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Environment Canada Environnement Canada

Atmospheric Environnement Environment atmosphérique A WEEKLY REVIEW OF CANADIAN CLIMATE

CLIMATIC PERSPE

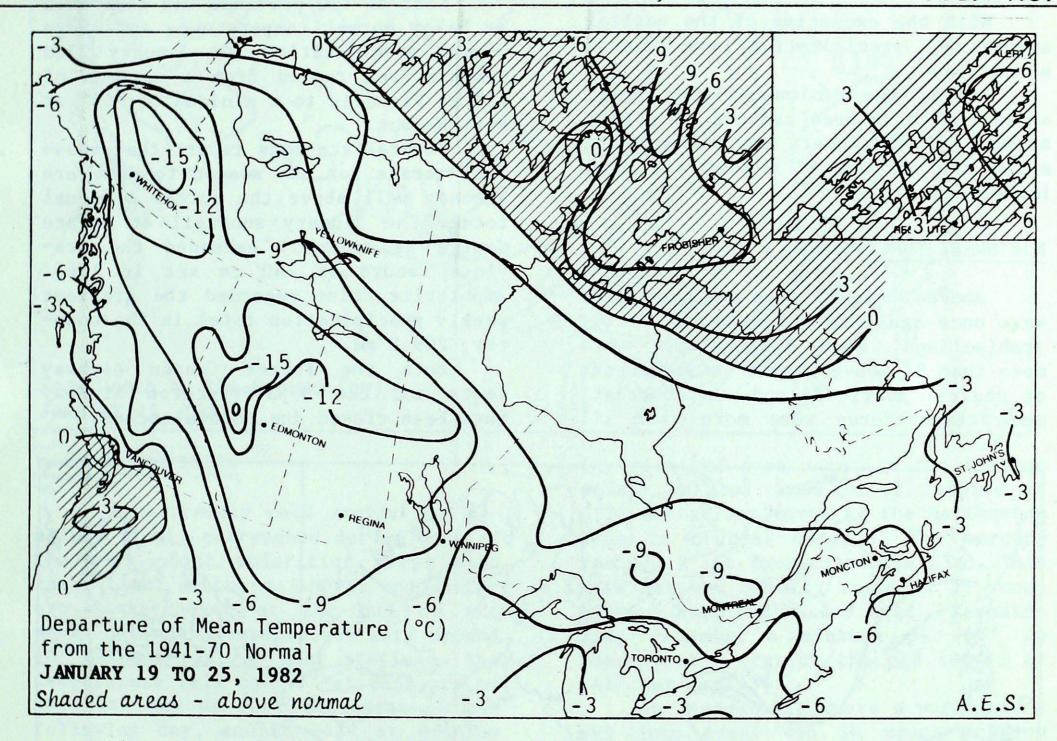
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THE CANADIAN CLIMATE CENTRE,
ATMOSPHERIC ENVIRONMENT SERVICE,
4905 DUFFERIN ST., DOWNSVIEW, ONTARIO M3H 5T4

JANUARY 29, 1982

(Aussi disponible en français)

VOL.4 NO. 3



# WEATHER HIGHLIGHTS FOR THE PERIOD - JANUARY 19 TO 28, 1982

The Cold weather maintain its domination over Canada

Only in the extreme southern British Columbia and the Franklin and Keewatin districts were the temperature above normal. Everywhere else, the cold weather was firmly entrenched during most of the week.

The cold weather caused an increasing number of mechanical breakdowns and power outages in Alberta.

Avalanches blocked both the trans-Canada highway in the Frazer Canyon and the Hope-Princeton highway.

The temperature touched 11° at Victoria and fell to -55° at Ross River. Precipitation totalled 209.8 mm at Amphitrite Point, British Columbia.

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

Canadian and 115 northern United States Synoptic stations.

The bitterly cold weather continued in central and northern areas with temperatures close to 15° below normal in most of the region. Carmacks and Ross River consistently recorded minimum temperatures of -50° to -55°. The mercury rose to -4° at Komakuk Beach on the 22nd.

With the exception of the coastal mountains, precipitation was almost nonexistant.

Due to the prolonged cold spell, activities have been reduced to a bare minimum. Most Yukoners are beginning to await the arrival of milder air with impatience.

#### NORTHWEST TERRITORIES

Above normal mean temperatures were once again recorded in the Arctic Archipellago. Mean temperatures were more than 9° above normal in some areas of central Baffin Island. In contrast, mean temperatures were more than 11°

below normal in the extreme south of the Mackenzie District.

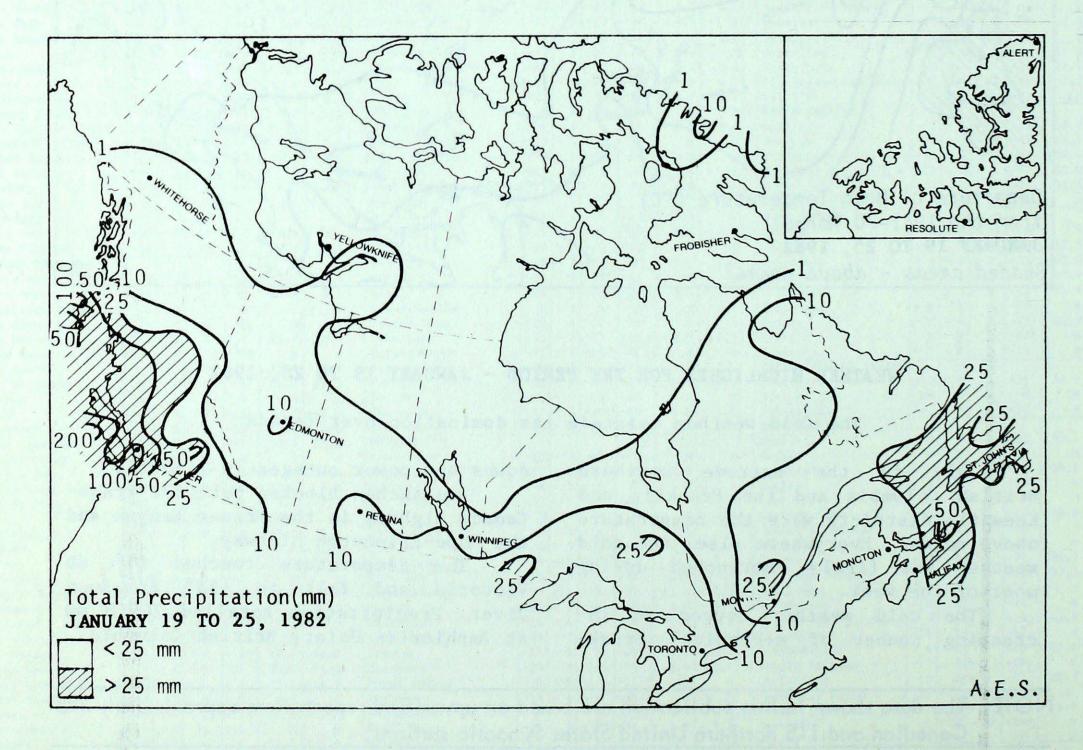
Only Cape Hooper measured a significant amount of precipitation, 12.4 mm. Most stations recorded no precipitation at all.

