

# Climatic Perspectives

MONTHLY SUPPLEMENT

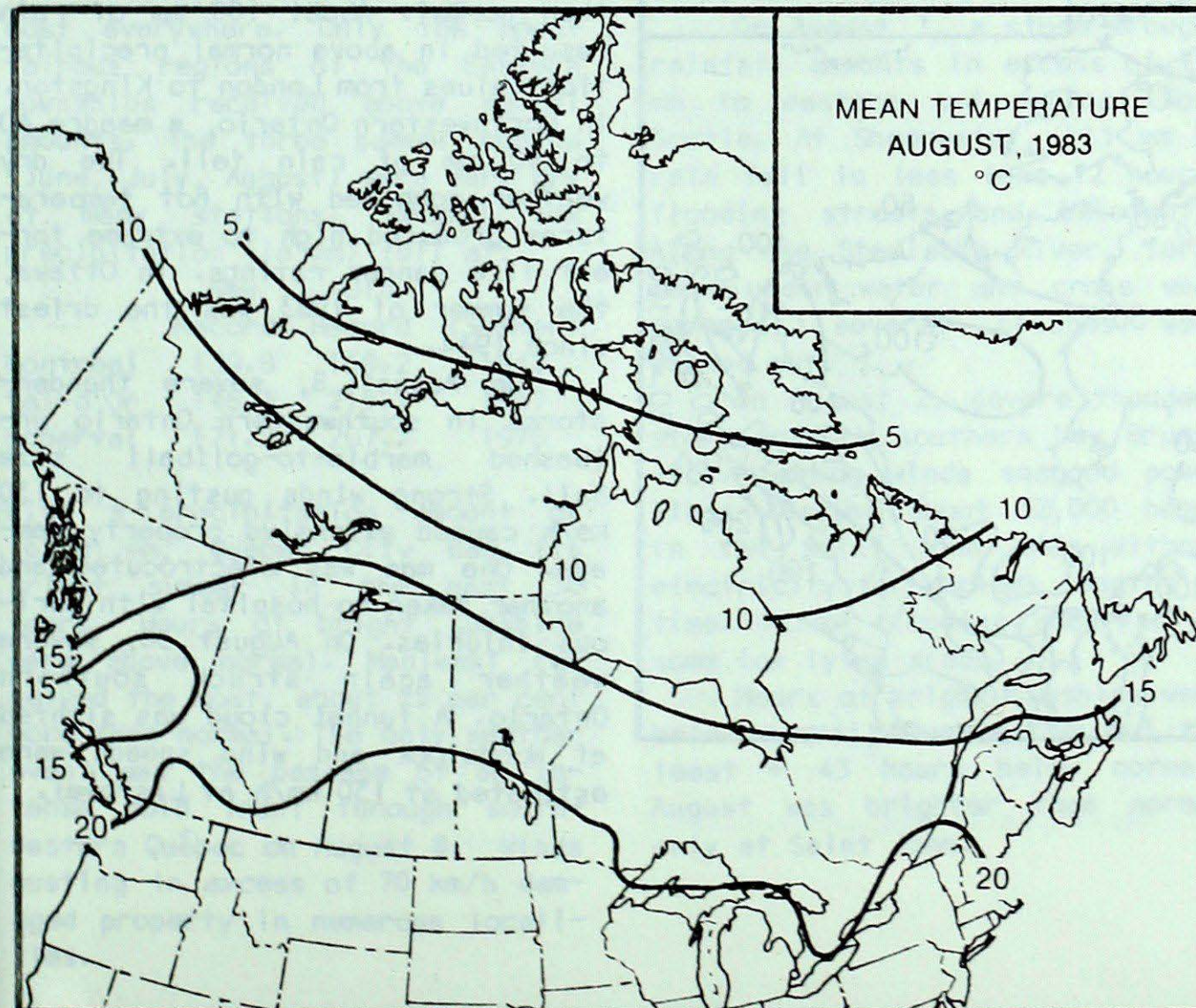
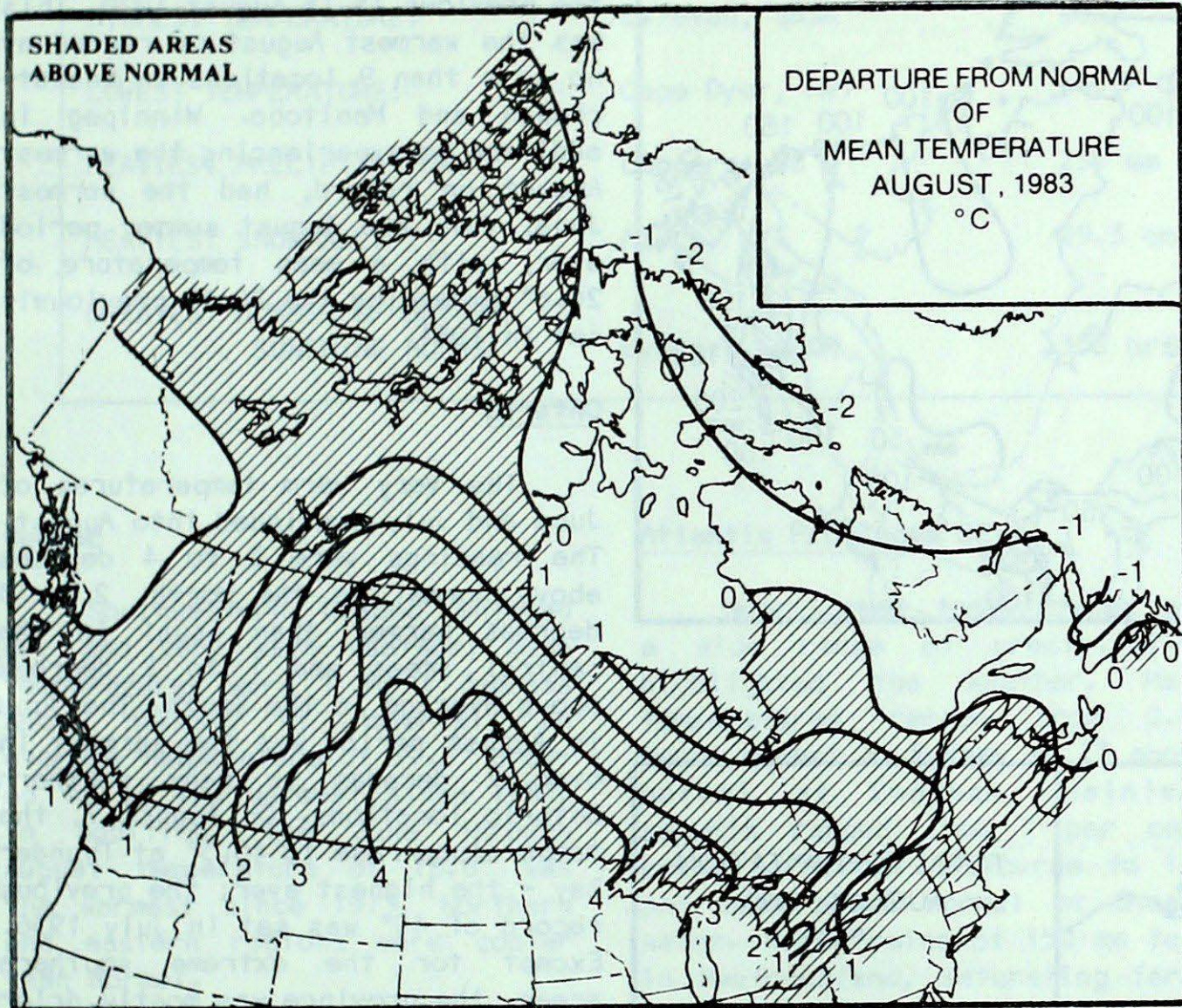
Canadian Climate Centre

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VOL. 5

AUGUST, 1983



## ACROSS THE COUNTRY

### Yukon and Northwest Territories

Mean temperatures were below normal almost everywhere; only southern Keewatin District experienced average temperatures 1 to 2 degrees above normal. With a mean temperature of 0.7°, Alert was the coldest place in the country.

Precipitation amounts ranged from about 30 per cent of normal in the Mackenzie District to almost 200 per cent of normal along the western shores of Hudson Bay. The High Arctic received about average amounts of precipitation. On August 17, snow was observed on mountain tops at Whitehorse. Cassiar received 5 cm of snow on the same day.

