

# Climatic Perspectives

Monthly Review

March 1992

Vol. 14

## CLIMATIC HIGHLIGHTS

*The weather scenario for March, across the country, was a continuation of the winter pattern - cold across the eastern parts and mild weather across the West. With an amplified upper ridge over central British Columbia, and a deep trough lying across central Ontario, ample precipitation fell over coastal British Columbia, west of the upper ridge, and across Ontario, Quebec and the Atlantic region, east of the trough. Cold weather across the East this month reduced maple syrup production in Quebec and the Atlantic provinces. The Prairie provinces, once again, experienced a dry month, as the upper ridge deflected the invasion of Pacific storms into the Northwest Territories.*

### Stormy weather in the East

Across the Maritimes, a "Cape Hatteras" storm, which tracked slowly across the region from March 8 to the 10th, unloaded copious amounts of precipitation. On the 8th, Hart Island, near Canso, N. S., received 127 mm of rain. As temperatures hovered near the freezing mark, the precipitation assumed various forms - from rain and freezing rain to ice pellets and snow. Slippery roads resulted in 35 car accidents in the Saint John, N.B. area. As well, towns and cities across New Brunswick experienced flooding due to the heavy rains.

These storms, which develop between Cape Hatteras, North Carolina, and the southern half of Chesapeake Bay, are classical winter storms. Weak upper atmospheric waves moving from the Ohio

River Valley, develop into vicious coastal storms, as these waves are amplified by the Appalachian Mountain barrier and the sharp thermal contrasts along the eastern seaboard. In some cases, the associated cloud shield is so extensive that it covers almost the entire eastern half of North America.

During the second week of the month, regions of central Ontario and Quebec were pummelled by a winter storm for two days, beginning on March 9. The lee side of Lake Huron was hit with gale force winds, plummeting temperatures and bringing a mixed bag of precipitation. Almost 50 cm of snow fell on Sudbury, Ont. during a 15 hour period, halting traffic and all outdoor activity. Rain and freezing rain was the order of the day across the southern parts of Ontario. On the 10th, temperatures dropped from 10°C to the freezing mark in one hour, at Kitchener, Ont., icing wet surfaces, producing hazardous driving conditions. Snow squalls dumped 10 cm to 30 cm of light, dry snow to the lee of Lake Huron and Georgian Bay.

On March 11, a storm from the Carolinas moved into Quebec producing minor flooding in the Montreal area, followed that evening and the next day by strong winds and heavy snowfalls throughout eastern Ontario. Mild weather which preceded the rain, melted the snow cover, filling ditches and low lying areas with water. However, many drains were frozen, resulting in roads and runways being underwater. At St Constant, Que., hundreds of families had to be evacuated as ice jams caused the St Pierre river to overflow.

On March 22, a snowstorm dumped 41 cm of snow on Sydney, N.S. Wind gusts to 137 km/h combined with cold temperatures produced blizzard conditions across the Atlantic provinces. There were ferry disruptions between Nova Scotia and Newfoundland, as well as power outages and road accidents.

### Warm and dry across the Prairies

By the end of the month, there was no snow on the ground across most of Alberta and the southern half of Saskatchewan. Although the lack of snow and soil moisture across southern Alberta and Saskatchewan has raised some concern about agricultural drought, previous studies indicate that there is a better than average chance of adequate spring rain over the Prairies during an El-Niño year. The El-Niño winter of 1991-92 ranks among the top 10 of the warmest winters. As well, there are indications that the warm ENSO event has peaked, and is in the declining phase, which will result in a western upper ridge slowly breaking down, allowing spring rainstorms to pass over the Prairies.

Projections made by the Winnipeg Climate Centre indicate that, assuming normal precipitation between now and the time of seeding, soil moisture for continuously cropped fields could be low across the western Prairies but, relatively high across the eastern portion of the Canadian Plains.



## Across the country

### Yukon and Northwest Territories

March was generally warm and dry in the Yukon. Monthly mean temperatures exceeded long time normals but daily maximums were only occasionally broken. Precipitation amounts were very meagre with many stations recording less than 5 mm in total.

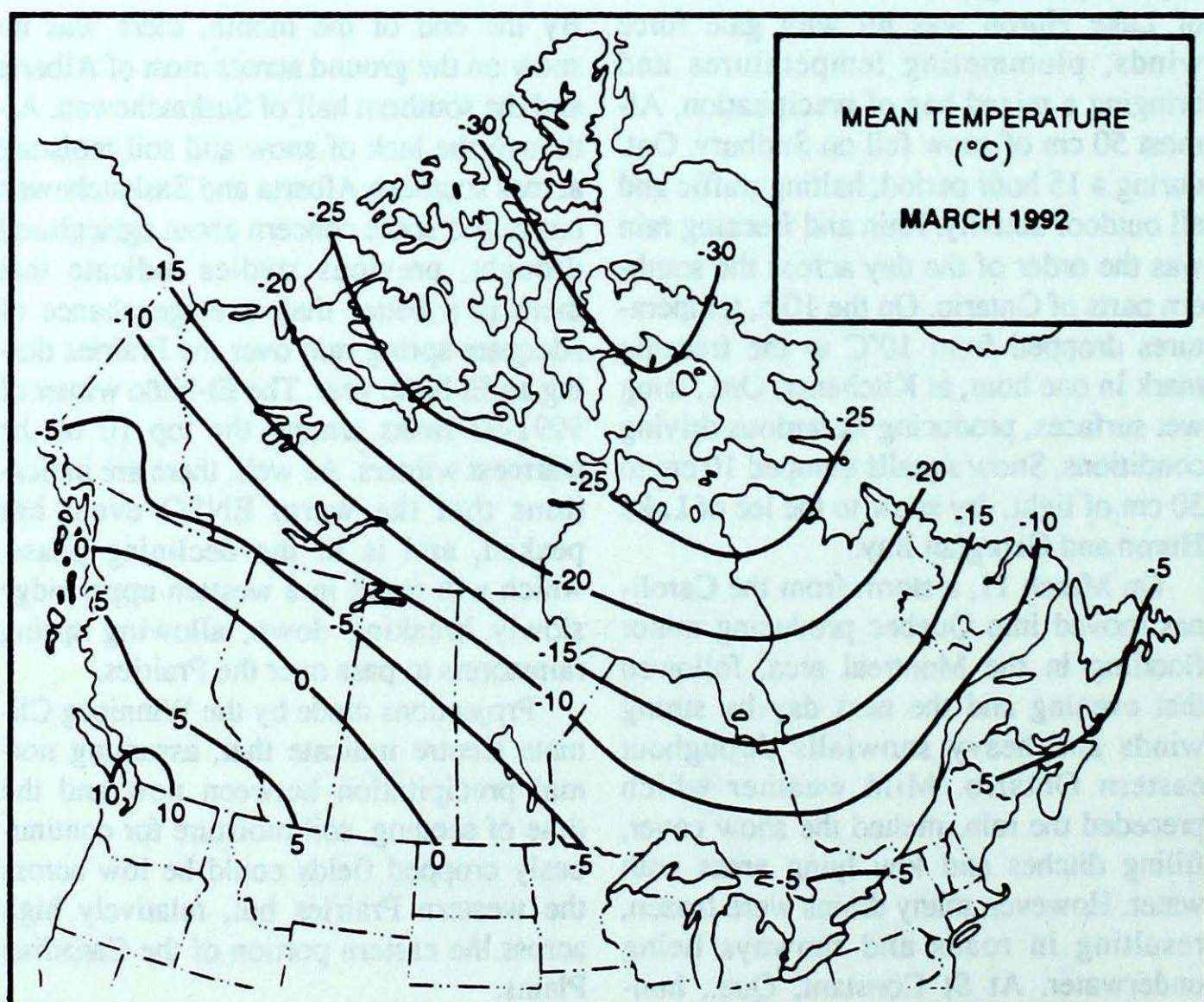
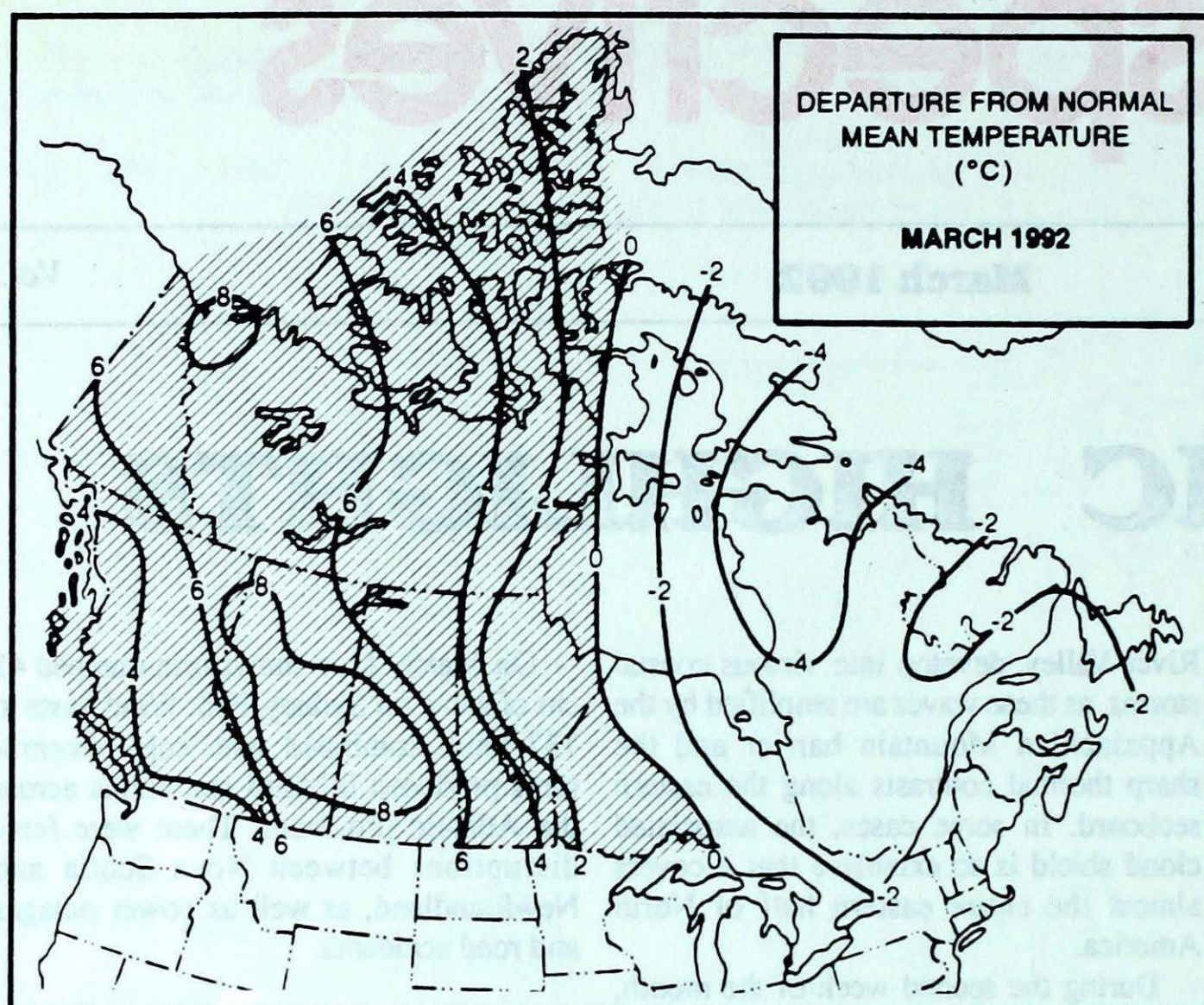
The warm trend crept further north till it covered the whole territory. Every station was milder than normal by about 4°C. Old Crow, Eagle Plains, Mayo and Ross River were over 6°C above their respective averages. Even with the influx of warm air, the extreme maximums this month were not as high as last month. Carmacks, Drury Creek and Haines Junction were the hot spots with daily maximums reaching 10°C. The coldest spot was Ogilvie Camp with a chilly -50°C on the 5th.

The majority of the Yukon had less than half their usual precipitation. The few isolated areas that exceeded their average monthly allotment were Fraser Camp in the south, Klondike and Eagle Plains on the Dempster Highway and Komakuk and Shingle Point on the north slope. The greatest amount measured was 20 mm along the Dempster highway.

The average wind speed, measured in Whitehorse, was 15.8 km/h from the south-southeast, while the peak gusted at 56 km/h from the same direction, on the 10th.

In the Northwest Territories, the mean temperatures were warmer in the west and cooler in the east, ranging from -9.9°C at Hay River to -37.3°C at Eureka. Mould Bay was under warmer than usual temperatures by 4.8°C, while Coral Harbour was below by 2.2°C.

Precipitation also exhibited an east/west dichotomy. Mould Bay and Resolute tallied three times their normal precipitation, while Baker Lake reported almost twice as much as usual, with Hall Beach and Rankin Inlet at about one-third of their normal monthly total. Amounts, though, were relatively small. Some of the higher totals





were recorded at 12.9 mm at Baker Lake, 9.5 mm at Mould Bay and 9.0 mm at Resolute Bay.

Sunshine hours were mostly below normal. In the Arctic islands, cloudy skies kept sunshine totals below normal by 25 to 43 hours. At Baker Lake the deficit was 71 hours. Only Coral Harbour enjoyed more than the average amount of sunshine, with 211.9 hours.

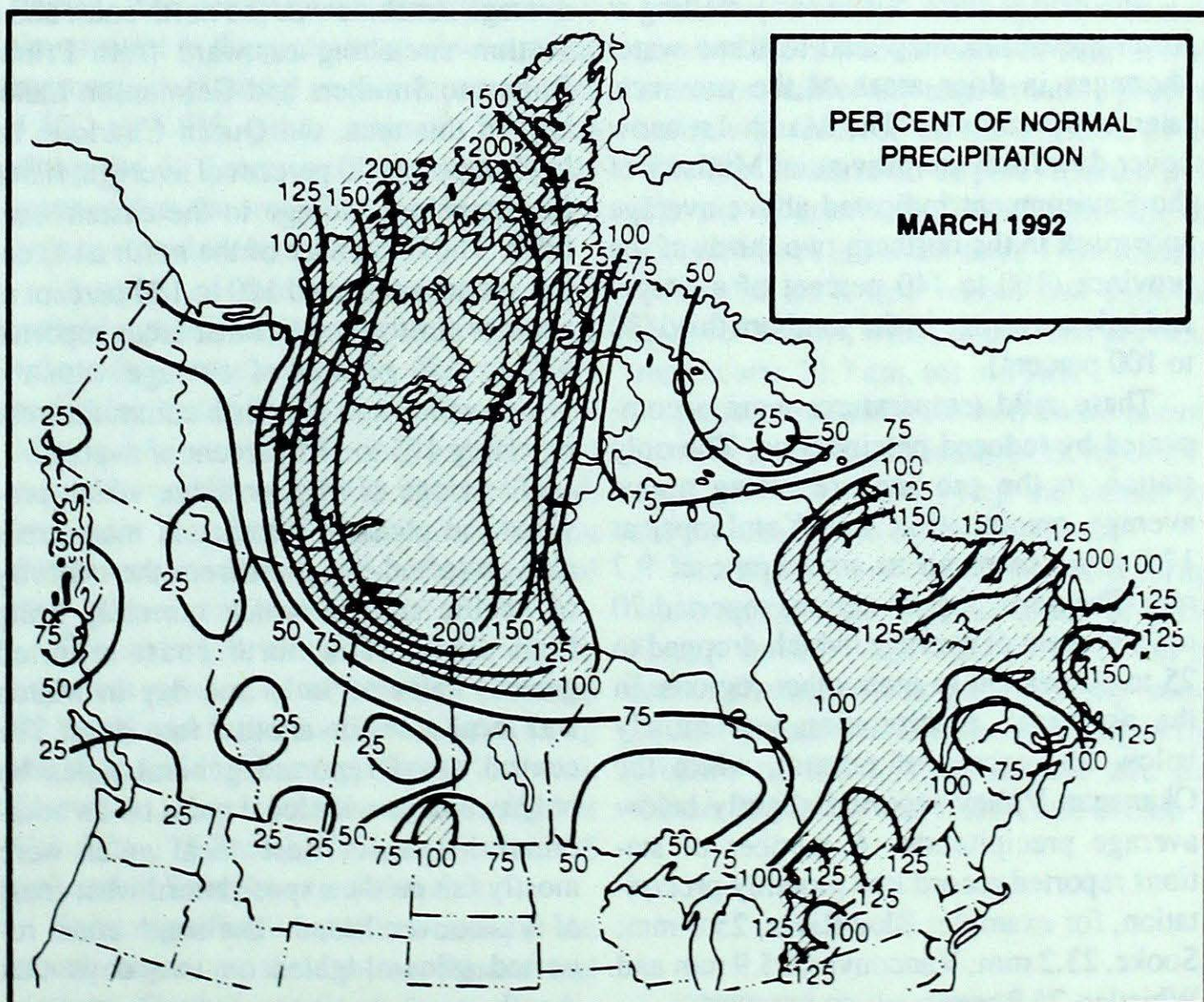
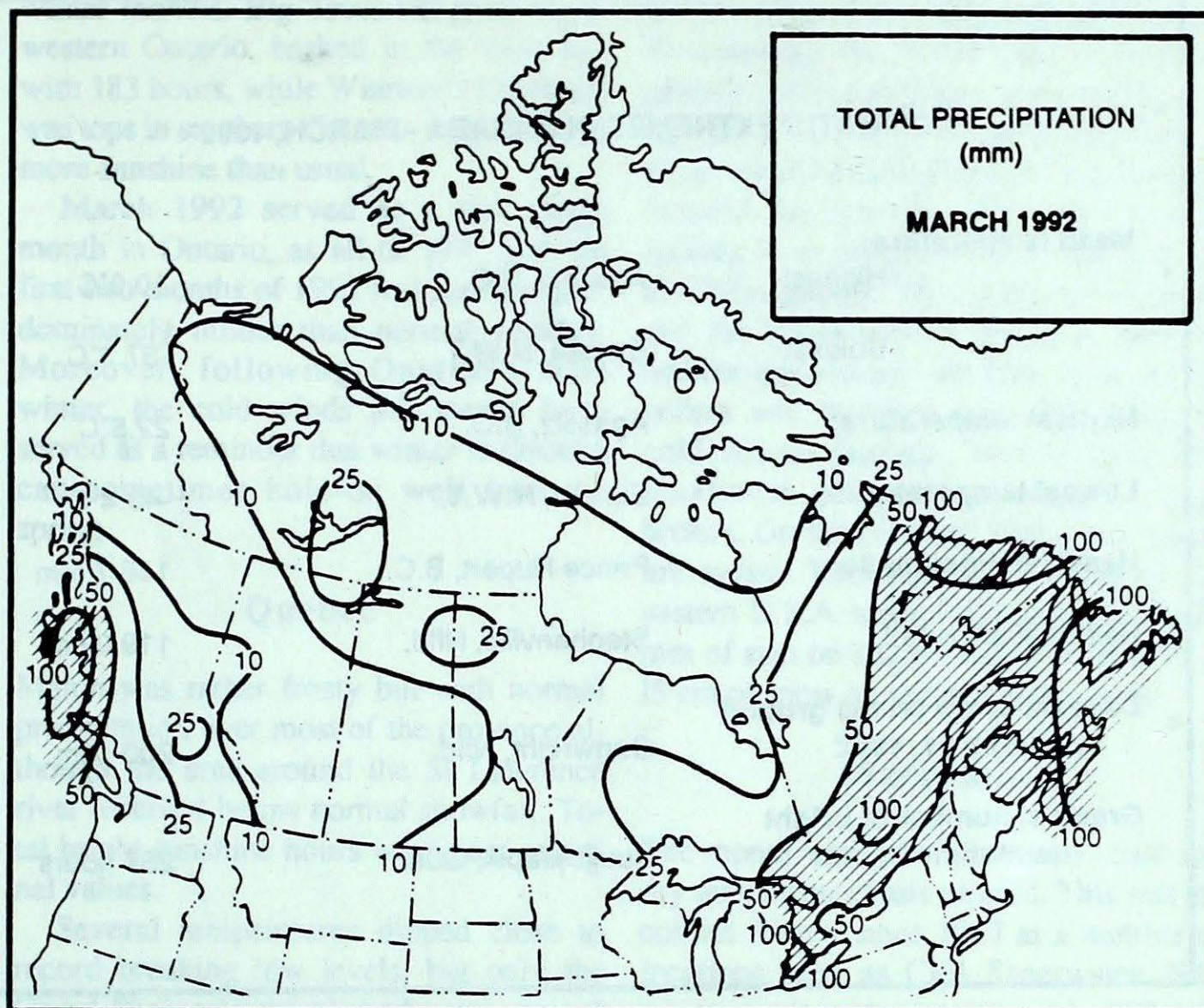
### British Columbia

