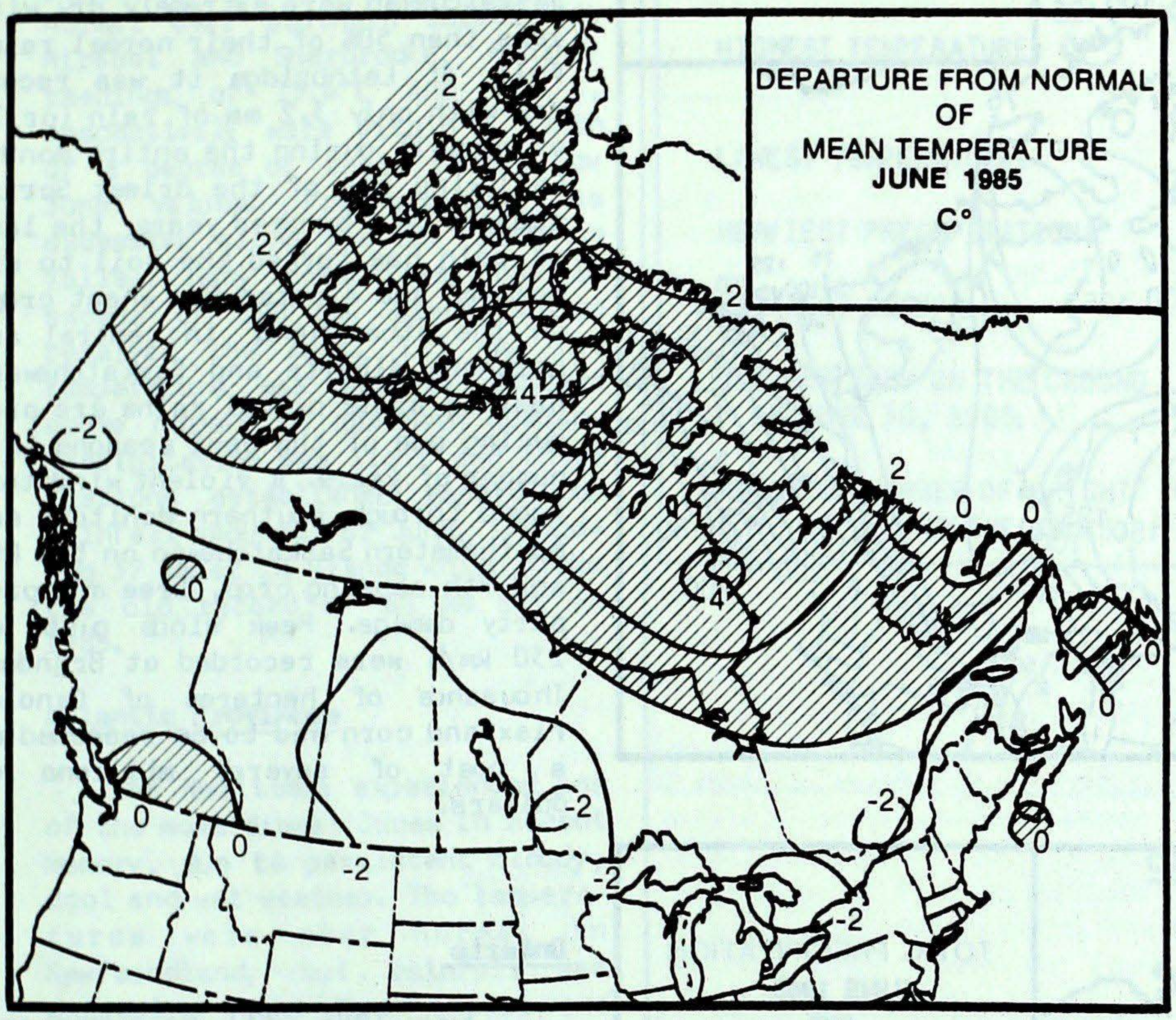
Environment Canada Environnement Canada

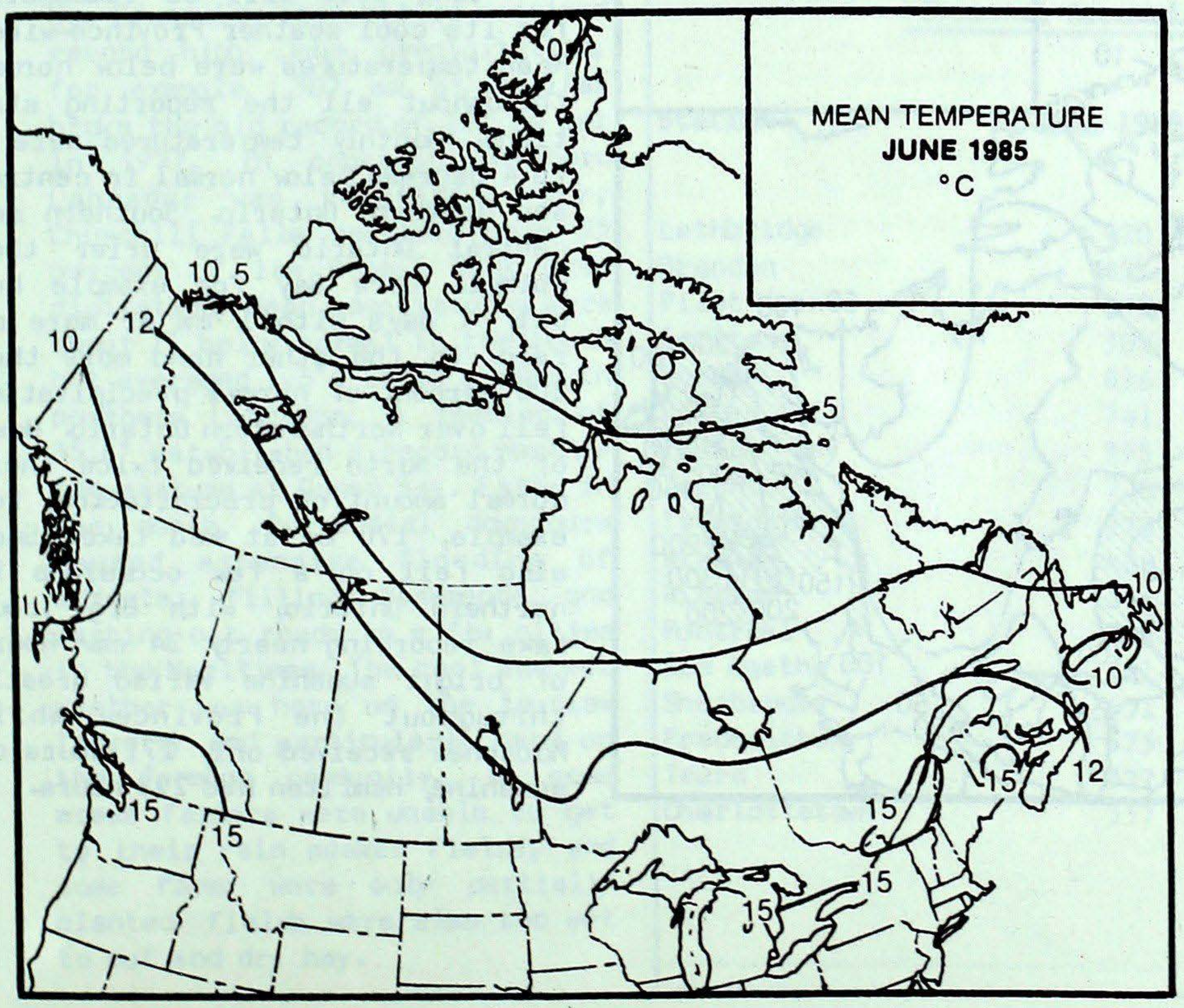
Climatic Perspectives

Monthly Supplement

Vol.7 June, 1985



DEPARTURE FROM NORMAL OF MEAN TEMPERATURE JUNE 1985 C°



MEAN TEMPERATURE JUNE 1985 °C

ACROSS THE COUNTRY

Yukon and Northwest Territories

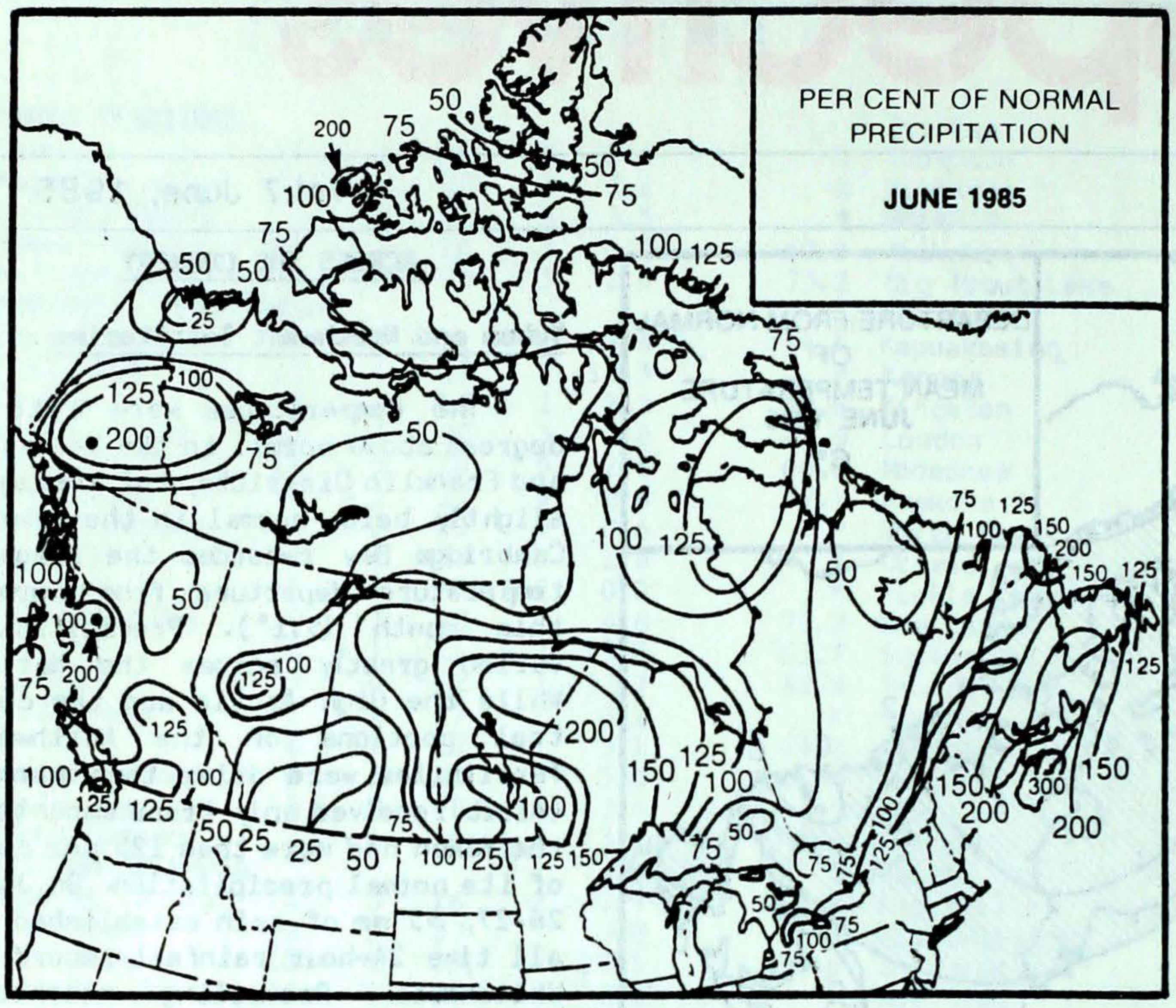
The temperatures were 2 to 5 degrees above normal in the Keewatin and Franklin Districts, but averaged slightly below normal in the Yukon. Cambridge Bay recorded the largest temperature departure from normal this month (5.1°). Precipitation varied greatly across the North. While the High Arctic and the central portions of the Northwest Territories were drier than normal (Alert received only trace amounts), the Yukon had more than 125 per cent of its normal precipitation. On June 26-27, 53 mm of rain established an all time 24-hour rainfall record at Whitehorse. Prevailing northerly winds pushed pack ice into the Beaufort Sea, preventing open water leads from developing. With 435 hours of bright sunshine, Inuvik was the sunniest place in Canada this month.

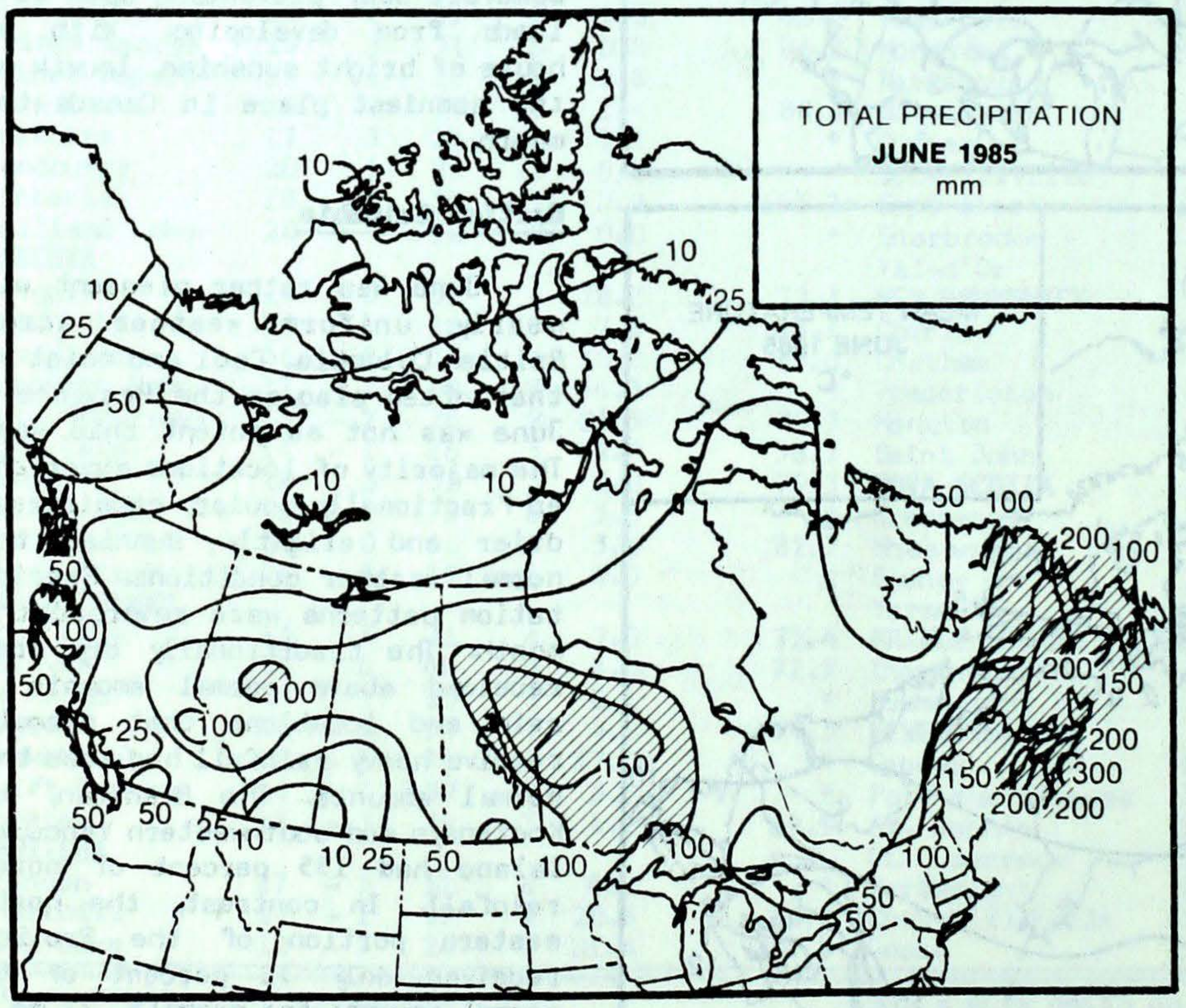
British Columbia

June was rather pleasant with nearly uniform weather across British Columbia. Cool and moist air that often plagues the Province in June was not as potent this year. The majority of locations experienced fractionally cooler, considerably drier and slightly sunnier than normal weather conditions. Precipitation patterns were reversed this month. The traditionally dry areas received above normal amounts of rain and locations that normally receive heavy rainfall had less than normal amounts. The Okanagan, the Kootenays and southwestern Vancouver Island had 155 percent of normal rainfall. In contrast, the northeastern portion of the Province received only 32 percent of the normal amount; for example, 22 mm of Fort Nelson. The only unusual event of note was the record 7.8 cm of snow that fell on the Williams Lake area.