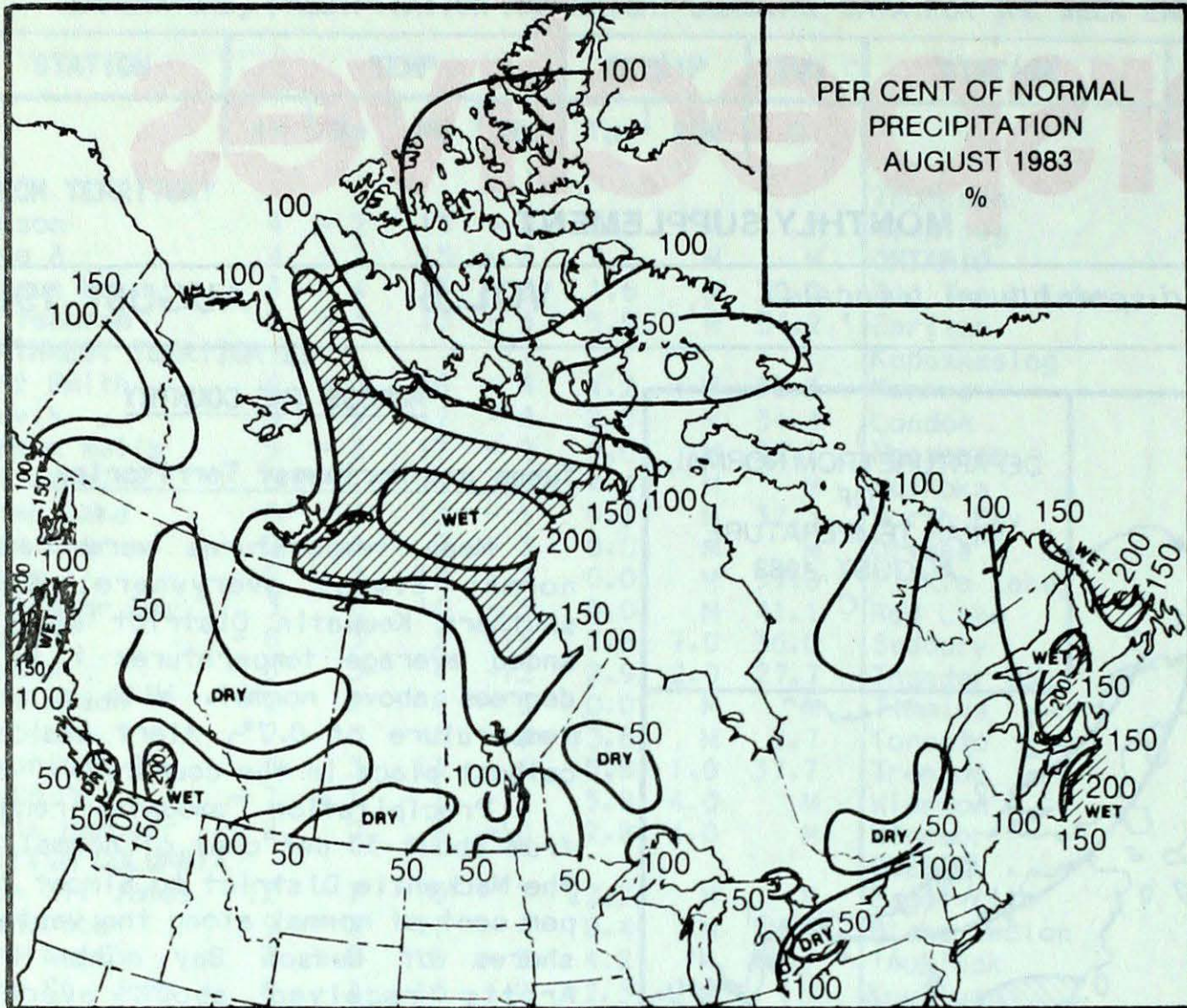
### British Columbia

Relatively dry and pleasant weather prevailed. Only the north coastal sections of the province, experienced above normal precipitation and below normal sunshine. Some interior communities reported strong thunderstorm activity early in the month. Hail damage and minor flooding occurred at some scattered interior sites.

### Prairie Provinces

The month was warm and sunny in the west and hot and dry in the east. Rainfall was above normal in the north with several locations in northern Manitoba recording over 100 mm. In the south, due to the showery characteristic of the precipitation, total amounts were variable and widely scattered. A number of hail storms were reported, especially in Alberta, the most severe occurring on August 3. The storm began at Drayton Valley and tracked eastwards to Edmonton during the late afternoon; golfball size hail caused considerable damage in parts of





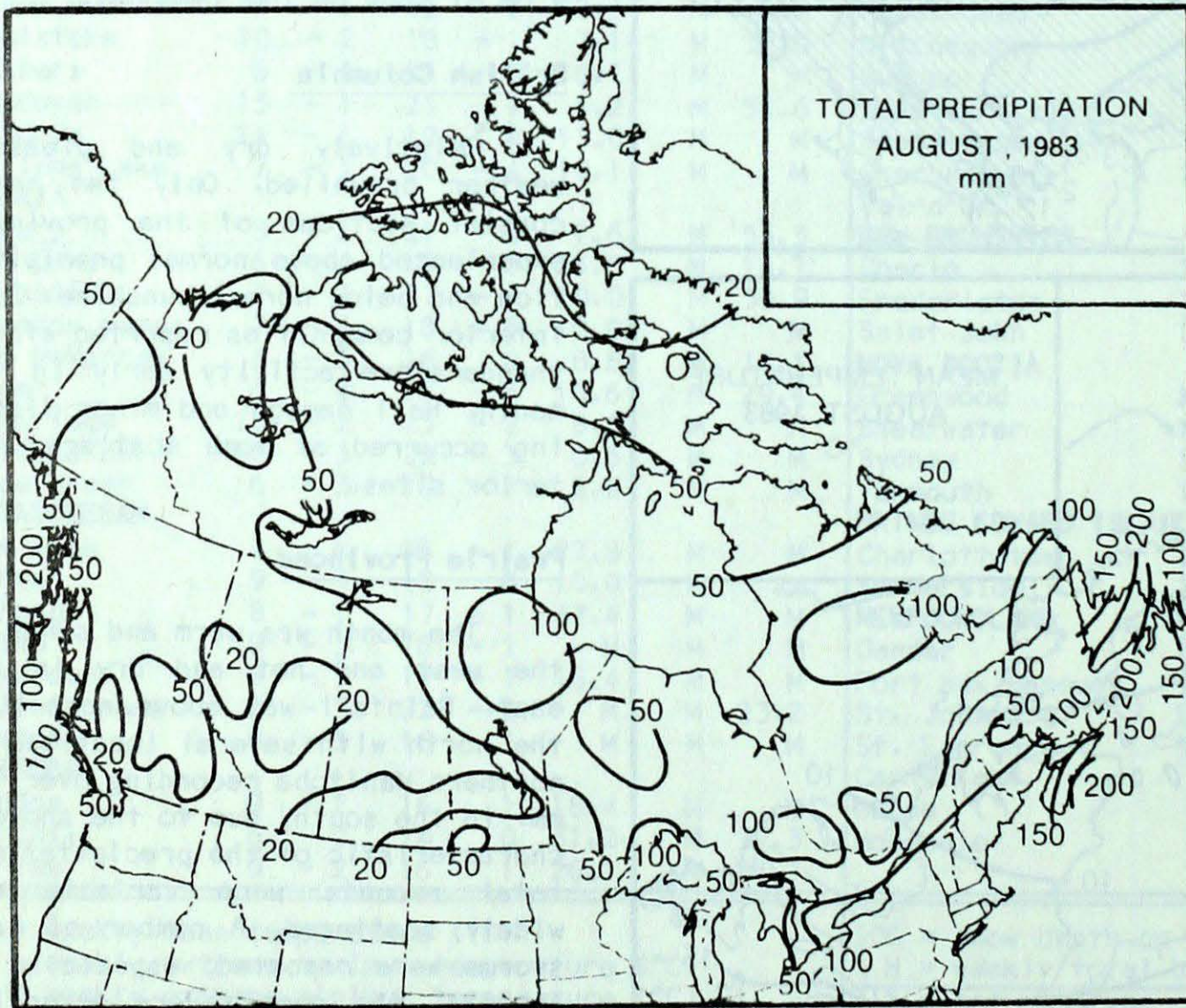
Edmonton and surrounding areas.

Daytime temperature in the mid to upper thirties occurred frequently, especially in Saskatchewan and Manitoba. The mercury exceeded 40° at Portage La Prairie and Estevan on August 4 and 6, respectively. Winnipeg set a new record for the number of days exceeding 30°; 16 days this year compared to the previous 15 in August 1920. This was the warmest August on record at no less than 9 locations in Saskatchewan and Manitoba. Winnipeg in addition to experiencing the warmest August on record, had the warmest June, July and August summer period ever, with a mean temperature of 20.6° exceeding the 20.4° previously set in 1961.

**Ontario**

The very warm temperatures of June and July continued into August. The readings were 3 to 4 degrees above normal in the North, 2 to 3 degrees warmer than usual in the central areas and 1 to 2 degrees above average in the South. The June to August period was the warmest in over 2 decades in many southern Ontario locations. On August 7, the temperature rose to 40.3° at Thunder Bay - the highest ever; the previous record of 40° was set in July 1936. Except for the extreme southern areas, the province was mostly drier than normal. About 100 mm of rain resulted in above normal precipitation values from London to Kingston. In Northwestern Ontario, a meagre 40 to 50 mm of rain fell. The dry weather combined with hot temperatures produced high to extreme forest fire danger ratings. In Ottawa, the summer of 1983 was the driest since 1944.

On August 8, severe thunderstorms in southwestern Ontario unleashed marble-to-golfball size hail. Strong winds gusting to 130 km/h caused extensive property damage. One man was electrocuted and another taken to hospital with serious injuries. On August 30, severe weather again struck southern Ontario. A funnel cloud was sighted at Woodstock and wind speeds were estimated at 130 km/h at Listowel.





## CLIMATIC EXTREMES - AUGUST, 1983

## MEAN TEMPERATURE:

WARMEST	Windsor, ONT	23.3°
COLDEST	Alert, NWT	0.7°

HIGHEST TEMPERATURE: Estevan, SASK 40.7°

LOWEST TEMPERATURE: Cape Dyer, NWT -4.7°

HEAVIEST PRECIPITATION: Langara, BC 251 mm

HEAVIEST SNOWFALL: Alert, NWT 29.3 cm

GREATEST NUMBER OF BRIGHT  
SUNSHINE HOURS: Wynyard, SASK 355 hrs

Québec

Southwestern Québec enjoyed dry and very warm weather; mean temperatures were 1 to 3 degrees above normal. At Roberval, an average temperature of 19.3° proved to be the warmest since 1980. In addition, the June through August temperature of 18.8° was the warmest since 1973. Northern and eastern regions were cooler than normal.

Precipitation was light almost everywhere. Only the mountainous regions of the Eastern Townships received above normal amounts. The three summer months (June, July, August) were very dry at many stations. Record low precipitation (in mm) fell at:

	New Record	Old Record	(Summer)
Montréal	139.8	168.2	1942
Val-d'Or	146.3	215.1	1967
Roberval	171.2	207.2	1976

With a precipitation amount of 163.8 mm, Québec City had its driest summer in the past 30 years. Hours of bright sunshine were above normal. Maniwaki received the most, about 25 per cent more than normal. The only weather event was the passage of an intense cold front through southwestern Québec on August 8. Winds gusting in excess of 70 km/h damaged property in numerous localities.

Atlantic Provinces

Near-normal temperatures and a wide range of precipitation highlighted the weather. Mean temperatures ranged from 0.8° below normal at Sydney to 1° above normal at Chatham. Rainfall amounts ranged from 7 per cent below normal at Shelburne to 138 per cent above normal at Shearwater. Heavy rains of 150 mm fell in Newfoundland, saturating farmlands and hampering harvesting.

On August 7, a storm brought rainfall amounts in excess of 100 mm to eastern and central Nova Scotia. At Shearwater, 113 mm of rain fell in less than 12 hours, flooding streets and basements. Along the Stewiacke River, farms were under water and crops were damaged; several bridges were washed out.

On August 2, severe thunderstorms struck southern New Brunswick. Strong winds snapped power lines leaving about 32,000 homes in the Saint John area without electricity for various lengths of time. Minor flooding occurred in some low lying areas.

Hours of bright sunshine were below normal; Summerside had the least - 43 hours below normal. August was brighter than normal only at Saint John.