Most of British Columbia did not see much, if any, winter. This warm trend has now been followed by a very early and sensational spring in most of the province. Warm, dry and sunny accurately describes the month of March.

Temperatures were above average throughout the province except for a brief period earlier in the month. The smallest departures were 1.5°C to 2.5°C on the north coast, while the warmest region was the Fort Nelson to Fort St John area, with 7°C to 8°C departures. The remainder of the province reported 3°C to 5°C above average. With the exception of the northwest corner of the province, from the Queen Charlotte Islands to Prince Rupert to Dease Lake and Smithers, the remainder of British Columbia set new high mean temperature records for March. Blue River, Fort St John and Williams Lake established new record maximum temperature of 18°C, 14.8°C and 17.2°C, respectively.

The warm temperatures have advanced various agricultural crops three to five weeks ahead of schedule. This was evident as fruit trees in the Okanagan Valley and spring daffodils on southern coast of Vancouver Island came into bloom. Late frosts in the last few days of the month raised some concern over the possibility of damage to vulnerable fruit trees in the horticultural districts. Fortunately, the frosts were short-lived and no significant damage was reported.

Other effects of the warm temperatures included early closures or just poor snow conditions, at many low level ski areas; however, the higher elevated resorts reported good spring skiing conditions. Most





## CLIMATIC EXTREMES IN CANADA - MARCH, 1992

|   |                     |           |
|---|---------------------|-----------|
| <b>Mean temperature:</b>                            |                     |           |
| Highest   | Agassiz, B.C.       | 10.9°C    |
| Coldest   | Eureka, N.W.T.      | -37.3°C   |
| <b>Highest temperature:</b>                         |                     |           |
|   | Agassiz, B.C..      | 22.5°C    |
| <b>Lowest temperature:</b>                          |                     |           |
|   | Eureka, N.W.T.      | -43.4°C   |
| <b>Heaviest precipitation:</b>                      |                     |           |
|   | Prince Rupert, B.C. | 186.7 mm  |
| <b>Heaviest snowfall:</b>                           |                     |           |
|   | Stephenville, Nfld. | 119.0 cm  |
| <b>Deepest snow on the ground on March 31, 1992</b> |                     |           |
|   | Cartwright, Nfld.   | 200 cm    |
| <b>Greatest number of bright sunshine hours:</b>    |                     |           |
|   | Kuujuarapik, Que..  | 257 hours |

outdoor activities are now changing rapidly from winter to summer interests.

The lack of snow due to early melting at lower elevations may lead to some water shortages in drier areas of the province, later in the summer. The March 1st snow cover data from the provincial Ministry of the Environment indicated above average snowpack in the northern two thirds of the province (100 to 140 percent of average) and below average in the southern third (80 to 100 percent).

These mild temperatures were accompanied by reduced precipitation. The only station in the province reporting above average precipitation was Kamloops, at 17.8 mm compared to an average of 9.7 mm. The north coastal regions reported 70 to 90 percent of average, which dropped to 25 to 50 percent in most other regions. In the northeast, precipitation was mostly below 25 percent of normal, while the Okanagan Valley reported slightly below average precipitation. A number of stations reported record low monthly precipitation, for example: Blue River, 25.0 mm; Sooke, 23.2 mm; Vancouver, 25.9 mm and Whistler, 25.9 mm.

Most of the province received ample sunshine. The only region reporting below average sunshine was the north coast and a section stretching eastward from Prince Rupert to Smithers and Germansen Landing. In this area, the Queen Charlotte Islands reported 70 percent of average, rising to just below average in the eastern sections. The remainder of the north and central sections reported 120 to 130 percent of average. In the south, most areas reported 130 to 150 percent of average with the Fraser valley and the north columbia areas reporting 175 to 185 percent of average.

The ridge of high pressure which provided the pleasant weather in most areas also protected the coast from the majority of Pacific storms, which normally bring high winds. The north coast reported general gales on only one day in March and local gales on another four days. The central coast reported general gales on only two days with local gales on an additional 11 days. These local gales were mostly felt on the exposed northwest coast of Vancouver Island. The south coast reported general gales on two days this month.

## Alberta

It was a record breaking month with warm weather dominating the scene. Temperatures were well in excess of normal, establishing new highs at Whitecourt, 2.3°C; Jasper, 3.3°C; Grande Prairie, 1.1°C; and Fort McMurray, -1.4°C. The longest standing record for Edmonton Municipal was 2.5°C, set in 1889, this was replaced by a new record high of 2.6°C.

These mild conditions were combined with relatively light precipitation, with all stations reporting below normal amounts. Some stations in southern Alberta recorded only trace amounts. A vigorous cold front, late in the month, did bring some snow to central Alberta, but this quickly melted as the warm temperatures returned the following day.

The total sunshine hours were correspondingly high across central and southern regions, while northern Alberta reported values close to normal

## Saskatchewan and Manitoba

Monthly mean temperatures were 2°C to 8°C above normal this month, and in some locations the warm spell ranked among the top 10 on record with temperatures ranging from 1.6°C at Swift Current to -19.3°C at Churchill. This is the fourth month in a row with above normal temperatures, with the hottest daily readings of 17.0°C and 15.3°C on the 27th at Meadow Lake and La Ronge. These broke the old records of 16.1°C and 15.1°C established in 1928 and 1986, respectively.

Precipitation totals were higher than usual in the north and below normal in the south. Totals ranged from 32.8 mm at Lynn Lake to only a trace at Nipawin. Much of the southern half of Saskatchewan received less than half of the normal March precipitation. Yorkton, Prince Albert and Nipawin tallied a low 10 percent of normal with 1.8 mm, 1.2 mm and a trace, respectively.

Sunshine was above normal in Saskatchewan and below normal in Manitoba. Totals in Manitoba ranged from 150.6 hours at Lynn Lake to 179.8 hours at Churchill, while in Saskatchewan sunshine



hours ranged from 175.7 hours at Yorkton to 209.7 hours at Broadview.

### Ontario

Winter retained a firm grip on Ontario this month, with cold temperatures dominating the scene. The monthly mean ranged 2°C either side of normal. For most local residents, 1992 was the coldest March in eight years while North Bay's mean of -8.3°C (normal -5.3°C) provided the coldest March since 1972. Ironically, the month began on a very mild note; however, an intense cold front ushered in record-breaking cold air on March 10 creating blizzard-like conditions in the Sudbury area. This cold regime continued for the remainder of the month.

The month also proved to be dry throughout the north and in areas west of Lake Ontario to London, but it was slightly wetter than normal in the extreme southwestern and eastern regions of the province. Overall, the cold air carried little moisture, and precipitation was generally light across the most of the province. In northern regions, snowfall ranged from 2 cm at Thunder Bay (the least amount of snowfall in 51 years of record), to 24 cm in Windsor. Average snowfall normally ranges from 20 to 45 cm. In addition to Thunder Bay, low snowfall records were also established at Kenora (7 cm breaking the record dating back to 1945) and Timmins (17 cm breaking the 1973 record). As well, in the Toronto-Niagara-London area, total precipitation was only 30 to 50 percent of normal. Hamilton's 32 mm of moisture marked the driest March since their records began in 1970. In contrast, the Windsor area recorded 106 mm of precipitation including 44 cm of snow (the majority was the result of "lake-effect"), making this their snowiest March since 1968. Meanwhile in eastern Ontario, heavy rain on March 27 elevated the total monthly precipitation close to the 100 mm plateau, from Trenton to Ottawa, with the latter's total of 98 mm registering as their soggiest March since 1980. This provoked concern over potential flooding by some regional rivers, such as the Raisin.

The total sunshine hours revealed a marked improvement over Ontario's dull

winter months. Big Trout Lake, in northwestern Ontario, basked in the most sun with 183 hours, while Wiarton's 170 hours was tops in southern Ontario, with 30 hours more sunshine than usual.

March 1992 served as a turn-about month in Ontario, as all of 1991 and the first two months of 1992 had featured predominately milder than normal weather. Moreover, following Ontario's mild winter, the cold winds this month have served as a reminder that winter in Ontario can sometimes hold-on well into the spring.

### Quebec

March was rather frosty but with normal precipitation over most of the province although the area around the St Lawrence river received below normal snowfall. Total bright sunshine hours were near seasonal values.

Several temperatures dipped close to record breaking low levels, but only the Gaspé Peninsula established a new record low of -7.6°C (breaking the -7.5°C record from 1978), albeit by a mere tenth of a degree. The temperature anomalies were the greatest in the extreme northwest as the mercury registered mean temperatures 4.5°C to 4.9°C below normal. The area along the St Lawrence river was slightly warmer than the rest of the province, with a negative deviation of only 2°C.

In spite of the cold weather, total monthly precipitation was near seasonal values due to the mild, rainy periods at the beginning and at the end of the month. The Maniwaki and Val d'Or regions received quantities of 150 to 200 percent of normal; however, the Gaspé Peninsula was the driest area receiving only 50 percent of their normal precipitation.

The snowfall along the St Lawrence river was meagre, as measured in Montreal (15.8 cm) and Sept-Iles (7.8 cm) and along the shores of Hudson Bay (8.6 to 18.0 cm). Elsewhere, heavier snow was recorded at Val d'Or (75.2 cm), Chibougamau (94.6 cm) and in Schefferville (78.6 cm).

Some significant weather events for the month began on the 7th, as Ottawa and western Quebec received freezing rain, which affected the Laurentians, La Tuque,

Québec City, Charlevoix and the Rivière-du-Loup regions. To the north of these regions 5 to 10 cm of snow were recorded. A low pressure area, associated with an intense warm front followed by a cold front, crossed the province from west to east leaving 15 to 20 cm of snow from Ottawa to Chibougamau. The St Lawrence valley and the lower part of the river received smaller quantities in the form of snow, ice pellets and freezing rain. Following the cold frontal passage, several daily low maximum temperature records were broken. On the 26th and 27th, a low pressure system tracking northward along the eastern U.S.A. seaboard, dumped 10 to 45 mm of rain on southern Quebec and 10 to 15 cm of snow on regions to the north.

### Maritimes

The month was generally sunny, cold and dry with an emphasis on cold. This was the coldest March since 1967 at a number of locations such as CFB Shearwater, N.S. where a mean temperature of -3°C was reported.

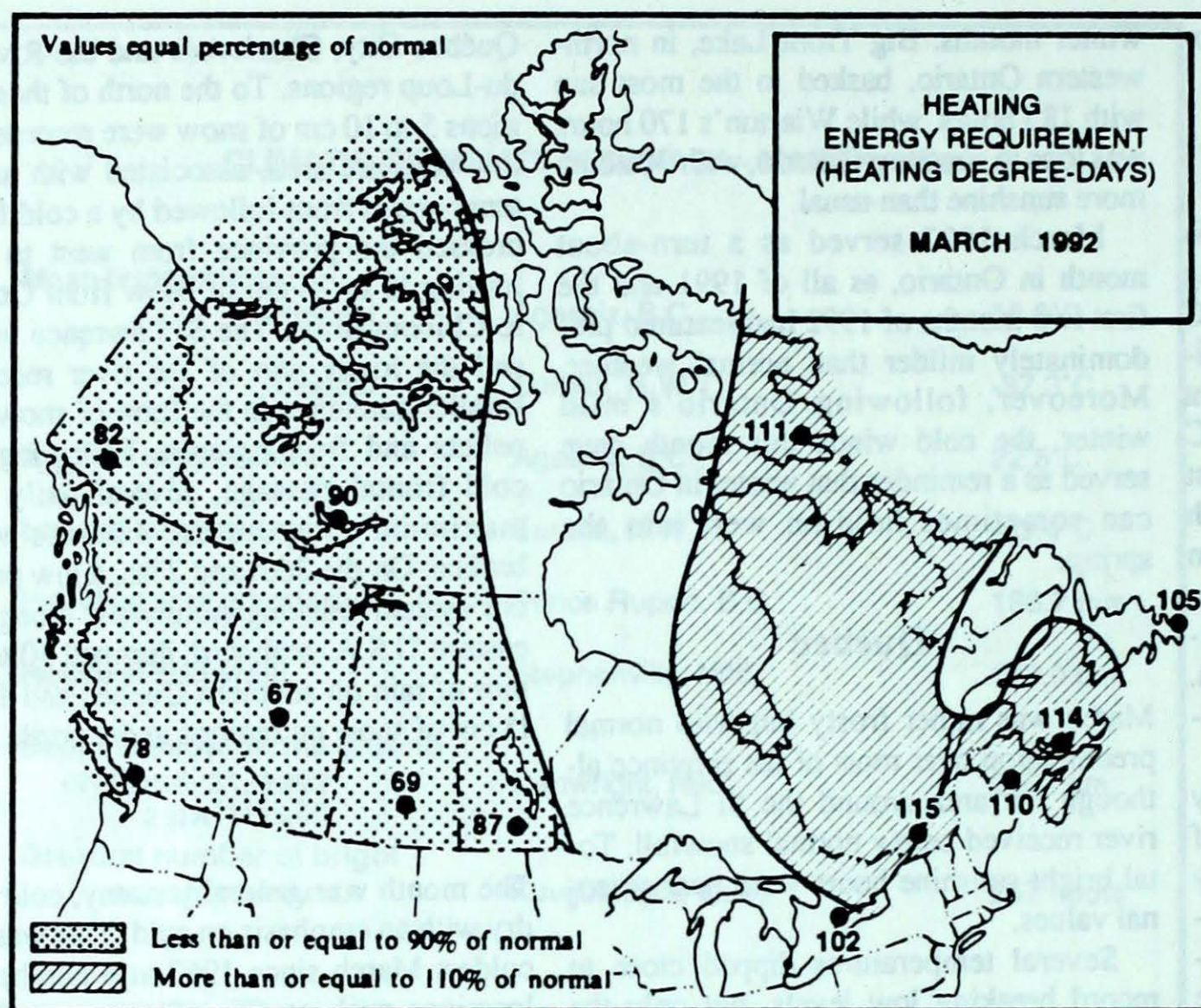
The precipitation totals were generally less than average, although the eastern parts of Nova Scotia received near normal amounts; half of the total monthly precipitation was received on the weekend of the 7th. The Fredericton airport reported only 3.2 cm of snowfall (7% of normal), the lowest March snowfall since 1952. Charlo, N.B. also set a new record low snowfall total for March, with 9.8 cm. The previous record was 22.7 cm, set in 1988.

Sunshine hours were well above normal in most areas. Fredericton, N.B. reported a total of 199.7 hours, tying the record for the most sunshine hours for March.

