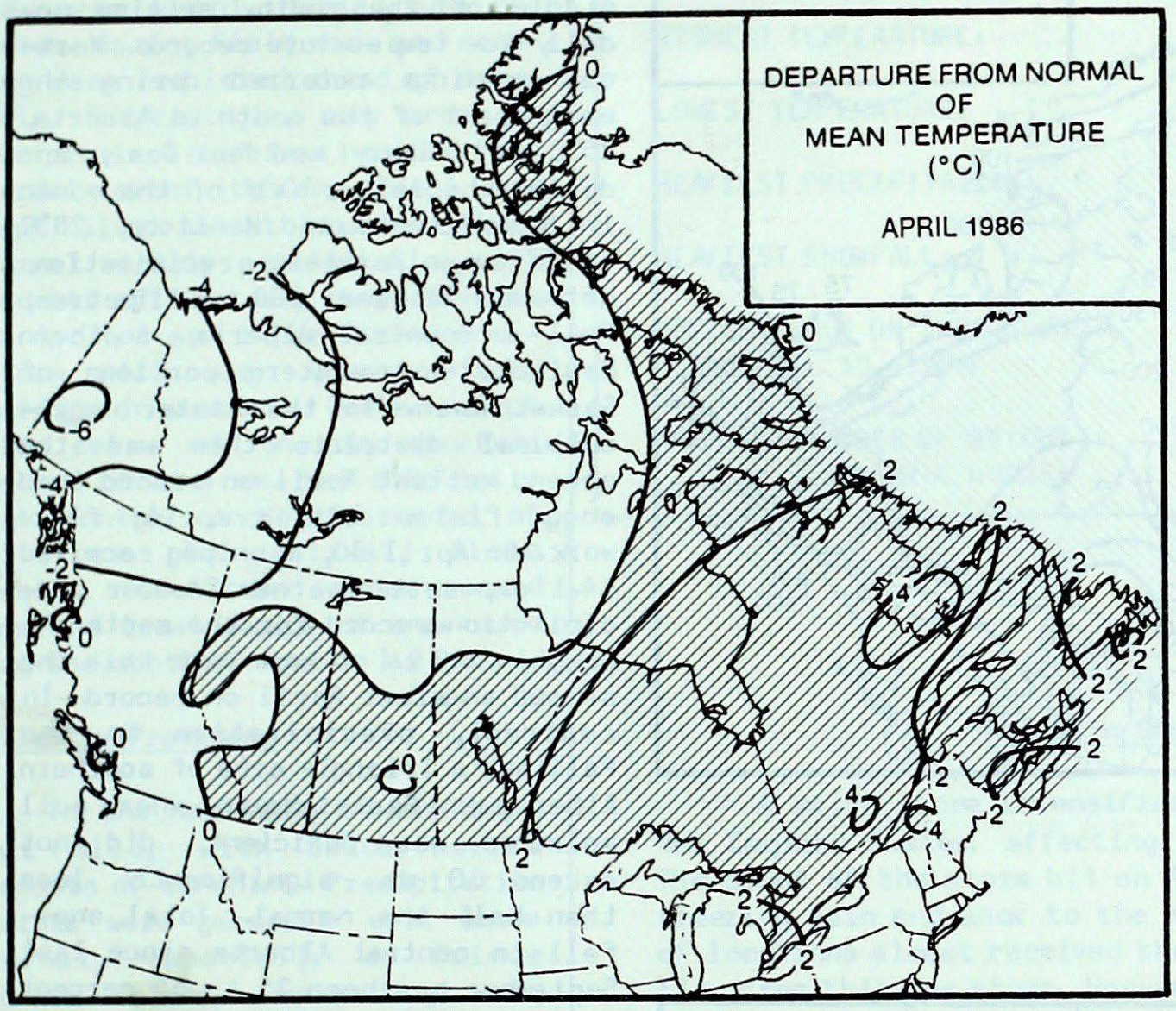
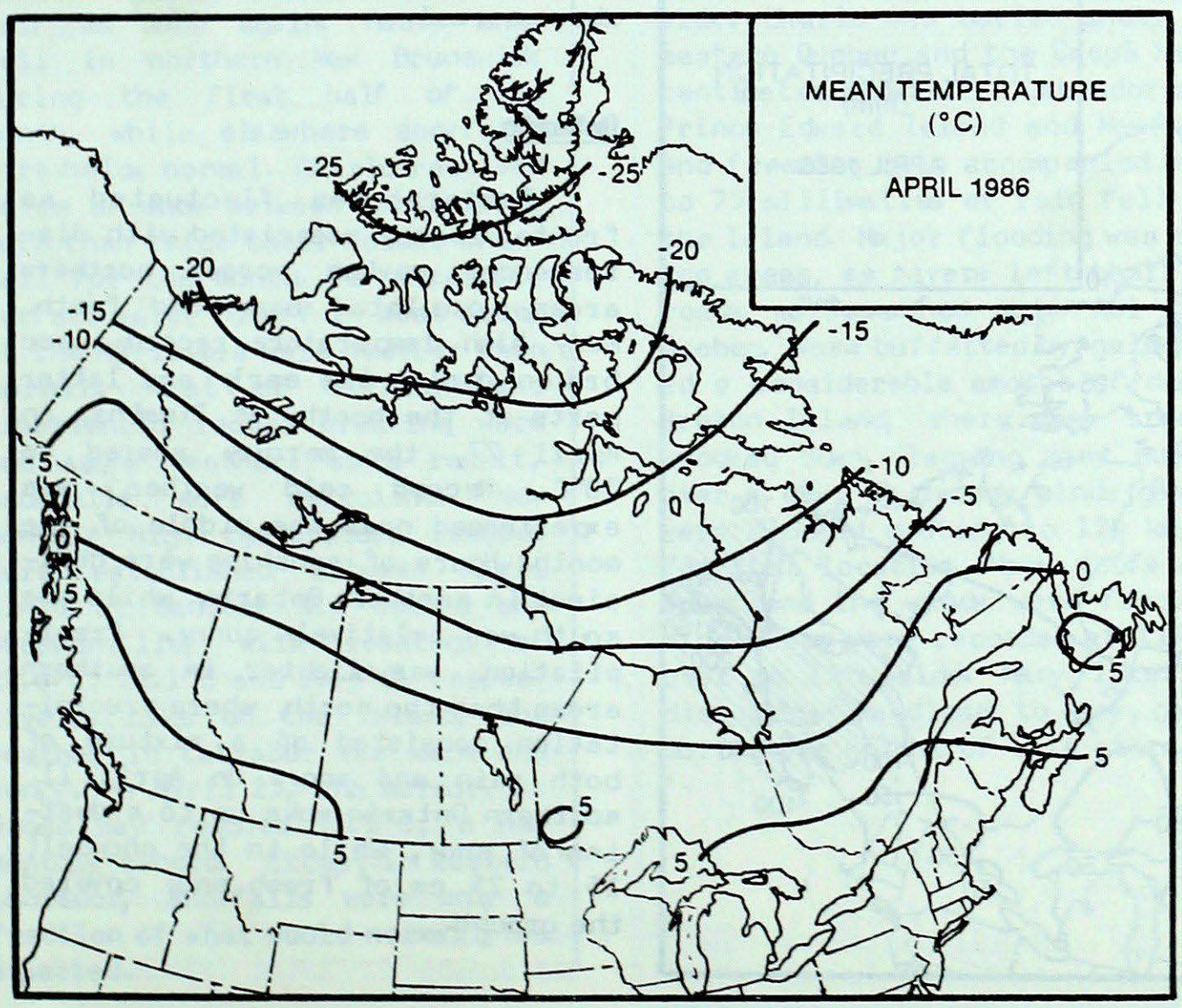
Environment Canada | Environnement Canada

# Climatic Perspectives

Monthly Supplement

Vol.8 April, 1986




## ACROSS THE COUNTRY

### Yukon and Northwest Territories

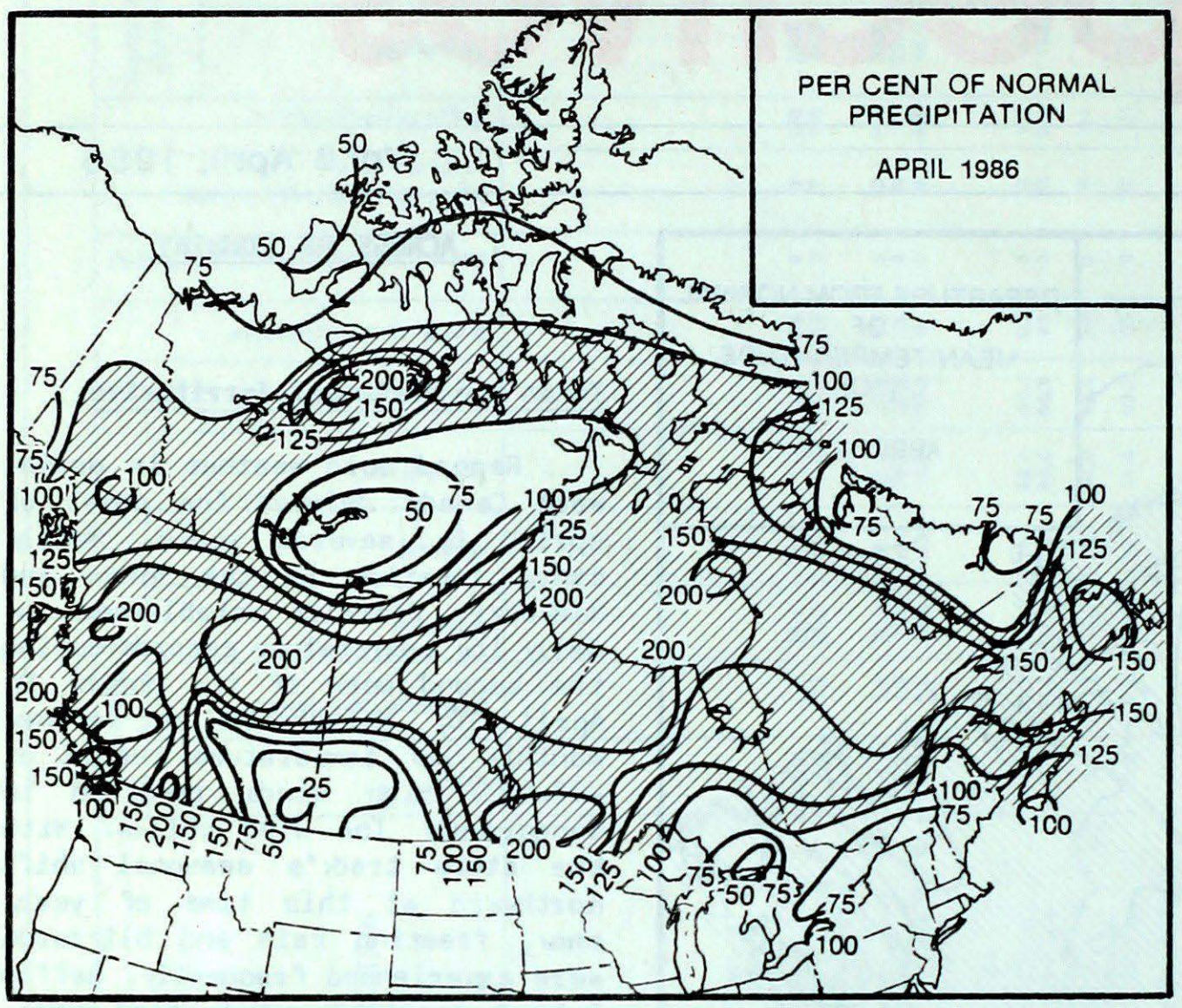
Record cold weather in northwest Canada delayed the onset of spring by several weeks. Nearly every location in the Yukon and Mackenzie District established new daily low temperature records during the second week of the month. On April 10, Whitehorse set a new monthly low temperature record of -29.4°C. High winds resulted in dangerously low wind chills. With the storm track's seasonal shift northward at this time of year, snow, freezing rain and blizzards were experienced frequently. Baffin Island received substantial snowfalls, while cold weather in the Yukon resulted in a heavier than normal snow pack. During the latter part of the month, temperatures in the Yukon and the southern portions of the Territories climbed to the double digits, gradually depleting the remaining snow cover.

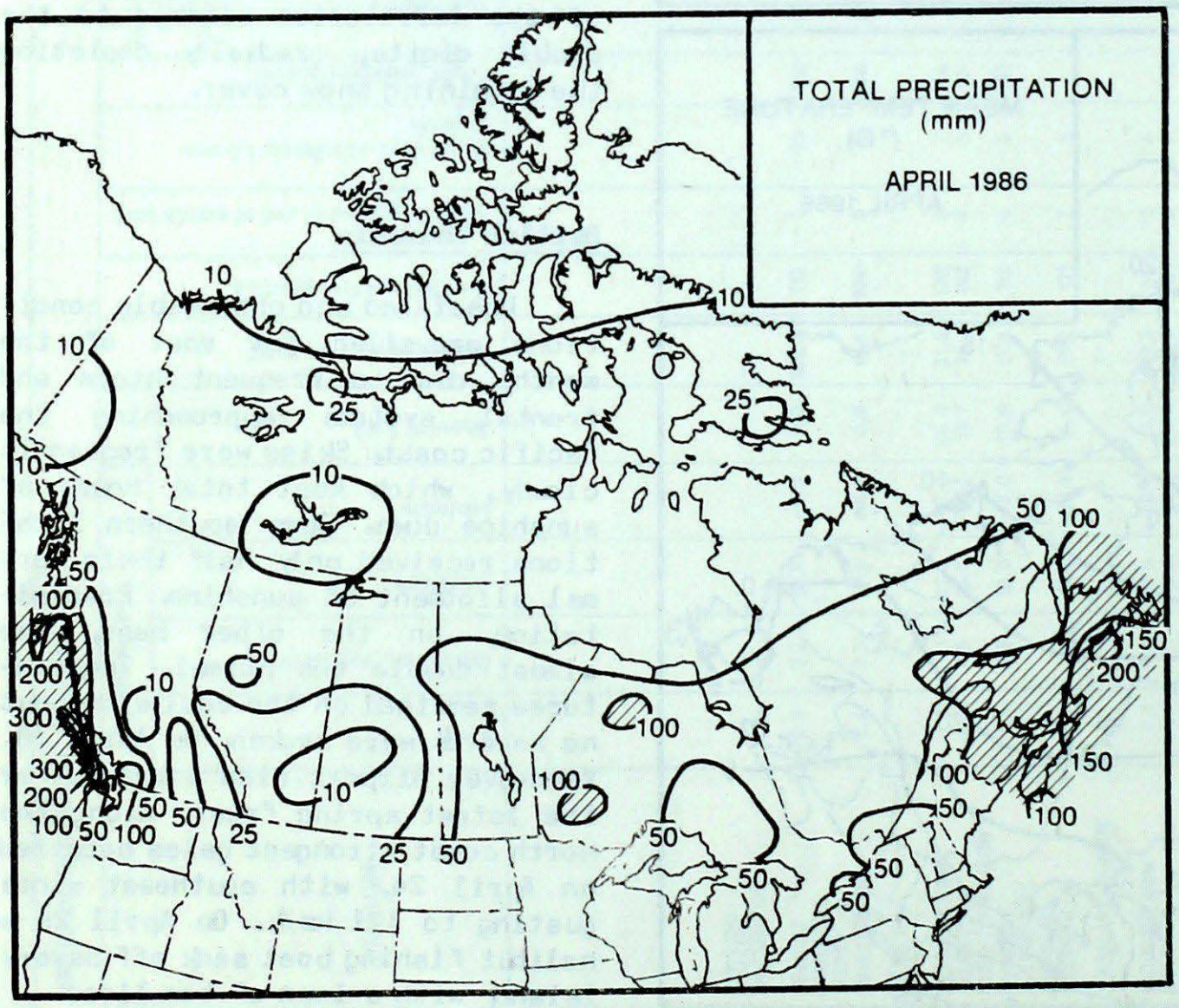
### British Columbia

Unsettled and changeable conditions prevailed for most of the month, due to frequent storm and frontal systems approaching the Pacific coast. Skies were frequently cloudy, which kept total hours of sunshine down. Some southern locations received only half their normal allotment of sunshine. Precipitation, on the other hand, was almost double the normal. Temperatures remained on the cool side, but no records were broken. On April 30, Vancouver Airport tied a record for the latest spring frost. Along the north coast strongest gales occurred on April 24, with southeast winds gusting to 121 km/h. On April 26 a halibut fishing boat sank off Savary Island, with a loss of ten lives.

Canada

# PRECIPITATION




**The Prairies**

Although mean temperatures for the month were close to normal there were significant fluctuations from one week to the next. The lowest readings occurred just before the middle of the month, setting new daily low temperature records. Warmest readings occurred during the early part of the month in Alberta, 25°C at Calgary and Red Deer, and during the latter half of the month in Saskatchewan and Manitoba, 28°C at Estevan. Heaviest precipitation, between 50 and 100 millimetres, fell in central Alberta, southern Manitoba and eastern portions of Saskatchewan. In the eastern agricultural districts this was the second wettest April on record, and soggy fields delayed spring field work. On April 30, Winnipeg received 44.1 mm, setting a new 24-hour precipitation record for the month. At Dauphin, 42 cm of snow made this the second snowiest April on record. In contrast, precipitation in the Palliser's Triangle area of southern Alberta and Saskatchewan, where soil moisture was deficient, did not exceed 10 mm, significantly less than half the normal. Total snowfall in central Alberta since last September has been 25 to 35 percent above normal.