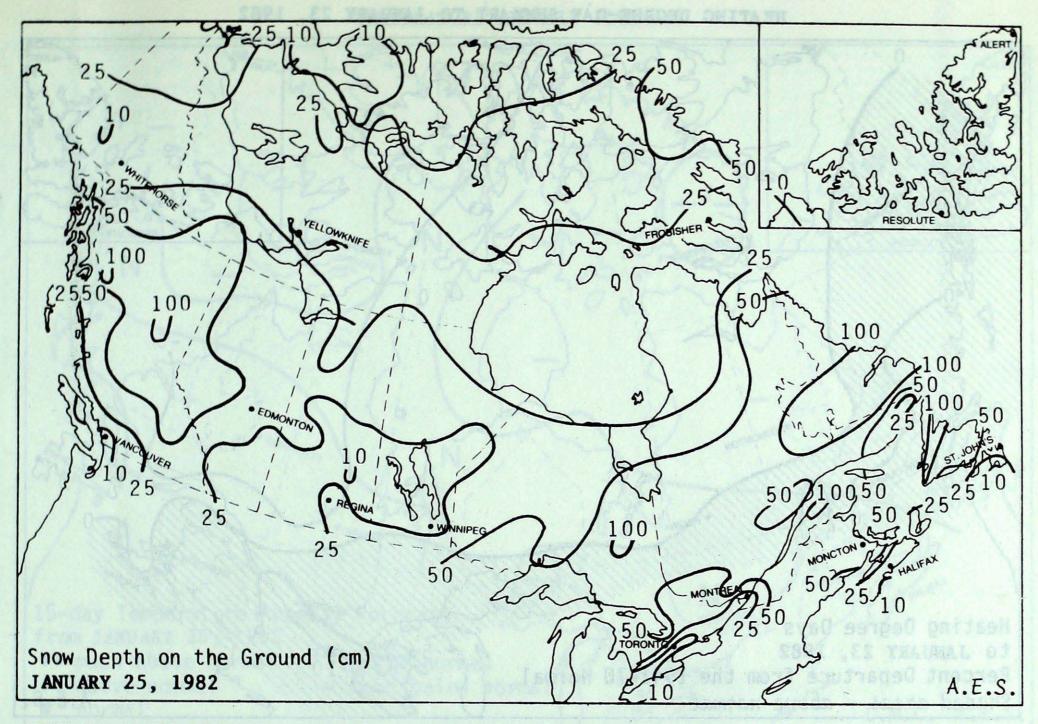
# BRITISH COLUMBIA

Most of the province was dominated by below normal temperatures and above normal precipitation. On January 23rd temperatures ranged from a maximum of 11° at Victoria to a minimum of -44° at Fort Nelson.

Several stations report that snow-fall totals for the season to date are already well above the normal seasonal total. The January snowfall at Prince George has already exceeded the previous record of 140 cm set in 1965. Amphitrite Point recorded the greatest weekly precipitation total in the country, 209.8 mm.

Both the Frazer Canyon highway route and the Hope-Princeton highway have been closed due to avalanches.





#### PRAIRIE PROVINCES

The extremely cold Arctic air remained firmly entrenched during most of the week. Some moderation crept into central and southern Alberta and southern Saskatchewan at the end of the week. The mean temperatures were around 10° below normal at most stations. The temperature fell to -47° at Thompson on the 20th and at Fort Chipewyan on the following day, and to -48° at Uranium City on the 19th.

Some central Alberta rural school bus runs were cancelled. Edmonton City was plagued with scattered power failures, and its snow removal equipment, faced with twice the January average snowfalls, had experienced numerous break-downs.

Despite some of the best conditions in the past several winters, attendance at ski facilities throughout Alberta was drastically reduced due to the extreme cold.

# ONTARIO

Strong winds and cold temperatures dominated Ontario for the fourth weekend in a row. This time however, freezing rain and even rain (in the extreme south) ushered in a brief respite of mild air as far north as the Haliburton area in central Ontario. The mercury reached 5° at Toronto on the 23rd. This mild air was quickly replaced by snow, blowing snow and record cold. Kapuskasing recorded a minimum of -45° on January 18th erasing the old record of -41° set in 1934.

In Thunder Bay where a world-class ski jump event was in progress from January 22nd to 24th, high and low temperatures of -20° to -30° respectively created numerous hardships for skiers and spectators alike.

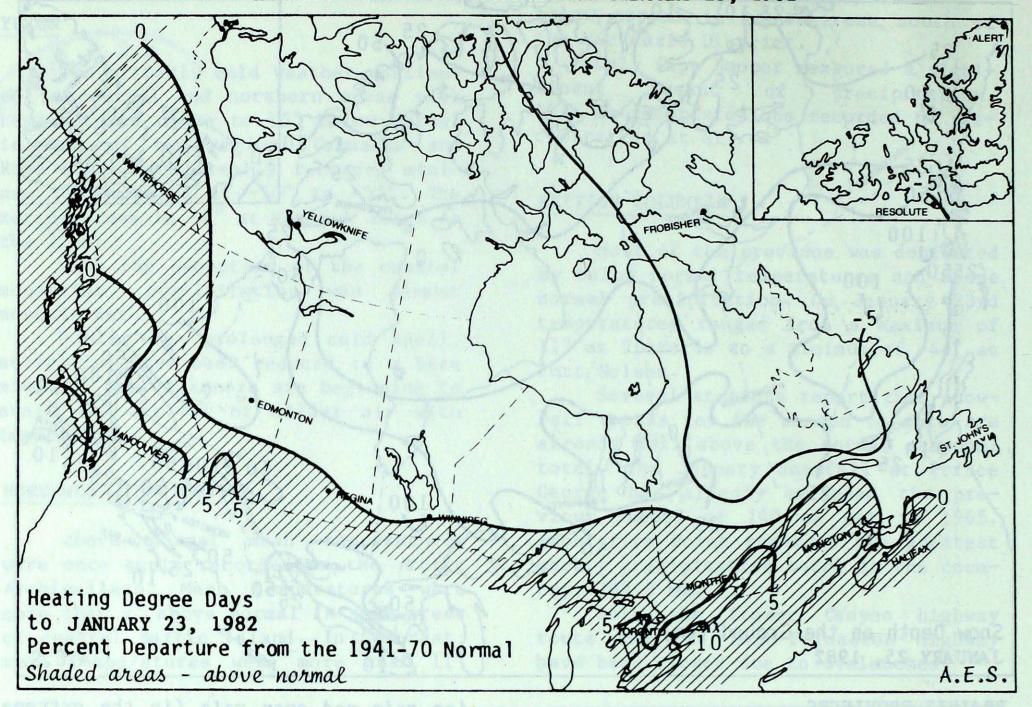
# QUEBEC

The cold weather held for another week. The weekly mean temperatures were from 8° to 11° below normal in southern regions. The temperature fell to -42° at Matagami on the 22nd. Eighteen daily low temperature records were set during the week.

