



Environment  
Canada

Environnement  
Canada

# Climatic Perspectives

*archives*

*Ref 92*

July 30 to August 5, 1990 **A weekly review of Canadian climate and water**

Vol. 12 No 31

## Hurricane Bertha Inundates Atlantic Canada

The passage of Bertha through the Maritimes soaked the eastern half of Nova Scotia, with Prince Edward Island receiving the brunt of the precipitation, causing extensive flooding and property damage. However, the overall damage had not been assessed by the end of the week. Seven metre waves snapped the keel of a cargo ship south of Nova Scotia in which six souls were lost and another twenty-one were rescued by ships in the area.

Although the Atlantic region started off the week on the sunny and warm side, by mid-week, hurricane Bertha churned its way over Sable Island, N.S. on the 1st then over Sydney, N.S. on the 2nd, which by then, had been downgraded to a tropical storm. Bertha then made its way through the Cabot Strait and on into the eastern parts of the Gulf of St. Lawrence. Winds gusting in excess of 100 km/h were reported at a few locations. East Point, P.E.I., reported a gust to 115 km/h early Thursday. Ingonish Beach, on Cape Breton Island, N.S. reported 131.1 mm of rain, and during a 30 hour period from early on the 1st to the afternoon of the 2nd, Port Hawkesbury Airport reported 141 mm of rain, 117 mm of which fell in 17 hours. An observer reported 191 mm northwest of Hunters Mountain, Cape Breton. Damage to a suspension bridge near Warren Lake was reported, and parts of the popular Ingonish Beach golf course was flooded. On Aug. 1, several people at Peggy's Cove, N.S. had to be rescued when large waves washed them into the sea. On the other hand, the waves produced excellent surfing conditions for the bravest of the brave.

The Annapolis Valley of Nova Scotia received only about 20 mm of rain, with no damage to the fruit orchards or tobacco crops. In fact, more rain is needed in the Valley. Average to above-average crop yields are expected this year. Prince Edward Island's tobacco crop was devastated although there was no estimate as to the percentage lost due to the heavy rains.

On Aug 1 and 2, the remnants of Bertha tracked through the western parts of Newfoundland. Port-aux-Basques reported 63.8 mm of rain with winds gusting to 102 km/h.

*Frank Amirault (902) 426-9226*

### Saskatchewan Crop Report Favorable

Ample rainfall this year over much of the grainbelt has provided sufficient soil moisture to properly fill crops and bring them to maturity. Crop development is about a week to ten days behind normal,

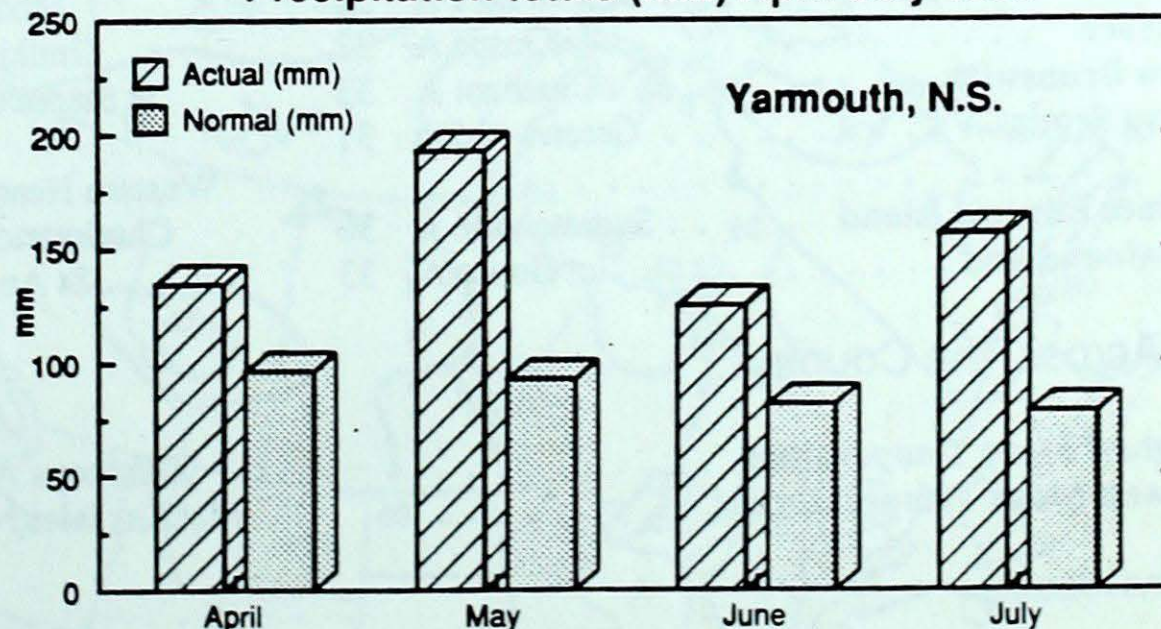
raising concerns about the effect of an early autumn frost. The 1990 crop yield is expected to be above average in most areas of the province. However, some areas along the Alberta border in western Saskatchewan will experience below-average yields. This year's production of the major grains and oilseeds is estimated to be 22.54 million tonnes, while the hay crop is expected to be 15% above average.