The highlight of the month was a spring snow storm that crippled areas of Cape Breton on the 22nd with up to 41 cm of snow. Strong winds and blowing snow caused blizzard conditions, resulting in the closure of the Sydney airport and the Canso Causeway that links Cape Breton

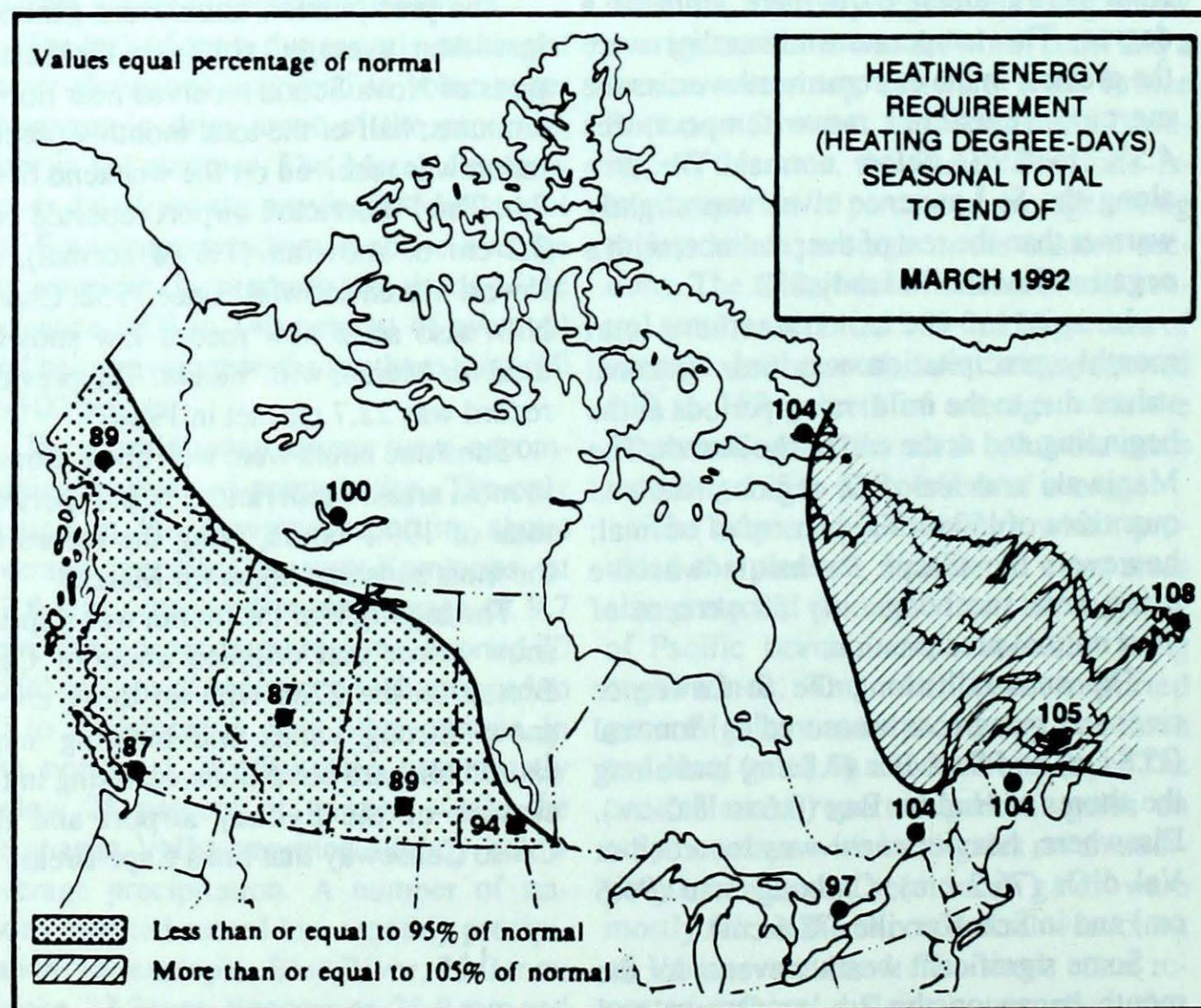
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### SEASONAL TOTAL OF HEATING DEGREE-DAYS TO END OF MARCH

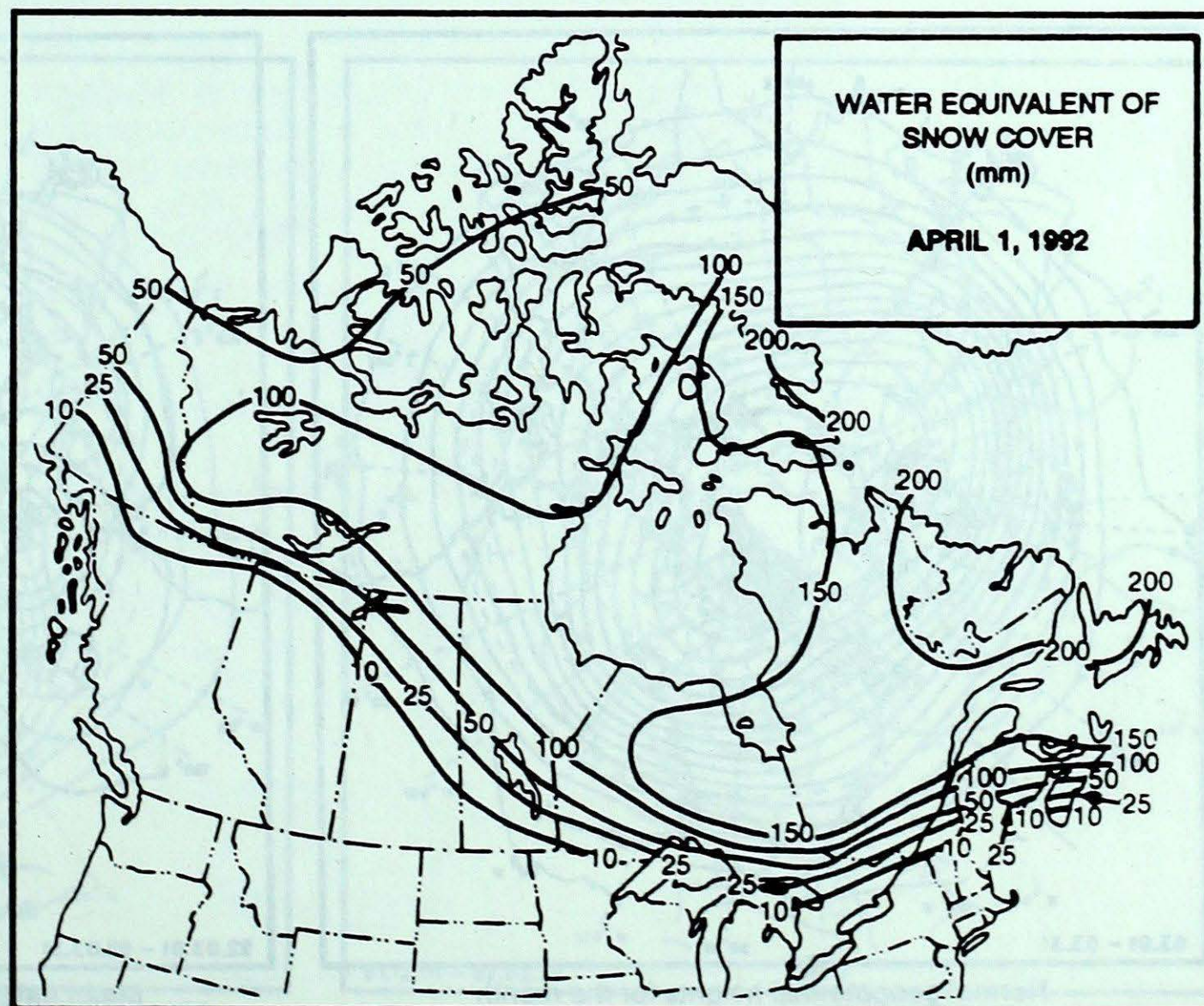
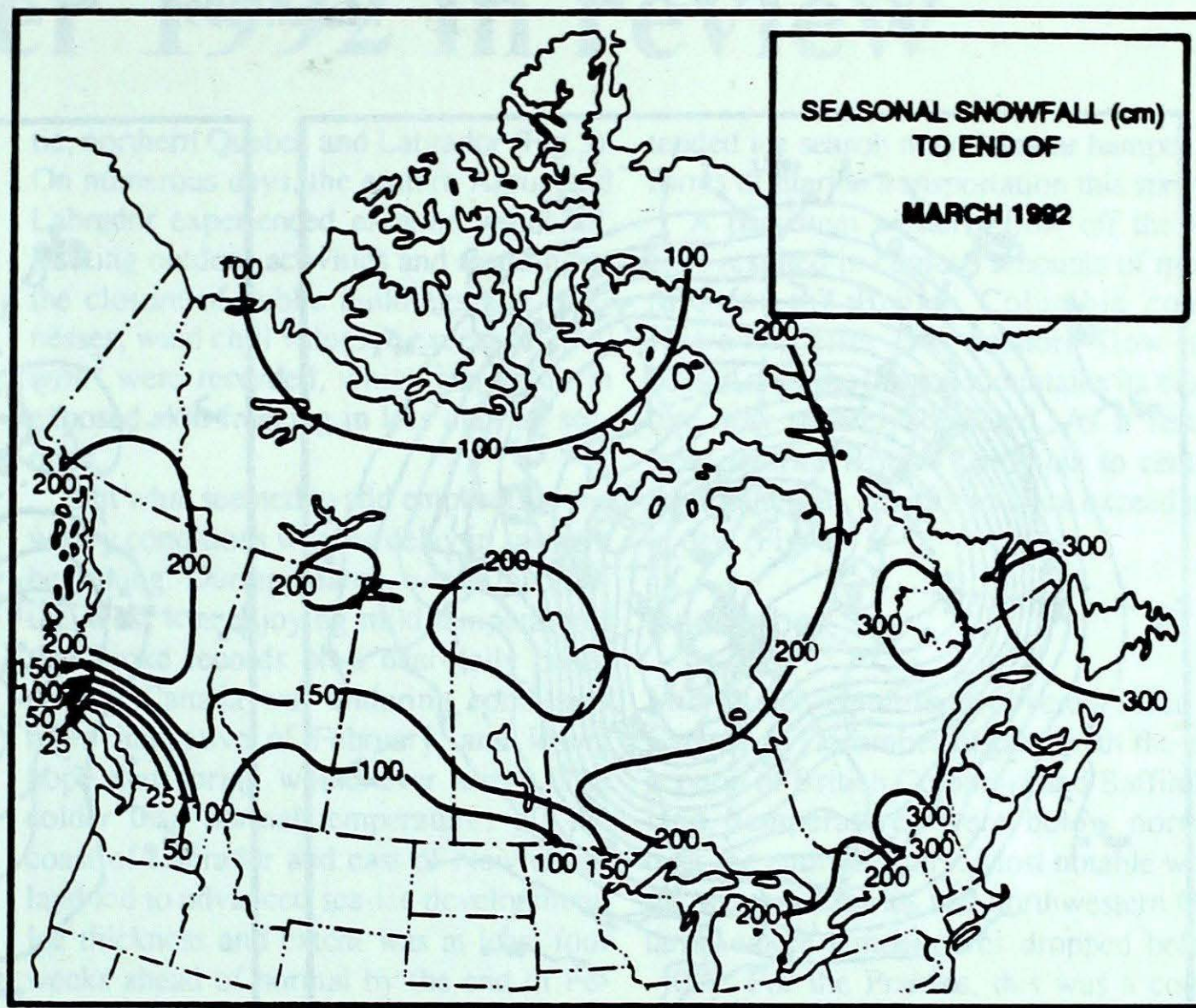
|                              | 1992 | 1991 | NORMAL |
|------------------------------|------|------|--------|
| <b>BRITISH COLUMBIA</b>      |      |      |        |
| Kamloops                     | 2693 | 3272 | 3293   |
| Penticton                    | 2593 | 3020 | 3002   |
| Port Hardy                   | 2514 | 2794 | 2895   |
| Vancouver                    | 2142 | 2416 | 2467   |
| Victoria                     | 2207 | 2482 | 2515   |
| <b>YUKON TERRITORY</b>       |      |      |        |
| Whitehorse                   | 5313 | 5954 | 5939   |
| <b>NORTHWEST TERRITORIES</b> |      |      |        |
| Iqaluit                      | 8070 | 8302 | 7892   |
| Inuvik                       | 8234 | 8314 | 8345   |
| Yellowknife                  | 7212 | 7535 | 7226   |
| <b>ALBERTA</b>               |      |      |        |
| Calgary                      | 3712 | 4190 | 4537   |
| Edmonton Mun.                | 4112 | 4460 | 4732   |
| Grande Prairie               | 4652 | 5168 | 5299   |
| <b>SASKATCHEWAN</b>          |      |      |        |
| Estevan                      | 4291 | 4705 | 4760   |
| Regina                       | 4517 | 4869 | 5089   |
| Saskatoon                    | 4746 | 5146 | 5277   |
| <b>MANITOBA</b>              |      |      |        |
| Brandon                      | 5169 | 5292 | 5311   |
| Churchill                    | 7507 | 7575 | 7405   |
| Dauphin                      | 4991 | 5440 | 5303   |
| Winnipeg                     | 4841 | 4957 | 5152   |
| <b>ONTARIO</b>               |      |      |        |
| Kapuskasing                  | 5562 | 5409 | 5441   |
| London                       | 3421 | 3223 | 3507   |
| Ottawa                       | 4203 | 4036 | 4063   |
| Sudbury                      | 4699 | 4424 | 4621   |
| Thunder Bay                  | 4853 | 4846 | 4862   |
| Toronto                      | 3393 | 3197 | 3512   |
| Windsor                      | 3007 | 2843 | 3137   |
| <b>QUEBEC</b>                |      |      |        |
| Baie Comeau                  | 5156 | 5037 | 4968   |
| Montréal                     | 4108 | 3699 | 3931   |
| Québec                       | 4645 | 4289 | 4406   |
| Sept-Îles                    | 5362 | 5271 | 5066   |
| Sherbrooke                   | 4485 | 4056 | 4438   |
| Val d'Or                     | 5437 | 5239 | 5129   |
| <b>NEW BRUNSWICK</b>         |      |      |        |
| Fredericton                  | 4151 | 3818 | 3976   |
| Moncton                      | 4132 | 3877 | 3909   |
| <b>NOVA SCOTIA</b>           |      |      |        |
| Sydney                       | 3758 | 3519 | 3538   |
| Yarmouth                     | 3336 | 3002 | 3257   |
| <b>PRINCE EDWARD ISLAND</b>  |      |      |        |
| Charlottetown                | 3945 | 3719 | 3773   |
| <b>NEWFOUNDLAND</b>          |      |      |        |
| Gander                       | 4367 | 4136 | 3988   |
| St. John's                   | 3987 | 3746 | 3704   |





# SEASONAL SNOWFALL TOTALS (cm) TO END OF MARCH

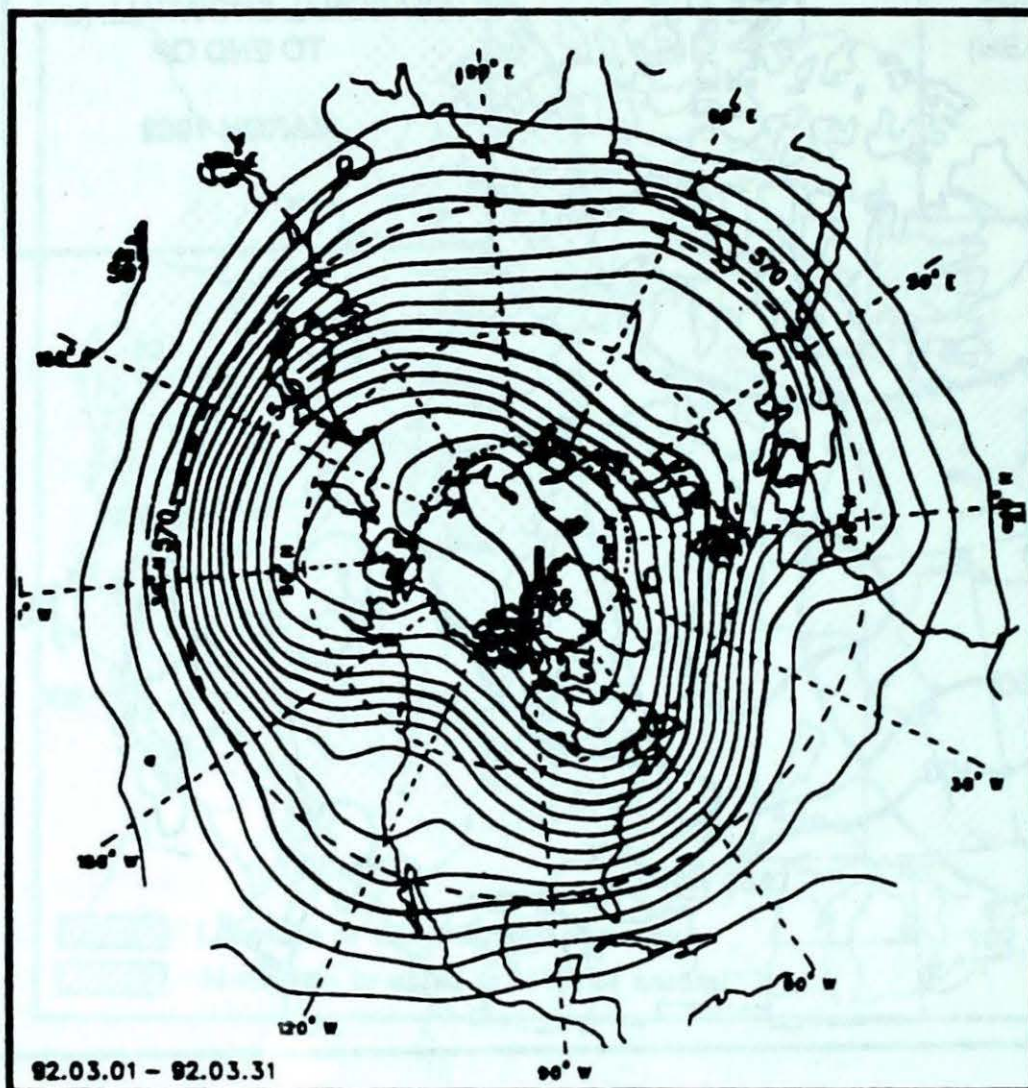
|                              | 1992 | 1991 | NORMAL |
|------------------------------|------|------|--------|
| <b>BRITISH COLUMBIA</b>      |      |      |        |
| Kamloops                     | 32   | 96   | 91     |
| Port Hardy                   | 1    | 72   | 71     |
| Prince George                | 204  | 302  | 230    |
| Vancouver                    | 2    | 118  | 60     |
| Victoria                     | 5    | 73   | 50     |
| <b>YUKON TERRITORY</b>       |      |      |        |
| Whitehorse                   | 200  | 181  | 122    |
| <b>NORTHWEST TERRITORIES</b> |      |      |        |
| Iqaluit                      | 134  | 97   | 129    |
| Inuvik                       | 135  | 150  | 145    |
| Yellowknife                  | 175  | 167  | 122    |
| <b>ALBERTA</b>               |      |      |        |
| Calgary                      | 63   | 110  | 116    |
| Edmonton                     | 128  | 94   | 117    |
| Grande Prairie               | 166  | 190  | 164    |
| <b>SASKATCHEWAN</b>          |      |      |        |
| Estevan                      | 69   | 102  | 98     |
| Regina                       | 79   | 83   | 102    |
| Saskatoon                    | 98   | 118  | 102    |
| <b>MANITOBA</b>              |      |      |        |
| Brandon                      | 136  | 107  | 104    |
| Churchill                    | 209  | 204  | 150    |
| The Pas                      | 234  | 117  | 145    |
| Winnipeg                     | 97   | 97   | 112    |
| <b>ONTARIO</b>               |      |      |        |
| Kapuskasing                  | 249  | 260  | 285    |
| London                       | 216  | 180  | 199    |
| Ottawa                       | 242  | 185  | 218    |
| Sudbury                      | 261  | 231  | 229    |
| Thunder Bay                  | 272  | 275  | 193    |
| Toronto                      | 77   | 87   | 124    |
| Windsor                      | 31   | 83   | 113    |
| <b>QUEBEC</b>                |      |      |        |
| Baie Comeau                  | 277  | 275  | 337    |
| Montréal                     | 201  | 197  | 224    |
| Québec                       | 228  | 314  | 326    |
| Sept-Îles                    | 271  | 421  | 388    |
| Sherbrooke                   | 271  | 210  | 289    |
| Val d'Or                     | 283  | 265  | 285    |
| <b>NEW BRUNSWICK</b>         |      |      |        |
| Charlo                       | 306  | 379  | 369    |
| Fredericton                  | 188  | 263  | 268    |
| Moncton                      | 421  | 304  | 311    |
| <b>NOVA SCOTIA</b>           |      |      |        |
| Sydney                       | 363  | 172  | 287    |
| Yarmouth                     | 216  | 111  | 201    |
| <b>PRINCE EDWARD ISLAND</b>  |      |      |        |
| Charlottetown                | 327  | 186  | 301    |
| <b>NEWFOUNDLAND</b>          |      |      |        |
| Gander                       | 353  | 381  | 342    |
| St. John's                   | 325  | 231  | 312    |