Weekly precipitations totals were close to normal at most stations following a storm which touched the province on the 23rd and 24th.

(continued on page 7)

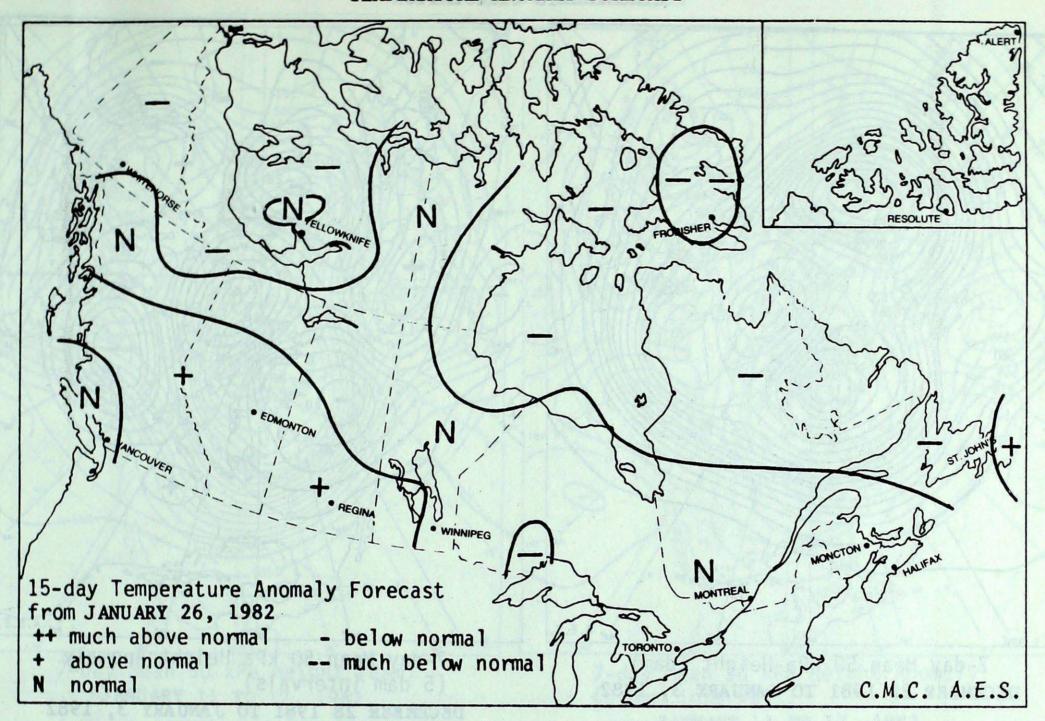
# HEATING DEGREE-DAY SUMMARY TO JANUARY 23, 1982



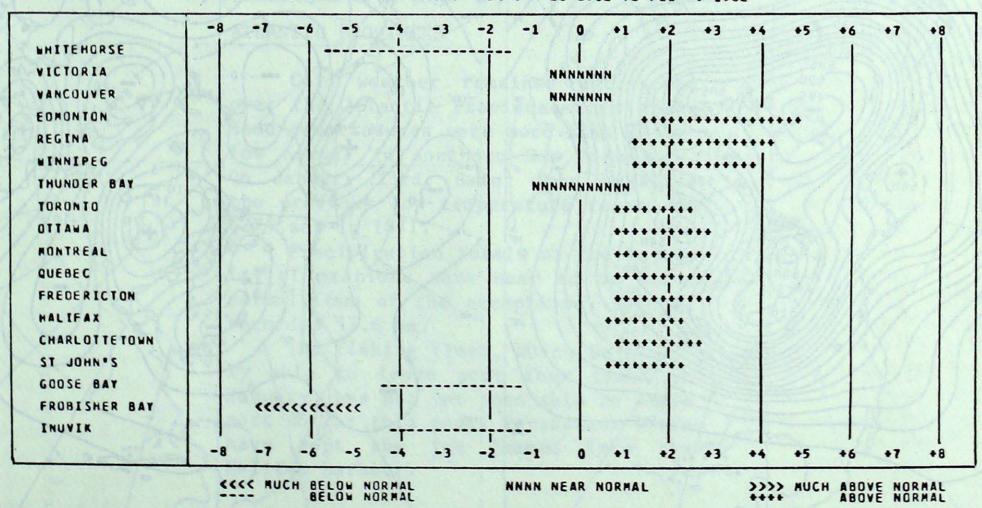
| STATION           | MONTHLY<br>CUMULATIVE<br>TOTAL | MONTHLY DIFF.<br>FROM 1941-70<br>NORMAL | SEASONAL<br>TOTAL | SEASONAL<br>DIFF. FROM<br>1941-70 NORMAL | SEASONAL<br>PERCENT<br>OF NORMAL |  |  |
|-------------------|--------------------------------|---|-------------------|--|----------------------------------|--|--|
| Resolute          | 1091.0                         | -62.0                                   | 6144.5            | -337.5                                   | 95                               |  |  |
| Inuvik            | 1194.0                         | 80.0                                    | 5232.5            | -98.5                                    | 98                               |  |  |
| Whitehorse        | 1151.5                         | 294.5                                   | 4007.0            | 145.0                                    | 104                              |  |  |
| Vancouver         | 396.5                          | 35.5                                    | 1563.5            | -29.5                                    | 98                               |  |  |
| Edmonton Mun      | 959.0                          | 206.0                                   | 2916.5            | -124.5                                   | 96                               |  |  |
| Calgary           | 912.5                          | 253.5                                   | 2894.5            | 57.5                                     | 102                              |  |  |
| Regina            | 1031.5                         | 225.5                                   | 3182.5            | 53.5                                     | 102                              |  |  |
| Winnipeg          | 1019.0                         | 195.0                                   | 3080.5            | 9.5                                      | 100                              |  |  |
| Thunder Bay       | 928.0                          | 175.0                                   | 3038.0            | 83.0                                     | 103                              |  |  |
| Windsor           | 616.0                          | 109.0                                   | 1986.5            | 171.5                                    | 109                              |  |  |
| Toronto           | 657.0                          | 102.0                                   | 2249.0            | 208.0                                    | 110                              |  |  |
| Ottawa            | 789.5                          | 122.5                                   | 2535.5            | 122.5                                    | 105                              |  |  |
| Montreal          | 778.5                          | 143.5                                   | 2492.0            | 219.0                                    | 110                              |  |  |
| Quebec            | 790.0                          | 117.0                                   | 2709.0            | 126.0                                    | 105                              |  |  |
| Saint John, N.B.  | 698.0                          | 121.0                                   | 2381.5            | 52.5                                     | 102                              |  |  |
| Halifax           | 582.0                          | 90.0                                    | 1940.5            | 41.5                                     | 102                              |  |  |
| Charlottetown     | 650.5                          | 90.5                                    | 2152.5            | -4.5                                     | 100                              |  |  |
| St. John's, Nfld. | 2911508.599M                   | 21.5                                    | 2176.5            | -54.5                                    | 98                               |  |  |