## CLIMATIC IMPACTS

Agriculture

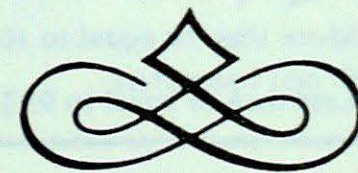
Excessive heat accelerated crop ripening across the Prairies. Harvesting was about 2 weeks advanced in the South. Owing to the heat stress and below normal rainfall, yields of grain crops are expected to be below normal - as much as 20 per cent below last year's in the drier areas according to Statistic Canada. However, total volume of grain crops was expected to be about 2 per cent more than last year's quota mainly because of the record area planted last spring. Heavy rains in Newfoundland saturated many fields. About one-half of the hay crop could not be harvested, and the remaining forage crop was of poor quality.

Forestry

Lightning strikes in the very dry and hot August weather ignited numerous forest fires in Manitoba and northern Ontario. Near the end of August, the forest fire ratings were at high to extreme levels in Northwestern Ontario. Drier weather in August raised the forest fire danger to high levels in the central interior of British Columbia. The total cost of fighting fires was about \$18 million lower than last year's in British Columbia.

Arctic Waters

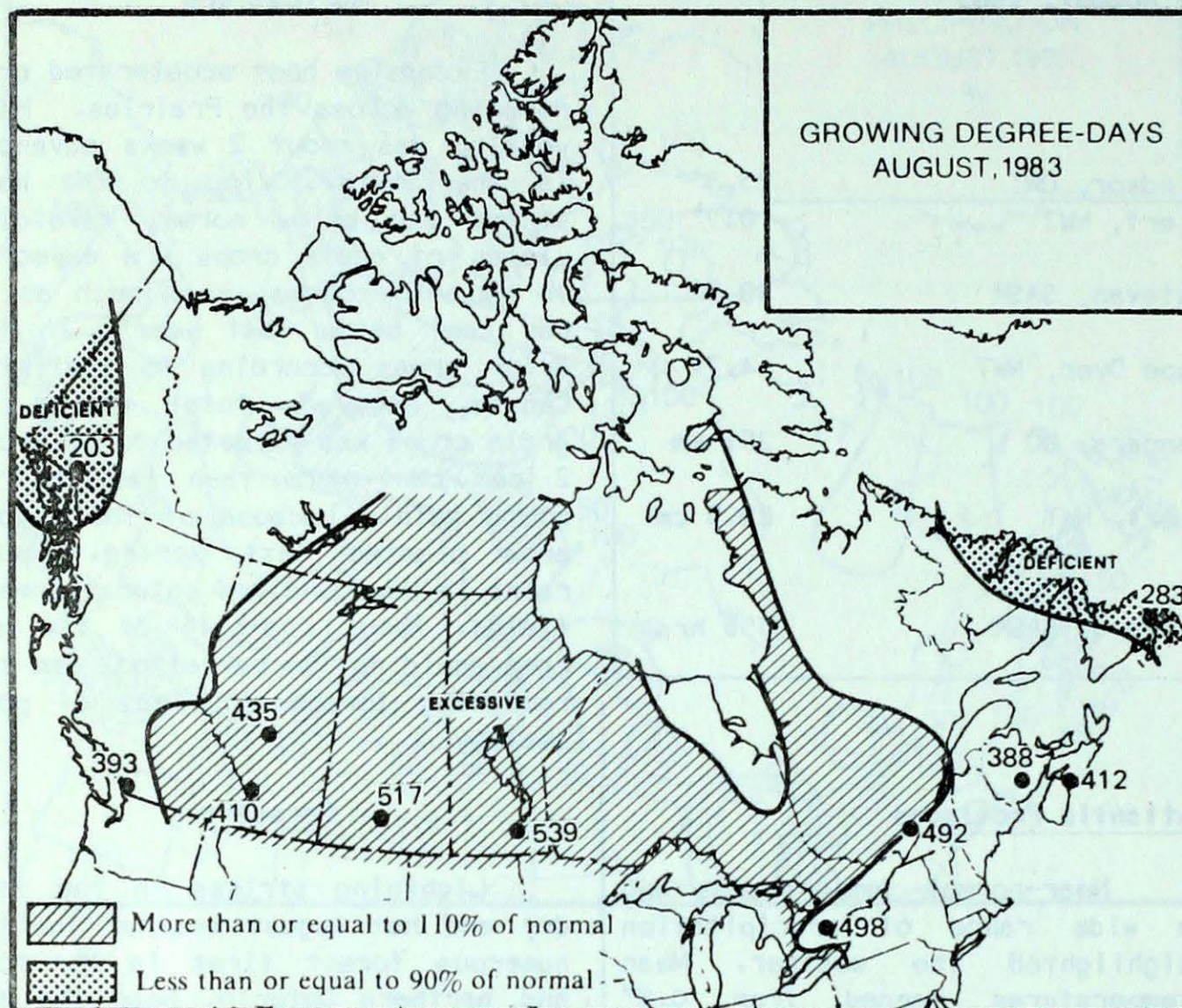
Ice cover was more extensive than normal in eastern Arctic. Heavy pieces of old ice at the entrance of Hudson Strait and along the northern portions of Labrador Coast hampered local shipping. In early August, three ships were damaged by icebergs in the Hudson Strait. In the Beaufort Sea, the pack ice came dangerously close to the drill sites on several occasions.





GROWING DEGREE-DAYS

TOTAL TO END OF AUGUST



**BRITISH COLUMBIA**

	1983	1982	NORMAL
Kamloops	1750	1724	1794
Penticton	1634	1616	1669
Prince George	1023	1096	971
Vancouver	1545	1407	1457
Victoria	1444	1285	1335

**ALBERTA**

Calgary	1161	1077	1074
Edmonton Mun.	1313	1240	1123
Grande Prairie	1085	1046	1075
Lethbridge	1335	1297	1326
Peace River	1029	1048	1041

**SASKATCHEWAN**

Estevan	1503	1343	1443
Prince Albert	1203	1097	1185
Regina	1306	1347	1338
Saskatoon	1363	1218	1321
Swift Current	1235	1120	1301

**MANITOBA**

Brandon	1291	1280	1350
Dauphin	1261	1196	1291
Winnipeg	1414	1427	1424

**ONTARIO**

London	1520	1612	1632
Muskoka	1362	1442	1356
North Bay	1268	1298	1353
Ottawa	1544	1603	1597
Thunder Bay	1197	1081	1130
Toronto	1532	1531	1641
Trenton	1501	1509	1627
Windsor	1782	1905	1921

**QUÉBEC**

Bale Comeau	839	792	939
Montréal	1537	1597	1646
Québec	1316	1296	1363
Sept-Îles	1038	704	829
Sherbrooke	1208	1223	1444

**NEW BRUNSWICK**

Charlo	1096	1063	1170
Fredericton	1343	1320	1365
Moncton	1254	1127	1260

**NOVA SCOTIA**

Halifax	1237	1090	1216
Sydney	1087	1001	1105
Yarmouth	1110	1095	1111

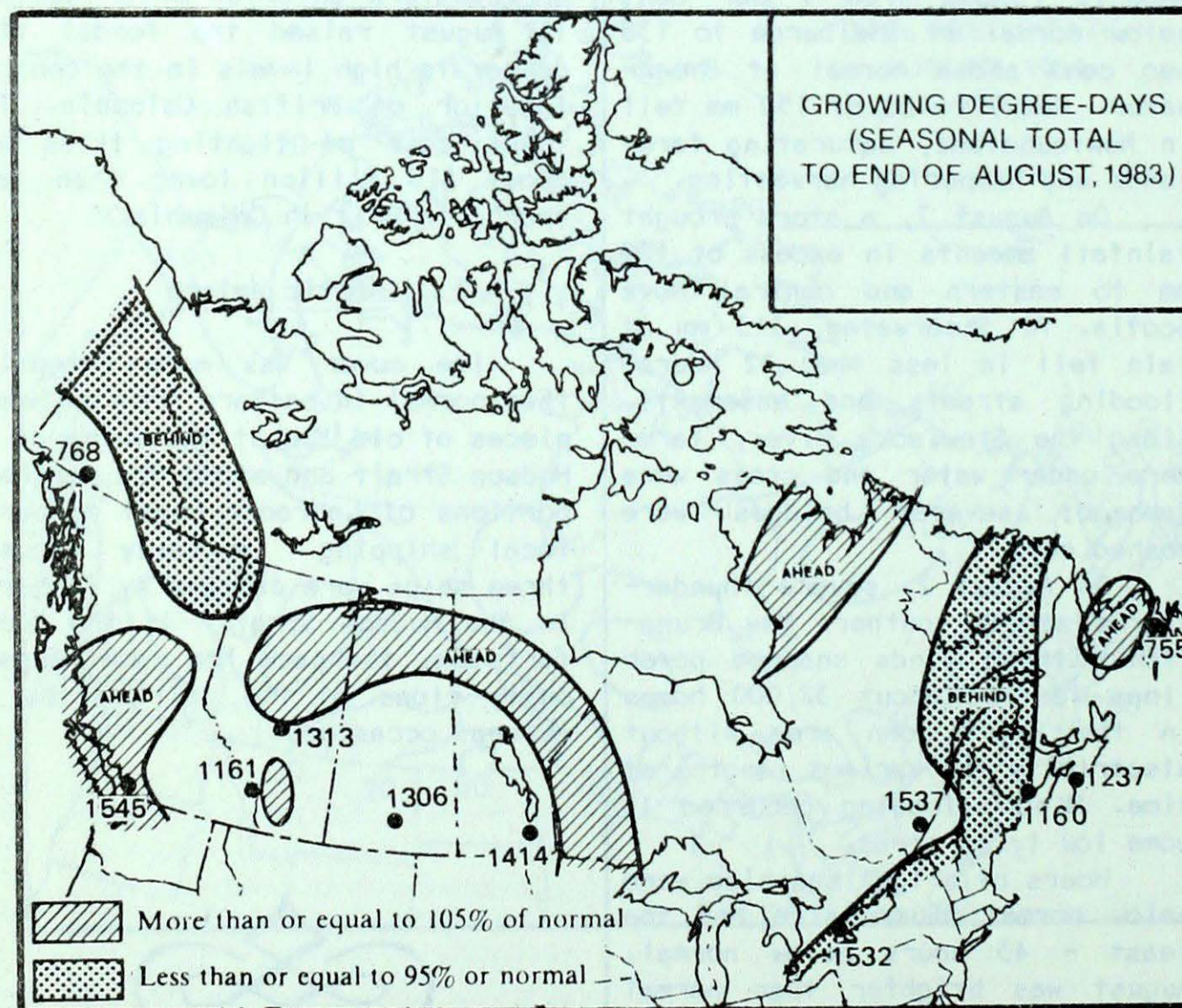
**PRINCE EDWARD ISLAND**

Charlottetown	1223	1118	1186
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**NEWFOUNDLAND**