**Ontario**

Temperatures fluctuated as frontal zones, associated with disturbances moving across northern areas, osculated back and forth. Many high temperature records were brdken during the early and latter parts of the month. At Timmins, on April 27, the mercury soared to 30°C. Record cold weather, was experienced near the middle of the month. Hours of sunshine were deficient in northern Ontario, while the south was relatively sunny. Precipitation, was lighter in southern areas than the north, where precipitation consisted of a mixture of both rain and snow. On April 11, southern Ontario woke up to a dusting of snow, while in the snowbelt 15 to 25 cm of fresh snow covered the ground.

# EXTREMES

**Québec**

Except for the second week, the month was exceptionally sunny and warm. Hours of sunshine across the southern third of the province totalled 15 to 30 percent above normal. Nine locations established new mean monthly temperature records. Spring field work and seeding were completed ahead of schedule. Surprisingly, many areas of the province received heavier than normal precipitation. Gaspé and Sept Iles almost doubled their normal monthly precipitation, 159 and 141 millimetres, respectively. On April 9 and 10, a fierce snowstorm with very strong winds, paralyzed southern Quebec. Sept Iles set a new one day snowfall record of 44.4 cm. Val d'Or set a new monthly snowfall record of 65.2 cm. In contrast, Blanc Sablon, established a new record for the least amount of snow during the month of April, 3.8 cm.

**Atlantic Provinces**

In the Maritimes it was damp, but mild, with below normal amounts of sunshine. Precipitation totals were generally well above normal, especially on Prince Edward Island, where they were half as much again. Heavy snow fell in northern New Brunswick during the first half of the month, while elsewhere snowfalls were below normal. Charlo received 86 cm of snow between April 7-12, more than twice their normal snowfall for the month. As a result, surface water runoff in most areas of the Maritimes were heavier than normal. Most of Newfoundland experienced record breaking warm and sunny weather; as a result, snowfalls were deficient. New monthly high temperature records were established between April 23-26 at Gander, St. John's and Stephenville, with readings of 22.6°C, 24.1°C and 23.8°C, respectively. Like on the Island, the weather in Labrador was warm and sunny. On April 25, the mercury at Goose Bay reached 21.2°C, a new monthly record. Except in western Labrador, snowfalls were only a fraction of what would normally be expected.

**CLIMATIC EXTREMES IN CANADA - APRIL 1986**

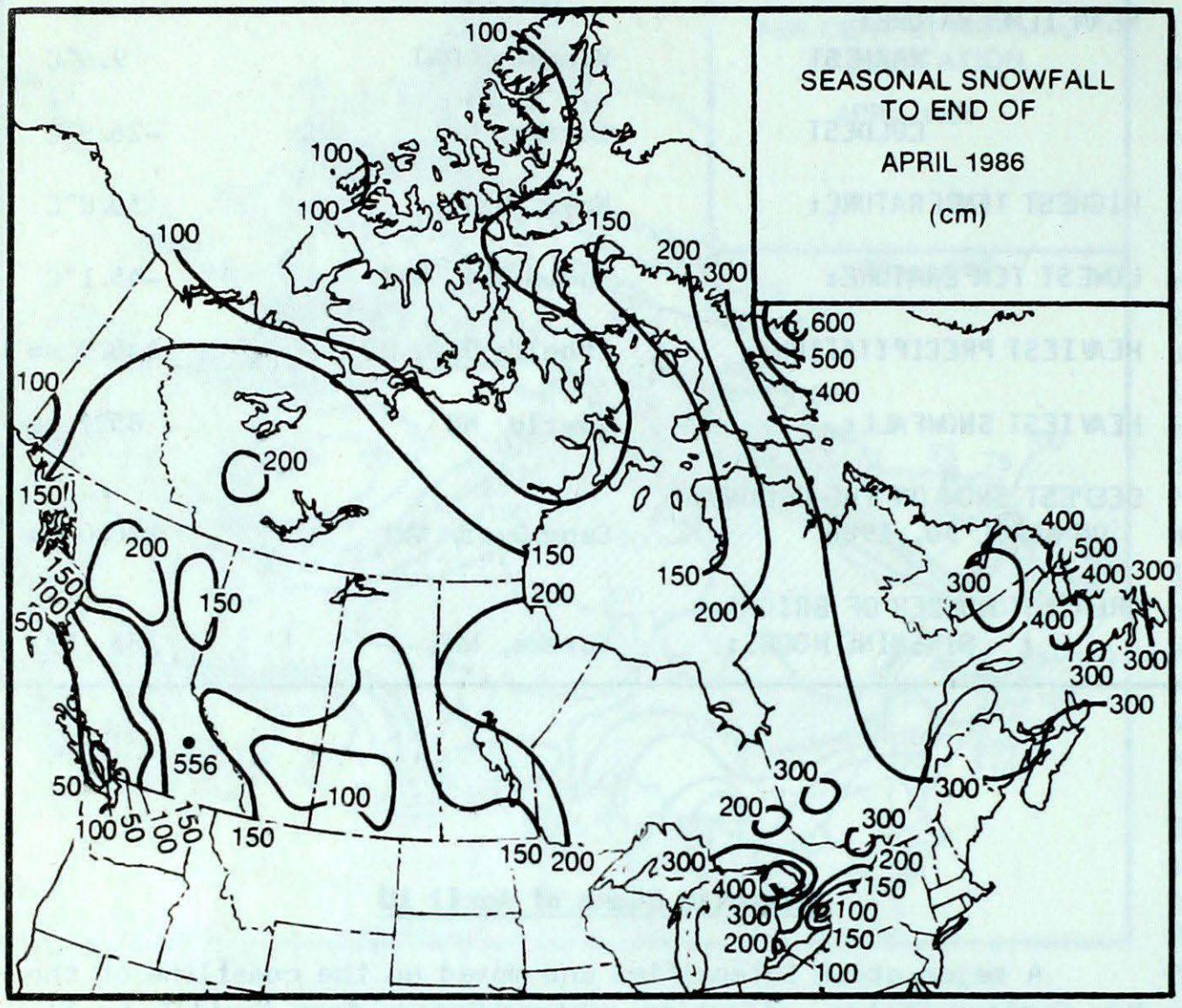
| | | |
|---|---|---|
| MEAN TEMPERATURE: | | |
| WARMEST | Windsor, ONT | 9.6°C |
| COLDEST | Eureka, NWT | -26.9°C |
| HIGHEST TEMPERATURE: | Wawa, ONT | 30.0°C |
| LOWEST TEMPERATURE: | Mould Bay, NWT | -45.1°C |
| HEAVIEST PRECIPITATION: | Ethelda Bay, BC | 448.9 mm |
| HEAVIEST SNOWFALL: | Charlo, NB | 85.7 cm |
| DEEPEST SNOW ON THE GROUND ON APRIL 30, 1986: | Cape Dyer, NWT | 130.0 cm |
| GREATEST NUMBER OF BRIGHT SUNSHINE HOURS: | Eureka, NWT | 386 hrs |

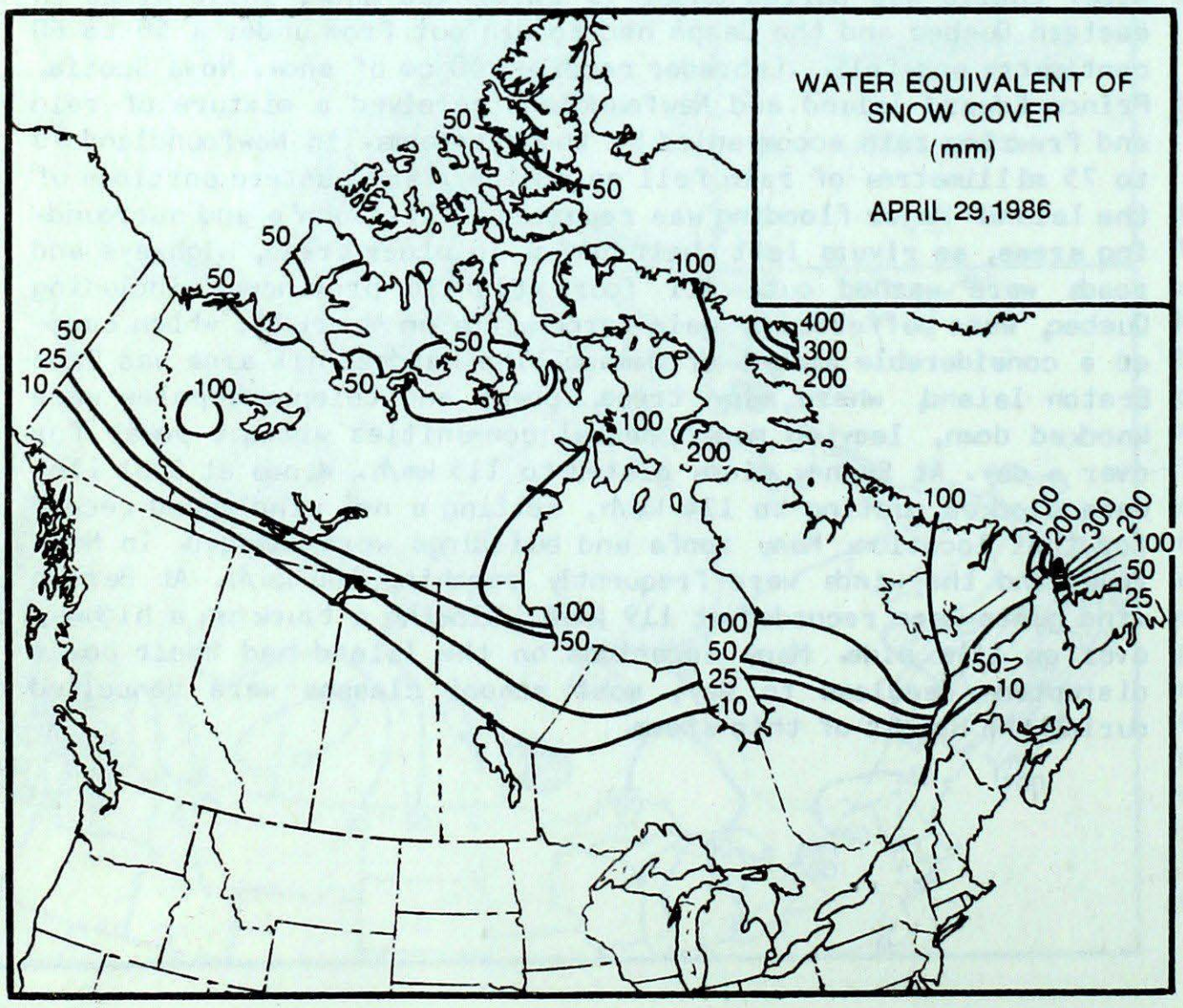
**Atlantic Storm of April 10**

A major storm intensified and moved up the coastline of the New England States, affecting eastern Canada from April 9 to 11. The brunt of the storm hit on April 10, bringing a mixture of rain, freezing rain and snow to the Maritimes and Newfoundland. A number of locations almost received their full monthly quota of precipitation from this one storm. Heaviest snow fell in northern New Brunswick. Charlo was buried under 75 cm of wet snow, while areas in eastern Quebec and the Gaspé had to dig out from under a 50 to 60 centimetre snowfall. Labrador received 40 cm of snow. Nova Scotia, Prince Edward Island and Newfoundland received a mixture of rain and freezing rain accompanied by thunderstorms. In Newfoundland 70 to 75 millimetres of rain fell on southern and eastern portions of the Island. Major flooding was reported in St. John's and surrounding areas, as rivers left their banks. In other areas, highways and roads were washed out. All four Atlantic provinces, including Quebec, were buffetted by gale-force winds on April 10, which caused a considerable amount of damage. The hardest hit area was Cape Breton Island, where many trees, power and telephone poles were knocked down, leaving many coastal communities without power for over a day. At Sydney winds gusted to 115 km/h. Winds at Sept Iles were clocked gusting to 124 km/h, setting a new wind speed record for that location. Many roofs and buildings were damaged. In Newfoundland the winds were frequently reaching 100 km/h. At Bergeo wind gusts were recorded at 119 km/h, blowing a truck on a highway over on it's side. Many locations on the Island had their power disrupted. Needless to say, most school classes were cancelled during the height of this storm.

# SNOWFALL

## SNOWFALL




## SEASONAL SNOWFALL TOTALS (CM)

### TO END OF APRIL

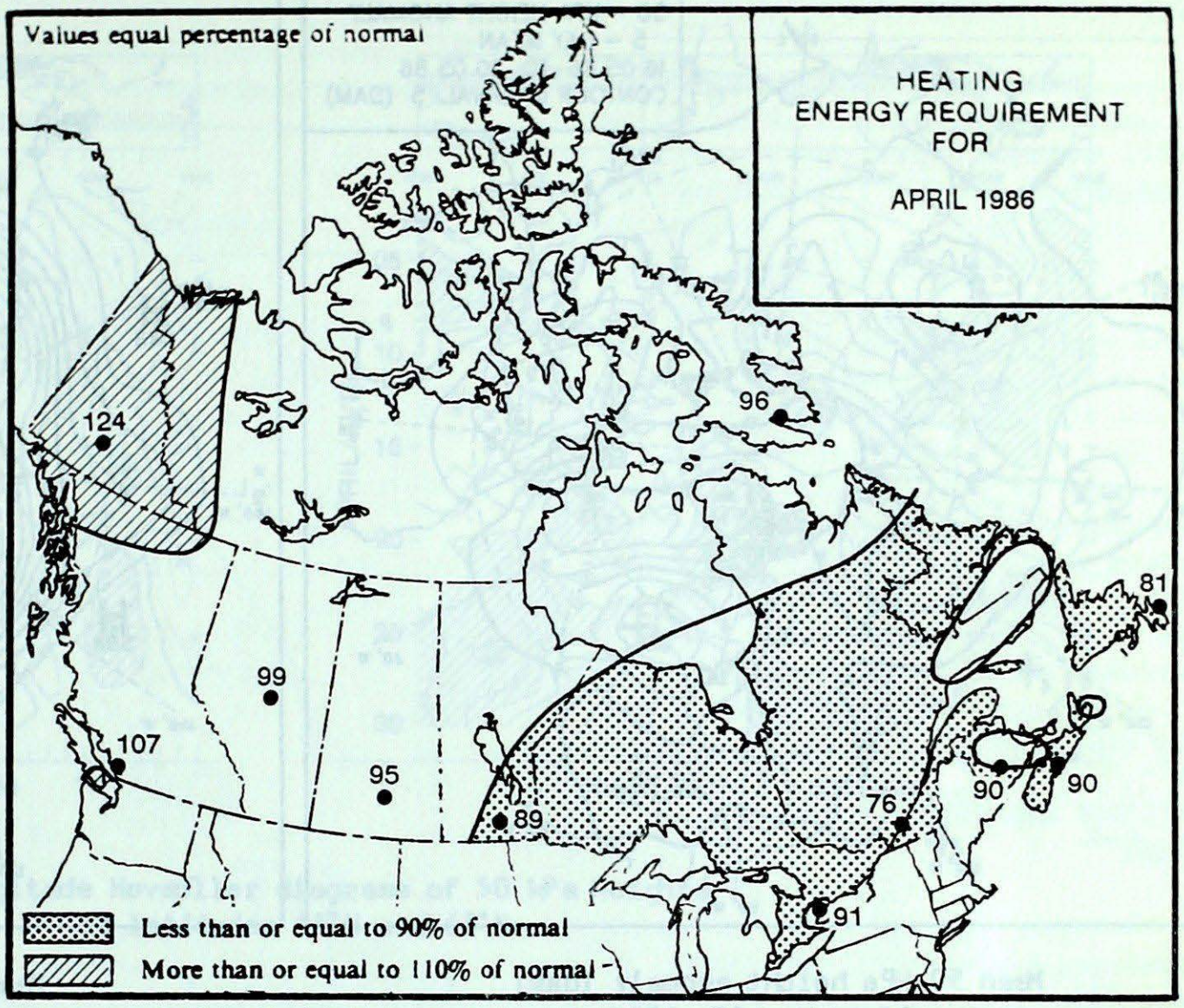
| | 1986 | 1985 | NORMAL |
|---|---|---|---|
| **YUKON TERRITORY** | | | |
| Whitehorse | 177.8 | 190.5 | 132.8 |
| **NORTHWEST TERRITORIES** | | | |
| Cape Dyer | 666.6 | 434.0 | 526.8 |
| Inuvik | 121.7 | 136.1 | 161.9 |
| Yellowknife | 173.9 | 176.8 | 131.5 |
| **BRITISH COLUMBIA** | | | |
| Kamloops | 85.3 | 115.3 | 91.5 |
| Port Hardy | 27.6 | 52.2 | 72.1 |
| Prince George | 161.5 | 216.2 | 239.5 |
| Vancouver | 43.8 | 66.1 | 60.4 |
| Victoria | 100.9 | 74.0 | 49.9 |
| **ALBERTA** | | | |
| Calgary | 91.2 | 114.3 | 142.2 |
| Edmonton Namao | 130.8 | 149.2 | 128.6 |
| Grande Prairie | 166.0 | 141.5 | 176.2 |
| **SASKATCHEWAN** | | | |
| Estevan | 105.6 | 125.4 | 114.2 |
| Regina | 101.1 | 180.1 | 118.5 |
| Saskatoon | 92.7 | 134.3 | 111.1 |
| **MANITOBA** | | | |
| Brandon | 155.4 | 83.9 | 114.8 |
| Churchill | 241.9 | 180.9 | 172.5 |
| The Pas | 170.2 | 152.3 | 164.0 |
| Winnipeg | 124.2 | 97.8 | 123.0 |
| **ONTARIO** | | | |
| Kapuskasing | 262.7 | 338.0 | 309.7 |
| London | 224.5 | * | 208.5 |
| Ottawa | 179.0 | 236.5 | 226.1 |
| Sudbury | 241.6 | 325.4 | 245.0 |
| Thunder Bay | 222.9 | 196.0 | 208.8 |
| Toronto | 88.6 | 151.6 | 131.1 |
| Windsor | 170.3 | 151.4 | 117.4 |
| **QUÉBEC** | | | |
| Baie Comeau | 412.0 | 300.8 | 368.3 |
| Montréal | 203.2 | 236.1 | 233.4 |
| Quebec | 321.2 | 295.5 | 342.5 |
| Sept-Iles | 376.7 | 281.1 | 420.9 |
| Sherbrooke | 232.1 | 321.0 | 290.8 |
| Val-d'Or | 331.6 | 323.9 | 306.6 |
| **NEW BRUNSWICK** | | | |
| Charlo | 338.1 | 258.6 | 411.4 |
| Fredericton | 303.4 | 168.1 | 289.3 |
| Moncton | 360.1 | 227.2 | 339.0 |
| **NOVA SCOTIA** | | | |
| Shearwater | 195.2 | 206.6 | 196.8 |
| Sydney | 342.4 | 267.5 | 312.6 |
| Yarmouth | 200.7 | * | 207.4 |
| **PRINCE EDWARD ISLAND** | | | |
| Charlottetown | 295.1 | 241.3 | 328.5 |
| **NEWFOUNDLAND** | | | |
| Gander | 350.1 | 385.6 | 389.0 |
| St. John's | 291.4 | 298.3 | 346.8 |

