

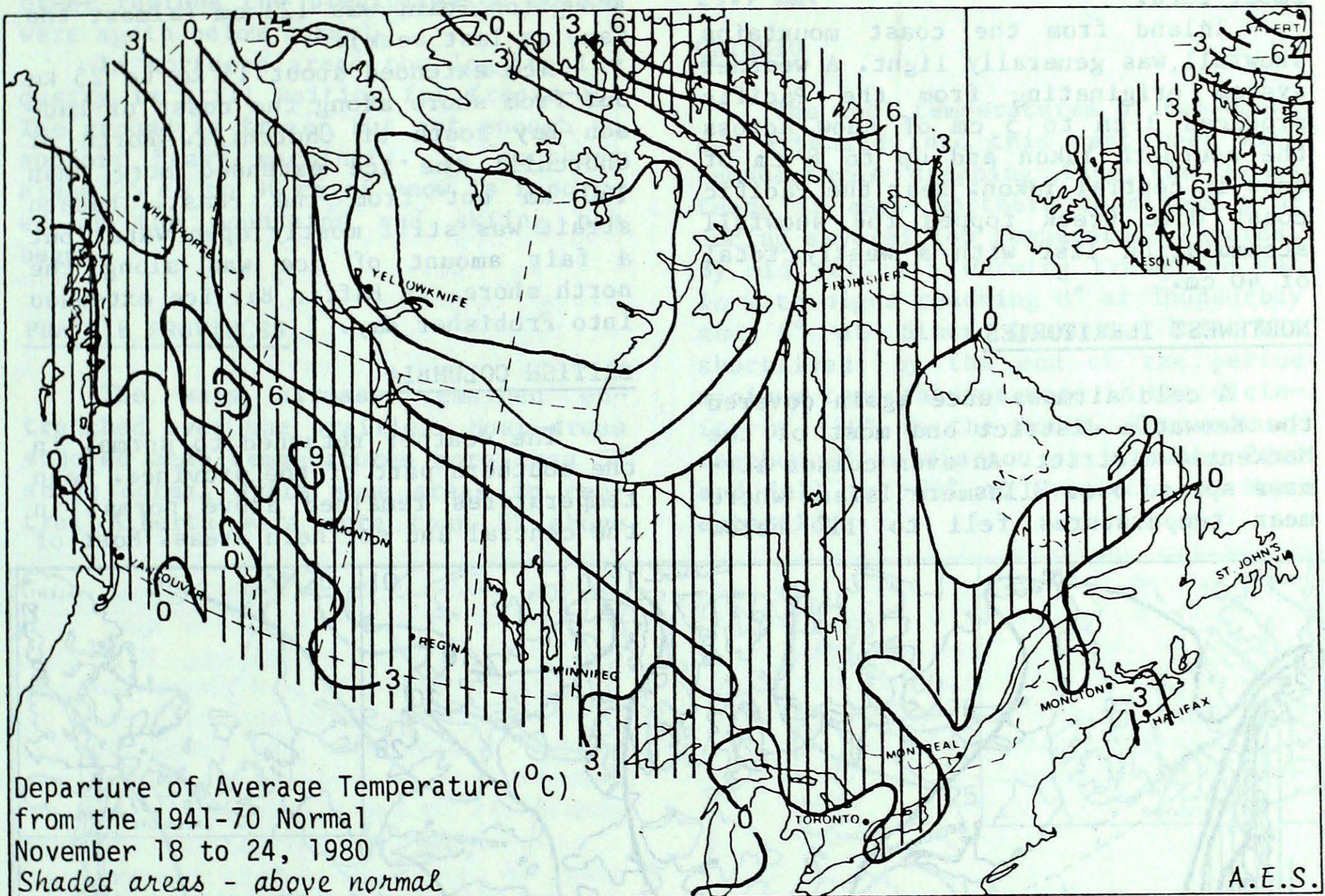
CLIMATIC PERSPECTIVES

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NOVEMBER 28 1980

(Aussi disponible en français)

VOL. 2 NO. 47



WEATHER HIGHLIGHTS FOR THE WEEK - NOVEMBER 18 TO 24, 1980

One of worst fall snowstorms hits Atlantic Provinces

The Atlantic Provinces were hit by one of the worst snowstorms in history. The storm dumped more than 30 cm of snow in southern Newfoundland and 25 cm at St. John's. At least 5 people died in the storm. Winds in excess of 100 km/h blew down high tension power lines in New Brunswick and more than 990 power poles in Nova Scotia causing prolonged blackouts in the Maritimes. Ski resorts were not prepared for this early snow.

The mild airmass extended to Québec this week while maintaining high temperature anomalies in northern Alta. northern B.C. and the Yukon. A cold airmass covered the Mackenzie and Keewatin districts. An even colder airmass near the pole was advancing southwards.

Temperatures fluctuated between 13° (Lethbridge) and -44° (Alert). A total of 101.1 mm of rain fell at Vancouver airport. Snow cover equalled 123 cm at Broughton Point.

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 mild weather persisted in the Yukon this week. Mean temperatures were more than 6° above normal at most stations. The mercury reached 3° at Burwash on November 24th. A cool airmass along coastal regions held mean temperatures below normal. The temperature fell to -41° at Shingle Point on November 23rd.

Inland from the coast mountains snowfall was generally light. A weather system originating from the Pacific produced 3 cm to 5 cm of snow across the southern Yukon and up to 8 cm of snow in central Yukon. Near the Pacific coast Mule Creek topped the snowfall accumulation list with a weekly total of 40 cm.

NORTHWEST TERRITORIES

A cold airmass once again covered the Keewatin district and most of the Mackenzie district. An even colder airmass spread over Ellesmere Island where mean temperatures fell to 11° below