following a group mich courte

# TEMPERATURE ANOMALY FORECAST



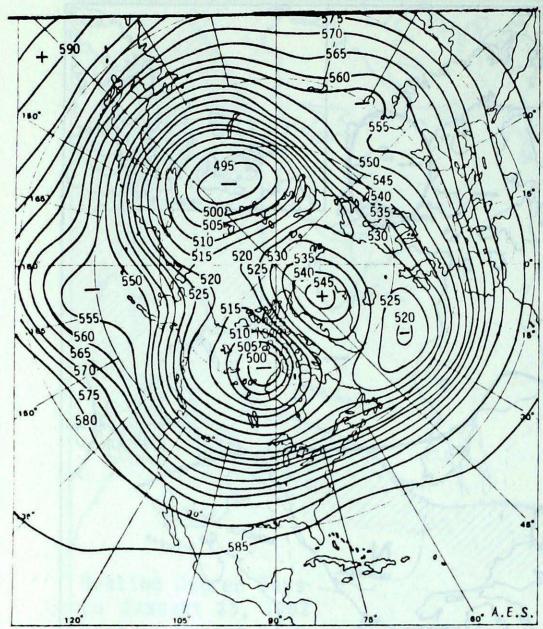
#### TEMPERATURE ANOMALY FORECAST FOR JAN 26 1982 TO FEB



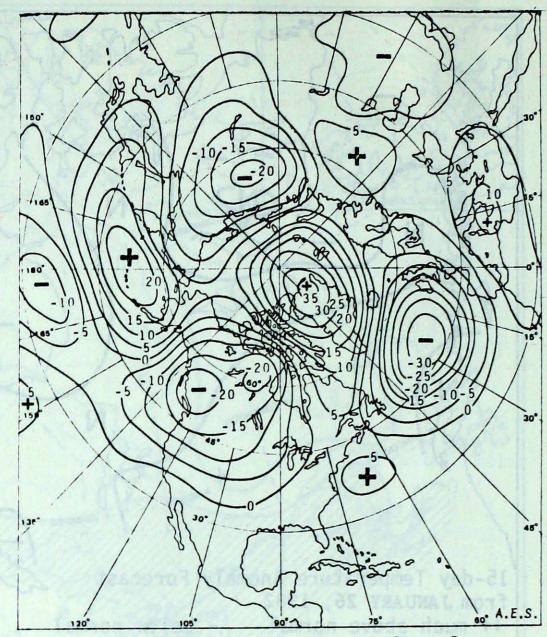
NNNN NEAR NORMAL

>>>> MUCH ABOVE NORMAL ABOVE NORMAL

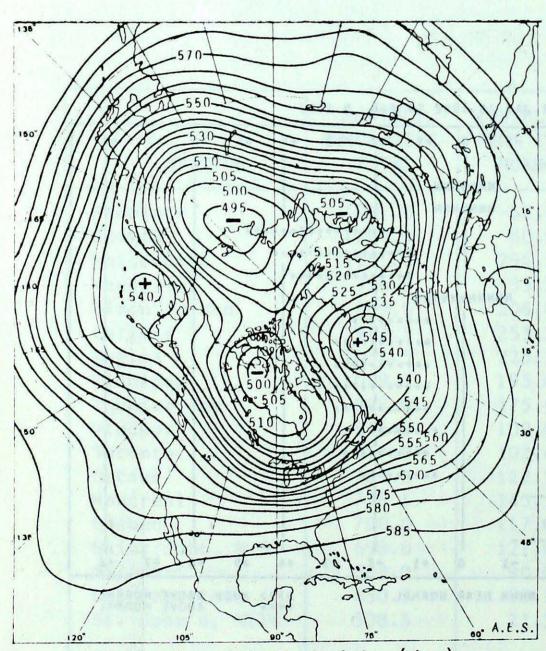
# ATMOSPHERIC CIRCULATION



7-day Mean 50 kPa Height (dam)
DECEMBER 28 1981 TO JANUARY 3, 1982

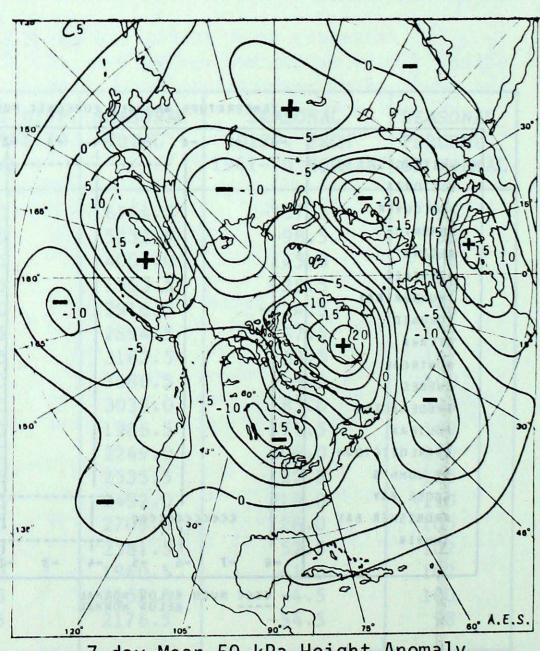


7-day Mean 50 kPa Height Anomaly (5 dam intervals) DECEMBER 28 1981 TO JANUARY 3, 1982



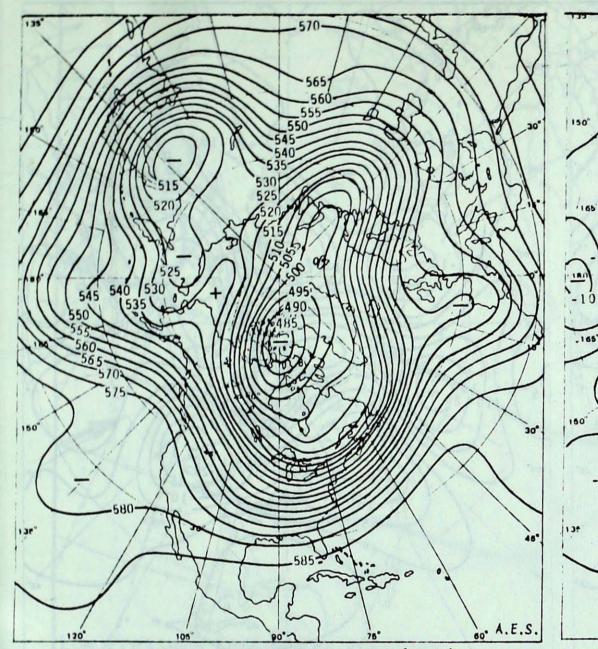
7-day Mean 50 kPa Height (dam)

