

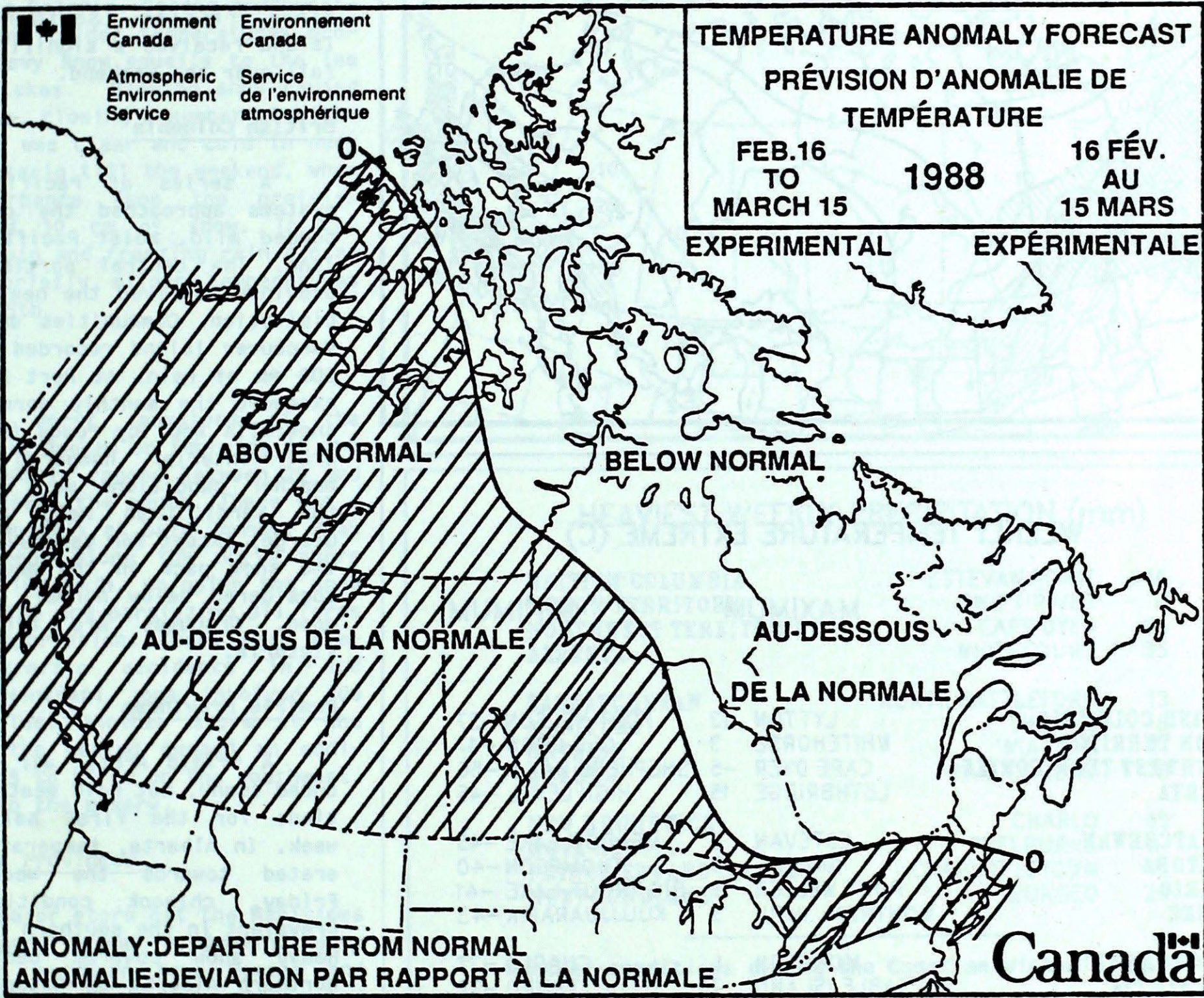
Climatic Perspectives

FEB 22 1988

A weekly review of Canadian climate

February 9 to 15, 1988

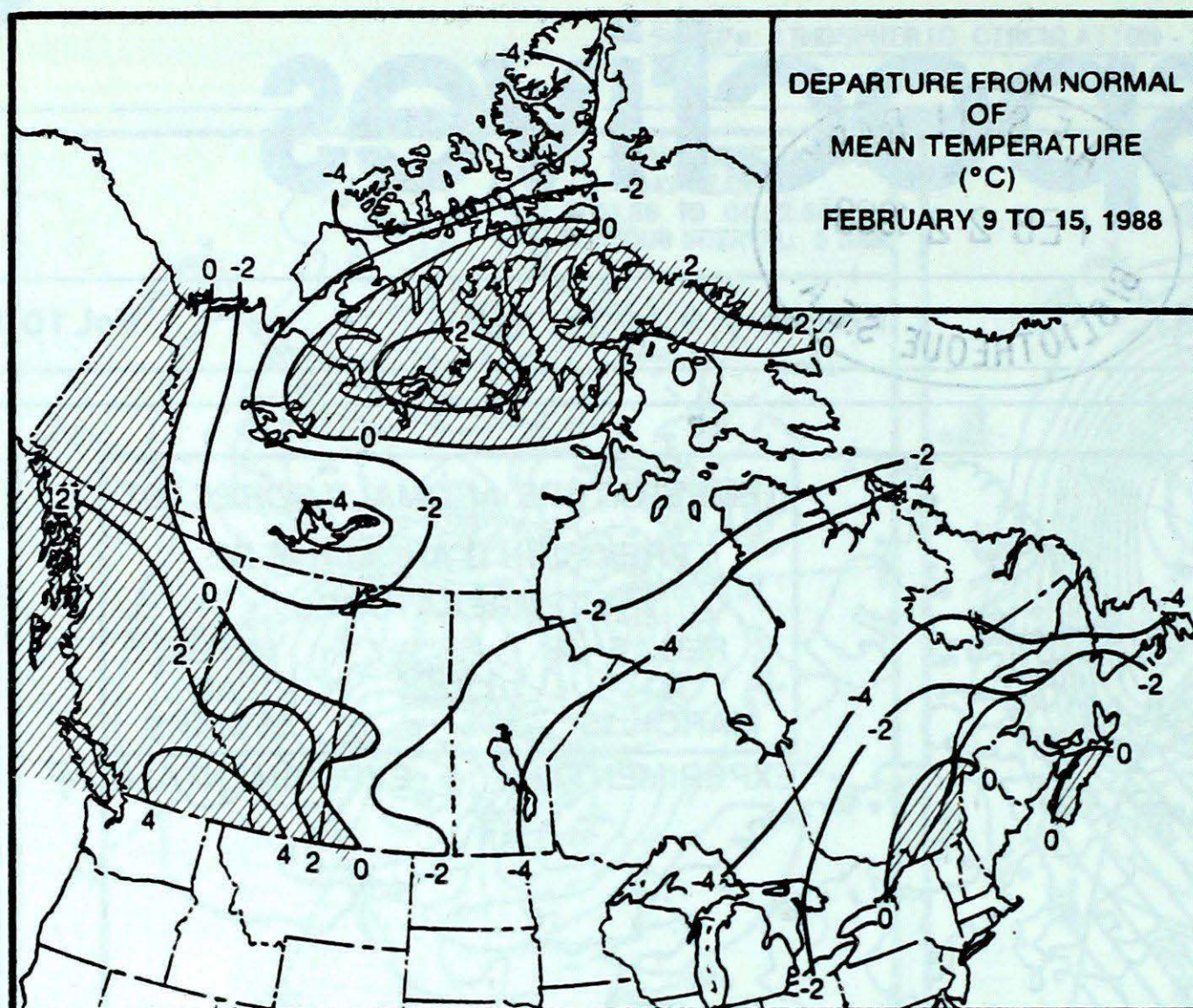
Vol.10 No.7



The above map is the latest in the evolution towards developing an acceptable format to be used in the official public product which will be formally introduced May 15, 1988. Stations near the line separating the two categories are expected to be in the transition zone between above and below normal averaged temperatures. Please forward any comments to the Canadian Climate Centre at the address listed on page 4 or call (416) 739-4436.

- Major winter storm batters Eastern Canada
- Changeable weather in the West affects Olympics
- mens downhill postponed due to winds

TEMPERATURE



ACROSS THE COUNTRY

Yukon and Northwest Territories

Milder Pacific air infiltrated the southern and central Yukon, while the north remained in a deep freeze. Wind chill and blizzard warnings were issued regularly for the Arctic, and blowing snow occurred frequently. Readings along the Arctic coastline plunged to the minus fifties. Southern Baffin Island received a significant snowfall over the weekend.

British Columbia

A series of Pacific weather systems approached the coast, and pumped mild, moist Pacific air inland. The central portion of the province received the heaviest precipitation. Communities on northern Vancouver Island recorded more than 200 mm of rain. At Port Hardy this exceeded the monthly normal. Heavy snowfalls and icy roads in the central interior hampered logging. Weather conditions were ideal for the Mardi Gras held at Prince George. Except for Vancouver Island, the snow pack in the mountains is considered below normal. Skiing is good. Crocuses are blooming in Victoria.

