Climatic Perspectives

A WEEKLY REVIEW OF CANADIAN CLIMATE

MARCH 30 ,1984 (Aussi disponible en français) VOL.6 NO. 12

FOR THE PERIOD MARCH 20 TO 26, 1984

• Ideal weather for Maple sap production in Eastern Canada

Sunny days and cool nights have provided near perfect weather for the production of maple syrup from Ontario to Nova Scotia. Under these weather conditions, the sap is stimulated and flows easily out of trees. The tapping operation was in full swing. Maple sugar festivals were held in many communities in Ontario, Québec and the Maritimes over the weekend. Normally, the season starts near mid- to late March. This year, however, very mild February weather hastened the start of

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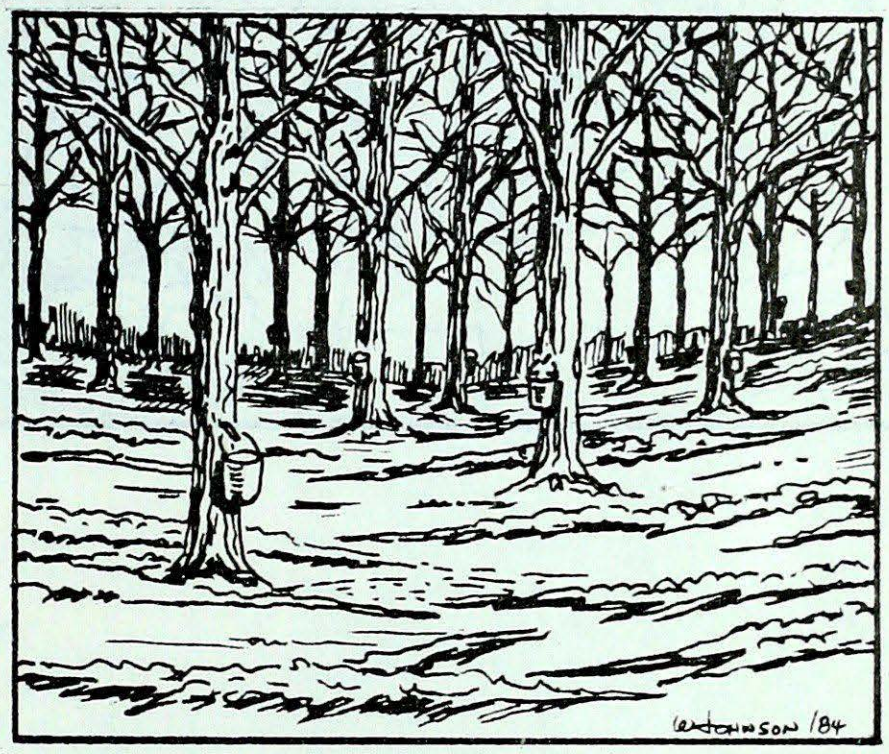
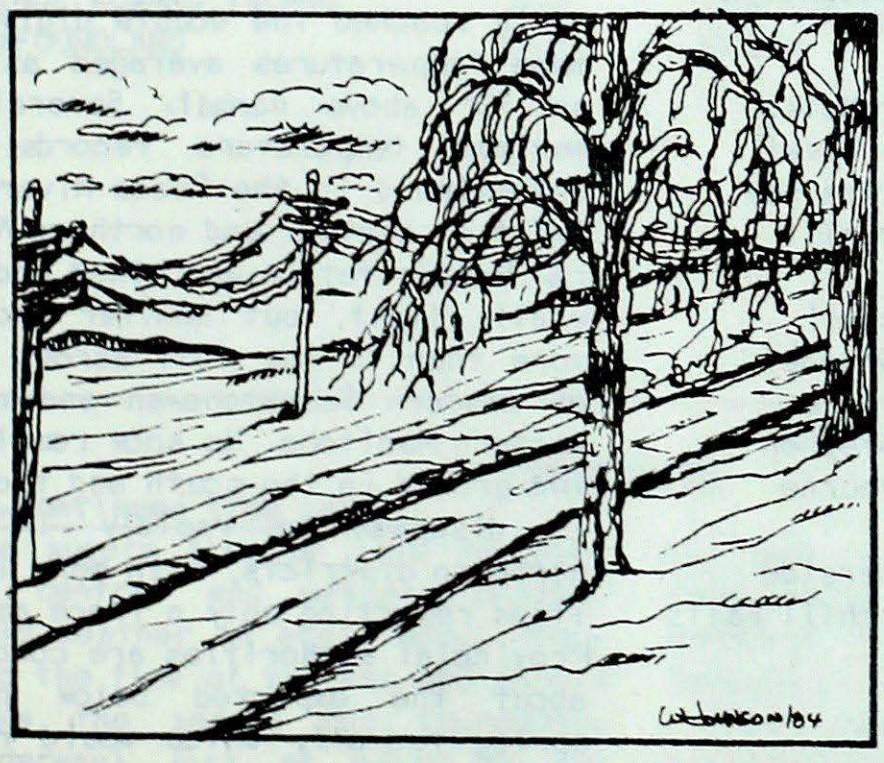


• Severe Ice storm along the St. Lawrence Valley and in the Maritimes



Extensive freezing rain affected many locations from southwestern Québec to Nova Scotia. Cape Breton was especially hard hit as nearly 90 mm of ice accretion on utility lines left thousands of residents without electricity for hours. Schools and businesses were closed in many areas and a rash of traffic accidents occurred on slippery roads in southern Québec, one of them fatal near Montréal.