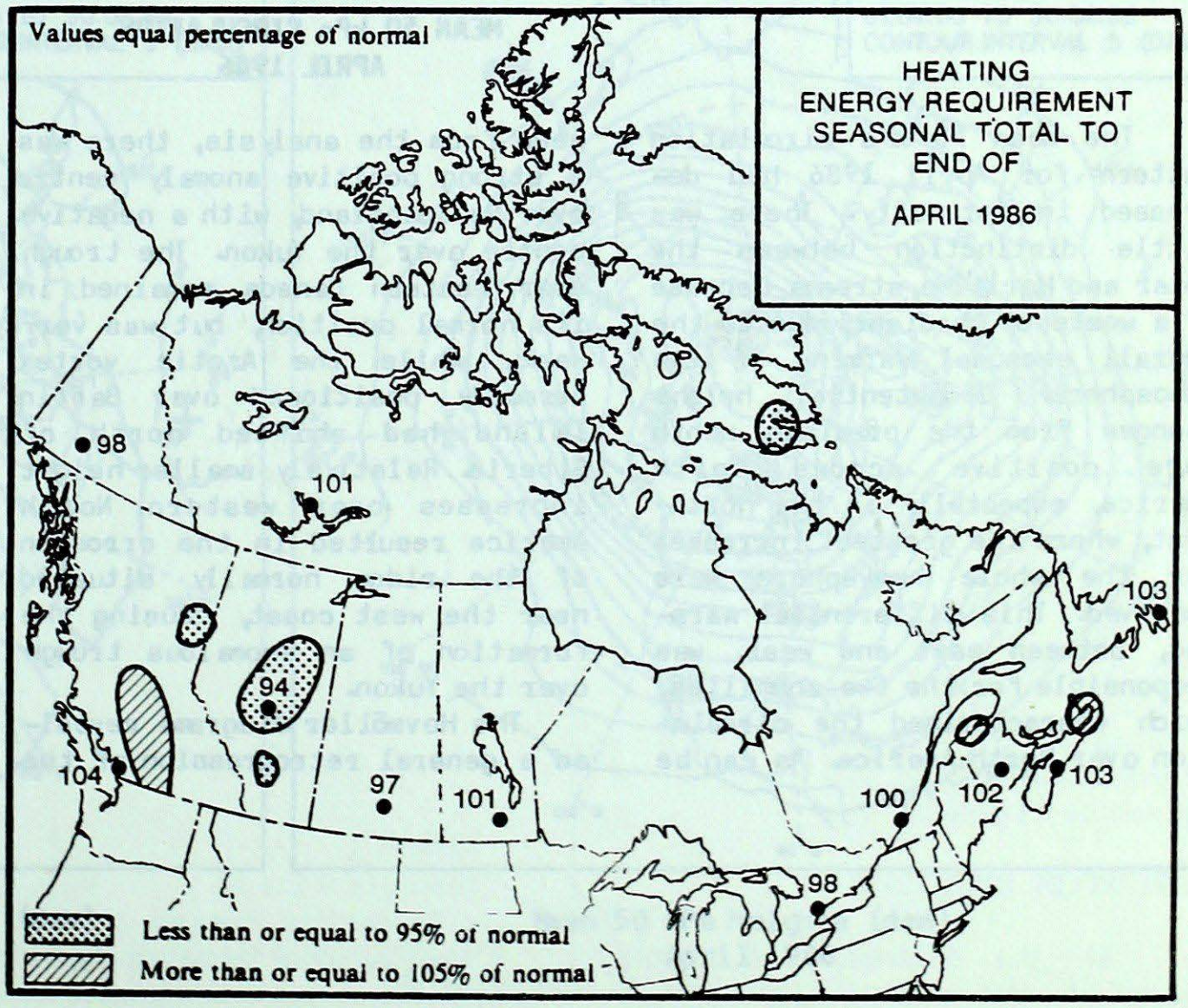
## SEASONAL TOTAL OF HEATING

DEGREE-DAYS TO END OF APRIL

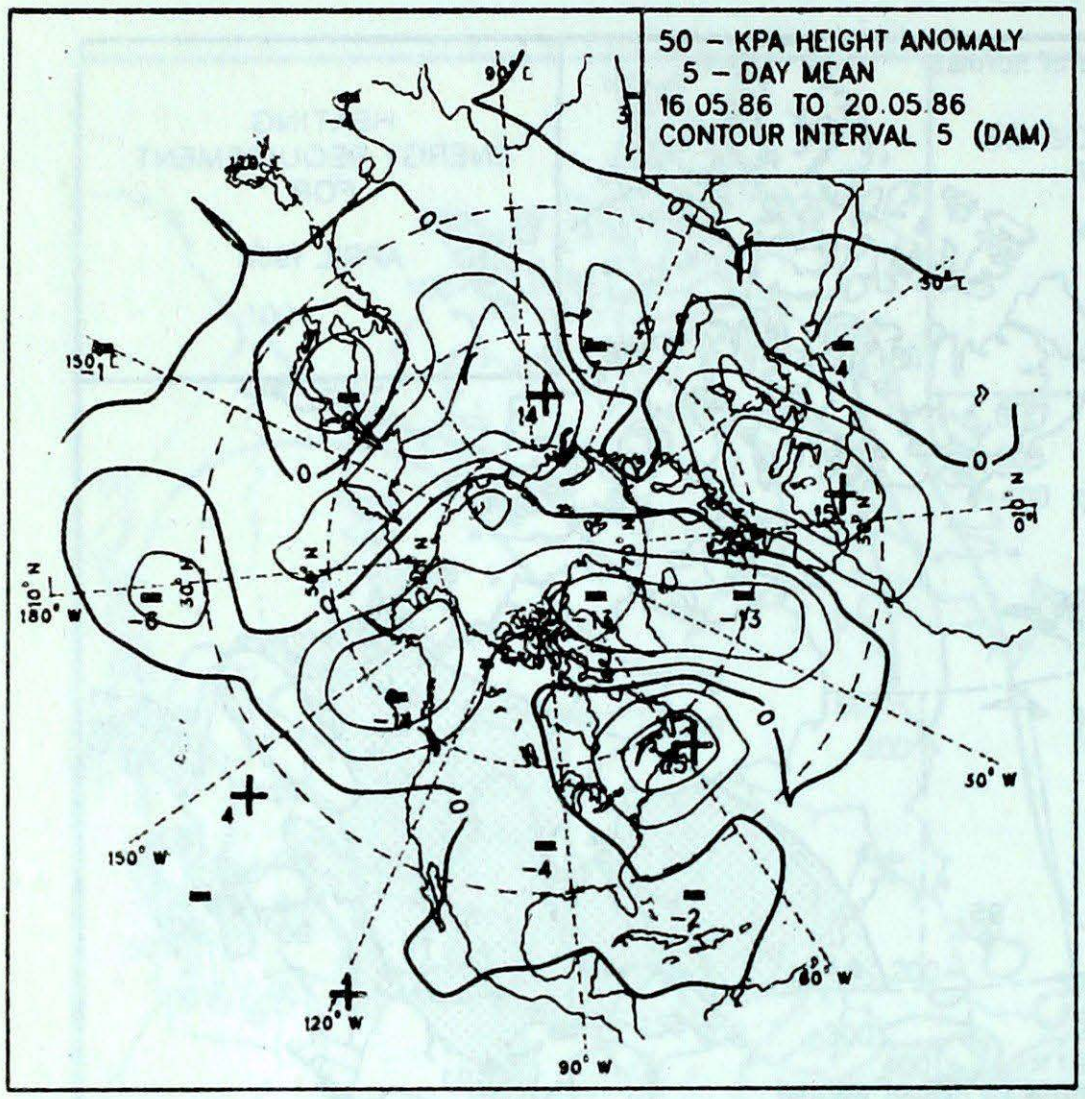
| | 1986 | 1985 | NORMAL |
|---|---|---|---|
| **BRITISH COLUMBIA** | | | |
| Kamloops | 3753 | 3815 | 3588 |
| Penticton | 3609 | 3663 | 3316 |
| Prince George | 5021 | 5100 | 4993 |
| Vancouver | 2870 | 2972 | 2761 |
| Victoria | 2894 | 3027 | 2783 |
| **YUKON TERRITORY** | | | |
| Whitehorse | 6293 | 6293 | 6402 |
| **NORTHWEST TERRITORIES** | | | |
| Frobisher Bay | 8189 | 8792 | 8820 |
| Inuvik | 9399 | 9436 | 9397 |
| Yellowknife | 8103 | 8228 | 8001 |
| **ALBERTA** | | | |
| Calgary | 4710 | 4959 | 4957 |
| Edmonton Mun | 4975 | 5261 | 5280 |
| Grande Prairie | 5535 | 5876 | 5783 |
| **SASKATCHEWAN** | | | |
| Estevan | 5037 | 5162 | 5247 |
| Regina | 5421 | 5629 | 5598 |
| Saskatoon | 5540 | 5838 | 5755 |
| **MANITOBA** | | | |
| Brandon | 5890 | 6067 | 5711 |
| Churchill | 8243 | 8207 | 8274 |
| The Pas | 6284 | 6354 | 6416 |
| Winnipeg | 5662 | 5496 | 5593 |
| **ONTARIO** | | | |
| Kapuskasing | 5951 | 5881 | 5903 |
| London | 3744 | 3661 | 3833 |
| Ottawa | 4304 | 4301 | 4443 |
| Sudbury | 5013 | 4971 | 5108 |
| Thunder Bay | 5349 | 5148 | 5314 |
| Toronto | 3783 | 3729 | 3841 |
| Windsor | 3371 | 3267 | 3421 |
| **QUÉBEC** | | | |
| Baie Comeau | 5576 | 5487 | 5456 |
| Montréal | 4238 | 4286 | 4253 |
| Quebec | 4811 | 4789 | 4776 |
| Sept-Iles | 5720 | 5632 | 5564 |
| Sherbrooke | 4551 | 4767 | 4901 |
| Val-d'Or | 5768 | 5775 | 5720 |
| **NEW BRUNSWICK** | | | |
| Charlo | * | 4978 | 5063 |
| Fredericton | 4523 | 4393 | 4394 |
| Moncton | 4499 | 4381 | 4344 |
| **NOVA SCOTIA** | | | |
| Halifax | 3830 | 3852 | 3713 |
| Sydney | 4217 | 4227 | 3981 |
| Yarmouth | 3594 | 3586 | 3614 |
| **PRINCE EDWARD ISLAND** | | | |
| Charlottetown | 4362 | 4411 | 4209 |
| **NEWFOUNDLAND** | | | |
| Gander | 4666 | 4788 | 4486 |
| St. John's | 4311 | 4360 | 4193 |