Gander	954	813	940
St. John's	755	747	836
Stephenville	1042	951	955

X = Season Ended





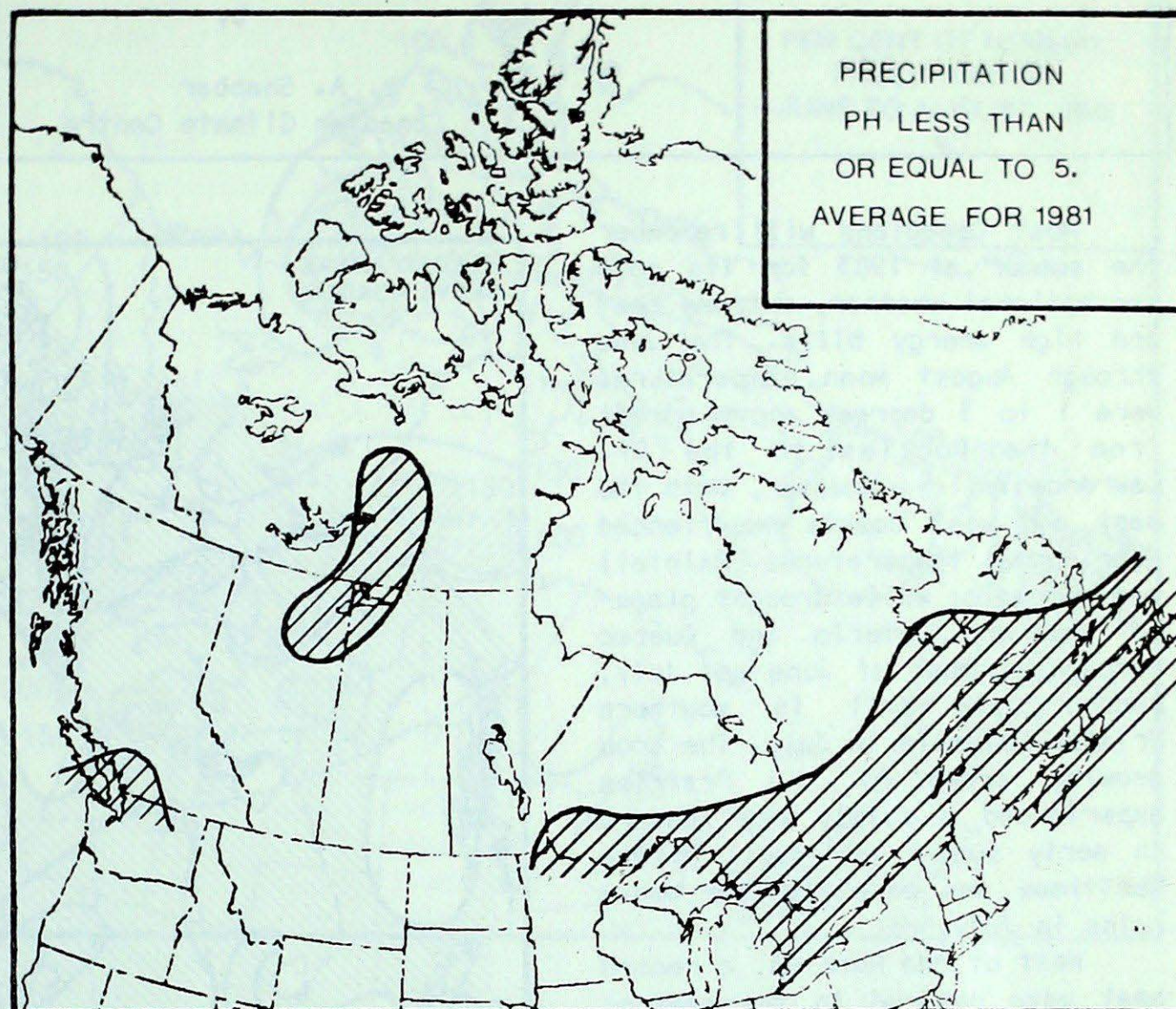
### AES SCIENTISTS TO TRACE PATH OF AIR POLLUTION

Over a six week period, beginning about September 12, Canadian and U.S. scientists have planned to track the movement of an inert tracer substance through the atmosphere over much of eastern North America. The experiment, referred to as CAPTEX (Cross-Appalachian Tracer Experiment), is intended to demonstrate and determine long range transport of air pollution by winds.

On August 23 1983, Charles Caccia, federal Environment Minister, signed an agreement with the United States government for the joint Canada-U.S. project. Mr. Caccia said "We hope that these experiments will provide even clearer confirmation that air pollution causing acidic precipitation can be transported over great distances and from one country to another. The data collected will help scientists further evaluate the ability of current numerical models of the atmosphere to predict the rate, direction and distance of that movement".

During CAPTEX Canadian scientists will release an inert, colourless, odourless and non-toxic tracer (perfluoro-monomethyl-cyclohexane) on three occasions from the Sudbury area and U.S. scientists will make three similar releases from Dayton, Ohio. The release sites chosen are near two of the main sources of air pollution in northeastern United States and southeastern Canada, sources which are thought to contribute significantly to the acid rain problem in North America. Each experiment will involve the release of 200 kilograms of the tracer over a three hour period and will take place at about one week intervals, depending on prevailing winds and weather conditions.

After each release, the scientists will track the movement of the tracer across eastern North America for a distance of 1000 kilometres using a network of 85 sampling stations on the ground



and, at various altitudes, with seven aircraft. The ground stations are laid out on a grid through the northeastern U.S., southern Ontario and southern Québec, with one station in Nova Scotia. Scientists expect to collect over 6,000 air samples during the experiment. Each sample must be analysed by gas chromatography before a picture of where the tracer went from each release point will be forthcoming. Results are not expected until next year but if the experiment proves successful much longer and more elaborate projects are expected to be carried out in the future.

Participating in the joint project will be scientists from the Atmospheric Environment Service of Environment Canada, the National Research Council, the Québec and Ontario Ministries of the Environment and several United States agencies: U.S. Department of Energy, the National Ocean-

graphic and Atmospheric Administration, the Environmental Protection Agency and the Electric Power Research Institute. CAPTEX is expected to cost \$2 to \$3 million; Canada will contribute about 10 per cent of the total cost.

Mr. Caccia described the agreement as "a good omen" for it "symbolizes a new period of closer cooperation in acid rain research between Canada and the United States".



## SUMMER ROUNDUP - 1983

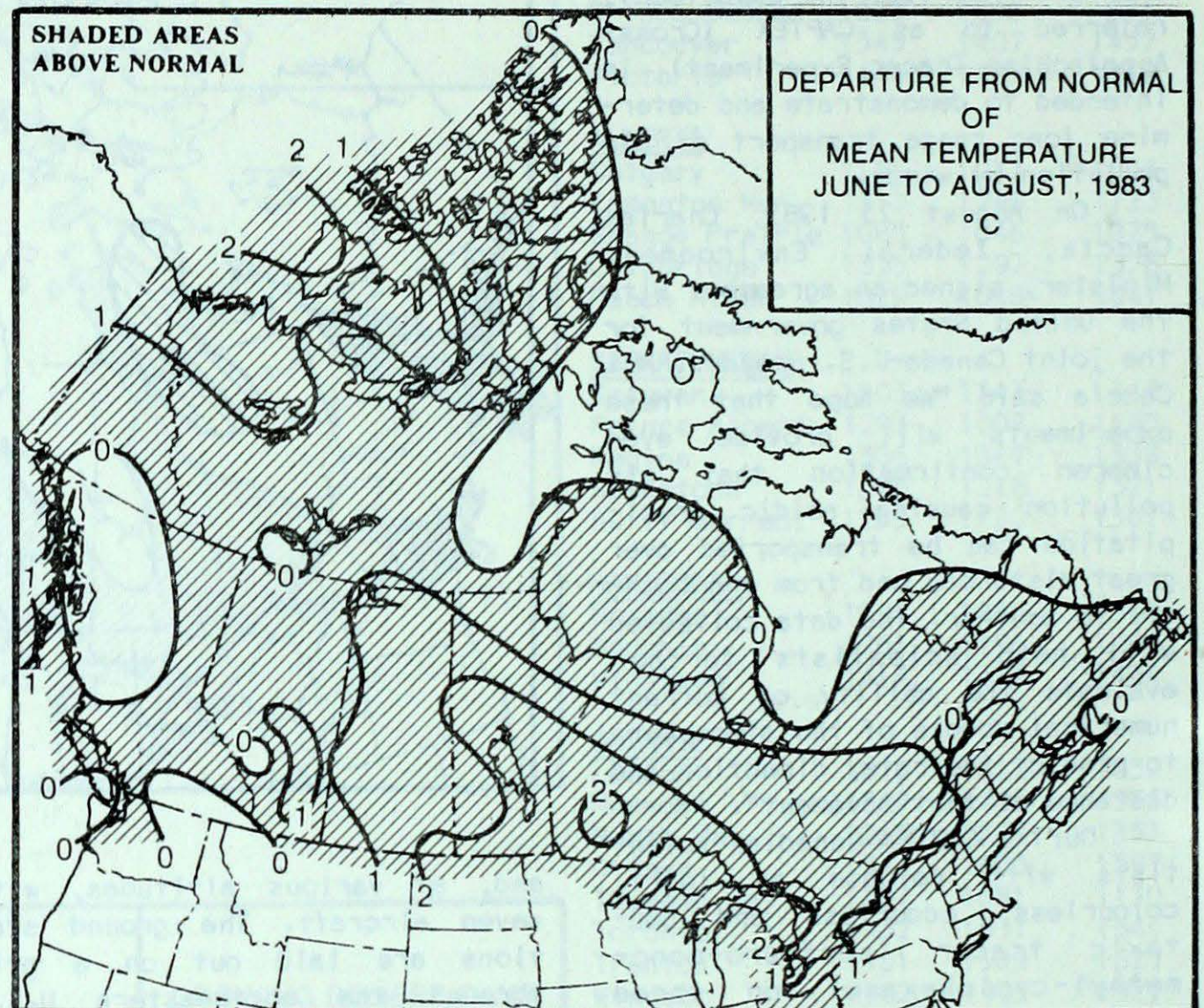
by

A. Shabbar  
Canadian Climate Centre

Most Canadians will remember the summer of 1983 for its good recreational weather, extreme heat and high energy bills. The June through August mean temperatures were 1 to 3 degrees above normal from the Rockies to the St. Lawrence Valley; however, both the east and west coasts experienced near normal temperatures. Rainfall was sporadic; while drought plagued southern Ontario and Québec throughout most of June and July, record rain fell in southern British Columbia in July. The crop growing areas of the Prairies experienced a fairly dry summer. An early summer dry spell in the Maritimes was ended by the heavy rains in July.