Prairie Provinces

A frigid Arctic air mass produced sunny, but cold weather conditions for the first half of the week. In Alberta, temperatures moderated towards the weekend. On Friday, chinook conditions were prevalent in the southern foothills. Heavy snow covered central and northern Alberta on Saturday, with amounts ranging from 10 to 20 cm. See the Olympic weather update on page 3.

An approaching warm front brought milder temperatures into Saskatchewan by the middle of the week and Manitoba by the weekend, but not before a number of daily low temperature records were broken. Maximum readings in southwestern Saskatchewan managed to climb above freezing. Most localities received some light snow. It turned much colder by the end of the period.

WEEKLY TEMPERATURE EXTREME (C)

| | MAXIMUM | MINIMUM |
|-----------------------|------------------|--------------------|
| BRITISH COLUMBIA | LYTTON 13 | FORT NELSON -37 |
| YUKON TERRITORY | WHITEHORSE 3 | OLD CROW -47 |
| NORTHWEST TERRITORIES | CAPE DYER -5 | SHEPHERD BAY A -56 |
| ALBERTA | LETHBRIDGE 15 | HIGH LEVEL -45 |
| SASKATCHEWAN | ESTEVAN 8 | MEADOW LAKE -45 |
| MANITOBA | GREYNA 8 | THOMPSON -40 |
| ONTARIO | PORT WELLER 6 | BIG TROUT LAKE -41 |
| QUEBEC | MONTREAL INT'L 5 | KUUJUAUPIK -43 |
| NEW BRUNSWICK | MONCTON 5 | CHARLO -27 |
| NOVA SCOTIA | SABLE ISLAND 7 | TRURO -22 |
| PRINCE EDWARD ISLAND | SHELBURNE | |
| NEWFOUNDLAND | SUMMERSIDE 5 | CHARLOTTETOWN -23 |
| | BONAVISTA 3 | WABUSH LAKE -38 |

ACROSS THE NATION

| | | | |
|--------------------------|-----|-----------------|-----|
| WARMEST MEAN TEMPERATURE | 8 | VANCOUVER INT'L | BC |
| COOLEST MEAN TEMPERATURE | -44 | EUREKA | NWT |
| | | SHINGLE POINT A | YT |

