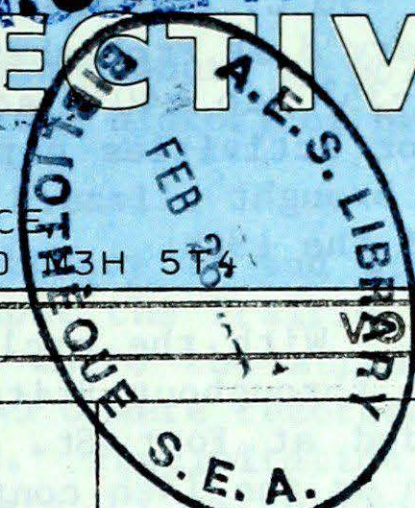


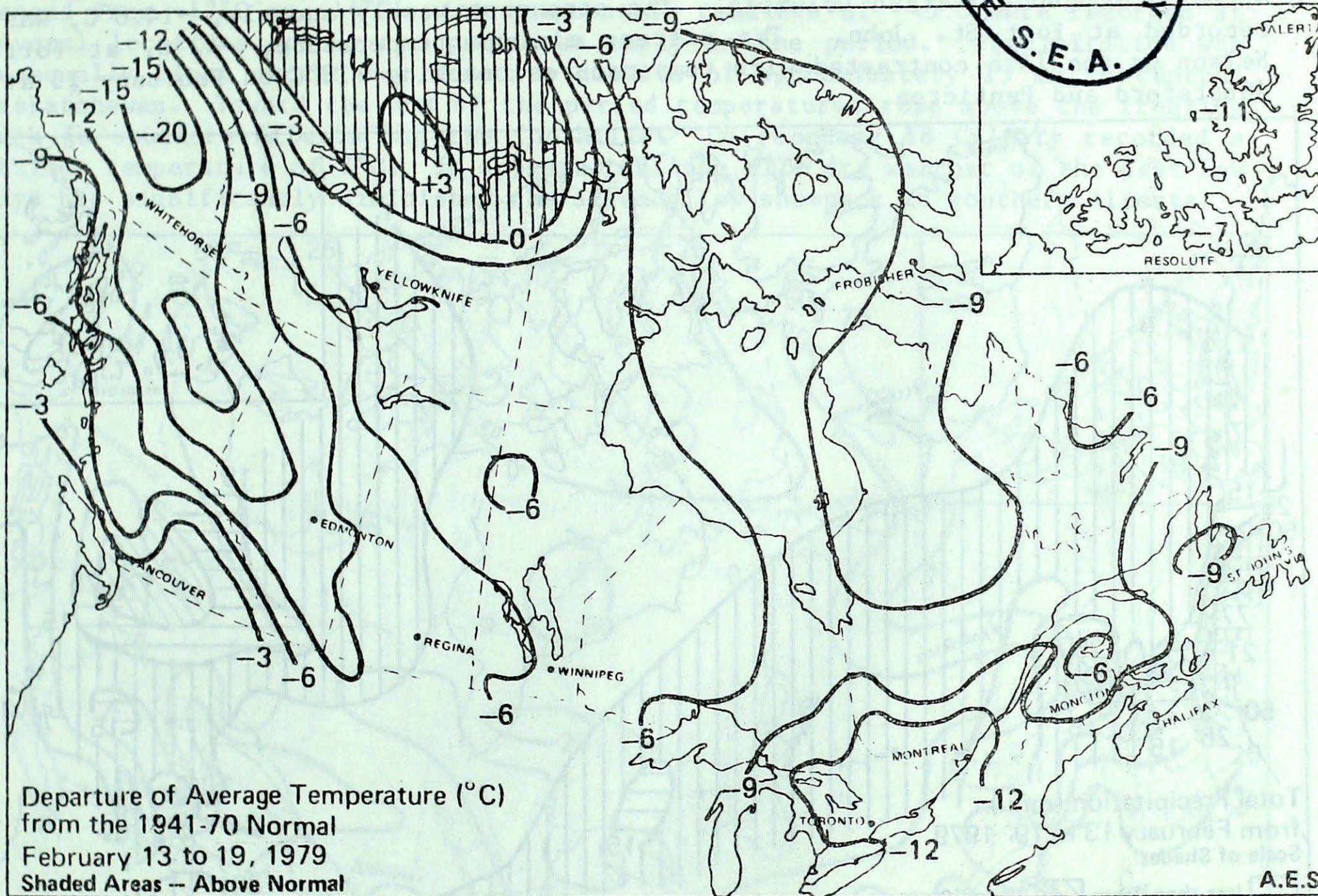
CLIMATIC PERSPECTIVES

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



23 FEBRUARY, 1979

NO. 2



WEATHER HIGHLIGHTS FOR THE WEEK - FEBRUARY 13 - 19, 1979

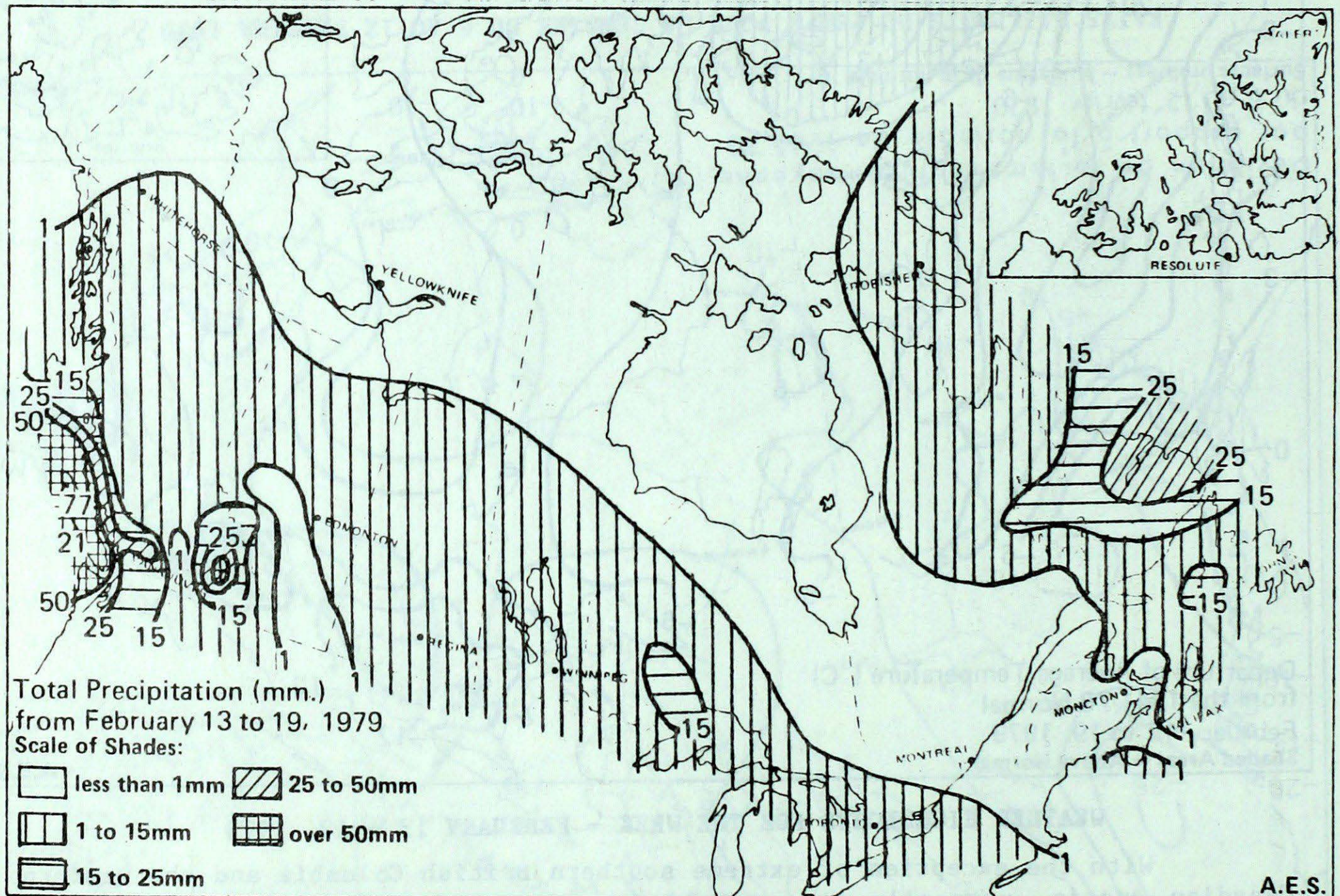
With the exception of extreme southern British Columbia and the western Canadian Arctic, unusually strong cold temperature anomalies prevailed across Canada for the second successive week. The much below normal temperatures were once again due to a very strong high pressure cell, with a central pressure greater than 105 kPa, that formed in the Yukon and moved southeastward across the Prairies to south of the Great Lakes by the end of the period. This seems to be the last and the strongest of a series of anticyclones originating in the Canadian Northwest. During the middle part of the period a moderating temperature trend developed in the west and spread slowly eastward.

Weekly temperature departures from normal of -15°C to -20°C in the Yukon when averaged with temperatures of the previous week resulted in 2 week temperature anomalies of approximately -22°C at Dawson and Mayo, values of 4 standard deviations from the mean. On February 15 a minimum temperature of -54°C was recorded at Dawson.

NOTE: The data shown in this publication are based on unverified reports from approximately 170 Surface Synoptic reporting stations of the Atmospheric Environment Service.

Temperatures were near normal in the western and central Arctic but continued much below normal in the eastern Arctic. The coldest temperature of the week, -55°C , occurred at Eureka February 15. Blizzard conditions which began February 8 at Frobisher Bay persisted through to the 16th. Temperatures ranging from -35°C to -40°C accompanied by winds gusting from 80 km/h to 100 km/h made outdoor activities extremely hazardous. Another in a series of storm systems again brought blizzard conditions to Frobisher Bay on the 18th and into the evening of the 19th.

With the exclusion of the extreme south, temperatures were much below normal throughout British Columbia. The strongest weekly anomaly, -14.8°C , was recorded at Fort St. John. The extreme minimum temperature, -42°C , at Fort Nelson on the 14th contrasted with temperatures reaching $+13^{\circ}\text{C}$ on February 13 at Abbotsford and Penticton.



Above normal precipitation occurred along portions of the southern coastal region and the southern Rockies. The few synoptic reports available from the southern B.C. Rockies indicate a substantial increase in the snowpack in the past week.