• AES Sunphotometer on board space shuttle

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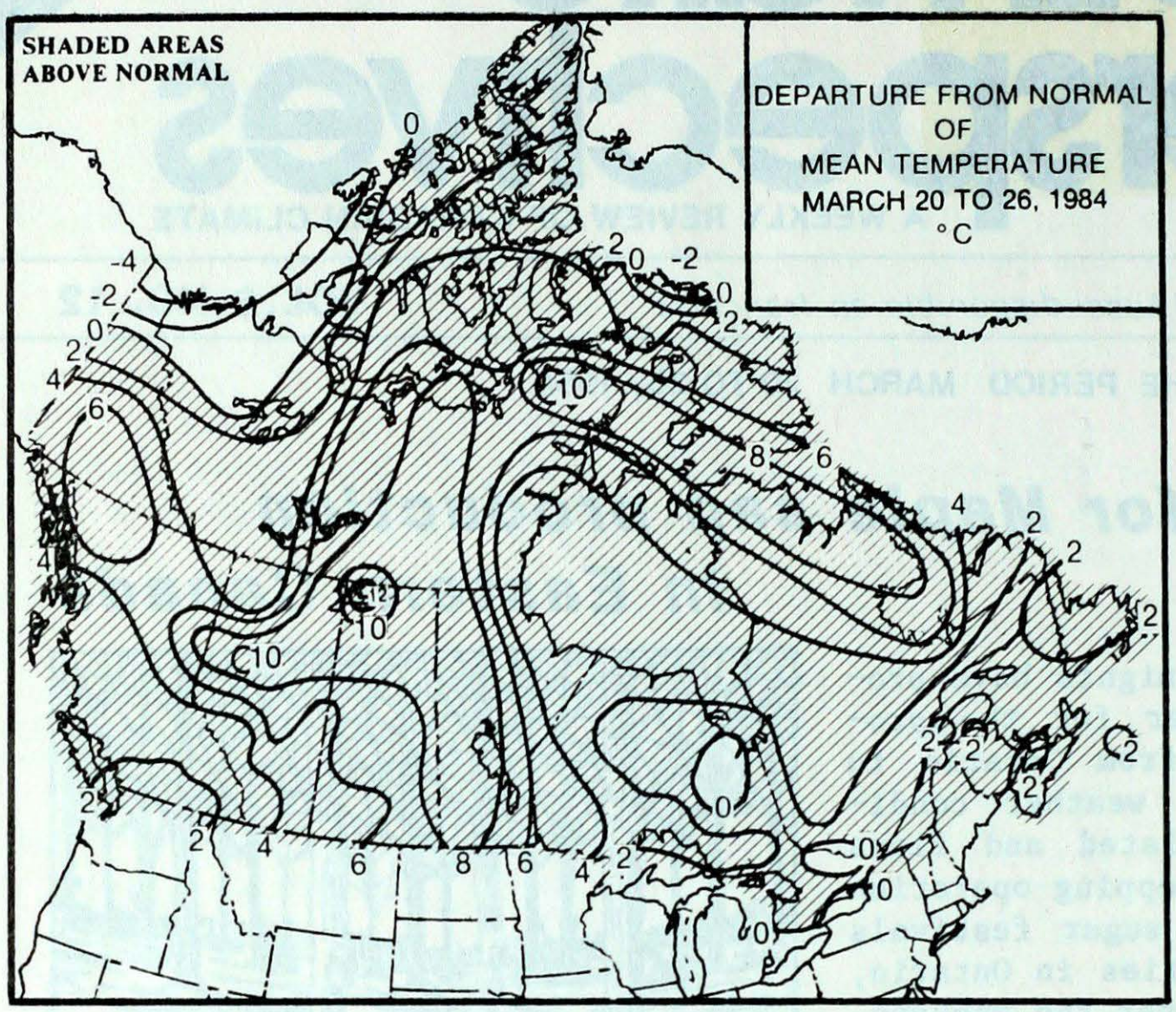
NOTE: The data shown in this publication are based on unverified reports from approximately 225 Canadian synoptic stations.

Canada



WEEKLY TEMPERATURES EXTREMES (°C)

	MAXIMUM		MINIMUM	
YUKON TERRITORY	7.8	Watson Lake	-37.7	Shingle Point
NORTHWEST TERRITORIES	6.2	Fort Smith	-45.0	Eureka
BRITISH COLUMBIA	16.6	Port Hardy	-16.0	Fort Nelson
ALBERTA	14.1	Calgary	-14.9	High Level
SASKATCHEWAN	14.1	Estevan	-13.0	Collins Bay
MANITOBA	13.2	Brandon	-22.6	Churchill
ONTARIO	9.9	Britt	-27.7	Nagagami
QUEBEC	12.2	Maniwaki	-27.1	La Grande Rivière
NEW BRUNSWICK	9.3	Fredericton	-10.7	St Stephen
NOVA SCOTIA	12.5	Greenwood	- 8.0	Shelburne
PRINCE EDWARD ISLAND	10.3	Charlottetown	- 7.4	Summerside
NEWFOUNDLAND	13.1	Deer Lake	-23.5	Churchill Falls

ACROSS THE NATION

Warmest mean temperature	8.3	Victoria, BC
Coolest mean temperature	-34.1	Mould Bay, NWT

ACROSS THE COUNTRY...