Ontario

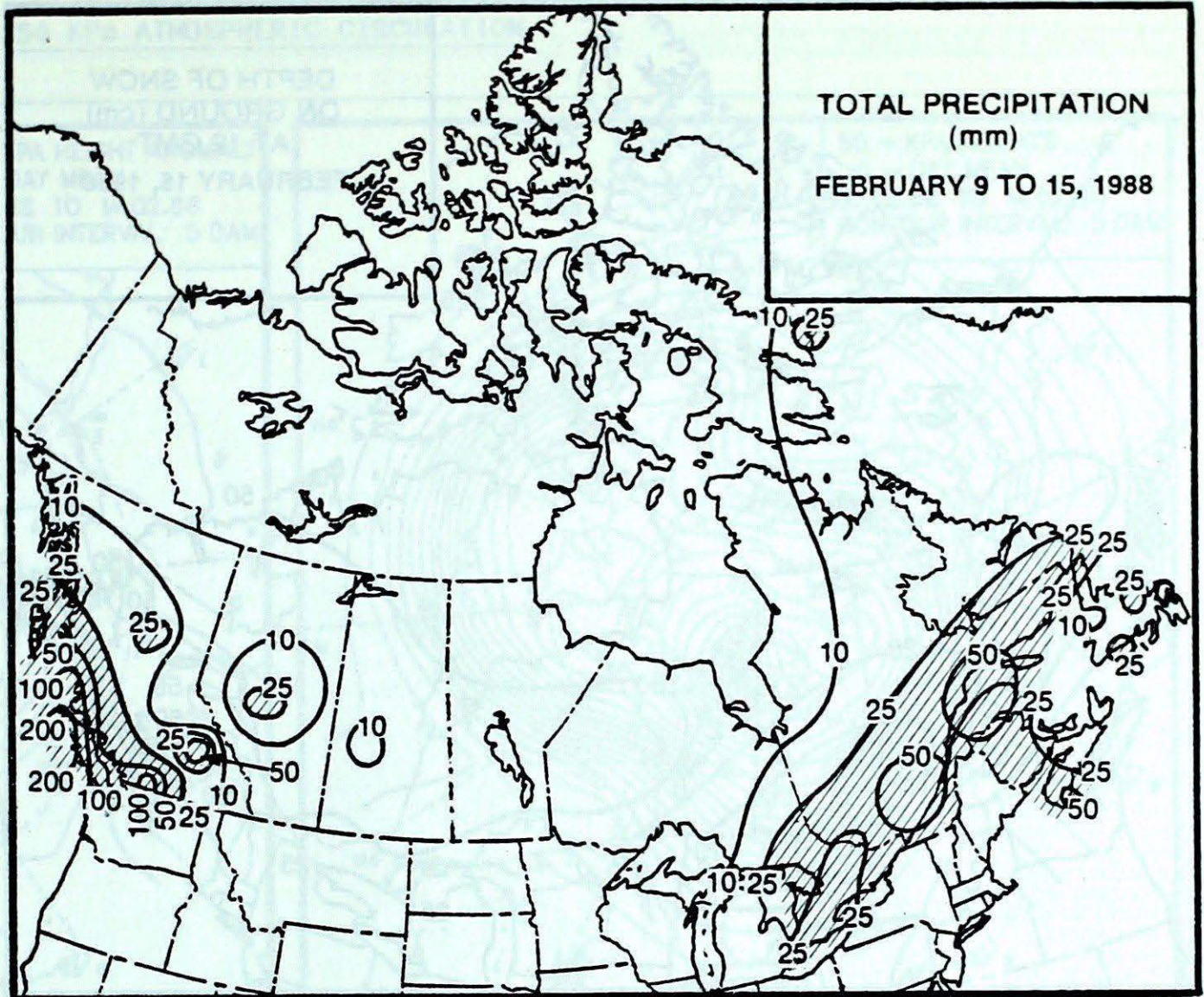
A major winter storm struck on February 12 and 13, dumping 10 to 30 cm of snow across southern and central Ontario. Strong easterly winds produced heavy drifting in rural areas, closing many schools. Toronto received 21 cm, the heaviest fall of the season. The storm hampered the search for a plane, which ditched into Lake Ontario. Strong northwesterlies and colder temperatures produced heavy snow squalls to the lee of the Lakes. Blowing snow caused whiteouts, closing a number of highways. It was clear and cold in northern Ontario till the weekend, when a disturbance from the prairies deposited 10 cm of snow. In the south, rain and freezing rain accompanied briefly milder temperatures on the 15th.

Quebec

The worst snowstorm of the winter hit Quebec on February 12 and 13. Snowfalls ranged between 20 and 35 cm across the south. There was a 60 cm snowfall at Baie Comeau. Peak wind speeds along the north shore reached 100 km/h, whipping the snow into drifts and paralyzing all forms of transportation. There were numerous traffic accidents in and around Montreal, one involved 100 automobiles. Another storm at the end of the period dumped an additional 15 to 20 cm on the southwest, adding to the misery.

Atlantic Provinces

A major storm hit the Maritimes on February 13 and 14, dumping heavy snow on northern Nova Scotia and parts of New Brunswick. Charlo had 57 cm of snow, while in other areas the snow changed to freezing rain and rain. Shelburne received 79 mm of mixed precipitation of which 53 mm fell on the 13th, setting a new 24-hour record. Winds reached 102 km/h at Truro. The storm moved into Newfoundland on Saturday, giving up to 15 cm of snow on the Island before changing to rain. Labrador received 15 to 25 cm of snow. Daniel's Harbour reported gusts to 130 km/h. Windy, colder weather covered all regions with the passage of the storm.