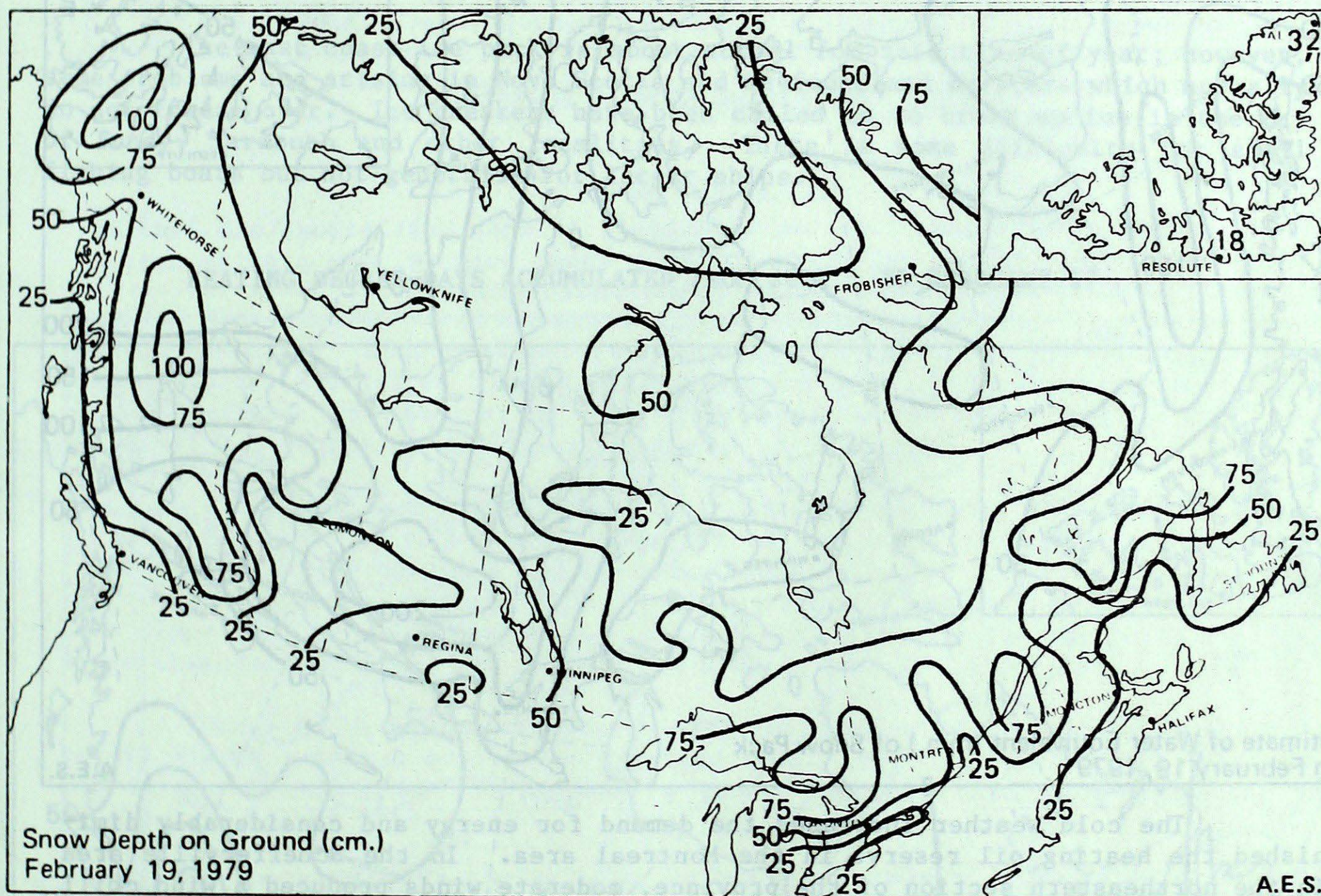
The Toronto Globe and Mail reported that high winds in southwestern B.C. on the 13th caused considerable damage. Lack of power necessitated the closing of 6 schools at Surrey and 5 small aircraft at Abbotsford were severely damaged or destroyed. Winds up to 90 km/h were prevalent along the southern coast with Cape Beale on the west coast of Vancouver Island recording gusts to 145 km/h.

The avalanche hazard was high in the Rockies. A massive avalanche near Roger's Pass on the 13th buried the Canadian Pacific Rail main line to the west

coast with up to 7 metres of snow, damaged a bridge and resulted in the season's first major rail traffic disruption. The line was back in operation on the 16th.

Seven skiers were killed and one injured in an avalanche south of Golden on February 14. The accident is believed to be the worst in the history of helicopter skiing in the Canadian Rockies.

Despite a warming trend which began in Alberta February 17 and spread eastward, weekly temperatures averaged below normal throughout the Prairie provinces, particularly in the Peace River region of Alberta where the anomalies ranged from -12°C to -14°C . Low temperature readings of -45°C were recorded at several locations across the provinces early in the period. Precipitation was seasonally light except for moderate amounts of approximately 15 mm in central Saskatchewan. Toward the end of the period temperatures rose above the freezing mark in southern Alberta and the foothills. On February 18 Calgary recorded a maximum temperature of 7°C . It appears that the mild dry weather of the past few days has significantly diminished the already low snowpack in southern Alberta.