Canada

PRECIPITATION





The Prairies

With mean daily temperatures ranging from 1 to 3°C below normal, June was much cooler than usual in most localities. Early in the month, widespread frosts were common. Southern Alberta and southwestern Saskatchewan were extremely dry with less than 50% of their normal rainfall. At Lethbridge it was record dry with only 3.2 mm of rain (or 3% of normal) during the entire month. Following one of the driest Spring seasons in a hundred years, the lack of rain has turned the soil to dry powder, and stunted the wheat crop. On the other hand, in central and northern Alberta and Saskatchewan, near to above normal rains are producing one of the best seasons in a number of years. A violent windstorm raged through southern Manitoba and southeastern Saskatchewan on the 8th and 9th causing crop, tree and property damage. Peak winds gusts of 130 km/h were recorded at Brandon. Thousands of hectares of Canola, flax and corn had to be reseeded at a cost of several millions of dollars.

Ontario

June 1985 will be remembered for its cool weather Province-wide. Mean temperatures were below normal throughout all the reporting stations. Monthly temperatures were 1 to 4 degrees below normal in central and northern Ontario. Southern and central Ontario were drier than normal. Gore Bay for example had only 4 days with 1 mm or more of rain. On the other hand more than 200 percent of normal precipitation fell over Northwestern Ontario. Most of the North received twice their normal amount of precipitation; for example, 170 mm at Red Lake. Snow also fell on a few occasions in northern Ontario, with Big Trout Lake reporting nearly 24 cm. Hours of bright sunshine varied greatly throughout the Province. While Moosonee received only 171 hours of sunshine, Hamilton had 298 hours.

Quebec

Whereas southern Québec experienced cloudy, cool and damp weather, northern Québec enjoyed relatively sunny, warm and dry conditions during June. Mean temperatures were about 1.5°C below normal over southern Québec. At Mirabel and Sherbrooke, monthly readings of 15.4°C and 14.1°C, respectively were within a tenth of a degree of their record low June values. Precipitation was excessive along the St. Lawrence Valley. Many communities had in excess of 100 mm. Blanc Sablon received the most, 125 mm. The temperature was several degrees above normal in northern Québec. Precipitation was light and three stations established record low rainfall amounts for June, including 37 mm at La Grande which broke the old record of 66 mm set in 1983.

Atlantic Provinces

The Maritimes experienced one of the most dismal Junes in recent memory, due to persistent cloudy, cool and wet weather. The temperatures were near normal in Newfoundland, but rainfall was excessive. Many Nova Scotia and New Brunswick communities received record high June precipitation, for example, 307 mm at Halifax broke the old record of 181 mm set in 1977. In contrast Northern Labrador was relatively dry, Churchill Falls received only 35 percent of its normal June precipitation. Mean temperatures were about 1° below normal in the south but averaged 1.5°C above normal in northern Labrador. A reading of 35.4° established a record monthly temperature at Goose Bay. Early in the month, torrential downpours caused extensive flooding of streets, filling basements and washing out roads in a few cities in the Maritimes. The cool and wet weather was hard on the tourism industry and particularly hard on the farming community. In some areas farmers were unable to get to their rain soaked fields, and some farms were only partially planted. Fields were also too wet to cut and dry hay.

CLIMATIC EXTREMES IN CANADA - JUNE 1985

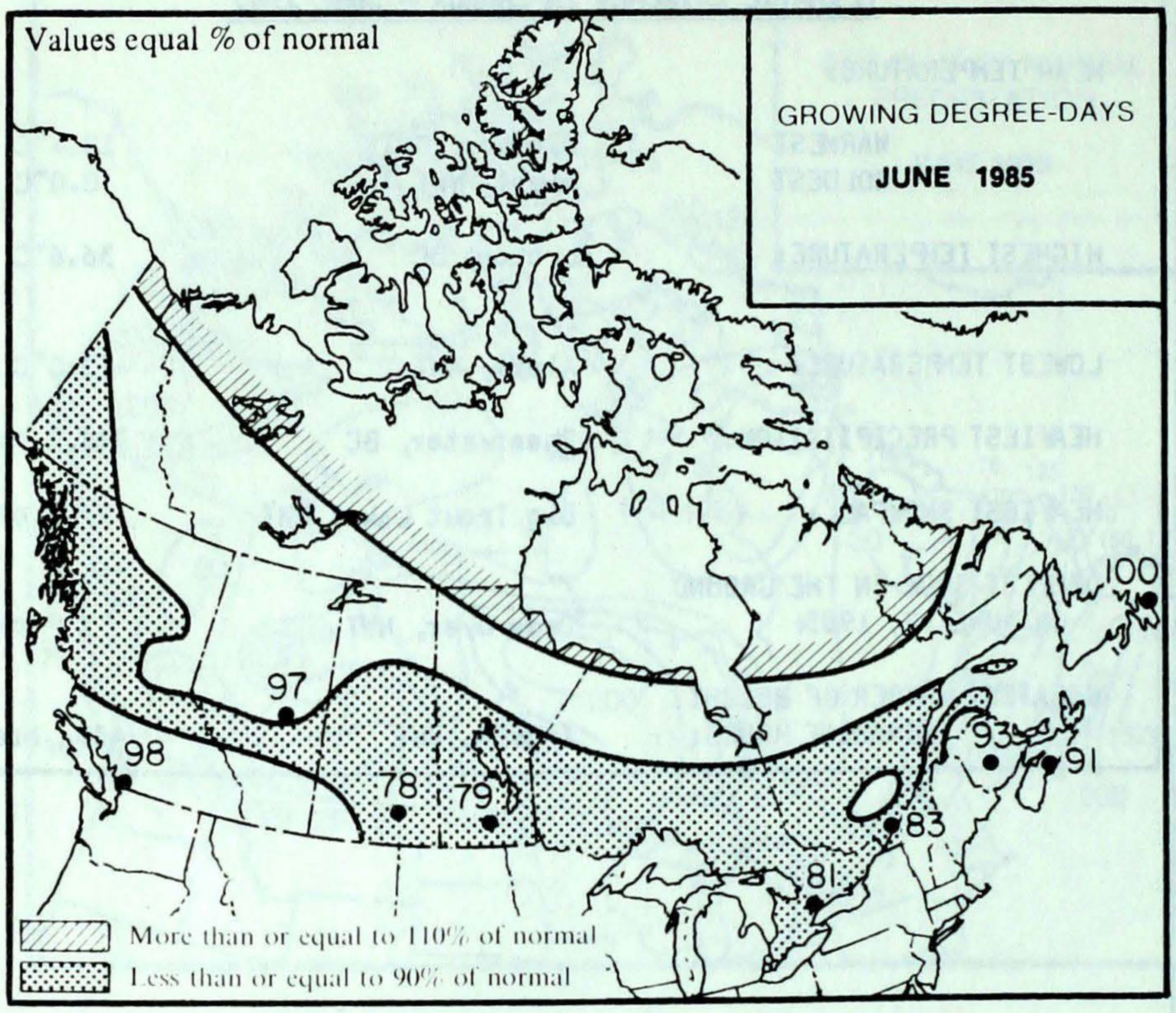
MEAN TEMPERATURE:		
WARMEST	Windsor, ONT	18.4°C
COLDEST	Alert, NWT	0.0°C
HIGHEST TEMPERATURE:	Lytton, BC	36.6°C
LOWEST TEMPERATURE:	Alert, NWT	-11.0°C
HEAVIEST PRECIPITATION:	Shearwater, BC	341.8 mm
HEAVIEST SNOWFALL:	Big Trout Lake, ONT	23.8 cm
DEEPEST SNOW ON THE GROUND ON JUNE 30, 1985:	Cape Dyer, NWT	2 cm
GREATEST NUMBER OF BRIGHT SUNSHINE HOURS:	Inuvik, NWT	435 hrs

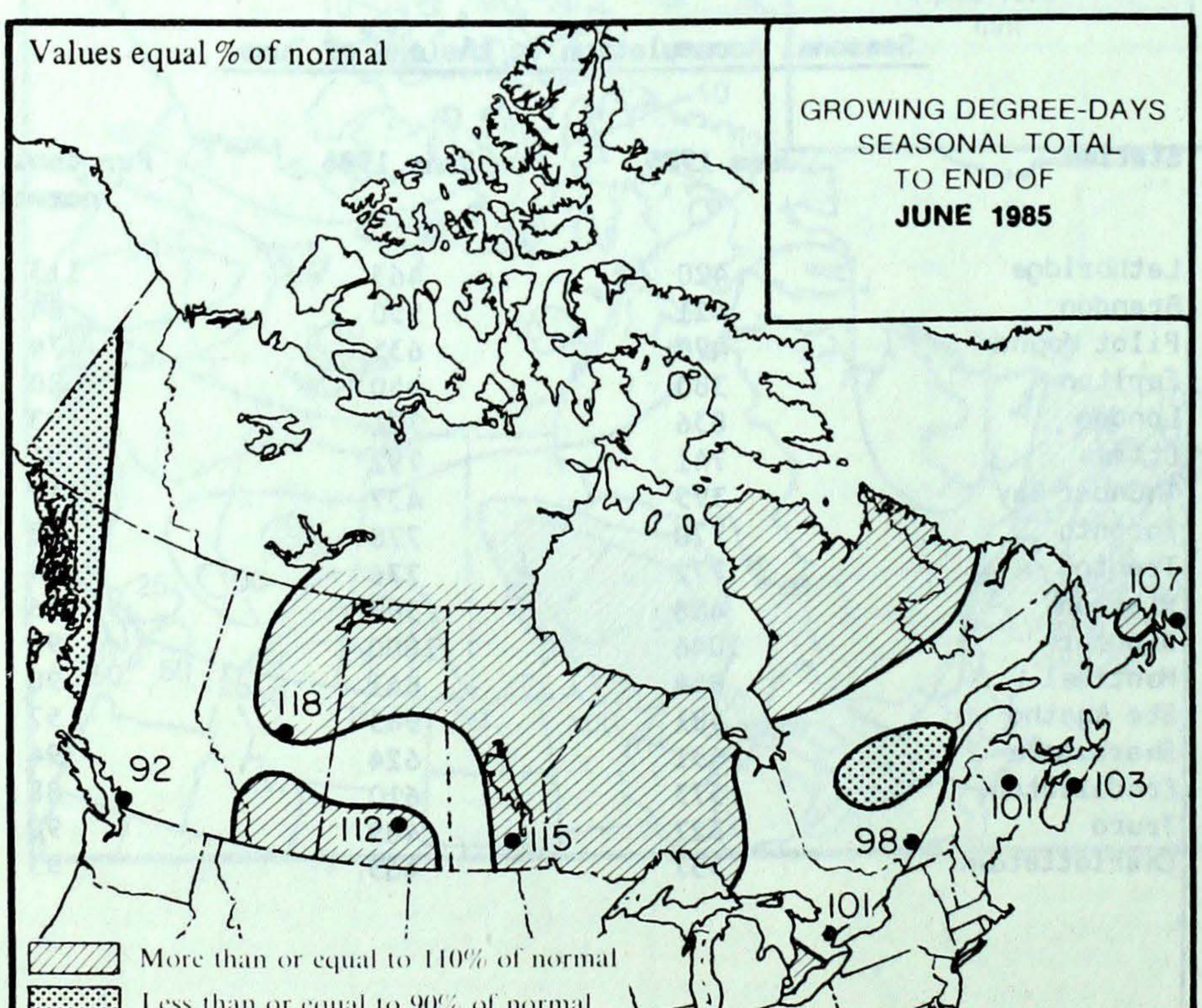
CORN HEAT UNITS

Seasonal Accumulation to the end of June

Station	June 1985	June 1984	Per cent of normal
Lethbridge	420	463	113
Brandon	421	550	64
Pilot Mound	490	635	74
Earlton	380	450	88
London	836	771	93
Ottawa	741	792	82
Thunder Bay	395	437	117
Toronto	770	778	88
Trenton	772	776	84
Wiarton	488	580	76
Windsor	1046	1000	97
Montréal	854	841	90
Ste Agathe	481	545	57
Sherbrooke	631	624	94
Fredericton	573	610	88
Truro	327	409	90
Charlottetown	337	463	83

GROWING DEGREE DAYS





SEASONAL TOTAL OF GROWING DEGREE-DAYS TO END OF JUNE

	1985	1984	NORMAL
BRITISH COLUMBIA			
Abbotsford	612	658	642
Kamloops	774	742	795
Penticton	749	652	746
Prince George	405	310	393
Vancouver	618	722	673
Victoria	564	635	618
ALBERTA			
Calgary	465	378	400
Edmonton Mun.	521	400	451
Grande Prairie	466	360	428
Lethbridge	604	481	507
Peace River	447	378	415
SASKATCHEWAN			
Estevan	623	561	548
Prince Albert	467	458	443
Regina	561	526	506
Saskatoon	542	523	507
Swift Current	543	471	485
MANITOBA			
Brandon	534	502	513
Churchill	73	132	50
The Pas	419	423	400
Winnipeg	621	527	545
ONTARIO			
London	772	686	683
Muskoka	549	568	547
North Bay	516	514	514
Ottawa	680	690	669
Thunder Bay	423	434	385
Toronto	318	635	315
Trenton	666	634	671
Windsor	958	820	830
QUÉBEC			
Baie Comeau	253	236	302
Maniwaki	536	512	510
Montréal	665	695	682
Quebec	513	543	527
Sept-Iles	243	212	231
Sherbrooke	518	498	583
NEW BRUNSWICK			
Charlo	373	381	398
Fredericton	525	537	521
Moncton	427	458	439
NOVA SCOTIA			
Halifax	424	433	415
Sydney	305	366	305
Yarmouth	419	419	401
PRINCE EDWARD ISLAND			
Charlottetown	372	433	370
NEWFOUNDLAND			
Gander	271	277	245
St. John's	199	266	193
Stephenville	269	355	270

GREAT LAKES WATER LEVELS FORECAST

by

Environment Canada and Detroit District
U.S. Army Corps of Engineers

During June, precipitation was above normal over the drainage basins of Lake Superior and Erie and below normal over the Lake Huron drainage basin. The above normal precipitation over Lake Superior, combined with the reduced outflows from that lake has caused its level to continue to rise. Lake Erie continued to decline during June. Lakes Huron, St. Clair and Ontario also appear to have reached their peak levels for this year. However, the levels of all lakes, except Ontario, are near their maximum and remain above the levels of one year ago, with the June level of Lake Huron essentially equal to the previous maximum for the month. In June 1985, levels on Lake Superior, Huron, St. Clair and Erie were about 3, 9, 8 and 7 inches (7, 23, 21 and 18 centimetres) respectively above the levels of one year ago, while Lake Ontario was about 5½ inches (14 centimetres) below the level recorded in June 1984.

Beginning in May 1985, the International Lake Superior Board of Control implemented a directive from the International Joint Commission to deviate from Lake Superior Regulation Plan 1977, and reduced the outflow from Lake Superior. The purpose of the flow reduction was to provide a measure of relief to very high water conditions on Lakes Michigan-Huron, St. Clair and Erie. The flow reduction continued during June with a Lake Superior outflow of 68,000 cfs (1930 cu. m/s), some 34,000 cfs (960 cu. m/s) below the Plan 1977 flow. By the end of June, the result of these emergency actions has been to store 63,000 cfs-months (1780 cu.m/s-months) of water on Lake Superior thus raising its level by 0.19 foot (6 centimetres), while lowering the levels of Lakes Michigan-Huron, St. Clair and Erie by 0.13, 0.06 and 0.02 foot (4, 2 and 1 centimetres) respectively in comparison to the levels that would have occurred under the strict application of Plan 1977. The July outflow from Lake Superior will be about 68,000 cfs (1930 cu.m/s), a 30% reduction when compared to the Plan 1977 flow of 97,000 cfs (2750 cu.m/s).