Yukon and Northwest Territories

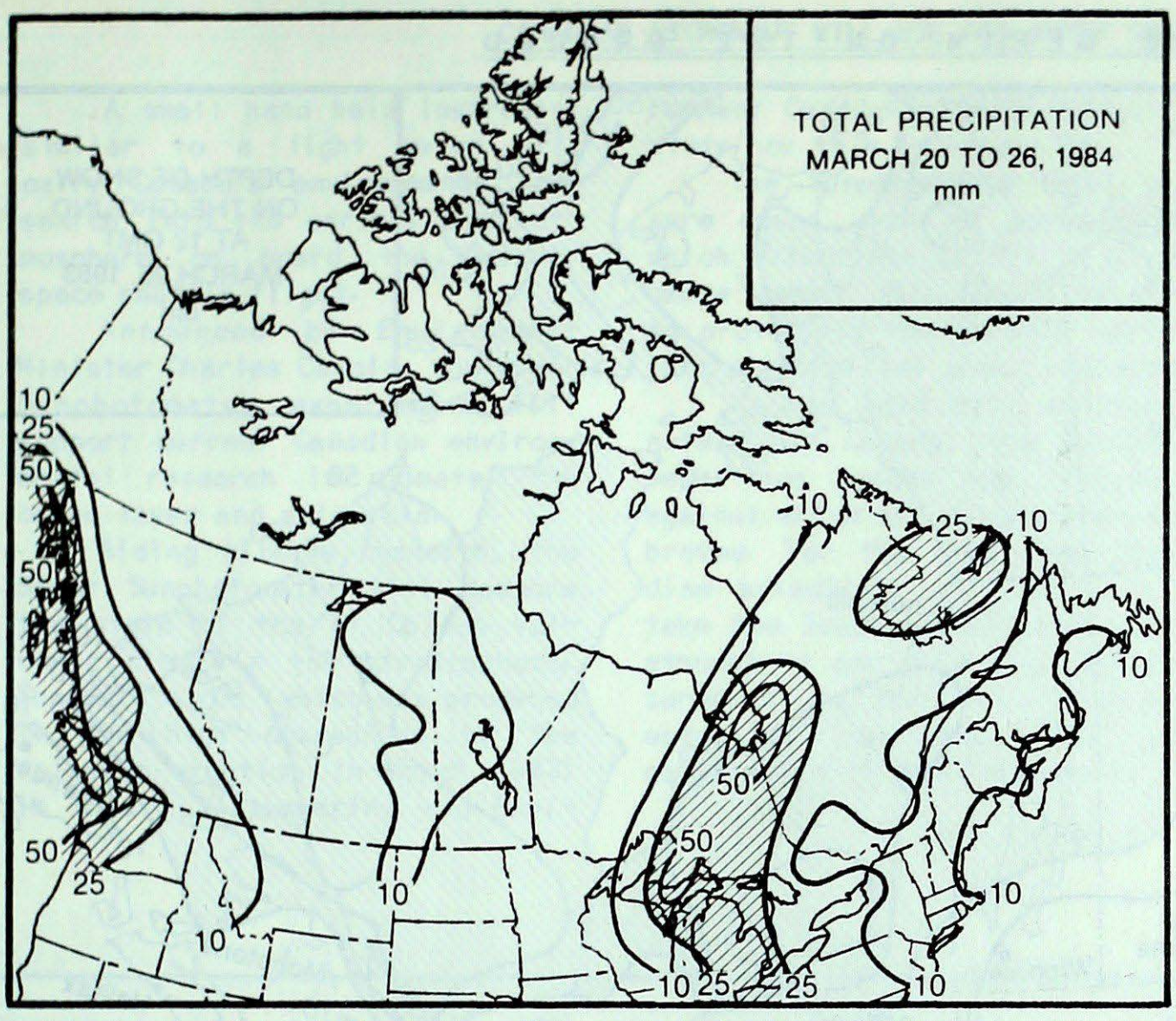
Westerly flow of mild air resulted in spring like weather in the Yukon and the Mackenzie District. At Watson Lake, the temperatures rose to 8° on March 23. Even eastern Arctic had readings that averaged 5 to 10 degrees above normal. Weather systems crossing the Mackenzie Valley kept skies cloudy and deposited a few centimetres of snow in the mountainous areas. Elsewhere, precipitation was light and remained less than 10 mm.

British Columbia

A mild onshore flow allowed a succession of weather systems, associated with cloudy and wet weather, to move inland. Mean temperatures ranged from 2 to 6 degrees above normal, but in the Peace River District climbed to as high as 9° above normal. Precipitation amounts were significant and many interior communities received more than twice their normal. Heaviest rainfalls, in excess of 100 mm, occurred on Vancouver Island and along the south shore. Rapid snow melt has left many central interior valleys free of snow.

Prairies

Pleasantly warm spring weather returned. Daytime tempertures in the south reached the double digits and mean temperatures averaged as high as 12° above normal. Several new maximum temperature records were established in the Peace River District of central and northern Alberta. Precipitation was mixed and generally light, but heavier amounts, more than 10 mm, fell across parts of eastern Saskatchewan and northwestern Manitoba. No snow remains on the ground in the south and the snow is disappearing rapidly in more northern districts, with many localities reporting only a trace amount. Provincial authorities are concerned about the expected below normal spring run-off, which would result in low water levels in ponds, water ing holes and wells this summer.