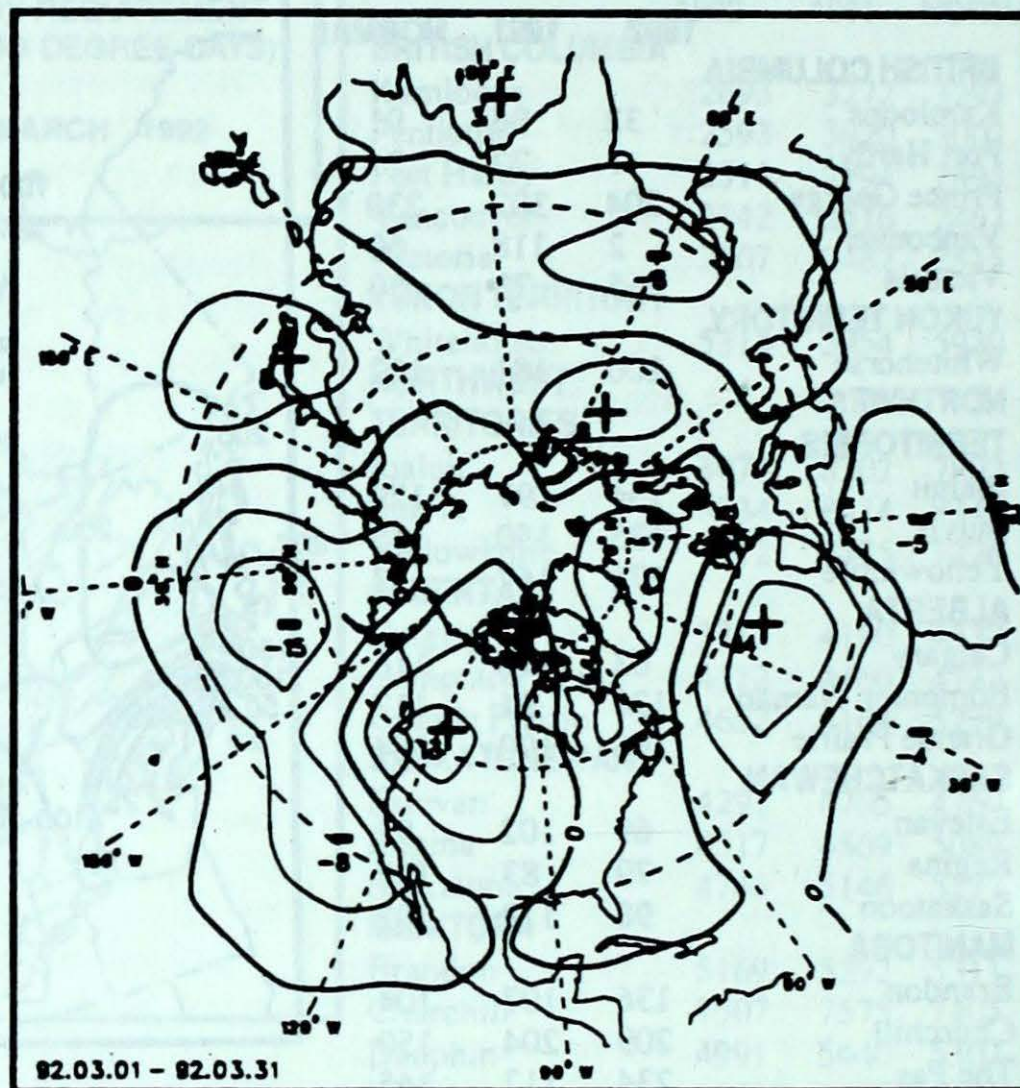


# 50-kPa ATMOSPHERIC CIRCULATION

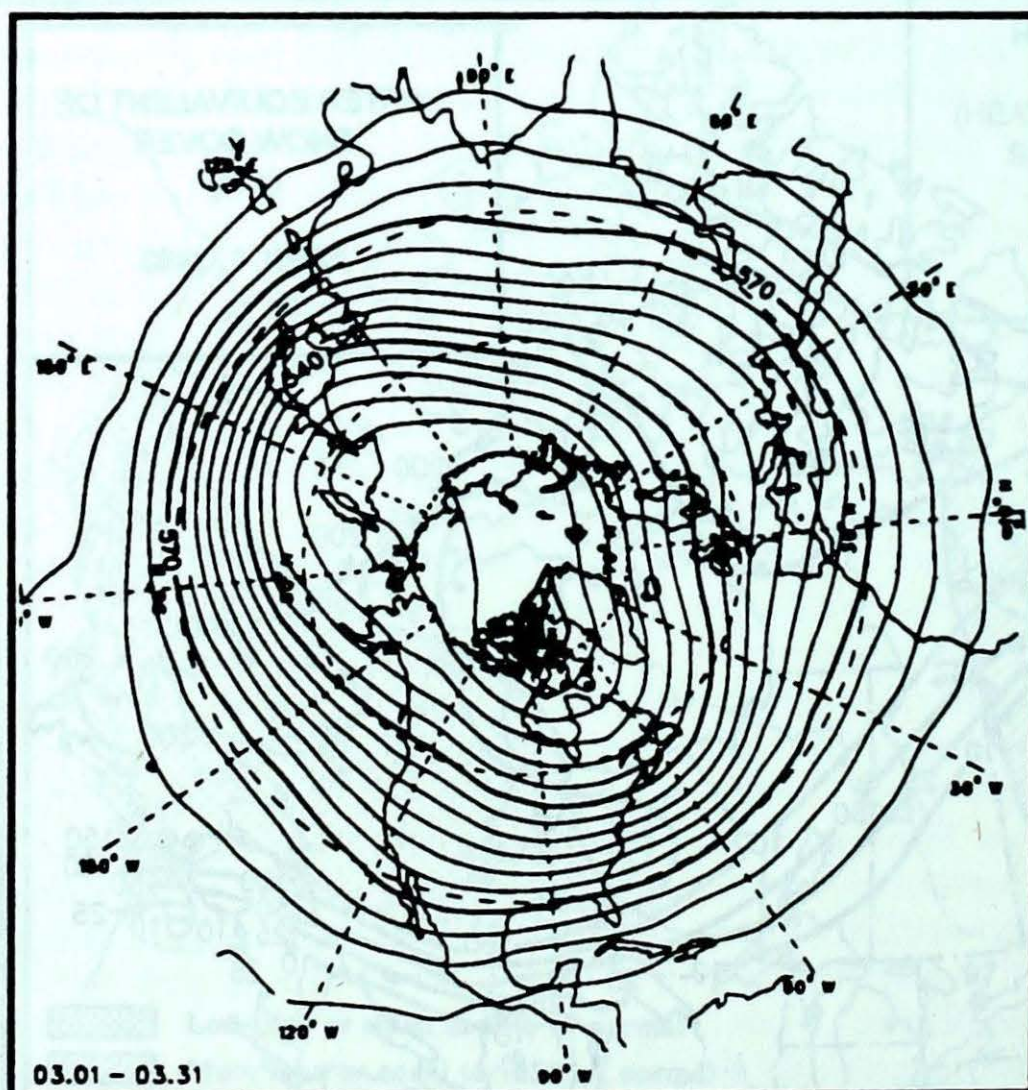
March 1992



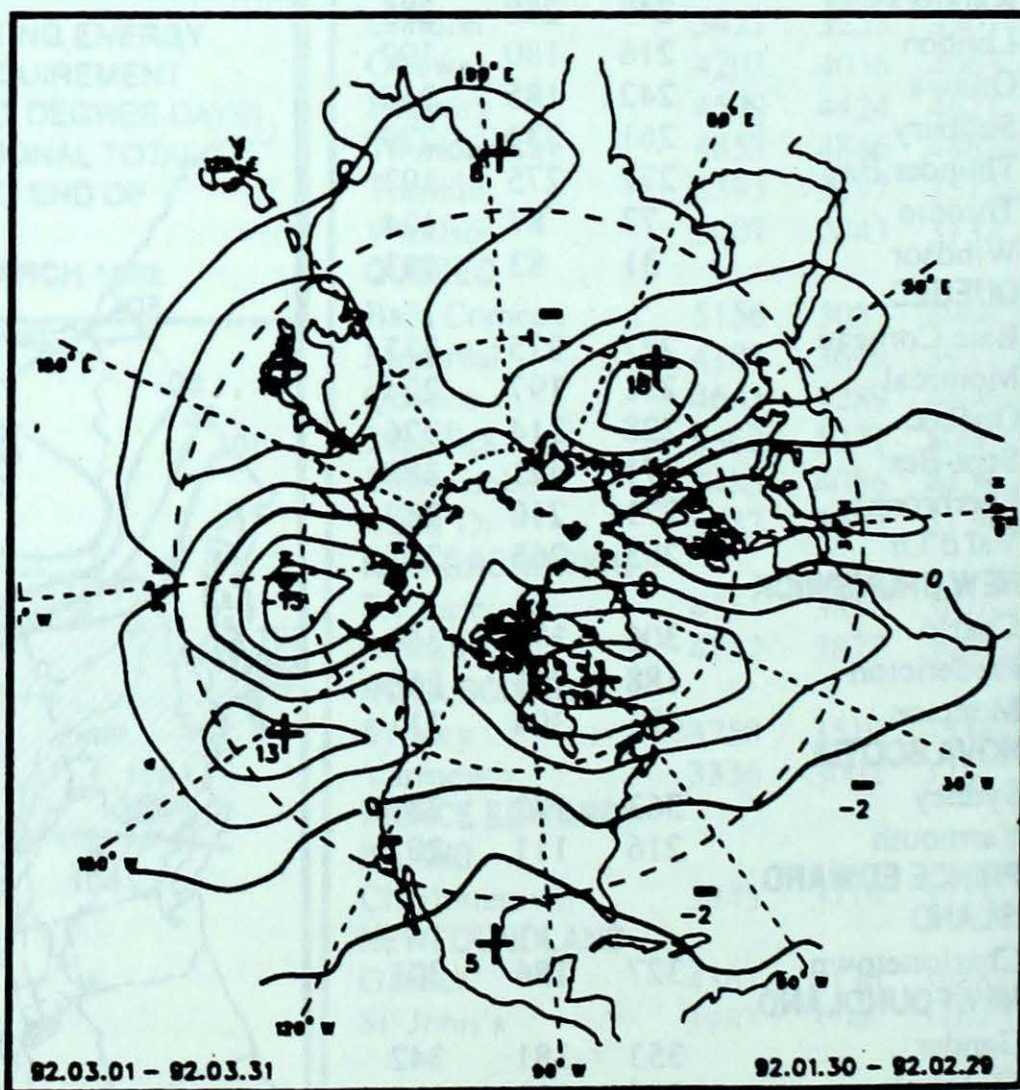
Mean geopotential heights  
- 5 decametre interval -



Mean geopotential height anomaly  
- 5 decametre interval -



Normal geopotential heights for the month  
- 5 decametre interval -



Mean heights difference w/r to previous month  
- 5 decametre interval -



# Winter 1992 in review

The winter of 1991-92 will be remembered for the contrast in temperatures across the country as an amplified upper ridge (Fig.1) and an associated positive height anomaly (Fig.2) dominated western Canada, while a combination of cold trans-polar air masses and short wave troughs emanating from a quasi-stationary trough over the southwestern United States converged over the Atlantic region. The stereotypical cold and windy winter of the Prairies was rarely in evidence, as December to February average temperatures were much above normal (Fig.3). During January and February a few mild incursions of warm air raised the mercury to values as much as 18°C above average in Alberta and Saskatchewan.

For most of the eastern half of the country there was little doubt that this was a cold winter, as a deeper than normal Arctic vortex, located in the northern part of the Davis Strait (Fig.1), produced bitterly cold temperatures across the eastern Arc-

tic, northern Quebec and Labrador (Fig.3). On numerous days, the eastern Arctic and Labrador experienced extreme windchill, limiting outdoor activities and resulting in the closure of public buildings and businesses; wind chill values in excess of 2300 w/m<sup>2</sup> were recorded, which can result in exposed skin freezing in less than 60 seconds.

But what seemed to add emphasis to the wintry conditions was the delay in spring's beginning. During March, while much of the West was enjoying mild temperatures that broke records on a near-daily basis, eastern Canada was enduring conditions more indicative of February, and losing hope that spring would ever arrive. The colder than normal temperatures off the coast of Labrador and east of Newfoundland led to advanced sea-ice development. Ice thickness and extent was at least four weeks ahead of normal by the end of February. As was the case last year, an ex-

tended ice season may delay or hamper all forms of marine transportation this spring.

A persistent westerly flow off the Pacific resulted in copious amounts of moisture for the British Columbia coast. However, after this onshore flow had passed over the coastal mountains its moisture was severely depleted. As a result, from interior British Columbia to central Saskatchewan, conditions were exceedingly dry, (Fig.4).

## December

Mid-winter conditions covered most of Canada as December began. With the exception of British Columbia and Baffin Island, temperatures were below normal over the entire country. Most notable were the western Prairies and northwestern Ontario, where temperatures dropped below -40°C. For the Prairies, this was a continuation of the cold weather that began in October. But, it was also the only time

