



Environment Canada / Environnement Canada

# A WEEKLY REVIEW OF CANADIAN CLIMATE

Atmospheric Environment / Environnement atmosphérique

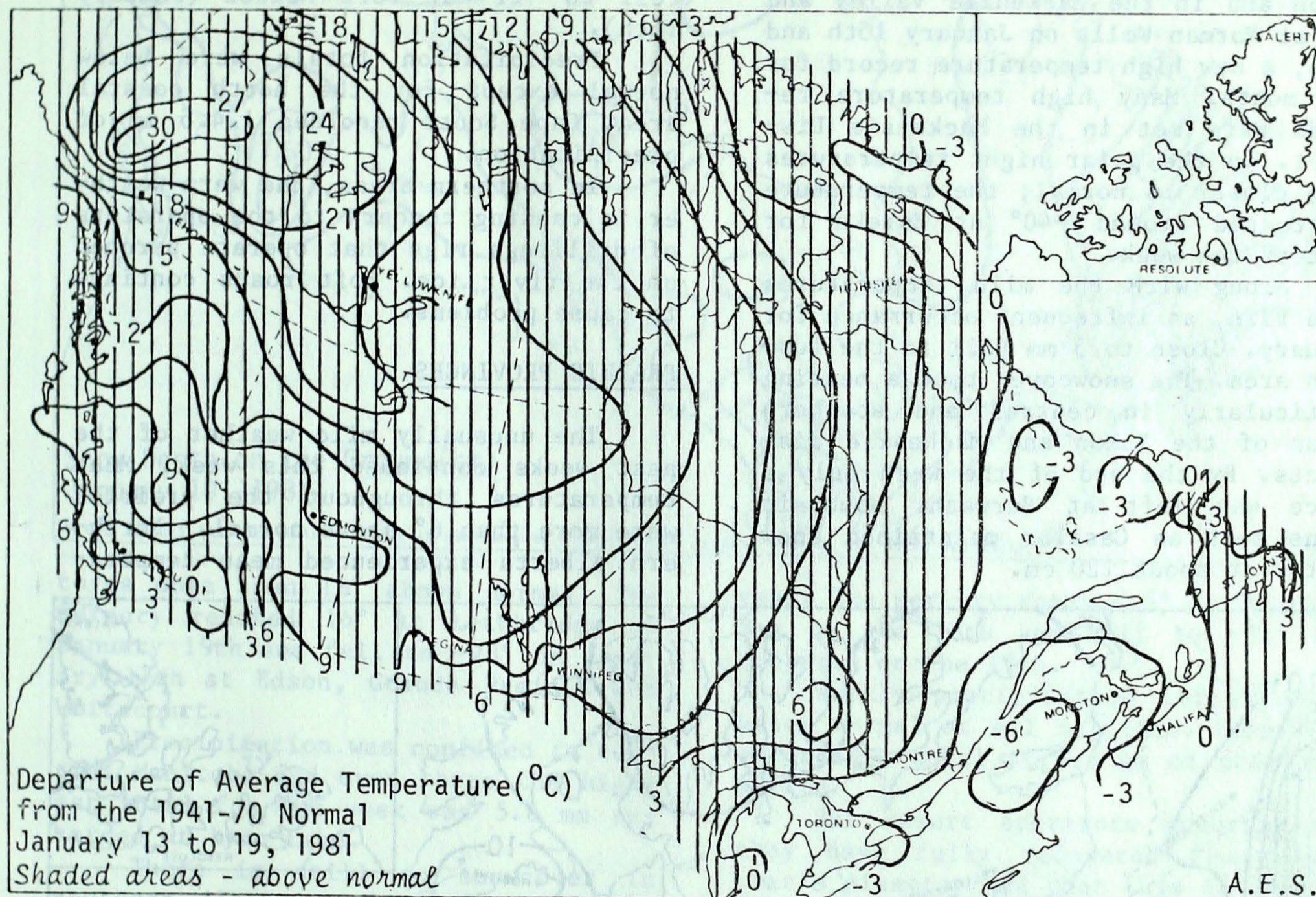
# CLIMATIC PERSPECTIVES

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## WEATHER HIGHLIGHTS FOR THE PERIOD - JANUARY 13-19, 1981

Mean temperatures exceed  $30^{\circ}$  above normal in the Yukon

Warm Pacific air continued to push into the Yukon and Mackenzie District raising temperatures to phenomenal levels. Several stations reached  $10^{\circ}$  and Norman Wells established a record high for January at  $12^{\circ}$ . In Alberta there were unconfirmed reports of the buds on some trees beginning to swell. The warm air finally pushed into Ontario and Québec. Toronto recorded an above freezing temperature for the first time this year.

The Maritimes were struck by two more storms this week making a total of five this year so far. Snowfall totals at many stations exceeded 200 cm for the season. Many small communities have been isolated with all means of transportation paralysed. Yarmouth is approaching the previous snowfall record.