JANUARY 4 TO 10, 1982



7-day Mean 50 kPa Height Anomaly (5 dam intervals) JANUARY 4 TO 10, 1982

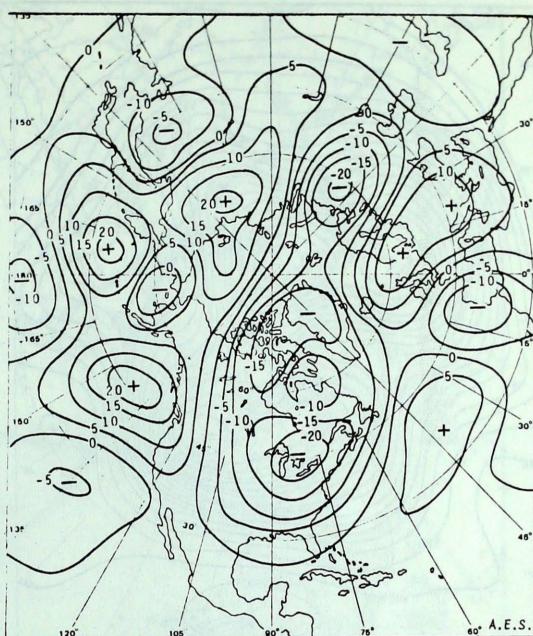
#### ATMOSPHERIC CIRCULATION



7-day Mean 50 kPa Height (dam) JANUARY 11 TO 17, 1982

t Pacific air over

Quebec high, winds



7-day Mean 50 kPa Height Anomaly (5 dam intervals)

JANUARY 11 TO 17, 1982



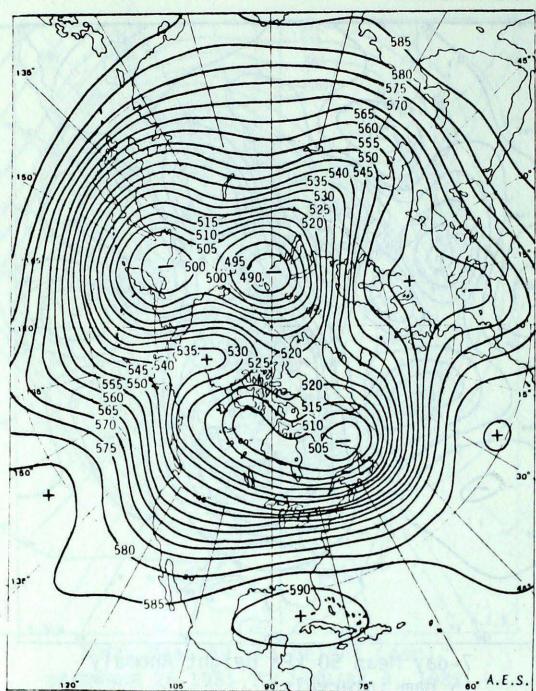
(continued from page 3)

# ATLANTIC PROVINCES

Cold weather remained entrenched over the Atlantic Provinces this week. Mean temperatures were more than 8° below normal in southern New Brunswick. On January 23rd, Saint John equalled the previous low temperature record of -27° set in 1871.

Precipitation totals at the majority of stations were near to or below normal. One of the exceptions, Sydney, recorded 57.6 mm.

The fishing fleet, which is usually able to leave port four times in January, has not yet been able to leave port so far this year. Persistant winds have kept the ice jammed into the Halifax harbour.

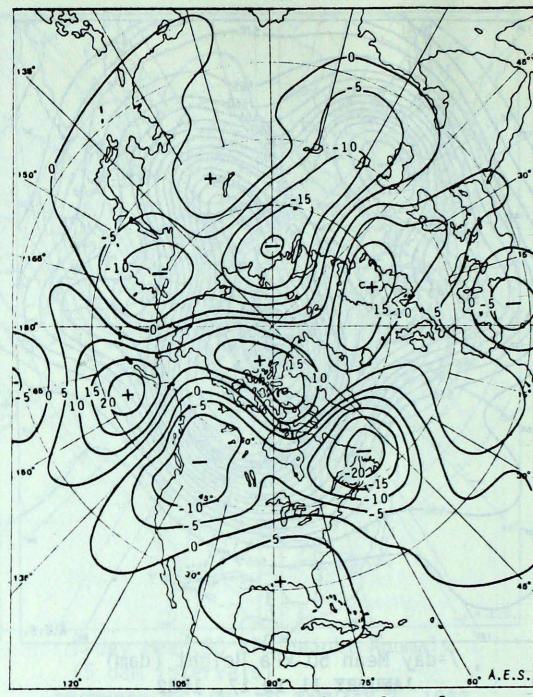


7-day Mean 50 kPa Height (dam) JANUARY 18 TO 24, 1982

Since the beginning of the new year a deep Arctic Vortex has been a prominent feature in the vicinity of Canadian Arctic. 50 kPa height anomalies have been consistently below normal. The mean ridge that previously dominated the weather regime in western Canada has shifted to just off the Canadian west coast and northward across Alaska. The combination of these two features has resulted in a very strong atmospheric circulation around the closed upper vortex.

Surges of extremely cold Siberian Arctic air penetrated southeastwards across the prairies and encompassed most of Canada and a large portion of the United States. Mean temperatures throughout the month of January have been well below normal most everywhere as fresh outbreaks of Arctic air drifted southeastwards.

This deep influx of cold air, away from its source region has resulted in strong system development due to the interactions with a much milder airmass to the south.



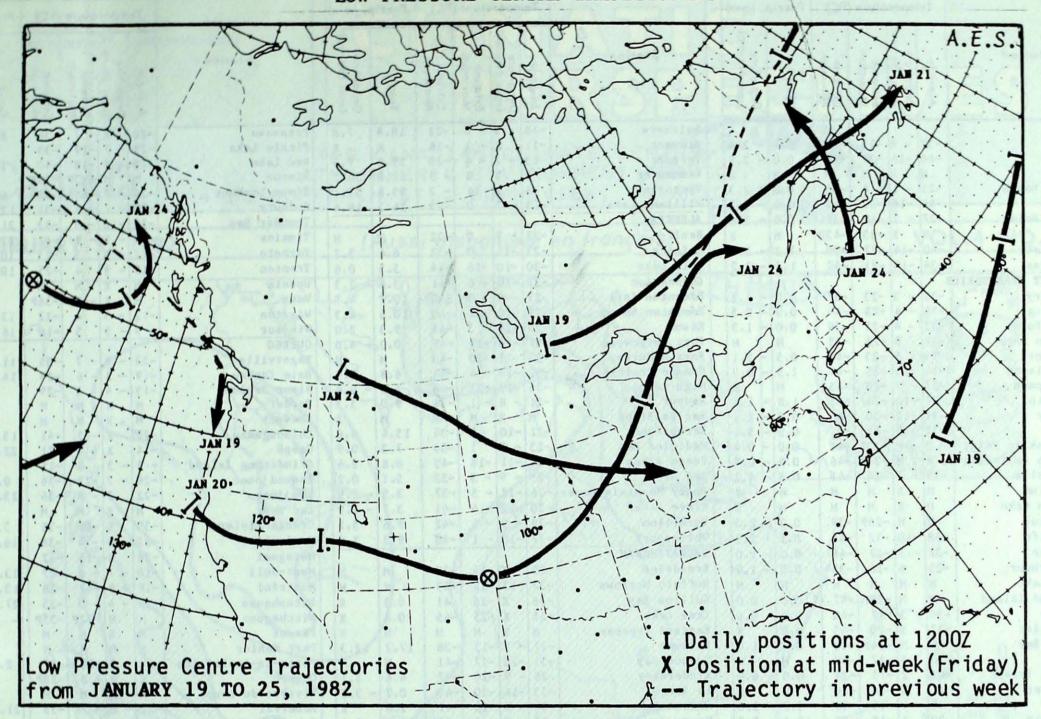
7-day Mean 50 kPa Height Anomaly (5 dam intervals)

