Environment Canada
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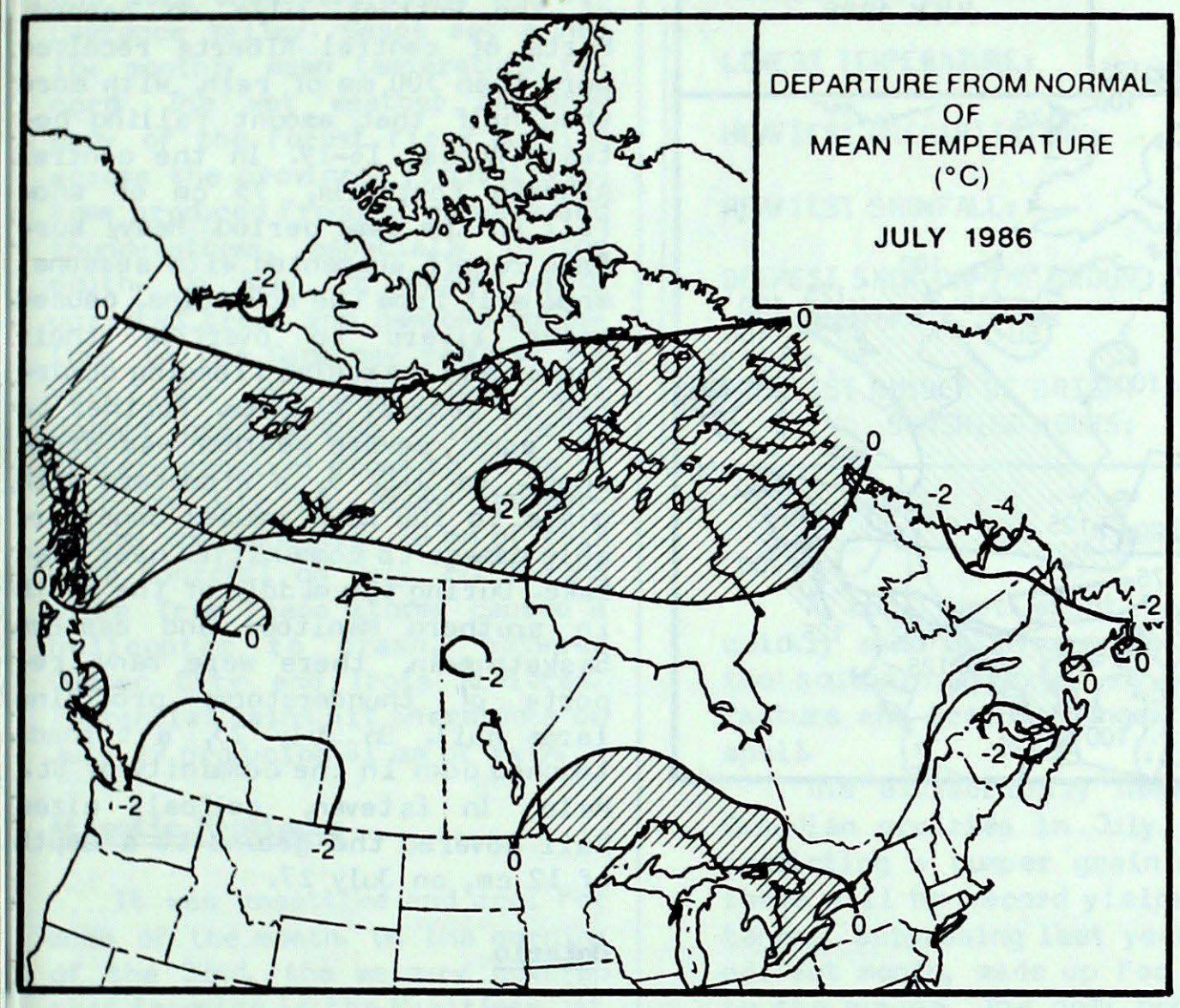
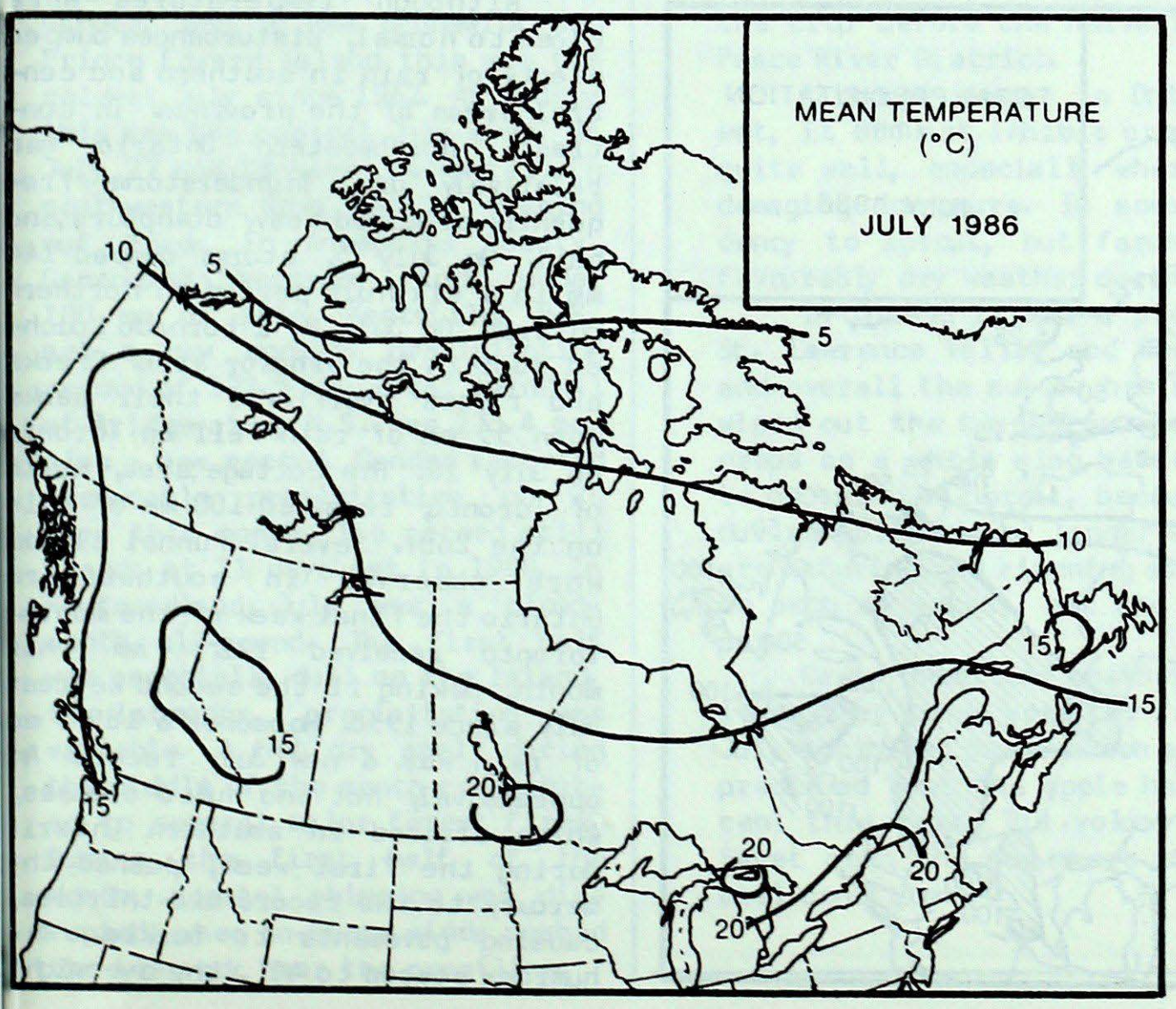
Climatic Perspectives