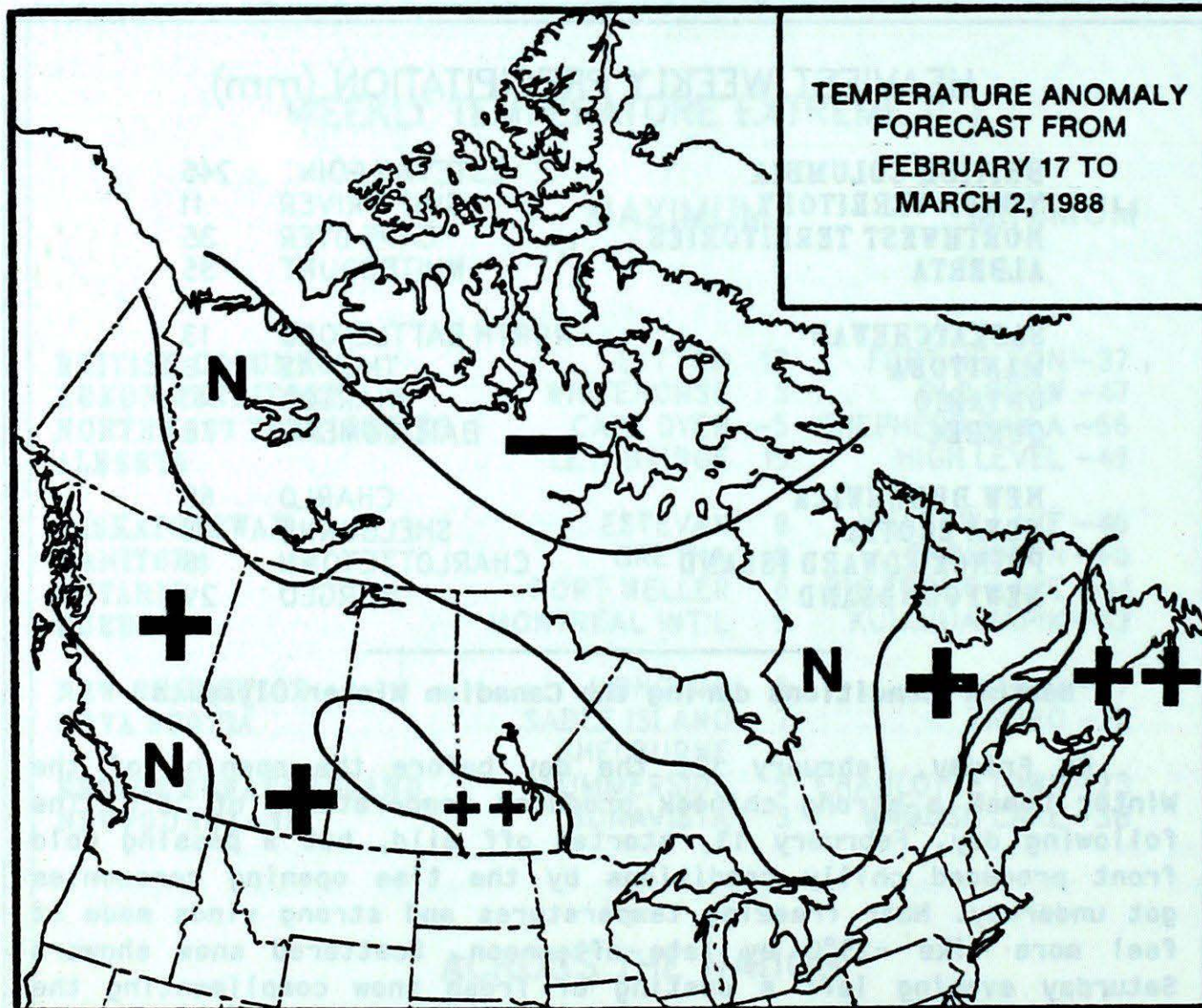
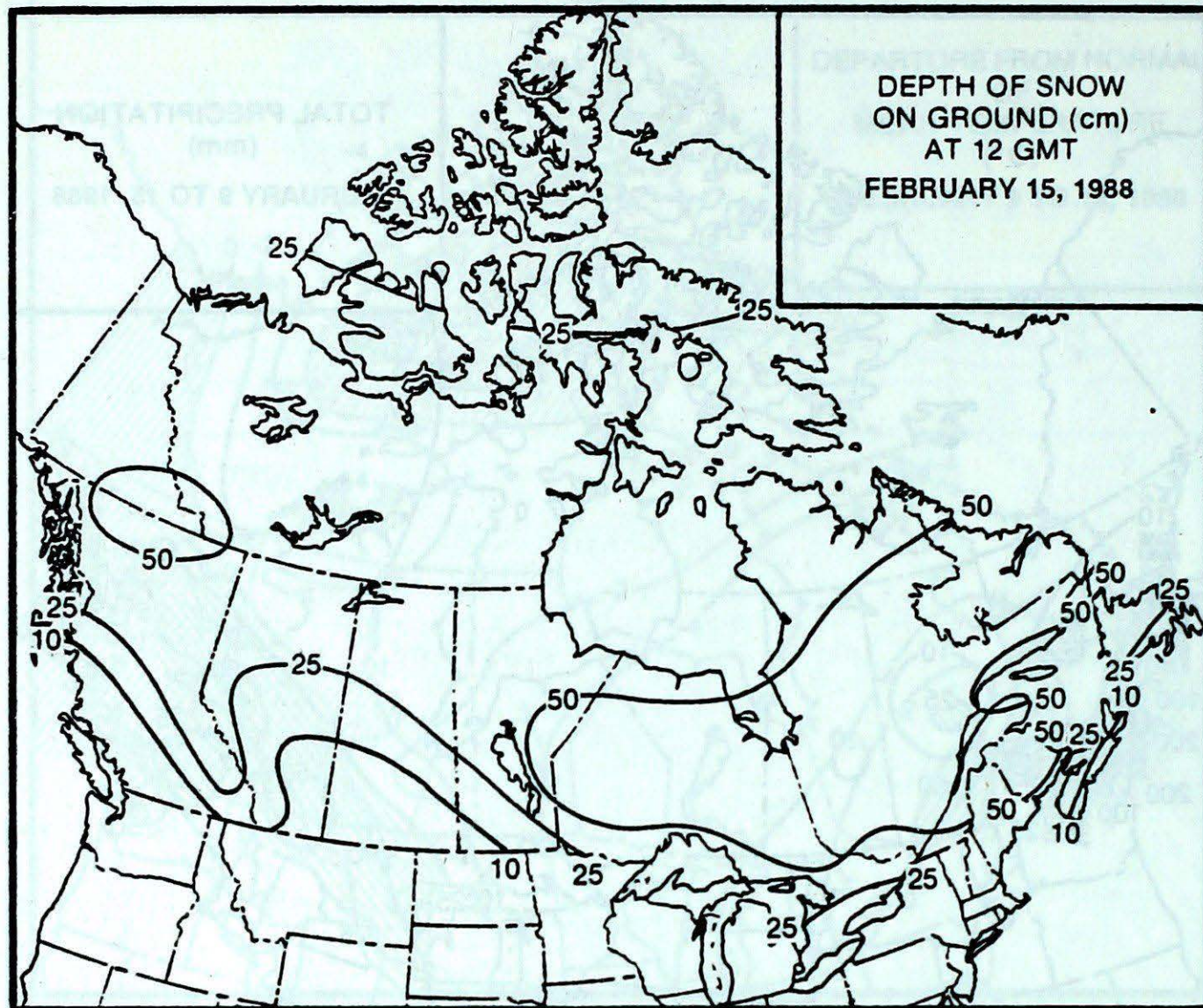
**HEAVIEST WEEKLY PRECIPITATION (mm)**