JANUARY 18 TO 24, 1982

Significant low pressure disturbances developed over the American plains and tracked northeastwards. The eastern half of the country received the brunt of these storms. The most intense development took place along the eastern sea-board. The Atlantic provinces were battered by high winds and heavy precipitation on numerous occasions.

Significant rainfall totals along the coast and heavy snowfalls in the British Columbia interior have been a common occurrence in the past few weeks. This has been mainly due to a combination of approaching Pacific weather systems, a strong on-shore flow and an influx of moist Pacific air over running an Arctic airmass. Across the prairies Ontario and Quebec high winds and very cold temperatures gave near blizzard conditions on numerous occasions. Heavy snow squal activity was common to the lea of the Great Lakes.

Andy Radomski





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| Temperature (°C)   |  | Precip. (mm  | (mm)                           |                                   |  | Temperature (°C), Precip. (mm) |                     |                    |            | Temperature (°C) Precip. (mn |                                    |  |  |  |   |   |
|--|--|--|--------------------------------|-----------------------------------|--|--------------------------------|---------------------|--------------------|------------|------------------------------|------------------------------------|--|--|--|---|---|
| Station  | . 0  |  | Truce<br>Normal                | Station                           |  |                                | jo<br>Li            |                    |            | mal                          |                                    |  | ē  |  |   |   |
| Station  | Average<br>Departure<br>from No  | Extreme<br>Maximun<br>Extreme  | Total Departure                | Station                           | Average  | Departure                      | Extreme             | Extreme<br>Minimum | Total      | Departure<br>from Norn       | Station                            | Average<br>Departure   |  | Extreme  | 10                                      | Dorture<br>Morr   |
| YUKON  | 4 0 E  | ŵ≥ w:  | 5 F QE                         | Smithers                          | -1   |                                | £ ₩.≥               |                    | 18.8       | 7.8                          | Pctawawa                           |  |  | 1  | Total                                   | Depor<br>from   |
| Burwash<br>Dawson  | 10 To  | -15 -45<br>-37 -48   | 200 m 274                      | Stewart                           | -1<br>-1   | 1                              | X - 3               | -16<br>-20         | M<br>29.6  | 7.8<br>X<br>7.3              | Pickle Lake<br>Red Lake            | -20 7<br>-29 - 7<br>-28 - 8  | 4014   | -34  | 8.0<br>M                                | 1   |
| Faro<br>Komakuk Beach  | M X -23 - 1  | M N  | 1 M 3                          | Vancouver                         | 7.9 77.9   | 3                              | 1 8                 | - 3                | 91.8       | 54.2                         | Simcoe<br>Sioux Lookout            | M M  | 1 - 3P   | -40<br>-19P  | 1.3<br>H                                |   |
| Mayo A Shingle Point   | -44 -18  | -39   -49<br>-18   -36   | 0.0 - 3.2                      | Williams Lake                     | -1   | 8 -                            | 7 0                 | 300                | 26.3       | 18.4                         | Sudbury                            | -20  - 7   | - 4  | -38<br>-31   | 12.5                                    |   |
| Teslin   | M X  | -23P -43   | P M )                          | Banff                             | -2   | 200                            | 9 0                 |                    | М          | н                            | Thunder Bay<br>Timmins             | -26 - 9  |  | -33<br>-41   | 21.8                                    | 7.2   |
| Watson Lake<br>Whitehorse  | -34 -15  | -27   -50<br>-21   -43   |                                |                                   | -2<br>-3   | 0 -1                           | 0 -16               | -32<br>-44         | 5.5        | 0.6                          | Toronto<br>Trenton                 | -11 - 5<br>-15 - 9   | 5 4  | -23<br>-25   | 10.6                                    | 1112200000000   |
| NORTHWEST TERRITORIE Cape Parry  | -32 - 3  | -23 -37  |                                | Coronation<br>Edmonton Intl       | -2<br>-2   | 7 -                            | 9 - 3               | -41<br>-40         | 3.5        | - 2.3<br>4.7                 | Upsala<br>Wawa                     | M X  | M - 6  | -36P   | M<br>M                                  | 3   |
| Cape Young<br>Clinton Point  | -32 - 4  | -23  -44<br>-21  -39   | 0.0 - 1.3                      | Edmonton Namao<br>Ed son          | -2°  | 9 -1                           | 0 - 2 9 - 3         | -40<br>-44         | 9.3        | 2.0                          | Wiarton<br>Windsor                 | -12 - 5<br>- 9 - 5   |  | -22<br>-16   | 13.8                                    | - 8.8   |
| Contwoyto Lake<br>Coppermine   | -35 - 5  | -26   -42<br>-23   -44   | 0.5 - 2.1                      | Fort Chipewyan Fort McMurray      | -3:<br>-3:   | 3 -1                           | SAM THE STATE OF    | -47<br>-43         | 0.0<br>M   | - 4.0<br>M                   | QUÉBEC<br>Bagotville               | -23 - 8  | - 7  | -35  | 11.7                                    | - 8.7   |
| Fort Reliance<br>Fort Simpson  |  | -25 -44<br>-25 -45   |                                | Grande Prairie<br>High Level      | -3:<br>-3:   | 0.00                           | 322                 | -44<br>-46         | 6.8        | 0.6                          | Baie Comeau<br>Blanc Sablon        | -19 - 3<br>-15 - 4   | - 6<br>- 1   | -29<br>-29   | 14.3<br>M                               | -10.9   |
| Fort Smith   |  | -24   -47<br>-30   -45   | 1.8 - 1.4                      | Jasper<br>Lac La Biche            | -21  | 1 - 8<br>M :                   | 8 - 1<br>X M        | -34<br>M           | 9.0<br>M   | 3.2<br>X                     | Border<br>Chevery                  | M M  | М  | M  | M<br>M                                  | ) N   |
| Inuvik<br>Lady Franklin Point  | TO 1809 4  | -25 -41<br>-23P -41  | 0.5 - 5.1                      | Lethbridge<br>Medicine Hat        | -21<br>-23   |                                | 45 AUX MINOR TO THE | -34<br>-34         | 15.4       | 8.6                          | Chibougamau<br>Gaspé               | -27 X<br>-14 X   | -13<br>- 1   | -41<br>-21   | 13.1                                    | X   |