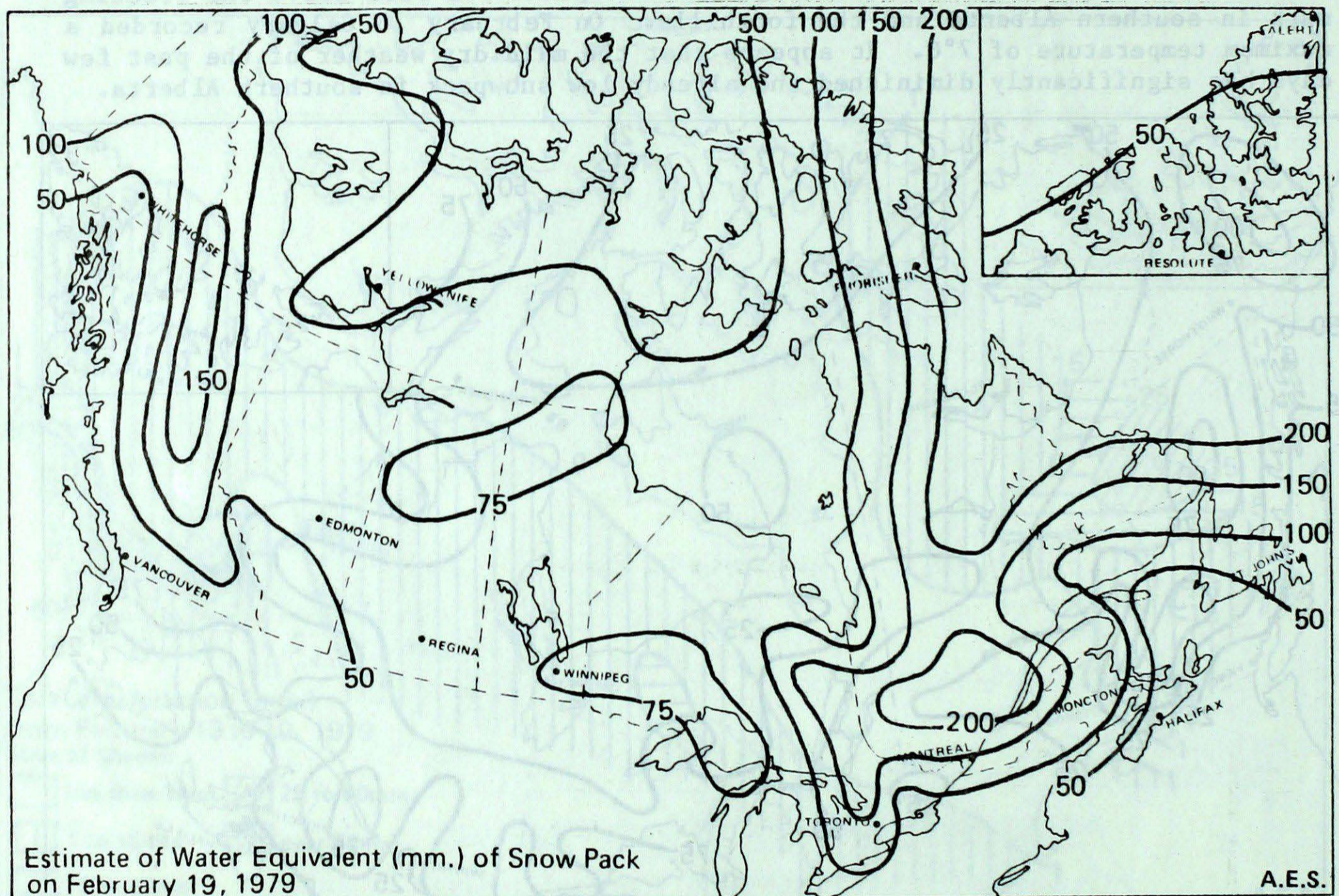


Although conditions moderated somewhat in northwestern Ontario, very cold dry air dominated the eastern half of Ontario for most of the week. Temperatures at Wiarton averaged 14°C below the 1941-70 normal. A record for the date was set when the temperature dropped to -28°C at Toronto on the 18th. The coldest Ontario temperature, -44°C occurred at Armstrong February 17. Conversely the temperature rose to -1°C at Atikokan February 19.

Pipes bursting from low temperatures caused several factories to flood in metropolitan Toronto. Water damage due to a fractured water main at the Sheraton Centre in Downtown Toronto was estimated at \$100,000. Oil supply companies were inundated with requests for fuel from home-owners.

The Niagara River froze over for the first time since 1962. Lakes Ontario and Michigan have much more ice cover than usual but there are still areas of open water. The other Great Lakes are completely ice covered, a condition normal for this time of year. Some shipping is taking place with the help of ice breakers in southern Lake Huron and Georgian Bay. It is anticipated that ice jams will be the major problem in coming weeks.

The cold outbreak persisted throughout Quebec thus setting a new record for longevity for the province. Numerous low minimum and low maximum temperature for the date were set across the province at Montreal, Dorval, Sherbrooke, Schefferville, Bagotville, Quebec and Val d'Or. The lowest reading of -45°C occurred at Poste de la Baleine February 13. Weekly temperature anomalies greater than -12°C covered most of the southwest. Temperatures moderated somewhat at the end of the period.



The cold weather increased the demand for energy and considerably diminished the heating oil reserve in the Montreal area. In the Schefferville area in the northeastern section of the province, moderate winds produced a wind chill factor high enough to stop all work on regional hydro lines. Elsewhere, the 13th running of the 160 km ski marathon from Lachute to Quinville near Hull took place on the 17th and 18th of February. Only 86 out of 1353 participants completed the trail due to the bitterly cold temperatures.

Very cold and dry weather continued to dominate the Maritimes although temperatures approached normal levels on the 19th. New daily record low maximums and daily record low minimums were set at some localities throughout the period. In the Maritimes weekly temperature anomalies ranged from -5.5°C at Charlo, N.B. to -11.2°C at Charlottetown, P.E.I.

Temperature anomalies ranged from -5.2°C at Hopedale to -10.9°C at Gander throughout Newfoundland and Labrador.

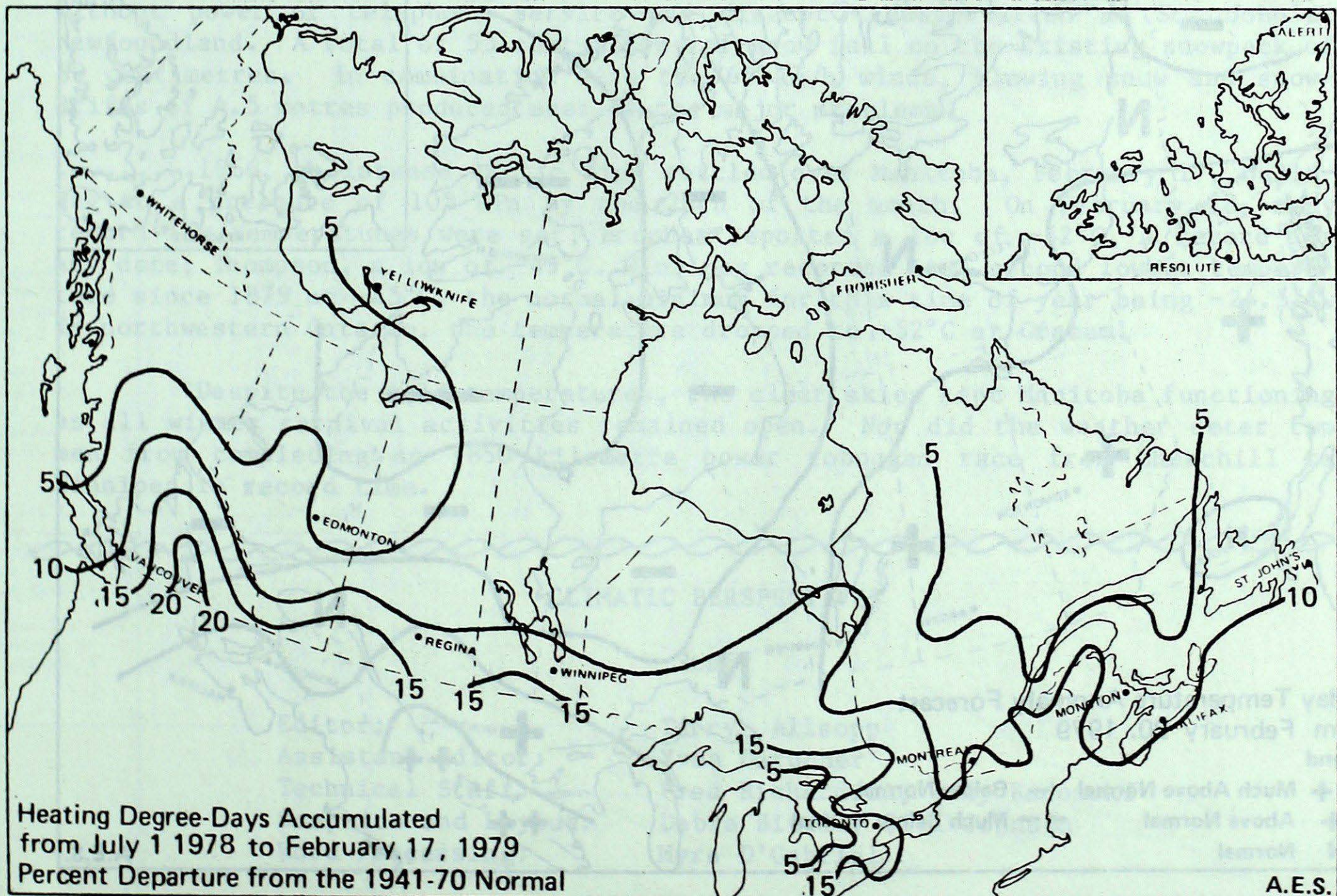
The extremely cold temperatures accompanied by a lack of snowfall created problems in the Amherst area of Nova Scotia as frost penetrated below shallow water mains, thus breaking a number of lines. The lack of snow has also curtailed some outdoor sports activities such as snowmobiling and cross country skiing.