Temperatures ranged from  $17^{\circ}$  (Prince Rupert) to  $-42^{\circ}$  (Eureka). Cape St. James recorded 124.5 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.

YUKON AND NORTHWEST TERRITORIES

Spring like temperatures continued throughout the Yukon and Mackenzie Valley where weekly temperatures reached a phenomenal 30° above normal. With the exception of the east-central portions of Baffin Island, all stations reported above normal averages for the week. The mercury reached 10° in the southern Yukon and in the Mackenzie Valley and 12° at Norman Wells on January 15th and 16th, a new high temperature record for the month. Many high temperature records were set in the Mackenzie District. In the polar night temperatures were closer to normal; the temperature fluctuated around -40° at Eureka for most of the week.

Along with the mild temperatures came rain, an infrequent occurrence for January. Close to 5 mm fell in the Burwash area. The snowcover took a beating particularly in central and southern areas of the Yukon and Mackenzie districts. By the end of the week only a trace was left at Burwash. Mountain towns such as Cassiar maintained snow depths at about 120 cm.

BRITISH COLUMBIA

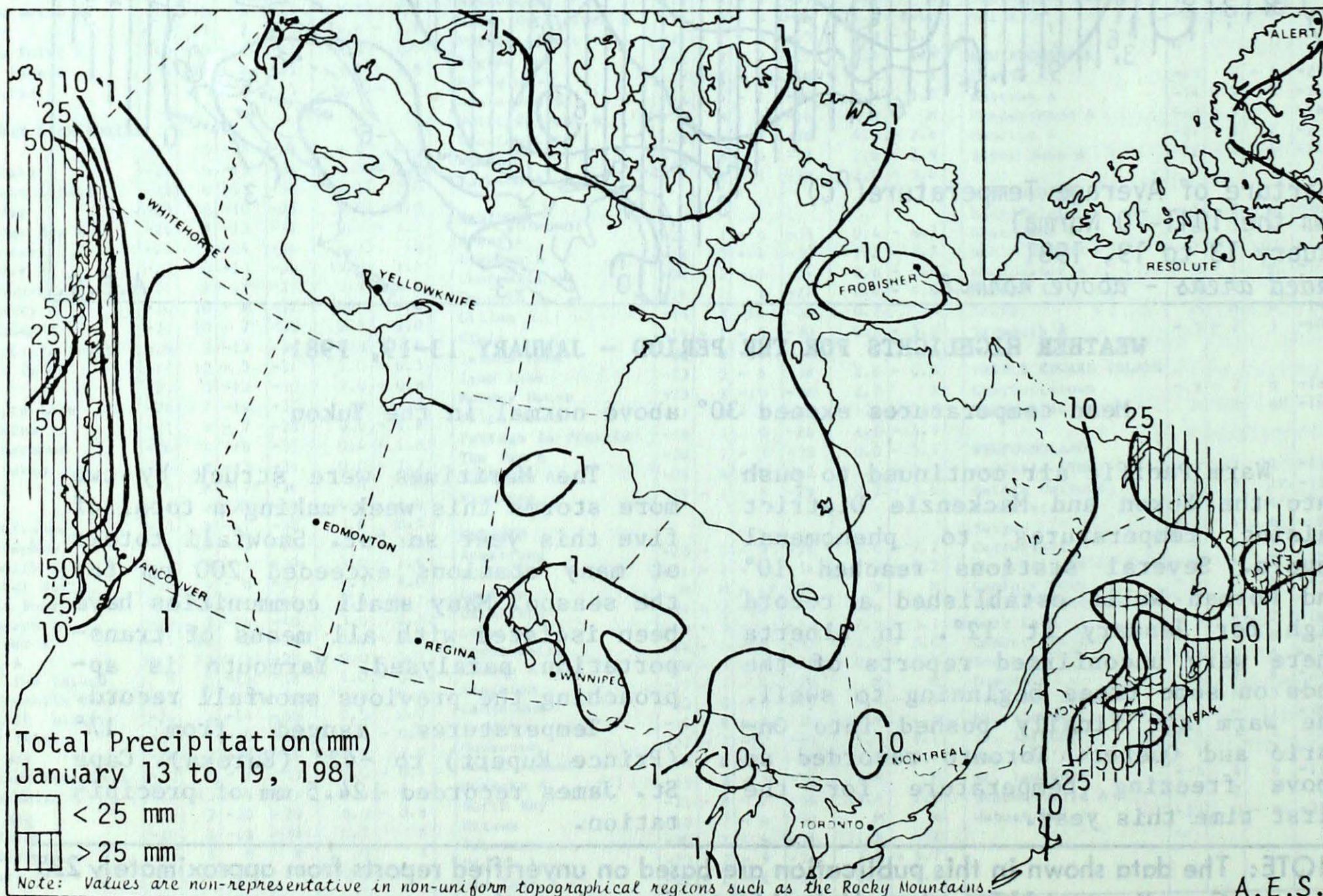
The influx of mild air continued this week. Mean temperatures were above normal throughout most of the province and some northwestern areas exceeded 18° above normal. Fort Nelson established a new record high for January at 11° (on the 19th). The mercury reached 17° at Prince Rupert (January 14th) and fell to -21° at Fort Nelson (January 16th).