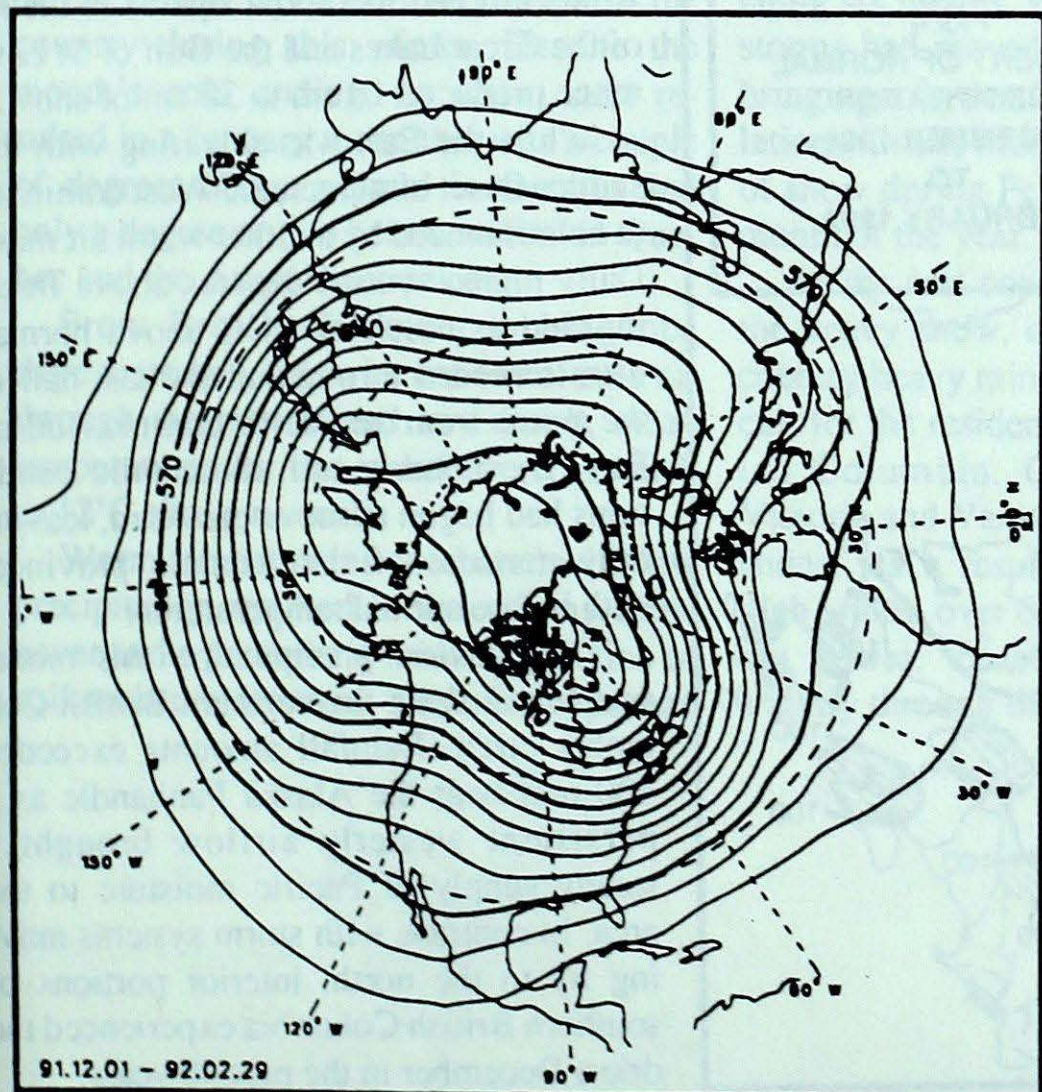


Fig.1 Mean 50 kPa geopotential heights. Winter 1992  
- 6 decametre interval -

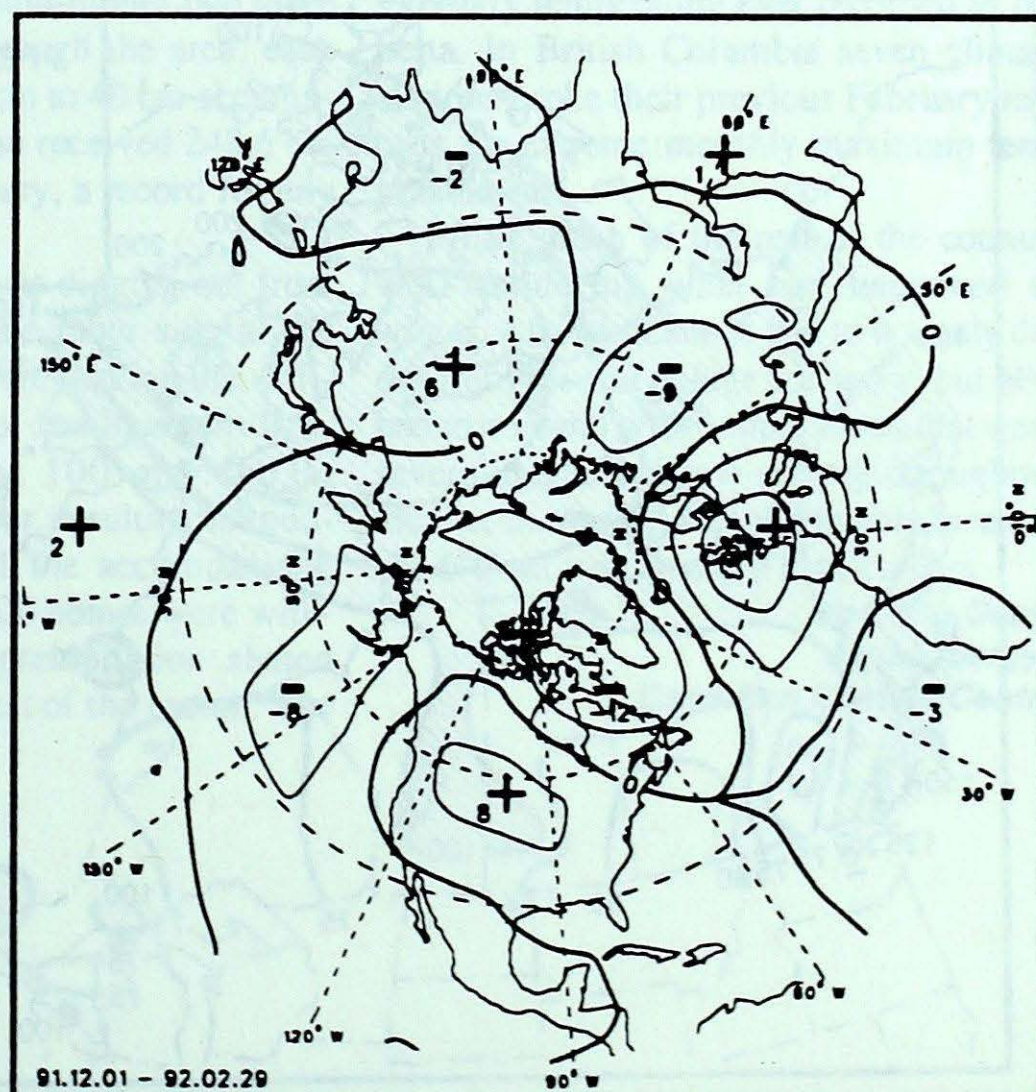
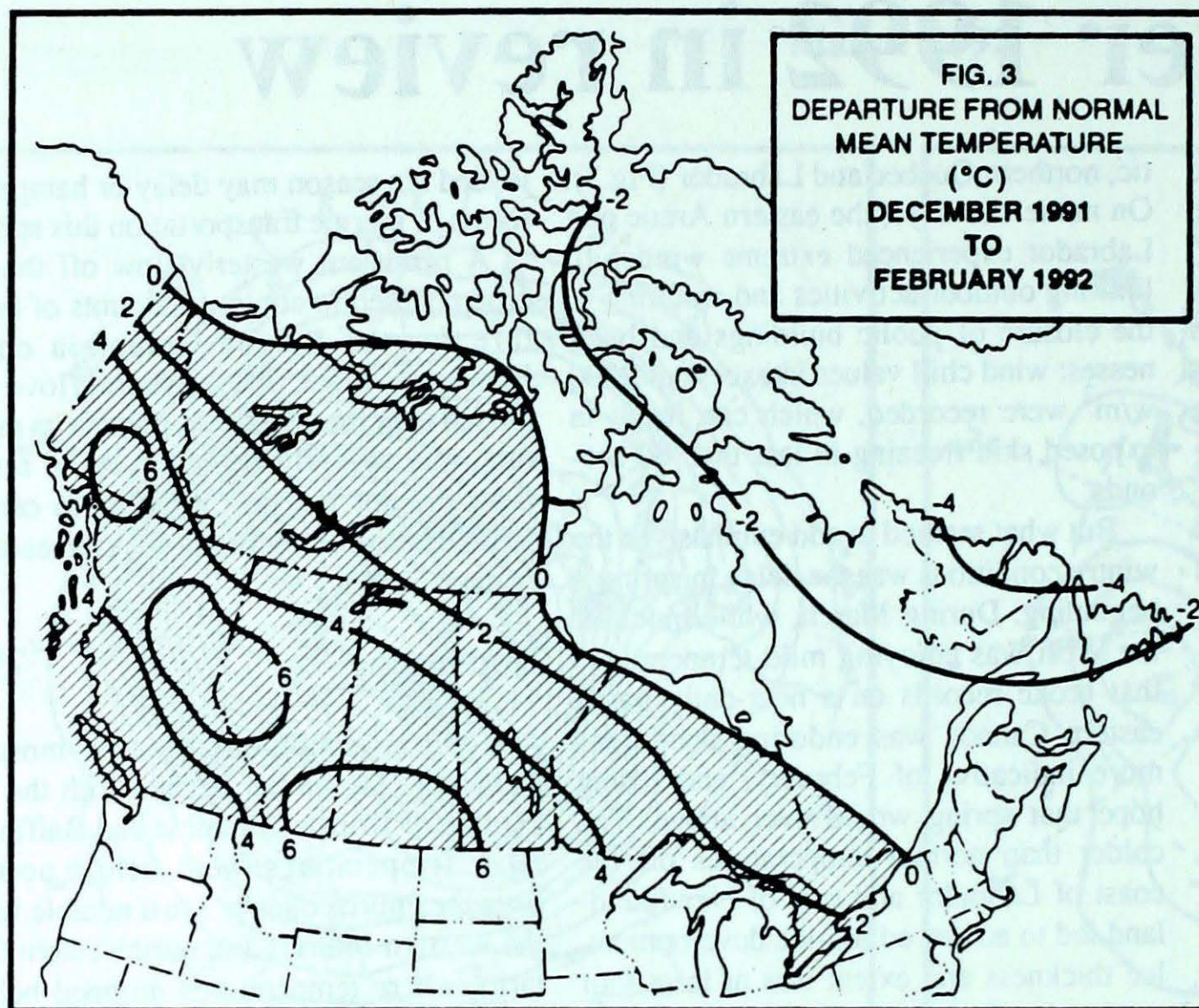


Fig.2 Mean geopotential height anomaly. Winter 1992  
- 6 decametre interval -



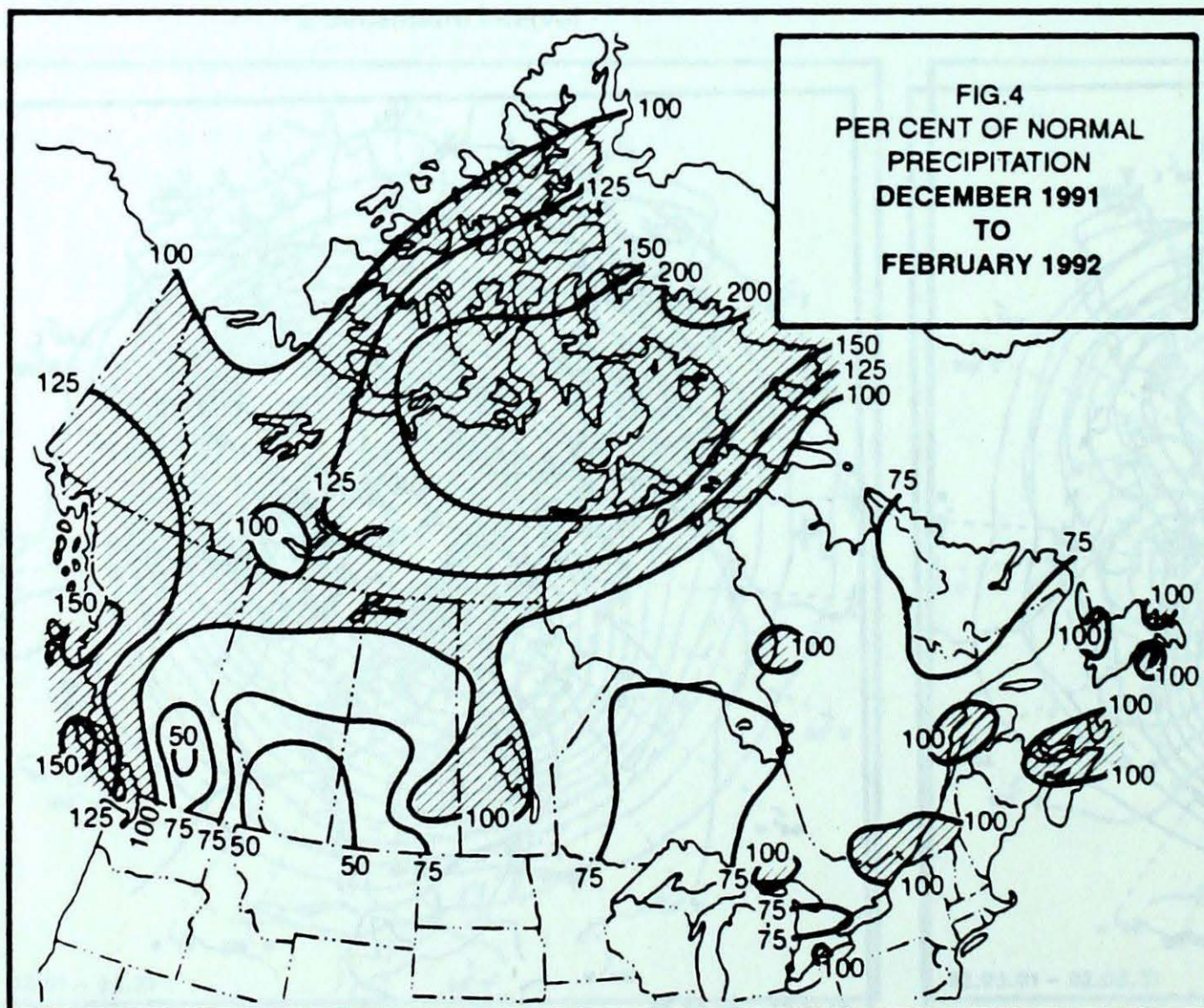


during the winter when an extended period of bitterly cold conditions was experienced. By the second week of the month warmer air had spread northward to cover almost all of the country south of the Territories. As this warmer air moved into the eastern half of Canada, it was accompanied by significant precipitation. On the 5th and 6th of the month, an early winter storm produced 15 cm to 20 cm of snow over southern Ontario. Moving eastward, the storm brought snowfalls as high as 30 cm to the Maritimes. Coming only a couple of days after a coastal storm had dropped a mixture of snow and freezing rain, transportation throughout the Atlantic provinces was brought to a virtual standstill. The snow that had fallen in the Great Lakes area remained on the ground for only a couple of days as record breaking temperatures, reaching the low teens, obliterated most of the snow cover.

At mid-month, temperatures in eastern Canada did another about-face, plunging into another deep freeze. In the wake of a cold front, that barrelled through the area on the 15th, temperatures fell to  $-40^{\circ}\text{C}$  in northern Ontario and Quebec and below  $-20^{\circ}\text{C}$  in the Maritimes. Conditions felt even colder as strong winds produced high wind chill factors. Snow squalls to the lee of the Great Lakes and the Gulf of St Lawrence produced 10 cm to 30 cm of snow.

While the East was shivering with this sudden onset of winter, the West continued to be influenced by a rather warm air mass. Daily highs, several degrees above freezing and as much as  $14^{\circ}\text{C}$  above normal, were recorded throughout the last half of the month from the Pacific coast to Hudson Bay. By month's end, these mild conditions had begun to move eastward, leaving only portions of the Atlantic provinces with below normal temperatures.

The heaviest precipitation this month was found along the northern British Columbia coast. Rainfall amounts exceeded 400 mm near the Alaska Panhandle as a persistent westerly airflow brought a steady supply of Pacific moisture to the area. In contrast, with storm systems moving by to the north, interior portions of southern British Columbia experienced the driest December in the past 40 years.





## January

Despite the fact that it was mid-winter, 1992 began on a decidedly warm note across Canada. With the exception of Ellesmere Island, temperatures during the first two weeks of the month were several degrees above normal throughout the country. In southern Alberta values of 14°C were reached, and even portions of the Yukon Territory exceeded the freezing mark.

By mid-month much colder conditions were being felt in most of the country east of Saskatchewan. For southern Ontario and areas along the St Lawrence Valley the cold air followed in the wake of a major storm that brought rain, freezing rain, snowfall amounts of 25 cm to 40 cm, and even a few rare winter thunderstorms. After the passage of this storm, temperatures throughout the East remained several degrees below normal for the rest of the month, with several locations setting new records for overnight minima. Many areas saw temperatures dip below -30°C, and only extreme southwestern Ontario and the coastal areas of Nova Scotia and Newfoundland escaped -20°C readings. At Clyde, on Baffin Island, a low temperature of -54°C was recorded, the coldest in the country during this winter. Despite the month's cold ending, its warm start resulted in a January mean that was a couple of degrees above normal in Ontario and only a degree or two below normal in Quebec and the Atlantic provinces.

From British Columbia to Manitoba there were only a few incursions of cold air through the month, and as a result, mean temperatures for the month were as much as 12°C above normal.

Warm temperatures combined with low precipitation resulted in little if any snow cover and a potentially critical depletion of soil moisture reserves. The only departure

from this dry picture came in Quebec and along the west coast. A storm that had dropped 50 mm to 60 mm of freezing rain over the lower St Lawrence Valley on the 5th and 6th, combined with the mid-month blizzard to raise January totals to values just slightly higher than normal. On British Columbia's Pacific coast, a near constant onshore flow resulted in precipitation totals more than twice the normal, with some areas receiving in excess of 600 mm.

## February

February 1992 will be remembered for its spectacular start. A storm that had developed east of the Carolinas on the last day of January hurled its full force at the Atlantic provinces between the 31st of January and the 3rd of February. As the storm stalled off the Nova Scotia coast, extremely heavy snowfalls combined with hurricane-force winds to create a blizzard that brought all four provinces to a standstill. In Moncton new records for one and two-day snowfalls for any month were set as 83 cm fell on the 1<sup>st</sup> and a further 41 cm fell the next day. Although snowdrifts of two to three metres were common, many roads in Prince Edward Island were blocked by drifts reaching six metres. By mid-month two more storms had moved through the area, each bringing a further 20 cm to 40 cm accumulations. In all, Moncton received 248.6 cm of snow during February, a record for any month of the year.

As the east coast was digging out from the heavy snow, on the other side of the country heavy rains were making life difficult for the residents of southwestern British Columbia. Over 100 mm fell at Victoria and Vancouver, resulting in mudslides. As a result of the accompanying high winds, over 65 000 homes were without power. Coastal precipitation abated slightly through the rest of the month. The

persistent westerly flow continued to provide an ample supply of moisture, but amounts were lower than in previous months, and for a change, no new monthly records were set.

A low-pressure system that moved through the south-central Prairies and over the Great Lakes on the 19th to 21st brought as much as 20 cm of snow to many localities. However, as this was the only significant storm to affect the Prairies during the month, precipitation totals for the area were generally well below normal.

In Ontario and Quebec precipitation was near normal, but with temperatures in the south slightly above normal, much of this fell as rain. In contrast, cold air that had dominated in eastern Ontario and Quebec resulted in final snowfall amounts that were above normal and in some cases record-setting.

The warm conditions that characterized January's weather in the West continued through most of February. A brief cold spell in the middle of the month failed to keep the western half of the country from achieving above normal temperatures for the third consecutive month. A reading of 23.6°C at Claresholm, Alberta, in the last week of the month, was the second highest February temperature ever recorded in Alberta. In British Columbia seven climate stations broke their previous February records for extreme monthly maximum temperatures.

While much of the rest of the country was wondering what had happened to winter, Atlantic Canada had to not only dig out from several deluges of snow, but also had to contend with temperatures that were several degrees below normal throughout the month. At Gander the monthly mean of -21.6°C set a new record for February.