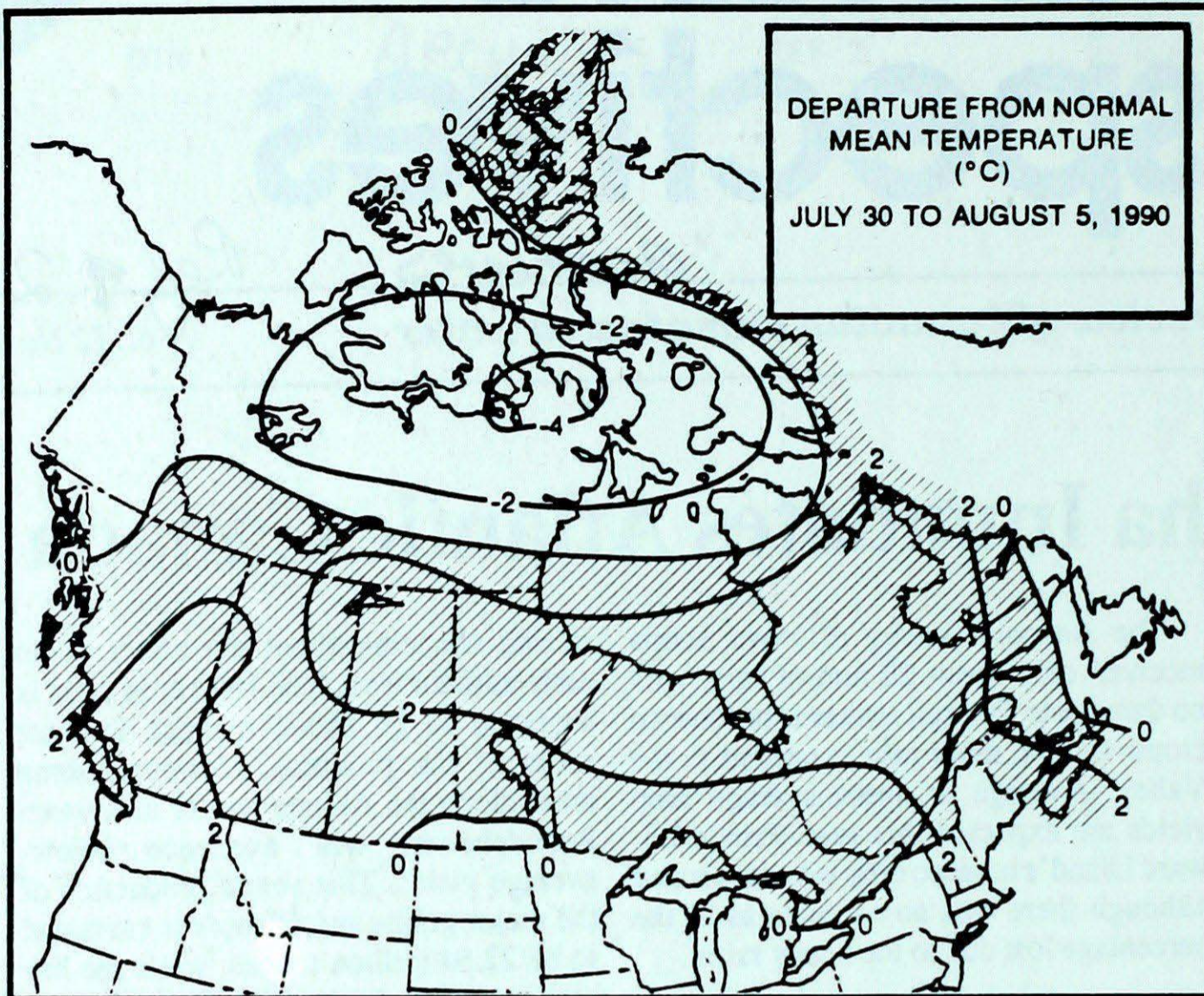
*Vern Scheidt (306) 787-5951*

### Warm weather expected for most of the country...

For the week of August 13, temperatures around 3°C above normal is expected for most of the country, except near to slightly above normal values are expected across Ontario, Quebec and New Brunswick. Precipitation is likely across most of the country except below normal amounts are expected across the Prairies and the eastern half of the Northwest Territories.

Precipitation totals (mm) April-July 1990





**Weekly normal temperatures (°C)**

|                           | max. | min. |
|---------------------------|------|------|
| Whitehorse A              | 20.6 | 8.1  |
| Iqaluit A                 | 11.2 | 4.1  |
| Yellowknife A             | 20.5 | 11.6 |
| Vancouver Int'l A         | 22.4 | 13.0 |
| Victoria Int'l A          | 22.1 | 11.0 |
| Calgary Int'l A           | 23.8 | 9.8  |
| Edmonton Int'l A          | 23.0 | 9.8  |
| Regina A                  | 26.6 | 11.5 |
| Saskatoon A               | 25.6 | 11.3 |
| Winnipeg Int'l A          | 25.6 | 12.4 |
| Ottawa Int'l A            | 25.8 | 14.4 |
| Toronto (Pearson Int'l A) | 26.3 | 14.0 |
| Montréal Int'l A          | 25.9 | 15.4 |
| Québec A                  | 24.3 | 13.0 |
| Fredericton A             | 25.5 | 13.1 |
| Saint John A              | 22.3 | 12.2 |
| Halifax (Shearwater)      | 22.2 | 14.2 |
| Charlottetown A           | 23.4 | 14.6 |
| Goose A                   | 21.0 | 11.1 |
| St John's A               | 20.7 | 12.2 |

**Weekly temperature and precipitation extremes**

|                       | Maximum temperature (°C) | Minimum temperature (°C) | Heaviest precipitation (mm) |
|-----------------------|--------------------------|--------------------------|-----------------------------|
| British Columbia      | Kamloops A 36            | Dease Lake 2             | Dease Lake 24               |
| Yukon Territory       | Watson Lake A 28         | Komakuk Beach A 1        | Komakuk Beach A 20          |
| Northwest Territories | Fort Smith A 33          | Pelly Bay A -3           | Fort Simpson A 56           |
|                       |                          |                          | Fort Reliance 56            |
| Alberta               | Medicine Hat A 33        | Lac La Biche (aut) 3     | High Level A 45             |
| Saskatchewan          | North Battleford A 33    | Cree Lake 6              | Uranium City A 24           |
| Manitoba              | Portage La Prairie A 34  | Thompson A 1             | Thompson A 31               |
| Ontario               | Ottawa Int'l A 32        | Moosonee 4               | North Bay A 106             |
| Québec                | Gaspe A 32               | Inukjuak A 1             | Natashquan A 98             |
| New Brunswick         | Chatham A 33             | St Stephen (aut) 11      | Chatham A 43                |
| Nova Scotia           | Greenwood A 31           | Truro 12                 | Sydney A 45                 |
|                       |                          | Western Head (aut) 12    |                             |
| Prince Edward Island  | Summerside A 30          | Charlottetown A 12       | East Point (aut) 127        |
| Newfoundland          | Goose A 33               | St Anthony 0             | St Anthony 45               |

**Across The Country...**

|                          |                     |
|--------------------------|---------------------|
| Highest Mean Temperature | Kamloops A(BC) 24   |
| Lowest Mean Temperature  | MacKar Inlet(NWT) 2 |

CLIMATIC PERSPECTIVES  
VOLUME 12

Managing Editor . . . . . *Amir Shabbar*  
Editor-in-charge  
- weekly/monthly . . . . . *Andy Radomski*  
French version . . . . . *Alain Caillet*  
Data Manager . . . . . *M. Skarpathiotakis*  
Computer support . . . . . *Tommy Jang*  
Art Set-up . . . . . *K. Czaja*  
Translation . . . . . *D. Pokorn*  
Cartography . . . . . *T. Chivers*

ISBN 0225-5707 UDC 551.506.1(71)

Climatic Perspectives is a weekly publication (disponible aussi en français) of the Canadian Climate Centre, Atmospheric Environment Service, 4905 Dufferin St., Downsview, Ontario, Canada M3H 5T4

☎ (416) 739-4438/4436

The purpose of the publication is to make topical information available to the public concerning the Canadian Climate and its socio-economic impact.