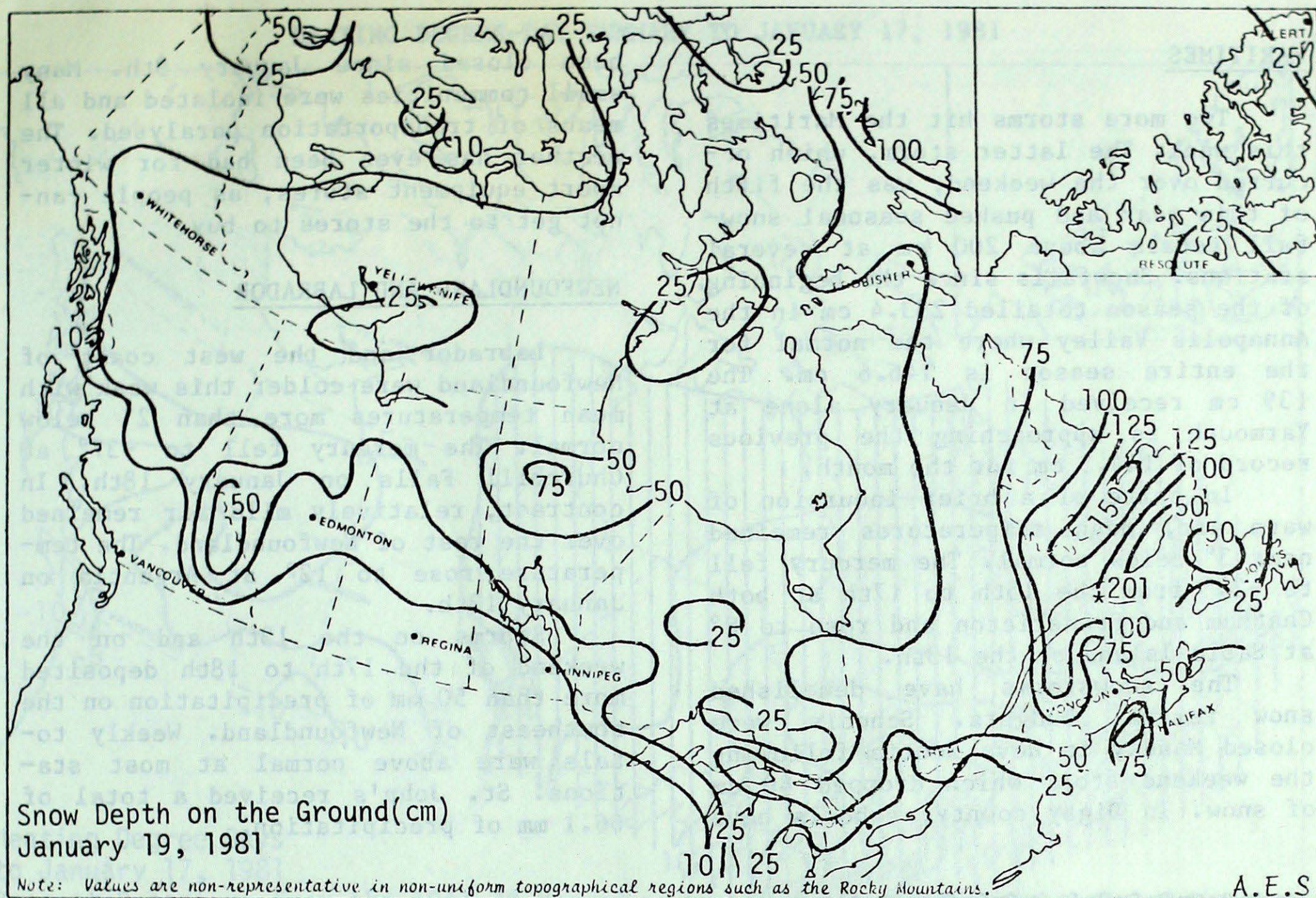
Precipitation totals were below normal except for the north coastal area. Cape Scott recorded 124.5 mm of precipitation.

In northern areas, the warm weather is causing concern to the operators of drillings rigs that operate perched on the river ice. Soft roads continue to cause problems.

PRAIRIE PROVINCES

The unusually mild weather of the past weeks continued this week. Mean temperatures throughout the prairies were more than 6° above normal. Northern Alberta experienced mean tempera-





tures more than  $18^{\circ}$  above normal. The mercury reached  $16^{\circ}$  at Lethbridge on January 19th and fell to  $-23^{\circ}$  on January 17th at Edson, Grande Prairie and Whitecourt.