Monthly Supplement

Vol.8 July, 1986





ACROSS THE COUNTRY

Yukon and Northwest Territories

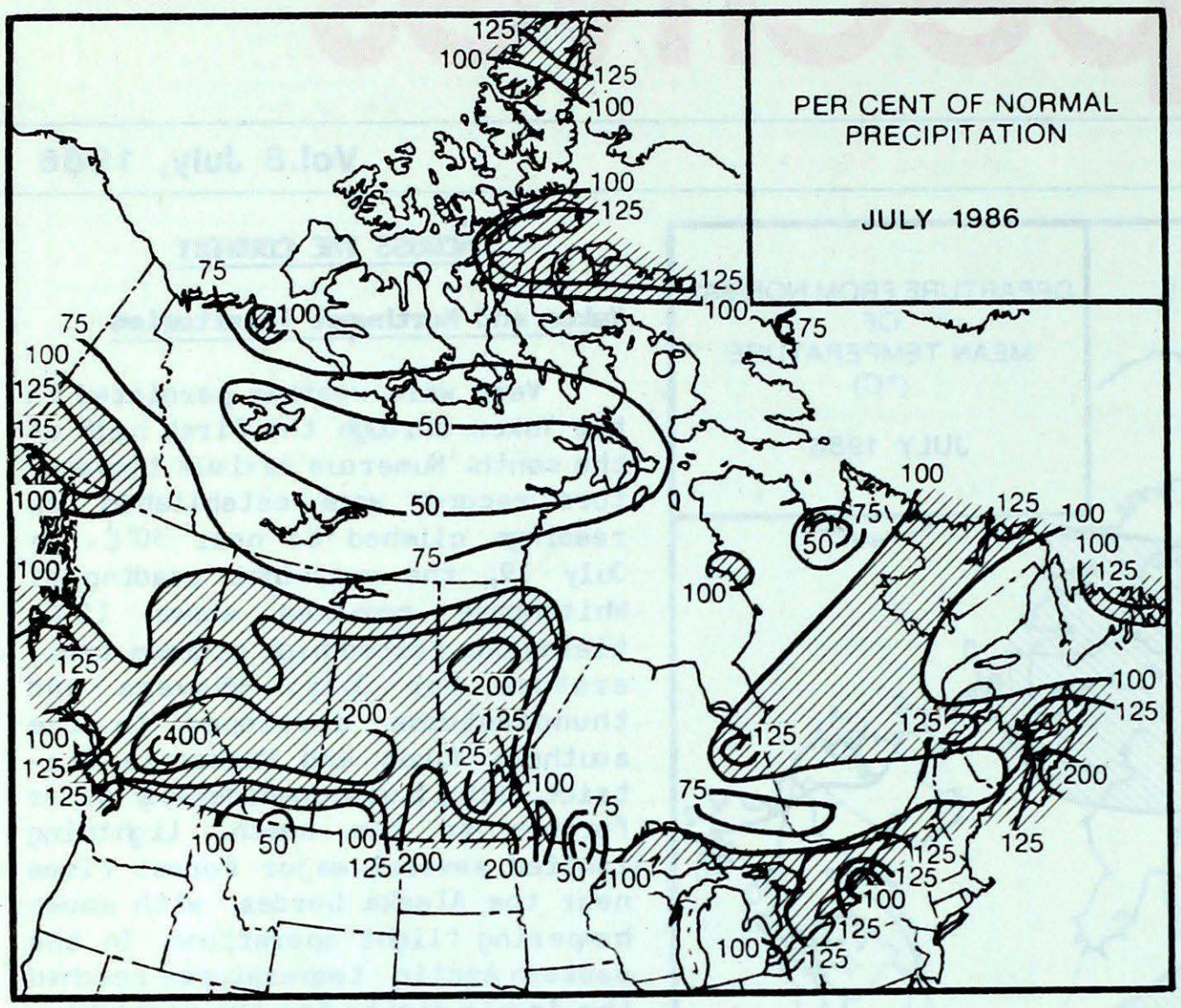
Very warm weather persisted in the Yukon through the first half of the month. Numerous maximum temperature records were established as readings climbed to near 30°C. On July 19, the overnight reading at Whitehorse remained above 15°C, tieing the record high minimum temperature for July. Showers and thunderstorms developed in the southern Yukon and Mackenzie District, but it was considerably drier further to the north. Lightning ignited several major forest fires near the Alaska border, with smoke hampering flight operations. In the eastern Arctic, temperatures reached the double digits for the first time this year. The shipping season commenced early, with favourable weather conditions. At the end of the month, copious amounts of rain and near freezing temperatures were reported in the Yukon. Burwash recorded its first July snowfall in almost 20 years. In the eastern Arctic, the weather became windy and unsettled. Fresh snowfalls were reported in the Arctic Archipelago.