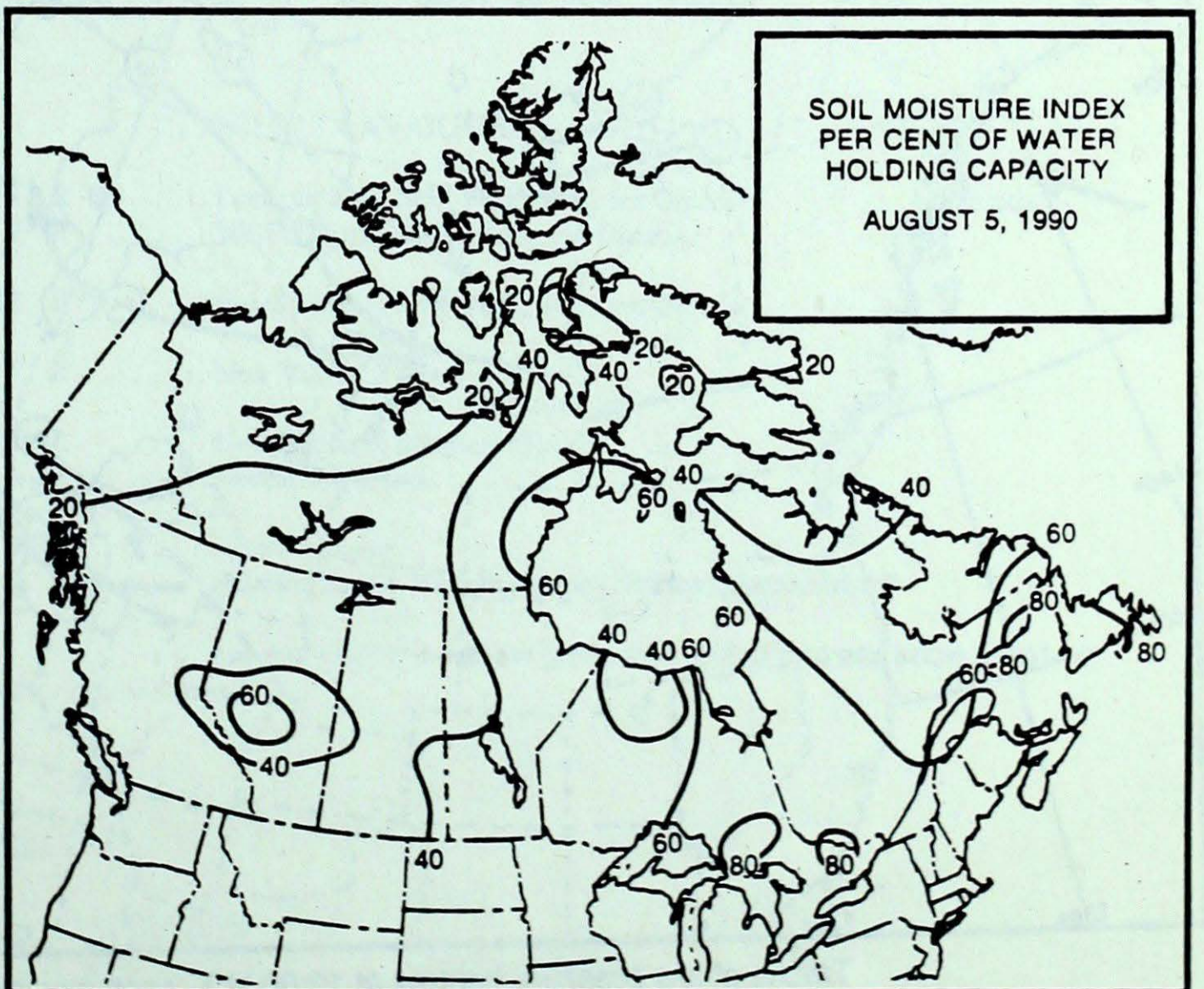
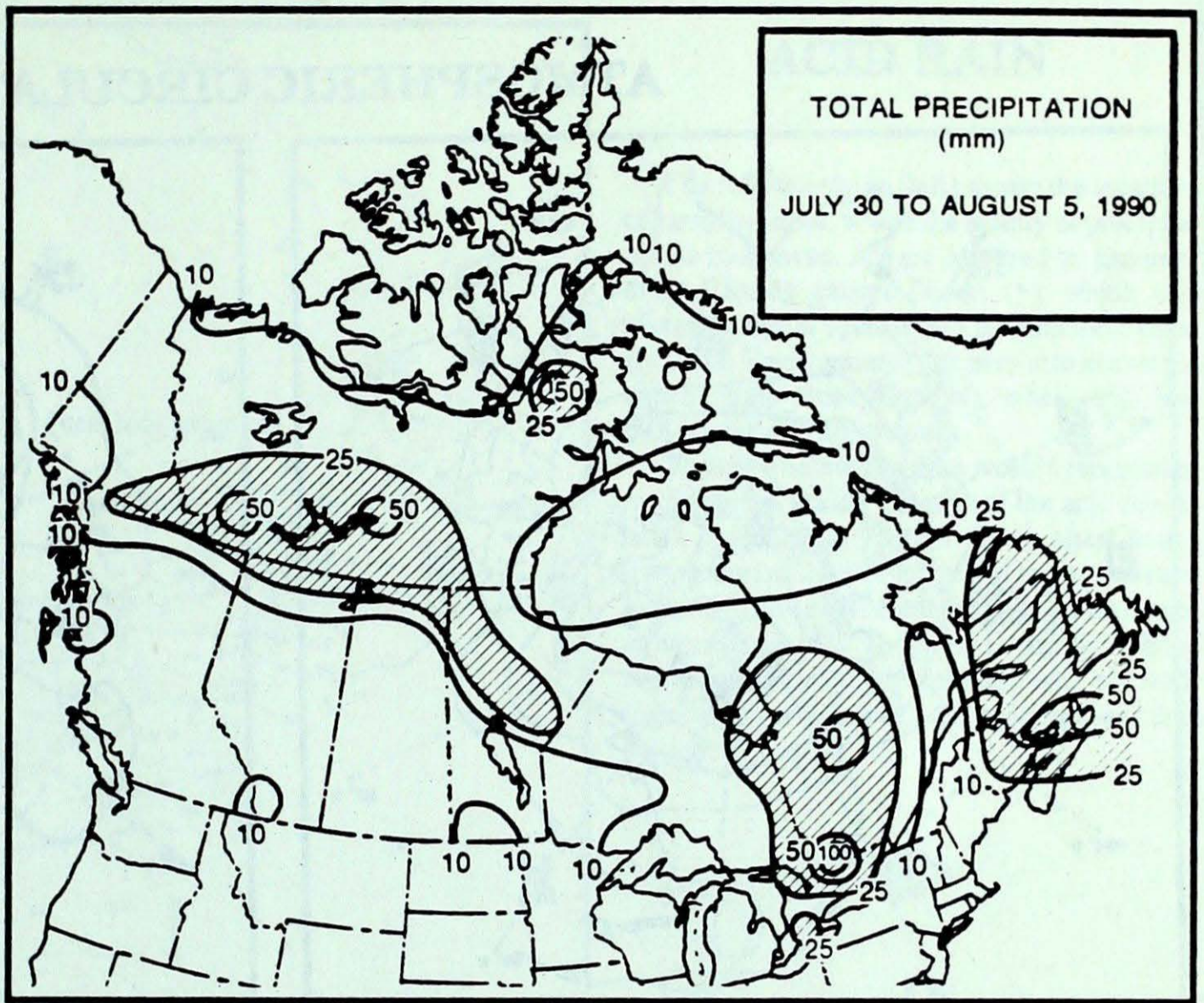
The data in this publication are based on unverified reports from approximately 225 Canadian synoptic weather stations. Information concerning climatic impacts is gathered from AES contacts with the public and from the media. Articles do not necessarily reflect the views of the Atmospheric Environment Service.