West of the Rockies, a record heat wave ushered in the season; hot weather helped ignite numerous major forest fires in central and northern British Columbia. But heavy rains arrived soon afterwards, and British Columbia had one of its quietest forest fire seasons. More than the usual number of hailstorms and torrential downpours destroyed fruit and vegetable crops worth tens of millions of dollars in the Okanagan and Fraser Valley. During mid-July, 100 to 150 mm of rain triggered major mud slides in southeastern British Columbia. The slides blocked part of the Trans-Canada Highway and halted rail service. Nine locations received record rainfall in July; at Hope, 255 mm of rain was about 7 times the average.

The Prairies endured a scorching heat wave in August. Southern Saskatchewan and southern Manitoba experienced their warmest summer in over 20 years, and with a mean temperature of 20.6°; Winnipeggers will remember the



summer of 1983 as the warmest ever - August was the hottest month since July 1936. Some locations had maximums of 40°. The relentless heat and below normal rainfall matured the crops about 2 weeks earlier than normal; the yields of most crops dropped by 10 to 20 per cent below last year's. However, the quality of cereal and wheat may be one of the best in recent years. The Prairies also experienced more severe weather than usual. Tornadoes, sudden downpours, large hail and strong winds struck many communities. A tornado touched down near Lloydminster on July 8, destroying several houses, killing a number of farm animals and seriously

injuring one man. In southern Saskatchewan, hail damage to crops was extensive. Flash floods caused severe property destruction on the Prairies. In June, an intense storm dumped 100 mm of rain on Saskatoon in 24 hours. Nearly 75 mm fell in 1 hour - a once in a hundred years occurrence. Soil moisture reserves in southern Alberta were consistently low throughout the summer. The depleted moisture in the ground combined with heavy grasshopper infestations affected the amount of winter wheat being planted.

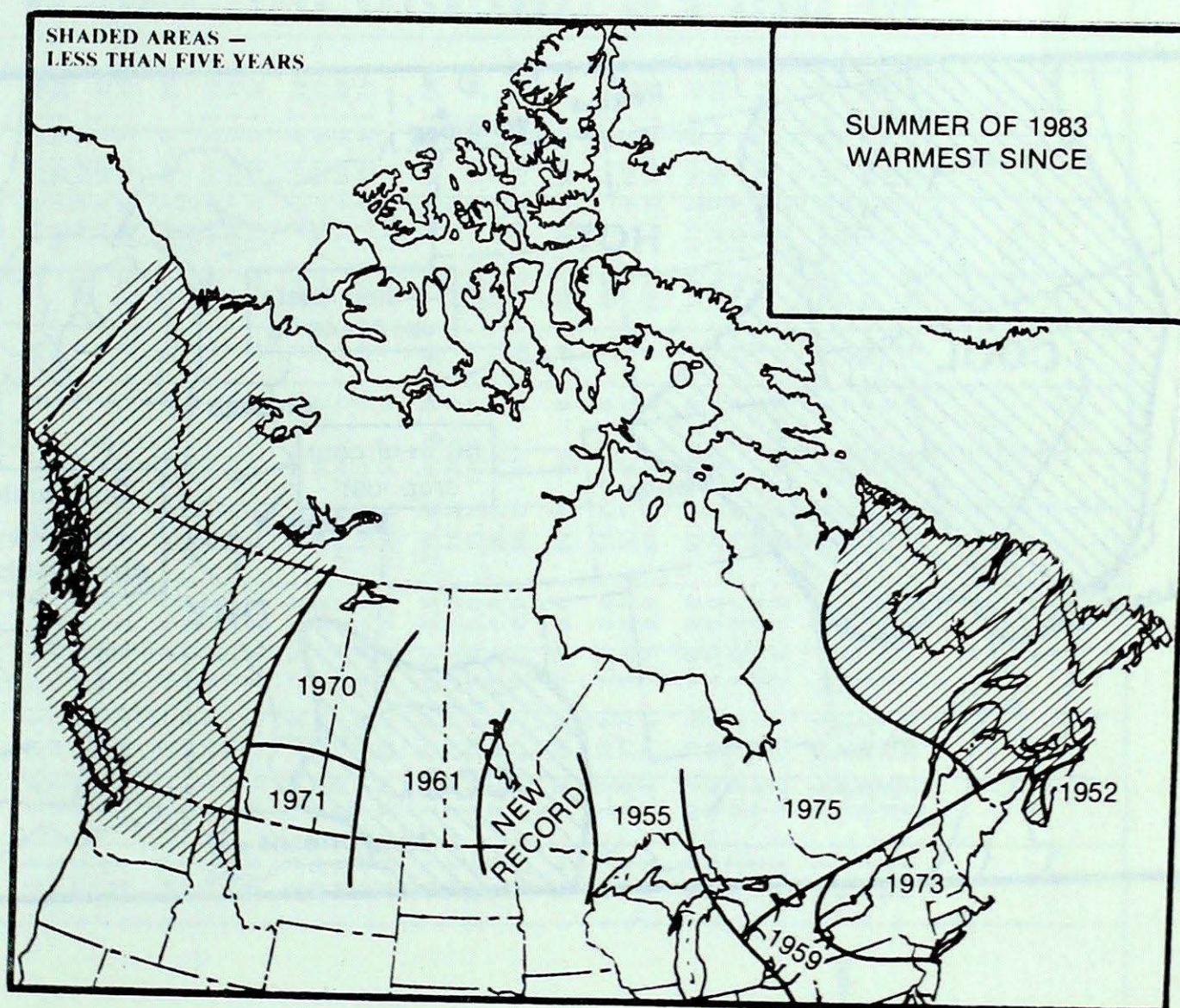
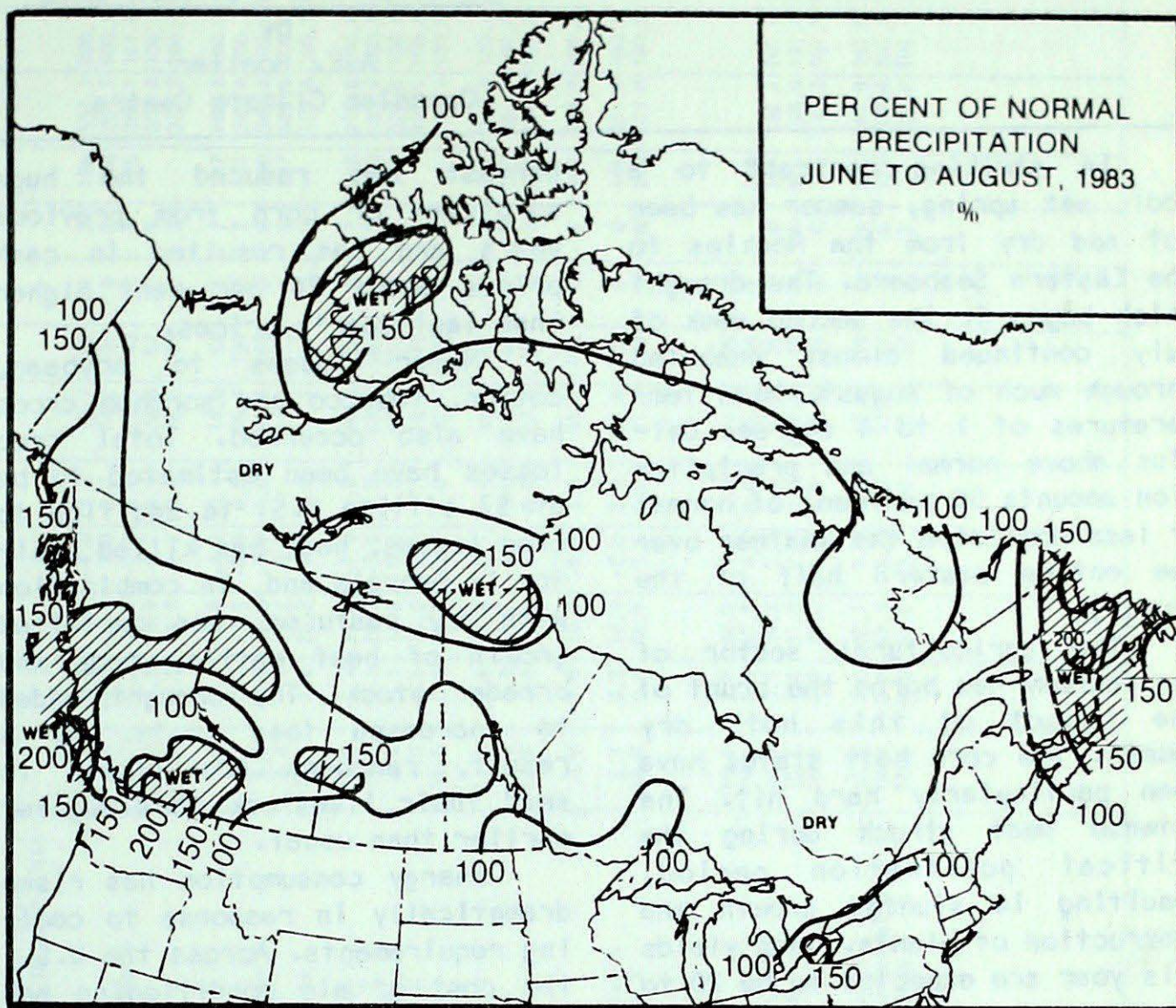
In southern Ontario, the June to August period was the warmest in two decades. In July, daytime temperatures soared into the mid-



thirties and produced a searing heat wave. The heat in combination with high humidities resulted in humidex values in excess of 40° in southern Ontario. Roads buckled and energy consumption rose about 10 per cent because of the greater electrical demands to keep cool. Of even greater concern was the drought that plagued southern Ontario for nearly 6 weeks. Lack of rain stunted crop growth. In eastern Ontario, many crops wilted in the hot and dry weather. Crop saving rain, dubbed the 'Multi-million dollars rain' by farmers, arrived in August. Still, corn yields were expected to be 25 per cent below average in the drought struck areas. On a positive note, the fine vacation weather attracted thousands of people to provincial parks. Attendance was 7 to 12 per cent greater than last year's. In Toronto and vicinity, an unusual rise in Lake Ontario's water temperature contributed to excessive bacterial growth and closed many beaches to swimmers.