Currently, the water levels of Lakes Superior and Huron are about 2 and 7½ inches (5 and 19 centimetres) respectively above the levels of one year ago. Considering the emergency flow reductions from Lake Superior and assuming the most probable water supplies over the next six months, the levels of Lake Superior are expected to be considerably above those of one year ago and by November would exceed the maximum recorded for that month. Under similar supply conditions, the levels of Lakes Huron, St. Clair and Erie should be well below their maximums of record, with the level of Lake Huron, by November 1985, falling below the level recorded one year earlier.

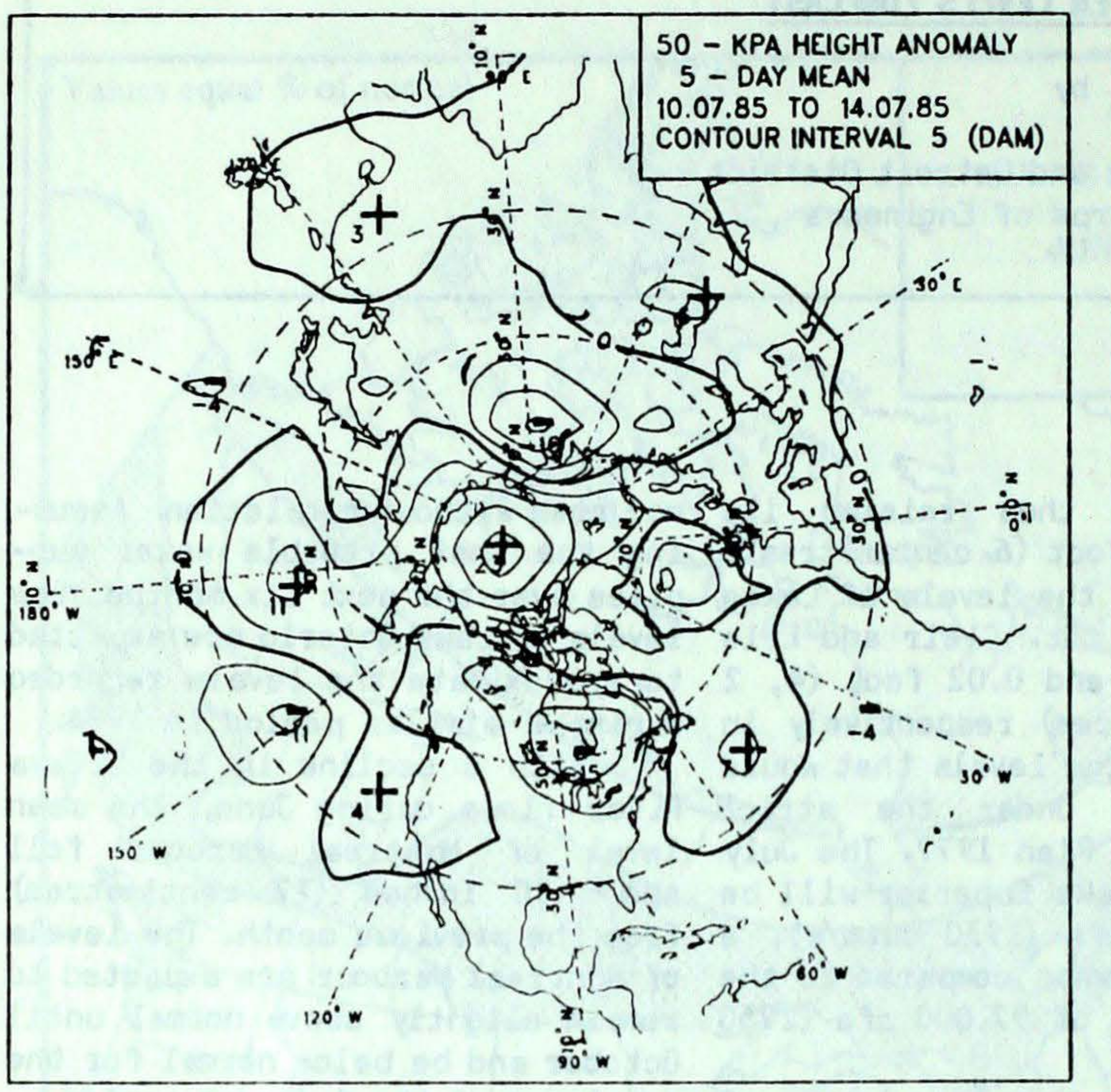
The International St. Lawrence River Board of Control reported that, as a result of near normal precipitation during June and a continuation of above normal outflows, the level of Lake Ontario began to decline towards the end of the month. As of 1 July 1985, the level of Lake Ontario was at elevation 246.03 feet (74.99 metres), or 4½ inches (12 centimetres) below the level of one year ago, and about 19 inches (49 centimetres) below the level that would have occurred without regulation. Assuming the most probable water supplies over the next six months, the levels of Lake Ontario are expected to approximate the levels recorded during a similar period in 1984.

With a decline in the Ottawa River flows during June, the mean level of Montreal Harbour fell about 30 inches (77 centimetres) from the previous month. The levels of Montreal Harbour are expected to remain slightly above normal until October and be below normal for the remainder of the forecast period.

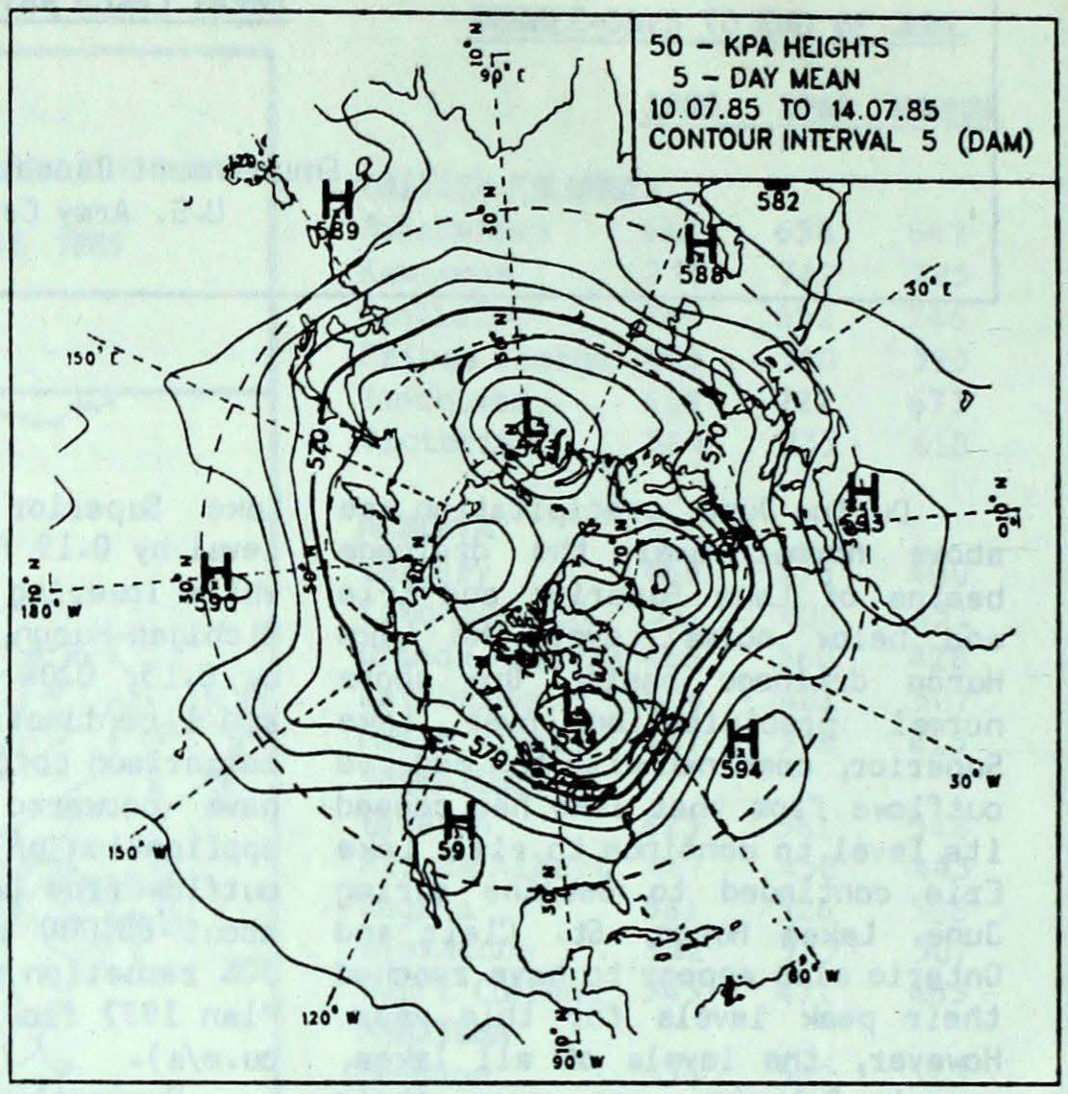
Extreme wet conditions over the next six months would continue to produce levels on each of the Great Lakes considerably higher than those recorded during a similar period in 1984. If these conditions occurred new maximum levels would likely result on Lakes Superior, Huron and Erie during the fall months of 1985. This could result in localized flooding during periods of onshore winds. Should extreme dry conditions occur, only the level of Lake Ontario would be expected to fall below normal during the forecast period. By late September 1985, the levels of Lakes Huron, St. Clair and Erie would most likely fall below the levels recorded one year earlier.

The most probable levels presented herein have been prepared under the auspices of the International Coordinating Committee on Great Lakes Basic Hydraulic and Hydrologic Data by the Great Lakes-St. Lawrence Study Office, Environment Canada, and the Detroit District, U.S. Army Corps of Engineers.

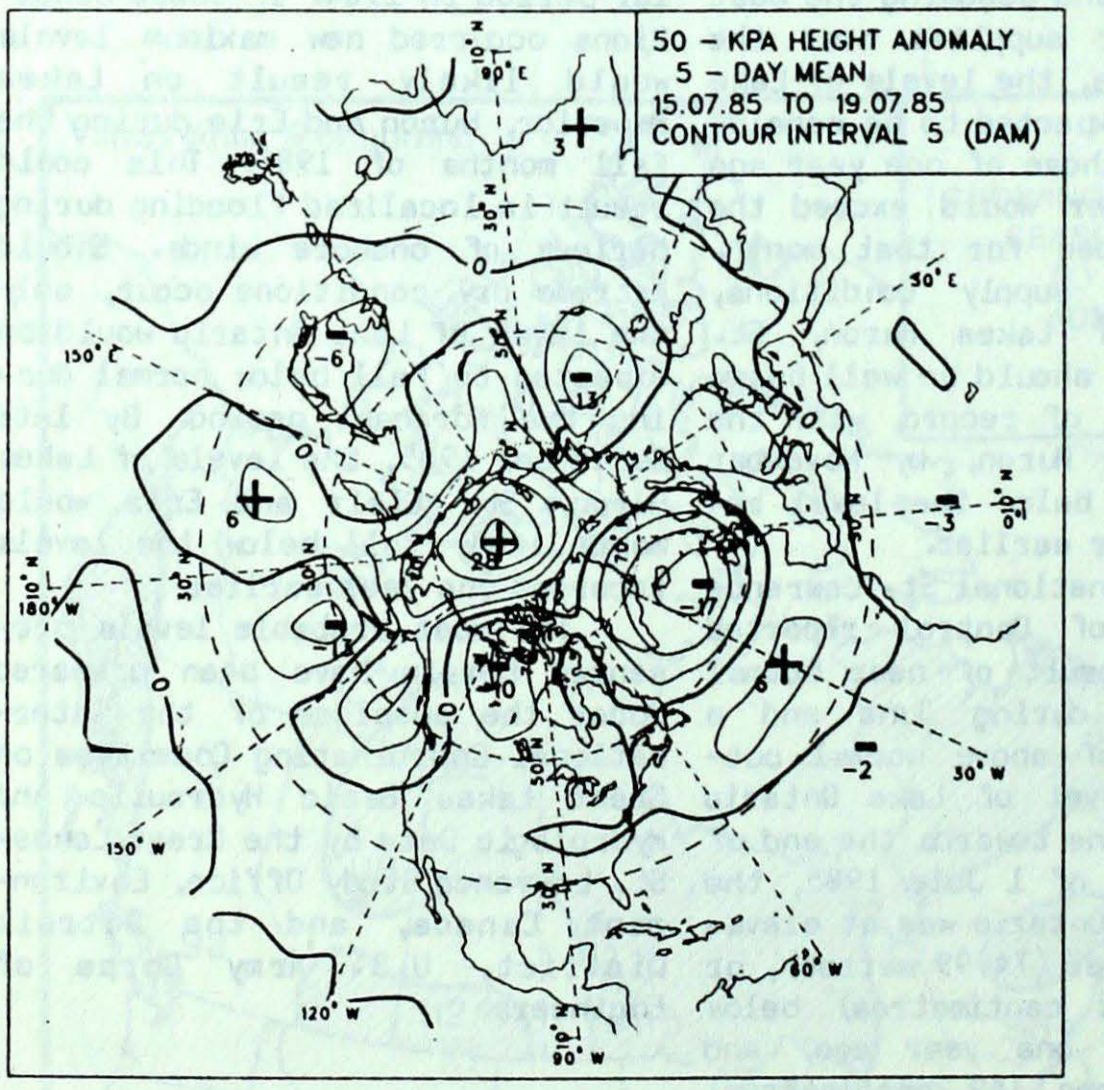
ATMOSPHERIC CIRCULATION



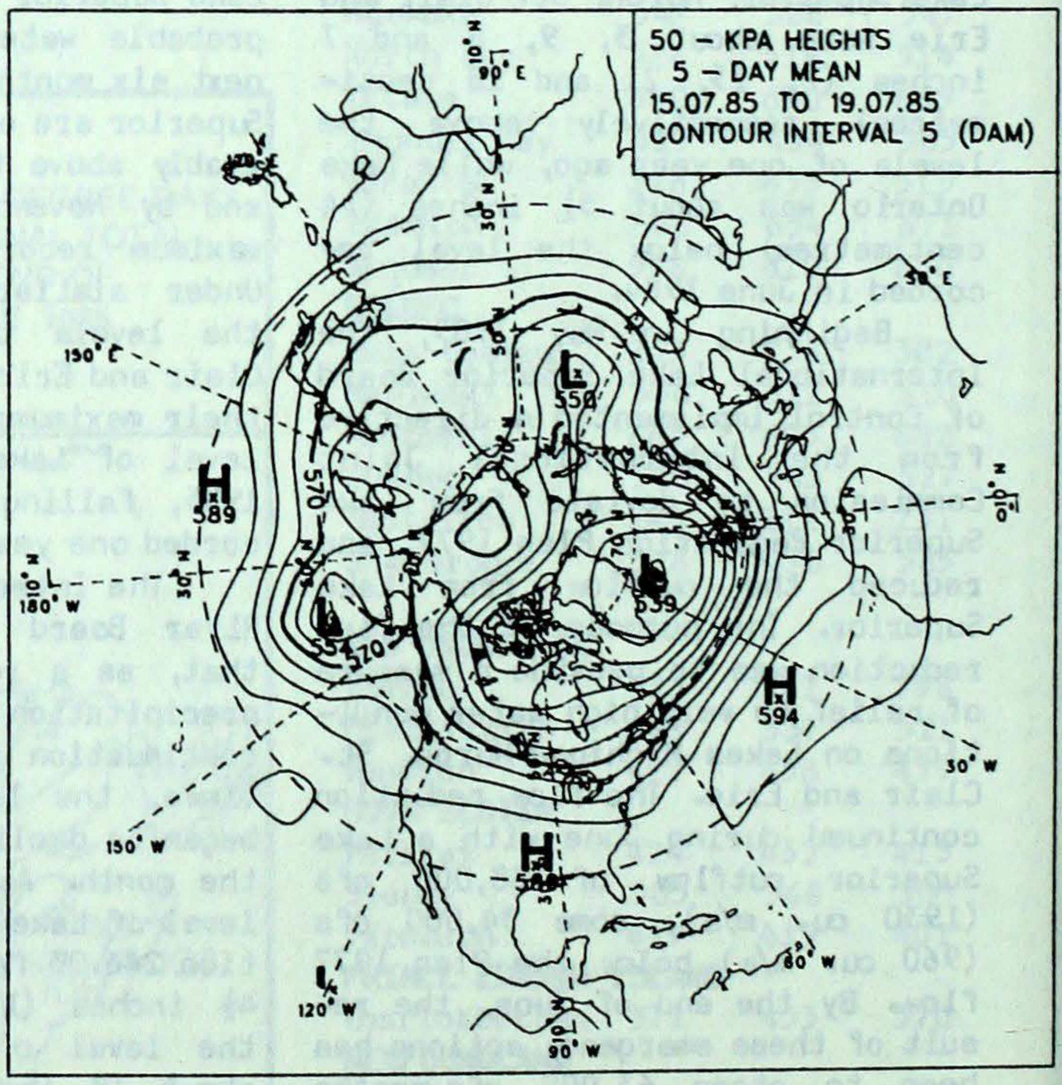
Mean 50 kPa height anomaly (dam)
July 10 to July 14, 1985