## ENERGY REQUIREMENTS

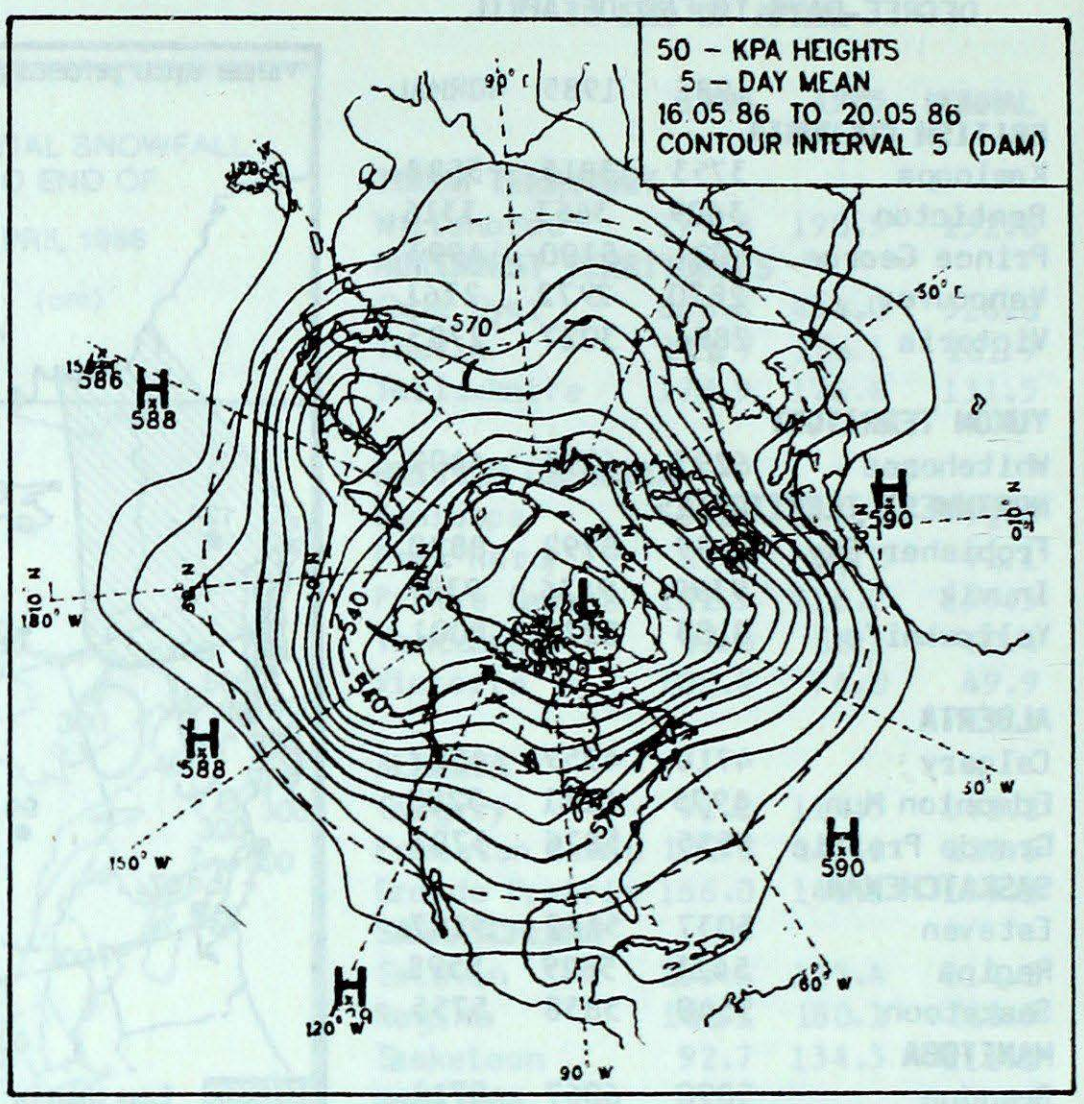


## ATMOSPHERIC CIRCULATION




Mean 50 kPa height anomaly (dam)
May 16 to May 20, 1986



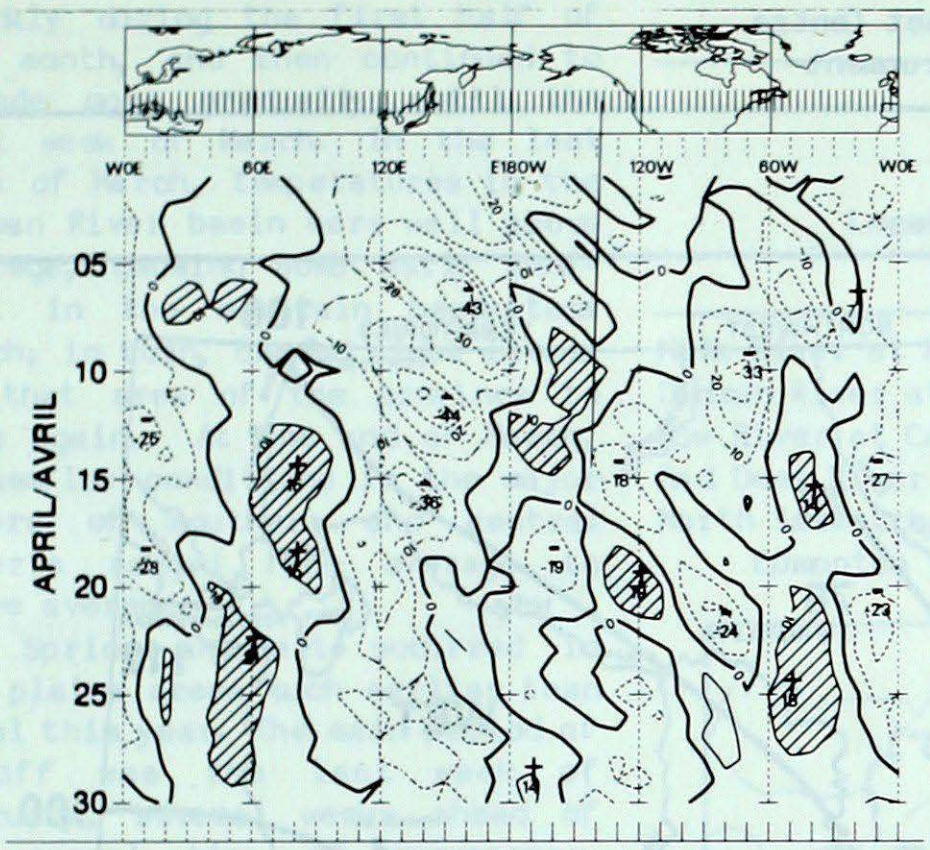

Mean 50 kPa heights (dam)
May 16 to 20, 1986

### MEAN 50 kPa CIRCULATION
### APRIL 1986

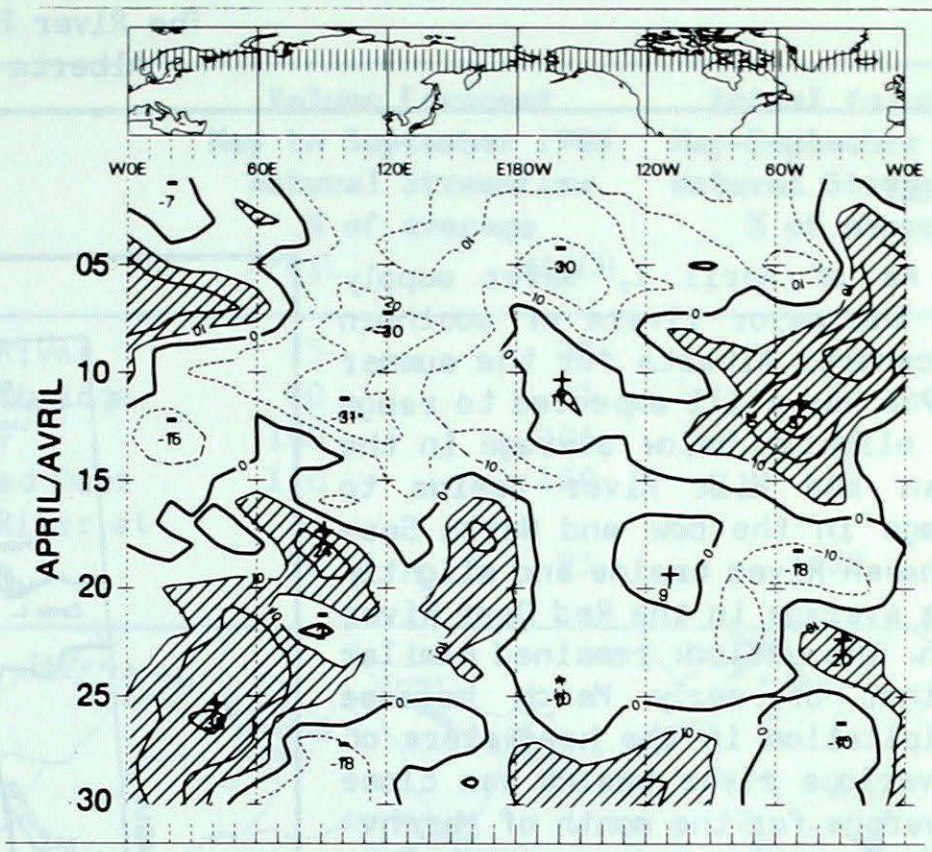
The mean 50 kPa circulation pattern for April 1986 had decreased in intensity. There was little distinction between the Polar and Maritime streams because of a weakened gradient, due to the overall seasonal warming of the atmosphere. Geopotential height changes from the previous month were positive across North America, especially in the northeast, where the greatest increases for the whole hemisphere were observed. This differential warming, between east and west, was responsible for the two anomalies, which characterised the circulation over North America. As can be seen from the analysis, there was a strong positive anomaly centre over Newfoundland, with a negative centre over the Yukon. The trough over eastern Canada remained in its normal position, but was very weak, while the Arctic vortex normally positioned over Baffin Island had shifted north of Siberia. Relatively smaller height increases over western North America resulted in the errosion of the ridge normally situated near the west coast, causing the formation of an anomalous trough over the Yukon.

The Hovmöller diagrams revealed a general retrogression of the long wave pattern. The motion of the troughs over the Pacific and Labrador were not as apparent as on the diagram at 45°N, because of successive amplitudinal variations and reformations, depending on the phasing of the mid to high latitude circulation streams. These impulses were clearly visible in the vicinity of the Pacific trough, between 170°W and 180°W, during the early two thirds of the month. At the surface, below normal temperatures were observed in the northwest, while positive temperature anomalies occurred in the east in direct relationship with upper circulation.

# ATMOSPHERIC CIRCULATION

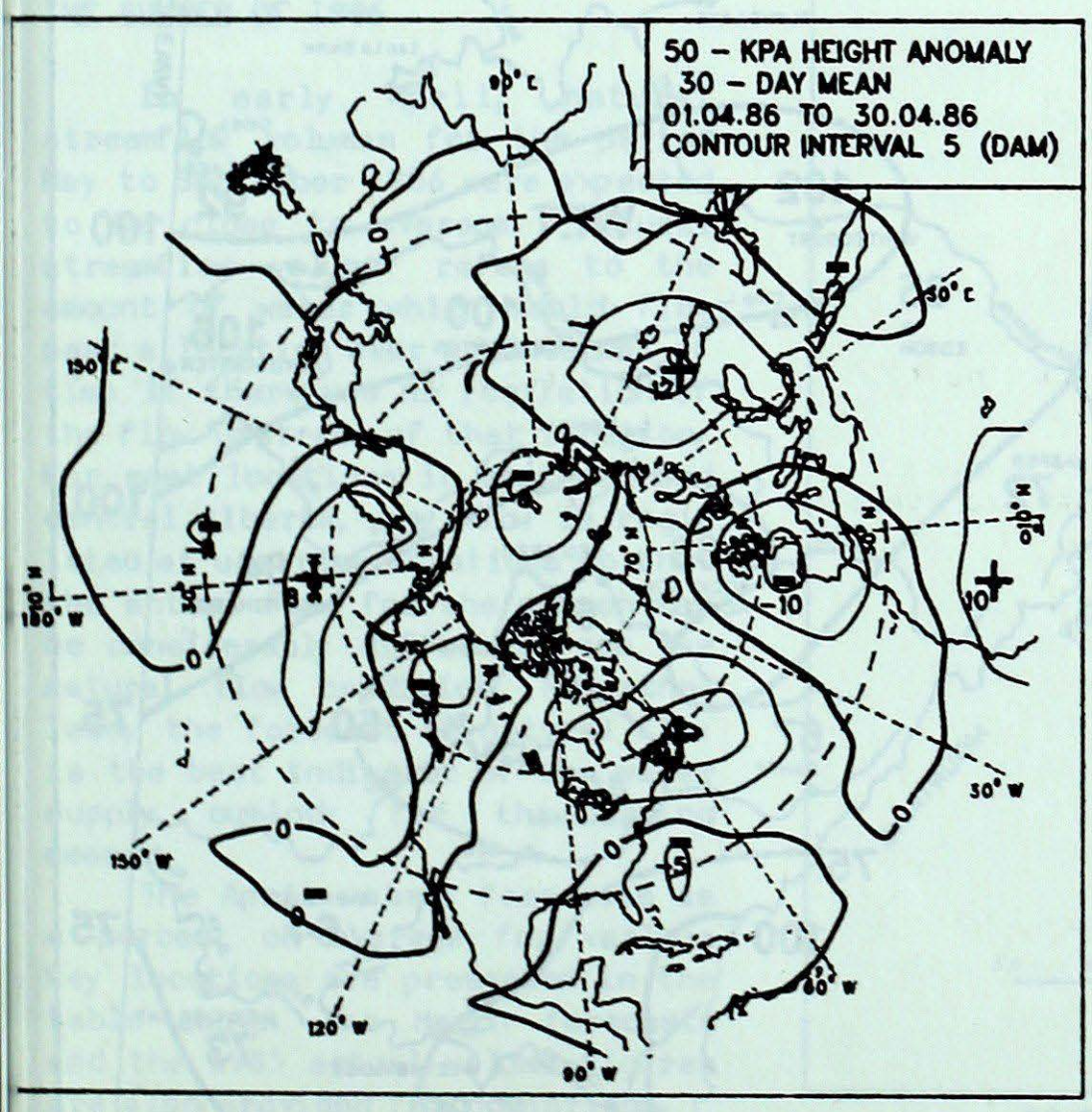



50 kPa 45° $\bar{Z}$ = 560 DAM

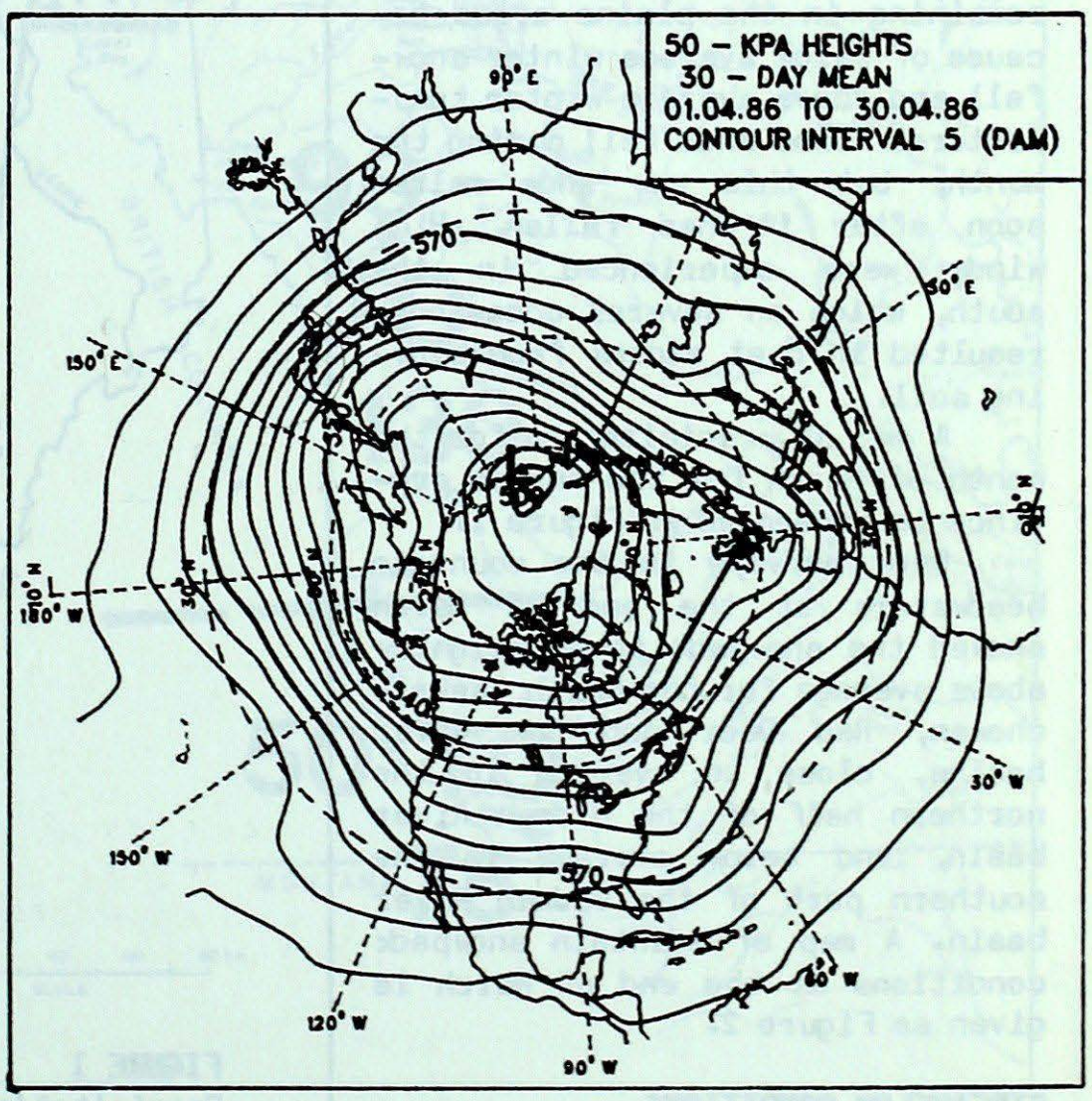



50 kPa 65°N $\bar{Z}$ = 530 DAM

Time-longitude Hovmöller diagrams of 50 kPa heights
at latitudes 45°N and 65°N




Mean 50 kPa height anomaly (dam)
April 1986




Mean 50 kPa heights (dam)
April 1986

# FEATURE

## WATER SUPPLY OUTLOOK FOR SOUTHERN AND CENTRAL ALBERTA

prepared by
The River Forecast Centre
Alberta Environment

### SUMMARY

As of April 1, water supply from the major rivers of southern and central Alberta for the summer of 1986 was still expected to range from slightly below average in the Oldman and Milk River basins to average in the Bow and North Saskatchewan River basins and slightly above average in the Red Deer River basin. The outlook remained similar to that of early March because precipitation in the headwaters of the various river basins was close to average for the month of March.

### WEATHER CONDITIONS DURING MARCH 1986

March was a month of above average temperature and close to average precipitation for most areas in southern and central Alberta. At the beginning of the month, there was virtually no snow remaining in the plains areas because of below average winter snowfall and above average winter temperatures. Some snow fell during the month, but this new snow melted soon after it had fallen. High winds were experienced in the south, which on several occasions, resulted in dust storms from blowing soil.

A map of precipitation for the month of March for the entire province is presented in Figure 1.

Snow surveys in the mountain headwaters at the end of March showed the snowpack to be slightly above average for the North Saskatchewan, Red Deer and Bow River basins, close to average in the northern half of the Oldman River basin, and below average in the southern part of the Oldman River basin. A map of mountain snowpack conditions at the end of March is given as Figure 2.

### STREAMFLOW CONDITIONS

At the beginning of March, many of the streams in southern

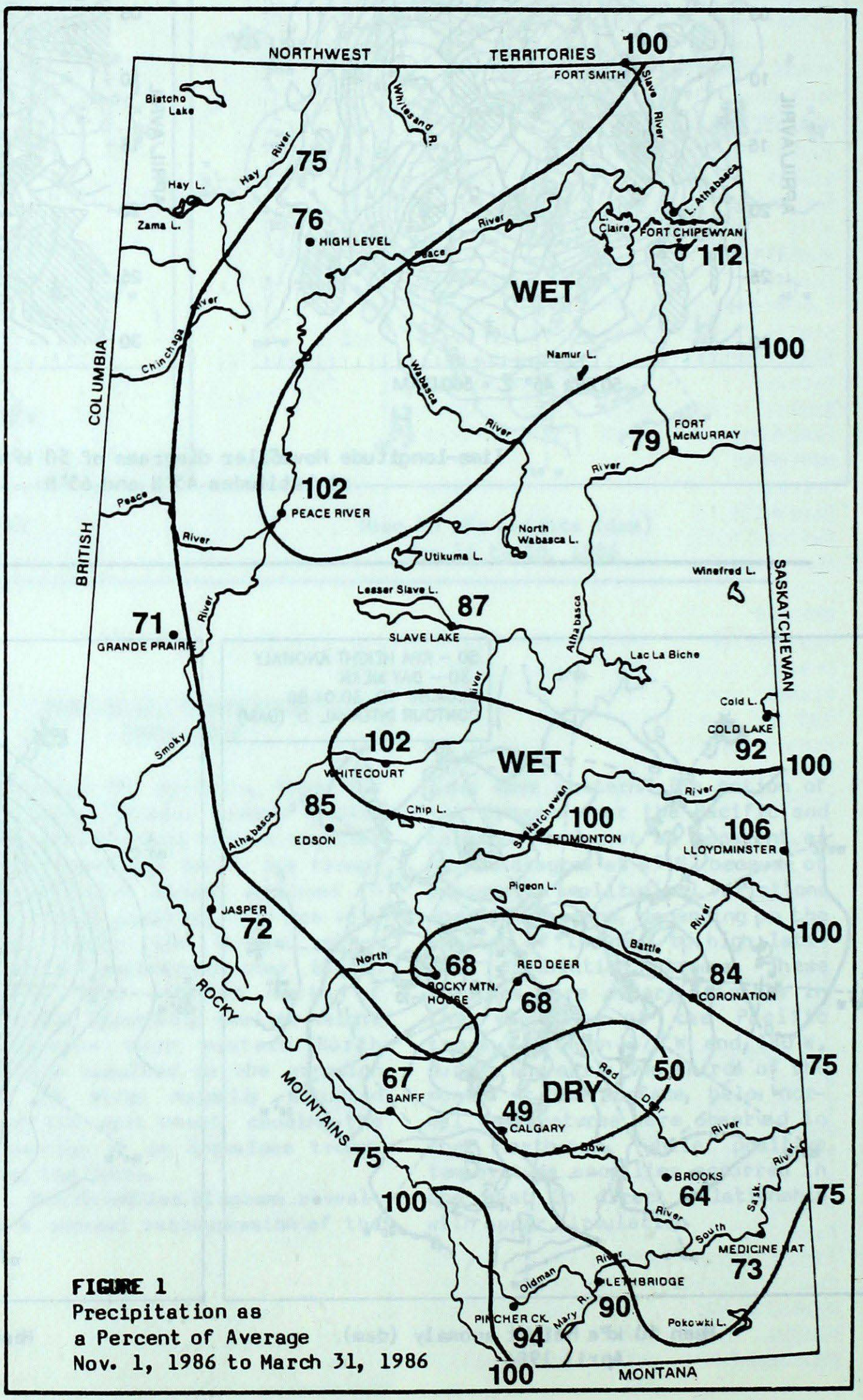



**FIGURE 1**
Precipitation as
a Percent of Average
Nov. 1, 1986 to March 31, 1986

Alberta were at very high levels because of an unusual runoff from snowmelt during the last week of February. These streams receded quickly during the first half of the month, and then continued to recede more gradually until the last week of March. In the last week of March, temperatures in the Oldman River basin were well above average, causing some early snowmelt in the mountain headwaters which, in turn, caused river levels in that area of the province to rise again. At the end of March, streamflow conditions in the major rivers of southern and central Alberta ranged from average to above average.