**Malcolm Geast  
Aaron Gerye  
Canadian Climate Centre**



## MARCH 1992

| STATION           | Temperature C |                        |         |         | Snowfall (cm) | % of Normal Snowfall | Total Precipitation (mm) | % of Normal Precipitation | Snow on ground at end of month (cm) | No. of days with Precip 1.0 mm or more | Bright Sunshine (hours) | % of Normal Bright Sunshine | Degree Days below 18 C |
|-------------------|---------------|------------------------|---------|---------|---------------|----------------------|--------------------------|---------------------------|-------------------------------------|--|-------------------------|-----------------------------|------------------------|
|                   | Mean          | Difference from Normal | Maximum | Minimum |               |                      |                          |                           |                                     |  |                         |                             |                        |
| BRITISH COLUMBIA  |               |                        |         |         |               |                      |                          |                           |                                     |  |                         |                             |                        |
| ABBOTSFORD A      | 9.7           | 4.1                    | 21.3    | -1.4    | 0.0           | 0                    | 29.1                     | 21                        | 0                                   | 8                                      | 208                     | 185                         | 257.8                  |
| ALERT BAY         | 8.1           | 2.9                    | 17.4    | -0.6    | 0.0           | 0                    | 48.8                     | 40                        | 0                                   | 12                                     | *                       | *                           | 307.5                  |
| AMPHITRITE POINT  | 9.3           | 3.1                    | 14.7    | 3.5     | 0.0           | 0                    | 79.1                     | 23                        | 0                                   | 10                                     | *                       | *                           | 269.2                  |
| BLUE RIVER A      | 3.5           | 4.5                    | 18.0    | -9.3    | 1.2           | 3                    | 25.0                     | 37                        | 14                                  | 8                                      | 152                     | 159                         | *                      |
| CAPE ST JAMES     | 7.0           | 2.1                    | 12.0    | 1.7     | 0.6           | 7                    | 94.6                     | 73                        | 0                                   | 17                                     | 93                      | *                           | 341.0                  |
| CAPE SCOTT        | 7.9           | 2.5                    | 13.8    | 3.2     | 0.0           | 0                    | 109.5                    | 40                        | 0                                   | 12                                     | *                       | *                           | 312.7                  |
| CASTLEGAR A       | 6.6           | 3.6                    | 18.1    | -4.6    | 0.0           | 0                    | 22.8                     | 40                        | 0                                   | 5                                      | 179                     | 146                         | 351.3                  |
| COMOX A           | 7.9           | 2.9                    | 15.8    | -0.4    | 0.0           | 0                    | 32.0                     | 29                        | 0                                   | 9                                      | 152                     | *                           | 314.6                  |
| CRANBROOK A       | 5.1           | 4.3                    | 17.1    | -6.0    | 0.0           | 0                    | 10.1                     | 60                        | 0                                   | 5                                      | 213                     | 129                         | 399.1                  |
| DEASE LAKE        | -3.0          | 4.4                    | 9.1     | -22.2   | 14.2          | 53                   | 10.2                     | 46                        | 64                                  | 5                                      | 154                     | 116                         | 649.5                  |
| FORT NELSON A     | -2.6          | 7.2                    | 14.5    | -28.5   | 4.6           | 16                   | 3.8                      | 16                        | 30                                  | 3                                      | 198                     | *                           | 638.5                  |
| FORT ST JOHN A    | 1.7           | 8.3                    | 14.8    | -20.0   | 5.0           | 15                   | 3.5                      | 12                        | 0                                   | 1                                      | 190                     | *                           | 505.6                  |
| HOPE A            | 10.8          | 5.2                    | 22.3    | 0.2     | 0.0           | 0                    | 25.2                     | 17                        | 0                                   | 7                                      | 183                     | 181                         | 224.0                  |
| KAMLOOPS A        | 7.5           | 4.0                    | 19.3    | -4.6    | 0.0           | 0                    | 17.8                     | 184                       | 0                                   | 5                                      | 222                     | 152                         | 325.2                  |
| KELOWNA A         | 6.5           | 3.9                    | 18.9    | -7.0    | 0.0           | 0                    | 14.1                     | 70                        | 0                                   | 5                                      | 215                     | 160                         | 357.6                  |
| MACKENZIE A       | 1.4           | 5.8                    | 13.1    | -12.1   | 9.2           | 22                   | 13.9                     | 28                        | 25                                  | 4                                      | 159                     | 127                         | 512.4                  |
| PENTICTON A       | 6.7           | 2.8                    | 18.9    | -4.7    | 0.0           | 0                    | 12.2                     | 71                        | 0                                   | 4                                      | 207                     | 148                         | 350.8                  |
| PORT ALBERNI A    | 9.2           | 4.1                    | 20.0    | -3.1    | 0.0           | 0                    | 41.1                     | 19                        | 0                                   | 7                                      | 146                     | *                           | 272.2                  |
| PORT HARDY A      | 7.0           | 2.6                    | 16.7    | -1.0    | 0.0           | 0                    | 35.6                     | 25                        | 0                                   | 11                                     | 117                     | 115                         | 339.7                  |
| PRINCE GEORGE A   | 3.8           | 5.6                    | 15.5    | -7.6    | 1.0           | 3                    | 13.2                     | 36                        | 0                                   | 4                                      | 186                     | 135                         | 440.7                  |
| PRINCE RUPERT A   | 5.3           | 2.2                    | 13.5    | -3.0    | 0.8           | 3                    | 186.7                    | 97                        | 0                                   | 19                                     | 77                      | 82                          | 395.0                  |
| PRINCETON A       | 6.2           | 5.2                    | 20.2    | -7.6    | 0.6           | 5                    | 4.0                      | 21                        | 0                                   | 2                                      | 231                     | *                           | *                      |
| REVELSTOKE A      | 5.8           | 5.0                    | 16.6    | -3.4    | 0.0           | 0                    | 20.6                     | 30                        | 0                                   | 8                                      | 190                     | 187                         | 376.4                  |
| SANDSPIT A        | 5.5           | 1.6                    | 10.5    | -1.4    | 0.2           | 2                    | 71.4                     | 72                        | 0                                   | 18                                     | 84                      | 69                          | 450.9                  |
| SMITHERS A        | 2.6           | 3.9                    | 13.7    | -9.9    | 0.4           | 2                    | 6.2                      | 24                        | 0                                   | 1                                      | 121                     | 99                          | 477.8                  |
| TERRACE A         | 5.5           | 4.0                    | 14.7    | -3.7    | 0.4           | 1                    | 53.0                     | 64                        | 0                                   | 10                                     | 108                     | 99                          | 387.0                  |
| VANCOUVER INT'L A | 8.5           | 2.7                    | 16.6    | 0.2     | 0.0           | 0                    | 25.9                     | 26                        | 0                                   | 6                                      | 188                     | 146                         | 294.5                  |
| VICTORIA INT'L A  | 9.0           | 3.3                    | 17.9    | 0.2     | 0.0           | 0                    | 23.8                     | 33                        | 0                                   | 7                                      | 199                     | 138                         | 278.9                  |
| VICTORIA MARINE   | 8.2           | 1.9                    | 15.0    | 1.1     | 0.0           | 0                    | 23.2                     | 20                        | 0                                   | 5                                      | 0                       | *                           | 303.4                  |
| WILLIAMS LAKE A   | 3.9           | 4.9                    | 17.2    | -9.2    | 3.4           | 16                   | 9.2                      | 41                        | 0                                   | 2                                      | 201                     | 124                         | 437.4                  |

| STATION               | Temperature C |                        |         |         | Snowfall (cm) | % of Normal Snowfall | Total Precipitation (mm) | % of Normal Precipitation | Snow on ground at end of month (cm) | No. of days with Precip 1.0 mm or more | Bright Sunshine (hours) | % of Normal Bright Sunshine | Degree Days below 18 C |
|-----------------------|---------------|------------------------|---------|---------|---------------|----------------------|--------------------------|---------------------------|-------------------------------------|--|-------------------------|-----------------------------|------------------------|
|                       | Mean          | Difference from Normal | Maximum | Minimum |               |                      |                          |                           |                                     |  |                         |                             |                        |
| YUKON TERRITORY       |               |                        |         |         |               |                      |                          |                           |                                     |  |                         |                             |                        |
| DAWSON A              | -8.1          | *                      | 7.9     | -41.1   | 12.2          | *                    | 7.0                      | *                         | *                                   | *                                      | *                       | *                           | *                      |
| MAYO A                | -5.6          | 6.1                    | 9.1     | -33.2   | 7.2           | 67                   | 4.8                      | 47                        | *                                   | *                                      | *                       | *                           | *                      |
| WATSON LAKE A         | -6.3          | 5.0                    | 8.7     | -30.5   | 7.0           | 25                   | 7.2                      | 31                        | 74                                  | 2                                      | 199                     | 148                         | 752.9                  |
| WHITEHORSE A          | -3.3          | 4.9                    | 6.9     | -26.0   | 5.6           | 34                   | 4.6                      | 34                        | 0                                   | 2                                      | 171                     | 112                         | 660.7                  |
| NORTHWEST TERRITORIES |               |                        |         |         |               |                      |                          |                           |                                     |  |                         |                             |                        |
| BAKER LAKE A          | -24.9         | 3.0                    | -11.0   | -41.4   | 12.9          | 155                  | 12.9                     | 170                       | 41                                  | 3                                      | 118                     | 62                          | 1330.6                 |
| CAMBRIDGE BAY A       | -26.7         | 4.6                    | -14.1   | -38.6   | 10.8          | 200                  | 8.6                      | 183                       | 41                                  | 3                                      | 159                     | 87                          | 1386.5                 |
| CAPE PARRY A          | -20.8         | 6.8                    | -8.9    | -34.1   | 6.2           | 58                   | 3.7                      | 61                        | 22                                  | 1                                      | *                       | *                           | 1201.5                 |
| CLYDE A               | -29.1         | -2.7                   | -20.6   | -40.9   | 2.0           | 33                   | 2.0                      | 33                        | 44                                  | 1                                      | 193                     | 120                         | 1460.0                 |
| COPPERMINE A          | -21.0         | 6.1                    | -5.1    | -36.6   | 31.6          | 304                  | 26.0                     | 265                       | 87                                  | 9                                      | 127                     | 79                          | 1208.9                 |
| CORAL HARBOUR A       | -27.4         | -2.2                   | -11.2   | -37.4   | 6.4           | 59                   | 6.4                      | 59                        | 36                                  | 3                                      | 212                     | 107                         | 1407.2                 |
| EUREKA                | -37.3         | 0.1                    | -26.7   | -43.4   | 3.0           | 125                  | 3.0                      | 136                       | 21                                  | 2                                      | 75                      | 63                          | 1714.5                 |
| FORT SIMPSON A        | -7.8          | 7.1                    | 14.5    | -33.2   | 3.4           | 16                   | 3.0                      | 16                        | 57                                  | 10                                     | 199                     | 124                         | 798.4                  |
| FORT SMITH A          | -9.7          | 5.1                    | 12.7    | -30.9   | 36.4          | 229                  | 31.4                     | 218                       | 61                                  | 8                                      | 195                     | 110                         | 853.7                  |
| IQALUIT               | -27.1         | -4.4                   | -10.6   | -36.3   | 2.4           | 9                    | 2.2                      | 9                         | 9                                   | 1                                      | 235                     | 133                         | 1399.0                 |
| HALL BEACH A          | -29.7         | -0.2                   | -14.4   | -40.6   | 4.2           | 34                   | 4.2                      | 36                        | 36                                  | 2                                      | *                       | *                           | 1480.0                 |
| HAY RIVER A           | -9.9          | 6.4                    | 11.0    | -33.0   | 18.0          | 94                   | 18.2                     | 99                        | 61                                  | 5                                      | *                       | *                           | 864.3                  |
| INUVIK A              | -16.2         | 8.8                    | 3.6     | -39.2   | 13.0          | 87                   | 11.4                     | 95                        | 45                                  | 4                                      | 147                     | 84                          | 1058.3                 |
| MOULD BAY A           | -28.0         | 4.8                    | -17.2   | -39.4   | 9.5           | 317                  | 7.1                      | 296                       | 20                                  | 3                                      | 70                      | 63                          | 1425.3                 |
| NORMAN WELLS A        | -12.6         | 7.2                    | 5.0     | -40.2   | 4.6           | 34                   | 4.2                      | 33                        | 5                                   | 1                                      | 164                     | 97                          | 948.2                  |
| RESOLUTE A            | -27.8         | 3.6                    | -17.7   | -39.3   | 9.0           | 290                  | 8.9                      | 297                       | 14                                  | 3                                      | 121                     | 83                          | 1419.0                 |
| YELLOWKNIFE A         | -15.1         | 3.8                    | 4.0     | -34.4   | 30.4          | 211                  | 25.8                     | 208                       | 57                                  | 5                                      | 183                     | 94                          | 1026.2                 |
| ALBERTA               |               |                        |         |         |               |                      |                          |                           |                                     |  |                         |                             |                        |
| BANFF                 | 3.4           | 6.8                    | 15.8    | -9.0    | 3.6           | 15                   | 3.4                      | 16                        | 0                                   | 1                                      | *                       | *                           | 454.7                  |
| CALGARY INT'L A       | 3.1           | 7.1                    | 19.4    | -11.8   | 10.7          | 54                   | 7.9                      | 49                        | 0                                   | 2                                      | 216                     | 134                         | 461.3                  |
| COLD LAKE A           | 0.5           | 8.1                    | 17.9    | -20.1   | 6.0           | 29                   | 5.6                      | 28                        | 0                                   | 2                                      | 182                     | 106                         | 542.2                  |
| CORONATION A          | 1.4           | 8.5                    | 16.0    | -13.7   | 18.2          | 78                   | 15.2                     | 73                        | 0                                   | 3                                      | 190                     | 104                         | 516.3                  |



## MARCH 1992

| STATION            | Temperature C |                        |         |         | Snowfall (cm) | % of Normal Snowfall | Total Precipitation (mm) | % of Normal Precipitation | Snow on ground at end of month (cm) | No. of days with Precip 1.0 mm or more | Bright Sunshine (hours) | % of Normal Bright Sunshine | Degree Days below 18 C |
|--------------------|---------------|------------------------|---------|---------|---------------|----------------------|--------------------------|---------------------------|-------------------------------------|--|-------------------------|-----------------------------|------------------------|
|                    | Mean          | Difference from Normal | Maximum | Minimum |               |                      |                          |                           |                                     |  |                         |                             |                        |
| EDMONTON INT'L A   | 1.8           | 8.5                    | 17.6    | -16.2   | 3.8           | 20                   | 4.2                      | 26                        | 0                                   | 2                                      | 197                     | 115                         | 503.5                  |
| EDMONTON MUNICIPAL | 2.6           | 7.6                    | 15.8    | -11.3   | 8.6           | *                    | 10.0                     | 54                        | 0                                   | 4                                      | 192                     | 114                         | 476.6                  |
| EDMONTON NAMAQ A   | 1.9           | 7.5                    | 14.8    | -12.9   | 5.4           | 31                   | 5.4                      | 30                        | 0                                   | 3                                      | *                       | *                           | 499.9                  |
| EDSON A            | 2.3           | 7.0                    | 17.2    | -12.4   | 3.4           | 10                   | 2.8                      | 12                        | 0                                   | 2                                      | 189                     | 123                         | 486.7                  |
| FORT CHIPEWYAN A   | -8.5          | 4.3                    | 10.5    | -30.0   | 18.8          | 114                  | 18.1                     | 98                        | 71                                  | *                                      | *                       | *                           | *                      |
| FORT MCMURRAY A    | -1.4          | 7.8                    | 16.7    | -23.8   | 15.8          | 65                   | 12.8                     | 62                        | 8                                   | 3                                      | 169                     | 102                         | 601.2                  |
| GRANDE PRAIRIE A   | 1.1           | 8.3                    | 15.5    | -22.1   | 19.1          | 83                   | 16.3                     | 78                        | 0                                   | 5                                      | 203                     | *                           | 524.8                  |
| HIGH LEVEL A       | -3.5          | 7.5                    | 14.0    | -31.0   | 11.1          | 53                   | 8.9                      | 45                        | 11                                  | 0                                      | 199                     | 113                         | 665.7                  |
| JASPER             | 3.3           | 6.0                    | 16.7    | -11.6   | 2.2           | 15                   | 4.0                      | 25                        | 0                                   | 2                                      | 202                     | *                           | 454.5                  |
| LETHBRIDGE A       | 4.1           | 6.2                    | 19.6    | -9.1    | 5.5           | 21                   | 5.6                      | 23                        | 0                                   | 3                                      | 217                     | 130                         | 432.7                  |
| MEDICINE HAT A     | 4.1           | 6.9                    | 20.0    | -12.9   | 0.0           | 0                    | 0.0                      | 0                         | 0                                   | 0                                      | 206                     | 127                         | 431.5                  |
| PEACE RIVER A      | 0.4           | 8.9                    | 14.4    | -19.7   | 8.6           | 42                   | 8.8                      | 51                        | 0                                   | 2                                      | *                       | *                           | 540.9                  |
| RED DEER A         | 2.1           | 8.3                    | 16.1    | -10.1   | 1.0           | 5                    | 1.0                      | 5                         | 0                                   | 0                                      | *                       | *                           | 492.9                  |
| ROCKY MTN HOUSE A  | 1.3           | 5.9                    | 14.4    | -10.4   | 1.6           | 5                    | 0.6                      | 2                         | 0                                   | 0                                      | *                       | *                           | 517.8                  |
| SLAVE LAKE A       | 0.5           | 6.8                    | 14.2    | -19.2   | 4.0           | 14                   | 5.7                      | 28                        | 0                                   | 3                                      | 214                     | 127                         | 542.1                  |
| SUFFIELD A         | 4.0           | *                      | 18.8    | -13.3   | 0.0           | *                    | 0.0                      | *                         | 0                                   | 0                                      | 216                     | *                           | 433.8                  |
| WHITECOURT A       | 2.3           | 8.2                    | 16.0    | -15.1   | 3.9           | 15                   | 3.6                      | 15                        | 0                                   | 1                                      | *                       | *                           | 485.6                  |
| SASKATCHEWAN       |               |                        |         |         |               |                      |                          |                           |                                     |  |                         |                             |                        |
| BROADVIEW          | -1.3          | 6.8                    | 12.6    | -14.5   | *             | *                    | 17.0                     | 106                       | 0                                   | 2                                      | 210                     | 121                         | 598.1                  |
| COLLINS BAY        | *             | *                      | *       | *       | *             | *                    | *                        | *                         | *                                   | *                                      | *                       | *                           | *                      |
| CREE LAKE          | -9.0          | 4.5                    | 11.0    | -35.0   | 21.4          | 101                  | 20.9                     | 144                       | 37                                  | 6                                      | 179                     | 100                         | 845.0                  |
| ESTEVAN A          | 0.2           | 6.1                    | 14.7    | -15.4   | 8.0           | 46                   | 22.8                     | 118                       | 0                                   | 4                                      | 179                     | 96                          | 551.6                  |
| HUDSON BAY A       | -3.4          | *                      | 12.1    | -20.3   | 4.4           | *                    | 2.2                      | *                         | 0                                   | 0                                      | 181                     | *                           | 663.3                  |
| KINDERSLEY         | 1.1           | 7.7                    | 17.7    | -14.7   | 13.2          | 90                   | 11.2                     | 76                        | 0                                   | 4                                      | 192                     | *                           | 525.2                  |
| LA RONGE A         | -4.5          | 6.2                    | 15.3    | -22.9   | 11.8          | 54                   | 13.0                     | 70                        | 20                                  | 7                                      | *                       | *                           | 696.4                  |
| MEADOW LAKE A      | -0.2          | *                      | 17.0    | -19.4   | 5.4           | *                    | 8.2                      | *                         | 0                                   | 4                                      | 183                     | *                           | 563.4                  |
| MOOSE JAW A        | 1.4           | 7.0                    | 19.2    | -13.7   | *             | *                    | 9.2                      | 53                        | 0                                   | 2                                      | 202                     | 121                         | 516.0                  |
| NIPAWIN A          | -3.4          | *                      | 9.1     | -17.8   | 0.0           | *                    | 0.0                      | *                         | 0                                   | 0                                      | 196                     | *                           | 662.8                  |
| NORTH BATTLEFORD A | -0.3          | 8.3                    | 15.7    | -18.5   | 8.6           | 41                   | 5.8                      | 28                        | 0                                   | 2                                      | *                       | *                           | 561.5                  |
| PRINCE ALBERT A    | -1.8          | 8.5                    | 12.8    | -19.2   | 1.2           | 6                    | 1.8                      | 9                         | 0                                   | 0                                      | 205                     | 124                         | 614.4                  |
| REGINA A           | 0.2           | 8.0                    | 15.3    | -12.7   | 4.2           | 23                   | 7.2                      | 40                        | 0                                   | 3                                      | 191                     | 122                         | 551.3                  |
| SASKATOON A        | -0.5          | 8.1                    | 15.2    | -17.0   | 3.0           | 16                   | 3.6                      | 20                        | 0                                   | 2                                      | *                       | *                           | 573.0                  |
| SWIFT CURRENT A    | 1.6           | 7.3                    | 18.6    | -12.3   | *             | *                    | 5.2                      | 26                        | 0                                   | 1                                      | 191                     | 122                         | 507.3                  |
| YORKTON A          | -4.0          | 5.6                    | 8.2     | -20.9   | 1.8           | 7                    | 1.8                      | 7                         | 3                                   | 1                                      | 176                     | 106                         | 682.1                  |
| MANITOBA           |               |                        |         |         |               |                      |                          |                           |                                     |  |                         |                             |                        |
| BRANDON A          | -4.7          | 4.0                    | 6.8     | -21.1   | 5.1           | 26                   | 17.9                     | 89                        | 1                                   | 3                                      | 17                      | *                           | 702.2                  |
| CHURCHILL A        | -19.3         | 1.1                    | -2.4    | -32.7   | 28.0          | 151                  | 18.6                     | 103                       | 36                                  | 5                                      | 180                     | 95                          | 1120.1                 |
| DAUPHIN A          | -3.5          | 5.0                    | 11.4    | -18.9   | 15.2          | 63                   | 16.2                     | 66                        | 0                                   | 5                                      | 170                     | 96                          | 667.8                  |
| GILLAM A           | -14.7         | 1.8                    | 8.1     | -34.8   | 47.6          | 153                  | 31.6                     | 160                       | 63                                  | 7                                      | *                       | *                           | 1012.1                 |