Mean 50 kPa heights (dam)
July 10 to July 14, 1985

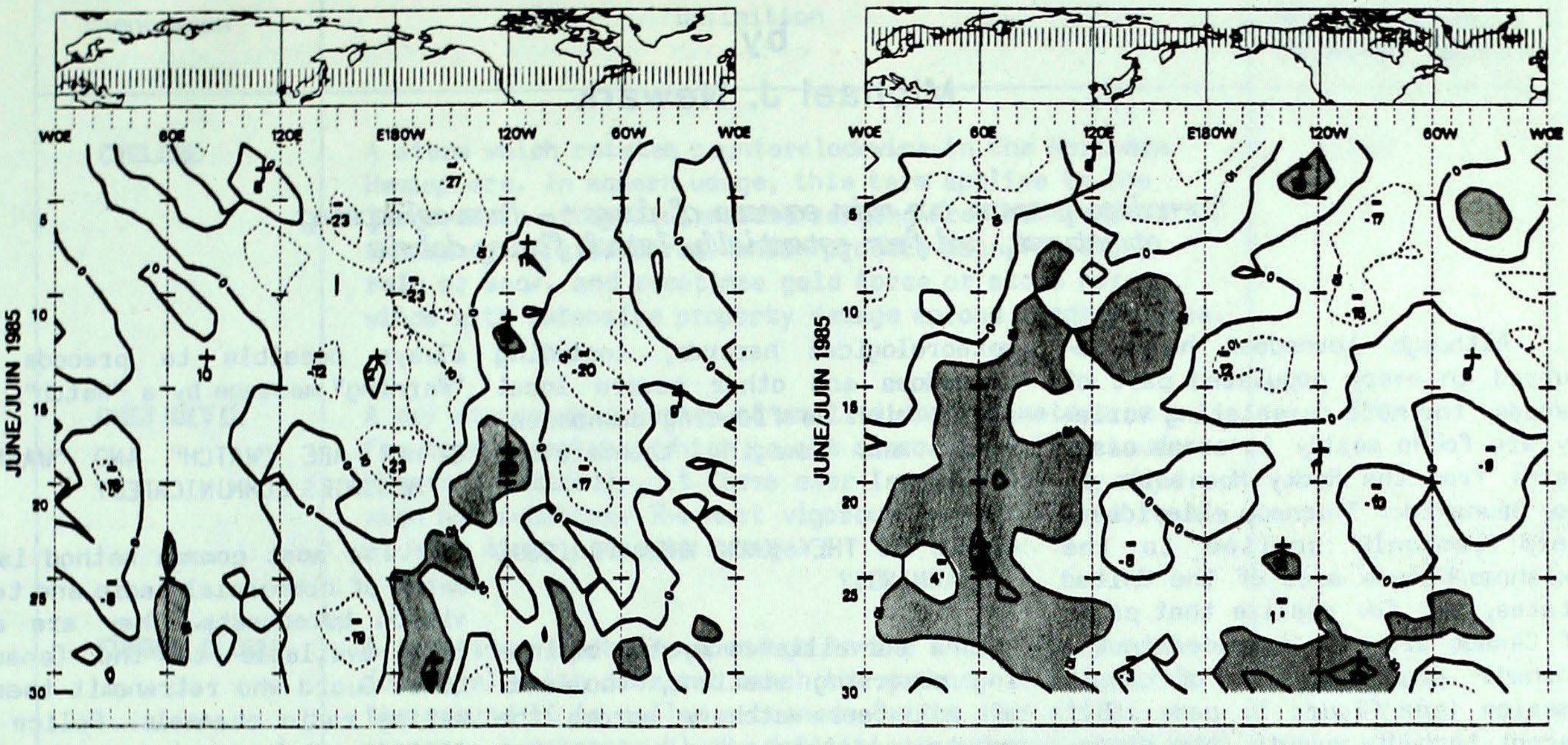


Mean 50 kPa height anomaly (dam)
July 15 to July 19, 1985

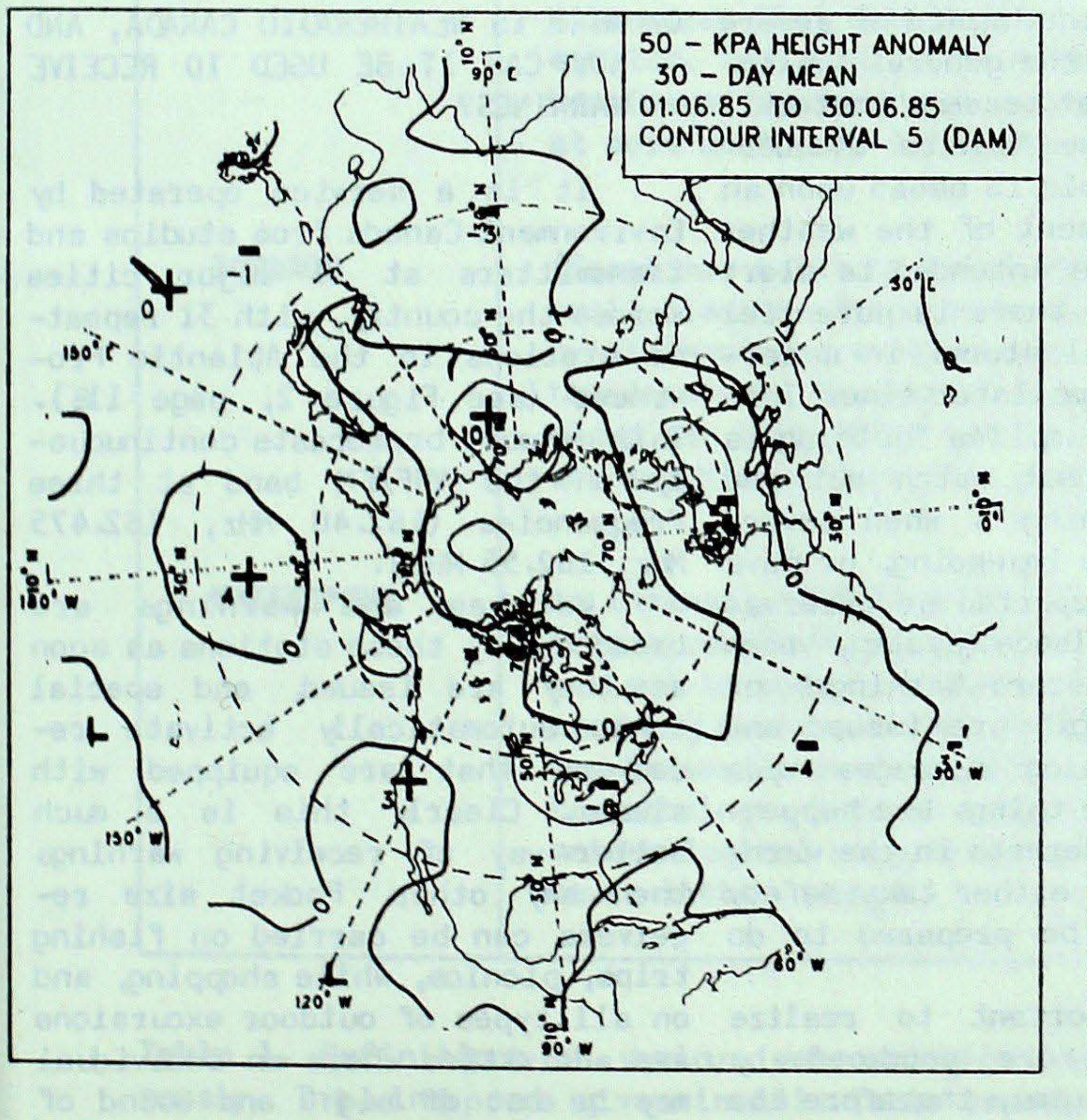


Mean 50 kPa heights (dam)
July 15 to July 19, 1985

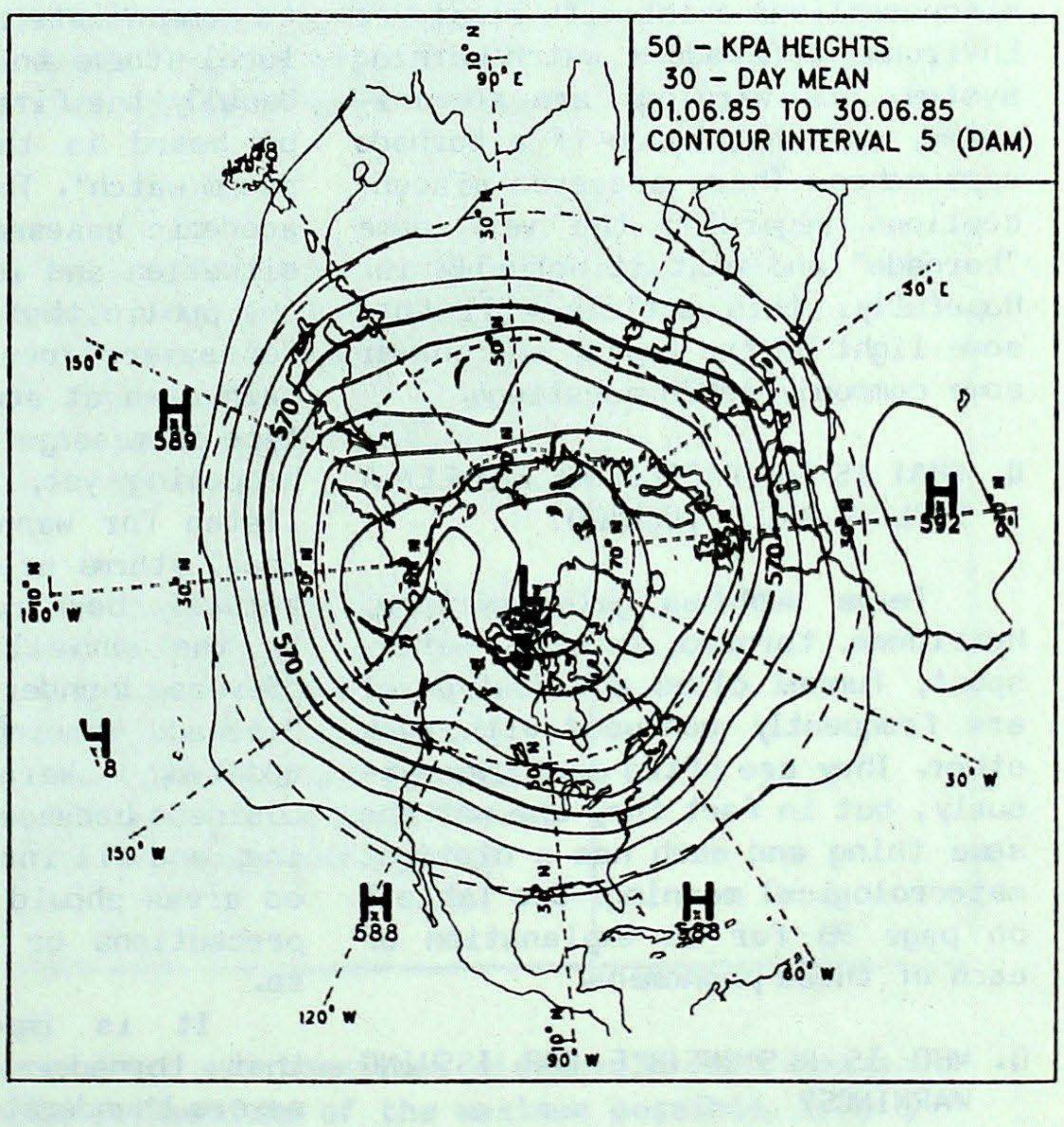
ATMOSPHERIC CIRCULATION



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



Mean 50 kPa height anomaly (dam)
June 1985



Mean 50 kPa heights (dam)
June 1985

FEATURE

TORNADO PREPAREDNESS

by
Michael J. Newark

Tornadoes present two main sources of danger - from collapsing structures, and from potentially lethal flying debris

Although tornadoes have occurred in every populated part of Canada, the more devastating variety are found mostly in areas eastwards from the Rocky Mountains to New Brunswick. "Tornado alley" is a term commonly applied to the Oklahoma-Kansas area of the United States, but few realize that parts of Canada are also included in the tornado prone region of North America (see Figure 1, page 10B). Recent tornadic events (the disastrous tornado outbreak of May 31, 1985 in southern Ontario and neighbouring Québec, and the St-Sylvère, Québec tornado of June 18, 1985) underscore the danger facing Canadians due to this type of storm.

It is evident that a number of misconceptions exist with regard to Environment Canada's watch/warning system, how warnings are communicated, and what to do if a tornado approaches. There are even misconceptions regarding the very name "tornado" and what it actually is. Hopefully, this acticle will shed some light on the topic, and answer some commonly asked questions.

Q. WHAT IS THE DIFFERENCE BETWEEN A CYCLONE AND A TORNADO?

Terms such as gale, cyclone, hurricane, tornado, twister, waterspout, funnel cloud and dust devil are frequently confused with each other. They are often used synonymously, but in fact they are not the same thing and each has a distinct meteorological meaning. See Table 1 on page 9B for an explanation of each of these phenomena.

Q. WHO IS RESPONSIBLE FOR ISSUING WARNINGS?

The Atmospheric Environment Service of Environment Canada is responsible for warning Canadians about many different kinds of meteorological hazards, including tornadoes and other severe local storms such as flooding downpours, hail, and damaging thunderstorm winds.

Q. HOW DO THEY KNOW WHEN TO ISSUE WARNINGS?

A surveillance system employing observing stations, thousands of volunteer watchers across the country, weather radar and weather satellites, is used to monitor and assess the development and movement of severe local storms.

Q. WHAT IS THE DIFFERENCE BETWEEN A "WATCH" AND A "WARNING"?

Two types of message are used to communicate the hazard of severe local storms to the general public. Usually the first message that will be heard is the "severe thunderstorm watch". This is based upon an academic assessment of the weather situation and is intended to alert the public that there is potential for severe local storms in a certain area at some later time. This type of message implies "nothing is happening yet, but watch out and listen for warnings". When severe local storms are impending, or have actually been reported or observed by the surveillance system, then "Severe Thunderstorm Warnings" or "Tornado Warnings" are issued and updated. Warning messages mean business because things are happening, and all interests in the warned areas should either take safety precautions or be prepared to do so.

It is important to realize that tornadoes are produced by severe thunderstorms, therefore the severe thunderstorm warning should be given the same amount of respect that is generated by an actual tornado warning. Sometimes, in fast breaking situations, it is not always possible to precede the "Warning" message by a "Watch".

Q. HOW ARE "WATCH" AND "WARNING MESSAGES COMMUNICATED?

The most common method is by means of commercial radio and television broadcasts. They are also made available to the Canadian Coast Guard who retransmit them on marine radio channels. Police and other special agencies receive them on telex circuits.

There is however one method of communication, namely Weatheradio Canada, which can reach many Canadians individually if they buy a special but inexpensive portable radio receiver.

Q. WHAT IS WEATHERADIO CANADA, AND HOW CAN IT BE USED TO RECEIVE WARNINGS?

It is a service operated by Environment Canada from studios and transmitters at 13 major cities across the country, with 31 repeater stations in the Atlantic Provinces (see Figure 2, page 11B). This network broadcasts continuously on the VHF/FM band at three frequencies (162.40 MHz, 162.475 MHz, 162.55 MHz).