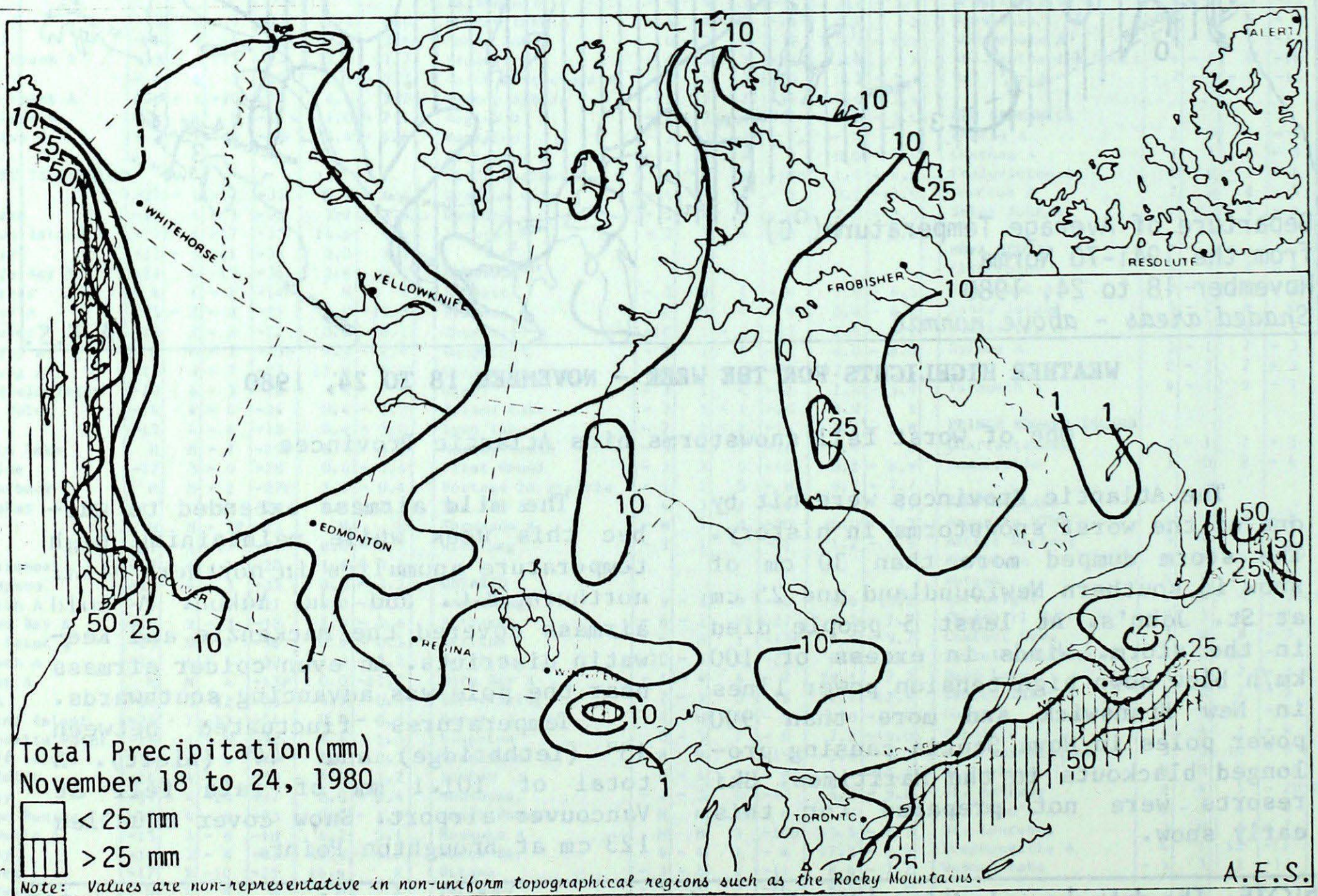
normal. At Alert the temperature ranged between -44° and -33° all week. In contrast, mild air over Baffin Island allowed the mercury to reach -1° at Cape Dorset on November 18th.

The greatest precipitation was on the Baffin Island coast. Cape Dyer recorded 29.0 mm. Elsewhere, except in the Yellowknife area, very little precipitation was recorded. Snowcover at Broughton Point was 123 cm (almost the same as last week).

Ice extended about 15 km to 25 km out from shore along the coast of Hudson Bay south of Churchill. North of Churchill the ice extended more than 160 km out from the coast. Hudson Strait was still mostly open water but a fair amount of ice was along the north shore. In Baffin Bay ice extended into Frobisher Bay.

BRITISH COLUMBIA

The weather returned to normal in the southern part of the province. Mean temperatures remained above normal in the central and northern areas. Most of



the northern half of the province enjoyed mean temperatures more than 3° above normal while some stations in the Cariboo region were more than 9° above normal. The mercury reached 12° at Abbotsford on November 21st and fell to -21° at Fort Nelson on the 22nd.

Precipitation totals were above normal along coastal areas. Weekly totals were 101.1 mm at Vancouver. In other regions the precipitation totals were again below normal.

In northern areas the logging industry is still waiting for freeze-up. The ground is frozen but not enough to support heavy machinery. In southern areas 25 cm to 30 cm of snow is reported on the mountains and skiing has begun.

PRAIRIE PROVINCES

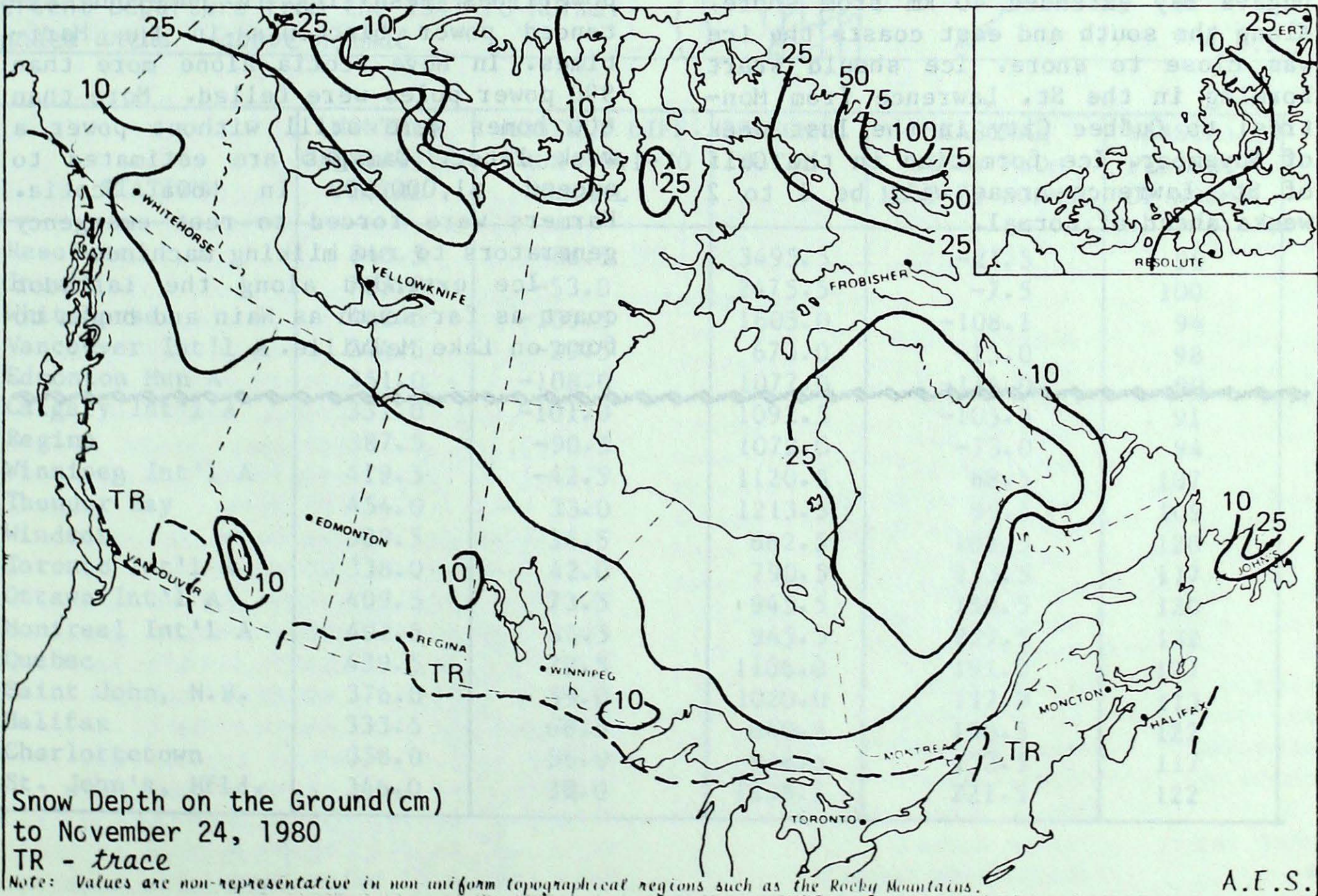
The warm airmass remained entrenched over the prairies. Most areas enjoyed mean temperatures more than 3° above normal while some areas in central Alberta were more than 9° above