Québec's summer was also hot and dry. The forest fire season was the worst in 50 years. About 260,000 hectares burned in 1,284 separate fires. The village of Nemaska in northern Québec was evacuated when fires threatened the safety of the residents. The quality and yields of the corn and cereal crops were expected to be below normal because of the prolonged dry and hot spell in July.

Summer temperatures were slightly above normal in the Maritimes, but decidedly below normal in Newfoundland. Heavy July rains ended an early dry spell in the Maritimes. The rains were especially beneficial to the vegetable and fruit crops in the Annapolis Valley. Heavy rains in Newfoundland saturated fields and hampered the hay harvest. In the Arctic waters, the ice cover was more extensive than usual in Baffin Bay and in Hudson Strait. On several occasions, ice breaker assistance was required by ships travelling farther north. In the Beaufort Sea, the pack ice lay perilously close to the drill sites.





## IMPACT OF THE U.S. HEAT WAVE

by  
A.E. Hoeller  
Canadian Climate Centre

In striking contrast to a cool, wet spring, summer has been hot and dry from the Rockies to the Eastern Seaboard. The drought which began in the second week of July continued almost unabated through much of August. Mean temperatures of 1 to 4 degrees Celsius above normal and precipitation amounts 50 per cent of normal or less dominated the weather over the entire eastern half of the country.

The agricultural sector of the economy has borne the brunt of the impact of this hot, dry summer. The corn belt states have been particularly hard hit. The intense heat struck during the critical pollination period, resulting in stunted growth and destruction of plants. Corn yields this year are expected to be 20 to 25 per cent below normal. Of some consolation to the farmers: small

harvest has reduced the huge surpluses or corn from previous years and has resulted in cash prices about 74 per cent higher than last year's prices.

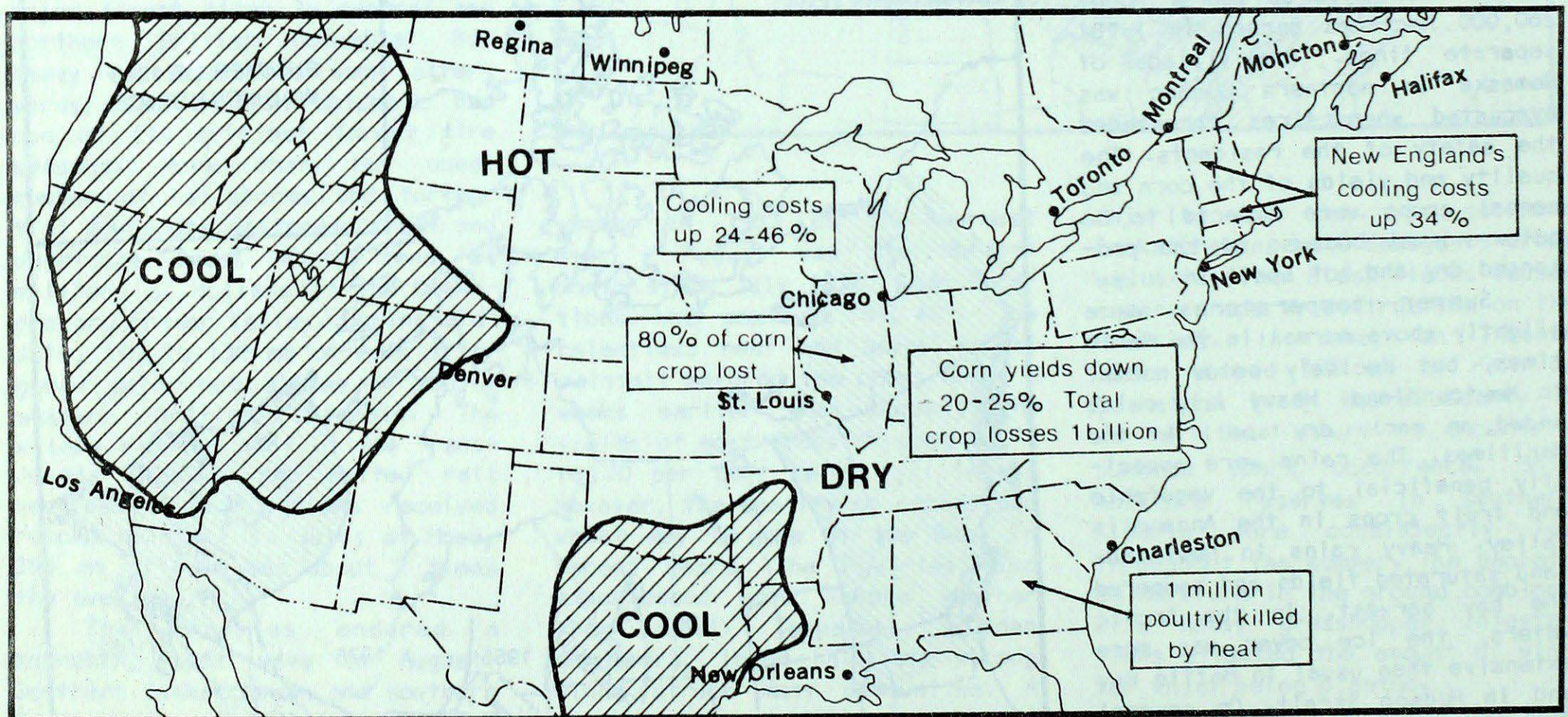
Major losses to soybean, cotton, tobacco and sorghum crops have also occurred. Total crop losses have been estimated to be at \$7 billion U.S. In addition to crop losses, heat has killed poultry in Georgia and, in combination with dry pastures, has curtailed growth of beef cattle, hogs and breeder stock. The drought added to increased feed costs. As a result, ranchers are likely to send their livestock to slaughter earlier than usual.

Energy consumption has risen dramatically in response to cooling requirements. Across the U.S., the cost of air conditioning has amounted to \$1 billion more than average this summer. In the north

central and New England states, cooling costs were 26 to 46 per cent above normal in July.

Unfortunately, not everyone managed to escape the heat. Approximately 220 people have died as a result of heat stroke. This figure represents only 10 to 50 per cent of the increase in mortality associated with unusually high temperatures. It has been estimated that deaths from all disease categories related to the heat wave range between 400 and 2,000.

The Assessment and Information Services Centre of NOAA considers this drought to be one of the most severe and extensive since the one in the 1930s. Although it is similar in size and intensity to the 1980 drought, this year's drought encompasses an area north of that involved in 1980.



information supplied by NOAA



# AUGUST 1983 AOÛT

STATION	Temperature °C Température °C				Snowfall (cm) Chute de neige (cm)	Total Precipitation (mm) Précipitation totale (mm)	% of Normal Precipitation % de précipitation normale	Snow on ground at end of month (cm) Neige au sol à la fin du mois (cm)	No. of days with Precip. 1.0 or more (mm) Nombre de jours de préc. 1.0 ou plus (mm)	Bright sunshine (hours) Durée de l'insolation (heures)	Degree Days below 18°C Degré-jours au-dessous de 18°C	Mean Sea Level Pressure (hPa) Pression au niveau moyen de la mer (hPa)	Mean Vapour Pressure (hPa) Pression de vapeur moyenne (hPa)
	Mean Moyenne	Difference from Normal Écart à la normale	Maximum Maximale	Minimum Minimale									
<b>BRITISH COLUMBIA COLOMBIE-BRITANNIQUE</b>													
Abbotsford A	17.5	0.6	30.0	7.8	0.0	29.2	52	0	4	267	28.5	101.6	1.53
Alert Bay	14.4	0.1	24.8	7.0	0.0	42.4	64	0	9		110.0	101.9	1.45
Blue River A	16.8	1.2	31.0	1.0	0.0	58.0	78	0	12	220			
Bull Harbour	14.1	0.6	23.2	8.0	0.0	55.0	67	0	8		121.4	101.9	1.45
Burns Lake	13.3	0.2	27.4	0.6	0.0	22.7	52	0	4	258	143.9		
Cape St. James	15.2	1.4	21.4	11.1	0.0	96.2	122	0	15		83.0	101.8	1.48
Cape Scott	14.6	0.7	19.7	9.5	0.0	106.3	100	0	11		106.7	101.9	1.53
Castlegar A	20.3	-0.6	36.4	7.2	0.0	63.6	139	0	6	284	4.0	101.5	
Comox A	17.6	0.6	28.2	10.0	0.0	35.8	81	0	4		22.4	101.7	1.32
Cranbrook A	18.9	1.5	34.4	6.8	0.0	39.3	121	0	8	313	20.6	101.5	1.15
Dease Lake	10.3	-1.3	22.5	-0.3	0.0	56.8	108	0	11	138	239.7	101.5	.95
Ethelda Bay	14.1	0.4	21.7	5.2	0.0	239.5	140	0	19		126.2		
Fort Nelson A	15.1	0.3	30.4	2.1	0.0	26.2	43	0	4	259	94.4	101.1	1.12
Fort St. John A	15.0	0.6	28.6	3.7	0.0	26.2	43	0	4		94.4	101.1	1.12
Hope A	18.5	0.1	31.2	7.8	0.0	25.6	51	0	6	255	16.3	101.7	1.52
Kamloops A	21.3	1.5	36.8	7.6	0.0	9.1	33	0	4	299	0.6	101.4	1.19
Kelowna A	19.0	1.2	34.1	4.1	0.0	29.6	96	0	6	290	14.4	101.5	1.29
Langara	14.0	0.8	18.1	10.8	0.0	251.0	244	0	20		125.3	101.5	1.42
Lytton	21.9	1.0	35.8	9.3	0.0	16.0	100	0	3	255	1.6	101.4	1.19
Mackenzie A	13.8	0.0	29.6	2.0	0.0	30.8	53	0	7	275	132.3		
McInnes Island	15.5	1.2	20.6	11.0	0.0	139.4	93	0	13		78.4	101.8	1.54
Merry Island	18.2	0.5	26.4	12.3	0.0	14.5	33	0	4	289	11.5		
Penticton A	20.6	1.1	34.6	8.4	0.0	33.2	125	0	5	289	3.5	101.4	1.35
Port Alberni A	17.5	-0.4	30.7	5.8	0.0	36.0	93	0	4	286	24.3		
Port Hardy A	14.4	0.6	21.7	7.7	0.0	56.1	81	0	8	196	110.7	101.8	1.34
Prince George A	14.6	0.5	28.5	1.5	0.0	61.3	90	0	9	287	109.9	101.7	1.14
Prince Rupert A													
Princeton A	18.1	1.0	33.5	3.8	0.0	51.2	201	0	9	291			
Quesnel A	16.0	0.4	30.7	3.2	0.0	30.2	47	0	5		72.9	101.6	1.20
Revelstoke A	18.3	0.7	30.2	7.5	0.0	64.4	152	0	7	261	20.2	101.6	1.42
Sandspit A	14.5	-0.2	19.5	9.9	0.0	97.9	198	0	13	149	112.0	101.6	1.40
Smithers A	13.5	-0.6	26.5	1.7	0.0	35.0	80	0	9	204	138.5	101.6	1.09
Stewart A	13.2	-0.8	23.6	6.8	0.0	174.4	251	0	23	80	149.3		
Terrace A	15.2	-0.6	27.4	6.4	0.0	44.9	71	0	9	161	90.0	101.7	1.11
Vancouver Harbour	17.9	0.7	25.7	12.2	0.0	35.8	66	0	6		15.2		
Vancouver Int'l A	17.7	0.6	24.4	11.4	0.0	24.1	59	0	5	280	17.9	101.7	1.52
Victoria Gonzales Heights	16.3	1.0	26.8	10.5	0.0	36.6	174	0	4	311	56.4		
Victoria Int'l A	16.9	0.8	20.5	9.1	0.0	10.0	37	0	4	315	44.5	101.7	1.36
Victoria Marine	15.0	0.8	22.7	8.0	0.0	10.4	39	0	3		91.8	101.7	1.33
Williams Lake A	15.7	0.7	28.4	2.1	0.0	25.2	59	0	5	303	78.6	101.6	.95