Watches and warnings are broadcast by these stations as soon as they are issued, and special tones automatically activate receivers that are equipped with alarms. Clearly this is a much better way of receiving warnings than any other. Pocket size receivers can be carried on fishing trips, picnics, while shopping, and on all types of outdoor excursions and activities where an individual may be out of sight and sound of regular radio and television broadcasts. Any weather sensitive operation within range can receive an immediate, individual alarm.

continued on p. 11B

Phenomenon	Definition	Typical maximum windspeed (km/h)
CYCLONE	A storm which rotates counterclockwise in the Northern Hemisphere. In modern usage, this term applies to the large-scale storms (diameters ranging from hundreds to thousands of kilometres) which produce rain, freezing rain or snow, and sometimes gale force or storm force winds with extensive property damage across large regions.	200
DUST DEVIL	A dry atmospheric vortex of small diameter (metres or a few tens of metres) which is not associated with clouds. Characteristically, it forms over land on very dry days with hot sunshine. The most vigorous types are capable of causing minor property damage.	120
FUNNEL CLOUD	A rotating cloudbase appendage in the shape of a funnel (or rope) which does not reach the ground. If it reaches the ground it is called a tornado (or in some circumstances, a waterspout). By definition, a funnel cloud does not cause any damage.	—
GALE	A strong wind. In the Beaufort wind scale, it is defined as a wind whose speed ranges from 51 to 101 km/h.	—
HURRICANE	A rotating tropical storm with a diameter of hundreds of kilometres that originates over warm oceans near the equator. Typically, the winds spiral inwards towards the hurricane "eye" and can cause wide spread property damage at more southerly latitudes.	320
TORNADO	(Sometimes called a twister) - An intense rotary storm of small diameter (tens or hundreds of metres) characterized by at least one vortex reaching the earth's surface from a thunderstorm. The vortex may be either visible as a funnel cloud, or invisible, but in either case damage results at the earth's surface in a long narrow track.	500
WATERSPOUT	An intensely whirling funnel - shaped vortex which extends from a cumulus-type cloud to a water surface. Its behaviour is characterized by a tendency to dissipate upon reaching shore. It look like, but is not, a tornado and can be easily confused with a real tornado which happens to crossing a body of water. Waterspouts form in different meteorological circumstances than tornadoes and usually cause little damage.	150

Table 1. Definitions of various meteorological terms that are sometimes mistakenly used synonymously. The windspeeds given in this table are simple estimations of the maximum possible. Only a very small percentage of all storms actually approach these values.

FEATURE

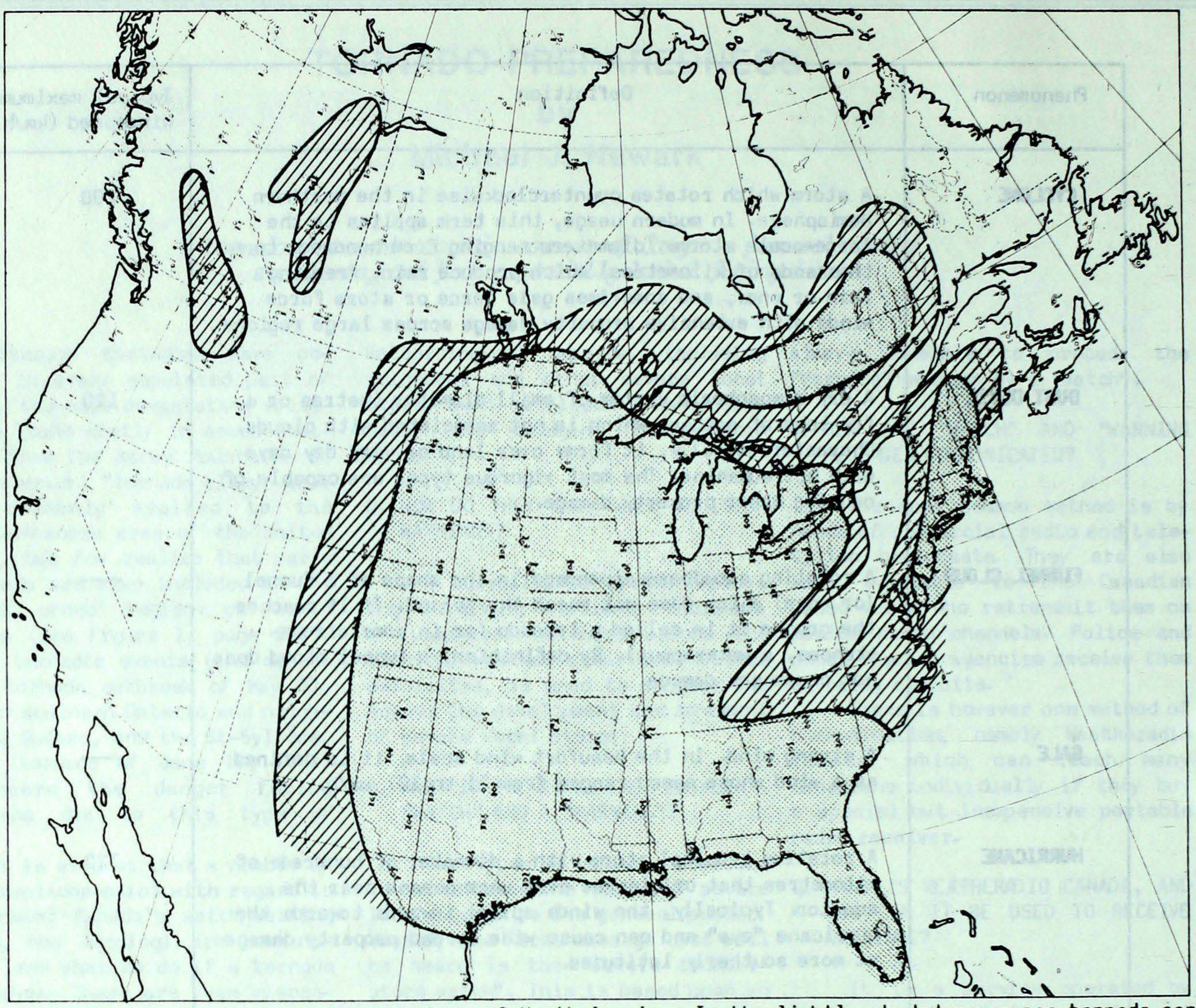


Figure 1. Map of the tornado prone regions of North America. In the lightly shaded zones one tornado can be expected on the average every two years in an area 100 km by 100 km. In the darker areas, at least one tornado per year, on the average, can be expected per 10,000 km^2.

Gabriel Aero-Marine Ltd. 1576 Hollis Street Halifax, N.S. B3J 2R7	(902) 423-7252	Marine Mail Order Supply 32 St. Margarets Bay Road Halifax, N.S. B3N 1J7	(902) 479-3595
R & S Electronics 157 Main Street Dartmouth, N.S. B2X 1S1	(902) 434-5235	James Borden Bishop Seeds Ltd. Lower Canard, R.R. #1 Port Williams, N.S. B0P 1T0	(902) 582-7262
Stright-Mackay Ltd. Box 1030 Harbour Drive Pictou, N.S. B0K 1H0	(902) 485-4307	Fisher Electronic 337 Welton Street Sydney, N.S. B1P 5C4	(902) 539-3939
Eastern Electronics Ltd. Box 789 Lunenburg, N.S. B0J 2C0	(902) 634-4004		

Table 2. List of suppliers of weatheradio receivers. Prices range from about $15 and up. This is not a complete list of such retailers, nor is there an implied endorsement of their products or services.

Q. WHERE CAN A WEATHERADIO RECEIVER BE OBTAINED?

Unfortunately, local suppliers are difficult to locate, except in the Maritimes, so a list of retailers is provided here (see Table 2, page 10B). This list is not exhaustive, nor is it meant as an endorsement of their products or service, but it should help secure a receiver if none can be found locally.

Q. WHAT SHOULD I DO IF A TORNADO STRIKES?

Tornadoes present two main sources of danger: (a) from collapsing structures; (b) from potentially lethal flying debris. All safety precautions should be designed to avoid being struck by airborne missiles such as glass shards, boards, siding etc, and to avoid being crushed by falling building material. There is also a danger of the individual becoming a tornado generated missile.

Although there are no foolproof guidelines to guarantee personal safety, the following is a list of generally recommended safety procedures to help maximize the chances of surviving.

IF CAUGHT INSIDE;

- For maximum safety, seek shelter in the basement.
- If there is no basement; shelter under a stairway or a sturdy table, or in a closet;
- Avoid buildings with large-span rooves like an arena, barn, supermarket, or auditorium. If caught in such a building seek an inside corridor or small room, or get under something sturdy;
- Always protect your head and try to reach the side of the building away from the storm (this will generally be the east side);
- Stay away from windows, doors, and outside walls.

IF CAUGHT OUTSIDE;

- Move away from the tornado's path (at a right angle if possible). Move quickly because tornadoes can travel as fast as a car.
- If there is no possibility of escape, abandon your vehicle and lie flat in a ditch, ravine or other depression.
- There is nothing that people in small boats can do. They should monitor Weatheradio Canada or the Coast Guard weather channels, or at the very least listen for weather warnings on a portable AM or FM radio, and seek safe harbour at the first mention of severe storms in the area.
- If no shelter can be found, hang on to a small tree or shrub (it is less likely to be uprooted or broken than a large one).

The devastating tornado which struck Barrie is an event which would be expected there only once in a 150 to 200 year period. Nonetheless, a tornado with the power to cause similar damage occurs somewhere in Ontario once in about 5 years, and in Quebec once in about 10 years. They have also been known in most other provinces. We cannot afford to be complacent about the threat posed by these storms which are nature's most intense form of energy release.

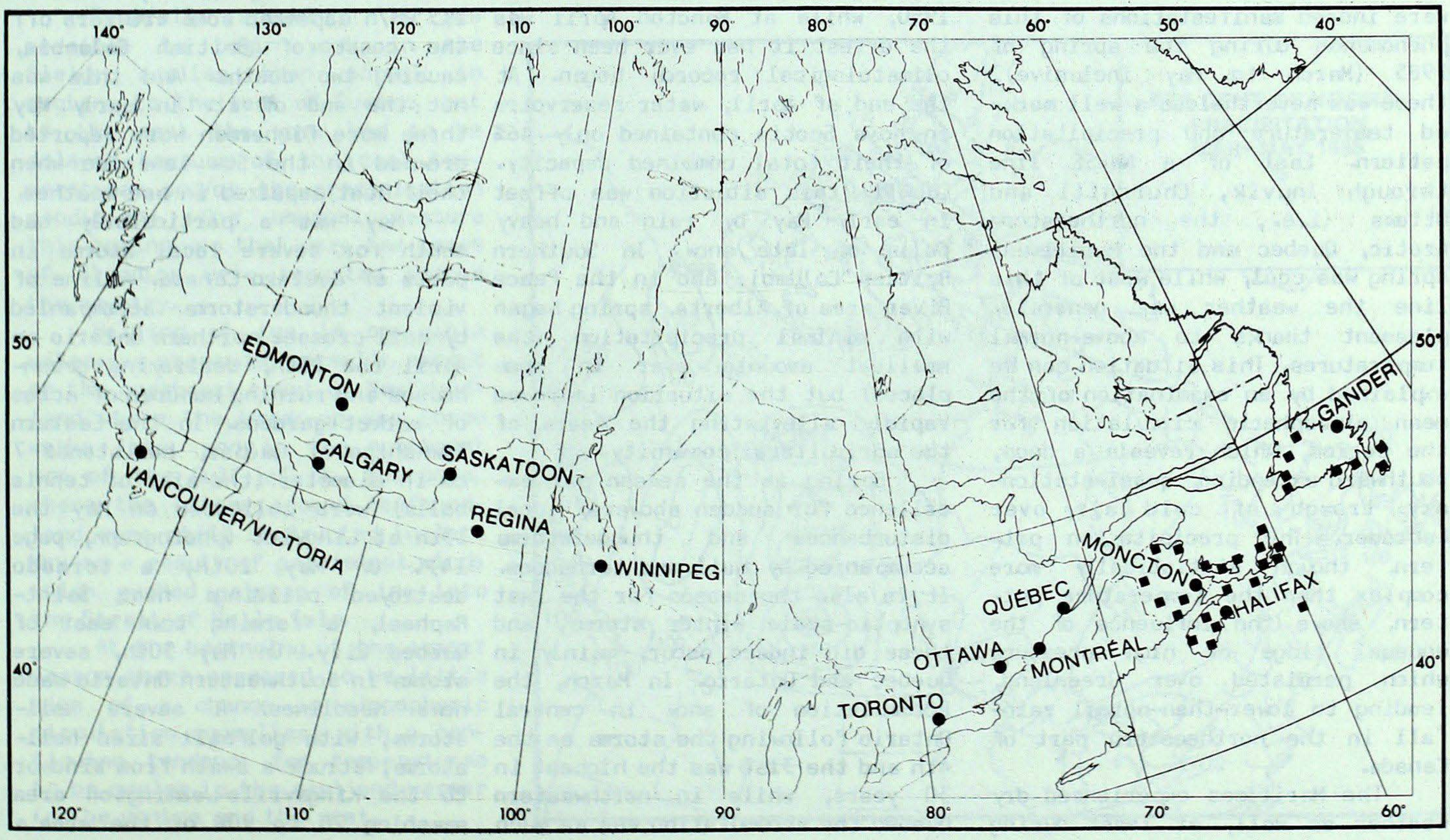


Figure 2. Map of the locations of Weatheradio Canada transmitters (dots), and repeater stations (squares). The range of the transmitters is roughly 70 km. The broadcast frequency of each station is indicated.

FEATURE

SPRING OF 1985 - A REVIEW

by
Alain Caillet

Generally warm in the west and cool in the east. Dry in western Alberta and the Yukon. The month of May in eastern Canada marred by destructive local storms

Spring is a transitional season in which extreme variations can be expected. One day will be like winter, another will be like summer, and it is never certain whether the alternation of cold and hot days will continue. While there were indeed manifestations of this phenomenon during the spring of 1985 (March to May inclusive), there was nevertheless a well marked temperature and precipitation pattern. East of a NW-SE line through Inuvik, Churchill and Ottawa (i.e., the northeastern Arctic, Quebec and the Maritimes) spring was cool, while west of this line the weather was generally pleasant thanks to above-normal temperatures. This situation can be explained by an examination of the mean atmospheric circulation for the period, which reveals a deep, southward extending, quasi-stationary trough of cold air over Labrador. The precipitation pattern, though statistically more complex than the temperature pattern, shows the influence of the unusual ridge of high pressure which persisted over Greenland, leading to lower-than-normal rainfall in the northeastern part of Canada.

The Maritimes experienced dry weather as well, at least during March and April. The below normal precipitation levels that began last summer were now in their 7th and 8th months at numerous locations in New Brunswick, Nova Scotia and Prince Edward Island. At Chatham, March was the driest since 1950, while at Moncton April was the driest it has ever been since climatological records began. At the end of April, water reservoirs in Nova Scotia contained only 46% of their total combined capacity. Luckily this situation was offset in early May by rain and heavy falls of late snow. In Southern British Columbia and in the Peace River area of Alberta, spring began with minimal precipitation (the smallest amounts ever in some places) but the situation improved rapidly alleviating the fears of the agricultural community.

Spring is the season par excellence for sudden showers, local disturbances and thunderstorms accompanied by hail and tornadoes. It is also the season for the last synoptic-scale winter storms, and these did indeed occur, mainly in Quebec and Ontario. In March, the accumulation of snow in central Ontario following the storms on the 4th and the 31st was the highest in 30 years, while in northwestern Quebec the accumulation was as much as twice the normal amount for this time of year. In mid-April there was a tornado touchdown near Windsor, Ontario, and winds of 110 km/h sank a fishing boat in the St. Lawrence with the loss of five lives. A few days later, winds of 115 km/h capsized some trawlers off the coast of British Columbia, causing two deaths. And this was not the end of it. In early May three more fishermen were reported drowned in the St. Lawrence when their boat capsized in bad weather.