HEAVIEST WEEKLY PRECIPITATION (mm)

YUKON	2.0	Whitehorse
NORTHWEST TERRITORIES	13.1	Lady Franklin Point
BRITISH COLUMBIA	106.2	Estevan Point
ALBERTA	8.9	Medicine Hat
SASKATCHEWAN	21.2	Collins Bay
MANITOBA	17.8	Lynn Lake
ONTARIO	51.1	Moosonee
QUEBEC	28.6	Schefferville
NEW BRUNSWICK	13.2	Saint John
NOVA SCOTIA	22.3	Yarmouth
PRINCE EDWARD ISLAND	5.2	Charlottetown
NEWFOUNDLAND	45.2	Goose

Maple Syrup

•continued from page 1

the sugary flow by late February in central and eastern Canada. Cold weather in early March stopped the flow of the sap and should make the second run (currently underway) just as sweet as the first.

On the average, Ontario produces over 1,000 kilo litres of maple sap with a farm value in millions of dollars. In 1982, farm value for maple products amounted to over $4 million in Ontario alone.

In recent years, many new advances have been made in this industry such as osmosis machine, but some producers still prefer the old fashioned way of tapping trees.

Ontario

A slow moving weather disturbance produced inclement weather throughout most of the Province. The weekend, however, was sunny but cool. A mid-week snowstorm hit northern Ontario dumping up to 25 cm of snow. Kapuskasing was particularly hard hit as many highways remained closed. Numerous southern Ontario locations also received over 15 cm of wet snow. Moderate amounts of rain combined with rapid snow melt left rivers and creeks swollen with high water run-off in the South. Some low lying areas experienced flooding. Towards the week's end, sunny days and cold nights provided ideal weather for maple syrup production.

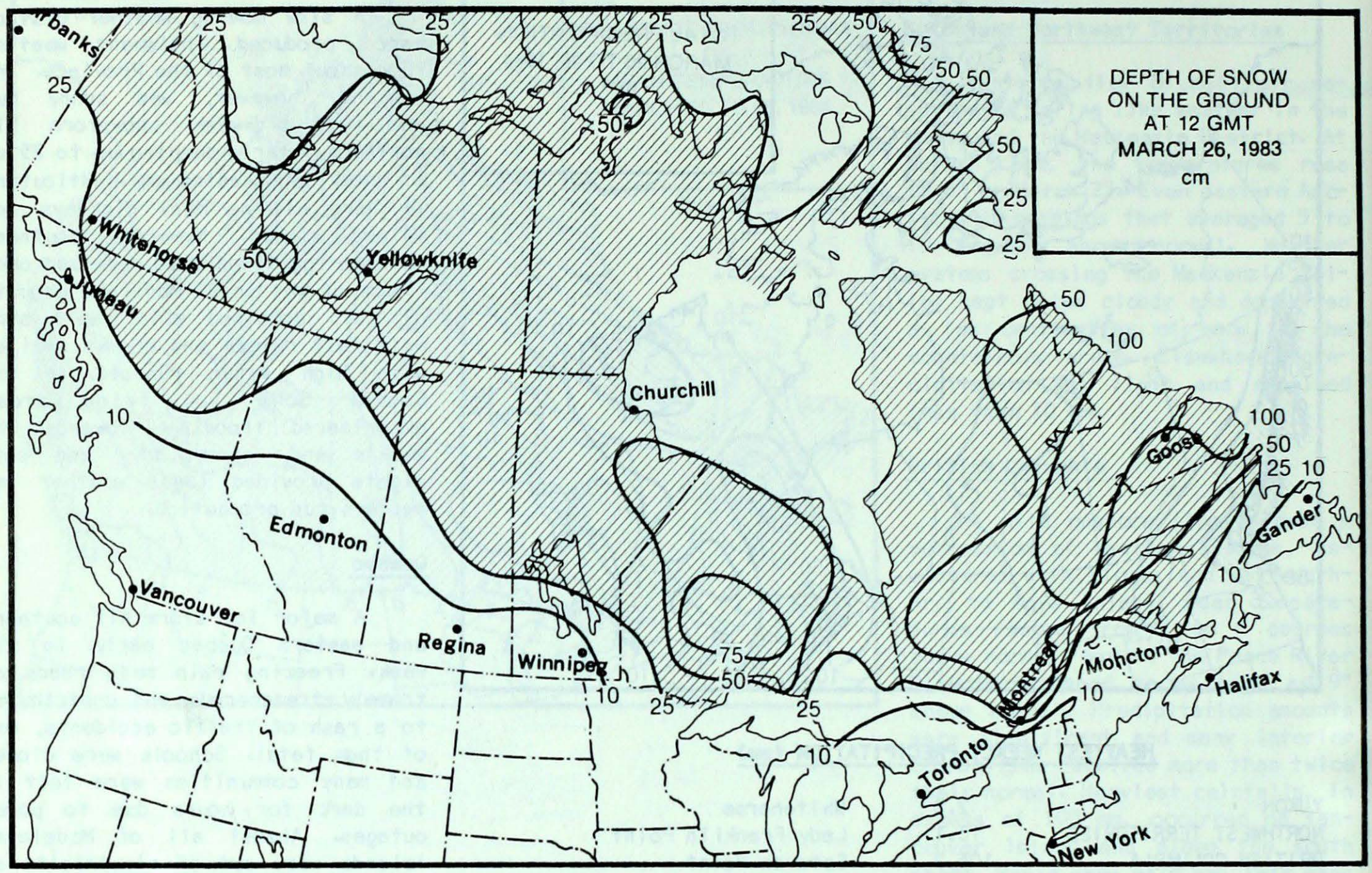
Québec

A major ice storm hit southern and eastern Québec early in the week. Freezing rain made roads extremely treacherous and contributed to a rash of traffic accidents, one of them fatal. Schools were closed and many communities were left in the dark for hours due to power outages. Almost all of Madeleine Islands were out of electricity as ice build up knocked down wires. Afterwards, mild air covered the Province and numerous record-warm temperatures were set in the South. Warm days and cool nights have provided ideal conditions for maple syrup production.