normal. A cold airmass was beginning to invade the northern areas of Saskatchewan and Manitoba resulting in below normal mean temperatures. The mercury reached 13° at Lethbridge on November 21st and fell to -33° at Thompson on November 23rd.

Precipitation was normal or below normal at every station except Banff which recorded a weekly total of 29.7 mm.

ONTARIO

The cool temperatures of two weeks ago extended into this past week with temperatures dropping into the minus teens in many northern locations producing several low temperature records. By mid period a warming trend had set in with highs reaching 8° at Thunderbay and 6° at Sioux Lookout. This was shortlived; by the end of the period minimum temperatures were in the vicinity of -20° in the north. The mercury reached 9° at Warton on November 22nd and fell to -26° at Geraldton on November 18th.



Precipitation was below normal at all stations. Snow cover extended as far south as Muskoka with 1 cm on the ground. The snow depth has reached 20 cm at Atikokan and 16 cm at Kapuskasing.

QUÉBEC

The weather was milder this week. Although the mean temperature was below normal overall, it was above normal at some stations. The mercury reached 6° at Montréal on November 20th and at Ste. Agathe on November 23rd. It fell to -27° at Nitchequon on November 19th. The cold weather continued to produce some low temperature records in southern Québec.

The precipitation totals were below normal at most stations but Capaux-Meules (station Grindstone Island) and Sherbrooke recorded 39.8 mm and 29.3 mm respectively. In northern areas the snowcover had reached 41 cm at Fort Chimo and 40 cm at Nitchequon.

The ice along the west coast of Ungava Bay extended 40 km from shore. Along the south and east coasts the ice was close to shore. Ice should start forming in the St. Lawrence from Montréal to Québec City in the last week of November. Ice formation in the Gulf of St. Lawrence areas will be 1 to 2 weeks ahead of normal.

ATLANTIC PROVINCES

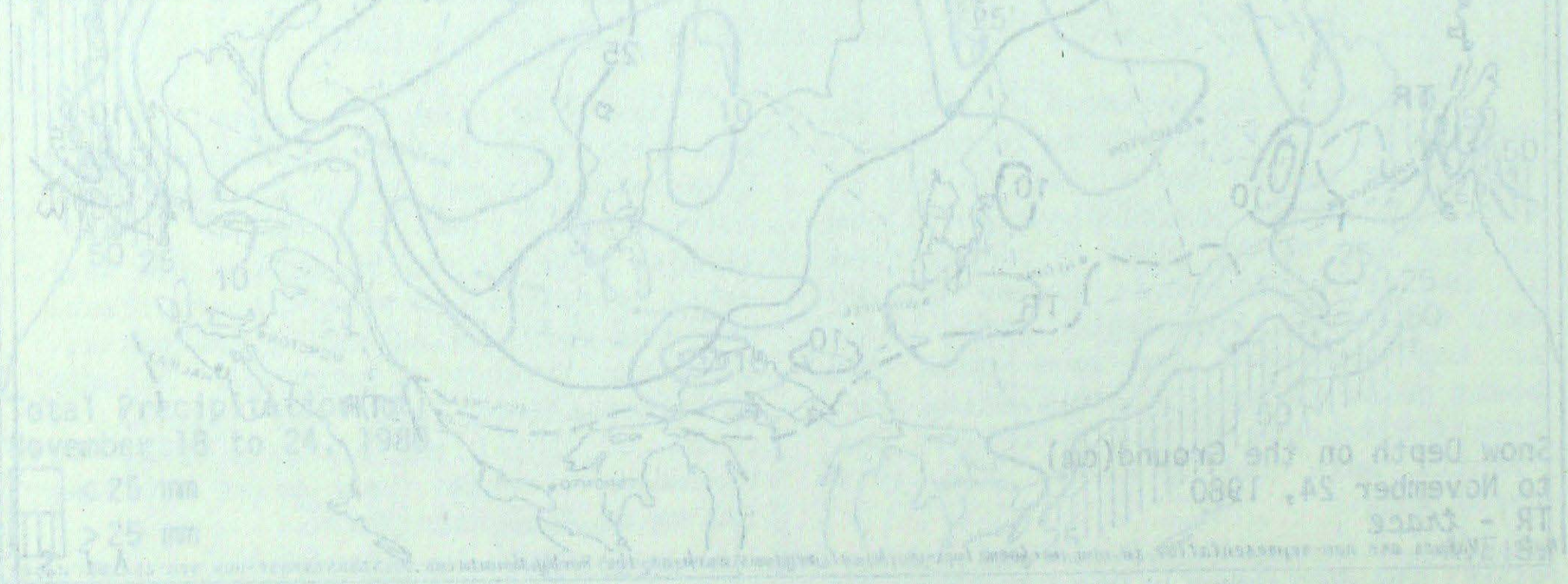
One of the worst autumnal snow storms in history struck the Atlantic Provinces on November 18th and 19th. In Newfoundland, 24 hour November snowfall records were set at Nappan and St. John's with 30.5 cm and 25.3 cm respectively. Precipitation totaled 68.0 mm at Yarmouth.

A cold airmass spread into all regions except southern Labrador. The mean temperature was 2° below normal in most regions. In the warm sector of the storm the temperature rose to 11° at Sable Island on November 18th. In Labrador the mercury fell to -19° at Wabush Lake on November 20th.