| Nicholson Peninsula<br>Norman Wells  |  | -24P -46<br>-24 -41  | 0.0 - 0.9                      | Peace River<br>Red Deer           | -32<br>-25   |                                | 1 -18               | -45<br>-33         | 6.8        | 2.6                          | Grindstone Island<br>Inoucdjouac   | - 9 - 3<br>-28 - 2   | 3  | -15<br>-36   | M<br>0.2                                | - 2.1   |
| Port Radium<br>Robertson Lake  | M X  | M M  | M X                            | Rocky Mountain Hous<br>Slave Lake |  | 5 -12                          | 2 - 5               | -37<br>-41         | 3.5        | - 1.9                        | Kuujjuaq<br>Lac Eon                | -22 3<br>M X   |  | -36<br>M   | 23.7<br>M                               | 19.0  |
| Tuktoyaktuk<br>Yellowknife   | . C.   | -28P -39<br>-32 -44  | 0.0 - 2.3                      | Vermilion<br>Whitecourt           | -29  | 9 - 9                          | 9 - 6               | -42<br>-40         | 9.6        | 5.1                          | Grande Riviere<br>Maniwaki         | -30 X<br>-22 -10   | -22  | -38<br>-38   | 3.5                                     | X   |
| Baker Lake   | -37 - 3 -  | -27  -46   | 0.0 - 1.0                      | SASKATCHEWAN                      |  |                                |                     |                    |            |                              | Matagami                           | -26 X  | -15  | -42  | 16.9<br>M                               | 4.5<br>X  |
| Coral Harbour<br>Ennadai Lake  | м м  | -16   -35<br>M M   | 0.0 - 1.9<br>M M               | Broadview<br>Buffalo Narrows      | -29<br>-32   | 2 -13                          |                     | -38<br>-43         | М          | M                            | Mont-Joli<br>Montréal              | -18 - 9  | - 2  | -27<br>-28   | 13.8                                    | - 5.2<br>- 4.5  |
| Jenny Lind Island<br>Pelly Bay   | -30 3 -  | -28P -41<br>-17 -40  | 0.0 0.0                        | Collins Bay<br>Cree Lake          | -36<br>-35   | 5 X                            | -25                 | -41<br>-45         | 0.3        | X                            | Natashquan<br>Nitchequon           | -16 - 4<br>M M   | The second secon | -25<br>-35P  | 27.8<br>M                               | 7.4<br>M  |
| Rankin Inlet<br>Shepherd Bay   | 56   | -29 -45<br>-24P -43  | 0.0 X<br>0.0 - 1.0             | Eastend Cypress<br>Estevan        | -27  | - 9                            |                     | -36                | 17.7       | 12.3                         | Parent<br>Port Menier              | M X  | M  | M  | M<br>M                                  | X<br>M  |
| Alert<br>Broughton Island  |  | -17   -39<br>-15   -26   | 0.0 - 6.9                      | Hudson Bay<br>Kindersley          | -31<br>-28   | 1000                           | A Commence          | -41<br> -37        | 4.6        | 1.1                          | Poste-de-la-Baleine<br>Québec      | -28 - 5<br>M M   | 0  | -37<br>-28P  | 2.6<br>M                                | - 3.0<br>M  |
| Cape Dorset Cape Dyer  | -21 X -  | The same of the sa | M X<br>5.0 - 2.0               | La Ronge<br>Meadow Lake           | -33<br>-34   |                                |                     | -43<br>-47         | 0.2 -      | - 3.2<br>X                   | Rivière du Loup<br>Roberval        | M M  | - 7  | M<br>-33   | M<br>21.2                               | 9.6   |
| Cape Hooper<br>Clyde   | The state of the s | 15 -25   | 12.4 8.3<br>M M                | Moose Jaw<br>Nipawin              | -27<br>-34   | 7.1                            |                     | -38<br>-42         | 12.8       | 8.4<br>X                     | Schefferville<br>Sept-Iles         | M M  | The second secon | -32P<br>-28  | M<br>20.9                               | - 1.8   |
| Dewar Lakes  |  | 11 -23   | 2.0 0.2<br>M M                 | North Battleford<br>Prince Albert | -30<br>-33   | 20.13810                       | -11<br>-17          | -42<br>-43         | 3.6 -      | - 1.3                        | Sherbrooke<br>Ste Agathe des Monts | -21 -12  | - 3  | -35<br>-31   | 21.2                                    | 6.4   |
| Frobisher Bay<br>Gladman Point   | -21 6 -<br>M H -   | 8 -32<br>22P -43   | 0.0 - 5.3                      | Regina<br>Rockglen                | -27<br>M   | - 8                            | -16<br>M            | -35<br>M           | 10.9<br>M  | 6.3<br>X                     | Val D'Or<br>NEW BRUNSWICK          | -24 - 8  |  | -40  |   | - 6.7   |
| Hall Beach   | -31 0 -  | 21 -39<br>11 -31   | 0.0 - 2.0                      | Saskatoon<br>Swift Current        | -29<br>-26   | -10                            | -10                 | -38<br>-37         | M          | М                            | Charlo<br>Chatham                  | -18 - 6<br>-15 - 6   |  | -29<br>-27   | 22.7                                    | 4.0   |
| Mackar Inlet   |  | 11 -40   | 0.0 - 0.1<br>0.0 X             | Uranium City<br>Wynyard           | -38<br>-30   | -10                            | -25                 | -48<br>-40         |            | 2.1<br>X                     | Fredericton<br>Moncton             | -17 - 9<br>-16 - 8   | - 5  | -27<br>-26   | 14.3                                    | - 5.7<br>- 6.5  |
| The second secon | -28 4 -  | 17 -36<br>24P -42  | 0.3 0.0                        | Yorkton<br>MANITOBA               | F. R. J. J. S. | The second second              | -18                 | -40                | 5.9        | 1.0                          | Saint John<br>St Stephen           | -15 - 8  | 100000   | -27<br>M   | 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 | -13.2   |
| Cambridge Bay  | -34 0 -  | 25 -42<br>24 -44   | M M M O.1 - 0.7                | Bissett<br>Brandon                | -28<br>-29   | - X                            | -17<br>-20          | -42<br>-40         | 0.2        | X                            | NOVA SCOTIA<br>Amherst             |  |  |  |   | ·   |
| Sacha Harbour  | -30 0 -  | SECTION OF THE PROPERTY OF   | 0.0 - 1.0                      | Churchill Churchill               | -34  | - 5                            | -23                 | -41                | 6.5        | 3.1                          | Eddy Point                         | -10 X  |  | -20  | 33.7                                    | X   |