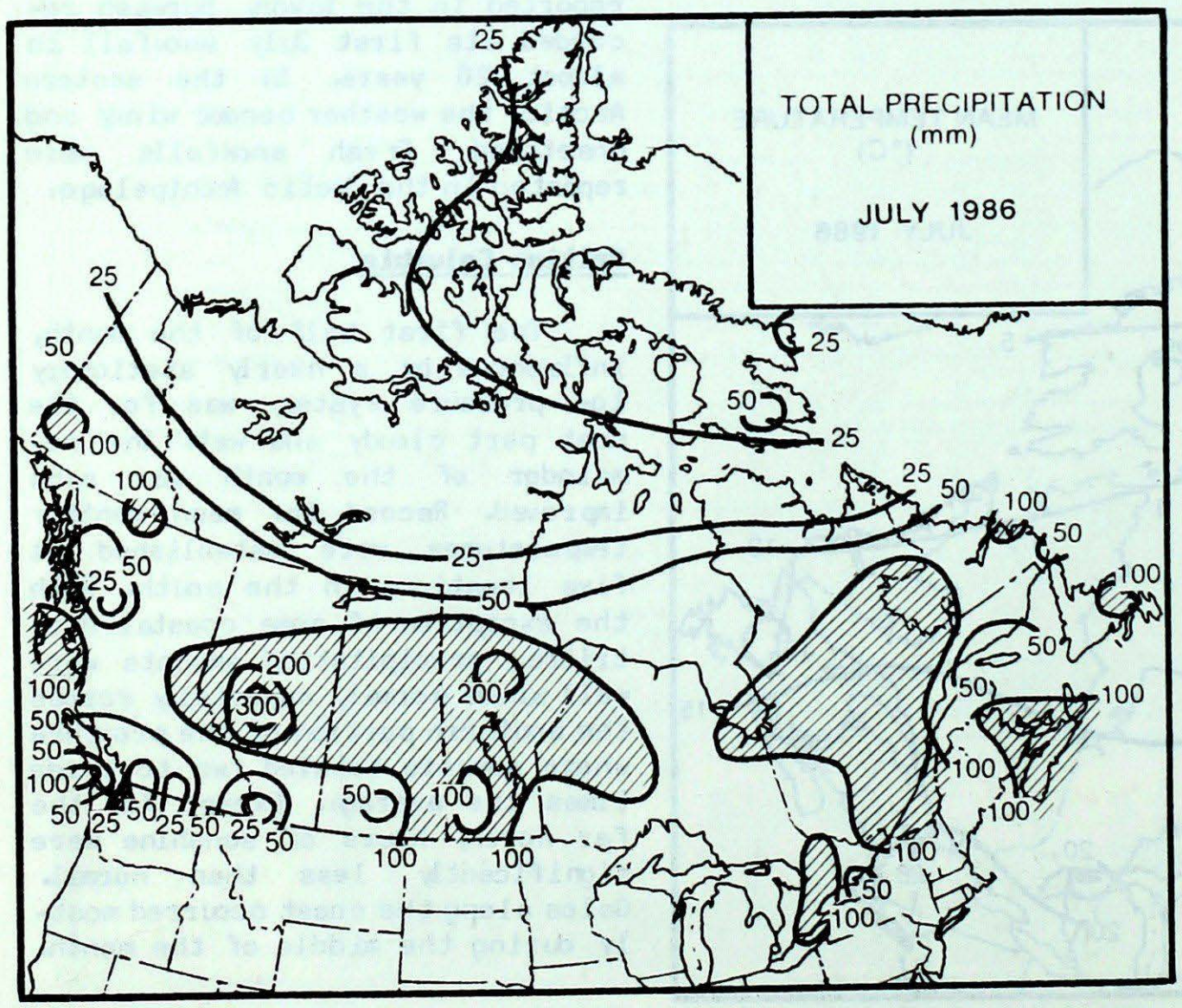
British Columbia

The first half of the month, influenced by a nearly stationary low pressure system, was for the most part cloudy and wet. The remainder of the month was much improved. Record low mean monthly temperatures were established at five locations in the south. With the exception of some coastal districts, precipitation amounts were well above normal, especially across the southern portion of the province where amounts totaled two to three times the average. Except for the far north, hours of sunshine were significantly less than normal. Gales along the coast occurred mostly during the middle of the month.

Canada

PRECIPITATION





Very pleasant weather conditions arrived in after mid-month.

