	-14 -11 -18 -19P - 8 -15 -16 -16 - 8 - 5P -15 - 4P -22 -11	-26P -30 -38 -32 -29 -24 -31	4.2 10.4 26.6 11.1 2.8 M 13.6	M X 0.1 - 0.6 10.8 5.1 X 1.0 M 23.2 7.3 0.1 X 10.0 M
MANITOBA Bissett Brandon A Churchill A Dauphin A Gillam A Gimli Island Lake Lynn Lake Norway House Pilot Nound Portage la Prairie The Pas A Thompson A Winnipeg	-15 -16 -22 -16 M -14 -20 -26 -21 -14 -12 -22 -25 -14	- 5 - 4 - 5 X - 4 X - 3 X - 4 - 5 - 8 - 3	- 3 -13 - 5 -16P - 1 -11 -20 -14 - 1 - 2 -16 -18	-31 -28 -29 -28 -32P -27 -30 -37 -32 -25 -25 -30 -39 -26	9.2 3.1 4.5	- 2.9 - 0.9 x - 2.0 x 0.6 x - 3.3 - 3.0 10.2 7.5
ONTARIO Armstrong Atikokan Earlton Geraldton Gore Bay A Kapuskasing Kenora A Kingston Lansdowne London Moosonee Mount Forest Muskoka A North Bay Ottawa Petawawa Pickle Lake Red Lake	-11 -10 M -10 M -13 -12 - 4 -13 M -15 - 4 M - 7 - 9 - 13 - 13	3 M 4 M - 4 - 2 - 1 0 M - 5 - 1 M - 4 - 2 - 1 0 X	1 OP 2 4 0 0 - 1 8 - 1 12 - 2 7 6P 1 2	-31 -27 -27P -32 -19P -29 -27 -14 -28 -10P -30 -15 -21P -22 -17 -20 -30 -26	M 8.0 14.1 6.8 21.8 14.0 1.0 57.2 5.4 44.5 11.0 45.0 58.1 22.2 47.3 41.0 2.6 0.0	- 1.8 1.4 0.8 2.3 - 3.0

, inch 3, 1500	Ter	mper	ature (°C1	Precip	- (mm)
RHX (P	3	اه -				
Station	əbo	Departure from Norma	mum mum	me		Departure from Norma
	Averoge	Depo	Extreme	Extreme	Total	Depo
Stracoe	M	ħ		-10	;; ;;, b;	M - 7.2
Stanx Lookout A Salbary A	-11 -10	- 1 - 3	U	-26 -23	15.5	2.6
Thunder Bay A Timmins A	- 5 -12	- 1 - 2	EXPERIMENTAL STATE OF	-22 -28	12.0	0.4
Toronto Int'l A Tranton A		- 2 - 3	12	-13 -14	40.5	31.5
Trout Lake	-17 - 8	- 2 X	- 2	-28 -21	13.9	4.4 X
Windsor A	- 4 3	- 3 2	5 14	-15 -11	49.0	21.9
QUÉBEC						
Bagotville A	- M		1 P	-15P -11	61.5	32.0
Blanc Sablon	M	М	6	-128	3	M
Border Chibougamau	-15	X	- 4	-18 -25	11.0	M X
Fort Chimo A	-16 - 1	X		-22 -10	104.7	0.8 X
Grindstone Island Inches	2 -11	2	- 5	- 1 -16	50.7	29.7
Bartak Barande Rivière A	M -17	100		-23P -30	2.0	X
Puniwaki Patagami A	- 9 M	- 3	1180000	-22 -31P	45.2	27.5 X
Mont-Joli A Montréal (A int.)	- 3 - 6	1	2	- 9 -17	02.0	45.2 25.8
Satashquan A	- 2	3	4	-12 -22	10.0	
Ritchequon Port Menier	-15 - 2	3	3	- 9	11.4	00.2
Poste-de-la-Baleine Québec A		- 1		-23 -13	34.9	12.4
Rivière du Loup	-10	7	- 6P	1.0	69.0	56.2
Schetferville A Sept-lles		- 1		3 3 3 3	87.4	21.1
Sherbrooke A	- 7	0	7	-17	31.7	10.8
Ste. Agathe des Monts Val d'Or A	-13	- 5	- i	-25		- 0.4
NEW BRUNSWICK	·	6	4	- 6	49.4	29.6
Charlo A Chatham A	0	4	8	- 7 - 6	37.5	18.2
Fredericton A Moncton A	- 1 1	3	9	- 3	81.6	55.6
Saint John A	C	3	8	- 6	71.8	30.8
NOVA SCOTIA Eddy Point	3	X	8	0	54.2	
Greenwood A Sable Island	2		No.	- 2	37.5	1
Shearwater A	2	1	10	- 2 - 2	34.4	The second second
Sydney A Truro	2 2	3	13	- I - 3	61.1	М
Yarmouth A						3001
PRINCE EDWARD ISLAND Charlottetown	2			- 2 - 3	49.4	25.3
Summerside	2	3	11	- 3	47.3	23.9
NEWFOUNDLAND Argentia VTMS	2			- 2	11.0	
Battle Harbour Bonavista	- 2 M			-10 - 2P	13.0	- 5.1 - 7.2
Burgeo Cartwright	- 4			- 4	6.0	-32.5 14.8
Churchill Falls A Comfort Cove	-11 - 1	7	- 6	-22	34.6	
Daniel's Harbour	0	2	6	- 6 -10	2.6	-13.7 -12.1
Gander Int'l A	- 1 - 6	1	3	- 7 -19	19.8	- 2.9 - 7.9
Goose A Hopedale	- 5	3	0	-13	19.0	6.3
Port aux Basques St. Albans	M - 2	M	5P	- 6P -10	M 16.4	M
St. Anthony St. John's A	M	M	4P	- 7P	11.4	-30.4 -17.6
St. Lawrence Stephenville A	2 2	2	7	- 3 - 3	3.8	-18.8
Wabush Lake	-12	0 2	- 5	-22	57.1	36.0
	JOL		e I Hill			
MAN SAGES -						