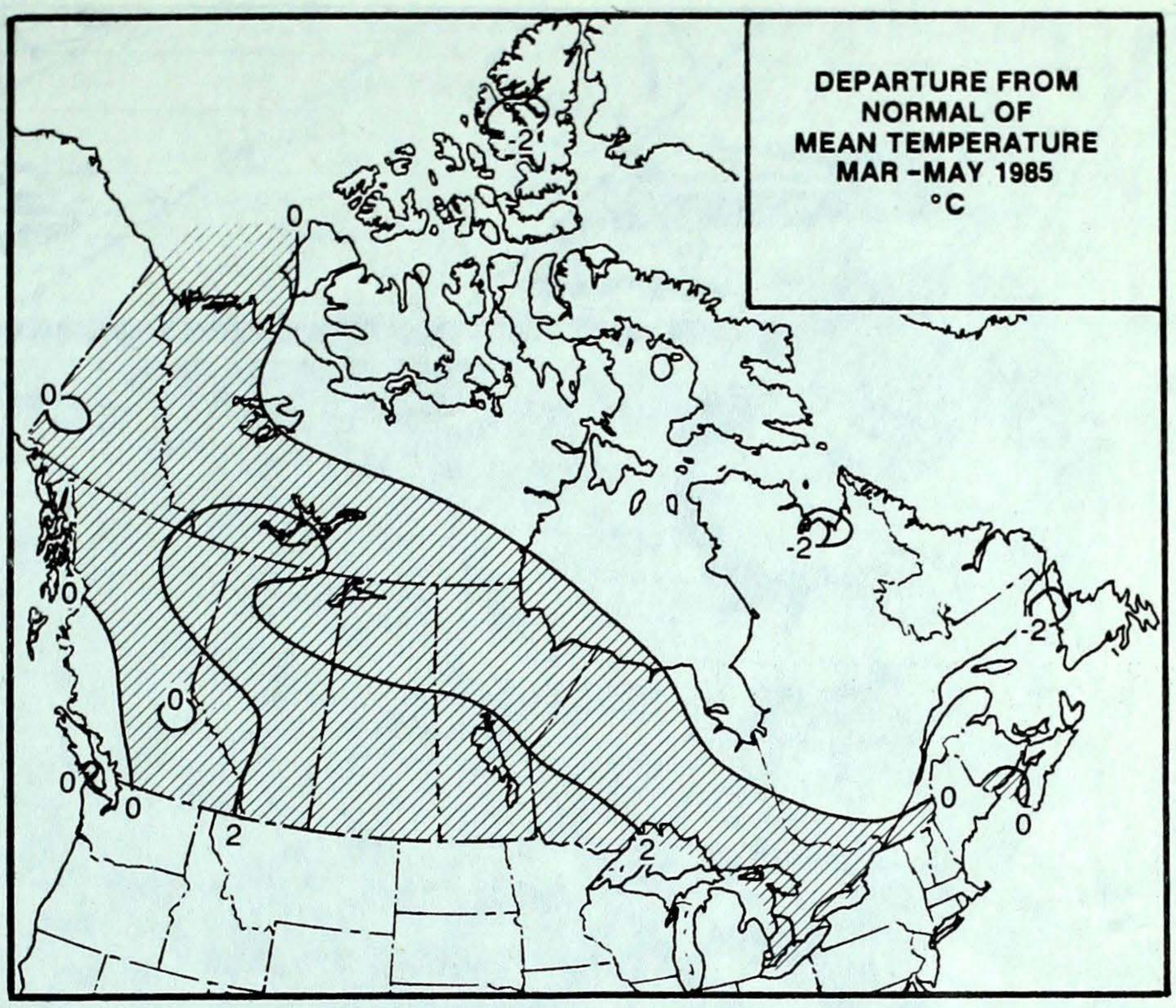
May was a particularly bad month for severe local storms in parts of eastern Canada. A line of violent thunderstorms accompanied by hail crossed northern Ontario on April the 20th, destroying greenhouses and ruining hundred of acres of market gardens. In the Eastern Townships of Québec, hailstones 7 cm in diameter (the size of tennis balls) were collected on May the 13th at Lingwick (photograph, page 14). On May 20th, a tornado destroyed buildings near Saint-Raphael, a farming town east of Quebec City. On May 30th, severe storms in southwestern Ontario made news headlines. A severe hailstorms, with golfball sized hailstorms, struck a swath from Windsor to the Kingsville-Leamington area smashing 70 to 90% of the area's greenhouses (see photo, page 14) and ruining the tomato and cucumber crop. This event was overshadowed the following day (May the 31st) when devastating tornadoes cut across southern Ontario causing twelve deaths and damage estimated at over 100 million dollars. Some property damage was suffered in Saint-Canute, Quebec at the tail end of this tornado outbreak, while in New Brunswick the same storm system dumped over 100 mm of rain on Saint John.

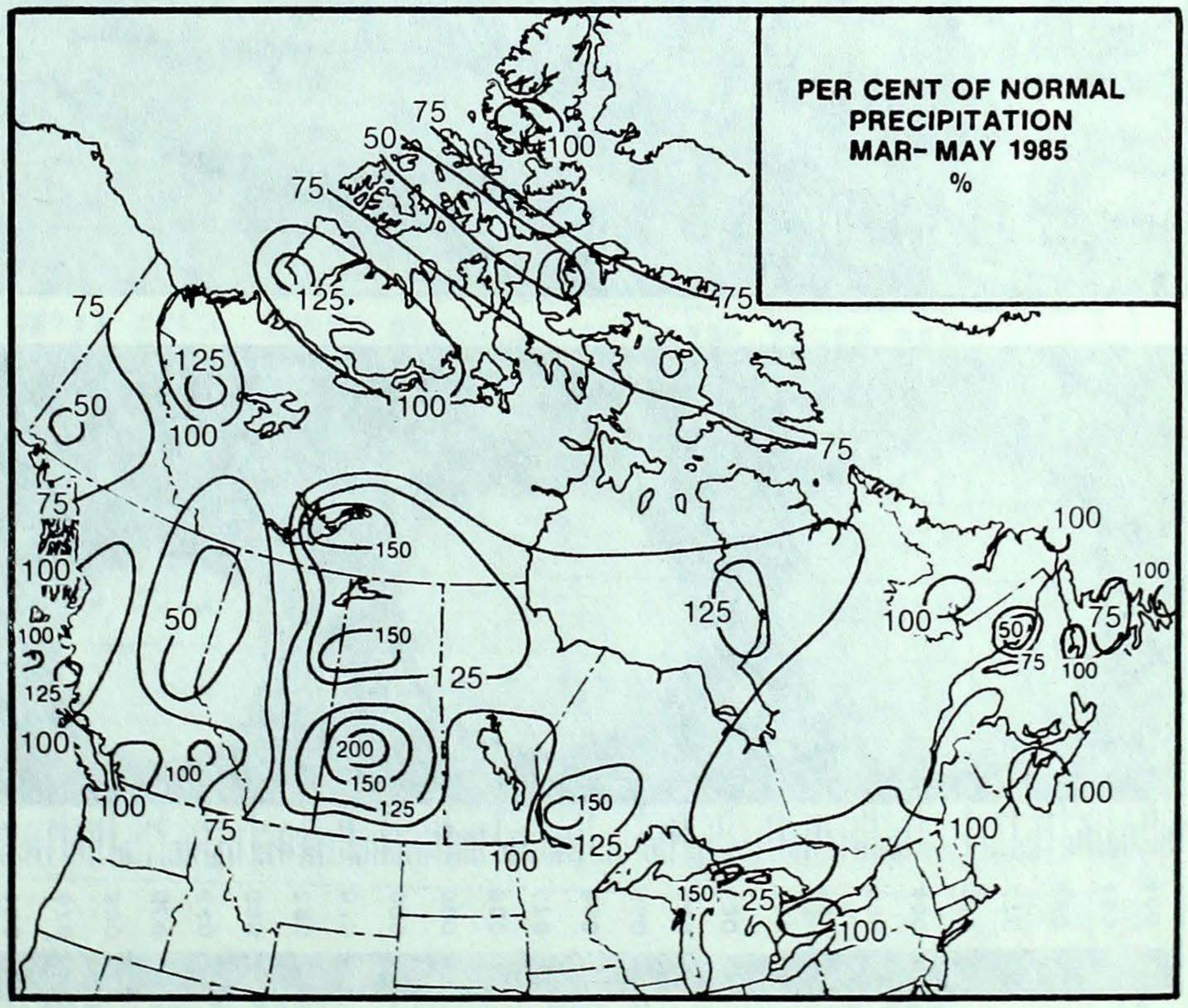
The central and western parts of the country, meanwhile, were enjoying much more pleasant weather. Apart from a few snowstorms (one in April on the Prairies, another in May over the uplands of British Columbia and several in the Yukon) the weather was abnormally mild and dry, especially in the Yukon where daytime temperatures beginning in mid-May were exceeding 20°C. Other record minimums were equalled or exceeded west of the Ontario-Quebec border for example 30°C on April 22nd at Toronto, 32°C on the 28th at Winnipeg and over 30°C in mid-May in British Columbia and Alberta.

Generally speaking, it was possible to begin work in the fields earlier than normal in regions to the west of Quebec, but to the east the work had to be delayed because of the cool temperatures and/or the precipitation conditions. One unusual feature this spring was that very few cases of flooding were reported across the country.

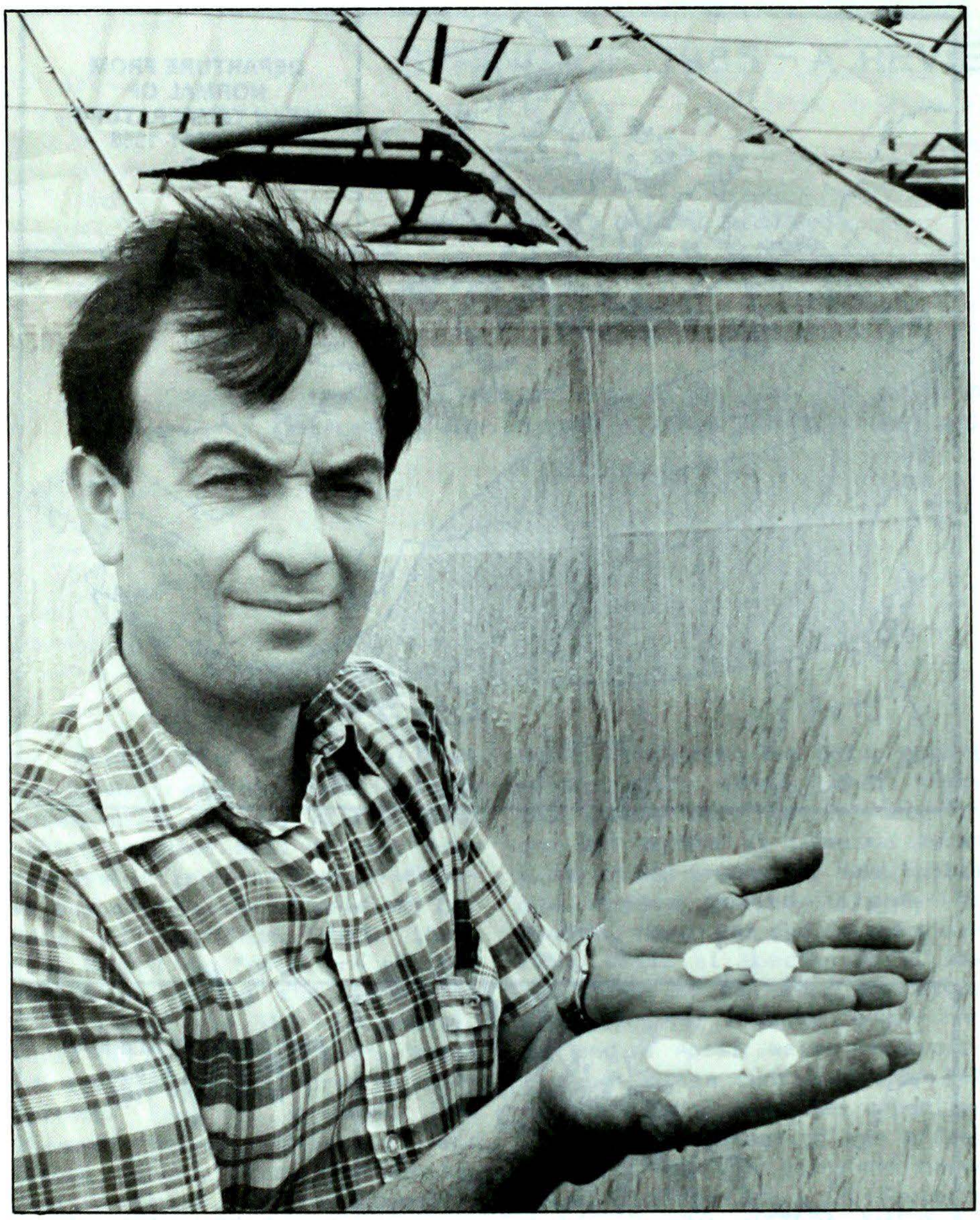
Melting of ice in navigable waterways proceeded normally except on the northeast coast of Newfoundland where the break-up was three weeks late, and in the northeast arm of the Gulf of St. Lawrence, where the waters around Newfoundland were still obstructed in late May as a result of persistent winds which pushed patches of ice into the Strait of Belle Isle.

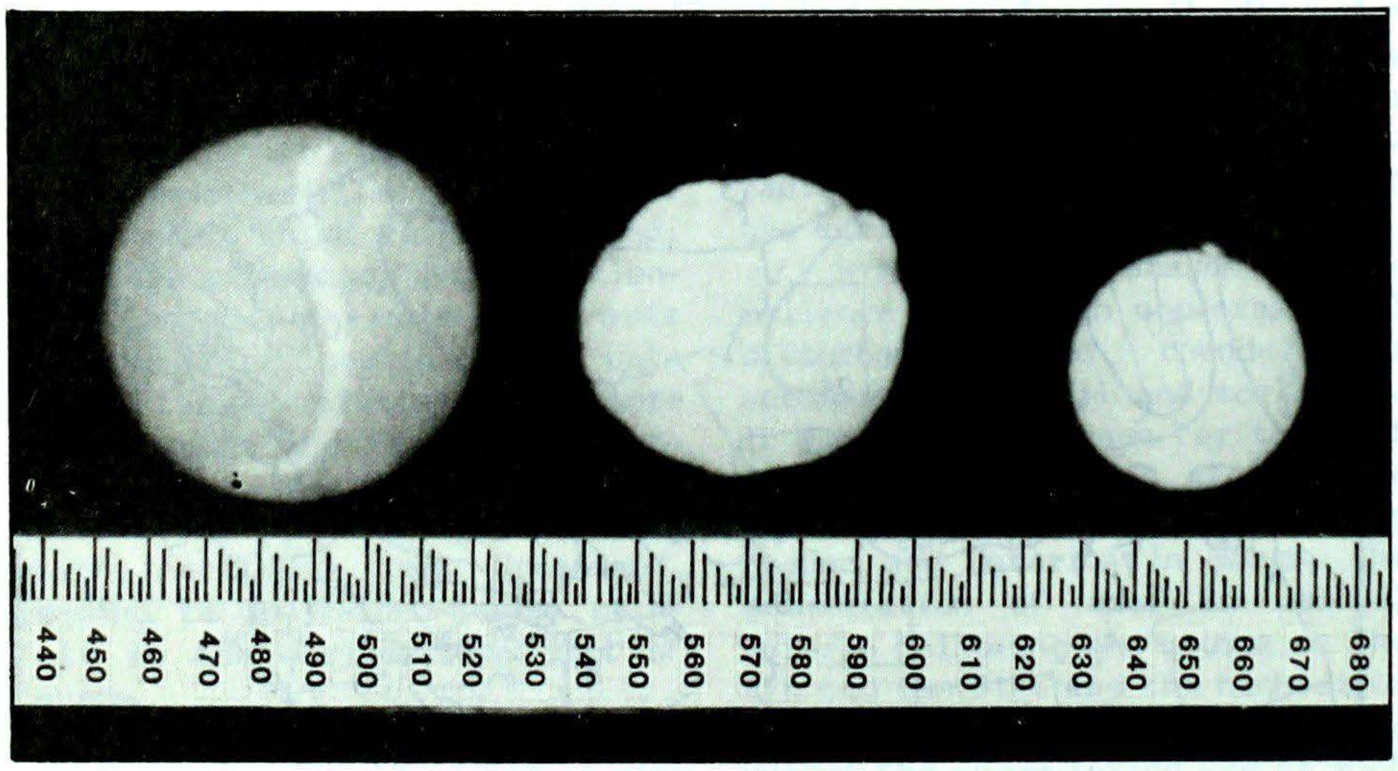
At the beginning of the summer season there appeared to be little sign of a change in atmospheric circulation anomalies, with a continuing tendency for temperatures to be cooler in the east and warmer in the centre and the west.