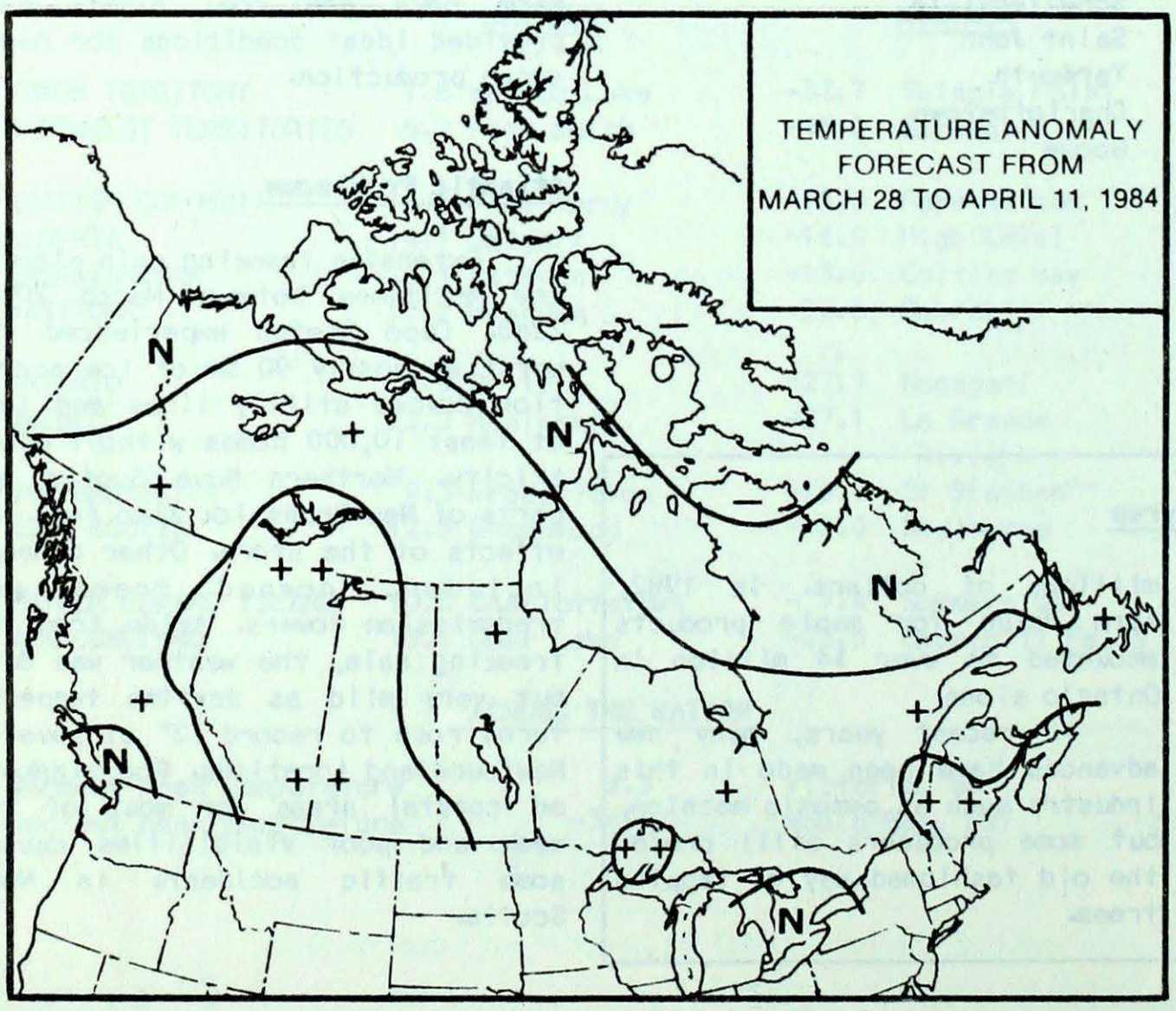
Atlantic Provinces

Extensive freezing rain plagued the Maritimes between March 20th-22nd. Cape Breton experienced the worst as nearly 90 mm of ice accretion downed utility lines and left at least 10,000 homes without electricity. Northern Nova Scotia and parts of New Brunswick also felt the effects of the storm. Other damages included: downed trees and transmission towers. Aside from the freezing rain, the weather was dull but very mild as daytime temperatures rose to record 12° at several Newfoundland locations. Fog blanketed coastal areas for most of the week and poor visibilities caused some traffic accidents in Nova Scotia.