Annual Subscriptions

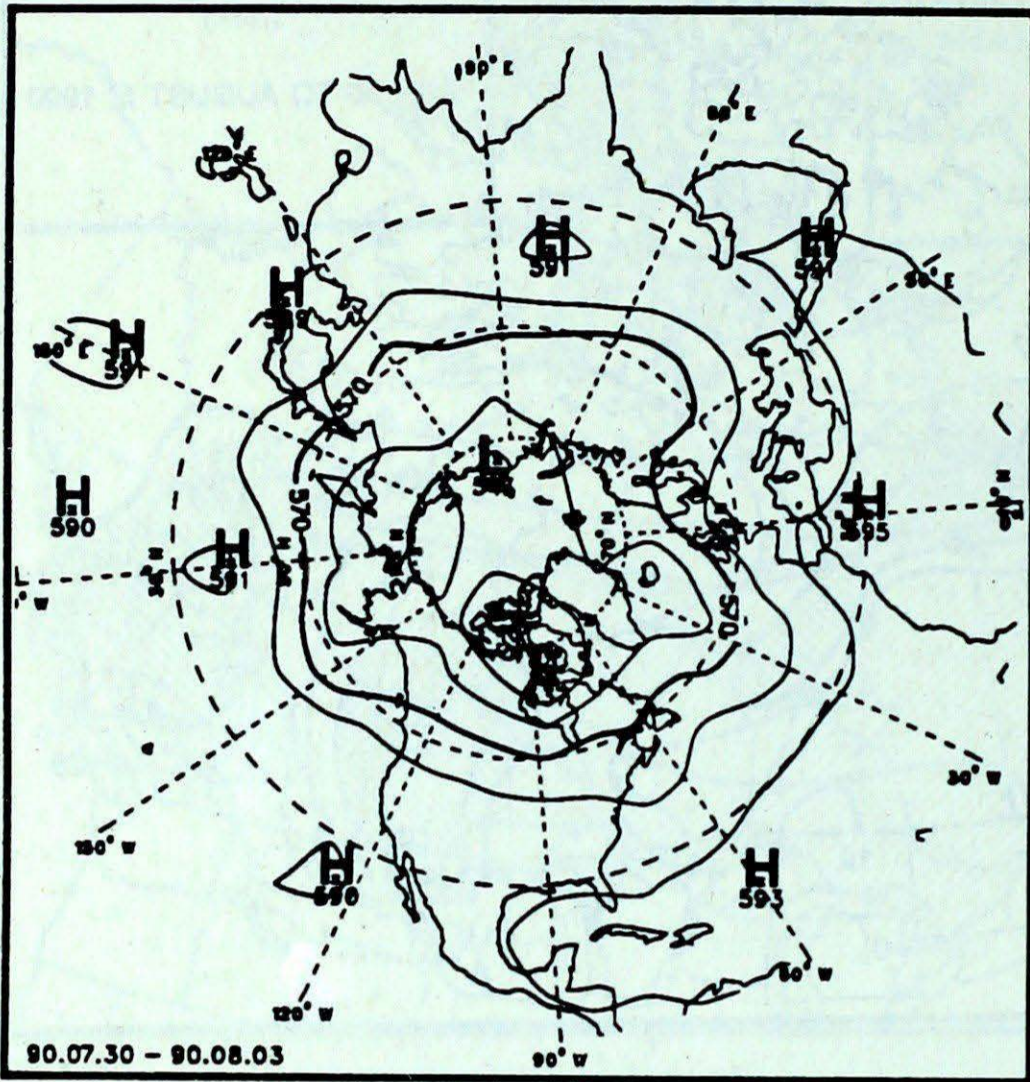
weekly and monthly : . . . . . \$35.00  
foreign: . . . . . \$42.00  
monthly issue: . . . . . \$10.00  
foreign: . . . . . \$12.00

Orders must be prepaid by money order or cheque payable to Receiver General for Canada. Canadian Government Publishing Centre, Ottawa, Ontario, Canada K1A 0S9