FEATURE





Top, Hail which damaged greenhouses near Leamington, Ontario on May 30, 1985. Bottom, large hail (compared to a tennis ball on the left and a golf ball on the right) which fell near Lingwick, Québec on May 13, 1985.

MEAN 50 kPa CIRCULATION FOR JUNE 1985

(Refer to the maps and diagrams on page 7). At 65°N the Hovmöller diagram shows that the retrogression of long waves has continued into June. The Greenland ridge intensified and retrogressed to the Northwest Territories by the end of the month. It was reinforced after June 24th by a second ridge retrogressing rapidly westward. When the blocking Greenland ridge (which had been the dominant feature for North America during the month of May) moved west, this allowed a trough to form in its climatologically normal position over eastern Baffin Island. At 45°N, the long-wave motion was less pronounced with retrogression over North America during the first three weeks of June and progression towards the east during the last week. This change in the direction of the wave motion coincided with a readjustment of the wave number which increased from 3 to 5. The trough located over 70°W, during the first three weeks, weakened and progressed during the last week to 30°W.

The mean circulation at 50 kPa shows a ridge along the Rockies and over the Yukon and a trough over eastern North America. This was consistent with the normal June pattern. The trough was deeper than normal over the Great Lakes region. However, the ridge was weaker than normal over western Canada although it was stronger over the western U.S.A. as indicated by the 50 kPa anomaly chart. The trough favoured precipitation over the eastern part of Canada, while the ridge brought drier and warmer weather to the west.

JUNE 1985

STATION	Temperature C				Snowfall (cm)	% of Normal Snowfall	Total Precipitation (mm)	% of Normal Precipitation	Snow on ground at end of month (cm)	No. of days with Precip 1.0 mm or more	Bright Sunshine (hours)	% of Normal Bright Sunshine	Degree Days below 18 C
	Mean	Difference from Normal	Maximum	Minimum									
BRITISH COLUMBIA													
ABBOTSFORD	14.6	-0.5	31.8	3.9	0.0		66.8	103	0	8	258	118	107.0
ALERT BAY	11.9	-0.8	26.9	4.9	0.0		56.1	85	0	11	X		184.3
AMPHITRITE POINT	11.9	-0.9	19.8	7.7	0.0		61.8	67	0	10	X		183.0
BLUE RIVER	13.4	-0.7	30.9	-1.9	0.0		110.0	134	0	14	221	112	MSG
BULL HARBOUR	11.2	-0.6	25.9	4.1	0.0		70.0	90	0	12	X		MSG
CAPE SCOTT	MSG		MSG	6.6	0.0		78.9	76	0	13	X		MSG
CAPE ST.JAMES	10.4	-0.6	17.6	6.7	0.0		39.6	53	0	10	220	*	227.7
CASTLEGAR	17.2	-0.1	34.3	4.6	0.0		44.2	70	0	6	268	119	49.7
COMOX	15.0	-0.4	31.6	5.4	0.0		18.6	52	0	8	X		95.5
CRANBROOK													
DEASE LAKE	9.0	-1.8	27.1	-3.3	0.4	100	23.5	53	0	5	261	120	270.9
ETHELDA BAY	10.5	-1.2	22.6	0.0	0.0		101.2	80	0	14	X		224.7
FORT NELSON	14.7	-0.1	31.0	0.2	0.0		22.4	32	0	7	337	*	106.5
FORT ST.JOHN	12.7	-1.2	28.8	1.7	MSG		46.3	68	0	9	X		159.0
HOPE	15.6	-0.6	32.8	5.9	0.0		80.9	125	0	11	238	106	MSG
KAMLOOPS	18.0	-0.4	35.0	6.2	0.0		32.5	108	0	7	276	107	40.6
KELOWNA	16.7	0.4	33.2	2.7	0.0		29.2	108	0	4	268	98	53.4
LANGARA	9.4	-1.1	15.8	4.4	0.0		112.6	126	0	14	X		112.6
LYTTON	18.2	-0.3	36.6	6.4	0.0		12.9	66	0	2	277	103	34.3
MACKENZIE	11.4	-1.5	29.6	-3.7	0.0		22.6	33	0	8	271	107	196.9
MCINNES ISLAND	12.0	-0.4	19.4	7.4	0.0		109.6	89	0	16	X		179.5
PENTICTON	17.6	0.0	34.5	5.1	0.0		38.0	137	0	4	277	105	MSG
PORT ALBERNI	14.2	*	33.6	1.9	0.0	*	28.1	*	0	5	260	*	119.1
PORT HARDY	11.9	-0.3	24.4	4.1	TR		36.9	52	0	10	204	118	184.5
PRINCE GEORGE	12.7	-0.6	28.7	-1.6	TR		34.1	50	0	10	297	114	161.6
PRINCE RUPERT	10.3	-0.9	26.1	2.4	0.0		111.1	85	0	17	171	113	232.6
PRINCETON	14.3	-0.6	34.4	0.0	0.0		9.2	34	0	2	296	*	MSG
QUESNEL	13.7	-0.7	31.4	-1.0	0.0		62.2	98	0	12	X		130.0
REVELSTOKE	16.0	-0.3	34.1	3.9	0.0		71.6	110	0	10	239	110	75.7
SANDSPIT	10.6	-1.4	17.7	2.7	0.0		39.8	76	0	14	154	88	210.5
SMITHERS	11.5	-1.4	26.9	-1.1	0.0		80.0	200	0	12	240	96	195.5
TERRACE	12.4	-1.7	28.1	2.7	0.0		42.1	99	0	9	202	105	166.0
VANCOUVER HARBOUR	15.5	-0.2	26.0	7.9	0.0		39.3	62	0	8	X		81.2
VANCOUVER INT'L	15.1	-0.4	24.9	7.2	0.0		31.8	70	0	8	275	115	89.2
VICTORIA GONZ. HTS	14.0	-0.2	27.6	8.0	0.0		31.2	155	0	4	309	112	125.0
VICTORIA INT'L	14.2	-0.5	29.3	5.8	0.0		34.2	117	0	5	309	120	118.6
VICTORIA MARINE	12.6	-0.3	27.4	4.6	0.0		29.3	111	0	6	X		161.8
WILLIAMS LAKE	12.1	-1.3	29.7	-1.6	7.8		56.5	125	0	13	280	98	180.0

STATION	Temperature C				Snowfall (cm)	% of Normal Snowfall	Total Precipitation (mm)	% of Normal Precipitation	Snow on ground at end of month (cm)	No. of days with Precip 1.0 mm or more	Bright Sunshine (hours)	% of Normal Bright Sunshine	Degree Days below 18 C
	Mean	Difference from Normal	Maximum	Minimum									
YUKON TERRITORY													
BURWASH	9.0	-1.7	26.1	-4.8	3.0	428	36.4	80	0	8	X		270.7
DAWSON	11.7	-1.6	28.5	-0.3	0.0		50.8	117	0	10	X		190.1
MAYO	12.5	-1.3	28.2	0.6	0.0		47.1	133	0	9	X		170.5
WATSON LAKE	11.4	-1.7	28.5	-1.6	0.0		26.3	50	0	9	300	113	201.7
WHITEHORSE	9.7	-2.7	27.1	-1.6	TR		64.5	210	0	6	251	92	249.5
NORTHWEST TERRITORIES													
ALERT	0.0	0.6	9.7	-11.0	5.9	70	6.3	52	0	3	351	115	540.1
BAKER LAKE	6.5	2.0	26.7	-1.8	0.4	14	6.2	29	0	2	321	122	334.0
CAMBRIDGE BAY	6.6	5.1	18.8	-4.0	6.5	162	13.0	98	0	5	322	120	436.3
CAPE DYER	3.6	3.0	12.9	-3.9	12.0	41	27.5	69	2	6	X		430.3
CAPE PARRY	3.1	1.1	12.5	-3.0	4.3	138	4.3	30	0	3	X		443.2
CLYDE	2.5	1.5	13.3	-4.9	14.8	154	17.5	140	1	4	313	120	565.6
COPPERMINE	5.4	1.2	23.8	-3.7	2.0	76	10.0	58	0	4	408	132	380.6
CORAL HARBOUR	5.4	2.9	20.4	-2.5	10.8	133	30.8	114	0	6	317	112	378.0
EUREKA	2.4	0.2	13.1	-8.3	TR		TR		TR	0	424	104	468.7
FORT RELIANCE	9.2	-0.7	25.0	-1.9	0.0		11.6	44	0	4	X		265.7
FORT SIMPSON	14.5	-0.3	29.6	1.6	0.0		31.6	81	0	11	323	115	113.4
FORT SMITH	13.5	-0.5	28.5	-1.7	0.0		13.3	32	0	2	294	98	143.4
FROBISHER BAY	6.3	2.5	20.1	-2.2	3.6	35	53.4	135	0	8	269	153	356.7
HALL BEACH	4.1	3.7	15.9	-2.0	1.6	25	12.6	75	0	4	X		418.1
HAY RIVER	11.8	-0.5	28.5	-1.2	0.0		16.3	60	0	3	X		199.4
INUVIK	11.2	1.1	25.7	-0.8	0.6	27	1.6	7	0	0	435	116	205.6
MOULD BAY	2.5	2.4	13.4	-4.2	5.8	165	12.8	203	TR	3	361	146	465.3
NORMAN WELLS	14.3	-0.1	29.8	1.7	0.0		52.5	141	0	12	MSG		121.0
POND INLET	3.3	1.4	11.4	-2.7	1.2	21	17.4	207	TR	9	X		438.7
RESOLUTE	1.9	2.1	9.4	-3.3	2.8	39	9.4	77	0	4	337	131	483.0
SACHS HARBOUR	4.0	1.7	17.1	-4.0	6.6	314	7.2	98	0	2	391	118	421.3
YELLOWKNIFE	12.5	-0.8	27.3	2.2	0.0		8.0	47	0	4	378	95	171.1
ALBERTA													
BANFF	11.3	-0.7	27.5	-0.5	TR		51.8	84	0	MSG	MSG		MSG
BROOKS	14.5	-1.4	32.0	-1.0	0.0		22.0	30	0	MSG	354	*	MSG
CALGARY INT'L	13.1	-0.8	30.8	0.3	0.0		40.9	45	0	7	329	123	149.4
COLD LAKE	12.6	-2.3	26.8	-0.7	0.0		53.5	74	0	16	274	96	162.8
CORONATION	12.4	-2.4	29.8	-2.5	0.0		26.6	46	0	7	344	111	168.9
EDMONTON INT'L	13.1	-1.4	28.2	-1.2	0.0		65.6	85	0	9	318	110	149.5
EDMONTON MUNI.	13.9	-1.6	27.0	1.8	0.0		84.1	108	0	11	339	124	127.4
EDMONTON NAMAO	12.9	-2.2	25.7	0.2	0.0		92.0	117	0	12	X		153.3
EDSON	11.2	-1.0	28.0	-2.0	0.0		88.1	99	0	12	271	106	204.1
FORT CHIPEWYAN	13.8	-0.2	27.5	-2.0	0.0		15.6	37	0	MSG	MSG		MSG

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

JUNE 1985

STATION	Temperature C Mean	Difference from Normal	Maximum	Minimum	Snowfall (cm)	% of Normal Snowfall	Total Precipitation (mm)	% of Normal Precipitation	Snow on ground at end of month (cm)	No. of days with Precip 1.0 mm or more	Bright Sunshine (hours)	% of Normal Bright Sunshine	Degree Days below 18 C
FORT MCMURRAY	13.2	-1.2	29.5	-1.1	0.0		49.4	77	0	7	313	114	150.9
GRANDE PRAIRIE	13.4	-0.7	30.9	0.8	0.0		54.2	77	0	11	294	*	134.8
HIGH LEVEL	13.6	-0.4	29.5	-1.0	0.0		41.3	77	0	6	321	105	136.7
JASPER	11.6	-1.2	29.2	-1.3	8.6	*	54.0	98	0	10	268	*	192.2
LETHBRIDGE	14.8	-1.0	31.5	2.3	0.0		3.2	4	0	2	320	110	107.7
MEDICINE HAT	15.7	-1.3	32.8	0.8	0.0		8.7	13	0	3	375	134	86.9
PEACE RIVER	13.4	-0.7	28.1	0.4	0.0		39.6	66	0	10	X		141.7
RED DEER	12.3	-1.7	29.6	-0.5	0.0		29.5	35	0	8	X		162.9
ROCKY MTN HOUSE	11.1	-2.1	26.5	-2.0	TR		54.1	51	0	8	X		207.4
SLAVE LAKE	12.4	-1.3	28.0	-0.4	0.0		44.7	54	0	9	318	115	167.3
SUFFIELD	15.1	-1.3	31.9	0.0	0.0		13.3	20	0	5	354	123	98.4
WHITECOURT	11.9	-1.2	27.3	-0.1	0.0		130.7	142	0	12	X		182.6
SASKATCHEWAN													
BROADVIEW	11.9	-3.4	26.3	-1.0	2.6		81.0	126	0	15	258	87	182.5
COLLINS BAY	9.9	-1.0	24.6	-1.3	2.6	60	83.7	148	0	9	227	*	248.3
CREE LAKE	11.4	-1.9	26.9	-2.8	TR		65.5	128	0	9	251	94	200.0
ESTEVAN	13.9	-3.0	28.9	0.0	0.0		42.5	54	0	8	258	85	128.2
HUDSON BAY	12.1	-2.9	25.4	-3.4	TR		78.0	108	0	11	228	*	179.6
KINDERSLEY	13.3	-2.8	27.1	-0.4	0.0		12.8	22	0	7	X		144.4
LA RONGE	11.8	-2.6	29.0	0.0	0.4	200	97.1	114	0	13	X		186.4
MEADOW LAKE	11.7	-3.6	28.2	-1.6	0.0		58.0	78	0	8	267	*	186.2
MOOSE JAW	13.6	-3.4	30.0	-1.2	0.0		34.9	52	0	6	284	99	135.0
NIPAWIN	12.4	*	26.4	0.8	1.6	*	91.3	*	0	16	243	80	169.5
NORTH BATTLEFORD	13.0	-2.8	29.4	-11.5	0.0		34.6	57	0	9	MSG		154.2
PRINCE ALBERT	12.7	-2.3	27.3	-1.1	0.2		55.7	80	0	11	244	93	170.4
REGINA	13.0	-3.3	29.0	-1.5	TR		45.4	57	0	9	252	89	153.5
SASKATOON	13.1	-3.0	28.8	-0.5	0.0		11.4	19	0	4	X		148.4
SWIFT CURRENT	12.7	-2.8	30.3	-2.9	0.0		20.4	26	0	3	314	111	161.7
URANIUM CITY	12.4	-1.5	26.3	-1.0	0.0		30.1	85	0	3	X		174.5
WYNYARD	12.2	-3.4	25.6	-0.4	0.0		46.2	61	0	11	236	80	174.3
YORKTON	12.4	-3.5	25.9	-1.4	4.2		98.3	139	0	13	234	81	170.5
MANITOBA													
BRANDON	12.9	-3.6	28.3	-1.2	0.0		95.9	124	0	13	X		160.1
CHURCHILL	6.1	-0.5	22.3	-1.7	2.8	79	30.2	69	0	7	245	104	352.7
DAUPHIN	12.9	-3.3	28.1	0.1	5.6		85.6	99	0	12	174	63	155.3
GILLAM	10.5	-0.2	25.1	-2.3	5.0	128	94.4	308	0	12	X		223.4
GIMLI	13.2	-3.0	26.5	-1.0	0.2		103.3	112	0	11	218	74	146.6
ISLAND LAKE	11.3	-2.3	25.3	-1.6	0.2	200	168.9	362	0	13	X		201.7
LYNN LAKE	11.1	-1.3	24.2	-1.8	2.4	42	84.2	139	0	10	224	84	206.7
NORWAY HOUSE	11.8	*	24.5	-0.2	0.8	*	110.0	*	0	8	MSG	*	187.7
PILOT MOUND	13.2	-3.4	26.1	1.4	0.0		113.1	143	0	16	X		147.7
PORTAGE LA PRAIRIE	14.0	-3.4	28.2	1.2	TR		81.2	107	0	13	X		129.2
THE PAS	12.3	-2.5	27.2	0.1	TR		78.5	124	0	12	239	87	170.3
THOMPSON	10.7	-1.9	25.4	-2.1	1.4	35	166.1	288	0	11	220	83	218.1
WINNIPEG INT'L	14.0	-3.2	27.4	2.3	TR		67.4	84	0	12	230	83	125.9
ONTARIO													
ATIKOKAN	11.9	-3.0	24.8	-2.2	0.0		167.0	177	0	13	208	86	183.2
BIG TROUT LAKE	10.7	-1.7	25.0	-0.4	23.8	*	152.4	231	0	13	191	*	217.6
EARLTON	14.0	-1.6	29.0	0.6	0.0		64.5	72	0	10	X		124.5
GERALDTON	12.1	-1.8	28.1	-1.4	0.0		64.4	70	0	11	X		178.3
GORE BAY	13.7	-2.3	27.2	4.6	0.0		32.2	55	0	4	X		132.4
HAMILTON RBG	17.0	-2.1	29.5	7.1	0.0		53.3	78	0	7	298	*	MSG
HAMILTON	16.2	-2.2	26.9	5.4	0.0		70.1	108	0	8	X		66.7
KAPUSKASING	12.7	-1.8	30.4	-2.4	MSG		51.1	60	0	12	X		162.2
KENORA	15.3	-1.2	25.1	1.1	0.0		83.0	99	0	14	X		142.4
KINGSTON	14.8	-2.3	25.5	6.3	0.0		51.8	80	0	10	217	90	96.8
LANSDOWNE HOUSE	12.0	-1.9	25.8	0.7	4.4	231	151.8	186	0	14	X		180.9
LONDON	16.2	-2.1	27.8	5.1	0.0		64.7	87	0	7	287	117	64.4
MOOSONEE	11.5	-0.8	30.2	0.6	MSG		90.5	115	0	13	171	77	197.4
MOUNT FOREST	13.4	-2.9	25.0	2.0	0.0		30.2	38	0	7	275	105	139.2
MUSKOKA	13.9	-2.4	27.4	2.0	0.0		65.6	80	0	10	X		127.1
NORTH BAY	13.7	-2.4	27.2	4.0	0.0		77.4	90	0	9	255	101	131.6
OTTAWA INT'L	16.2	-2.2	28.3	7.0	0.0		94.8	129	0	11	MSG		62.2
PETAWAWA	14.7	-2.0	27.3	2.2	0.0		63.0	72	0	11	X		102.2
PETERBOROUGH	14.6	-2.6	25.5	1.3	0.0		47.2	78	0	6	X		104.2
PICKLE LAKE	12.0	-2.3	25.5	1.2	3.0	96	144.6	164	0	16	X		180.3
RED LAKE	11.7	-4.0	23.8	-0.8	1.2	240	170.2	202	0	18	184	*	188.9
ST. CATHARINES	17.0	-2.4	29.0	6.5	0.0		56.4	82	0	8	X		49.7
SARNIA	16.1	-2.4	29.2	6.0	0.0		50.2	74	0	8	294	108	71.7
SAULT STE. MARIE	12.6	-2.4	26.4	0.4	0.0		49.3	66	0	7	290	113	165.9
SIMCOE	16.1	-2.6	28.0	5.0	0.0		91.0	136	0	7	X		67.4
SIOUX LOOKOUT	12.1	-3.5	24.9	-0.6	MSG		104.9	114	0	13	X		179.6
SUDBURY	14.1	-2.3	28.2	2.3	0.0		42.0	50	0	8	286	116	122.4
THUNDER BAY	12.7	-1.7	27.0	0.2	0.0		127.6	166	0	13	275	104	158.6
TIMMINS	12.8	-2.2	29.7	-3.0	0.0		44.0	49	0	10	X		159.4
TORONTO	17.1	-2.4	28.4	7.8	0.0		41.8	65	0	6	263	*	47.1
TORONTO INT'L	15.7	-2.4	27.6	3.3	0.0		37.3	55	0	6	X		79.9
TORONTO ISLAND	15.8	-1.7	28.9	7.6	0.0		49.0	73	0	7	MSG		75.5
TRENTON	15.8	-2.4	27.1	4.9	0.0		47.2	74	0	10	X		71.7
WATERLOO-WELL	15.1	-2.8	26.5	3.5	0.0		95.4	123	0	8	X		91.8
WAWA	10.3	*	27.8	-2.0	0.0	*	63.6	*	0	8	MSG	*	230.9
WIARTON	13.5	-2.5	25.5	4.0	0.0		45.6	67	0	5	292	100	141.2
WINDSOR	18.4	-1.7	30.5	7.8	0.0		59.4	66	0	6	X		30.1