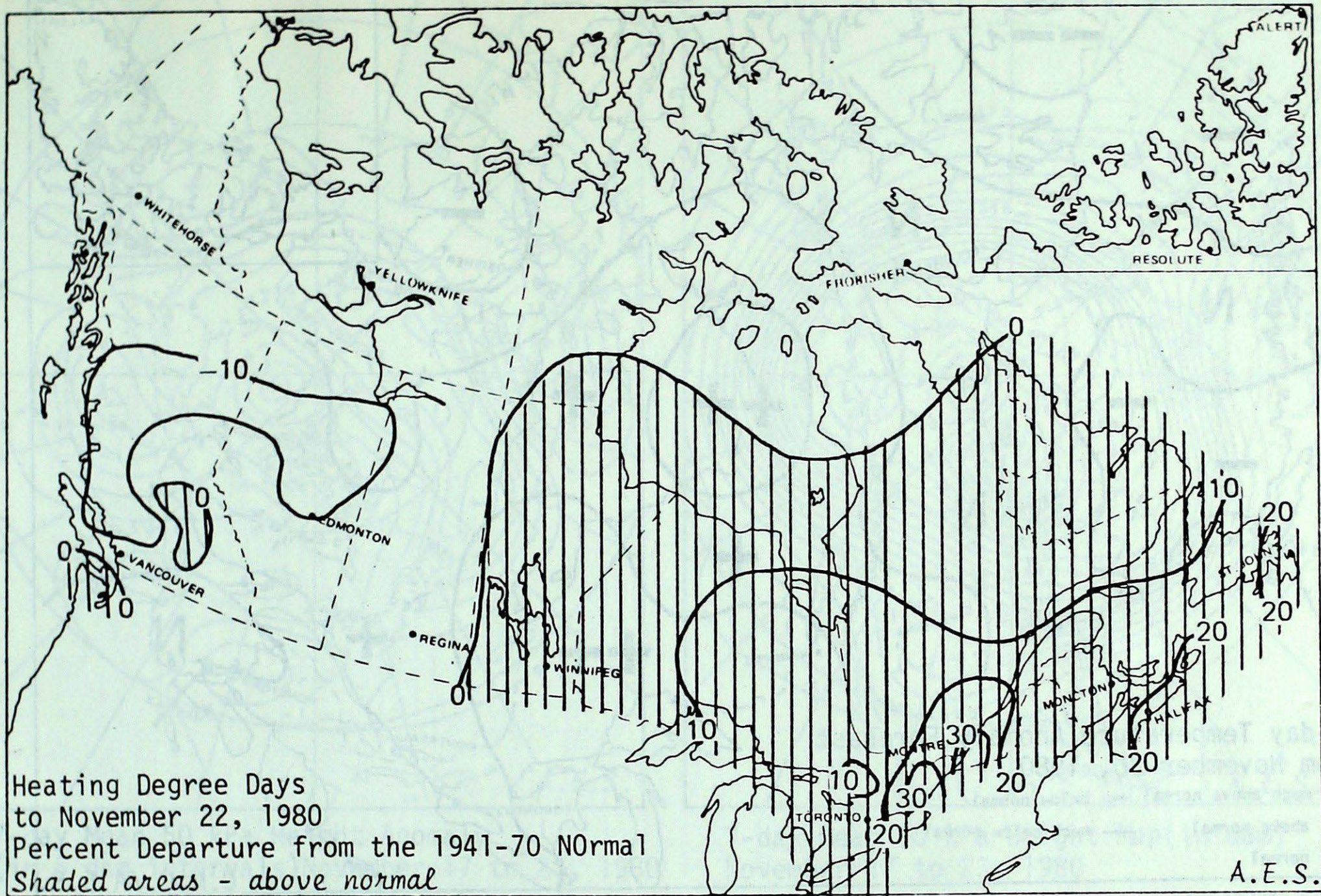
At least 5 people died in the storm: 3 on the highway and 2 at sea. At Amherst, all schools, industry and commerce were closed with children appreciating their holiday.

The storm took many by surprise. Snow removal equipment and ski resorts were not prepared. Wind in excess of 100 km/h blew down several high tension powerlines resulting in numerous extended power blackouts in the Maritimes. In Nova Scotia alone more than 990 power poles were felled. More than 600 homes were still without power a week later. Damages are estimated to exceed \$1,000,000 in Nova Scotia. Farmers were forced to rent emergency generators to run milking machines.

Ice extended along the Labrador coast as far south as Nain and began to form on Lake Melville.