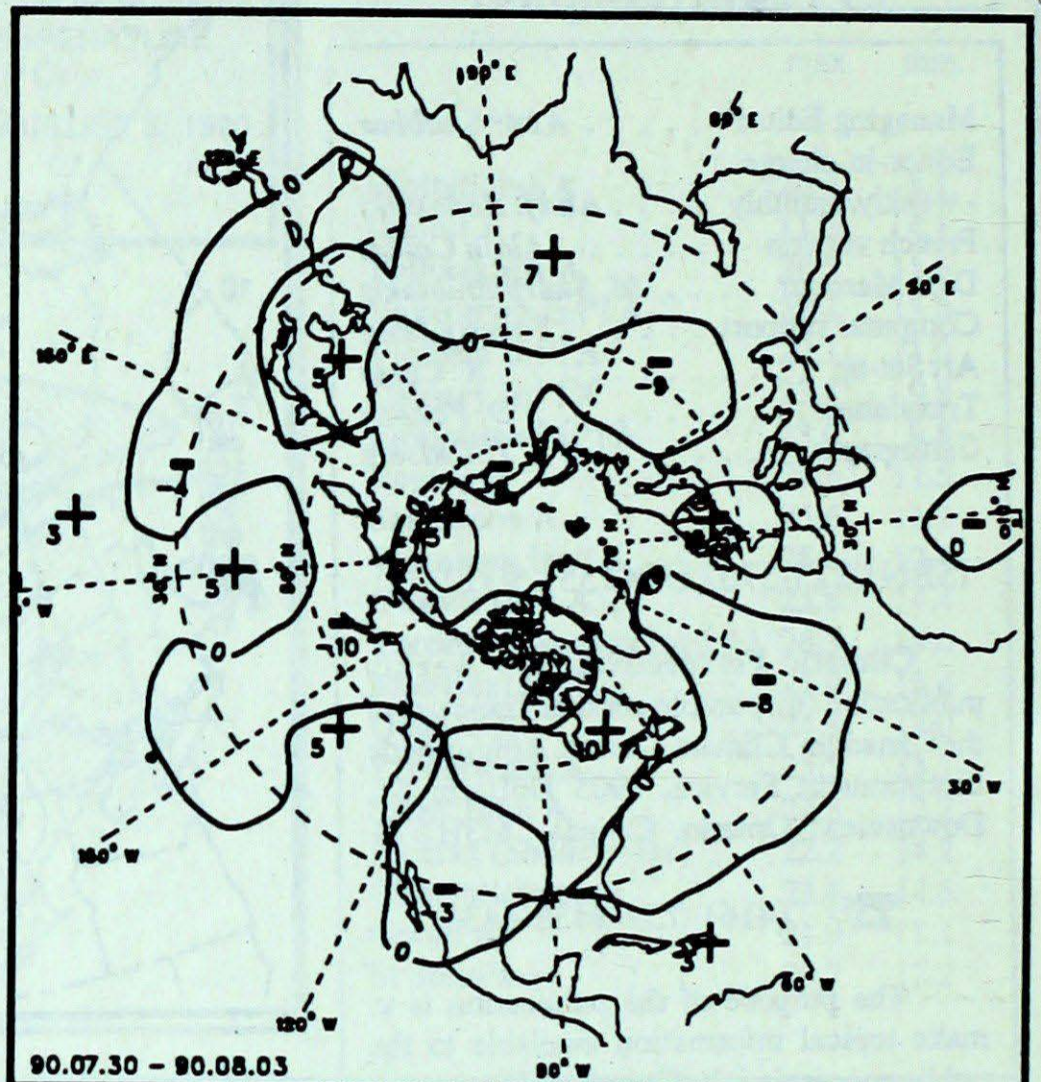
☎ (819) 997-2560



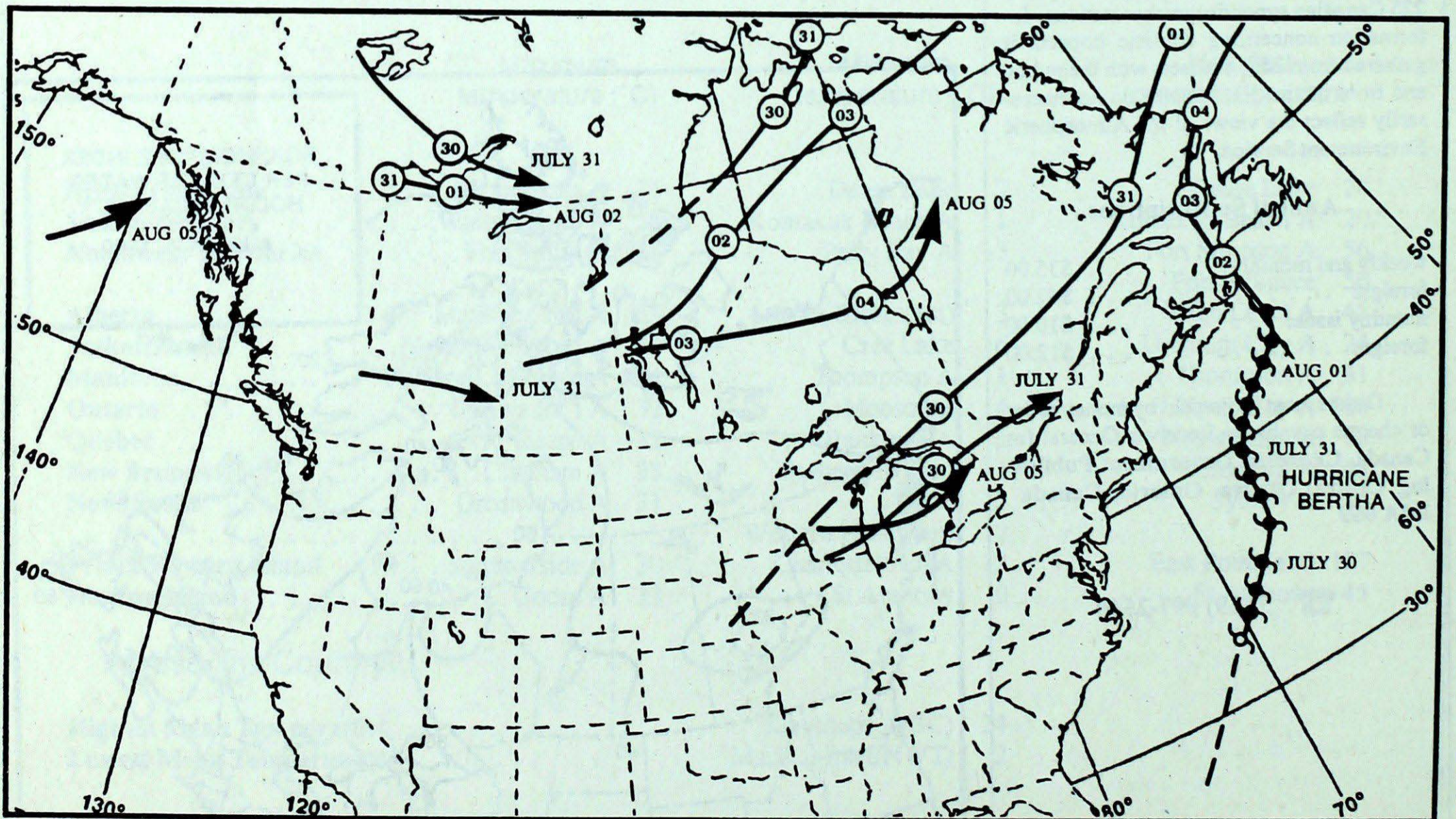
### ATMOSPHERIC CIRCULATION



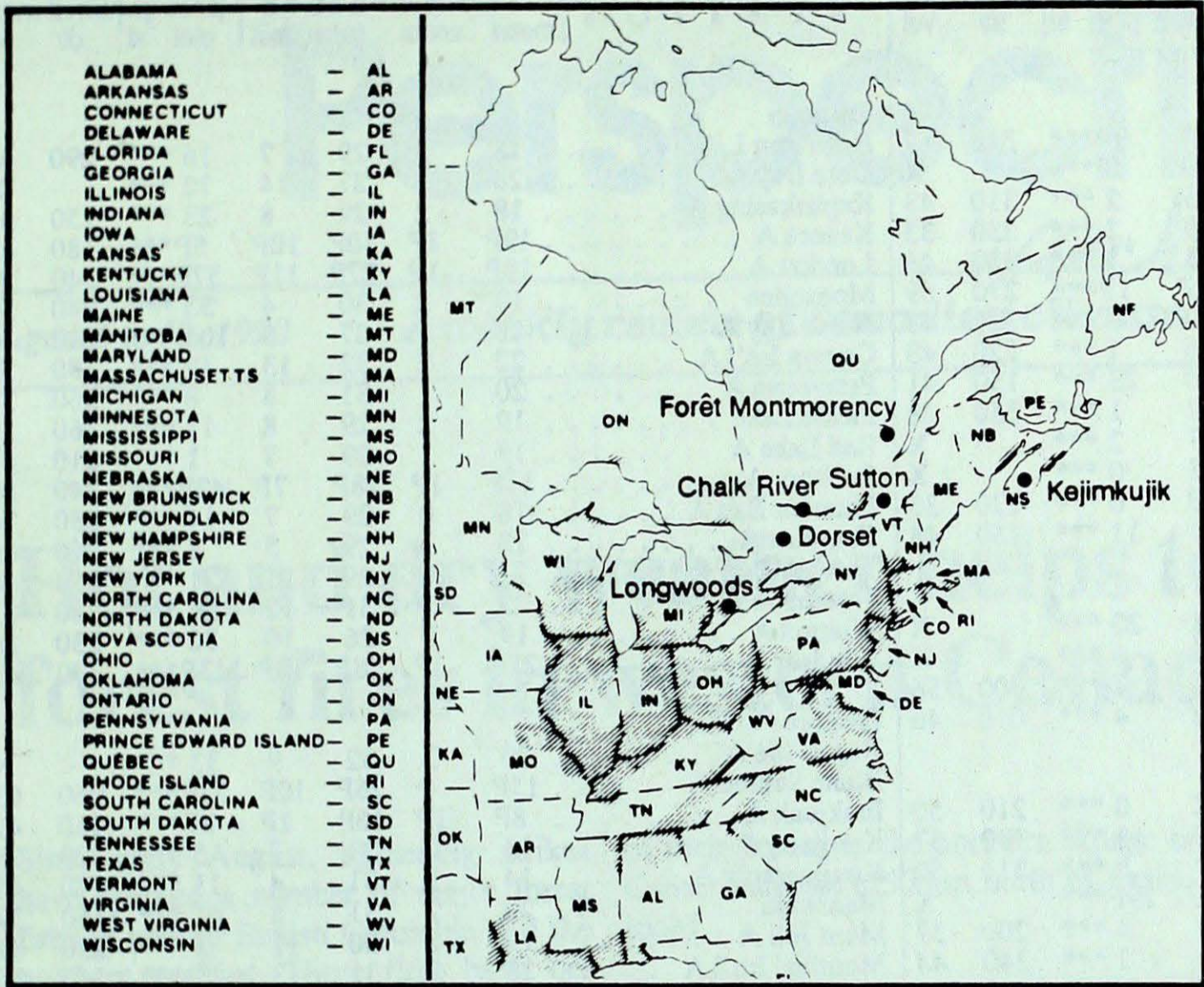
Mean geopotential height  
50-kPa level (10-decametre intervals)



Mean geopotential height anomaly  
50-kPa level (10-decametre intervals)



Tracks of low pressure centres at 12:00 U.T. each day during the period.



### ACID RAIN

The reference map (left) shows the locations of sampling sites, where the acidity of precipitation is monitored. All are operated by Environment Canada except Dorset (\*), which is a research station operated by the Ontario Ministry of the Environment. The map also shows the approximate areas (shaded), where SO<sub>2</sub> and NO<sub>x</sub> emissions are greatest.

The table below gives the weekly report summarizing the acidity (or pH) of the acid rain or snow that fell at the collection sites, and a description of the path travelled by the moisture laden air. Environmental damage to lakes and streams is usually observed in sensitive areas regularly receiving precipitation with pH readings less than 4.7, while pH readings less than 4.0 are serious.

| Site        | day | pH  | amount | air path to site | July 29 to August 4, 1990                            |
|-------------|-----|-----|--------|------------------|--|
| Longwoods   |     |     |        | .....            | NO DATA AVAILABLE                                    |
| Dorset *    | 30  | 4.0 | 18 R   | .....            | Pennsylvania, New York, Southern Ontario             |
|             | 04  | 3.5 | 2 R    | .....            | West Virginia, Ohio, Southern Ontario                |
| Chalk River | 30  | 4.2 | 12 R   | .....            | Pennsylvania, New York, Southern Ontario             |
| Sutton      | 31  | 3.8 | 5 R    | .....            | New York   |
| Montmorency | 31  | 4.5 | 19 R   | .....            | New England, Southern Quebec                         |
|             | 03  | 4.7 | 3 R    | .....            | Northern Quebec                                      |
| Kejimkujik  | 31  | 4.8 | 6 R    | .....            | Atlantic Ocean                                       |
|             | 01  | 5.1 | 10 R   | .....            | Atlantic Ocean, New Brunswick, Prince Edouard Island |

r = rain (mm), s = snow (cm), m = mixed rain and snow (mm)