Prairie Provinces

The month was cool and very unsettled. Many western locations doubled their normal monthly rainfall. In Saskatchewan this was one of the wettest Julys on record. Parts of central Alberta received more than 300 mm of rain, with more than half that amount falling between August 16-19. In the central Alberta foothills, 75 cm of snow fell in the same period. Heavy surface runoff augmented with seasonal snow melt from the mountains, caused major rivers to overflow their banks, and extensive flooding occurred in central Alberta. Further to the east, severe weather was prominent. On July 3, a windstorm with gusts to 100 km/h caused considerable damage to communities near Swan Lake. During the middle of the month in southern Manitoba and eastern Saskatchewan, there were many reports of thunderstorms producing large hail. On July 23, a tornado touched down in the community of St. Malo. In Estevan, golfball sized hail covered the ground to a depth of 12 cm, on July 27.

Ontario

Although temperatures were close to normal, disturbances dumped plenty of rain in southern and central areas of the province. In contrast, northwestern Ontario was relatively dry. Thunderstorms frequently produced heavy downpours and hail. On July 5, storms dumped 144 mm in a six hour period in northern Ontario. On July 8, a tornado touched down in the Windsor area. Creeks and rivers overflowed their banks when 55 mm of rain fell in Toronto on July 18. The cottage area, north of Toronto, received 100 mm of rain on the 26th. Several funnel clouds were observed in southwestern Ontario the final week of the month. Toronto received 122.3 mm this month, making it the second wettest July since 1938. Moosonee's 189.3 mm of rain was a new July record. An oppressively hot and humid airmass, which arrived in southern Ontario during the first week, pushed the mercury to the record mid-thirties, causing pavements to buckle. The humidex soared to 41°, the overnight

temperatures failed to fall below 20°C.

Québec

The first couple of weeks of the month were cool and cloudy, with some improvement taking place thereafter. It was markedly cooler and more unsettled along the St. Lawrence Valley. Gaspé set a new low monthly mean temperature record. The wet weather dampened many of the forest fires burning across the province. Frontal systems produced frequent showers and thunderstorms, especially in the south. On July 15, strong winds uprooted trees and damaged buildings in the Saguenay region. The very next day powerlines were downed near Québec City. Grand Riviere received close to 50 mm of rain on July 24. Heavy thunderstorms dumped nearly 70 mm of rain near Montréal on July 27. Strong winds from these storms caused a helicopter to crash, between Québec City and Trois Rivières. Torrential rains hit Sherbrooke on July 29 producing 81 mm of rain.

Atlantic Provinces

It was unsettled and cool for much of the month. On the morning of the 22nd, the mercury hovered near freezing in the Maritimes. At Gander, and in New Brunswick and Prince Edward Island this was the coldest July since 1962. At Sydney this was the coolest July ever. On July 27 and 28 heavy rains fell in southwestern Nova Scotia, washing out roads in Annapolis County. Greenwood recorded just under 100 mm of rain. Kentville, N.S. set a new monthly precipitation record of 172.5 mm. Total rainfall at Bridgewater, N.S. was 235.4 mm, also a new record. Gander reported measurable precipitation on 20 days this month. The record still stands at 21 days set in 1980. In Newfoundland July was a cloudy month all-round. The first half was especially dull on the Island. In Labrador, precipitation was variable. A hot dry spell during the middle of the month contributed to several major forest fires. During the first half of the month, coastal shipping was disrupted, when on-shore winds pushed the ice pack near the coastline.

CLIMATIC EXTREMES IN CANADA - JULY 1986

MEAN TEMPERATURE:		
WARMEST	Windsor, ONT	23.2°C
COLDEST	Resolute, NWT	2.2°C
HIGHEST TEMPERATURE:	Windsor, ONT	35.2°C
LOWEST TEMPERATURE:	Pond Inlet, NWT	- 6.1°C
HEAVIEST PRECIPITATION:	Thompson, MAN	210.7 mm
HEAVIEST SNOWFALL:	Alert, NWT	34.2 cm
DEEPEST SNOW ON THE GROUND ON JULY 31st, 1986:	Not Available	
GREATEST NUMBER OF BRIGHT SUNSHINE HOURS:	Yellowknife, NWT	393 hrs

AGRICULTURAL SUMMARY

A cool, wet start to the summer growing season in B.C. was quickly made up by a sunny and hot August. Fruits have done well in the southern valleys, as have grains in the Peace River District. Pasture and grazing ranges have held up well during the current dry spell.

The extraordinary heavy rains, which fell across most of the Canadian prairies in July, are the main reason agriculturists are predicting a bumper grain crop this year. Confidence is high that there will be record yields this year of approximately 16.9 million tonnes, surpassing last year's amount by one million. August, a near perfect month, made up for the unsettled weather conditions earlier in the summer. The only concern is that frost might damage some of the crop before the harvest is complete. Swathing has begun in the Peace River District.