The Nova Scotia Power Corporation reported that electrical energy consumption reached a record level on the 14th, largely due to the heavy demands for heating.

The bitter cold, accompanied by strong winds, caused heavy icing on fishing boats operating off the east coast resulting in difficult working conditions.

The east coast ice pack is about normal for this time of year; however, some problems are arising in Nova Scotia and Newfoundland harbours which normally do not freeze over. Ice breakers have been called in to break up ice in the Bay of Fundy, Yarmouth and other localities. There is some difficulty for small fishing boats but not generally for larger ships.

HEATING DEGREE-DAYS ACCUMULATED FROM JULY 1 TO FEBRUARY 17



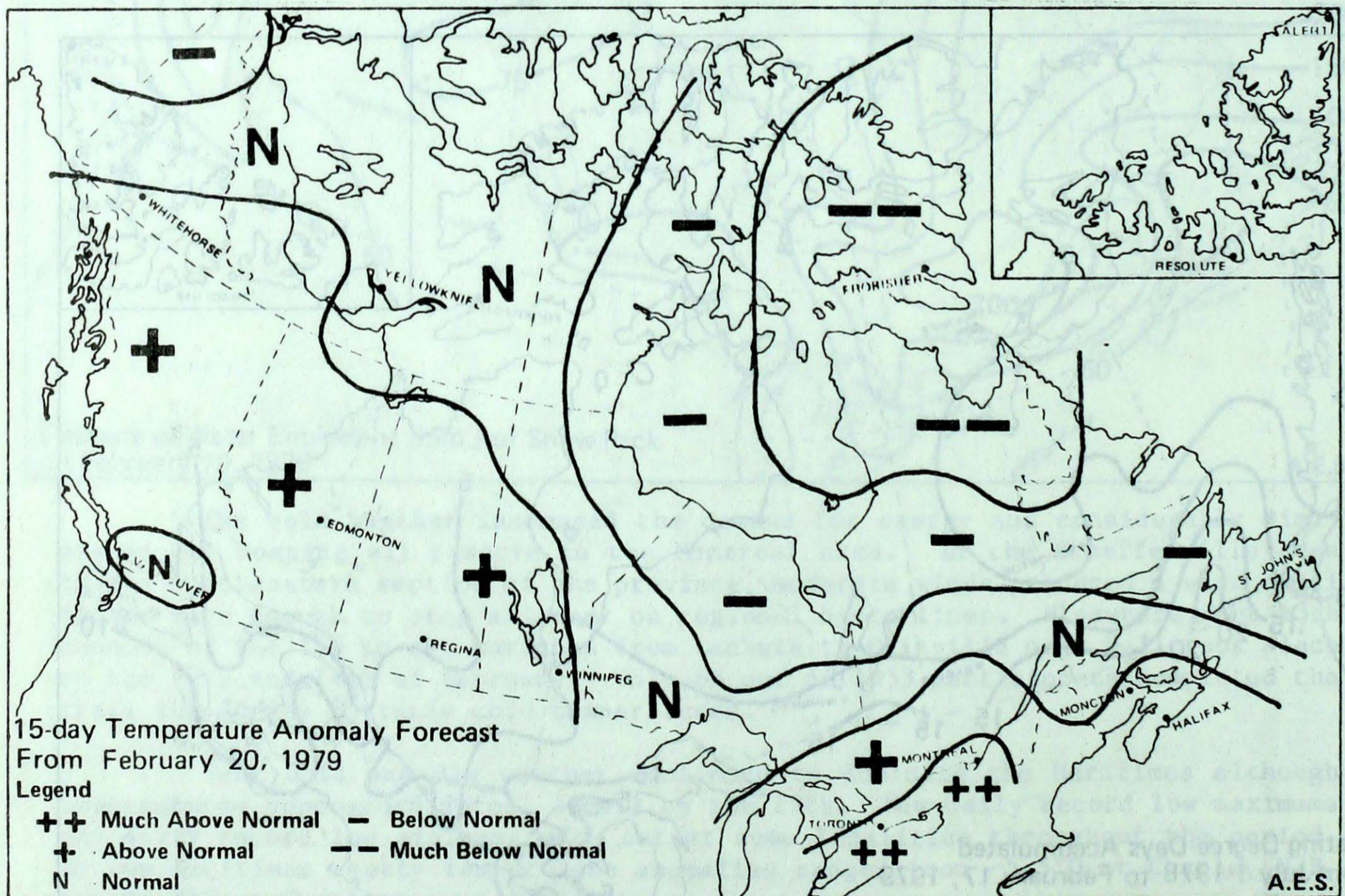
HEATING DEGREE-DAYS ACCUMULATED FROM JULY 1 TO FEBRUARY 17

STATION	1941-70 NORMAL	1978-79 TOTAL	PERCENT OF NORMAL	1977-78 TOTAL	PERCENT OF NORMAL	1976-77 TOTAL	PERCENT OF TOTAL
Vancouver Int'l A	1956	2141.0	109	2010.5	103	1874.0	96
Edmonton Mun A	3802	3953.5	104	4090.5	108	3107.0	82
Calgary Int'l A	3529	3899.5	110	4193.0	119	2989.5	85
Regina	3984	4453.0	112	4415.0	111	3868.5	97
Winnipeg Int'l A	3966	4500.0	113	4257.0	107	4244.0	107
Thunder Bay	3766	4205.5	112	3895.5	103	4196.5	111
Windsor	2378	2568.5	108	2608.5	110	2958.5	124
Toronto Int'l A	2658	2895.0	109	2891.0	109	3226.5	121
Ottawa Int'l A	3126	3351.5	107	3286.5	105	3522.0	113
Montreal Int'l A	2983	3324.5	111	3210.5	108	3441.5	115
Quebec	3338	3672.0	110	3486.5	104	3775.0	113
Saint John, N.B.	2994	3175.0	106	3028.0	101	3237.5	108
Halifax	2472	2729.0	110	2517.5	102	2674.5	108
Charlottetown	2808	3039.5	108	2865.0	102	3120.0	111
St. John's, Nfld.	2813	3049.0	108	2759.5	98	2880.5	102

15 DAY TEMPERATURE ANOMALY FORECAST

Forecast Method

Analogue technique, i.e. the hypothesis is that past situations similar to the present one, through reference to their known outcome, can provide useful indications of what is likely to happen in the near future.