Precipitation was confined to central Manitoba and even there the highest total for the week was 5.6 mm recorded at Lynn Lake.

There is still no snowcover in southern Alberta and southern Saskatchewan. Plants are showing signs of life. There are unconfirmed reports of buds swelling on some trees. There is some concern about spring wheat beginning to grow, but the lack of soil moisture seems to be preventing any growth.

#### ONTARIO

Warm air from the west pushed into Ontario this week. Mean temperatures in northwestern areas were more than  $9^{\circ}$  above normal. Southern Ontario maintained mean temperatures more than  $2^{\circ}$  below normal although temperatures rose above freezing for the first time this

year. The mercury reached  $5^{\circ}$  at Thunder Bay on the 18th and fell to  $-30^{\circ}$  at Moosonee on the 13th.

Weekly precipitation totals were below normal at all stations. Gore Bay recorded a total of 6.4 mm of precipitation.

Ski resort operators report that they have fully recovered from last year's disaster and that this is one of their best seasons in several years.

#### QUÉBEC

The cold weather of past weeks gave way to mild weather this week. The mean temperature was still below normal (by  $5^{\circ}$ ) in Eastern Townships, but was more than  $6^{\circ}$  above normal in the northwest. The mercury reached  $1^{\circ}$  (at Cap-aux-Meules on the 13th, Maniwaki on the 19th) and fell to  $-36^{\circ}$  (Sherbrooke on the 13th, Schefferville on the 17th).

Weekly precipitation totals were below normal at all stations except for Anticosti Island and Magdalen Island. Cap-aux-Meules recorded 86.8 mm of precipitation.

MARITIMES

Two more storms hit the Maritimes this week. The latter storm, which occurred over the weekend, was the fifth of this year and pushed seasonal snowfall totals above 200 cm at several stations. Snowfalls since the beginning of the season totalled 233.4 cm in the Annapolis Valley where the normal for the entire season is 146.6 cm. The 139 cm received in January alone at Yarmouth is approaching the previous record of 144.3 cm for the month.

In spite of a brief incursion of warm air, mean temperatures remained near 3° below normal. The mercury fell to -24° from the 15th to 17th at both Chatham and Fredericton and rose to 8° at Sable Island on the 13th.

The snowstorms have demolished snow removal budgets. Schools were closed Monday in Nova Scotia following the weekend storm which dropped 40 cm of snow. In Digby county, schools have

been closed since January 9th. Many small communities were isolated and all means of transportation paralysed. The weather has even been bad for winter sport equipment stores, as people cannot get to the stores to buy.

NEWFOUNDLAND AND LABRADOR

Labrador and the west coast of Newfoundland were colder this week with mean temperatures more than 2° below normal. The mercury fell to -37° at Churchill Falls on January 18th. In contrast, relatively mild air remained over the rest of Newfoundland. The temperature rose to 12° at Argentia on January 13th.

Storms on the 13th and on the weekend of the 17th to 18th deposited more than 50 mm of precipitation on the southeast of Newfoundland. Weekly totals were above normal at most stations. St. John's received a total of 66.1 mm of precipitation.