| STATION             | Temperature C |                        |         |         | Snowfall (cm) | % of Normal Snowfall | Total Precipitation (mm) | % of Normal Precipitation | Snow on ground at end of month (cm) | No. of days with Precip 1.0 mm or more | Bright Sunshine (hours) | % of Normal Bright Sunshine | Degree Days below 18 C |
|---------------------|---------------|------------------------|---------|---------|---------------|----------------------|--------------------------|---------------------------|-------------------------------------|--|-------------------------|-----------------------------|------------------------|
|                     | Mean          | Difference from Normal | Maximum | Minimum |               |                      |                          |                           |                                     |  |                         |                             |                        |
| ISLAND LAKE         | -11.1         | 0.3                    | 8.5     | -32.9   | 19.0          | 34                   | 15.8                     | 51                        | 49                                  | 4                                      | *                       | *                           | 903.3                  |
| LYNN LAKE A         | -10.9         | 3.8                    | 7.8     | -32.2   | 71.4          | 287                  | 32.8                     | 214                       | 36                                  | 10                                     | 151                     | 81                          | 896.1                  |
| NORWAY HOUSE A      | -9.7          | *                      | 8.2     | -29.5   | 30.8          | *                    | 19.8                     | *                         | 16                                  | 10                                     | *                       | *                           | 986.9                  |
| PORTAGE LA PRAIRIE  | -3.1          | 4.3                    | 7.6     | -15.7   | 9.3           | 34                   | 16.9                     | 62                        | 0                                   | 4                                      | *                       | *                           | 52.5                   |
| THE PAS A           | -6.3          | 4.9                    | 10.5    | -23.7   | 9.6           | 34                   | 6.8                      | 29                        | 13                                  | 2                                      | 173                     | 99                          | 754.9                  |
| THOMPSON A          | -12.3         | 1.9                    | 8.6     | -31.2   | 26.8          | 92                   | 21.3                     | 103                       | 46                                  | 8                                      | 161                     | 82                          | 929.1                  |
| WINNIPEG INT'L A    | -4.3          | 3.9                    | 7.0     | -17.5   | 15.8          | 75                   | 19.0                     | 84                        | 0                                   | 6                                      | 13                      | 7                           | 691.7                  |
| ONTARIO             |               |                        |         |         |               |                      |                          |                           |                                     |  |                         |                             |                        |
| BIG TROUT LAKE      | -14.6         | -0.1                   | 8.0     | -37.1   | 18.2          | 80                   | 16.2                     | 75                        | 27                                  | 7                                      | 183                     | *                           | 1020.2                 |
| EARLTON A           | -9.9          | -2.3                   | 9.3     | -31.9   | 42.3          | 95                   | 46.0                     | 79                        | 10                                  | 7                                      | *                       | *                           | 863.4                  |
| GERALDTON A         | -11.6         | *                      | 6.9     | -34.4   | 18.2          | *                    | 29.8                     | *                         | 50                                  | 7                                      | *                       | *                           | 915.9                  |
| GORE BAY A          | -5.3          | -1.0                   | 6.1     | -19.4   | 24.6          | 79                   | 63.0                     | 118                       | 19                                  | 6                                      | *                       | *                           | 723.9                  |
| HAMILTON A          | -1.2          | -0.4                   | 13.2    | -15.2   | 20.0          | 100                  | 31.6                     | 41                        | 0                                   | 8                                      | *                       | *                           | 593.7                  |
| KAPUSKASING A       | -11.7         | -2.3                   | 7.9     | -30.1   | 18.8          | 40                   | 22.1                     | 40                        | 62                                  | 7                                      | *                       | *                           | 919.1                  |
| KENORA A            | -5.4          | 1.7                    | 8.1     | -22.3   | 6.6           | 22                   | 15.7                     | 52                        | 9                                   | 5                                      | *                       | *                           | 724.5                  |
| KINGSTON A          | -4.2          | -2.6                   | 8.0     | -22.4   | 44.0          | 136                  | 112.2                    | 130                       | *                                   | 9                                      | 130                     | 92                          | 686.8                  |
| LONDON A            | -0.7          | 0.2                    | 13.5    | -14.6   | 34.4          | 123                  | 53.2                     | 71                        | 0                                   | 13                                     | 110                     | 91                          | 577.3                  |
| MOOSEHAWK A         | -15.8         | -3.5                   | 3.9     | -36.0   | 25.4          | 77                   | 24.0                     | 64                        | 42                                  | 4                                      | 160                     | 108                         | 1048.0                 |
| MUSKOKA A           | -4.9          | -1.1                   | 9.2     | -27.1   | 36.4          | 99                   | 87.1                     | 131                       | 5                                   | 14                                     | *                       | *                           | 747.3                  |
| NORTH BAY A         | -8.3          | -3.0                   | 7.9     | -26.8   | 64.4          | 167                  | 69.0                     | 113                       | 39                                  | 10                                     | 153                     | 102                         | 815.9                  |
| OTTAWA INT'L A      | -6.0          | -3.0                   | 8.8     | -21.4   | 47.2          | 132                  | 97.6                     | 145                       | 2                                   | 10                                     | 154                     | 104                         | 744.6                  |
| PETAWAWA A          | -8.2          | -3.9                   | 8.9     | -28.4   | 44.7          | 149                  | 55.1                     | 83                        | 26                                  | 9                                      | *                       | *                           | 818.2                  |
| PETERBOROUGH A      | -3.9          | -1.4                   | 10.6    | -22.0   | 27.6          | 118                  | 62.6                     | 87                        | *                                   | 10                                     | *                       | *                           | 676.3                  |
| PICKLE LAKE         | -10.5         | 0.2                    | 7.5     | -32.1   | 26.8          | 70                   | 25.0                     | 60                        | 51                                  | 8                                      | *                       | *                           | 884.1                  |
| RED LAKE A          | -8.5          | 0.2                    | 5.8     | -29.6   | 11.6          | 48                   | 21.0                     | 73                        | 26                                  | 5                                      | 174                     | *                           | 820.2                  |
| ST CATHARINES A     | 0.1           | -1.0                   | 15.7    | -12.6   | 16.6          | 93                   | 33.8                     | 41                        | 0                                   | 6                                      | 131                     | *                           | 556.0                  |
| SARNIA A            | -0.3          | -0.6                   | 14.8    | -13.7   | 27.8          | 126                  | 69.8                     | 104                       | 0                                   | 13                                     | 139                     | 108                         | 566.2                  |
| SAULT STE MARIE A   | -6.6          | -1.7                   | 6.9     | -25.3   | 19.8          | 65                   | 38.6                     | 66                        | 14                                  | 6                                      | 152                     | 101                         | 762.0                  |
| SHAWANEE A          | -8.3          | 0.0                    | 6.8     | -29.2   | 9.8           | 30                   | 15.0                     | 43                        | 45                                  | 5                                      | *                       | *                           | 815.1                  |
| SUDBURY A           | -7.9          | -1.9                   | 6.6     | -24.5   | 64.6          | 185                  | 89.2                     | 162                       | 35                                  | 7                                      | 142                     | 93                          | 804.7                  |
| THUNDER BAY A       | -5.5          | 0.8                    | 6.4     | -22.9   | 2.4           | 7                    | 12.2                     | 27                        | *                                   | 3                                      | 173                     | 100                         | 728.6                  |
| TIMMINS A           | -10.5         | -2.1                   | 9.4     | -29.7   | 17.3          | 32                   | 20.3                     | 34                        | 56                                  | 5                                      | *                       | *                           | 881.4                  |
| TORONTO             | 0.1           | *                      | 12.1    | -13.6   | 12.4          | *                    | 29.6                     | *                         | 0                                   | 9                                      | *                       | *                           | 557.1                  |
| TORONTO INT'L A     | -1.2          | -0.2                   | 12.3    | -14.5   | 6.6           | 30                   | 21.7                     | 36                        | 0                                   | 6                                      | *                       | *                           | 592.8                  |
| TORONTO ISLAND A    | -0.5          | *                      | 10.9    | -13.4   | 8.6           | 40                   | 26.2                     | *                         | 1                                   | 6                                      | *                       | *                           | 571.6                  |
| TRENTON A           | -3.4          | -2.4                   | 12.0    | -21.0   | 35.4          | 133                  | 89.6                     | 124                       | *                                   | 11                                     | *                       | *                           | 660.7                  |
| WATERLOO WELLINGTON | -1.5          | 0.4                    | 14.4    | -15.7   | 14.4          | 60                   | 34.2                     | 42                        | 0                                   | 10                                     | *                       | *                           | 604.3                  |
| WAWA A              | -8.6          | *                      | 6.7     | -27.8   | 22.6          | *                    | 27.0                     | *                         | 35                                  | 5                                      | *                       | *                           | 823.2                  |
| WIARTON A           | -4.0          | -1.2                   | 9.2     | -18.2   | 44.6          | 104                  | 55.9                     | 86                        | *                                   | 11                                     | 170                     | 123                         | 681.3                  |
| WINDSOR A           | 1.1           | -0.1                   | 16.1    | -12.4   | 43.6          | 218                  | 106.4                    | 148                       | 0                                   | 13                                     | *                       | *                           | 523.1                  |



## MARCH 1992

| STATION             | Temperature C |                        |         |         | Snowfall (cm) | % of Normal Snowfall | Total Precipitation (mm) | % of Normal Precipitation | Snow on ground at end of month (cm) | No. of days with Precip 1.0 mm or more | Bright Sunshine (hours) | % of Normal Bright Sunshine | Degree Days below 18 C |
|---------------------|---------------|------------------------|---------|---------|---------------|----------------------|--------------------------|---------------------------|-------------------------------------|--|-------------------------|-----------------------------|------------------------|
|                     | Mean          | Difference from Normal | Maximum | Minimum |               |                      |                          |                           |                                     |  |                         |                             |                        |
| QUEBEC              |               |                        |         |         |               |                      |                          |                           |                                     |  |                         |                             |                        |
| BAGOTVILLE A        | -9.7          | -3.2                   | 8.1     | -31.6   | 43.7          | 91                   | 49.6                     | 96                        | 48                                  | 8                                      | *                       | *                           | 858.3                  |
| BAIE COMEAU A       | -8.6          | -1.9                   | 4.4     | -31.9   | 12.4          | 21                   | 95.4                     | 123                       | 30                                  | 9                                      | 183                     | 122                         | 825.2                  |
| BLANC SABLON A      | -8.4          | -2.6                   | 6.6     | -25.2   | 50.8          | 61                   | 75.4                     | 67                        | 0                                   | 14                                     | 88                      | *                           | 819.5                  |
| CHIBOUGAMAU CHAPAIS | -14.7         | *                      | 4.7     | -38.7   | 94.6          | *                    | 93.2                     | *                         | 106                                 | 13                                     | 138                     | 88                          | 1015.2                 |
| GASPE A             | -7.6          | *                      | 9.1     | -28.7   | 13.4          | *                    | 52.3                     | *                         | 0                                   | 5                                      | 164                     | *                           | 795.3                  |
| INUKJUAQ A          | -25.1         | -4.5                   | -10.9   | -35.9   | 8.6           | 96                   | 7.8                      | 87                        | 18                                  | 2                                      | 232                     | 145                         | 1334.8                 |
| KUUJUAQ A           | -21.1         | -3.4                   | -6.2    | -36.4   | 45.8          | 171                  | 45.8                     | 176                       | 34                                  | 10                                     | 160                     | 97                          | 1215.5                 |
| KUUJUAUPIK A        | -22.0         | -4.9                   | -4.8    | -42.8   | 1.8           | 9                    | 17.6                     | 84                        | 34                                  | 6                                      | 257                     | 152                         | 1240.8                 |
| LA GRANDE IV A      | -18.3         | *                      | *       | *       | 39.6          | *                    | 30.8                     | *                         | 37                                  | 9                                      | 172                     | *                           | *                      |
| LA GRANDE RIVIERE A | -18.9         | *                      | -2.5    | -36.8   | 28.0          | *                    | 26.8                     | *                         | 50                                  | 6                                      | 166                     | *                           | 1143.8                 |
| MANIWAKI            | -8.2          | -3.1                   | 8.8     | -27.8   | 47.0          | 139                  | 111.4                    | 217                       | 50                                  | 11                                     | 135                     | 93                          | 811.5                  |
| MONT JOLI A         | -7.3          | -2.3                   | 7.6     | -25.4   | 18.2          | 29                   | 52.8                     | 73                        | 5                                   | 9                                      | 169                     | 130                         | 783.5                  |
| MONTREAL INT'L A    | -5.2          | -2.7                   | 9.6     | -26.9   | 15.8          | 44                   | 73.3                     | 100                       | 0                                   | 9                                      | 165                     | 107                         | 718.7                  |
| MONTREAL MIRABEL I/ | -6.3          | *                      | 7.7     | -25.2   | 15.2          | *                    | 81.4                     | *                         | 10                                  | 9                                      | 204                     | *                           | 754.2                  |
| NATASHQUAN A        | -8.6          | -2.4                   | 4.9     | -27.3   | 20.8          | 36                   | 80.0                     | 99                        | 17                                  | 11                                     | 149                     | 105                         | 816.8                  |
| QUEBEC A            | -6.8          | -2.3                   | 8.8     | -27.6   | 19.2          | 35                   | 101.6                    | 124                       | 41                                  | 9                                      | 148                     | 106                         | 768.5                  |
| ROBERVAL A          | -10.1         | -3.2                   | 5.5     | -29.8   | 42.2          | 72                   | 69.6                     | 114                       | 48                                  | 6                                      | 155                     | *                           | 869.4                  |
| SCHEFFERVILLE A     | -18.6         | -3.5                   | -1.5    | -42.2   | 78.6          | 188                  | 69.8                     | 168                       | 90                                  | 12                                     | 137                     | 84                          | 1134.0                 |
| SEPT-ILES A         | -8.7          | -2.1                   | 4.9     | -29.5   | 7.8           | 11                   | 69.4                     | 84                        | 25                                  | 8                                      | 154                     | 100                         | 827.2                  |
| SHERBROOKE A        | -6.3          | -2.3                   | 11.7    | -30.6   | 36.0          | 68                   | 73.3                     | 92                        | 11                                  | 11                                     | 153                     | *                           | 753.3                  |
| STE AGATHE DES MONT | -7.9          | -2.4                   | 6.7     | -28.0   | 26.4          | 40                   | 82.4                     | 86                        | 76                                  | 12                                     | 158                     | 103                         | 801.4                  |
| ST HUBERT A         | -5.3          | -2.9                   | 9.7     | -24.3   | 14.8          | *                    | 80.1                     | 101                       | 0                                   | 10                                     | 154                     | *                           | 720.8                  |
| VAL D'OR A          | -11.6         | -3.3                   | 7.7     | -32.6   | 75.2          | 158                  | 96.6                     | 164                       | 57                                  | 13                                     | 153                     | 98                          | 917.9                  |
| NEW BRUNSWICK       |               |                        |         |         |               |                      |                          |                           |                                     |  |                         |                             |                        |
| CHARLO A            | -7.5          | -2.0                   | 8.7     | -13.2   | 9.8           | 13                   | 41.2                     | 45                        | 17                                  | 7                                      | 174                     | 118                         | *                      |
| FREDERICTON A       | -4.7          | -2.3                   | 9.6     | -22.9   | 3.2           | 7                    | 67.4                     | 80                        | 2                                   | 5                                      | 200                     | *                           | 703.7                  |
| MONCTON A           | -5.7          | -2.8                   | 9.5     | -24.5   | 13.2          | 20                   | 74.5                     | 67                        | 9                                   | 7                                      | 179                     | 130                         | 735.3                  |
| SAINT JOHN A        | -4.7          | -2.2                   | 8.9     | -23.2   | 7.0           | 14                   | 86.8                     | 76                        | 0                                   | 6                                      | 179                     | 125                         | 701.7                  |