Space Scale

The chart is 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 (ΔT) Forecast</u>
Dawson	Normal (ΔT ranging from -1.3°C to $+1.3^{\circ}\text{C}$)
Vancouver	Normal (ΔT ranging from -0.4°C to $+0.4^{\circ}\text{C}$)
Frobisher	Much Below (ΔT -4.6°C or greater in magnitude)
Trenton	Much Above (ΔT greater than $+2.2^{\circ}\text{C}$)

Note: Anomaly denotes departure from the 1941-70 normal.

The current 15 day forecast predicts a reversal of the temperature patterns which have prevailed across Canada for the past two weeks. Above normal temperatures are forecast for all of southern Canada; however, the analogue technique predicts much below normal temperatures for Canada's northeast.

ON THIS DATE...

.....February 15, 1959, a dissipating storm tracking easterly away from the Canadian Maritimes gathered enough momentum to claim six lives and leave 70,000 without power or telephone service and disrupt transportation at St. John's, Newfoundland. A total of 55 centimetres of snow fell on the existing snowpack of 69 centimetres. In combination with the 65 km/h winds, blowing snow and snowdrifts of 4.5 metres produced most of the major problems.

.....1966, an intense Arctic high settled over Manitoba, February 17, building to a pressure of 105 kPa by the 20th of the month. On February 18, many record low temperatures were set; Brochet reported a low of -52°C , a record for any date; Thompson, a low of -49°C . Winnipeg recorded its' second lowest temperature since 1879 at -45°C , the normal minimum for this time of year being -24.5°C . In northwestern Ontario, the temperature dropped to -52°C at Graham.

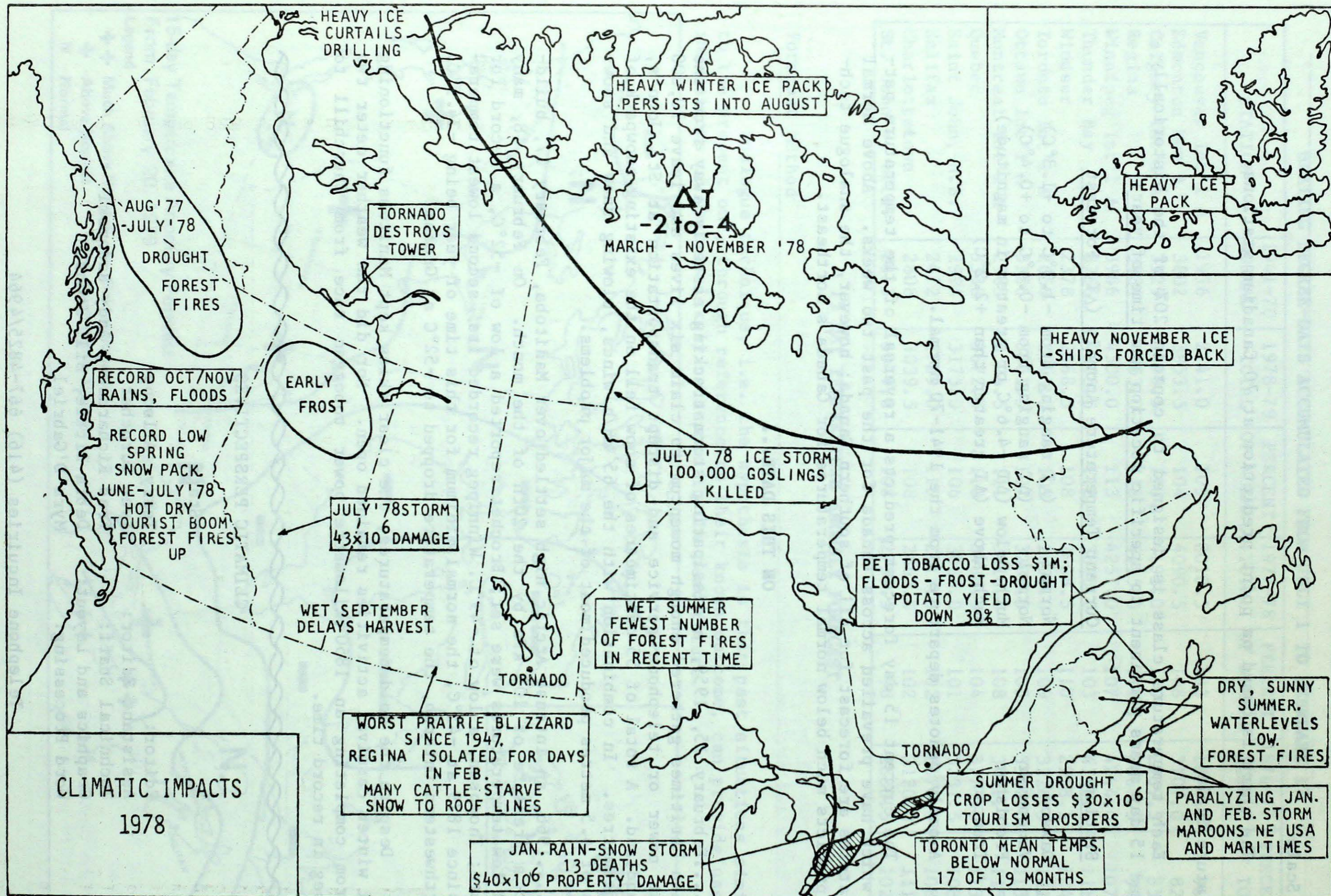
Despite the cold temperatures, the clear skies kept Manitoba functioning as all winter carnival activities remained open. Nor did the weather deter two men from completing an 1850 kilometre power toboggan race from Churchill to Winnipeg in record time.