| | | |
|-----------------------|------------------|-----|
| BRITISH COLUMBIA | ESTEVAN POINT | 245 |
| YUKON TERRITORY | SWIFT RIVER | 11 |
| NORTHWEST TERRITORIES | CAPE DYER | 35 |
| ALBERTA | WHITECOURT | 35 |
| SASKATCHEWAN | NORTH BATTLEFORD | 13 |
| MANITOBA | THE PAS | 8 |
| ONTARIO | WIARTON | 41 |
| QUEBEC | BAIE COMEAU | 78 |
| NEW BRUNSWICK | CHARLO | 65 |
| NOVA SCOTIA | SHELBURNE | 81 |
| PRINCE EDWARD ISLAND | CHARLOTTETOWN | 15 |
| NEWFOUNDLAND | BURGEO | 29 |

Weather conditions during the Canadian Winter Olympics

On Friday, February 12, the day before the opening of the Winter Games a strong chinook produced temperatures of 15°C. The following day, February 13, started off mild, but a passing cold front produced chilly conditions by the time opening ceremonies got underway. Near freezing temperatures and strong winds made it feel more like -25°C by late afternoon. Scattered snow showers Saturday evening left a dusting of fresh snow complimenting the well groomed man-made snow, covering the ski trails and slopes. February 14, day two of the games, was mostly cloudy, with daytime readings hovering near freezing. Windy conditions were not ideal for ski jumping, which took place near Calgary. Chinook winds, gusting to 100 km/h at higher altitudes, caused the postponement of the mens downhill on Mount Allan till Monday, when weather conditions were more settled, but still mainly cloudy.

FORECAST



Temperature Anomaly Forecast

- ++ much above normal
+ above normal
N normal
- below normal
-- much below normal

This forecast is prepared by searching historical weather maps to find cases similar to the present. The historical outcome during the 15 days subsequent to the chosen analogues is assumed to be a forecast for the next 15 days from now.

CLIMATIC PERSPECTIVES VOLUME 10

Managing Editor P.R. Scholefield
Editors-in-charge

| | |
|-----------------|---------------------|
| weekly | A.K. Radomski |
| monthly | A. Shabbar |
| French | A.A. Caillet |
| Data Manager | M. Skarpathiotakis |
| Art Layout | K. Czaja |
| Word Processing | P. Burke/U. Ellis |
| Translation | D. Pokorn |
| Cartography | G. Young/T. Chivers |

Regional Correspondents

Atlantic: F. Amirault; Que.: J. Miron
Ont.: B. Smith; Central: J.F. Bendell
Western: W. Prusak; Pac.: E. Coatta;
Yukon Weather Centre: J. Steele;
Frobisher Bay & Yellowknife Weather
Offices; Newfoundland Weather
Centre: G. MacMillan; Ice Central
Ottawa

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Unsolicited articles are welcome but should be at maximum about 1500 words in length. They will be subject to editorial change without notice due to publishing time constraints. The contents may be reprinted freely with proper credit.

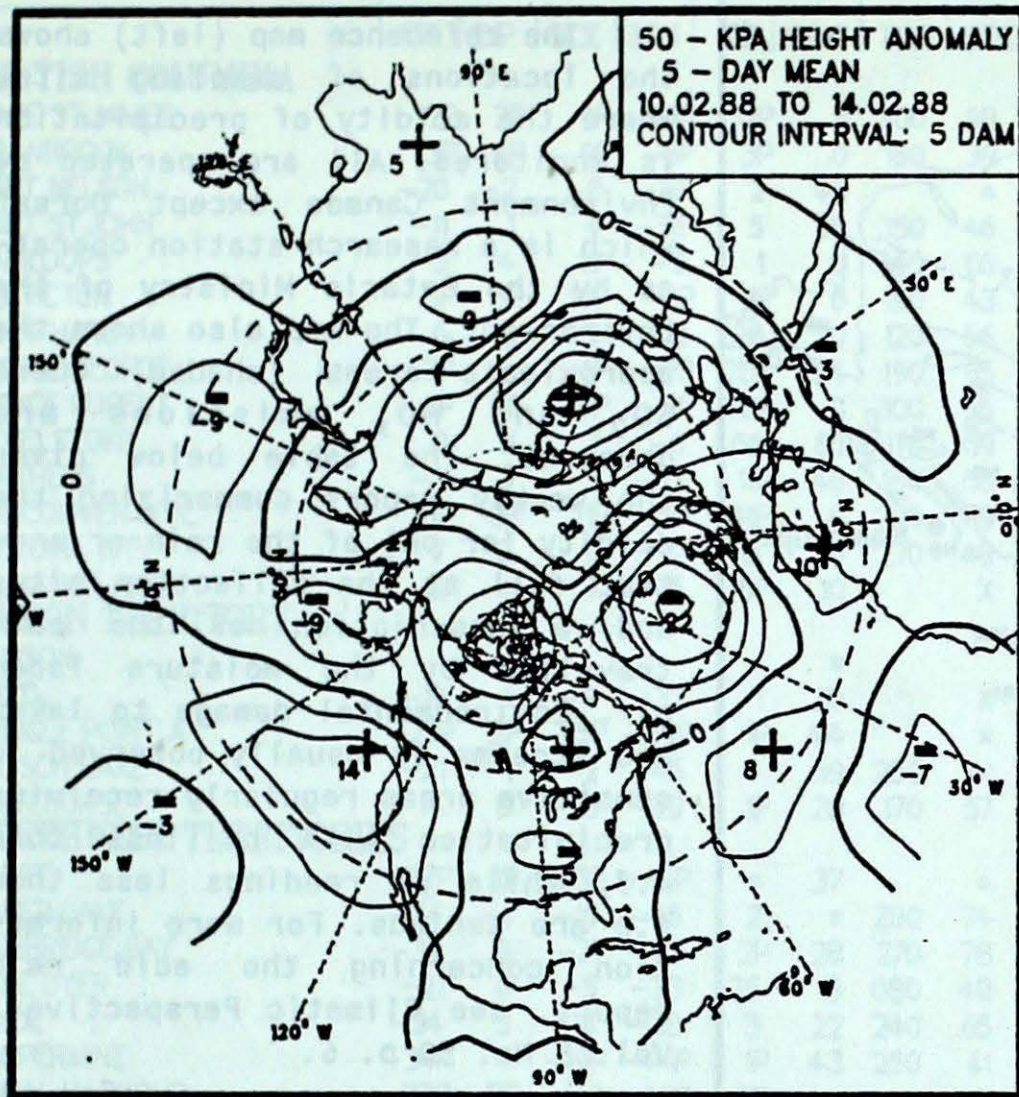
The data in this publication are based on unverified reports from approximately 225 Canadian synoptic weather stations. Information concerning climatic impacts is gathered from AES contacts with the public and from the media. Articles do not necessarily reflect the views of the Atmospheric Environment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