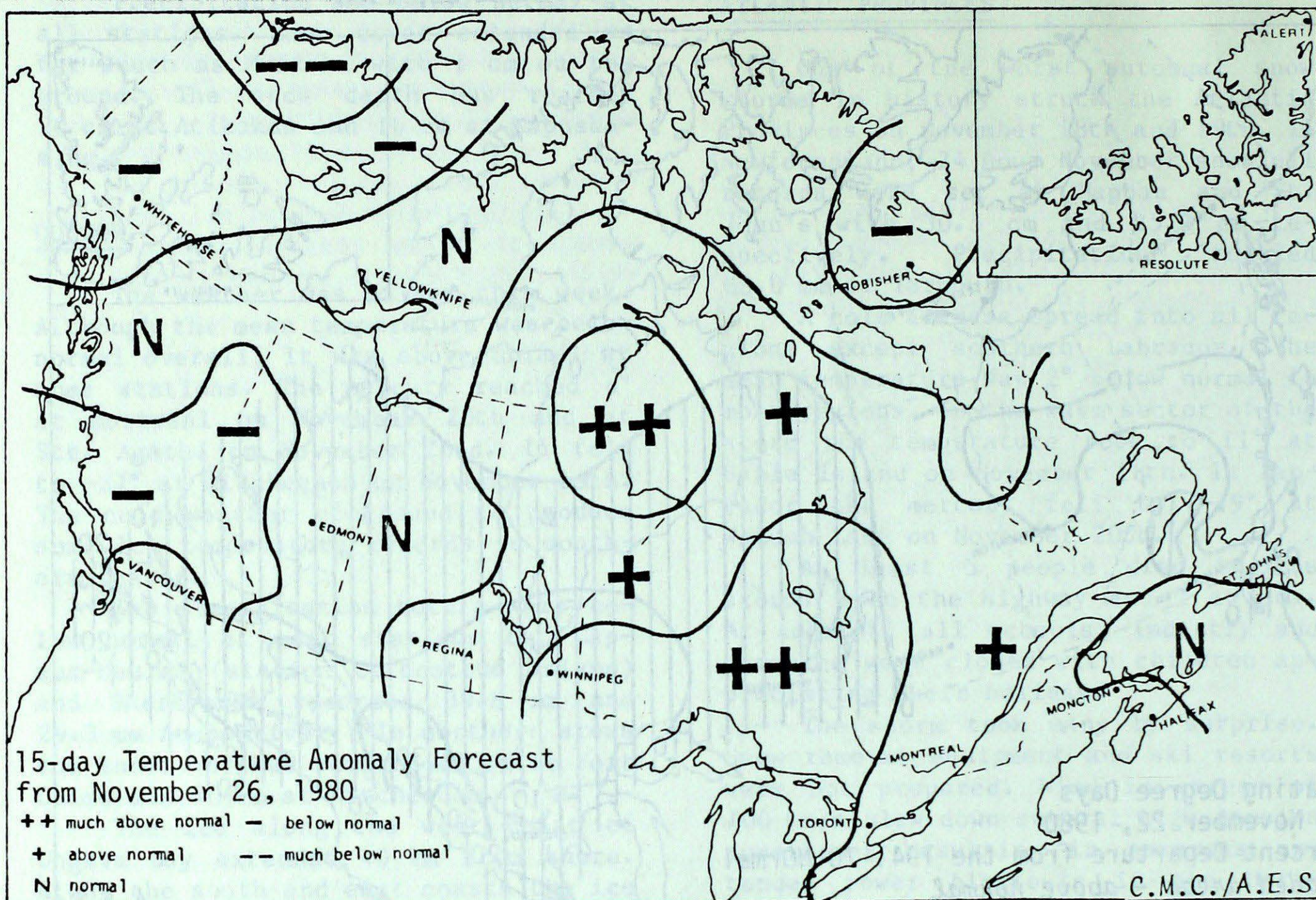


HEATING DEGREE-DAY SUMMARY TO NOVEMBER 22, 1980



STATION	MONTHLY CUMULATIVE TOTAL	MONTHLY DIFF. FROM 1941-70 NORMAL	SEASONAL TOTAL	SEASONAL DIFF. FROM 1941-70 NORMAL	SEASONAL PERCENT OF NORMAL
Resolute	846.5	-68.5	3495.5	-21.5	99
Inuvik	793.0	-53.0	2475.5	-7.5	100
Whitehorse	462.5	-105.5	1605.0	-108.1	94
Vancouver Int'l A	244.5	-29.5	673.0	-15.0	98
Edmonton Mun A	351.0	-108.0	1077.0	-114.0	90
Calgary Int'l A	331.0	-101.0	1092.5	-105.5	91
Regina	387.5	-90.5	1072.0	-73.0	94
Winnipeg Int'l A	419.5	-42.5	1120.5	68.5	107
Thunder Bay	454.0	33.0	1213.5	99.5	109
Windsor	309.5	34.5	662.5	108.5	120
Toronto Int'l A	338.0	42.0	790.5	113.5	117
Ottawa Int'l A	409.5	73.5	945.5	158.5	120
Montreal Int'l A	402.5	86.5	945.5	227.5	132
Quebec	439.5	78.5	1106.0	191.0	121
Saint John, N.B.	376.0	59.0	1020.0	117.0	113
Halifax	333.5	66.5	840.5	150.5	122
Charlottetown	358.0	56.0	918.5	132.5	117
St. John's, Nfld.	346.0	39.0	1238.5	221.5	122

15 DAY TEMPERATURE ANOMALY FORECAST

Forecast Method

Analogue technique based on point prediction at 70 Canadian stations.

Temperature Scale

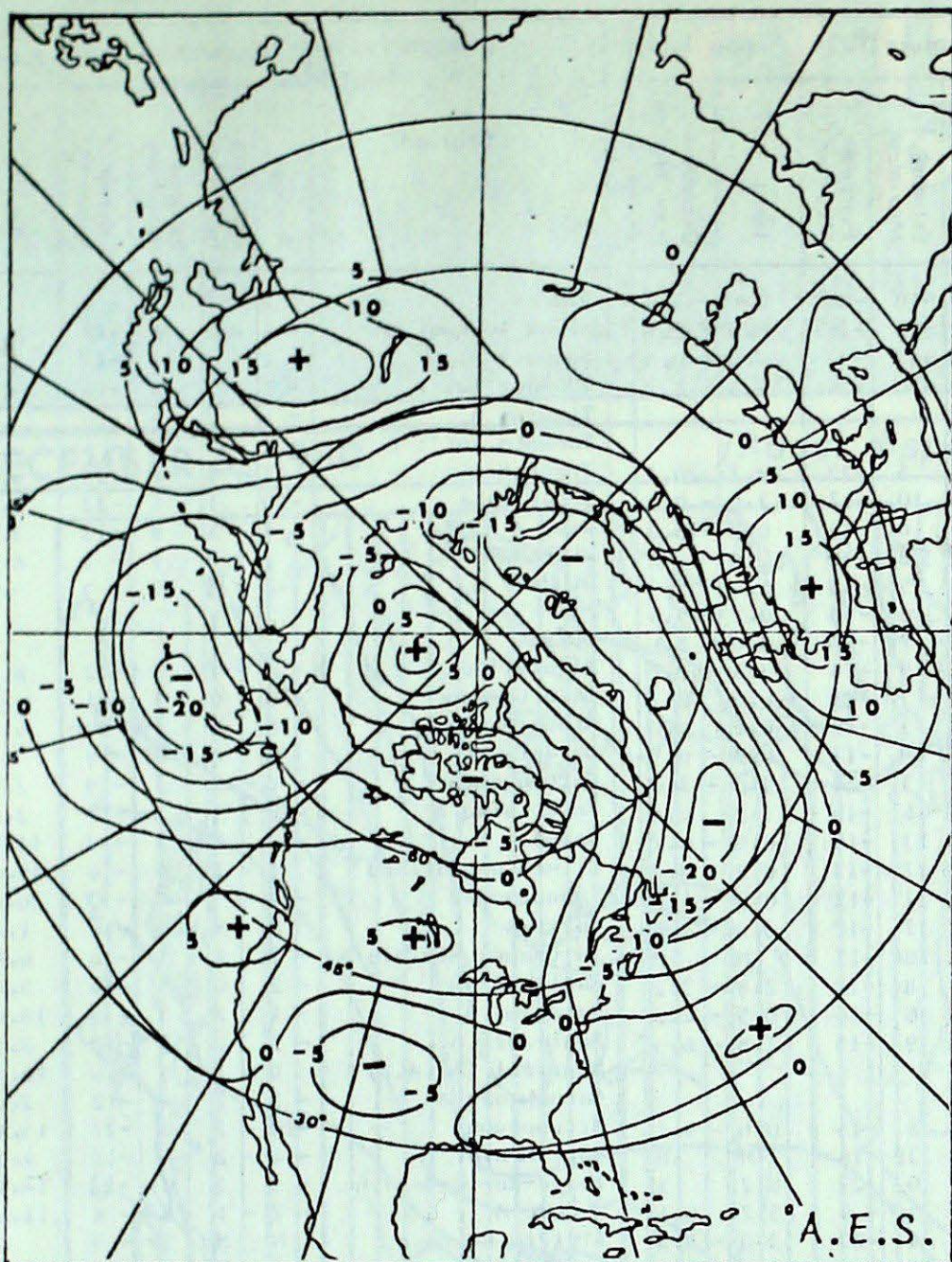
Each temperature class is designed to contain 20% of the historically observed 15 day means pertinent to specific location and time of year:

StationCurrent Temperature Anomaly Forecast

<u>Station</u>	<u>Current Temperature Anomaly Forecast</u>
Whitehorse	Below Normal
Victoria	Below Normal
Vancouver	Near Normal
Edmonton	Near Normal
Regina	Above Normal
Winnipeg	Much Above Normal
Thunder Bay	Much Above Normal
Toronto	Above Normal
Ottawa	Above Normal
Montreal	Above Normal
Quebec	Above Normal
Fredericton	Above Normal
Halifax	Above Normal
Charlottetown	Near Normal
St. John's	Above Normal
Goose Bay	Above Normal
Frobisher Bay	Below Normal
Inuvik	Much Below Normal

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

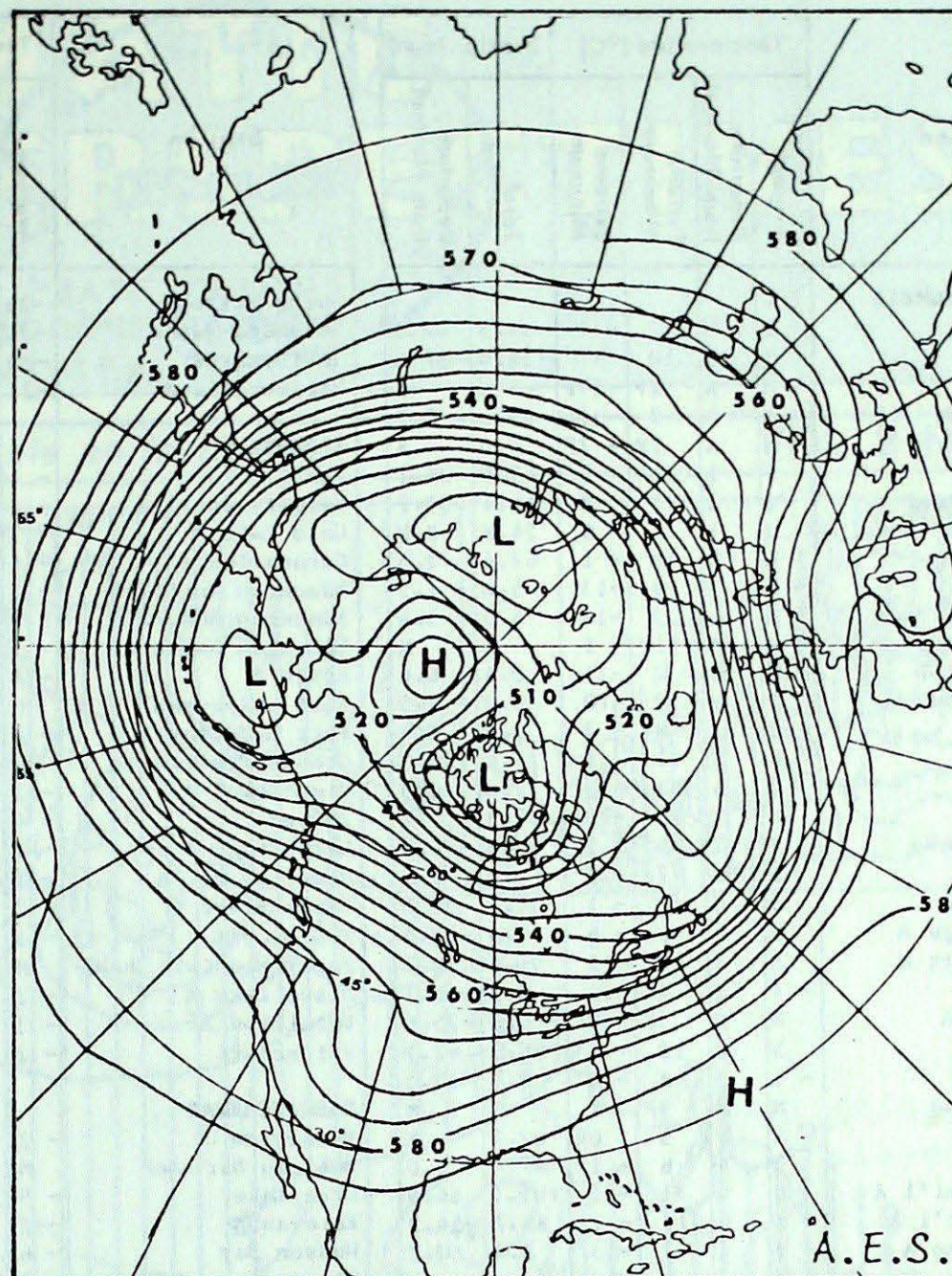
Atmospheric Circulation



7-day Mean 50 kPa Height Anomaly
(in 5 dam intervals) November 17 to 23, 1980

A mean atmospheric ridge continued to dominate the western half of the country. On a day to day basis the passage of strong triggering pulses in the upper circulation did cause considerable variation in amplitude. A westerly flow pumped mild moist Pacific air inland; precipitation amounts along the British Columbia coastline continued to exceed 50 mm. Mean temperatures remained above normal especially in the Yukon, northern British Columbia and Alberta where some areas experienced mean temperatures more than 9° above normal.

Disturbances which intensified east of the Rocky Mountains tracked eastwards across the northern prairie provinces into northern Québec. A southwesterly circulation south of these weather systems permitted relatively mild air to penetrate northward. Mean temperatures registered above normal throughout the Prairie provinces, Ontario and Québec. Precipitation continued to be light due to the lack of a source of moisture.



7-day Mean 50 kPa Height Map (in dam)
November 17 to 23, 1980

Eastern Canada on the other hand received the brunt of inclement weather. A low pressure system crossing the southern Gulf States early in the week tracked northeastwards along the eastern-sea-board. Once the storm tapped the abundant moisture supply over the relatively warm water off the Atlantic coast, it deepened rapidly to a central pressure of 96.4 kPa by Wednesday morning south of Newfoundland. After the system brushed past eastern Ontario and southern Québec, the Atlantic provinces received the full force of this late autumn storm. Warm air to the south of this system never reached the mainland; as a result precipitation was mostly in the form of snow. The intense circulation around the centre resulted in gale force winds in excess of 100 km/h causing heavy blowing and drifting snow. Heavy snow covered the island of Newfoundland and in many locations new 24 hours snow fall records were set.