Spring snowmelt occurred in the plains areas much earlier than usual this year. The main period of runoff was the last week of February, several weeks ahead of the normal time of occurrence. Spring runoff volumes were above average in the Milk, St. Mary, Oldman and Highwood River areas and in the Cypress Hills area. Runoff volumes were generally below average throughout the rest of southern and central Alberta.

## WATER SUPPLY VOLUME FORECASTS FOR THE SUMMER OF 1986

In early April, natural streamflow volumes for the period May to September 1986 were expected to be close to average. "Natural streamflow volume" refers to the amount of water which would flow past a location over an interval of time if there was no regulation of the flow upstream of that location. For most locations in southern and central Alberta, the flow is regulated at upstream locations so that the actual flow for the season may be considerably different from the natural flow condition. Nevertheless, the forecast of natural flow is the best indicator of the water supply outlook for the coming season.

The April volume forecasts as a percent of average for various key locations are presented in the table above. The March forecasts and the 1985 actual volume figures are also provided for comparison.

The April forecasts were reduced slightly from the March forecasts primarily because of some early melting of the snowpack in the headwaters areas in March.

Spring and summer precipitation greatly affects the summer water supply in southern and central Alberta. The spring forecasts of summer water supply usually assume that precipitation for the

| Location | Volume Forecast May to September 1986 Natural Streamflow % of average | | Actual Volume May-September 1985 Natural Streamflow % of average |
|---|---|---|---|
| | APRIL | MARCH | |
| Milk River at Milk River | 75 | 80 | 21 |
| Oldman River at Lethbridge | 80 | 85 | 63 |
| Bow River at Calgary | 100 | 106 | 71 |
| Red Deer River at Red Deer | 110 | 120 | 57 |
| North Saskatchewan River at Edmonton | 92 | 95 | 72 |

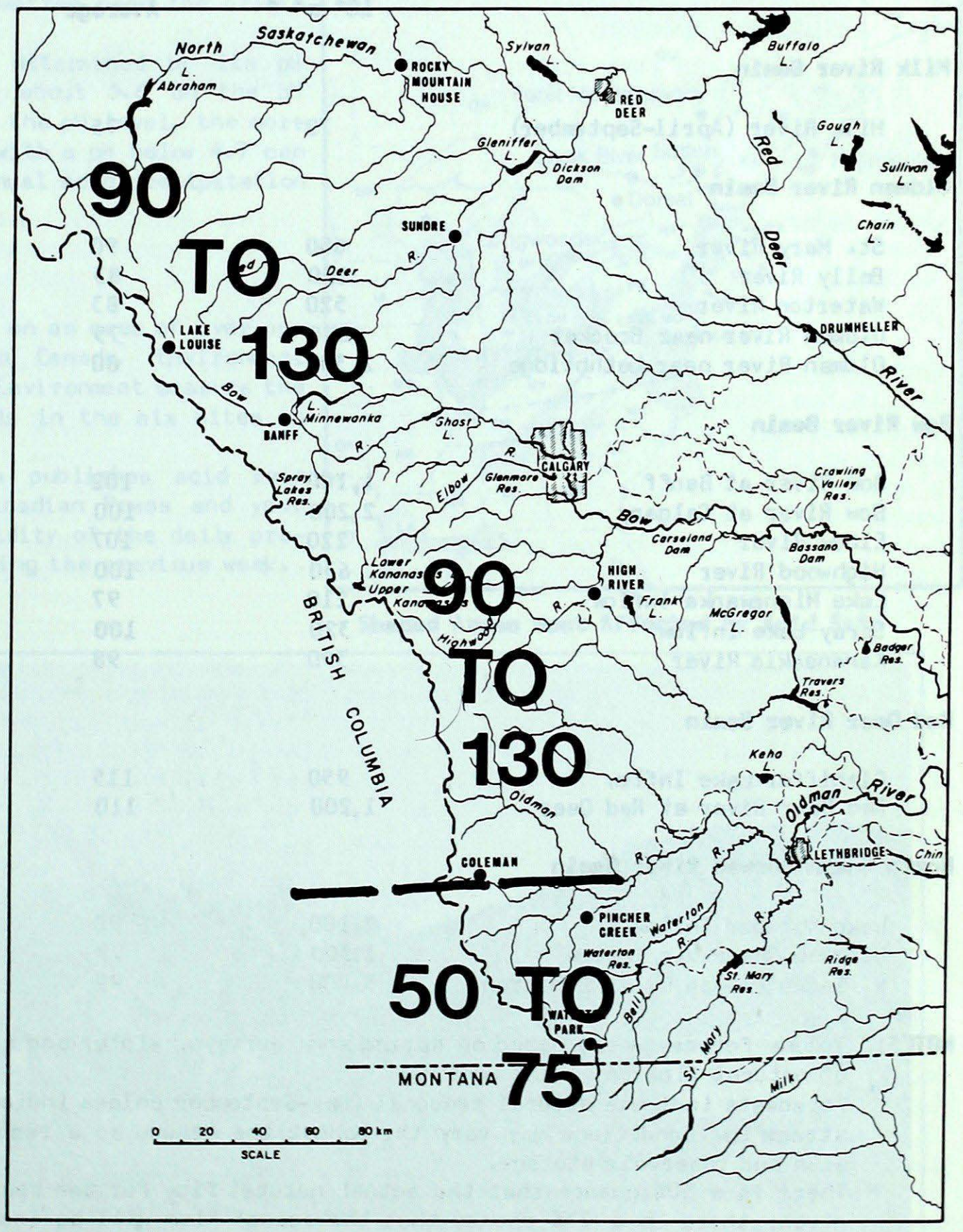



**FIGURE 2**
Mountain Snowpack Conditions - April 1, 1986
As a Percent of Average

# FEATURE

months to come will be close to avearage. Differences between the natural flow forecasts and the actual natural flow conditions are usually attributable to spring and summer precipitation deviating significantly from the norm.

Table 1 is a detailed account of the April streamflow volume forecasts for the summer of 1986 for the major streams of southern and central Alberta.

As of April 1, almost all of the major water storage facilities were at normal levels for the time of year.

## WATER SUPPLY OUTLOOK FOR SOUTHERN AND CENTRAL ALBERTA

### TABLE 1

Water Supply Outlook as of April 1, 1986
(Natural Flow)

| | Volume Forecast $10^6$ m³ * | % of Average | Probable Range % of Average | 1985 Actual % of Average |
|---|---|---|---|---|
| **Milk River Basin** | | | | |
| Milk River (April-September) | 72 | 75 | 40 - 110 | 21 |
| **Oldman River Basin** | | | | |
| St. Mary River | 650 | 90 | 65 - 110 | 81 |
| Belly River | 200 | 83 | 65 - 105 | 82 |
| Waterton River | 520 | 83 | 65 - 105 | 79 |
| Oldman River near Brocket | 830 | 75 | 50 - 95 | 54 |
| Oldman River near Lethbridge | 2,300 | 80 | 50 - 95 | 63 |
| **Bow River Basin** | | | | |
| Bow River at Banff | 1,100 | 102 | 90 - 115 | 76 |
| Bow River at Calgary | 2,200 | 100 | 85 - 120 | 71 |
| Elbow River | 220 | 107 | 85 - 130 | 66 |
| Highwood River | 630 | 100 | 70 - 130 | 49 |
| Lake Minnewanka Inflow | 210 | 97 | 90 - 115 | 55 |
| Spray Lake Inflow | 320 | 100 | 90 - 115 | 75 |
| Kananaskis River | 390 | 98 | 90 - 115 | 68 |
| **Red Deer River Basin** | | | | |
| Gleniffer Lake Inflow | 950 | 115 | 80 - 140 | 50 |
| Red Deer River at Red Deer | 1,200 | 110 | 80 - 140 | 57 |
| **North Saskatchewan River Basin** | | | | |
| Lake Abraham Inflow | 2,100 | 98 | 90 - 110 | 83 |
| Brazeau Reservoir Inflow | 1,300 | 99 | 80 - 120 | 78 |
| N. Saskatchewan R. at Edmonton | 5,000 | 92 | 75 - 110 | 72 |

**NOTES:** Volume forecasts are based on spring snow surveys, winter and spring precipitation data, and the trend of natural flow in recent months.
Forecasts indicate natural seasonal (May-September unless indicated otherwise) runoff expected; actual streamflow conditions may vary throughout the season as a result of the effects of streamflow diversion and reservoir storage.
There is a 50% chance that the actual natural flow for the season will fall within the probable range given; there is a 25% chance that the actual flow will be less than the lower bound of the probably range given.

* $10^6$ m³ = 1,000 dam³ = 811 acre-feet = 409 cfs-days

FEATURE

# ACID RAIN

by
Environment Canada

Eighty per cent of Canadians consider acid rain the most serious environmental threat facing Canada today. By using the weekly acid rain bulletins issued by Environment Canada, Canadians can be informed about the acidity of rain or snow falling in eastern Canada.

## What is Acid Rain

Acid rain originates from the sulfur and nitrogen oxides emitted into our atmosphere by various industrial processes and transportation sources. These pollutants combine with water vapour in the air to form sulfuric or nitric acids, which fall back to the ground when it rains or snows. Prevailing winds can carry the pollutants that cause acid rain and snow hundreds, even thousands, of kilometres from the origin of the pollution.

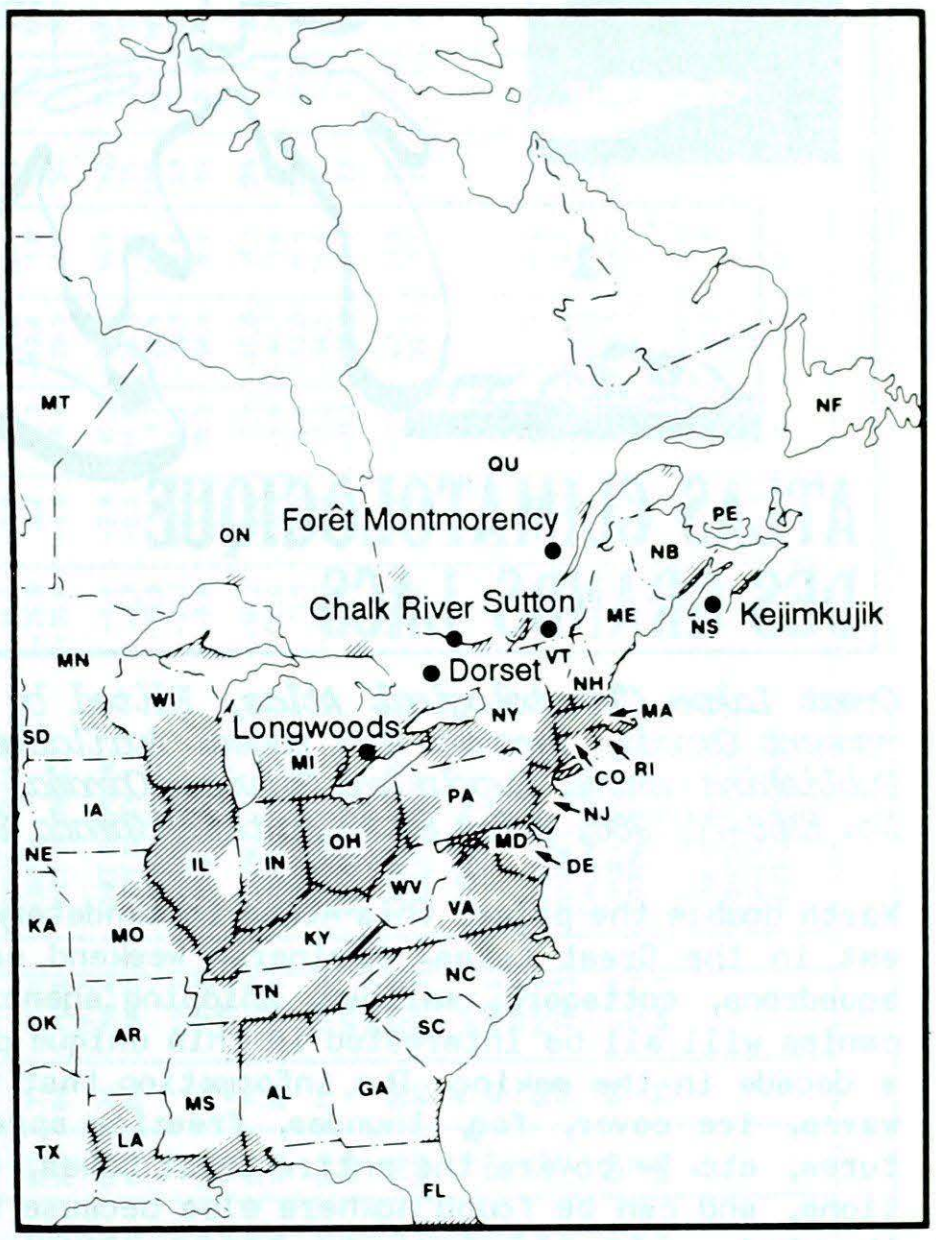
The acidity of precipitation is determined by its pH level. "Clean" rain or snow measures about 5.6 on the pH scale. As shown on the chart, the lower the pH level, the more acidic the precipitation. Rain or snow with a pH below 4.7 can cause damage to the environment. Continual acid precipitation will damage our environment over time.

## Acid Rain Bulletins

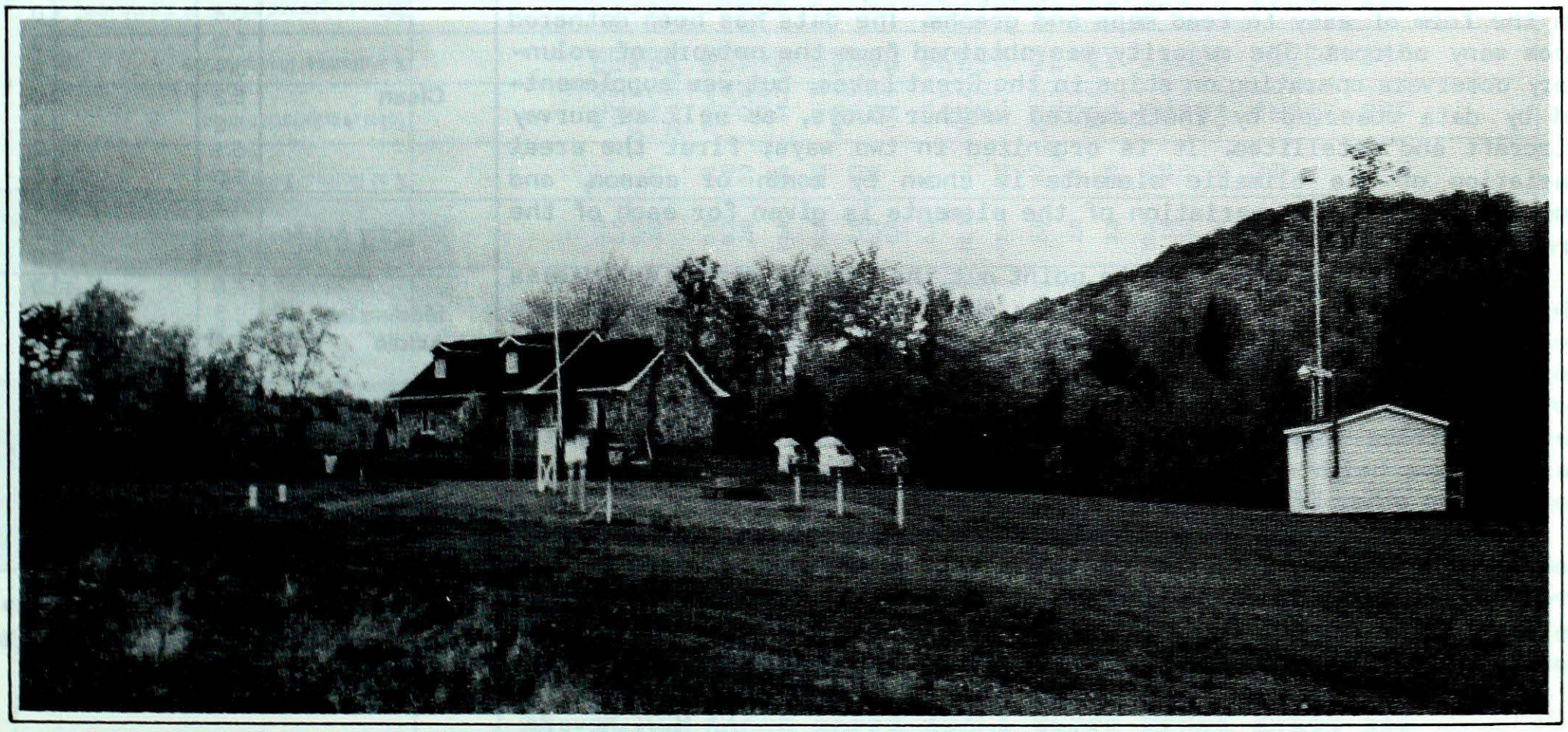
Acid precipitation regularly falls on an area of over one million square kilometres in eastern Canada. Environment Canada and the Ontario Ministry of the Environment measure the acidity of the precipitation that falls in the six sites in eastern Canada.