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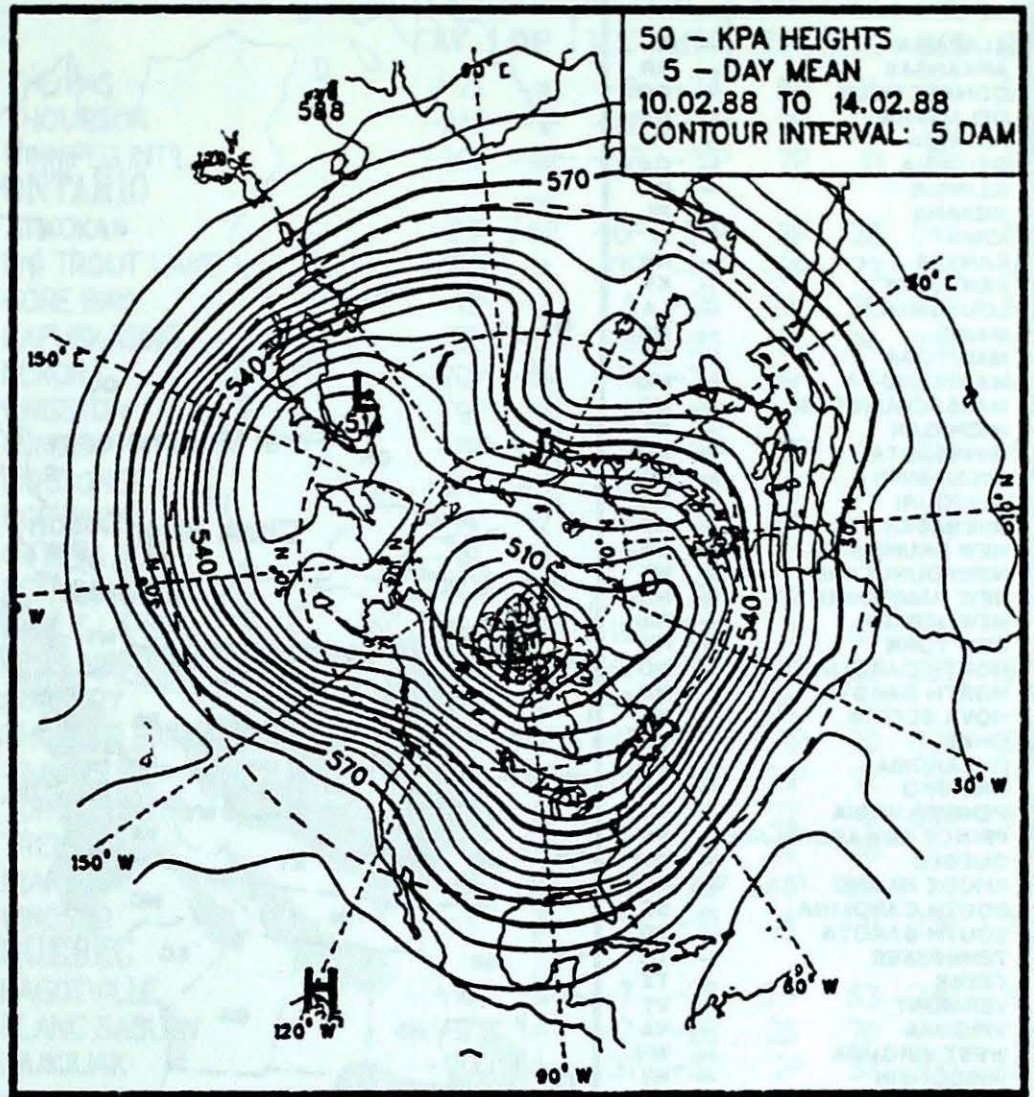
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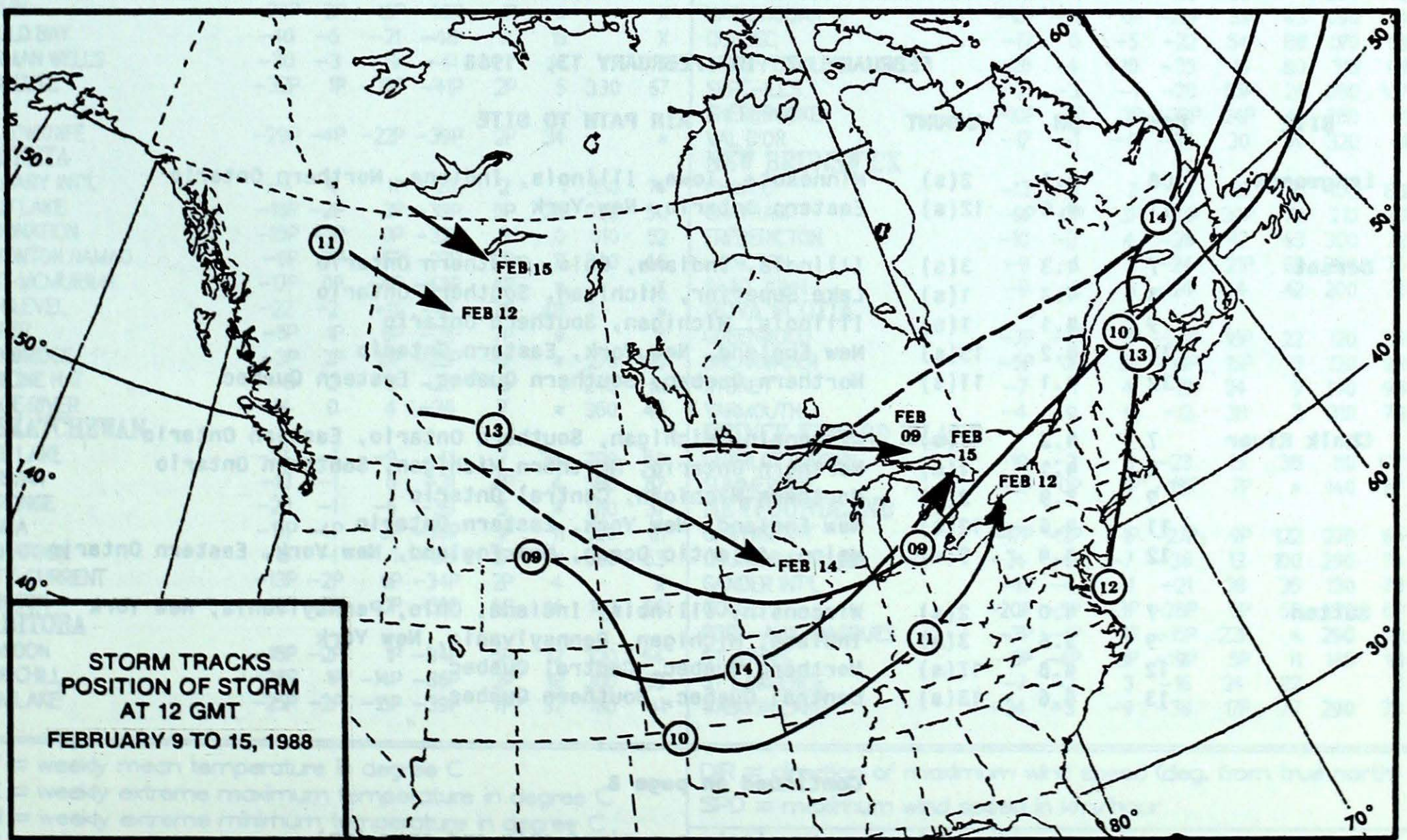
50 KPa ATMOSPHERIC CIRCULATION