Environment Canada Environnement

CLIMATIC PERSPECTIVES

Vol: 12 No: 31 Date: 900730

DTM

ARCHIVES

1005959D  
REF 2

| STATION                      | temperature |      |     |     | precip. |     | wind max |                             | STATION             | temperature |      |     |     | precip. |     | wind max |     |  |  |  |  |  |  |  |
|------------------------------|-------------|------|-----|-----|---------|-----|----------|-----------------------------|---------------------|-------------|------|-----|-----|---------|-----|----------|-----|--|--|--|--|--|--|--|
|                              | mean        | anom | max | min | ptot    | st  | dir      | vel                         |                     | mean        | anom | max | min | ptot    | st  | dir      | vel |  |  |  |  |  |  |  |
| <b>British Columbia</b>      |             |      |     |     |         |     |          | <b>Ontario</b>              |                     |             |      |     |     |         |     |          |     |  |  |  |  |  |  |  |
| Cape St James                | 16P         | 2P   | 20P | 12P | 9P***   | 310 | 67       | Big Trout Lake              | 18                  | 2           | 29   | 7   | 16  | ***     | 290 | 48       |     |  |  |  |  |  |  |  |
| Cranbrook A                  | 20          | 0    | 31  | 9   | 0       | *** | X        | Gore Bay A                  | 20                  | 1           | 27   | 14  | 12  | ***     | X   | X        |     |  |  |  |  |  |  |  |
| Fort Nelson A                | 18          | 1    | 33  | 5   | 2       | *** | 310      | 43                          | Kapusking A         | 18          | 2    | 29  | 8   | 23      | *** | 250      | 50  |  |  |  |  |  |  |  |
| Fort St John A               | 19          | 3    | 31  | 8   | 2       | *** | 230      | 33                          | Kenora A            | 19P         | 1P   | 30P | 10P | 5P***   | 180 | 43       |     |  |  |  |  |  |  |  |
| Kamloops A                   | 24          | 3    | 36  | 13  | 5       | *** | 330      | 46                          | London A            | 19P         | -1P  | 27P | 11P | 37P***  | 340 | 39       |     |  |  |  |  |  |  |  |
| Penticton A                  | 24P         | 2P   | 35P | 12P | 1P***   | 270 | 69       | Moosonee                    | 17                  | 2           | 30   | 4   | 33  | ***     | 240 | 52       |     |  |  |  |  |  |  |  |
| Port Hardy A                 | 16          | 2    | 24  | 10  | 6       | *** | 330      | 43                          | North Bay A         | 18          | 1    | 27  | 8   | 106     | *** | 010      | 46  |  |  |  |  |  |  |  |
| Prince George A              | 18          | 2    | 33  | 6   | 1       | *** | 220      | 43                          | Ottawa Int'l A      | 22          | 2    | 32  | 13  | 39      | *** | 180      | 39  |  |  |  |  |  |  |  |
| Prince Rupert A              | 15          | 2    | 21  | 10  | 23      | *** | 150      | 41                          | Petawawa A          | 20          | 1    | 31  | 8   | 8       | *** | 360      | 37  |  |  |  |  |  |  |  |
| Revelstoke A                 | 22          | 2    | 30  | 12  | 1       | *** | 350      | 48                          | Pickle Lake         | 19          | 2    | 29  | 8   | 11      | *** | 360      | 32  |  |  |  |  |  |  |  |
| Smithers A                   | 17          | 1    | 31  | 7   | 2       | *** | X        | X                           | Red Lake A          | 19          | 1    | 29  | 7   | 1       | *** | 210      | 41  |  |  |  |  |  |  |  |
| Vancouver Int'l A            | 20          | 2    | 30  | 12  | 0       | *** | X        | X                           | Sudbury A           | 17P         | -1P  | 28P | 7P  | 42P***  | 340 | 50       |     |  |  |  |  |  |  |  |
| Victoria Int'l A             | 19          | 2    | 29  | 10  | 0       | *** | 120      | 35                          | Thunder Bay A       | 18          | 0    | 29  | 7   | 14      | *** | 280      | 74  |  |  |  |  |  |  |  |
| Williams Lake A              | 18          | 2    | 33  | 7   | 11      | *** | 130      | 44                          | Timmins A           | 18          | 1    | 29  | 5   | 8       | *** | 360      | 46  |  |  |  |  |  |  |  |
| <b>Yukon Territory</b>       |             |      |     |     |         |     |          | <b>Québec</b>               |                     |             |      |     |     |         |     |          |     |  |  |  |  |  |  |  |
| Komakuk Beach A              | 7           | 0    | 15  | 1   | 20      | *** | X        | X                           | Bagotville A        | 20          | 3    | 32  | 9   | 33      | *** | X        | X   |  |  |  |  |  |  |  |
| Teslin (aut)                 | 13          | *    | 22  | 5   | 6       | *** | X        | X                           | Blanc Sablon A      | 15P         | *    | 26P | 10P | 53P***  | 060 | 93       |     |  |  |  |  |  |  |  |
| Watson Lake A                | 16          | 0    | 28  | 4   | 2       | *** | 300      | 56                          | Inukjuak A          | 8P          | -1P  | 16P | 1P  | 9P***   | 160 | 41       |     |  |  |  |  |  |  |  |
| Whitehorse A                 | 14          | -1   | 23  | 2   | 4       | *** | 010      | 46                          | Kuujuuaq A          | 14          | 2    | 29  | 7   | 5       | *** | 270      | 78  |  |  |  |  |  |  |  |
| <b>Northwest Territories</b> |             |      |     |     |         |     |          | <b>New Brunswick</b>        |                     |             |      |     |     |         |     |          |     |  |  |  |  |  |  |  |
| Alert                        | 3           | -1   | 20  | -2  | 0       | *** | 210      | 50                          | Charlo A            | 20          | 2    | 30  | 11  | 36      | *** | 310      | 39  |  |  |  |  |  |  |  |
| Baker Lake A                 | 8           | -3   | 17  | 0   | 13      | *** | 330      | 57                          | Chatham A           | 22          | 2    | 33  | 13  | 43      | *** | 320      | 39  |  |  |  |  |  |  |  |
| Cambridge Bay A              | 5           | -3   | 13  | *   | 8       | *** | 310      | 52                          | Fredericton A       | 21P         | 2P   | 32P | 12P | 28P***  | 300 | 44       |     |  |  |  |  |  |  |  |
| Cape Dyer A                  | 6P          | 0P   | 15P | 1P  | 29P***  | X   | X        | X                           | Moncton A           | 21P         | 2P   | 32P | 13P | 23P***  | 080 | 43       |     |  |  |  |  |  |  |  |
| Clyde A                      | 5           | 1    | 14  | 1   | 4       | *** | 200      | 37                          | Saint John A        | 20          | 3    | 30  | 12  | 39      | *** | 330      | 50  |  |  |  |  |  |  |  |
| Coppermine A                 | 8           | -2   | 15  | 2   | 2       | *** | 340      | 44                          | <b>Nova Scotia</b>  |             |      |     |     |         |     |          |     |  |  |  |  |  |  |  |