Each Tuesday, Environment Canada publishes acid rain bulletins and issues them via the Canadian Press and your local weather office, reporting the acidity of the daily precipitation at each of the six sites during the previous week.

**Continued on Page 12B**



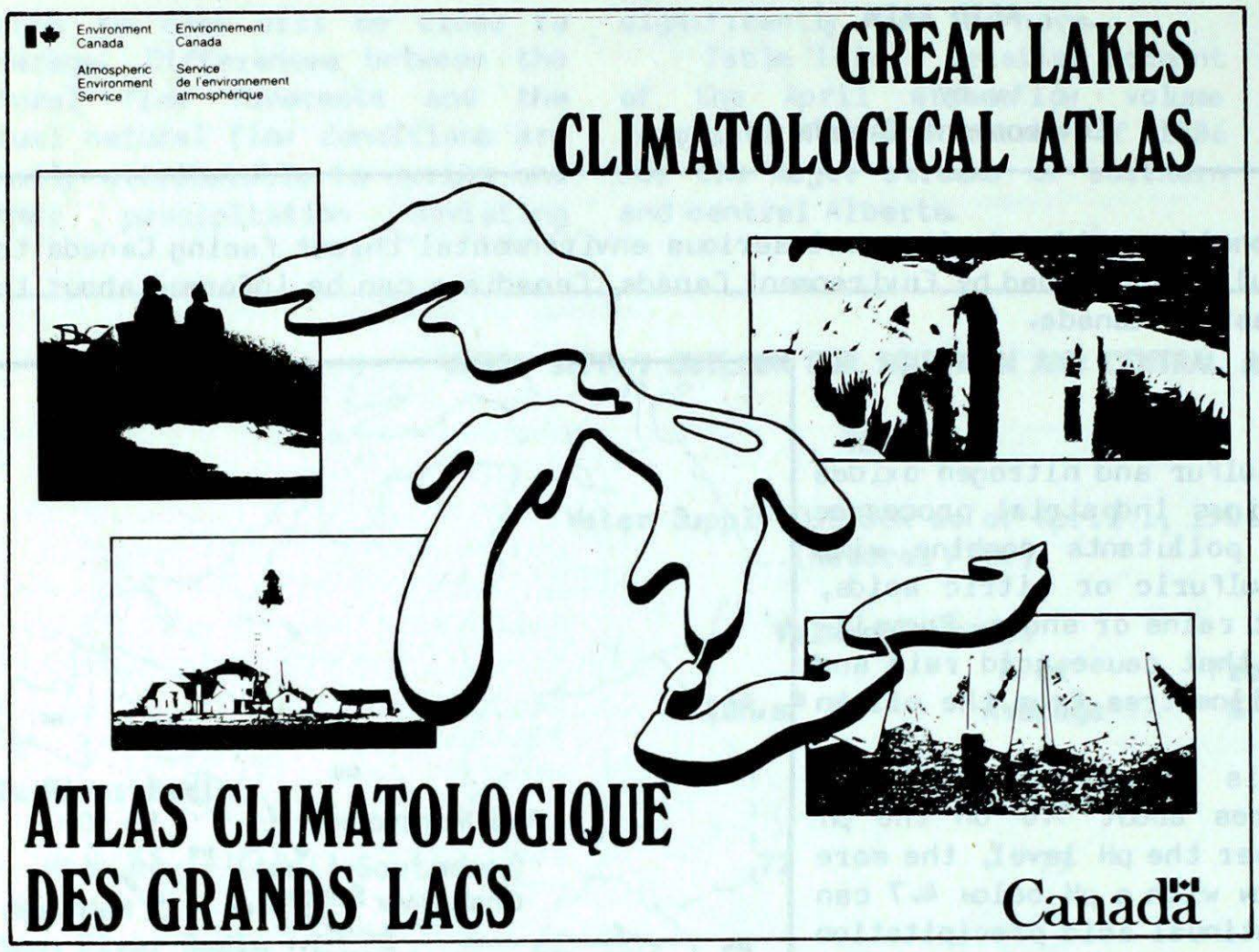

**Shaded Areas Most Affected by Acid Rain**



**Sutton, opened in January 1986 and located in the Eastern Townships of Québec is one of six stations monitoring acidity levels of rain and snow in eastern Canada**

# FEATURE

BOOK REVIEW




***Great Lakes Climatological Atlas,*** *Edited by Andrej Saulesleja, Environment Canada, Toronto. 145 pages. Available from Canadian Government Publishing Centre, Supply and Services Canada, Ottawa, K1A 0S9, catalogue No. EN56-70/1986, price $9.95 (outside Canada $11.95)*

Worth double the price, this Atlas is mandatory for anyone with an interest in the Great Lakes. Mariners, weekend sailors, yacht-clubs, power squadrons, cottagers, marinas, shipping agencies, marine insurance companies will all be interested in this unique publication, which was over a decade in the making. The information that the Atlas contains - wind, waves, ice cover, fog, thunder, freezing spray, air and water temperatures, etc. - covers the entire Great Lakes, not just the Canadian portions, and can be found nowhere else because this Atlas is the first of its kind.

Attractively produced on quality paper, it presents the information in the form of easy to read maps and graphs. The data has been gathered from many sources. The majority was obtained from the network of voluntary observers operating on ships in the Great Lakes, but was supplemented by data observed by instrumented weather buoys, as well as survey aircraft and satellites. It is organized in two ways; first the areal variation of the climatic elements is shown by month or season, and secondly the monthly variation of the elements is given for each of the Great Lakes.

The Editor has taken care to point out the various errors and biases which exist in the data, and clearly a considerable effort has been made to quality control the data. If I may be allowed to carp a little about an otherwise excellent publication, it would have been useful to show the actual period of years covered by the map of each element rather than just for those showing ice cover. Also, one is left wondering why the maximum wave heights on Lake Superior appear to be lower than those on some of the other Great Lakes.

Not being a sailor myself, but rather a landfast cottager on Georgian Bay, I found myself noting contently that my planned vacation in July promises the least precipitation during the year, the calmest and warmest water, and the warmest air temperatures. A highly recommended publication for Great Lakes mariners on both sides of the international border!

M.J. Newark

**Continued from page 11B**

**How to Use the Acid Rain Bulletins**

The acid rain bulletins provide the origin and the pH level of the precipitation that fell each day. To find out about the acid rain or snow that fell in an area, first use the map on the previous page to identify the site that is closest to you. Then, when you receive the bulletin:

- refer to your site and note the pH level of the precipitation that fell;
- check the pH level in the chart below to see how acidic the rain or snow was;
- check the bulletin again to find out the origin and path of the weather system that brought the precipitation.

If the rain or snow was moderately to strongly acidic chances are it came from highly industrialized regions to the south or southwest. If the precipitation was "clean" or slightly acidic, it probably came from the north or the Atlantic Ocean.

| Precipitation | pH | Number of Times More Acidic Than Clean Snow | |
|---|---|---|---|
| Clean | 5.6 | 1.0 | |
| | 5.5 | 1.3 | |
| | 5.4 | 1.6 | |
| | 5.3 | 2.0 | |
| | 5.2 | 2.5 | |
| | 5.1 | 3.2 | |
| | 5.0 | 4.0 | |
| Slightly Acidic | 4.9 | 5.0 | |
| | 4.8 | 6.3 | |
| | 4.7 | 7.9 | A |
| Moderately Acidic | 4.6 | 10.0 | C |
| | 4.5 | 13.0 | I |
| | 4.4 | 16.0 | D |
| | 4.3 | 20.0 | |
| Strongly Acidic | 4.2 | 25.0 | R |
| | 4.1 | 32.0 | A |
| | 4.0 | 40.0 | I |
| | 3.9 | 50.0 | N |
| | 3.8 | 63.0 | |
| | 3.7 | 79.0 | |
| | 3.6 | 100.0 | |

**Note: Most pH readings will fall into this scale; however, some readings may be higher or lower.**

# APRIL 1986

| STATION | Temperature C Mean | Difference from Normal | Maximum | Minimum | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **BRITISH COLUMBIA** | | | | | | | | | | | | | |
| ABBOTSFORD | 8.0 | -0.7 | 22.7 | -1.0 | 0.0 | | 142.4 | 139 | 0 | 17 | 95 | 57 | 300.7 |
| ALERT BAY | 6.9 | -0.5 | 17.4 | -0.8 | 0.0 | | 114.9 | 137 | 0 | 15 | X | | 334.5 |
| AMPHITRITE POINT | 7.8 | -0.2 | 14.5 | 1.9 | 0.0 | | 338.8 | 165 | 0 | 20 | X | | 309.1 |
| BLUE RIVER | 4.9 | 1.0 | 21.4 | -4.6 | 2.6 | 28 | 69.5 | 152 | 0 | 13 | 124 | 74 | MSG |
| BULL HARBOUR | 6.5 | -0.3 | 13.8 | -1.0 | | | 253.3 | 200 | 0 | 21 | X | | 346.4 |
| CAPE SCOTT | 6.7 | -0.5 | 12.9 | 1.3 | 0.5 | 14 | 316.4 | 168 | 0 | 25 | X | | 341.4 |
| CAPE ST.JAMES | 6.4 | -0.1 | 12.7 | 1.2 | 0.2 | 8 | 141.9 | 133 | 0 | 21 | 165 | * | 347.1 |
| CASTLEGAR | 7.9 | -0.2 | 23.4 | -2.8 | 2.8 | 33 | 57.8 | 131 | 0 | 12 | 152 | 88 | 303.8 |
| COMOX | 8.0 | -0.4 | 16.8 | -0.5 | | | 52.0 | 91 | 0 | 12 | X | | 311.3 |
| CRANBROOK | 6.3 | 0.5 | 21.9 | -10.5 | 10.6 | 106 | 34.7 | 135 | 0 | 8 | 223 | * | 351.5 |
| DEASE LAKE | -1.8 | -2.1 | 12.0 | -21.2 | 19.5 | 162 | 14.3 | 116 | 7 | 4 | 207 | 108 | 594.0 |
| ETHELDA BAY | 5.2 | -1.2 | 14.6 | -2.5 | | | 448.9 | 186 | 0 | 22 | X | | 384.6 |
| FORT NELSON | -0.5 | -2.1 | 15.9 | -25.4 | 7.0 | 43 | 20.5 | 122 | | 5 | 235 | * | 553.3 |
| FORT ST.JOHN | 2.3 | -0.6 | 16.7 | -19.0 | 10.7 | 65 | 39.9 | 185 | 0 | 6 | X | | 370.5 |
| HOPE | 8.6 | -0.7 | 24.5 | -0.5 | 0.0 | | 129.5 | 123 | 0 | 17 | 95 | 59 | 281.6 |
| KAMLOOPS | 8.6 | -0.5 | 23.3 | -2.7 | 0.0 | | 10.7 | 102 | 0 | 2 | 153 | 77 | 273.1 |
| KELOWNA | 7.3 | -0.2 | 23.2 | -4.0 | | | 40.0 | 225 | 0 | 12 | 140 | 68 | 319.9 |
| LANGARA | 4.9 | -0.9 | 10.9 | -0.9 | 18.9 | 410 | 189.6 | 156 | 0 | 22 | X | | 393.7 |
| LYTTON | 9.1 | -0.2 | 25.2 | -0.5 | | | 27.3 | 146 | 0 | 6 | 153 | 74 | 266.4 |
| MACKENZIE | 1.5 | -0.9 | 16.2 | -14.1 | 12.4 | 115 | 30.9 | 116 | 0 | 5 | 179 | 86 | 496.2 |
| MCINNES ISLAND | 7.2 | 0.0 | 13.4 | 1.6 | 2.8 | 57 | 293.3 | 168 | 0 | 26 | X | | 325.2 |
| PENTICTON | 8.1 | -0.5 | 22.7 | -3.7 | | | 46.3 | 216 | 0 | 9 | 154 | 72 | 297.8 |
| PORT ALBERNI | 7.9 | * | 24.0 | -3.4 | 2.0 | * | 63.6 | * | 0 | 16 | 121 | * | 302.6 |
| PORT HARDY | 6.6 | 0.0 | 15.2 | -1.2 | | | 159.6 | 148 | 0 | 19 | 114 | 79 | 343.0 |
| PRINCE GEORGE | 4.1 | -0.2 | 20.2 | -8.0 | 2.6 | 26 | 39.0 | 142 | 0 | 6 | 181 | 89 | 416.8 |
| PRINCE RUPERT | 5.6 | 0.2 | 14.8 | -1.4 | 10.4 | 142 | 215.2 | 113 | 0 | 19 | 150 | 111 | 370.4 |
| PRINCETON | 5.7 | -0.5 | 23.3 | -6.6 | 1.6 | 45 | 24.4 | 164 | 0 | 5 | 149 | * | MSG |
| QUESNEL | 5.2 | -0.2 | 22.8 | -6.5 | 1.2 | 29 | 39.5 | 170 | 0 | 7 | X | | 384.2 |
| REVELSTOKE | 7.2 | 0.8 | 20.4 | -1.3 | | | 62.7 | 106 | 0 | 13 | 119 | 66 | 324.6 |
| SANDSPIT | 5.5 | -0.5 | 14.9 | -2.0 | 4.4 | 209 | 126.9 | 150 | 0 | 21 | 148 | 95 | 375.5 |
| SMITHERS | 4.0 | -0.2 | 16.6 | -5.3 | 3.0 | 42 | 36.6 | 207 | 0 | 8 | 0 | | MSG |
| TERRACE | 5.0 | -0.7 | 16.0 | -1.8 | 7.2 | 59 | 111.0 | 181 | 0 | 13 | 121 | 81 | 390.6 |
| VANCOUVER HARBOUR | 8.6 | -0.7 | 18.9 | 2.4 | 0.0 | | 130.8 | 143 | 0 | 16 | X | | 281.0 |
| VANCOUVER INT'L | 8.1 | -0.7 | 17.0 | -0.1 | 0.0 | | 105.8 | 177 | 0 | 16 | 120 | 66 | 299.0 |
| VICTORIA GDNZ. HTS | 8.7 | -0.4 | 17.0 | 2.8 | 0.0 | | 27.6 | 90 | 0 | 11 | 137 | 67 | 277.3 |
| VICTORIA INT'L | 7.6 | -0.8 | 17.4 | -0.6 | 0.0 | | 33.3 | 84 | 0 | 11 | 120 | 66 | 311.9 |
| VICTORIA MARINE | 7.7 | -0.3 | 15.9 | 0.1 | 0.0 | | 67.2 | 95 | 0 | 14 | X | | 311.1 |
| WILLIAMS LAKE | 3.3 | -1.1 | 21.5 | -7.6 | 6.8 | 70 | 13.2 | 61 | 0 | 6 | 165 | 79 | 443.1 |