CLIMATIC PERSPECTIVES

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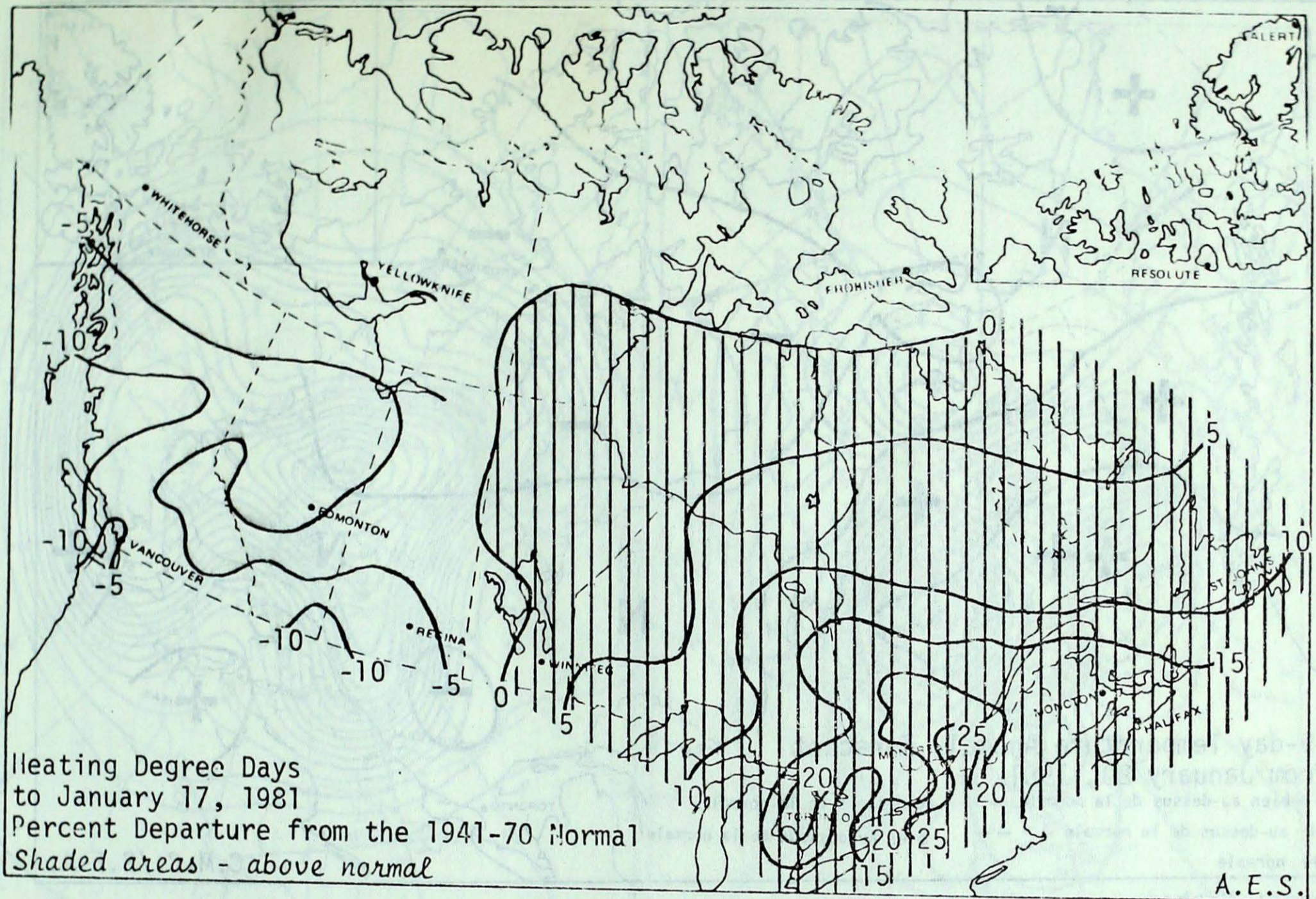
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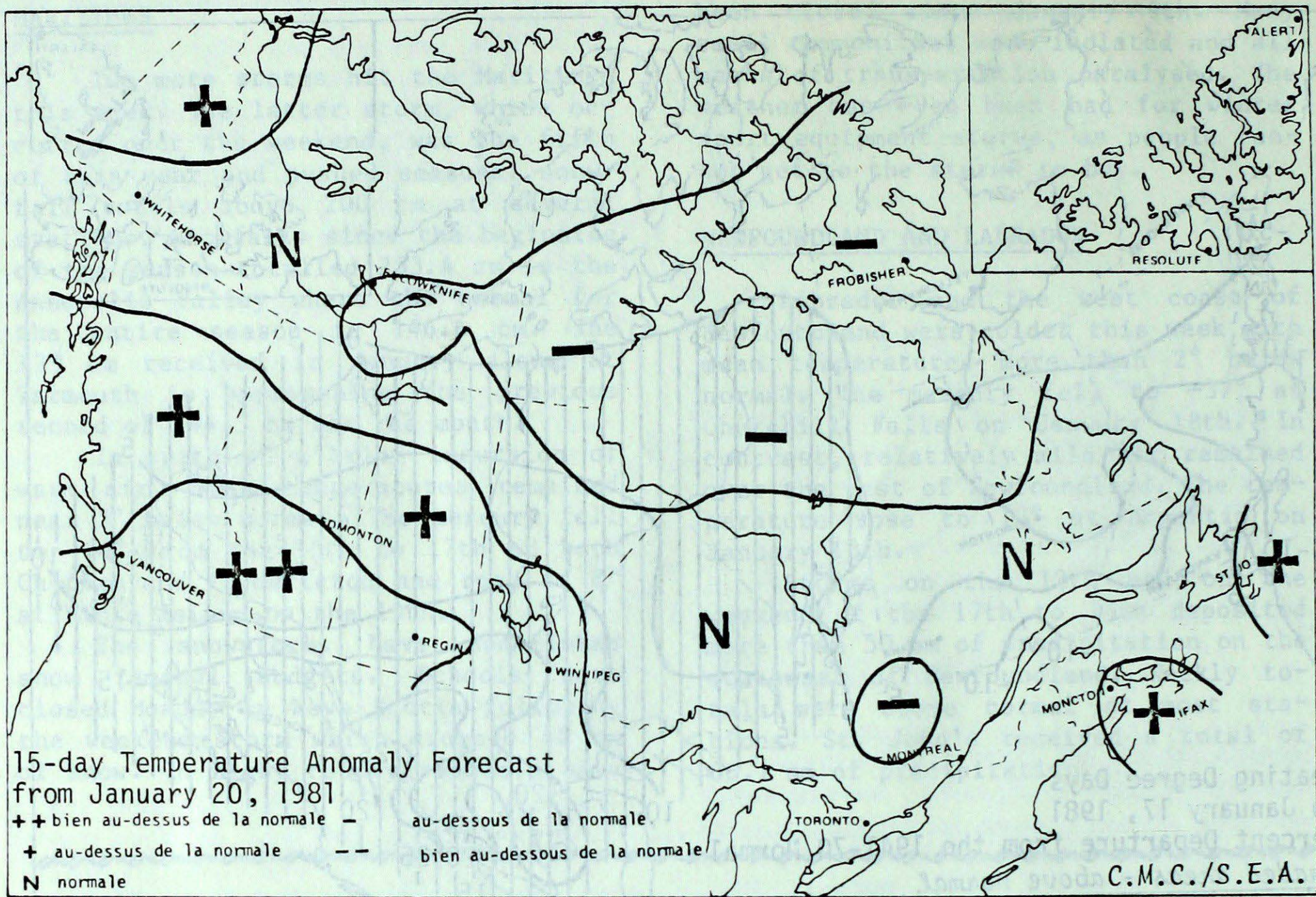
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HEATING DEGREE-DAY SUMMARY TO JANUARY 17, 1981