MEAN 50 KPa HEIGHT ANOMALY (dam)



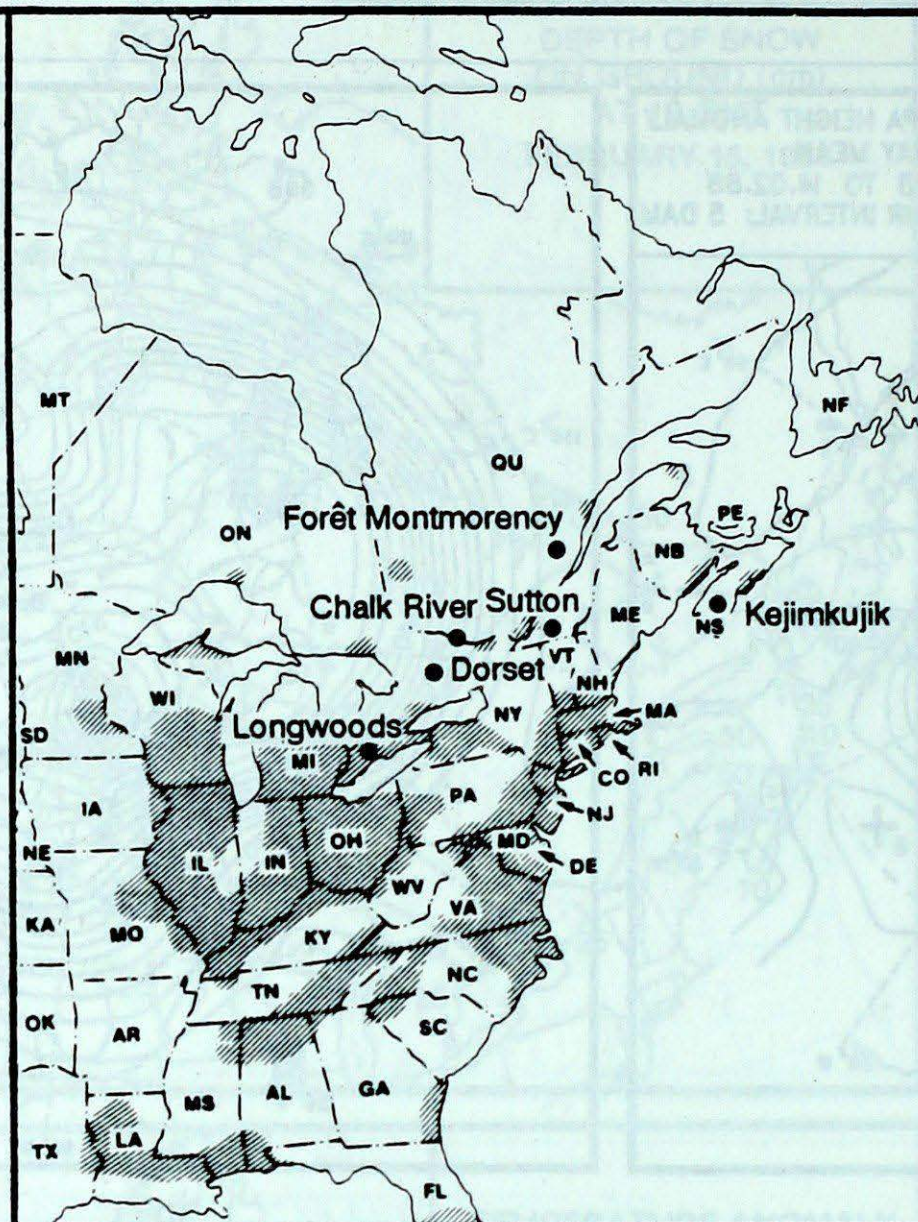
MEAN 50 KPa HEIGHTS (dam)