| Coral Harbour A              | 6P          | -3P  | 14P | 1P  | 10P***  | 280 | 52       | Greenwood A                 | 21                  | 2           | 31   | 12  | 19  | ***     | 260 | 44       |     |  |  |  |  |  |  |  |
| Eureka                       | 8           | 2    | 16  | 2   | 0       | *** | 120      | 52                          | Shearwater A        | 20          | 2    | 29  | 15  | 33      | *** | 310      | 57  |  |  |  |  |  |  |  |
| Fort Smith A                 | 19          | 3    | 33  | 5   | 6       | *** | 290      | 48                          | Sydney A            | 19          | 0    | 30  | 13  | 45      | *** | 250      | 82  |  |  |  |  |  |  |  |
| Hall Beach A                 | 3           | -2   | 8   | -1  | 22      | *** | 170      | 50                          | Yarmouth A          | 19          | 3    | 27  | 13  | 3       | *** | 330      | 50  |  |  |  |  |  |  |  |
| Inuvik A                     | 11P         | -2P  | 18P | 4P  | 2P***   | 330 | 33       | <b>Prince Edward Island</b> |                     |             |      |     |     |         |     |          |     |  |  |  |  |  |  |  |
| Iqaluit A                    | 7           | -1   | 12  | 3   | 46      | *** | 140      | 39                          | Charlottetown A     | 20          | 1    | 30  | 12  | 67      | *** | 350      | 65  |  |  |  |  |  |  |  |
| Mould Bay A                  | 3           | -1   | 10  | -2  | 1       | 1   | 360      | 41                          | Summerside A        | 21          | 2    | 30  | 15  | 63      | *** | 360      | 63  |  |  |  |  |  |  |  |
| Norman Wells A               | 14          | -2   | 22  | 9   | 22      | *** | 300      | 41                          | <b>Newfoundland</b> |             |      |     |     |         |     |          |     |  |  |  |  |  |  |  |
| Resolute A                   | 3           | -1   | 8   | 0   | 4       | *** | 100      | 52                          | Cartwright          | 11          | -3   | 29  | 2   | 26      | *** | 220      | 44  |  |  |  |  |  |  |  |
| Yellowknife A                | 16          | 0    | 26  | 8   | 23      | *** | 020      | 44                          | Churchill Falls A   | 18          | 4    | 30  | 9   | 21      | *** | 020      | 54  |  |  |  |  |  |  |  |
| <b>Alberta</b>               |             |      |     |     |         |     |          | <b>90/07/30-90/08/05</b>    |                     |             |      |     |     |         |     |          |     |  |  |  |  |  |  |  |
| Calgary Int'l A              | 18          | 1    | 30  | 8   | 11      | *** | 310      | 74                          | Gander Int'l A      | 17          | 0    | 27  | 3   | 3       | *** | 200      | 69  |  |  |  |  |  |  |  |
| Cold Lake A                  | 18          | 2    | 30  | 5   | 0       | *** | 310      | 41                          | Goose A             | 16          | 0    | 33  | 10  | 37      | *** | 250      | 52  |  |  |  |  |  |  |  |
| Edmonton Namao A             | 19          | 2    | 30  | 9   | 1       | *** | 170      | 33                          | Port Aux Basques    | 14P         | -2P  | 20P | 10P | 41P***  | 090 | 102      |     |  |  |  |  |  |  |  |
| Fort McMurray A              | 19          | 2    | 32  | 5   | 3       | *** | 270      | 46                          | St John's A         | 16          | -1   | 28  | 5   | 8       | *** | 170      | 70  |  |  |  |  |  |  |  |
| High Level A                 | 18          | 2    | 31  | 6   | 45      | *** | 180      | 67                          | St Lawrence         | 14          | -1   | 19  | 8   | 3       | *** | X        | X   |  |  |  |  |  |  |  |
| Jasper                       | 17          | 2    | 31  | 7   | 9       | *** | X        | X                           | Wabush Lake A       | 17          | 3    | 30  | 7   | 6       | *** | 300      | 46  |  |  |  |  |  |  |  |
| Lethbridge A                 | 19          | 0    | 32  | 8   | 9       | *** | 290      | 82                          |                     |             |      |     |     |         |     |          |     |  |  |  |  |  |  |  |
| Medicine Hat A               | 22          | 1    | 33  | 11  | 8       | *** | 310      | 52                          |                     |             |      |     |     |         |     |          |     |  |  |  |  |  |  |  |
| Peace River A                | 18          | 2    | 31  | 6   | 2       | *** | X        | X                           |                     |             |      |     |     |         |     |          |     |  |  |  |  |  |  |  |
| <b>Saskatchewan</b>          |             |      |     |     |         |     |          | <b>Manitoba</b>             |                     |             |      |     |     |         |     |          |     |  |  |  |  |  |  |  |
| Cree Lake                    | 18          | 3    | 31  | 6   | 0       | *** | 280      | 48                          | Brandon A           | 18          | 0    | 30  | 6   | 17      | *** | 280      | 65  |  |  |  |  |  |  |  |
| Estevan A                    | 19          | -1   | 32  | 4   | 1       | *** | 310      | 56                          | Churchill A         | 13          | 0    | 23  | 5   | 6       | *** | 280      | 54  |  |  |  |  |  |  |  |
| La Ronge A                   | 19          | 3    | 30  | 9   | 2       | *** | 260      | 41                          | Lynn Lake A         | 17          | 3    | 30  | 7   | 27      | *** | 260      | 48  |  |  |  |  |  |  |  |
| Regina A                     | 19          | -1   | 31  | 7   | 2       | *** | 320      | 54                          | The Pas A           | 19          | 2    | 30  | 6   | 2       | *** | 270      | 56  |  |  |  |  |  |  |  |
| Saskatoon A                  | 18          | 0    | 32  | *   | 0       | *** | 320      | 39                          | Thompson A          | 16          | 2    | 30  | 1   | 31      | *** | 160      | 44  |  |  |  |  |  |  |  |
| Swift Current A              | 19P         | 0P   | 31P | 9P  | 1P***   | 290 | 44       | Winnipeg Int'l A            | 20                  | 1           | 33   | 7   | 1   | ***     | 200 | 54       |     |  |  |  |  |  |  |  |
| Yorkton A                    | 18          | 0    | 29  | 7   | 0       | *** | 120      | 41                          |                     |             |      |     |     |         |     |          |     |  |  |  |  |  |  |  |

mean = mean weekly temperature, °C  
 max = maximum weekly temperature, °C  
 min = minimum weekly temperature, °C  
 anom = mean temperature anomaly, °C

ptot = weekly precipitation total in mm  
 st = snow thickness on the ground in cm  
 dir = direction of max wind, deg. from north.  
 vel = wind speed in km/h

— Annotations —  
 X = no observation  
 P = less than 7 days of data  
 \* = missing data when going to printing.