STATION	MONTHLY CUMULATIVE TOTAL	MONTHLY DIFF. FROM 1941-70 NORMAL	SEASONAL TOTAL	SEASONAL DIFF. FROM 1941-70 NORMAL	SEASONAL PERCENT OF NORMAL
Resolute	805.5	-41.5	6095.0	-81.0	99
Inuvik	553.5	-266.5	4868.0	-169.0	97
Whitehorse	335.0	-300.0	3530.5	-109.5	97
Vancouver Int'l A	232.5	-32.5	1427.0	-70.0	95
Edmonton Mun A	390.5	-158.5	2613.5	-223.5	92
Calgary Int'l A	319.0	-162.0	2411.5	-247.5	91
Regina	500.5	-94.5	2748.5	-169.5	94
Winnipeg Int'l A	594.0	-8.0	2932.5	83.5	103
Thunder Bay	595.0	40.0	2932.0	175.0	106
Windsor	475.5	101.5	1926.5	244.5	115
Toronto Int'l A	544.0	136.0	2237.0	343.0	118
Ottawa Int'l A	641.0	148.0	2695.0	456.0	120
Montreal Int'l A	646.0	175.0	2681.5	572.5	127
Quebec	652.0	159.0	2912.5	509.5	121
Saint John, N.B.	542.5	121.5	2513.5	340.5	116
Halifax	429.0	69.0	2090.0	323.0	118
Charlottetown	495.0	85.0	2340.5	333.5	117
St. John's, Nfld.	338.0	-17.0	2316.0	217.0	110

15 DAY TEMPERATURE ANOMALY FORECAST



Forecast Method

Analogue technique based on point prediction at 70 Canadian stations.