| STATION | Temperature C Mean | Difference from Normal | Maximum | Minimum | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **YUKON TERRITORY** | | | | | | | | | | | | | |
| BURWASH | -8.4 | -6.1 | 8.2 | -35.1 | 4.8 | 38 | 3.4 | 20 | 2 | 2 | X | | 795.1 |
| DAWSON | -6.3 | -4.4 | 12.5 | -32.0 | 21.0 | 225 | 11.3 | 120 | 16 | 4 | X | | 728.5 |
| MAYO | -4.2 | -3.8 | 11.8 | -30.9 | 15.3 | 203 | 9.3 | 108 | 7 | 5 | X | | 664.2 |
| WATSON LAKE | -3.7 | -3.1 | 10.6 | -28.0 | 4.6 | 33 | 5.1 | 33 | 6 | 1 | 204 | 94 | 652.1 |
| WHITEHORSE | -4.5 | -4.8 | 8.9 | -29.4 | 16.6 | 158 | 11.9 | 125 | 11 | 2 | 234 | 101 | 673.8 |
| **NORTHWEST TERRITORIES** | | | | | | | | | | | | | |
| ALERT | -26.5 | -1.6 | -12.4 | -39.0 | 4.4 | 56 | 4.4 | 57 | 22 | 3 | 286 | 73 | 1335.9 |
| BAKER LAKE | -17.8 | -0.5 | -6.0 | -30.6 | 18.7 | 137 | 13.7 | 99 | 40 | 5 | 269 | 114 | 1073.5 |
| CAMBRIDGE BAY | -22.2 | -0.3 | -10.2 | -32.0 | 11.4 | 140 | 11.3 | 156 | 24 | 4 | 262 | 104 | 1205.1 |
| CAPE DYER | -16.2 | -0.8 | 0.7 | -31.1 | 32.8 | 64 | 20.6 | 45 | 130 | 6 | X | | 1025.2 |
| CAPE PARRY | -21.5 | -2.8 | -8.0 | -34.7 | 6.2 | 47 | 5.2 | 54 | 10 | 1 | X | | 1188.6 |
| CLYDE | -17.2 | 1.2 | -3.5 | -31.9 | 9.8 | 71 | 4.8 | 35 | 34 | 1 | 262 | 105 | 1106.1 |
| COPPERMINE | -19.9 | -2.4 | -5.9 | -31.3 | 37.2 | 364 | 32.2 | 292 | 49 | 11 | 221 | 102 | 1137.7 |
| CORAL HARBOUR | -16.5 | -0.2 | -2.4 | -31.2 | 13.4 | 93 | 13.4 | 97 | 23 | 5 | 284 | 102 | 1033.8 |
| EUREKA | -26.9 | 0.7 | -12.2 | -42.4 | 1.8 | 62 | 1.8 | 66 | 22 | 1 | 386 | 108 | 1349.5 |
| FORT RELIANCE | -10.6 | -1.0 | 8.7 | -29.9 | 4.0 | 30 | 3.6 | 28 | 39 | 1 | X | | 857.2 |
| FORT SIMPSON | -5.4 | -2.9 | 10.2 | -28.2 | 16.7 | 142 | 15.9 | 108 | 14 | 6 | 249 | 112 | 700.2 |
| FORT SMITH | -2.7 | -0.5 | 16.4 | -23.3 | 3.6 | 26 | 4.4 | 27 | 17 | 1 | 264 | 108 | 619.5 |
| FROBISHER BAY | -12.9 | 1.4 | 1.7 | -29.5 | 39.0 | 135 | 39.0 | 147 | 40 | 8 | 186 | 79 | 928.1 |
| HALL BEACH | -21.1 | -0.2 | -5.0 | -35.7 | 12.8 | 111 | 12.9 | 118 | 38 | 3 | X | | 1173.2 |
| HAY RIVER | -6.8 | -2.6 | 15.3 | -24.9 | 8.0 | 61 | 8.0 | 50 | 23 | 2 | X | | 717.5 |
| INUVIK | -18.2 | -3.9 | 2.3 | -40.0 | 15.1 | 88 | 12.1 | 81 | 39 | 5 | 268 | 107 | 1087.7 |
| MOULD BAY | -25.0 | -0.9 | -9.9 | -45.1 | 1.6 | 27 | 1.4 | 28 | 28 | 0 | 384 | 134 | 1290.0 |
| NORMAN WELLS | -11.5 | -4.3 | 6.8 | -32.0 | 15.8 | 103 | 14.2 | 92 | 18 | 4 | 217 | 91 | 884.1 |
| POND INLET | -22.3 | -0.3 | -10.0 | -34.5 | 16.6 | 100 | 11.2 | 85 | 22 | 5 | X | | 1209.6 |
| RESOLUTE | -23.3 | -0.2 | -11.1 | -35.2 | 5.4 | 83 | 5.4 | 91 | 34 | 3 | 304 | 109 | 1238.6 |
| SACHS HARBOUR | -21.9 | -1.9 | -7.9 | -40.2 | 1.9 | 38 | 1.8 | 40 | 11 | 1 | 338 | 127 | 1197.8 |
| YELLOWKNIFE | -8.6 | -1.7 | 9.0 | -29.0 | 7.6 | 77 | 7.4 | 71 | | 2 | 320 | 120 | 768.8 |
| **ALBERTA** | | | | | | | | | | | | | |
| BANFF | 3.1 | 0.7 | 18.5 | -14.5 | 22.6 | 71 | 24.0 | 63 | 0 | 9 | X | | |
| BROOKS | 4.7 | 0.1 | 23.0 | -12.5 | 0.4 | 2 | 10.5 | 41 | 0 | | 218 | * | |
| CALGARY INT'L | 4.5 | 1.2 | 25.0 | -13.3 | 13.0 | 50 | 11.4 | 34 | | 5 | 216 | 105 | 407.0 |
| COLD LAKE | 2.9 | 0.0 | 20.1 | -19.6 | 34.2 | 275 | 27.5 | 127 | 1 | 5 | 225 | 98 | 452.6 |
| CORONATION | 3.6 | 0.6 | 22.0 | -14.0 | 0.6 | 3 | 11.4 | 47 | 0 | 4 | 230 | 99 | 433.4 |
| EDMONTON INT'L | 3.9 | 0.7 | 24.0 | -13.1 | 11.0 | 85 | 39.8 | 197 | | 8 | 196 | 84 | 423.6 |
| EDMONTON MUNI. | 4.6 | 0.4 | 23.7 | -12.6 | 11.6 | 87 | 35.4 | 163 | 0 | 8 | 208 | 91 | 400.9 |
| EDMONTON NAMAO | 3.7 | -0.2 | 22.9 | -14.9 | 17.2 | 147 | 24.5 | 136 | 0 | 8 | X | | 430.5 |
| EDSON | 2.3 | 0.4 | 24.8 | -14.5 | 37.2 | 251 | 53.0 | 200 | 1 | 10 | 161 | 78 | 472.4 |
| FORT CHIPEWYAN | -1.6 | -0.3 | 14.5 | -17.0 | 13.6 | 58 | 17.0 | 87 | 1 | | X | | |

X = Not observed * = normal missing MSG = data missing

APRIL 1986

| STATION | Temperature C Mean | Difference from Normal | Maximum | Minimum | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FORT MCMURRAY | 2.3 | 0.2 | 22.3 | -16.1 | 29.3 | 217 | 34.7 | 169 | 7 | 7 | 200 | 86 | 473.4 |
| GRANDE PRAIRIE | 3.0 | 0.3 | 22.4 | -12.0 | 25.8 | 216 | 46.2 | 236 | 10 | 6 | 176 | * | 451.2 |
| HIGH LEVEL | -0.3 | -1.1 | 14.8 | -18.8 | 2.8 | 19 | 11.2 | 64 | 0 | 5 | 205 | 83 | 556.2 |
| JASPER | 3.6 | 0.3 | 19.2 | -11.2 | 6.0 | 55 | 7.7 | 34 | 1 | 5 | 183 | * | 432.3 |
| LETHBRIDGE | 6.1 | 1.2 | 22.7 | -12.1 | 13.2 | 48 | 15.4 | 36 | 0 | 4 | 245 | 123 | 357.9 |
| MEDICINE HAT | 6.3 | 0.7 | 23.0 | -12.2 | 3.0 | 16 | 5.7 | 18 | 0 | 2 | 264 | 131 | 351.0 |
| PEACE RIVER | 2.2 | 0.1 | 19.0 | -13.8 | 23.1 | 243 | 37.6 | 262 | 5 | 7 | X | | 473.2 |
| RED DEER | 4.0 | 0.9 | 25.0 | -12.3 | 9.3 | 54 | 15.5 | 58 | 0 | 5 | X | | 434.5 |
| ROCKY MTN HOUSE | 2.7 | -0.3 | 24.5 | -12.2 | 15.4 | 53 | 22.9 | 66 | 0 | 6 | X | | 458.9 |
| SLAVE LAKE | 2.8 | 0.3 | 23.1 | -13.1 | 25.2 | 273 | 34.6 | 197 | 4 | 9 | 204 | 87 | 456.1 |
| SUFFIELD | 5.3 | 0.1 | 22.9 | -12.0 | 4.8 | 30 | 7.0 | 24 | 0 | 2 | 220 | 104 | 380.8 |
| WHITECOURT | 2.6 | -0.1 | 24.6 | -12.5 | 55.5 | 317 | 80.3 | 297 | 1 | 12 | X | | 461.1 |
| **SASKATCHEWAN** | | | | | | | | | | | | | |
| BROADVIEW | 3.1 | 0.6 | 23.6 | -18.4 | 18.4 | 129 | 23.0 | 83 | 0 | 5 | 213 | 102 | 447.7 |
| COLLINS BAY | | | | | | | | | | | | | |
| CREE LAKE | -2.3 | -0.5 | 12.8 | -25.6 | 22.8 | 121 | 25.8 | 118 | 7 | 5 | 219 | 90 | 594.0 |
| ESTEVAN | 4.8 | 0.7 | 27.9 | -15.0 | 13.2 | 81 | 25.5 | 68 | 0 | 9 | 192 | 91 | 397.7 |
| HUDSON BAY | 1.7 | 0.2 | 21.2 | -15.6 | 38.6 | 214 | 44.6 | 165 | | 9 | 194 | * | 489.7 |
| KINDERSLEY | 4.1 | 0.3 | 21.6 | -13.3 | | | 8.2 | 38 | 0 | 4 | X | | 418.4 |
| LA RONGE | 0.3 | -0.1 | 16.5 | -23.2 | 28.9 | 209 | 44.6 | 225 | 11 | 5 | X | | 531.9 |
| MEADOW LAKE | 2.1 | -1.5 | 18.8 | -20.3 | 20.0 | 208 | 20.2 | 91 | 2 | 6 | 223 | * | 475.2 |
| MOOSE JAW | 4.4 | 0.2 | 24.9 | -15.4 | 6.4 | 48 | 15.5 | 51 | 0 | 5 | 212 | 97 | 393.9 |
| NIPAWIN | | | | | | | | | | | | | |
| NORTH BATTLEFORD | 3.2 | 0.2 | 19.9 | -14.7 | 0.6 | 5 | 12.6 | 59 | 0 | 3 | X | | 446.5 |
| PRINCE ALBERT | 2.1 | 0.2 | 19.6 | -15.7 | 2.3 | 20 | 19.9 | 90 | 0 | 5 | 203 | 90 | 479.6 |
| REGINA | 3.9 | 0.6 | 23.9 | -13.2 | 8.0 | 73 | 18.6 | 78 | 0 | 5 | 208 | 99 | 424.1 |
| SASKATOON | 3.5 | 0.2 | 21.2 | -14.3 | 3.8 | 40 | 6.2 | 29 | 0 | 4 | X | | 434.3 |
| SWIFT CURRENT | 4.2 | 0.7 | 23.0 | -18.8 | 11.3 | 73 | 16.3 | 57 | 0 | 5 | 237 | 113 | 419.6 |
| URANIUM CITY | -3.8 | -0.7 | 12.4 | -26.4 | 21.8 | 128 | 13.9 | 78 | 4 | 3 | X | | 654.9 |
| WYNYARD | 2.5 | 0.0 | 23.1 | -14.5 | 7.2 | 51 | 13.6 | 55 | 0 | 5 | 207 | 90 | 464.0 |
| YORKTON | 2.5 | 0.3 | 22.0 | -18.2 | 21.8 | 166 | 24.6 | 110 | 0 | 7 | 195 | 87 | 487.5 |
| **MANITOBA** | | | | | | | | | | | | | |
| BRANDON | 3.2 | 0.4 | 21.2 | -13.3 | 13.5 | 119 | 63.1 | 187 | 0 | 10 | X | | 442.8 |
| CHURCHILL | -11.2 | -1.1 | 8.6 | -28.0 | 52.1 | 233 | 46.2 | 201 | 11 | 9 | 188 | 92 | 821.2 |
| DAUPHIN | 2.3 | 0.0 | 22.3 | -21.0 | 41.6 | 255 | 55.5 | 173 | | 6 | 176 | 79 | 470.1 |
| GILLAM | -4.5 | 2.1 | 12.7 | -25.4 | 58.0 | 151 | 54.7 | 147 | 17 | 9 | X | | 675.7 |
| GIMLI | 2.6 | 1.2 | 15.2 | -10.6 | 8.2 | 54 | 56.4 | 150 | 0 | 9 | 172 | 69 | 461.3 |
| ISLAND LAKE | 0.1 | 3.3 | 14.2 | -17.8 | 26.8 | 96 | 56.7 | 138 | 1 | 9 | X | | 549.2 |
| LYNN LAKE | -2.9 | 0.6 | 3.0 | -8.7 | 76.2 | 321 | 60.1 | 259 | 23 | 8 | 190 | 82 | 625.2 |
| NORWAY HOUSE | 0.3 | * | 15.3 | -14.1 | 27.0 | * | 49.8 | * | 9 | 9 | 0 | * | 531.0 |

| STATION | Temperature C Mean | Difference from Normal | Maximum | Minimum | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PILOT MOUND | 3.9 | 0.9 | 20.4 | -12.6 | 25.8 | 162 | 104.4 | 252 | 0 | 11 | X | | |
| PORTAGE LA PRAIRIE | 3.8 | 0.6 | 22.0 | -12.0 | 15.2 | 134 | 96.5 | 226 | 0 | 11 | X | | 426.2 |
| THE PAS | 0.2 | 0.2 | 19.3 | -19.6 | 35.4 | 182 | 49.0 | 178 | 10 | 5 | 192 | 84 | 534.9 |
| THOMPSON | -2.0 | 1.7 | 16.1 | -20.0 | 60.9 | 200 | 63.7 | 190 | 16 | 9 | 173 | 74 | 600.5 |
| WINNIPEG INT'L | 4.5 | 1.1 | 21.4 | -9.6 | 10.5 | 92 | 98.3 | 255 | 0 | 10 | 186 | 84 | 403.8 |
| **ONTARIO** | | | | | | | | | | | | | |
| ATIKOKAN | 4.9 | 2.8 | 21.1 | -10.1 | 2.0 | 9 | 80.6 | 173 | 0 | 12 | 180 | 86 | 384.1 |
| BIG TROUT LAKE | -1.2 | 2.6 | 13.8 | -15.2 | 29.8 | * | 96.3 | 342 | 8 | 11 | 151 | * | 575.5 |
| EARLTON | 5.4 | 3.5 | 29.8 | -10.0 | 17.4 | 89 | 57.2 | 114 | 0 | 10 | X | | 378.5 |
| GERALDTON | 1.8 | 2.3 | 16.6 | -13.0 | 3.2 | 20 | 39.8 | 91 | 35 | 9 | X | | 472.1 |
| GORE BAY | 6.5 | 2.8 | 27.4 | -5.6 | 3.6 | 33 | 28.6 | 43 | 0 | 9 | X | | 315.6 |
| HAMILTON RBG | 8.1 | 1.1 | 26.2 | -3.0 | 3.4 | 61 | 63.1 | 81 | 0 | 9 | 202 | * | |
| HAMILTON | 8.6 | 2.5 | 25.2 | -3.4 | 9.4 | 146 | 78.3 | 98 | 0 | 9 | X | | 310.8 |
| KAPUSKASING | 3.4 | 2.9 | 29.7 | -13.8 | 21.8 | 87 | 37.8 | 71 | 0 | 10 | X | | 439.2 |
| KENORA | 5.5 | 2.8 | 17.5 | -8.5 | 0.6 | 2 | 93.4 | 222 | 0 | 10 | X | | 375.3 |
| KINGSTON | 8.0 | 2.5 | 24.5 | -5.4 | 1.2 | 15 | 48.8 | 69 | 0 | 8 | 190 | 94 | 298.3 |
| LANSDOWNE HOUSE | 0.6 | 2.9 | 15.8 | -15.7 | 14.4 | 44 | 102.9 | 254 | | 9 | X | | 526.1 |
| LONDON | 7.8 | 1.4 | 27.7 | -4.4 | 4.7 | 51 | 80.7 | 99 | 0 | 10 | 171 | 102 | 307.8 |
| MOOSONEE | 0.1 | 2.4 | 23.7 | -18.1 | 35.8 | 168 | 60.4 | 142 | 0 | 10 | 137 | 79 | 538.4 |
| MOUNT FOREST | 6.7 | 2.3 | 25.5 | -7.0 | 18.2 | 130 | 65.8 | 90 | 0 | 11 | | | 340.3 |
| MUSKOKA | 7.5 | 3.0 | 27.4 | -7.6 | 13.4 | 111 | 69.3 | 94 | 0 | 14 | X | | 315.4 |
| NORTH BAY | 6.2 | 3.0 | 28.3 | -11.6 | 19.6 | 118 | 59.2 | 95 | 0 | 10 | 192 | 97 | 358.6 |
| OTTAWA INT'L | 9.0 | 3.4 | 26.9 | -6.8 | 2.6 | 31 | 36.0 | 52 | 0 | 8 | 220 | * | 271.9 |
| PETAWAWA | 7.4 | 3.2 | 26.5 | -8.7 | 7.6 | 126 | 56.4 | 94 | 0 | 8 | X | | 318.0 |
| PETERBOROUGH | 7.6 | 1.6 | 25.5 | -4.4 | 1.2 | 18 | 44.5 | 61 | 0 | 7 | X | | 311.4 |
| PICKLE LAKE | 2.3 | 2.8 | 19.2 | -16.1 | 10.6 | 35 | 65.0 | 148 | 46 | 11 | X | | 451.1 |
| RED LAKE | 3.7 | 2.3 | 16.7 | -11.9 | 14.6 | 78 | 69.4 | 203 | 0 | 9 | 171 | * | 429.2 |
| ST. CATHARINES | 8.1 | 0.9 | 25.3 | 2.0 | 8.0 | 242 | 94.4 | 125 | 0 | 13 | X | | 298.7 |
| SARNIA | 8.1 | 1.0 | 28.6 | -4.4 | 1.8 | 29 | 67.0 | 73 | 0 | 10 | 191 | 99 | 301.3 |
| SAULT STE. MARIE | 5.7 | 2.6 | 25.9 | -6.7 | 2.0 | 20 | 36.1 | 56 | 0 | 8 | 190 | 97 | 368.5 |
| SIMCOE | | | | | | | | | | | X | | |
| SIOUX LOOKOUT | 4.5 | 3.1 | 17.6 | -11.1 | 8.2 | 32 | 106.9 | 236 | 2 | 10 | X | | 454.2 |
| SUDBURY | 6.3 | 3.6 | 29.8 | -10.5 | 14.6 | 92 | 26.3 | 43 | 0 | 8 | 201 | 97 | 360.2 |
| THUNDER BAY | 4.8 | 2.3 | 19.0 | -9.0 | 1.2 | 7 | 54.8 | 108 | 0 | 9 | 190 | 88 | 397.1 |
| TIMMINS | 4.1 | 3.1 | 29.9 | -13.0 | 29.4 | 129 | 48.6 | 99 | 0 | 7 | X | | 422.6 |
| TORONTO | 9.4 | 1.8 | 23.9 | -2.7 | 2.4 | 31 | 49.2 | 67 | 0 | 11 | 188 | * | 259.7 |
| TORONTO INT'L | 7.6 | 1.4 | 25.8 | -4.7 | 2.2 | 29 | 54.0 | 77 | 0 | 7 | X | | 312.9 |
| TORONTO ISLAND | | | | | | | | | | | | | |
| TRENTON | 8.8 | 2.4 | 25.9 | -4.3 | 0.4 | 6 | 55.9 | 73 | 0 | 8 | X | | 285.4 |
| WATERLOO-WELL | 7.2 | 1.2 | 25.2 | -5.2 | 5.0 | 71 | 59.0 | 76 | 0 | 10 | X | | 323.7 |
| WAWA | 4.2 | * | 30.0 | -11.6 | 2.2 | * | 50.6 | * | 0 | 9 | | * | 416.8 |
| WIARTON | 7.3 | 2.6 | 29.3 | -5.8 | 15.0 | 138 | 62.2 | 90 | 0 | 13 | 192 | 99 | 329.3 |
| WINDSOR | 9.6 | 1.5 | 28.5 | -3.6 | 2.6 | 61 | 72.8 | 87 | 0 | 9 | X | | 254.1 |