| Abbotsford   | 1 0  | 9 - 7  | 112.5 56.8                     | Dauphin<br>Gillam                 | -31<br>-34   | 1                              | -17<br>-26          | -40<br>-43         | 2.2 -<br>M | 3.4<br>X                     | Greenwood<br>Sable Island          | -11 - 6<br>- 4 - 3   | 9 -  | -24<br>-10   | 16.8                                    | - 5.7<br>- 8.8  |
| Anphitrite Point   | 0 - 3<br>4 X   | 5 - 6  | 67.4 35.5<br>209.8 X           | Gimli<br>Grand Rapids             | -28<br>M   |                                | -18<br>M            | -41<br>M           | 4.5 -<br>M | 2.1<br>X                     | Shearwater<br>Shelburne            | -10 - 7<br>- 9 X   | 6 -  | -21<br>-21   | M                                       | - 7.4<br>X  |
| Blue River Bull Harbour  | M X 1 - 2  | M M 8 - 6  | M X<br>84.0 42.3               | Island Lake<br>Lynn Lake          | -31<br>-36   |                                | -26                 | -38<br>-44         | 0.1 -      | 5.8                          | Sydney<br>Truro                    | - 9 - 4<br>M M   | 6P -   | -17<br>-23P  | 57.6<br>M                               | 29.8<br>M   |
| Burns Lake<br>Cape Scott   | -21 X -  | 6   -30   - 6  | 93.9 3.3                       | Norway House<br>Pilot Mound       | -33<br> -27  | - 8                            | -24<br>-19          | -43<br>-34         | 0.8        | 9.2                          | PRINCE EDWARD ISLAND               | - 8 - 6  |  |  |   | 15.8  |
| Cape St James<br>Clinton   | 1 - 3<br>M X   | 8 - 7<br>M M   | 55.1 23.4<br>M X               | Portage<br>The Pas                | -28<br>-33   | -10<br>- 9                     | -20<br>-22          | -37<br>-42         | 10.3       | 5.1<br>3.7                   | Charlottetown<br>East Point        | -14 - 7<br>M X   | M  | -21<br>M   | M                                       | - 1.6<br>X  |
| Cranbrook  | 1 - 1  | 9 - 4 -22  | 102.0 58.3<br>17.9 11.0        | Thompson<br>Winnipeg              | -36<br>-27   | -12<br>- 8                     | -24<br>-19          | -47<br>-39         | M 5.0 -    | M<br>0.4                     | Summerside<br>NEWFOUNDLAND         | -13 - 7  |  |  | 18.4                                    | 0.6   |
| Dease Lake<br>Estevan Point  | -31 -11 -1<br>M M  | 18 -43<br>M M  | 9.4 4.3<br>M M                 | ONTARIO<br>Armstrong              | -27  | - 5                            |                     | -42                | м          | м                            | Argentia<br>Badger                 | M X  | 5 -<br>M   | -15P<br>M  | 19.9<br>M                               | X   |
| Ethelda Bay -  | - 3 X<br>-35 -12 -2  | 7 -10  | M X 2.1 - 1.9                  | Atikokan<br>Barrie                | -25<br>M   | - 9<br>X                       | -12<br>M            |                    | 37.0 2     | 24.7<br>X                    | Bonavista<br>Burgeo                | - 6 - 2<br>- 7 - 2   | State of the state |  | 25.6                                    | 10.5  |
| Fort St John -   | -31 -13 -2   | A STATE OF THE PARTY OF THE PAR | 10,9<br>120.9 4.1              | Big Trout Lake                    | -31<br>M   | - 6                            | -20<br>M            | -41<br>M           |            | 4.1<br>Y                     | Cape Race                          | M X  | M<br>3 -   | M  | M<br>11.3 -                             | X<br>-12.7  |
| Кли 100 рв   | $\begin{vmatrix} -10 & -2 & -2 & -2 & -2 & -2 & -2 & -2 & -$   | 1 -17  | 20.4 12.3                      | Caribou Island                    | M<br>-22   | X<br>- 7                       | M<br>- 8            | M<br>-40           | M          | X                            | Daniel's Harbour                   | -10 - 3<br>-10 - 2   | 3 -  |  | 25.4<br>M                               | 6.8<br>M  |
| The second secon | - 8 - 8  | 6 - 9<br>7 -14<br>5P -30P  | 128.0 97.8<br>35.7 22.1<br>M X | Geraldton Gore Bay                |  | 100                            | -12                 | -42                | 17.1       | 5.5                          | Gander                             | - 9 - 3<br>- 7 - 3   | 3  -   |  | 26.1<br>M                               | 7.1<br>M  |
|  | - 1   - 4  | 8 -10  | 63.8 13.1                      | Kapuskasing                       | -13<br>-27<br>-24                                  | - 9                            | -11<br>-13          |                    | 25.4 1     | 0.6                          | St Albans                          | - 9 - 3  | 5 -  | 22   | M<br>36.8                               | M<br>X  |
| Penticton -  | - 1 3 1  | 0 - 2  | 35.3 27.1                      | Kenora<br>Kingston                | -15  | - 8                            | 1                   | -24                | M          | M '                          | St John's                          | - 7 - 3<br>- 6 - 2   | 3 -  | 17   | 49.9                                    | 21.2  |
| Port Alberni<br>Port Hardy   |  | M M 7 - 6  | 67.2 30.0                      | Lansdowne<br>London               | -29<br>-11   | - 6<br>- 5                     |                     |                    | 21.5       | 1.1                          | Stephenville                       | - 9 - 3<br>-14 - 4   | 5 -  | 16   |   | 13.2  |
| Prince Rupert -  | - 5 - 5  | 2   -32<br>6   -16   | 39.8 25.9<br>55.3 16.3         | Moosonee<br>Mount Forest          | -27<br>-13   | - 6<br>- 5                     | 3                   | -40<br>-23         | М          | M                            | Cartwright                         | -16 - 2  | 0 -  | 31   | M<br>17.2                               | M<br>3.6  |
|  | -19 - 7 -  | M M 8 -26  | M X 37.5 23.3                  | Muskoka<br>Nagagami               | -15<br>M<br>-20                                    | - 6<br>X                       | M                   | -30<br>M           | M          | M<br>X<br>4.6                | Goose                              |  | - 7  -   | 32   | 16.8                                    | 3.3   |
| Revelatoke -   | - 9 - 5  | 1 -15  | 58.6 24.9                      | North Bay                         |  |                                | - 5                 | -30                | 12.8 -     | 4.0                          | IMPEGNIC                           | The second secon | -  | AND DESCRIPTION OF THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAMED IN COLUMN TWIND TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN | THE RESERVE OF THE PERSON NAMED IN      | AND DESCRIPTION OF THE PERSON |