CLIMATIC PERSPECTIVES

Staff

Editor:	Terry Allsopp
Assistant Editor:	Yves Durocher
Technical Staff:	Fred Richardson, Andy Radomski
Graphics and Layout:	Debra Bittle, Bill Johnson
Word Processing:	Myra D'Gabriel

Telephone Inquiries (416) 667-4825/4964



TEMPERATURE AND PRECIPITATION DATA FOR THE WEEK ENDING 0600 G.M.T. FEBRUARY 20, 1979

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							Lethbridge A							Toronto Int'l A						
Abbotsford	3	-1	13	-4	16.2	-29.8	Medicine Hat A	-15	-9	6	-32	0.0	-5.2	Trenton A	-18	-12	-5	-28	5.0	-8.9
Alouette River	-10	M	2	-27	14.1	M	Peace River A	-20	-11	4	-40	0.0	-4.0	Trout Lake	-19	-13	-5	-31	M	M
Albermarle Harbour	M	M	6	M	77.4	41.1	Red Deer A	-28	-11	-16	-43	2.0	-6.4	Wawa A	-26	-4	-11	-40	3.6	-1.7
Atlin	0	1	10	-5	64.1	53.2	Rocky Mountain House	-22	-10	-2	-35	0.5	-4.8	Warton A	-22	M	-8	-40	7.6	M
Brooks A	-3	-1	8	-15	13.7	9.4	Vermilion A	-21	-11	3	-33	0.2	-5.9	Windsor A	-21	-14	-8	-35	14.0	0.5
Brooks A	3	-1	9	-5	75.8	48.3	Whitecourt	-25	-9	-9	-45	5.9	2.4	QUEBEC	-14	-11	-6	-22	5.1	-8.0
Carleton Place	M	M	M	-2	20.9	-51.9	SASKATCHEWAN						Bagotville A	-26	-12	-10	-32	0.0	-16.3	
Castlegar A	-29	-10	-14	-42	3.1	-2.5	Broadview	-24	-8	-4	-39	3.1	0.7	Baie Comeau	-21	-7	-8	-28	0.2	-17.2
Castlegar A	-29	-15	-18	-41	17.2	9.7	Buffalo Narrows	-25	-4	-12	-41	6.6	3.9	Border	-30	-8	-21	-38	M	M
Chilliwack A	-5	-4	6	-19	0.3	-3.7	Cree Lake	-28	M	-16	-41	5.6	M	Chibougamau	-28	M	-9	-39	0.0	M
Chilliwack A	-5	-6	6	-21	35.6	24.9	Estevan A	-20	-7	-4	-37	0.4	-1.9	Fort Chimo A	-30	-7	-25	-37	9.6	1.8
Chilliwack A	0	-1	13	-11	3.4	-1.5	Hudson Bay	-26	-7	-14	-39	M	M	Gaspé A	-18	-9	-5	-24	0.4	-8.3
Chilliwack A	2	-2	10	-9	54.2	15.0	Kindersley	-22	-7	-1	-37	5.0	2.2	Grindstone Island	-17	-10	-8	-21	7.3	-13.1
Chilliwack A	-17	-10	1	-40	13.2	3.8	La Ronge A	-25	-4	-11	-38	4.6	2.2	Inoucdjouac	-34	-9	-20	-43	0.0	-1.8
Chilliwack A	-1	-5	6	-12	14.8	-42.1	North Battleford A	-25	-9	-12	-40	8.9	5.1	Maniwaki	-25	-13	-7	-39	0.0	-13.0
Chilliwack A	-16	-10	3	-37	12.4	1.8	Prince Albert A	-26	-7	-11	-41	5.2	1.5	Matagami A	-28	M	-6	-41	0.0	M
Chilliwack A	-4	-2	3	-16	38.0	14.7	Regina A	-23	-7	-8	-36	3.0	0.4	Mont Joli A	-22	-11	-10	-28	0.6	-19.0
Chilliwack A	-13	-7	2	-25	11.0	3.6	Saskatoon A	-24	-8	-9	-40	16.3	12.8	Montréal Int'l A	-22	-13	-9	-29	0.0	-22.5
Chilliwack A	-9	-8	2	-19	7.4	-13.6	Swift Current A	-20	-8	2	-36	1.2	-2.3	Natashquan A	-21	-10	-9	-27	2.8	-18.4
Chilliwack A	4	0	11	-3	23.6	-3.2	Uranium City	-30	M	-16	-45	1.0	M	Nitchequon	-33	-11	-16	-42	1.6	-6.0
Chilliwack A	3	-1	9	-4	22.9	-0.8	Wynyard	-25	-4	-6	-39	12.6	10.1	Port Menier	-19	-8	-8	-25	9.2	-10.0
Chilliwack A	-11	-7	2	-32	4.2	-3.5	Yorkton A	-26	-9	-11	-42	7.4	4.1	Poste de la Baleine	M	M	M	M	M	M
YUKON TERRITORY							MANITOBA						Québec A	-23	-12	-12	-30	0.0	-18.7	
Chilliwack A	-43	-20	-27	-54	0.0	-3.9	Bissett	-22	-5	-5	-41	9.3	4.0	Riviere du Loup	-22	-7	-10	-28	0.0	-14.5
Chilliwack A	-39	-18	-26	-52	0.2	-3.0	Brandon A	-25	-8	-11	-40	5.0	0.8	Roberval A	-24	-9	-7	-33	0.0	-14.2
Chilliwack A	M	M	M	-43	2.6	-4.3	Churchill A	-32	-5	-18	-45	0.4	-2.2	Schefferville A	-31	-10	-20	-40	2.4	-8.0
Chilliwack A	-29	-14	-20	-45	2.1	-1.6	Dauphin A	M	M	M	-41	8.0	4.3	Sept-Iles A	-20	-8	-7	-29	0.0	-21.6