X = Not observed * = normal missing MSG = data missing

APRIL 1986

| STATION | Temperature C Mean | Difference from Normal | Maximum | Minimum | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| QUEBEC | | | | | | | | | | | | | |
| BAGOTVILLE | 4.8 | 2.6 | 23.9 | -9.5 | 28.0 | 141 | 58.8 | 123 | 0 | 10 | X | | 398.1 |
| BAIE COMEAU | 1.5 | 1.1 | 10.9 | -12.3 | 68.0 | 232 | 111.0 | 172 | | 11 | 183 | * | 495.1 |
| BLANC SABLON | 0.3 | 1.2 | 12.7 | -16.6 | 3.8 | 9 | 63.4 | 88 | | 10 | 110 | * | 548.5 |
| CHIBOUGAMAU | 2.6 | 3.7 | 27.0 | -20.2 | 59.8 | 270 | 93.4 | 181 | | 12 | 185 | 98 | 464.5 |
| GASPE | 3.0 | 2.1 | 17.8 | -10.8 | 62.4 | 162 | 159.0 | 192 | 0 | 11 | 160 | * | 449.3 |
| INUKJUAK | -8.9 | 2.0 | 2.4 | -25.6 | 15.4 | 115 | 31.0 | 212 | 25 | 5 | 158 | 88 | 806.8 |
| KUUJJUAQ | -6.2 | 3.0 | 9.9 | -15.1 | 12.3 | 56 | 13.5 | 58 | 42 | 8 | 180 | 91 | 726.5 |
| KUUJJUARAPIK | -3.9 | 2.9 | 12.4 | -24.9 | 25.5 | 115 | 46.1 | 171 | 2 | 12 | 116 | 62 | 671.1 |
| LA GRANDE RIVIERE | 2.2 | * | 13.0 | -18.6 | 17.1 | * | 34.4 | * | 5 | 10 | 42 | * | 606.2 |
| MANIWAKI | 7.4 | 3.8 | 28.1 | -8.1 | 5.2 | 43 | 49.2 | 82 | 0 | 9 | 227 | 118 | 316.8 |
| MATAGAMI | 3.0 | 4.7 | 28.7 | -13.7 | 38.8 | 167 | 48.0 | 119 | | 9 | 179 | 97 | 451.3 |
| MONT JOLI | 3.3 | 1.7 | 19.6 | -7.4 | 50.6 | 180 | 62.4 | 111 | 0 | 8 | 184 | 119 | 440.7 |
| MONTREAL INT'L | 8.8 | 3.1 | 27.3 | -3.3 | 0.6 | 6 | 49.4 | 66 | 0 | 8 | 224 | 118 | 277.1 |
| MONTREAL M INT'L | 8.1 | * | 26.4 | -4.2 | 6.8 | * | 59.4 | * | 0 | 8 | | * | 296.7 |
| NATASHQUAN | 0.4 | 0.9 | 12.9 | -13.6 | 9.6 | 32 | 51.4 | 68 | 0 | 9 | 130 | 79 | 492.6 |
| QUEBEC | 5.4 | 2.1 | 24.0 | -4.3 | 20.0 | 123 | 93.4 | 128 | 0 | 9 | 212 | 123 | 379.7 |
| ROBERVAL | 4.8 | 3.1 | 24.9 | -9.5 | 32.4 | 146 | 76.6 | 161 | 0 | 10 | 196 | * | 395.2 |
| SCHEFFERVILLE | -4.5 | 2.7 | 0.3 | -9.3 | 39.8 | 97 | 69.2 | 152 | 24 | 12 | 109 | * | 679.5 |
| SEPT-ILES | 0.9 | 0.9 | 11.7 | -14.0 | 67.8 | 205 | 140.9 | 179 | | 11 | 152 | 81 | 510.8 |
| SHERBROOKE | 7.7 | 4.1 | 27.5 | -5.9 | 3.8 | 16 | 46.8 | 62 | 0 | 9 | 218 | * | 310.9 |
| STE AGATHE DES MONTS | 6.5 | 4.3 | 25.7 | -7.5 | 6.2 | 30 | 48.8 | 58 | 0 | 9 | 222 | 115 | 345.9 |
| ST-HUBERT | 8.2 | 2.5 | 27.9 | -5.0 | 0.8 | 7 | 50.9 | 67 | 0 | 10 | 0 | | 296.1 |
| VAL D'OR | 4.2 | 3.3 | 28.2 | -17.0 | 65.2 | 303 | 87.1 | 171 | 0 | 12 | 220 | 119 | 416.1 |
| NEW BRUNSWICK | | | | | | | | | | | | | |
| CHARLO | 2.6 | 1.3 | 18.1 | -10.7 | 85.7 | 249 | 112.7 | 137 | | 12 | 151 | 93 | 463.1 |
| CHATHAM | 4.1 | 1.1 | 19.9 | -8.5 | 30.2 | 91 | 120.7 | 142 | 0 | 12 | 140 | 81 | 418.4 |
| FREDERICTON | 5.6 | 1.5 | 19.6 | -8.1 | 19.6 | 91 | 111.3 | 139 | 0 | 10 | | | 373.4 |
| MONCTON | 4.4 | 1.4 | 16.7 | -9.6 | 9.8 | 34 | 127.6 | 141 | 0 | 13 | 144 | 90 | 409.7 |
| SAINT JOHN | 5.3 | 2.1 | 201.0 | -7.2 | 23.0 | 111 | 128.3 | 119 | 0 | 11 | 155 | 98 | 383.7 |

| STATION | Temperature C Mean | Difference from Normal | Maximum | Minimum | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NOVA SCOTIA | | | | | | | | | | | | | |
| GREENWOOD | 6.8 | 2.2 | 21.5 | -8.4 | 7.2 | 41 | 87.6 | 116 | 0 | 12 | X | | 337.4 |
| HALIFAX INT'L | 6.1 | 2.8 | 19.0 | -7.2 | 14.8 | 61 | 138.7 | 120 | 0 | 14 | 0 | | 357.4 |
| SABLE ISLAND | 4.2 | 0.9 | 12.4 | -4.2 | 4.0 | 65 | 150.8 | 153 | 0 | 14 | 78 | 57 | 413.1 |
| SHEARWATER | 5.4 | 1.4 | 15.9 | -7.5 | 0.0 | | 114.7 | 114 | 0 | 13 | 102 | 61 | 378.6 |
| SYDNEY | 2.7 | 0.7 | 15.3 | -9.2 | 3.0 | 11 | 156.2 | 153 | 0 | 12 | 97 | 61 | 459.8 |
| TRURO | 6.4 | 3.5 | 20.2 | -10.6 | 18.4 | 98 | 75.8 | 94 | 0 | 11 | 136 | 90 | 346.7 |
| YARMOUTH | 7.3 | 2.6 | 18.3 | -4.1 | 0.4 | 6 | 91.8 | 95 | 0 | 12 | 160 | 89 | 320.9 |
| PRINCE EDWARD ISLAND | | | | | | | | | | | | | |
| CHARLOTTETOWN | 4.2 | 1.9 | 18.0 | -8.0 | 11.4 | 41 | 120.0 | 146 | | 12 | X | | 415.6 |
| SUMMERSIDE | 3.6 | 1.0 | 14.9 | -6.6 | 11.2 | 46 | 118.2 | 156 | | 14 | 120 | 74 | 432.9 |
| NEWFOUNDLAND | | | | | | | | | | | | | |
| ARGENTIA | 4.5 | 2.2 | 22.4 | -8.7 | 0.2 | 2 | 106.4 | 137 | 0 | 8 | X | | 406.8 |
| BATTLE HARBOUR | -0.3 | 2.0 | 14.7 | -18.9 | 6.6 | 14 | 52.0 | 95 | | 11 | X | | 548.2 |
| BONAVISTA | 3.2 | 2.6 | 21.5 | -8.1 | 11.8 | 52 | 79.6 | 122 | 0 | 10 | X | | 444.1 |
| BURGEO | 5.5 | 3.9 | 12.2 | -10.9 | | | 221.4 | 175 | 0 | 12 | 0 | | 464.9 |
| CARTWRIGHT | -0.9 | 1.7 | 13.6 | -22.6 | 14.2 | 24 | 36.9 | 45 | 21 | 9 | 179 | 139 | 570.7 |
| CHURCHILL FALLS | -1.7 | 3.3 | 14.7 | -23.5 | 25.5 | 48 | 53.2 | 86 | 28 | 8 | 145 | 93 | 589.0 |
| COMFORT COVE | 4.1 | 3.2 | 22.0 | -13.6 | 9.4 | 20 | 139.4 | 155 | 0 | 15 | X | | 418.6 |
| DANIEL'S HARBOUR | 2.0 | 1.7 | 15.8 | -16.0 | 4.0 | 14 | 76.6 | 146 | 0 | 12 | 160 | 119 | 481.2 |
| DEER LAKE | 4.2 | 3.4 | 23.2 | -18.4 | | | 91.8 | 155 | 0 | 10 | X | | 420.3 |
| GANDER INT'L | 4.1 | 3.2 | 22.6 | -12.0 | 8.8 | 18 | 130.0 | 139 | 0 | 8 | 126 | 108 | 416.6 |
| GOOSE | 0.8 | 2.5 | 21.2 | -22.1 | 13.2 | 27 | 61.0 | 99 | 0 | 8 | 195 | 139 | 516.7 |
| PORT-AUX-BASQUES | 2.4 | 1.6 | 11.2 | -11.3 | 1.0 | 4 | 114.6 | 123 | | 14 | 105 | * | 469.0 |
| ST ANTHONY | -0.4 | * | 12.2 | -14.2 | 10.0 | * | 128.9 | * | 6 | 12 | 0 | * | 552.4 |
| ST JOHN'S | 4.2 | 3.0 | 24.1 | -8.2 | 4.4 | 12 | 129.2 | 111 | 0 | 7 | 143 | 123 | 412.8 |
| ST LAWRENCE | 2.4 | * | 14.9 | -11.6 | 0.0 | * | 183.4 | * | 0 | 12 | | * | |
| STEPHENVILLE | 5.4 | * | 23.8 | -13.5 | 1.1 | * | 88.1 | * | 0 | 12 | | * | 378.8 |
| WABUSH LAKE | -1.3 | * | 12.1 | -22.9 | 57.4 | * | 81.3 | * | 7 | 12 | 161 | * | 579.4 |

X = Not observed * = normal missing MSG = data missing

**AGROCLIMATOLOGICAL STATIONS** — **APRIL 1986**

| 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 | 8.3 | -1.2 | 23.5 | -0.5 | 0 | 127.1 | 115 | 0 | 20 | 95 | 100.5 | 291.0 |
| KAMLOOPS | | | | | | | | | | | | |
| SIDNEY | | | | | | | | | | | | |
| SUMMERLAND | 7.9 | -0.8 | 22.0 | -1.5 | 0 | 39.6 | 202 | 0 | 12 | 173 | 83.5 | 150.5 |
| **ALBERTA** | | | | | | | | | | | | |
| BEAVERLODGE | 3.0 | -0.4 | 21.0 | -15.0 | 21.0 | 79.0 | 409 | 18 | 6 | 168 | 29.5 | 31.5 |
| ELLERSLIE | 3.7 | -0.6 | 23.2 | -13.3 | 11.9 | 44.9 | 223 | T | 10 | 203 | 44.4 | 49.3 |
| FORT VERMILLION | | | | | | | | | | | | |
| LACOMBE | 3.4 | +0.3 | 25.0 | -15.5 | 29.0 | 31.5 | 133 | 0 | 6 | 203 | 31.5 | 45.3 |
| LETHBRIDGE | | | | | | | | | | | | |
| VAUXHALL | | | | | | | | | | | | |
| VEGREVILLE | 3.1 | -1.7 | 22.0 | -20.5 | 17.0 | 27.1 | 66 | 0 | 9 | | 38.4 | 40.5 |
| **SASKATCHEWAN** | | | | | | | | | | | | |
| INDIAN HEAD | | | 23.0 | -16.5 | 23.0 | 27.0 | 95 | 0 | 9 | | 51.5 | 66.0 |
| MELFORT | 2.0 | 0.7 | 21.0 | -17.0 | 4.2 | 21.0 | 111 | 0 | 5 | 182 | 28.0 | 28.0 |
| REGINA | 3.4 | 0.4 | 23.5 | -16.5 | 7.8 | 20.2 | 85 | 0 | 5 | | 0.0 | 0.0 |
| SASKATOON | 3.3 | 0.8 | 21.5 | -14.0 | 0.8 | 6.2 | 30 | 0 | 3 | 200 | 36.5 | 49.0 |
| SCOTT | 3.3 | 0.6 | 20.5 | -15.0 | 0 | 6.0 | 25 | 0 | 2 | 236 | 26.9 | 26.9 |
| SWIFT CURRENT SOUTH | 4.2 | 0.2 | 23.5 | -18.0 | 8.9 | 14.4 | 56 | 0 | 6 | 195 | 54.1 | 76.3 |
| **MANITOBA** | | | | | | | | | | | | |
| BRANDON | 4.2 | 0.9 | 22.4 | -12.7 | 8.0 | 61.0 | 165 | 0 | 10 | | 44.3 | 56.1 |
| GLENLEA | 4.0 | 0.6 | 21.0 | -10.0 | 10.2 | 83.2 | 222 | 0 | 8 | 171 | 36.6 | 40.6 |
| MORDEN | 4.8 | 0.8 | 21.5 | -11.0 | 16.6 | 96.6 | 233 | 0 | 11 | 160 | 34.7 | 57.0 |
| **ONTARIO** | | | | | | | | | | | | |
| DELHI | 8.0 | 1.3 | 28.0 | -5.0 | 0 | 83.1 | 89 | 0 | 10 | 172 | 113.1 | 148.7 |
| ELORA | 7.3 | 2.2 | 24.6 | -5.3 | 4.7 | 36.0 | 51 | 0 | 7 | | 99.9 | 131.2 |
| GUELPH | 7.6 | 1.8 | 24.9 | -5.0 | 2.0 | 45.0 | 61 | 0 | 7 | 160 | 103.6 | 140.2 |
| HARROW | 9.0 | 1.1 | 27.0 | -2.0 | 0 | 77.6 | 96 | 0 | 9 | 199 | 137.5 | 166.5 |
| KAPUSKASING | | | | | | | | | | | | |
| MERIVALE | | | | | | | | | | | | |
| OTTAWA | 9.3 | 3.6 | 25.9 | -6.3 | 2.6 | 32.6 | 50 | 0 | 7 | 220 | 143.9 | 168.5 |
| SMITHFIELD | 9.2 | 3.1 | 26.0 | -3.0 | 2.4 | 61.8 | 76 | 0 | 7 | | 137.6 | 167.1 |
| VINELAND STATION | 7.0 | 0.1 | 25.6 | -2.1 | 9.0 | 92.0 | 127 | 0 | 12 | 175 | 78.7 | 128.2 |
| WOODSLEE | | | | | | | | | | | | |
| **QUEBEC** | | | | | | | | | | | | |
| LA POCATIERE | 4.7 | 1.9 | 20.5 | -6.0 | 4.5 | 57.2 | 91 | 0 | 12 | 205 | 31.5 | 34.8 |
| L'ASSUMPTION | 8.5 | 3.5 | 27.5 | -4.0 | 0 | 42.8 | 60 | 0 | 9 | 224 | 107.1 | 129.0 |
| LENNOXVILLE | | | | | | | | | | | | |
| NORMANDIN | 4.2 | 3.7 | 28.0 | -12.0 | 32.0 | 70.0 | 143 | 0 | 11 | 189 | 47.0 | 48.2 |
| ST. AUGUSTIN | | | | | | | | | | | | |
| STE CLOTHILDE | 8.7 | 3.0 | 29.0 | -3.0 | 0 | 28.2 | 37 | 0 | 7 | 217 | 137.0 | 174.1 |
| **NEW BRUNSWICK** | | | | | | | | | | | | |
| FREDERICTON | | | | | | | | | | | | |
| **NOVA SCOTIA** | | | | | | | | | | | | |
| KENTVILLE | 6.8 | 2.4 | 20.0 | -7.0 | 10.4 | 104.0 | 125 | 0 | 11 | 132 | 76.0 | 111.2 |
| NAPPAN | 4.7 | 1.4 | 16.0 | -10.5 | 8.0 | 110.2 | 146 | 0 | 12 | 128 | 36.8 | 68.8 |
| **PRINCE EDWARD ISLAND** | | | | | | | | | | | | |
| CHARLOTTETOWN | | | | | | | | | | | | |
| **NEWFOUNDLAND** | | | | | | | | | | | | |
| ST. JOHN'S WEST | | | | | | | | | | | | |