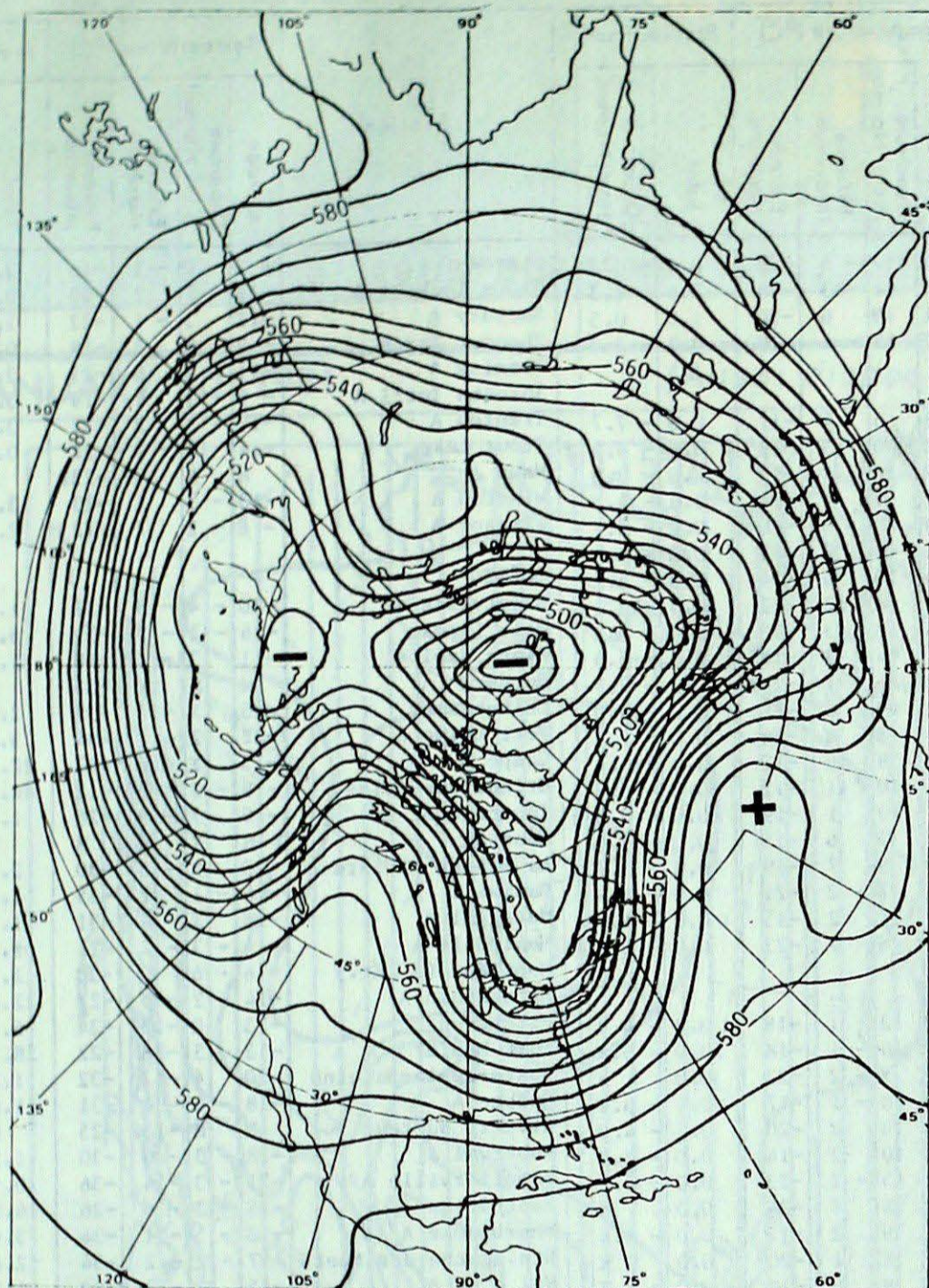
Temperature Scale

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

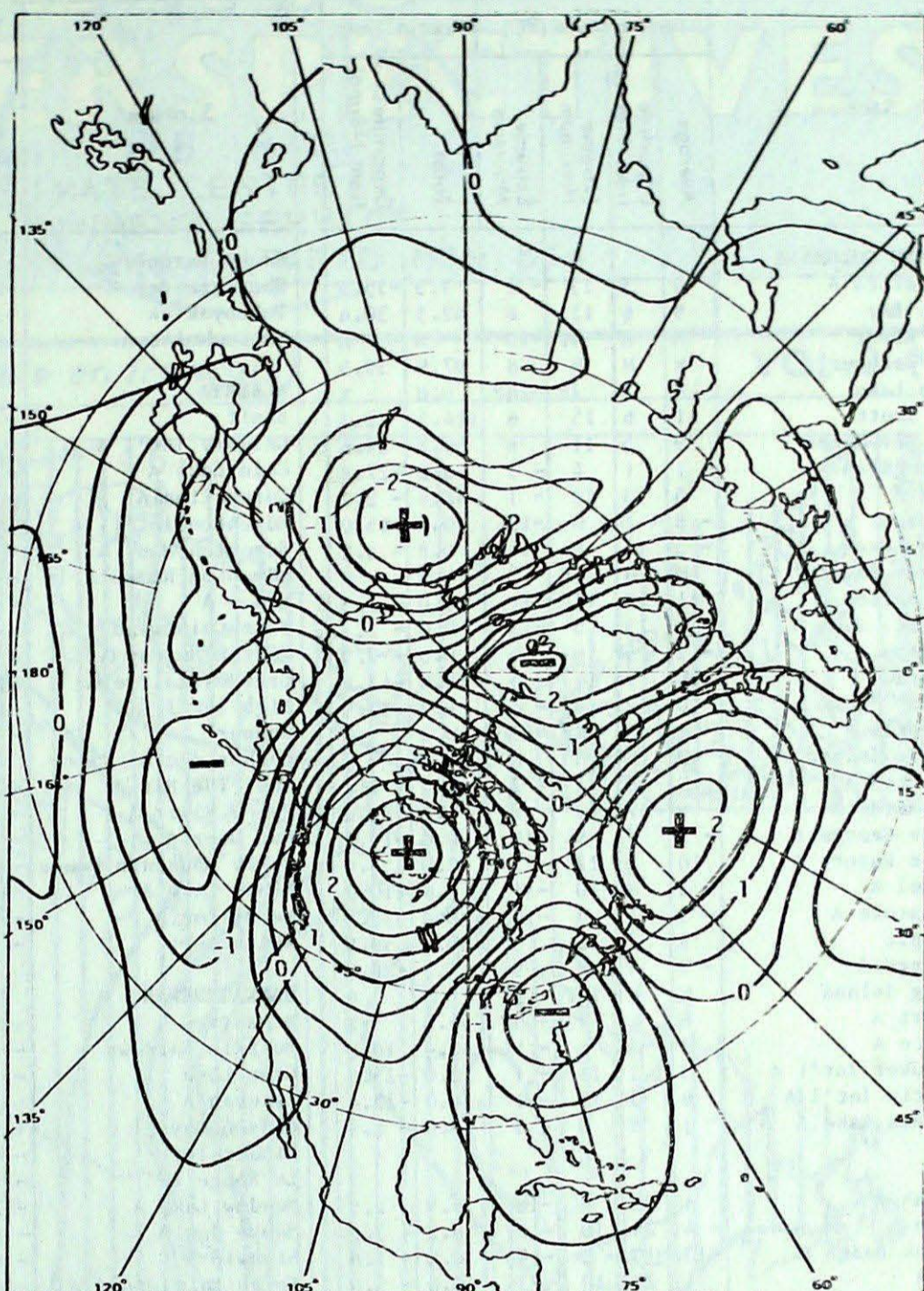
Station	Current Temperature Anomaly Forecast	
Whitehorse	Near Normal	Within 1.7° of Normal
Victoria	Much Above Normal	More than 2.0° above Normal
Vancouver	Much Above Normal	More than 2.3° above Normal
Edmonton	Above Normal	From 1.4° to 4.9° above Normal
Regina	Much Above Normal	More than 4.3° above Normal
Winnipeg	Above Normal	From 1.1° to 3.7° above Normal
Thunder Bay	Near Normal	Within 0.9° of Normal
Toronto	Near Normal	Within 0.7° of Normal
Ottawa	Near Normal	Within 0.8° of Normal
Montreal	Near Normal	Within 0.8° of Normal
Quebec	Near Normal	Within 0.9° of Normal
Fredericton	Near Normal	Within 0.9° of Normal
Halifax	Above Normal	From 0.7° to 2.3° above Normal
Charlottetown	Above Normal	From 0.8° to 2.6° above Normal
St. John's	Above Normal	From 0.7° to 2.2° above Normal
Goose Bay	Near Normal	Within 1.3° of Normal
Frobisher Bay	Below Normal	From 1.5° to 5.0° below Normal
Inuvik	Above Normal	From 1.3° to 4.3° above Normal