SNOW DEPTH ON THE GROUND



TEMPERATURE ANOMALY FORECAST



Temperature Anomaly Forecast

The temperature anomaly forecast, for each of the 70 Canadian stations, is prepared by searching historical weather maps to find cases similar to the present one. The principle used is that a prediction for the next 15 days may be based on what is known to have actually happened during 15-day periods. After the five best cases are selected, the surface temperature anomalies are calculated. This results in five separate forecasts, which are averaged to provide the forecast depicted.

++ **much above normal**

+ **above normal**

N **normal**

- **below normal**

-- **much below normal**

CANADIAN ASTRONAUT WILL USE AES SUPER SUNPHOTOMETER

A small hand held instrument similar to a light meter will carry Canada's environmental research into the earth's high atmosphere on board the October space shuttle flight.

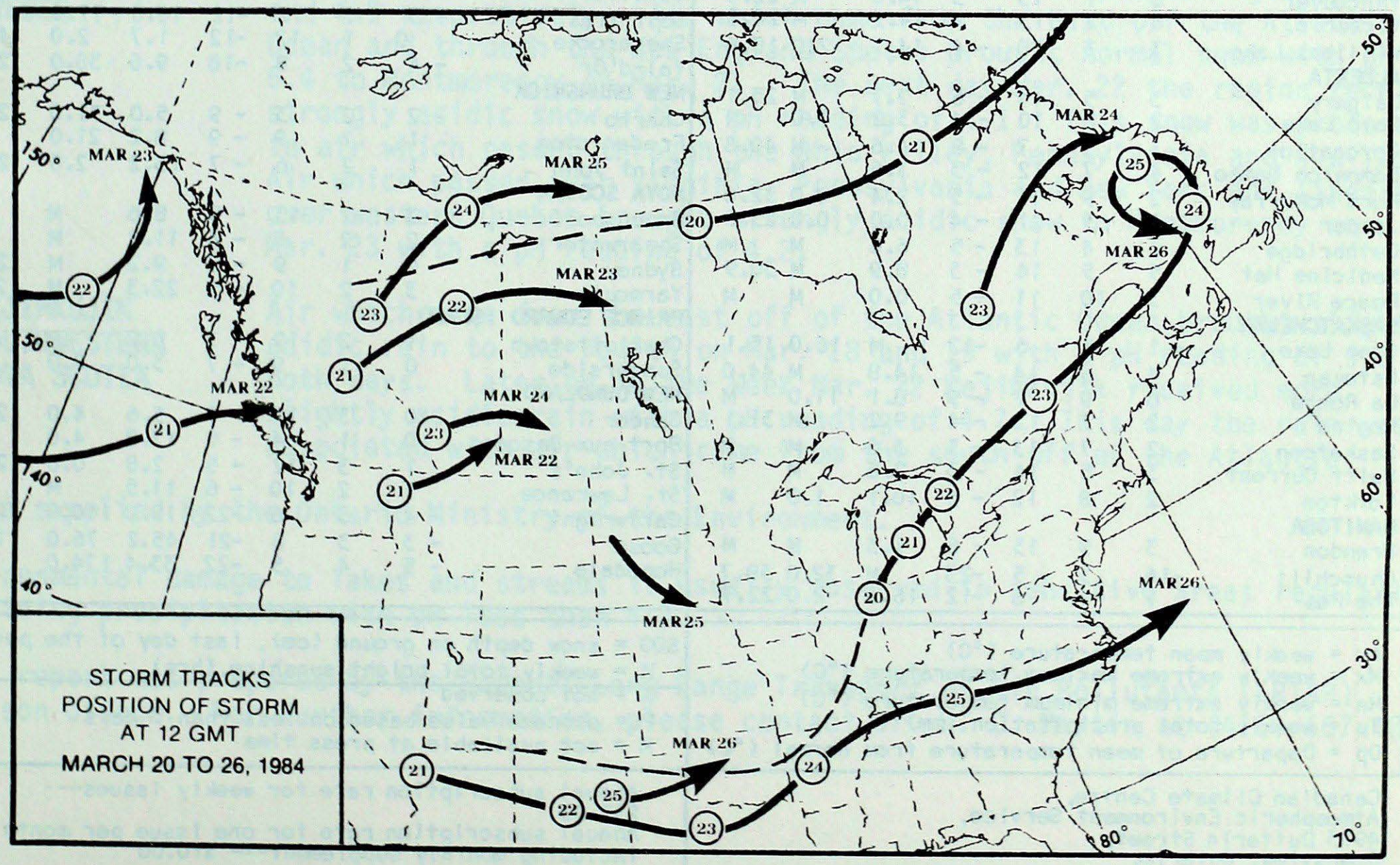
Announced by Environment Minister Charles Caccia, the Super Sunphotometer experiment will support current Canadian environmental research in climate, the ozone layer and acid rain.

Aiding climate research, the Super Sunphotometer will measure the state of the El Chicon volcanic cloud in the stratosphere. The haze cloud (which was produced in the high atmosphere by the volcanic eruption in March 1982) is slowly disappearing and Environment Canada scientists want to study how this is happening.

The Sunphotometer will measure gases, such as water vapour which affect the chemistry of the ozone layer. This layer is vital in protecting the earth's surface from ultra-violet solar radiation.

In the acid rain monitoring network in Canada, the Sunphotometer has become the instrument against which all others are calibrated. For the first time Canadian scientists will be able to take the Sunphotometer out of the atmosphere and make a direct measurement on the sun. This will establish completely the zero calibration of the instrument.