STATION	Temperature °C Température °C				Snowfall (cm) Chute de neige (cm)	Total Precipitation (mm) Précipitation totale (mm)	% of Normal Precipitation % de précipitation normale	Snow on ground at end of month (cm) Neige au sol à la fin du mois (cm)	No. of days with Precip. 1.0 or more (mm) Nombre de jours de préc. 1.0 ou plus (mm)	Bright sunshine (hours) Durée de l'insolation (heures)	Degree Days below 18°C Degré-jours au-dessous de 18°C	Mean Sea Level Pressure (hPa) Pression au niveau moyen de la mer (hPa)	Mean Vapour Pressure (hPa) Pression de vapeur moyenne (hPa)
	Mean Moyenne	Difference from Normal Écart à la normale	Maximum Maximale	Minimum Minimale									
<b>YUKON TERRITORY TERRITOIRE DU YUKON</b>													
Burwash A	10.0	-0.4	21.1	-3.1	0.0	73.4	191	0	10				
Dawson A	11.6	-0.2	23.4	-1.4	0.0	57.9	105	0	13				
Mayo A	12.2	-0.4	22.9	-0.5	0.0	74.6	180	0	15				
Watson Lake A	12.0	-1.1	24.4	1.4	0.0	34.7	83	0	13	211	185.7	101.2	.95
Whitehorse A	11.6	-0.9	22.4	0.6	0.0	27.3	72	0	9	219	199.4	101.2	.88
<b>NORTHWEST TERRITORIES TERRITOIRES DU NORD-OUEST</b>													
Alert	0.7	-0.2	9.7	-4.0	29.3	19.2	68	1	7	186	537.1	100.1	.57
Baker Lake	9.6	-0.1	26.3	1.0	0.0	74.2	199	0	8	148	261.7	100.9	.96
Cambridge Bay A	6.7	0.2	16.2	-0.6	0.0	13.5	48	0	4	175	286.7	101.0	.81
Cape Dyer A	1.7	-2.9	9.9	-4.7	10.4	26.6	52	0	9		505.8	100.7	.57
Cape Parry A	5.9	0.5	14.8	-1.7	0.0	6.8	25	0	3		375.2	100.9	.81
Clyde	2.2	-1.8	12.8	-4.1	10.4	14.0	54	1	7	147	489.8	100.7	.59
Coppermine	8.9	0.2	23.9	-0.3	0.0	75.7	196	0	7	191	280.0	100.1	.95
Coral Harbour A	6.8	-0.6	18.0	-1.0	0.0	66.1	149	0	8	200	347.8	101.7	.79
Eureka	4.4	1.1	13.2	-0.7	T	13.1	113	0	5	247	422.9	100.7	.64
Fort Reliance	14.1	1.2	26.2	5.9	0.0	67.1	167	0	9		124.8	100.9	1.18
Fort Simpson A	14.0	-0.4	27.8	-1.8	0.0	26.6	59	0	7	248	116.6	100.8	1.12
Fort Smith A	15.5	1.3	29.7	-0.6	0.0	69.8	164	0	13	278	83.9	100.9	1.21
Frobisher Bay A	6.4	-0.5	13.6	0.0	0.0	65.8	112	0	13	113	373.9	100.6	.73
Hall Beach A	4.0	-0.6	15.0	-2.6	T	19.3	47	0	5		432.1	100.6	.68
Hay River A	14.9	0.5	29.4	3.7	0.0	72.7	193	0	9		95.9	100.9	1.23
Inuvik A	11.3	0.6	24.8	-0.1	0.0	36.5	84	0	8	187	208.0	100.8	.97
Mould Bay A	2.3	0.9	11.7	-3.7	1.0	13.0	60	T	3	227	485.0	101.0	.60
Norman Wells A	13.8	0.4	26.7	3.5	0.0	12.5	21	0	5	225	134.3	100.8	1.07
Pond Inlet A													
Resolute A	3.0	0.6	10.1	-4.0	1.8	31.7	102	0	5	191	493.9	100.8	.64
Sachs Harbour A	4.3	0.5	12.4	-2.8	2.2	32.8	143	0	8	186	421.8	100.9	.74
Yellowknife A	14.9	0.8	26.5	5.6	0.0	31.2	71	0	8	259	103.0	100.9	1.18
<b>ALBERTA</b>													
Banff	16.4	2.6	30.0	1.0	0.0	47.1	96	0					
Brooks	19.9	2.5	37.5	4.5	0.0	45.3	96	0		332			
Calgary Int'l A	18.3	3.1	34.5	5.0	0.0	42.0	76	0	4	313	32.4	101.5	1.02
Cold Lake A	18.1	2.6	31.8	2.7	0.0	7.5	10	0	4	328	38.9	101.4	1.32
Coronation A	18.3	2.2	34.0	1.9	0.0	18.2	35	0	4	332	37.3	101.5	1.22
Edmonton Int'l A	16.8	2.0	32.7	1.3	0.0	12.2	16	0	3	320	61.0	101.5	1.31
Edmonton Municipal A	19.0	2.8	33.5	5.0	0.0	13.2	17	0	4	325	20.4	101.4	1.31
Edmonton Namao A	17.6	2.0	32.6	3.7	0.0	8.5	12	0	3		39.4	101.4	1.30