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

## Atmospheric Circulation



7-day Mean 50 kPa Height Map (in dam)  
January 12 to 18, 1981



7-day Mean 50 kPa Height Anomaly  
(in 5 dam intervals) January 12 to 18, 1981

The mean 50 kPa atmospheric circulation over North America increased its north-south component from last week. The stationary blocking upper ridge over western Canada and the long wave trough over the Great Lakes Basin have both sharpened in amplitude. The upper level circulation has accelerated due to a tighter gradient.

Very strong 50 kPa height anomalies in excess of 30 dam are evident over the western half of the country; at the same time negative height anomalies persist over southeastern Canada and the eastern United States.

The Atlantic Provinces, situated down stream from the major trough, continued to be under the influence of a

strong southwesterly circulation. This permitted significant low pressure systems to develop and track northeastwards off the east coast. As a result 2 more storms battered the Atlantic Provinces this past week.

The rest of eastern Canada was unseasonably dry. The strong surge of mild Pacific air continued to support abnormally warm temperatures in western Canada and has now progressed as far east as western Québec. Mean temperatures in the Yukon were more than 30 degrees above the long term normal. In contrast the Québec eastern townships had mean temperatures 6 degrees below the normal.

Andy Radomski

TEMPERATURE AND PRECIPITATION DATA FOR THE WEEK ENDING 0600 G.M.T. JANUARY 20, 1981

Table with columns for Station, Temperature (°C) (Average, Departure from Normal, Extreme Maximum, Extreme Minimum), and Precip. (mm) (Total, Departure from Normal). Rows include stations in BRITISH COLUMBIA, YUKON, and NORTHWEST TERRITORIES.

Table with columns for Station, Temperature (°C) (Average, Departure from Normal, Extreme Maximum, Extreme Minimum), and Precip. (mm) (Total, Departure from Normal). Rows include stations in ALBERTA, SASKATCHEWAN, MANITOBA, and ONTARIO.

Table with columns for Station, Temperature (°C) (Average, Departure from Normal, Extreme Maximum, Extreme Minimum), and Precip. (mm) (Total, Departure from Normal). Rows include stations in QUEBEC, NEW BRUNSWICK, NOVA SCOTIA, PRINCE EDWARD ISLAND, and NEWFOUNDLAND.

P = extreme value based on less than 7 days X = no normal due to short period M = not available at press time