STORM TRACKS



TEMPERATURE, PRECIPITATION AND BRIGHT SUNSHINE DATA FOR THE WEEK ENDING 0600 GMT MARCH 27, 1984

STATION	TEMP				PRECIP		SUN
	Av	Dp	Mx	Mn	Tp	SOG	H
YUKON TERRITORY							
Dawson	- 8	4	5	-21	M	41.0	M
Mayo A	- 3	6	4	-12	1.2	34.0	M
Watson Lake	- 1	8	8	-12	1.6	37.0	32.1
Whitehorse	0	7	7	- 7	2.0	14.0	M
NORTHWEST TERRITORIES							
Fort Smith	- 4	8	6	-14	4.0	37.0	M
Inuvik	-27	- 3	-16	-35	5.0	65.0	M
Norman Wells	-19	- 2	- 8	-26	1.4	19.0	24.4
Yellowknife	-12	5	1	-22	8.2	25.0	25.8
Baker Lake	-23	3	-15	-32	1.9	57.0	34.4
Cape Dyer	-21	3	- 6	-35	3.8	50.0	M
Clyde	-28	- 4	-19	-37	M	84.0	M
Frobisher Bay	-15	6	- 1	-32	7.8	21.0	18.5
Alert	-31	2	-20	-38	0.0	14.0	47.5
Eureka	-35	1	-21	-45	0.0	13.0	M
Hall Beach	-29	- 1	-19	-36	0.0	25.0	M
Resolute	-26	4	-17	-37	11.6	36.0	19.6
Cambridge Bay	-23	6	-11	-36	4.6	32.0	25.1
Mould Bay	-34	- 3	-27	-42	0.2	26.0	M
Sachs Harbour	-30	- 2	-20	-40	0.0	10.0	44.1
BRITISH COLUMBIA							
Cape St. James	7	2	10	5	73.8	M	26.6
Cranbrook	3	1	11	- 4	12.2	0.0	21.4
Fort Nelson	- 4	4	10	-16	4.6	36.0	19.4
Fort St. John	3	9	9	- 2	0.4	0.0	M
Kamloops	8	3	15	0	9.9	M	32.1
Penticton	7	2	14	- 1	31.1	M	21.7
Port Hardy	8	3	17	1	71.7	M	21.9
Prince George	3	4	9	- 4	27.4	M	25.0
Prince Rupert	6	3	10	1	76.9	M	10.8
Revelstoke	4	2	12	- 1	16.6	M	14.4
Smithers	3	3	10	- 7	8.1	M	20.7
Vancouver	8	1	13	3	74.0	M	22.4
Victoria	8	2	13	1	44.5	M	20.8
Williams Lake	3	3	10	- 4	14.7	2.0	18.6
ALBERTA							
Calgary	3	5	14	- 6	7.7	M	25.1
Cold Lake	2	8	10	- 4	3.2	1.0	M
Coronation	1	5	7	- 8	4.6	M	40.8
Edmonton Namao	4	7	12	- 3	7.6	M	M
Fort McMurray	2	9	11	- 5	2.4	0.0	32.6
Jasper	3	5	11	- 4	0.0	0.0	25.6
Lethbridge	4	4	13	- 5	6.6	M	M
Medicine Hat	5	5	14	- 3	8.9	M	30.9
Peace River	3	10	11	- 5	0.0	M	M
SASKATCHEWAN							
Cree Lake	- 1	X	6	-12	M	16.0	15.1
Estevan	4	6	14	- 5	14.8	M	44.0
La Ronge	0	9	7	- 9	8.1	11.0	M
Regina	2	7	13	- 4	9.2	M	31.1
Saskatoon	2	7	13	- 3	3.6	M	M
Swift Current	3	5	14	- 3	2.6	M	M
Yorkton	2	8	12	- 6	10.1	1.0	M
MANITOBA							
Brandon	3	9	13	- 6	1.3	M	M
Churchill	-16	3	- 5	-23	M	32.0	39.7
The Pas	1	9	6	-12	16.3	2.0	22.7
Thompson	- 3	11	5	-13	5.6	24.0	17.2
Winnipeg	2	7	10	- 4	2.0	M	39.6
ONTARIO							
Big Trout Lake	-10	2	3	-23	0.2	55.0	M
Earlton	- 3	1	4	-13	M	7.0	M
Kapuskasing	- 8	- 2	4	-24	M	18.0	M
Kenora	1	5	8	- 5	0.2	18.0	M
London	- 1	- 2	6	-12	14.4	M	M
Moosonee	-10	- 1	7	-26	51.1	43.0	22.7
Muskoka	0	1	7	- 9	M	2.0	M
North Bay	- 3	0	6	-13	5.4	6.0	35.5
Ottawa	- 1	0	7	- 8	9.4	15.0	37.9
Pickle Lake	- 5	2	6	-17	0.0	80.0	M
Red Lake	- 1	5	7	-12	3.9	31.0	26.0
Sudbury	- 2	2	7	-12	9.1	0.0	34.7
Thunder Bay	- 2	2	3	-10	3.6	2.0	31.6
Timmins	- 5	2	5	-17	M	26.0	M
Toronto	0	- 1	5	- 6	19.8	0.0	M
Trenton	0	- 1	6	- 6	17.6	M	M
Wiarton	- 1	0	9	- 7	18.5	M	37.3
Windsor	1	- 2	6	- 4	42.4	M	M
QUEBEC							
Bagotville	- 3	1	6	-12	7.0	49.0	M
Blanc-Sablon	- 4	2	2	-15	M	104.0	M
Inukjuak	-13	5	- 2	-20	M	39.0	34.7
Kuujjuaq	- 7	9	3	-21	16.6	68.0	5.3
Kuujjuarapik	-11	3	2	-24	M	37.0	4.4
Maniwaki	- 1	2	12	-12	5.1	11.0	38.5
Mont-Joli	- 3	0	5	-10	8.0	17.0	M
Montréal	1	1	10	- 9	8.6	0.0	42.5
Natashquan	- 3	1	3	-12	M	53.0	M
Nitchequon	- 7	4	4	-20	18.5	32.0	2.3
Québec	- 1	0	5	-12	12.2	65.0	M
Schefferville	- 6	6	3	-21	28.6	76.0	4.0
Sept-Iles	- 3	1	2	-12	18.8	77.0	7.4
Sherbrooke	0	1	12	-12	1.7	2.0	48.1
Val-d'Or	- 4	2	8	-18	9.6	38.0	29.9
NEW BRUNSWICK							
Charlo	- 2	2	3	- 9	5.0	71.0	22.1
Fredericton	1	1	9	- 9	8.2	21.0	M
Saint John	1	2	6	- 7	13.2	2.0	28.2
NOVA SCOTIA							
Greenwood	3	2	13	- 5	8.6	M	M
Shearwater	2	2	8	- 4	11.2	M	M
Sydney	0	1	9	- 7	9.2	M	26.3
Yarmouth	3	2	10	- 5	22.3	M	29.9
PRINCE EDWARD ISLAND							
Charlottetown	1	2	10	- 7	5.2	M	M
Summerside	0	1	9	- 7	3.0	0.0	M
NEWFOUNDLAND							
Gander	0	3	12	- 9	5.6	4.0	28.4
Port aux Basques	0	1	4	- 6	17.8	4.0	M
St. John's	1	3	12	- 5	2.8	0.0	21.2
St. Lawrence	1	2	10	- 6	11.5	M	M
Cartwright	- 4	3	6	-22	19.0	110.0	21.7
Goose	- 3	3	8	-21	45.2	76.0	13.2
Hopedale	- 5	4	5	-22	33.4	174.0	2.1