Andy Radomski

TEMPERATURE AND PRECIPITATION DATA FOR THE WEEK ENDING 0600 G.M.T. NOVEMBER 25, 1980

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							Sachs Harbour	-28	-3	-18	-38	0.0	-1.4	Simcoe	2	-1	7	-4	0.0	-13.2
Abbotsford A	6	0	12	-4	94.5	47.3	Shepherd Bay A	-30	-3	-22	-38	0.0	-2.1	Sioux Lookout A	-4	-3	6	-17	0.0	-13.2
Alert Bay	5	0	10	1	38.0	-17.8	Tuktoyaktuk	-25	-2	-17	-32	0.0	-0.3	Sudbury A	-2	1	5	-11	7.5	-13.3
Blue River	M	X	2P	-11P	M	X	Yellowknife A	-21	-3	-10	-34	4.8	-1.7	Thunder Bay A	-2	1	8	-18	5.8	-7.1
Bull Harbour	5	0	9	-1	59.6	-7.2	ALBERTA						Timmins A	-4	2	5	-20	11.7	-11.0	
Burns Lake	M	X	7P	-7P	0.0	X	Banff	-6	0	5	-22	29.7	20.1	Toronto Int'l A	2	0	8	-4	3.1	-12.3
Cape Scott	7	1	11	3	65.9	-36.1	Calgary Int'l A	-1	3	10	-17	3.0	-0.5	Trenton A	1	-1	7	-10	9.2	-10.7
Cape St. James	8	2	11	2	68.1	32.7	Cold Lake A	-3	5	6	-14	0.8	-5.3	Trout Lake	-10	1	1	-22	3.0	-0.8
Castlegar A	2	1	9	-6	24.8	8.0	Coronation A	-4	4	8	-16	M	M	Wawa A	-1	X	8	-18	3.6	X
Comox A	6	0	10	-1	47.6	2.6	Edmonton Int'l. A	-2	6	9	-15	0.0	-5.3	Warton A	2	0	9	-3	8.8	-14.5
Cranbrooke	-1	3	9	-13	5.6	-1.2	Edmonton Mun. A	0	6	8	-10	0.2	-5.5	Windsor A	2	-1	9	-5	-5.1	-8.3
Dease Lake	-5	6	3	-14	5.5	-3.4	Edmonton Namao A	-1	6	7	-10	0.0	-8.6	QUÉBEC						
Estevan Point	M	M	11P	1	M	M	Edson A	-4	7	9	-19	3.8	-2.1	Bogotville A	-4	-1	3	-12	8.2	-8.6
Fort Nelson A	-13	2	-2	-21	0.4	-6.6	Fort Chipewyan	M	M	-3P	-23	6.5	0.3	Brie Comeau	-3	0	3	-11	4.8	-20.9
Fort St. John A	1	9	9	-10	0.0	-8.5	Fort McMurray A	-5	6	5	-17	6.9	0.0	Blanc Sablon	M	M	2P	-10P	3.2	-12.0
Kamloops A	2	1	8	-7	3.6	-1.4	Grande Prairie A	0	8	10	-11	0.0	-8.9	Border	M	M	0P	-19	0.0	M
Langara	6	2	11	4	77.4	33.4	High Level A	-12	1	3	-24	3.0	-7.0	Chibougamau	-6	X	3	-19	7.4	X
Lytton	3	4	11	-4	17.8	0.3	Jasper	-4	1	6	-16	11.2	0.6	Fort Chimo A	-10	-1	2	-17	2.4	-8.8
Mackenzie A	M	X	3	-10P	7.8	X	Lethbridge A	-2	0	13	-16	6.0	-0.7	Gaspé A	-3	X	5	-13	11.9	X
McInnes Island	7	2	10	2	58.8	-16.7	Medicine Hat A	-1	3	12	-13	0.8	-3.2	Grindstone Island	1	-1	5	-6	39.6	21.7
Penticton A	2	0	7	-8	8.2	2.3	Peace River A	-2	8	7	-12	0.3	-5.6	Inouéjouac	-6	3	0	-13	26.6	19.9
Port Hardy A	5	0	10	-1	34.7	-31.5	Red Deer A	-5	2	7	-17	3.3	-1.3	Koartak	M	X	-6P	-14	1.4	X
Prince George A	0	4	6	-8	1.4	-12.5	Rocky Mountain House	M	M	10P	-17	M	M	La Grande Rivière A	-7	X	1	-16	6.6	X
Prince Rupert A	5	2	9	-1	90.0	18.2	Slave Lake A	-2	9	8	-18	2.8	-3.2	Mamiwaki	-2	0	5	-16	5.4	-11.8
Quesnel A	-1	2	8	-10	3.2	-9.7	Vermilion A	-3	5	6	-14	0.5	-4.2	Matagami A	-4	X	5	-18	18.6	X
Revelstoke A	M	M	5P	-9	0.0	-25.6	Whitecourt	-2	6	9	-15	1.8	-6.3	Mont-Joli A	-2	0	5	-10	8.3	-8.8
Sandspit	5	0	10	-1	85.5	42.3	SASKATCHEWAN						Montréal (A int.)	0	-1	6	-10	16.2	-5.5	
Smithers A	-1	3	8	-10	1.6	-13.3	Broadview	-2	5	8	-15	0.0	-4.1	Natashquan A	-3	-1	4	-12	3.0	-30.5
Spring Island	M	M	9P	2	M	M	Buffalo Narrows	M	M	3P	-16	M	M	Nitchequon	-10	-1	0	-27	15.4	1.1
Stewart A	M	X	5	0P	67.7	X	Cree Lake	-9	X	0	-22	0.2	X	Port Renier	-4	-2	4	-12	4.3	-17.5
Terrace A	3	4	6	-1	47.4	-2.0	Estevan A	-2	4	5	-9	5.2	0.1	Poste-de-la-Baleine	-5	1	2	-12	14.1	-1.6
Vancouver Int'l A	6	0	11	-1	101.1	66.9	Hudson Bay	-6	4	4	-23	3.0	-5.8	Québec A	-2	-1	5	-8	11.6	-9.6
Victoria Int'l A	6	0	11	-1	86.7	54.2	Kindersley	-3	4	10	-14	1.8	-3.3	Rivière du Loup	M	M	5P	-9	3.1	M
Williams Lake A	-3	1	7	-13	8.4	0.2	La Ronge A	-6	6	4	-22	1.2	-6.1	Roberval A	-2	2	5	-13	2.2	-12.2
YUKON							Meadow Lake A	-6	X	4	-18	0.0	X	Schefferville A	-10	-1	0	-19	11.3	-3.1