| STATION              | Temperature C |                        |         |         | Snowfall (cm) | % of Normal Snowfall | Total Precipitation (mm) | % of Normal Precipitation | Snow on ground at end of month (cm) | No. of days with Precip 1.0 mm or more | Bright Sunshine (hours) | % of Normal Bright Sunshine | Degree Days below 18 C |
|----------------------|---------------|------------------------|---------|---------|---------------|----------------------|--------------------------|---------------------------|-------------------------------------|--|-------------------------|-----------------------------|------------------------|
|                      | Mean          | Difference from Normal | Maximum | Minimum |               |                      |                          |                           |                                     |  |                         |                             |                        |
| NOVA SCOTIA          |               |                        |         |         |               |                      |                          |                           |                                     |  |                         |                             |                        |
| GREENWOOD A          | -3.2          | -2.3                   | 10.6    | -19.0   | 15.8          | 33                   | 77.1                     | 92                        | 0                                   | 9                                      | *                       | *                           | 655.4                  |
| HALIFAX INT'L A      | -4.1          | -2.5                   | 8.7     | -13.2   | 14.1          | 31                   | 110.5                    | 86                        | 0                                   | 8                                      | *                       | *                           | 766.4                  |
| SABLE ISLAND         | -0.5          | -1.2                   | 8.0     | -11.9   | 47.4          | 166                  | 152.8                    | 131                       | 0                                   | 15                                     | 110                     | 94                          | 573.0                  |
| SHEARWATER A         | -3.1          | -2.3                   | 6.6     | -19.1   | 16.0          | 41                   | 93.6                     | 80                        | 0                                   | 9                                      | 155                     | 105                         | 652.7                  |
| SYDNEY A             | -5.4          | -2.9                   | 7.8     | -19.9   | 66.0          | 103                  | 186.5                    | 142                       | 16                                  | 13                                     | 162                     | 129                         | 725.8                  |
| YARMOUTH A           |               |                        |         |         |               |                      |                          |                           |                                     |  |                         |                             |                        |
| YARMOUTH A           | -1.6          | -1.9                   | 12.3    | -15.7   | 29.6          | 91                   | 90.5                     | 92                        | 0                                   | 10                                     | 152                     | 111                         | 608.2                  |
| PRINCE EDWARD ISLAND |               |                        |         |         |               |                      |                          |                           |                                     |  |                         |                             |                        |
| CHARLOTTETOWN A      | -6.0          | -2.9                   | 7.7     | -22.9   | 21.8          | 35                   | 81.2                     | 85                        | 5                                   | 8                                      | *                       | *                           | 743.2                  |
| NEWFOUNDLAND         |               |                        |         |         |               |                      |                          |                           |                                     |  |                         |                             |                        |
| BONAVISTA            | -3.8          | -1.1                   | 8.6     | -19.3   | 27.8          | 71                   | 138.6                    | 159                       | 3                                   | 16                                     | *                       | *                           | 674.1                  |
| BURGED               | -4.6          | -2.0                   | 5.0     | -18.2   | 60.4          | 126                  | 177.2                    | 117                       | 22                                  | 17                                     | *                       | *                           | 657.7                  |
| CARTWRIGHT           | -9.0          | -0.9                   | 7.8     | -25.1   | 91.0          | 106                  | 136.7                    | 147                       | 200                                 | 12                                     | 93                      | 75                          | 638.4                  |
| CHURCHILL FALLS A    | -14.7         | -1.6                   | 5.1     | -36.9   | 49.4          | 77                   | 65.8                     | 99                        | 78                                  | 11                                     | 140                     | 101                         | 1014.2                 |
| COMFORT COVE         | -4.7          | -1.1                   | 11.0    | -22.9   | 54.2          | 79                   | 82.2                     | 82                        | 6                                   | 14                                     | *                       | *                           | 718.8                  |
| DANIELS HARBOUR      | -7.1          | -2.6                   | 12.5    | -23.0   | 82.0          | 134                  | 121.6                    | 161                       | 12                                  | 19                                     | 84                      | 73                          | 769.8                  |
| DEER LAKE A          | -6.5          | -2.0                   | 11.0    | -27.2   | 93.0          | 172                  | 96.3                     | 121                       | 34                                  | 12                                     | *                       | *                           | 757.1                  |
| GANDER INT'L A       | -4.8          | -1.3                   | 10.3    | -22.3   | 70.8          | 98                   | 112.6                    | 102                       | 2                                   | 13                                     | 114                     | 109                         | 706.2                  |
| GOOSE A              | -10.3         | -1.7                   | 6.2     | -27.8   | 99.4          | 133                  | 105.3                    | 146                       | 44                                  | 16                                     | 116                     | 90                          | 873.6                  |
| MARY'S HARBOUR       | -8.1          | -1.6                   | 7.4     | -37.9   | 53.4          | 71                   | 61.8                     | 68                        | 106                                 | 8                                      | *                       | *                           | 800.9                  |
| PORT AUX BASQUES     | -6.3          | -3.6                   | 5.0     | -22.0   | 88.4          | 172                  | 125.6                    | 120                       | 20                                  | 19                                     | 115                     | *                           | 749.1                  |
| ST ANTHONY           | -7.7          | -1.0                   | 5.0     | -25.0   | 67.6          | 109                  | 82.9                     | 79                        | 48                                  | 14                                     | *                       | *                           | 797.6                  |
| ST JOHN'S A          | -3.3          | -1.0                   | 9.0     | -17.0   | 52.4          | 81                   | 144.0                    | 109                       | 0                                   | 16                                     | 119                     | 126                         | 661.4                  |
| ST LAWRENCE          | -3.6          | -1.8                   | 9.1     | -15.7   | 54.7          | 123                  | 157.2                    | 133                       | 3                                   | 18                                     | *                       | *                           | 670.4                  |
| STEPHENVILLE A       |               |                        |         |         |               |                      |                          |                           |                                     |  |                         |                             |                        |
| WABUSH LAKE A        | -6.5          | -3.7                   | 11.6    | -22.0   | 119.0         | 203                  | 139.4                    | 171                       | 17                                  | 16                                     | 105                     | 100                         | 758.3                  |
|                      | -15.2         | -1.4                   | 4.1     | -38.0   | 59.0          | 99                   | 61.6                     | 108                       | 57                                  | 9                                      | 155                     | 105                         | 1030.0                 |



## AGROCLIMATOLOGICAL STATIONS

MARCH 1992

| STATION          | Temperature C |                        |         |         | Snowfall (cm) | Total Precipitation (mm) | % of Normal Precipitation | Snow on ground at end of month (cm) | No. of days with Precip 1.0 mm or more | Bright Sunshine (hours) | Degree days above 5 C |                |
|------------------|---------------|------------------------|---------|---------|---------------|--------------------------|---------------------------|-------------------------------------|--|-------------------------|-----------------------|----------------|
|                  | Mean          | Difference from Normal | Maximum | Minimum |               |                          |                           |                                     |  |                         | This month            | Since Jan. 1st |
| BRITISH COLUMBIA |               |                        |         |         |               |                          |                           |                                     |  |                         |                       |                |
| AGASSIZ          | 10.9          | 4.8                    | 22.5    | 1.5     | 0.0           | 42.8                     | 29                        | 0                                   | 8                                      | 217                     | 282.8                 | 300.4          |
| SUMMERLAND       | 6.9           | 3.2                    | 18.0    | -3.0    | 0.0           | 6.0                      | 41                        | 0                                   | 2                                      | 216                     | 63.8                  | 81.9           |
| ALBERTA          |               |                        |         |         |               |                          |                           |                                     |  |                         |                       |                |
| BEAVERLODGE      | 2.1           | 8.2                    | 16.0    | -19.5   | 12.5          | 11.8                     | 48                        | 0                                   | 3                                      | 206                     | 19.2                  | 29.5           |
| LACOMBE          | 2.2           | 8.2                    | 16.5    | -11.5   | 1.5           | 1.5                      | 8                         | 0                                   | 1                                      | 192                     | 7.7                   | 7.7            |
| SASKATCHEWAN     |               |                        |         |         |               |                          |                           |                                     |  |                         |                       |                |
| INDIAN HEAD      | -0.1          | 7.8                    | 13.5    | -11.5   | 3.4           | 10.6                     | 49                        | 0                                   | 2                                      | **                      | 1.0                   | 1.0            |
| MELFORT          | -3.1          | 7.1                    | 9.0     | -20.0   | 0.0           | 0.0                      | 0                         | 10                                  | 0                                      | 171                     | 0.0                   | 0.0            |
| REGINA           | 0.0           | 8.2                    | 14.5    | -13.5   | 4.0           | 4.3                      | 27                        | 0                                   | 2                                      | **                      | 0.0                   | 0.0            |
| SCOTT            | -0.7          | 8.2                    | 16.0    | -18.0   | 5.0           | 4.6                      | 24                        | 0                                   | 2                                      | 181                     | 1.3                   | 1.3            |
| SWIFT CURRENT    | 2.0           | 6.7                    | 19.0    | -13.0   | 3.7           | 4.4                      | 29                        | 0                                   | 1                                      | 165                     | 10.3                  | 27.3           |
| MANITOBA         |               |                        |         |         |               |                          |                           |                                     |  |                         |                       |                |
| BRANDON          | -3.8          | 4.6                    | 8.9     | -22.4   | 4.3           | 21.1                     | 90                        | 0                                   | 4                                      | **                      | 0.0                   | 0.0            |
| MORDEN           | -2.1          | 6.9                    | 12.0    | -17.0   | 7.0           | 22.2                     | 93                        | 8                                   | ***                                    | 2                       | **                    | **             |
| GLENLEA          | -0.5          | 6.2                    | 7.0     | -18.0   | 8.0           | 26.4                     | 93                        | 5                                   | 7                                      | 149                     | 0.0                   | 0.0            |
| ONTARIO          |               |                        |         |         |               |                          |                           |                                     |  |                         |                       |                |
| DELHI            | -0.4          | -0.1                   | 16.0    | -16.0   | 18.0          | 55.8                     | 66                        | 0                                   | 12                                     | **                      | 7.7                   | 7.7            |
| ELORA            | -2.4          | 0.3                    | 11.5    | -18.0   | 4.4           | 38.1                     | 51                        | 0                                   | 8                                      | **                      | 1.4                   | 1.4            |
| GUELPH           | -4.2          | -2.3                   | 14.5    | -18.0   | 13.4          | 67.0                     | 107                       | 0                                   | 9                                      | 131                     | 3.9                   | 3.9            |
| HARROW           | 1.0           | -0.2                   | 14.5    | -14.0   | 30.3          | 57.2                     | 77                        | 0                                   | 14                                     | 125                     | 13.9                  | 13.9           |
| KAPUSKASING      | -11.9         | -2.3                   | 8.0     | -31.0   | 17.1          | 22.2                     | 41                        | 57                                  | 7                                      | 162                     | 0.0                   | 0.0            |
| OTTAWA           | -5.9          | -3.0                   | 7.9     | -23.5   | 32.8          | 85.6                     | 144                       | 12                                  | 9                                      | 154                     | 0.0                   | 0.0            |
| SMITHFIELD       | -2.6          | -1.2                   | 11.0    | -19.3   | 58.4          | 113.1                    | 133                       | 0                                   | 12                                     | **                      | 4.0                   | 4.0            |

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| STATION              | Temperature C |                        |         |         | Snowfall (cm) | Total Precipitation (mm) | % of Normal Precipitation | Snow on ground at end of month (cm) | No. of days with Precip 1.0 mm or more | Bright Sunshine (hours) | Degree days above 5 C |                |
|----------------------|---------------|------------------------|---------|---------|---------------|--------------------------|---------------------------|-------------------------------------|--|-------------------------|-----------------------|----------------|
|                      | Mean          | Difference from Normal | Maximum | Minimum |               |                          |                           |                                     |  |                         | This month            | Since Jan. 1st |
| QUEBEC               |               |                        |         |         |               |                          |                           |                                     |  |                         |                       |                |
| LA POCAIERE          | -6.4          | -2.0                   | 10.0    | -24.5   | 29.4          | 71.9                     | 107                       | 60                                  | 8                                      | 165                     | 0.8                   | 0.8            |
| L'ASSOMPTION         | -5.4          | -1.7                   | 7.5     | -29.5   | 12.9          | 71.2                     | 102                       | 10                                  | ***                                    | *                       | **                    | **             |
| NORMANDIN            | -12.1         | -3.4                   | 5.0     | -39.0   | 30.6          | 65.8                     | 110                       | 40                                  | 9                                      | 162                     | 0.0                   | 0.0            |
| NEW BRUNSWICK        |               |                        |         |         |               |                          |                           |                                     |  |                         |                       |                |
| FREDERICTON          | -4.4          | -1.9                   | 11.0    | -18.0   | 3.4           | 71.4                     | 88                        | 0                                   | 7                                      | 200                     | 3.0                   | 3.0            |
| NOVA SCOTIA          |               |                        |         |         |               |                          |                           |                                     |  |                         |                       |                |
| KENTVILLE            | -3.1          | -2.1                   | 11.5    | -19.5   | 14.1          | 97.7                     | 99                        | 0                                   | 10                                     | 155                     | 4.8                   | 5.6            |
| NAPPAN               | -5.0          | -2.7                   | 12.0    | -23.0   | 11.0          | 65.0                     | 72                        | 10                                  | 12                                     | 163                     | 2.8                   | 3.3            |
| PRINCE EDWARD ISLAND |               |                        |         |         |               |                          |                           |                                     |  |                         |                       |                |
| CHARLOTTETOWN        | -5.4          | -2.7                   | 9.0     | -23.0   | 8.8           | 74.2                     | 88                        | 0                                   | 8                                      | **                      | 5.0                   | 5.0            |
| NEWFOUNDLAND         |               |                        |         |         |               |                          |                           |                                     |  |                         |                       |                |
| ST. JOHN'S WEST      | -2.6          | -0.6                   | 9.0     | -17.0   | 56.2          | 178.0                    | 118                       | 17                                  | ***                                    | 1                       | **                    | **             |

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with the mainland. Marine ferry traffic between Cape Breton and Newfoundland was also disrupted. Following this storm was another disturbance that dumped an additional 18 cm of snow on Sydney, on the 23rd. The accumulation from these two storms accounted for most of Sydney's total precipitation for the month.

### Newfoundland and Labrador

Stormy, cold weather prevailed over Newfoundland during the first half of March followed by a mild spell at the end of the month. Mean temperatures were 2°C to 3°C below normal in the western regions (Stephenville -6.5°C, normal -2.8°C), while a degree colder than average in the east.

Precipitation was frequent, with a lot of snow being recorded in western regions (Deer Lake 93 cm, normal 54 cm). On the 9th, a system brought about 10 hours of freezing rain to the southern regions, re-

sulting in residents on the Burin Peninsula to be without power for 48 hours, as numerous utility poles were damaged by the storm.

Another major disturbance occurred on the 22nd, just as winter was officially ending. The storm brought snow, rain and freezing rain combined with very strong winds across the island. Wind gusts were up to 132 km/h in Burgeo area, interfering with the ferry service to Nova Scotia. During the last week of March there were maximum temperature readings of 10°C and three days of rain in excess of 100 mm, causing significant snow melt. Severe damage to roadbeds and numerous flooded basements were reported in the St John's area.

Meanwhile heavy packed ice caused problems for the marine transportation sector; however, significant ice break-up occurred later in the month, opening up the shipping lanes. Sunshine hours were close to normal across the region.

In Labrador, snowfall amounts were normal but the mean temperatures were slightly colder than usual for this time of year. A vigorous system, at the beginning of the month, produced blizzard-like conditions in the eastern regions. The community of Black Tickle was without electrical power for three days as a result of this storm. In general, mean temperatures were 1°C to 2°C below normal (Goose Bay -10.3°C, normal -8.6°C).

Snowfall occurred frequently throughout the month, especially in northern regions. Main reported a total of 176.0 cm, almost twice the normal. At western locations, monthly snowfall was near 55 cm, very close to normal. At the end of the month, Labrador reported their snow cover at 60 cm in western regions and nearly 200 cm at some eastern locations.

Sunshine hours were near 150 hours in the west, close to normal, while eastern locations received near 100 hours, a little below normal.

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