## AUGUST 1983 AOÛT

STATION	Temperature °C Température °C				Snowfall (cm) Chute de neige (cm)	Total Precipitation (mm) Précipitation totale (mm)	% of Normal Precipitation % de précipitation normale	Snow on ground at end of month (cm) Neige au sol à la fin du mois (cm)	No. of days with Precip. 1.0 or more (mm) Nombre de jours de préc. 1.0 ou plus (mm)	Bright sunshine (hours) Durée de l'insolation (heures)	Degree Days below 18°C Degré-jours au-dessous de 18°C	Mean Sea Level Pressure (hPa) Pression au niveau moyen de la mer (hPa)	Mean Vapour Pressure (hPa) Pression de vapeur moyenne (hPa)	STATION	Temperature °C Température °C				Snowfall (cm) Chute de neige (cm)	Total Precipitation (mm) Précipitation totale (mm)	% of Normal Precipitation % de précipitation normale	Snow on ground at end of month (cm) Neige au sol à la fin du mois (cm)	No. of days with Precip. 1.0 or more (mm) Nombre de jours de préc. 1.0 ou plus (mm)	Bright sunshine (hours) Durée de l'insolation (heures)	Degree Days below 18°C Degré-jours au-dessous de 18°C	Mean Sea Level Pressure (hPa) Pression au niveau moyen de la mer (hPa)	Mean Vapour Pressure (hPa) Pression de vapeur moyenne (hPa)
	Mean Moyenne	Difference from Normal Écart à la normale	Maximum Maximale	Minimum Minimale											Mean Moyenne	Difference from Normal Écart à la normale	Maximum Maximale	Minimum Minimale									
QUEBEC														NOVA SCOTIA NOUVELLE-ÉCOSSE													
Bagotville A	17.2	0.8	31.5	3.6	0.0	56.8	57	0	10		36.3	101.5	1.40	Eddy Point	17.5	-0.6	28.9	9.7	0.0	125.2	118	0	10	181	39.2	101.5	1.77
Baie Comeau A	14.4	-0.2	27.9	2.0	0.0	54.8	58	0	11	221	114.7	101.3	1.34	Greenwood A	18.7	0.4	30.7	6.8	0.0	120.1	133	0	9		23.2	101.5	1.63
Blanc Sablon	11.1	-0.7	19.1	3.1	0.0	132.8	123	0	16	135	211.8	101.2	1.21	Halifax Int'l A	17.8	-0.3	27.9	9.0	0.0	160.8	144	0	8		36.4	101.6	1.63
Chibougamau A	15.5	1.5	29.2	1.1	0.0	112.6	95	0	15	206	88.1	101.5	1.34	Sable Island	17.4	-0.2	22.8	5.9	0.0	140.5	121	0	13	174	29.7	101.6	1.86
Kuujujac A	9.7	-0.7	21.4	-1.0	0.0	36.8	58	0	13	142	256.3	101.0	.82	Shearwater A	18.4	0.6	28.0	9.5	0.0	232.4	238	0	10	195	26.1	101.5	1.70
Gaspe A	15.4	-0.6	29.8	2.6	0.0	43.2	50	0	7	196	94.2	101.3	1.40	Sydney A	16.8	-0.8	29.2	6.5	0.0	142.0	140	0	12	177	59.3	101.5	1.62
Inukjuac A	8.5	-0.4	15.7	1.6	0.0	28.4	44	0	6	188	294.2	101.1	.90	Truro	17.1	0.0	28.2	5.2	0.0	116.8	122	0	11	182	47.2	101.5	1.67
La Grande Riviere	13.2		26.1	3.0	0.0	94.5	0	0	14		150.9	101.3	1.09	Yarmouth A	16.6	0.2	25.5	9.3	0.0	105.8	109	0	5	200	50.7	101.5	1.61
Maniwaki	18.3	1.3	29.2	4.9	9.9	35.0	38	0	7	279	37.8	101.5	1.65	PRINCE EDWARD ISLAND ILE-DU-PRINCE-ÉDOUARD													
Matagami A	15.3	1.3	28.7	0.6	0.0	169.8	159	0	13	250	100.1			Charlottetown A	17.6	-0.2	28.6	8.0	0.0	79.7	90	0	14		36.1	101.4	1.66
Mont Joli A	17.0	1.0	29.4	4.8	0.0	62.6	79	0	10	218	67.1	101.3	1.38	Summerside A	18.5	0.1	28.4	10.0	0.0	159.0	199	0	16	197	27.3	101.4	1.65
Montreal Int'l A	20.8	1.2	32.3	8.0	0.0	32.8	36	0	6	260	11.7	101.5	1.74	NEWFOUNDLAND TERRE-NEUVE													
Montreal Mirabel Int'l A	19.6		31.2	6.4	0.0	63.6	0	0	8		24.2	101.6	1.67	Argentia	14.5	-0.8	23.5	6.5	0.0	130.3	135	0	17		110.8	101.6	1.47
Natashquan	13.2	-0.1	22.9	1.8	0.0	116.8	112	0	14	211	146.3	101.2	1.39	Battle Harbour	10.1	-1.1	25.6	4.0	0.0	122.9	146	0	14		239.6	101.3	1.03
Nitchequan	12.4	0.6	24.1	3.9	0.0	147.1	131	0	14	194	172.5	101.3	1.08	Bonavista	14.2	-0.8	24.7	3.8	0.0	121.0	145	0	13		128.3	101.5	1.35
Kuujuarapik A	10.8	0.4	28.8	1.0	0.0	90.7	96	0	12	184	227.4	101.2	1.02	Burgeo	13.8	-1.1	20.3	4.4	0.0	172.7	117	0	11	131	124.0	101.4	1.44
Quebec A	19.2	1.7	29.8	7.1	0.0	52.8	45	0	8	256	23.0	101.5	1.55	Cartwright	11.1	-0.9	28.0	0.2	0.0	94.9	116	0	18	198	214.8	101.1	1.03
Roberval A	19.3	2.9	34.3	4.8	0.0	71.0	72	0	8	258	30.6	101.4	1.50	Churchill Falls A	11.6	-0.8	25.6	1.6	0.0	75.2	79	0	17	195	199.4	101.2	1.01
Ste. Agathe des Monts	17.4	1.6	28.3	3.0	0.0	79.0	70	0	10	242	49.4	101.7	1.61	Comfort Cove	14.4	-1.2	27.4	3.9	0.0	215.1	200	0	16		139.7	101.6	1.35
St. Hubert A	20.4	1.2	31.7	5.7	0.0	38.6	40	0	5		16.9	101.5	1.72	Daniel's Harbour	13.6	-0.9	22.9	4.0	0.0	109.2	95	0	12	162	144.6	101.3	1.35
Schefferville A	10.4	-0.4	25.0	1.8	0.0	99.7	102	0	14	184	235.5	101.2	.90	Deer Lake A	14.7	-0.3	29.4	1.6	0.0	136.4	133	0	14		126.3	101.4	1.38
Sept-Iles A	14.0	-0.1	26.5	2.9	0.0	62.0	60	0	10	199	125.1	101.2	1.28	Gander Int'l A	14.1	-1.5	26.4	4.0	0.0	155.4	160	0	15	149	133.6	101.4	1.39
Sherbrooke A	17.3	0.8	29.7	2.8	0.0	161.0	133	0	13	250	56.2	101.6	1.65	Goose A	13.6	-0.7	29.9	2.9	0.0	57.2	55	0	13	164	148.1	101.1	1.09
Val d'or A	17.3	1.8	28.9	3.4	0.0	52.0	51	0	10	254	51.7	101.6	1.41	Hopedale	10.5	-0.3	26.8	1.7	0.0	40.9	51	0	8		234.9	101.0	.93
NEW BRUNSWICK NOUVEAU-BRUNSWICK														Port-aux-Basques	14.4	-0.3	20.0	5.5	0.0	206.9	180	0	17		111.9	101.0	1.46
Charlo A	17.1	1.0	30.3	6.0	0.0	62.2	58	0	9	227	58.1	101.4	1.50	St. Anthony	11.2	-1.4	25.4	4.2	0.0	139.7	106	0	13		204.1	101.3	1.13
Chatham A	19.0	1.0	31.1	6.0	0.0	44.4	53	0	8	212	29.3	101.4	1.54	St. John's A	14.0	-1.3	27.9	0.5	0.0	140.5	116	0	18	141	133.5	101.6	1.34
Fredericton A	18.7	0.5	31.6	5.8	0.0	60.5	70	0	11	204	34.7	101.5	1.61	St. Lawrence	14.4	0.3	23.0	7.4	0.0	165.1	136	0	15		110.5		
Moncton A	17.7	0.1	28.4	6.6	0.0	89.2	114	0	10	212	40.5	101.4	1.64	Stephenville A	15.1	-1.0	25.1	5.6	0.0	244.4	235	0	17	140	94.3	101.3	1.45
Saint John A	17.5	0.9	27.3	8.8	0.0	115.2	113	0	10	215	34.2	101.5	1.54	Wabush Lake A	11.8	0.0	25.5	1.6	0.0	92.6	98	0	16	190	193.3	101.2	1.00



## AUGUST 1983 AOÛT

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	Mean Moyenne	Difference from Normal Ecart à la normale	Maximum Maximale	Minimum Minimale							This Month Présent mois	Since Jan 1st Depuis le 1 <sup>er</sup> janv.	
<b>AGROCLIMATOLOGICAL STATIONS AGROCLIMATOLOGIQUES</b>													
<b>BRITISH COLUMBIA COLOMBIE-BRITANNIQUE</b>													
Agassiz	18.4	0.7	30.0	9.0	0.0	61.2	99	0	8	261	415.5	1772.6	
Kamloops													
Sidney													
Summerland	20.6	0.6	33.0	11.0	0.0	20.4	74	0	5	295	483.0	1677.0	
<b>ALBERTA</b>													
Beaverlodge	15.0	0.8	28.0	3.0	0.0	32.4	51	0	4	354			
Ellerslie	16.9		31.5	1.5	0.0	9.6		0	3	331	370.3	1215.9	
Fort Vermilion													
Lacombe	16.6	1.7	33.0	2.5	0.0	10.2	15	0	3	302	362.1	1137.4	
Lethbridge	20.2	3.2	35.5	3.5	0.0	19.3	41	0	4	324			
Vauxhall	20.1	2.6	36.5	3.0	0.0	16.6	43	0	2	317			
Vegreville													
<b>SASKATCHEWAN</b>													
Indian Head	21.1	2.5	36.5	5.5	0.0	18.6	33	0	4				
Melfort	19.9	3.8	34.5	7.0	0.0	78.0	143	0	6	338	464.0	1325.0	
Regina	20.8	3.4	37.0	7.0	0.0	7.4	18	0	3		495.5	1405.5	
Saskatoon	20.0		36.5	6.0	0.0	30.0		0	6	340	468.5	1417.5	
Scott	18.9	2.9	34.5	3.0	0.0	37.6	81	0	8	333	435.2	1298.7	
Swift Current South	21.4	3.7	38.0	4.5	0.0	18.4	48	0	5	326	912.0	1563.5	
<b>MANITOBA</b>													
Brandon	21.5	3.6	38.0	6.0	0.0	67.2	97	0	8	305	505.9	1492.0	
Glenlea	22.5	4.2	37.0	7.0	0.0	51.3	85	0	5	321			
Morden	23.2	4.2	39.5	9.0	0.0	58.6	82	0	9	316	562.7	1685.1	
<b>ONTARIO</b>													
Delhi	21.3	1.5	31.0	9.0	0.0	153.4	165	0	8	263	504.3	1738.2	
Elora	19.9		29.7	8.1	0.0	82.7		0	7	244	465.0	1525.0	

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	Mean Moyenne	Difference from Normal Ecart à la normale	Maximum Maximale	Minimum Minimale							This Month Présent mois	Since Jan 1st Depuis le 1 <sup>er</sup> janv.	
Guelph	20.4	1.6	31.6	7.0	0.0	92.0	113	0	8	239	484.0	1564.0	
Harrow	22.9	1.7	32.0	11.0	0.0	67.4	85	0	6	265	552.8	1733.0	
Kapuskasing													
Merivale													
Ottawa	20.9	1.5	32.3	8.5	0.0	23.4	28	0	5		496.4	1673.0	
Smithfield	20.6	1.3	31.0	8.0	0.0	64.9	86	0	9		480.0	1643.0	
Vineland Station	21.5	0.7	30.9	12.5	0.0	90.2	105	0	10		512.8	1739.0	
Woodslee	22.2	1.4	32.5	11.0	0.0	47.8	63	0	4				
<b>QUEBEC</b>													
La Pocatiere	18.3	1.0	30.0	5.0	0.0	29.1	30	0	7	257	413.2	1295.9	
L'Assomption	20.4	1.6	32.0	6.0	0.0	50.8	53	0	8	220	477.0	1590.1	
Lavaltrie													
Lennoxville													
Normandin													
St. Augustin													
Ste. Clothilde	20.0	1.1	31.0	7.0	0.0	100.4	104	0	8	262	462.7	1630.1	
<b>NEW BRUNSWICK NOUVEAU-BRUNSWICK</b>													
Fredericton													
<b>NOVA SCOTIA NOUVELLE-ECOSSE</b>													
Kentville	18.8	0.4	30.0	7.5	0.0	106.3	108	0	9	204	428.4	1523.9	
Nappan	17.9	0.5	30.5	5.0	0.0	131.2	144	0	13	197	971.0	1361.5	
<b>PRINCE EDWARD ISLAND ILE-DU-PRINCE-EDOUARD</b>													
Charlottetown	18.3	-0.1	28.5	7.5	0.0	90.4	102	0	11	177	410.4	1370.8	
<b>NEWFOUNDLAND TERRE-NEUVE</b>													
St. John's West	14.8	-0.7	25.5	1.5	0.0	125.2	109	0	16	183	304.8	1040.7	