Burwash A	-8	8	3	-23	0.0	-4.0	Moose Jaw A	-2	3	9	-13	5.6	0.6	Sept-Îles	-3	0	2	-11	8.7	-13.5
Dawson A	-13	6	-7	-21	1.8	-2.7	Nipawin A	-6	X	2	-22	0.0	X	Sherbrooke A	-3	-1	5	-11	29.3	2.2
Komakuk Beach A	-25	-3	-17	-35	0.0	-0.5	North Battleford A	-3	5	9	-16	0.0	-5.3	Ste. Agathe des Monts	-2	2	6	-13	7.2	-17.1
Mayo A	-12	6	2	-23	2.8	-2.5	Prince Albert	-6	3	4	-22	0.2	-6.3	Val d'Or A	-4	0	4	-17	6.4	-15.3
Shingle Point A	-28	-6	-20	-41	0.0	-1.4	Regina A	-4	4	8	-13	0.4	-5.9	NEW BRUNSWICK						
Watson Lake A	M	M	1	-20P	3.0	-7.1	Rockglen	M	X	8P	-11	M	X	Charlo A	-3	0	5	-8	9.3	-12.3
Whitehorse A	-4	7	2	-17	4.0	-0.7	Saskatoon A	-4	5	8	-15	0.6	-5.3	Chatham A	-2	-2	6	-14	16.0	-8.3
NORTHWEST TERRITORIES							Swift Current A	-2	3	8	-13	3.9	-1.9	Fredericton A	-2	-3	7	-12	34.3	7.3
Alert	-38	-11	-33	-44	0.2	-1.4	Uranium City	-15	-1	-1	-29	7.5	-0.7	Moncton A	-2	-3	8	-11	29.9	6.1
Baker Lake	-29	-6	-2	-36	0.0	-2.0	Wynyard	-3	5	5	-15	2.4	-3.1	Saint John A	-1	-3	6	-10	29.5	-9.3
Broughton Island	-12	4	-7	-21	6.0	0.1	Yorkton A	-3	5	7	-17	0.0	-8.0	NOVA SCOTIA						
Byron Bay	-32	-6	-25	-40	0.0	-0.3	MANITOBA						Eddy Point	1	X	5	-3	38.2	X	
Cambridge Bay A	-32	-6	-23	-40	0.8	-1.2	Bissett	-3	6	5	-15	0.0	-8.8	Greenwood A	1	-2	7	-5	32.7	8.6
Cape Dorset	M	X	-1P	-21	18.8	X	Brandon A	-2	5	8	-12	0.0	-5.4	Sable Island	5	-2	11	0	56.7	-28.6
Cape Dyer A	-12	3	-4	-24	29.0	12.3	Churchill A	-18	-4	-1	-28	11.8	3.2	Shearwater A	1	-3	6	-5	27.4	-3.1
Cape Hooper	-12	5	-6	-22	7.0	0.7	Dauphin A	-2	5	6	-14	0.0	-6.5	Sydney A	1	-2	6	-4	24.0	-7.7
Cape Parry A	-23	-2	-17	-29	0.3	-1.3	Gillam A	-15	X	0	-32	14.7	X	Truro	-2	-3	6	-12	18.8	-7.1
Cape Young A	-26	-4	-19	-34	0.0	-0.9	Gimli	-3	4	7	-13	0.0	-7.7	Yarmouth A	2	-2	8	-3	68.0	36.0
Chesterfield Inlet	M	M	-3P	-34	0.0	-5.0	Island Lake	M	X	1P	-22	M	X	PRINCE EDWARD ISLAND						
Clinton Point	-24	-3	-20	-29	0.0	-1.4	Lynn Lake	-14	2	0	-27	7.0	-2.4	Charlottetown	0	-3	4	-7	20.9	-5.1
Clyde	-11	8	-4	-23	14.2	10.6	Norway House	-7	X	4	-28	9.4	X	Summerside	0	-2	5	-6	2.8	-19.8
Contwoyto Lake	-32	-8	-25	-37	0.0	-2.8	Pilot Mound	-3	4	8	-13	0.0	-6.1	NEWFOUNDLAND						
Coppermine	-29	-7	-21	-35	0.0	-3.2	Portage la Prairie	0	5	7	-12	0.0	-6.6	Argentia VTMS	3	X	10	-2	24.6	X
Coral Harbour	-22	-5	-2	-35	4.5	-0.2	The Pas A	-6	5	3	-22	1.4	-5.9	Battle Harbour	-1	1	3	-7	2.4	-17.8
Dewar Lakes	-16	4	-7	-27	1.2	0.2	Thompson A	-14	1	1	-33	9.3	-0.4	Bonavista	1	-1	6	-4	25.4	1.1
Ennadai	M	M	-15P	-31	M	M	Winnipeg	-2	5	5	-12	0.0	-5.7	Burgeo	M	M	6P	-4	16.2	-18.0
Eureka	-31	2	-13	-42	0.0	-0.4	ONTARIO						Cartwright	-3	0	2	-10	6.1	-9.6	
Fort Reliance	-24	-7	-2	-32	1.6	-4.3	Armstrong	-5	3	7	-25	0.4	-15.9	Churchill Falls A	-9	2	1	-18	5.0	-14.7
Fort Simpson	-18	2	-11	-28	7.1	0.0	Atikokan	-5	2	7	-22	10.6	-4.3	Comfort Cove	M	M	2	-6P	30.6	13.3
Fort Smith A	-15	0	-4	-30	6.5	1.1	Earlton	-2	1	4	-14	5.0	-10.5	Daniel's Harbour	0	-2	5	-5	2.6	-16.1
Frobisher Bay A	-10	3	-3	-24	11.0	0.0	Geraldton	-5	3	5	-26	5.4	-14.1	Deer Lake	-3	-3	2	-11	5.0	-14.0
Gladman Point A	-30	-3	-24	-37	1.5	0.8	Gore Bay A	2	0	7	-6	6.6	-17.6	Gander Int'l A	-1	-2	2	-6	55.0	34.8
Hall Beach A	-23	0	-9	-34	4.5	0.8	Kapusking	-4	1	4	-16	18.9	-1.0	Goose A	-5	0	2	-14	0.6	-16.5
Hay River A	-14	1	-5	-24	13.8	5.0	Kenora A	-3	3	5	-14	2.4	-8.5	Hopedale	-5	-1	2	-11	0.4	-13.2
Inuvik A	-28	-3	-19	-37	1.2	-2.1	Kingston	2	0	7	-10	35.0	17.2	Port aux Basques	1	-2	5	-3	13.5	-16.2
Jenny Lind Island	-31	-5	-24	-38	0.0	-0.8	Lansdowne	-7	3	4	-20	3.4	-7.3							