WESTERN TERRITORIES							ONTARIO						Sherbrooke A	-25	-12	-5	-39	0.0	-12.1	
Chilliwack A	M	M	M	-39	0.0	-1.7	Gillam A	-29	M	-15	-45	0.6	M	Val d'Or A	-27	-12	-8	-38	0.0	-11.6
Chilliwack A	-38	-4	-30	-48	0.0	-1.0	Gimli	-23	-6	-10	-38	9.5	4.4	NEW BRUNSWICK						
Chilliwack A	-34	2	-25	-41	0.0	-0.8	Lynn Lake	-29	-7	-16	-41	4.0	1.7	Charlo A	-20	-6	-6	-25	0.0	-9.1
Chilliwack A	-26	M	-18	-37	75.4	M	Norway House	-26	M	-11	-40	8.3	M	Chatham A	M	M	M	-25	1.1	-22.0
Chilliwack A	-39	-6	-30	-49	0.0	-1.0	Pilot Mound	-23	-5	-7	-36	2.4	-1.8	Fredericton A	-18	-9	-3	-24	0.0	-23.6
Chilliwack A	-37	-8	-21	-47	0.0	-1.7	Portage la Prairie	-23	-7	-13	-36	10.5	6.3	Moncton A	-18	-10	-5	-25	0.6	-25.9
Chilliwack A	-29	3	-23	-36	0.0	-1.5	The Pas A	-24	-5	-12	-34	5.9	1.7	Saint John A	-18	-11	-5	-24	0.0	-32.4
Chilliwack A	-38	-8	-26	-49	0.0	-2.1	Thompson A	-28	-5	-13	-43	1.3	0.0	NOVA SCOTIA						
Chilliwack A	-34	-3	-18	-49	0.0	-1.2	Winnipeg Int'l A	-23	-6	-11	-39	M	M	Greenwood A	-16	-10	-3	-22	0.0	-22.5
Chilliwack A	-50	-11	-39	-55	0.0	-0.4	NEW BRUNSWICK						Shearwater A	-15	-11	-2	-22	1.0	-30.6	
Chilliwack A	-31	-4	-21	-48	0.5	-4.0	Armstrong A	-24	-6	-9	-44	M	M	Sydney A	-16	-11	-7	-22	2.4	-26.1
Chilliwack A	-30	-5	-16	-48	0.2	-3.8	Atikokan	-20	-2	-1	-40	10.7	6.0	Truro	M	M	-12	M	M	M
Chilliwack A	-36	-11	-27	-45	5.6	-1.5	Earlton A	-26	-12	-8	-39	0.7	-9.9	Yarmouth A	-13	-10	-3	-18	13.8	-13.3
Chilliwack A	-31	-6	-21	-47	0.6	-3.6	Geraldton	-24	-4	-6	-42	M	M	PRINCE EDWARD ISLAND						
Chilliwack A	-30	1	-21	-42	0.0	-1.5	Gore Bay A	-22	-13	-9	-37	10.5	2.3	Charlottetown	-18	-11	-6	-24	0.4	-26.8
Chilliwack A	-36	1	-24	-45	0.2	-0.1	Kapuskasing A	-24	-7	-7	-36	0.8	-8.7	Summerside	-17	-10	-6	-23	0.8	-20.6
Chilliwack A	-35	-8	-27	-44	0.0	-3.9	Kenora A	-20	-4	-8	-33	8.9	1.4	NEWFOUNDLAND						
Chilliwack A	-41	-7	-27	-52	2.1	-1.5	Kingston A	-21	-12	-8	-28	M	M	Battle Harbour	M	M	-14	M	16.7	-6.7
Chilliwack A	-33	-6	-23	-47	0.8	-2.3	Lansdowne House	-24	-5	-7	-37	2.4	-2.9	Cartwright	-22	-10	-12	-32	27.6	7.4
QUEBEC							London A	-17	-12	-7	-26	1.6	-16.6	Deer Lake	-17	-9	-10	-24	4.9	-20.4
Chilliwack A	-14	-7	3	-35	18.7	13.3	Moosonee	-27	-8	-9	-42	0.9	-9.7	Gander Int'l A	-17	-11	-11	-23	7.8	-16.7
Chilliwack A	-19	-11	7	-34	0.4	-4.5	Mount Forest	-21	-12	-7	-32	4.7	-7.2	Goose A	-23	-9	-14	-31	26.0	11.9
Chilliwack A	-25	-8	-9	-42	6.3	2.0	Muskoka A	-23	-14	-7	-40	4.0	-11.0	Hopedale	-21	-5	-9	-30	M	M
Chilliwack A	-23	-9	-8	-38	3.9	-0.3	North Bay A	-23	-12	-10	-35	0.6	-13.4	St. Anthony	M	M	-15	M	33.2	M
Chilliwack A	-23	-12	-9	-32	2.2	-2.8	Ottawa Int'l A	-22	-12	-10	-28	0.4	-15.7	St. John's A	-14	-9	-8	-18	6.6	-35.0
Chilliwack A	-25	-11	-12	-36	1.6	-4.9	Petawawa A	-23	M	-9	-36	0.0	M	Stephenville A	-17	-11	-9	-23	17.5	-7.6
Chilliwack A	-24	-14	-3	-36	0.2	-8.7	Pickle Lake	-24	-5	-7	-38	23.2	14.3	Wabush Lake	-30	-8	-16	-39	18.4	7.9
Chilliwack A	-29	-4	-15	-44	3.2	-2.2	Red Lake A	-22	-5	-8	-39	10.3	2.4							
Chilliwack A	-25	-6	-13	-43	5.5	1.0	Simcoe	M	M	M	-25	M	M							
Chilliwack A	-29	-14	-17	-42	6.0	-2.7	Sioux Lookout A	-21	-5	-6	-38	9.8	0.3							
Chilliwack A	-17	-9	4	-34	9.2	0.3	Sudbury A	-24	-12	-10	-34	2.2	-5.9							
							Thunder Bay A	-22	-8	-8	-39	15.6	7.9							
							Timmins A	-24	-7	-5	-35	0.6	-11.0							

M-Denotes missing data.