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

JUNE 1985

STATION	Temperature C: Mean	Difference from Normal	Maximum	Minimum	Snowfall (cm)	% of Normal Snowfall	Total Precipitation (mm)	% of Normal Precipitation	Snow on ground at end of month (cm)	No. of days with Precip 1.0 mm or more	Bright Sunshine (hours)	% of Normal Bright Sunshine	Degree Days below 18 C
QUEBEC													
BAGOTVILLE	14.1	-1.4	27.7	-1.0	0.0		55.8	62	0	11	X		118.8
BAIE COMEAU	11.7	-1.4	22.6	-0.3	0.0		81.9	97	0	11	217	*	188.9
BLANC SABLON	7.5	0.1	23.8	1.2	0.0		125.5	133	0	15	152	*	315.6
CHIBOUGAMAU	12.2	-1.9	28.0	-0.1	TR		90.8	84	0	11	204	87	174.5
GASPE	11.5	-2.5	25.5	0.0	0.0		89.4	152	0	15	208	*	191.3
INUKJUAK	8.5	3.7	22.1	-1.4	0.2	5	84.5	243	0	10	203	104	285.1
KUUJJUAQ	9.8	2.5	28.2	-3.5	1.0	27	23.2	45	0	7	212	117	248.2
KUUJJUARAPIK	10.2	3.3	27.8	-1.0	6.0	125	52.8	92	0	10	205	109	237.5
LA GRANDE RIVIERE	12.1	*	28.2	-0.8	0.2	*	37.3	*	0	8	216	*	182.4
MANIWAKI	14.8	-1.5	27.3	1.3	0.0		54.6	60	0	12	220	88	MSG
MATAGAMI	11.6	-2.0	29.0	-0.8	0.0		116.5	120	0	16	208	86	187.6
MONT JOLI	13.3	-1.4	24.5	2.4	0.0		73.6	117	0	10	237	97	141.3
MONTREAL INT'L	16.3	-2.4	27.1	7.2	0.0		95.2	115	0	13	223	89	61.5
MONTREAL M INT'L	15.4	*	26.6	6.6	0.0	*	117.4	*	0	16	210	*	81.3
NATASHQUAN													
NITCHEQUON	11.3	1.1	27.6	-0.6	2.0	64	47.6	56	0	13	244	112	200.8
QUEBEC	15.2	-1.6	27.8	3.6	0.0		104.6	95	0	12	199	88	89.1
ROBERVAL	14.4	-1.5	27.7	1.0	0.0		27.4	33	0	6	233	*	114.9
SCHEFFERVILLE	10.5	1.9	27.0	-1.0	TR		22.1	29	0	5	279	*	221.8
SEPT-ILES	11.7	0.0	23.8	3.0	0.0		94.8	105	0	10	251	107	188.1
SHERBROOKE	14.1	-1.8	26.6	2.5	0.0		123.7	125	0	11	195	*	119.1
STE AGATHE DES MONTS	13.7	-1.7	25.4	2.9	0.0		98.4	97	0	15	196	82	127.9
ST-HUBERT	16.1	-2.5	27.6	5.5	0.0		110.1	128	0	11	MSG		67.7
VAL D'OR	13.2	-1.8	27.8	-0.9	0.0		88.6	94	0	11	238	98	147.0
NEW BRUNSWICK													
CHARLO	13.6	-1.1	26.7	2.4	0.0		116.7	139	0	11	211	89	145.4
CHATHAM	14.4	-1.7	27.5	3.9	0.0		146.2	178	0	14	199	86	110.2
FREDERICTON	15.3	-1.3	26.9	3.9	0.0		181.2	213	0	16	197	*	63.3
MONCTON	14.0	-1.4	25.7	4.0	0.0		155.9	173	0	16	179	79	121.4
SAINT JOHN	13.7	-0.5	23.3	3.6	0.0		269.4	285	0	16	174	85	127.7

STATION	Temperature C: Mean	Difference from Normal	Maximum	Minimum	Snowfall (cm)	% of Normal Snowfall	Total Precipitation (mm)	% of Normal Precipitation	Snow on ground at end of month (cm)	No. of days with Precip 1.0 mm or more	Bright Sunshine (hours)	% of Normal Bright Sunshine	Degree Days below 18 C
NOVA SCOTIA													
GREENWOOD	14.8	-1.5	24.9	2.7	0.0		156.5	218	0	19	X		96.1
HALIFAX INT'L	14.1	-1.1	25.4	7.2	0.0		306.9	343	0	18	MSG		117.4
SABLE ISLAND	10.8	-0.6	16.2	6.6	0.0		132.6	141	0	14	188	114	216.4
SHEARWATER	13.5	-0.8	23.8	6.5	0.0		341.8	407	0	17	176	79	135.4
SYDNEY	12.1	-1.5	24.1	5.2	0.0		182.8	222	0	14	166	73	175.8
TRURO	13.4	-1.2	23.5	4.8	0.0		237.4	395	0	17	162	74	138.3
YARMOUTH	13.4	-0.4	22.0	6.5	0.0		162.4	199	0	13	185	87	138.2
PRINCE EDWARD ISLAND													
CHARLOTTETOWN	13.5	-1.4	23.0	5.5	0.0		167.8	210	0	13	X		134.9
SUMMERSIDE	13.8	-1.5	24.2	6.3	0.0		129.2	174	0	14	191	79	125.6
NEWFOUNDLAND													
ARGENTIA	9.0	-1.1	18.5	2.5	0.0		105.2	140	0	14	X		269.4
BATTLE HARBOUR	8.0	1.0	32.6	-1.0	TR		134.6	166	0	15	X		299.3
BONAVISTA	9.8	-0.2	26.1	1.8	0.0		81.6	127	0	16	X		246.1
BURGEO	8.6	-1.4	18.6	3.0	0.0		289.4	213	0	14	134	78	280.2
CARTWRIGHT	7.1	-1.7	31.5	0.0	TR		104.0	133	0	13	176	97	329.3
CHURCHILL FALLS	10.7	0.5	30.1	-1.4	TR		36.3	37	0	7	264	141	225.8
COMFORT COVE	11.7	-0.4	28.0	0.4	0.0		106.7	134	0	15	X		187.2
DANIEL'S HARBOUR	9.4	-0.8	17.5	3.0	0.0		110.2	127	0	12	201	105	262.8
DEER LAKE	12.2	0.1	30.8	-0.6	0.0		112.9	159	0	11	X		189.0
GANDER INT'L	11.8	-0.4	27.5	1.2	0.0		124.2	154	0	17	178	96	186.9
GOOSE	11.0	-0.7	35.4	0.0	3.4	91	85.8	92	0	12	187	99	223.0
PORT-AUX-BASQUES	9.1	-0.3	19.2	3.9	0.0		206.8	200	0	14	151	*	267.9
ST ANTHONY	7.0	-1.4	24.8	-1.7	0.0		224.2	242	0	12			327.7
ST JOHN'S	10.4	-0.9	25.7	-0.4	0.0		88.9	103	0	10	194	103	227.8
ST LAWRENCE	8.4	-0.4	18.7	0.1	0.0		139.5	130	1	12			
STEPHENVILLE	11.6	-0.7	26.6	1.9	0.0		170.9	198	0	11	206	108	193.1
WABUSH LAKE	11.2	0.7	29.3	-1.8	0.0		45.5	54	0	7	255	133	205.0

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

AGROCLIMATOLOGICAL STATIONS JUNE 1985

STATION	Temperature C				Snowfall (cm)	Total Precipitation (mm)	% of Normal Precipitation	Snow on ground at end of month (cm)	No. of days with Precip 1.0 mm or more	Bright Sunshine (hours)	Degree days above 5 C	
	Mean	Difference from Normal	Maximum	Minimum							This month	Since jan. 1st
BRITISH COLUMBIA												
AGASSIZ	15.5	-0.1	32.0	5.5	0.0	77.9	97	0	8	228	313.8	755.4
KAMLOOPS												
SIDNEY												
SUMMERLAND	17.8	0.4	34.0	5.5	0.0	21.4	70	0	4	317	373.0	789.5
ALBERTA												
BEAVERLODGE	13.0	-0.1	31.0	-1.0	0.0	54.1	79	0	9	267	232.9	433.7
ELLERSLIE	12.7	-1.3	26.0	-1.5	0.0	58.8	76	0	9	324	230.9	481.6
FORT VERMILLION												
LACOMBE	12.6	-1.1	29.0	-1.0	0.0	36.9	46	0	9	332	227.5	461.8
LETHBRIDGE	14.5	-0.5	31.5	1.0	0.0	2.0	3	0	1	320	285.4	668.0
VAUXHALL	14.8	-0.8	32.0	1.5	0.0	12.6	21	0	5	344	284.3	631.5
VEGREVILLE	12.0	-2.2	27.0	-2.0	0.0	108.5	148	0	10		212.4	452.5
SASKATCHEWAN												
INDIAN HEAD	12.9	-2.7	27.5	-1.0	0.0	79.0	107	0	13		243.0	573.0
MELFORT	12.2	-3.1	26.5	-1.0	0.0	58.9	83	0	11	197	213.5	460.0
REGINA	12.7	-3.0	29.0	-3.0	0.0	46.2	64	0	10		220.2	496.5
SASKATOON	13.0	-2.6	29.0	-2.5	0.0	13.0	22	0	5	266	236.5	538.0
SCOTT	12.5	-2.0	30.0	-1.0	0.0	10.6	16	0	4	273	224.8	470.9
SWIFT CURRENT SOUTH	13.2	-2.3	31.0	-3.0	0.0	17.0	23	0	3	276	243.7	585.8
MANITOBA												
BRANDON	13.9	-2.4	29.5	-1.0	0.0	97.3	120	0	13	244	261.5	603.6
GLENLEA	13.7	-3.2	27.0	-2.0	0.0	84.1	95	0	14	220	379.8	721.9
MORDEN												
ONTARIO												
DELHI	16.6	-1.7	28.0	5.0	0.0	77.3	109	0	9	301	345.2	810.4
ELORA	14.2	-2.9	25.6	1.1	0.0	46.1	53	0	7		275.7	648.9
GUELPH	15.2	-2.2	26.8	2.0	0.0	78.5	111	0	6	268	304.5	697.6
HARROW	17.5	-2.2	31.0	1.0	0.0	51.5	68	0	6	284	383.9	954.0
KAPUSKASING												
MERIVALE												
OTTAWA	16.4	-1.7	27.6	6.6	0.0	93.1	117	0	12	940	342.8	708.0
SMITHFIELD	16.3	-1.0	27.0	5.0	0.0	46.3	74	0	10		343.7	750.8
VINELAND STATION	16.7	-1.7	29.6	6.0	0.0	59.4	84	0	7		350.8	759.9
WOODSLEE												
QUEBEC												
LA POCATIERE	14.4	-1.3	25.5	2.5	0.0	79.0	88	0	12	232	281.4	446.9
L'ASSUMPTION	15.9	-1.7	27.0	5.5	0.0	113.0	134	0	13	210	325.9	624.7
LENNOXVILLE												
NORMANDIN			26.0	-1.5	0.0	56.0	73	0	10	224		329.5
ST. AUGUSTIN												
STE CLOTHILDE	16.3	-1.4	28.5	6.5	0.0	109.2	127	0	13	222	338.4	674.2
NEW BRUNSWICK												
FREDERICTON												
NOVA SCOTIA												
KENTVILLE	15.1	-0.8	24.5	5.5	0.0	234.8	330	0	17	165	303.0	525.5
NAPPAN	14.0	-0.7	24.0	4.0	0.0	161.6	206	0	19		277.2	462.0
PRINCE EDWARD ISLAND												
CHARLOTTETOWN												
NEWFOUNDLAND												
ST. JOHN'S WEST	10.7	-0.4	26.0	-0.5	0.0	101.3	127	0	11	186	45.4	220.1