ACID RAIN

ACID RAIN REPORT

| | | |
|----------------------|----|----|
| ALABAMA | -- | AL |
| ARKANSAS | -- | AR |
| CONNECTICUT | -- | CO |
| DELAWARE | -- | DE |
| FLORIDA | -- | FL |
| GEORGIA | -- | GA |
| ILLINOIS | -- | IL |
| INDIANA | -- | IN |
| IOWA | -- | IA |
| KANSAS | -- | KA |
| KENTUCKY | -- | KY |
| LOUISIANA | -- | LA |
| MAINE | -- | ME |
| MANITOBA | -- | MT |
| MARYLAND | -- | MO |
| MASSACHUSETTS | -- | MA |
| MICHIGAN | -- | MI |
| MINNESOTA | -- | MN |
| MISSISSIPPI | -- | MS |
| MISSOURI | -- | MO |
| NEBRASKA | -- | NE |
| NEW BRUNSWICK | -- | NB |
| NEWFOUNDLAND | -- | NF |
| NEW HAMPSHIRE | -- | NH |
| NEW JERSEY | -- | NJ |
| NEW YORK | -- | NY |
| NORTH CAROLINA | -- | NC |
| NORTH DAKOTA | -- | ND |
| NOVA SCOTIA | -- | NS |
| OHIO | -- | OH |
| OKLAHOMA | -- | OK |
| ONTARIO | -- | ON |
| PENNSYLVANIA | -- | PA |
| PRINCE EDWARD ISLAND | -- | PE |
| QUÉBEC | -- | QU |
| RHODE ISLAND | -- | RI |
| SOUTH CAROLINA | -- | SC |
| SOUTH DAKOTA | -- | SD |
| TENNESSEE | -- | TN |
| TEXAS | -- | TX |
| VERMONT | -- | VT |
| VIRGINIA | -- | VA |
| WEST VIRGINIA | -- | WV |
| WISCONSIN | -- | WI |



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_2 and NO_x emissions are greatest. The table below gives the weekly report summarizing the acidity (or pH) of the 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 less than 4.7, while pH readings less than 4.0 are serious. For more information concerning the acid rain report, see Climatic Perspectives, Vol. 5 No. 50 p. 6.

FEBRUARY 7 TO FEBRUARY 13, 1988

| SITE | DAY | pH | AMOUNT | AIR PATH TO SITE |
|-------------|-----|-----|--------|---|
| Longwoods | 08 | 4.1 | 2(s) | Minnesota, Iowa, Illinois, Indiana, Northern Ontario |
| | 11 | 4.0 | 12(s) | Eastern Ontario, New York |
| Dorset | 7 | 4.3 | 3(s) | Illinois, Indiana, Ohio, Southern Ontario |
| | 8 | 4.3 | 1(s) | Lake Superior, Michigan, Southern Ontario |
| | 9 | 4.1 | 1(s) | Illinois, Michigan, Southern Ontario |
| | 11 | 4.2 | 15(s) | New England, New York, Eastern Ontario |
| | 12 | 4.1 | 11(s) | Northern Quebec, Southern Quebec, Eastern Quebec |
| Chalk River | 7 | 4.2 | 1(s) | Wisconsin, Michigan, Southern Ontario, Eastern Ontario |
| | 8 | 4.1 | 1(s) | Northern Ontario, Northern Michigan, Southern Ontario |
| | 9 | 3.9 | 2(s) | Northern Michigan, Central Ontario |
| | 11 | 4.6 | 12(s) | New England, New York, Eastern Ontario |
| | 12 | 4.4 | 9(s) | Maine, Atlantic Ocean, New England, New York, Eastern Ontario |
| Sutton | 7 | 4.0 | 2(s) | Wisconsin, Illinois, Indiana, Ohio, Pennsylvania, New York |
| | 9 | 3.6 | 3(s) | Indiana, Michigan, Pennsylvania, New York |
| | 12 | 4.8 | 17(s) | Northern Quebec, Central Quebec |
| | 13 | 4.6 | 13(s) | Central Quebec, Southern Quebec |

Continued on page 8

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

ACID RAIN REPORT (Cont'd)

Cont'd from page 6

| SITE | DAY | pH | AMOUNT | AIR PATH TO SITE |
|-------------|-----|-----|--------|---|
| Montmorency | 7 | 3.8 | 4(s) | Wisconsin, Southern Michigan, Ohio, Pennsylvania, New York, Southern Quebec |
| | 9 | 4.0 | 3(s) | Michigan, Ohio, Pennsylvania, Eastern Ontario, Southern Quebec |
| | 12 | 5.1 | 35(s) | Central Quebec, Maine, Maritimes |
| | 13 | 5.2 | 7(s) | Labrador, Central Quebec |
| Kejimikujik | 8 | 4.1 | 5(s) | Michigan, Southern Ontario, Pennsylvania, New Jersey, Atlantic Ocean |
| | 10 | 3.9 | 1(s) | West Virginia, Illinois, New England, Maine |
| | 12 | 4.1 | 51(m) | Atlantic Ocean |
| | 13 | 5.1 | 5(s) | Maryland, New Jersey, Atlantic Ocean |

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