Av = weekly mean temperature (°C)
Mx = weekly extreme maximum temperature (°C)
Mn = weekly extreme minimum temperature (°C)
Tp = weekly total precipitation (mm)
Dp = Departure of mean temperature from normal (°C)

SOG = snow depth on ground (cm), last day of the period
H = weekly total bright sunshine (hrs)
X = not observed
P = extreme value based on less than 7 days
M = not available at press time

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ACID RAIN REPORT ISSUED BY ENVIRONMENT CANADA FOR MAR. 18-24, 1984

LONGWOODS NEAR LONDON ONTARIO

Longwoods received strongly acidic snow with a pH reading of 3.9 on Mar. 21. This snow was associated with air from the U.S. Midwest. Air which passed through Virginia, West Virginia, Pennsylvania and southern Ontario produced strongly acidic snow with a pH of 3.8 on the following day Mar. 22.

DORSET* MUSKOKA ONTARIO

Air which passed over Virginia, Maryland, Pennsylvania and southern Ontario brought moderately acidic snow and rain to Dorset Mar. 21 with a pH value of 4.5. On the next day Mar. 22 air which came from the south and passed over Kentucky, Ohio and southern Ontario produced strongly acidic snow in the region. This snow had a pH reading of 4.2.

CHALK RIVER OTTAWA VALLEY ONTARIO

Chalk River received strongly acidic rain on two occassions last week. The rain on Mar. 21 had a pH value of 4.1 and was produced in air which passed over Virginia, Maryland, Pennsylvania, New York and southern Ontario. The rain on Mar. 22 had a pH reading of 4.0 and was associated with air from the U.S. midwest and southern Ontario.

MONTMORENCY QUEBEC CITY QUEBEC

Air which came from the east across Nova Scotia and New Brunswick produced slightly acidic snow Mar. 18 and 19 with pH readings of 5.1 and 4.9 respectively. Air which came from the east off the Atlantic Ocean and through the New England States brought normal snow with pH 5.4 to Montmorency on Mar. 21. The next day Mar. 22 the region received strongly acidic snow with a pH reading of 4.1. This snow was produced in air which passed through the Ohio Valley, Pennsylvania and New York. Air which passed over Virginia, Pennsylvania and New York and lingered over western Quebec brought strongly acidic snow to Montmorency on Mar. 23 with a pH reading of 4.2.

KEJIMKUJIK SOUTHWESTERN NOVA SCOTIA

Air which came from the east off of the Atlantic Ocean brought slightly acidic rain to the region on Mar. 18 and 19 with a pH reading of 5.0 on both days. Later on in the week Mar. 22 Kejimkujik received more slightly acidic rain with a pH reading of 4.7. This day the rain was associated with air which came from the south off of the Atlantic.

Data supplied by the Ontario Ministry of the Environment.

nvironmental damage to lakes and streams is usually observed in sensitive areas regularly eceiving precipitation with pH less than 4.7.

his report was prepared by the Federal Long Range Transport of Air Pollutants (LRTAP) iaison Office. For further information, please contact Dr. H. C. Martin at (416) 667-4803.