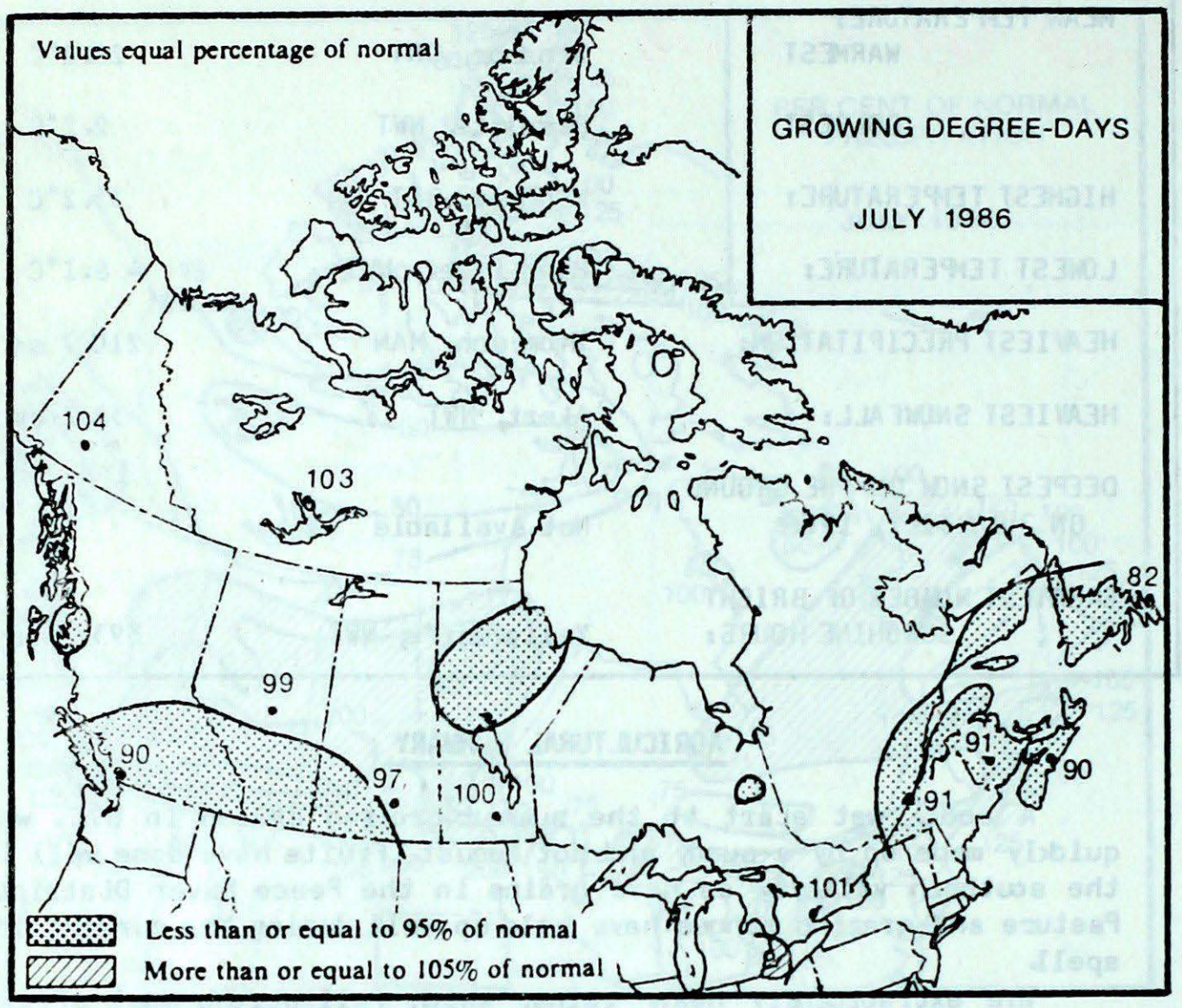
Although summer in Ontario was a little on the cool side and wet, it did not inhibit crop growth, in fact crops overall have done quite well, especially where they have been unaffected by hail and damaging downpours. In some isolated areas, grain has shown a tendency to sprout, but farmers are now more concerned about having favourably dry weather during harvest time.

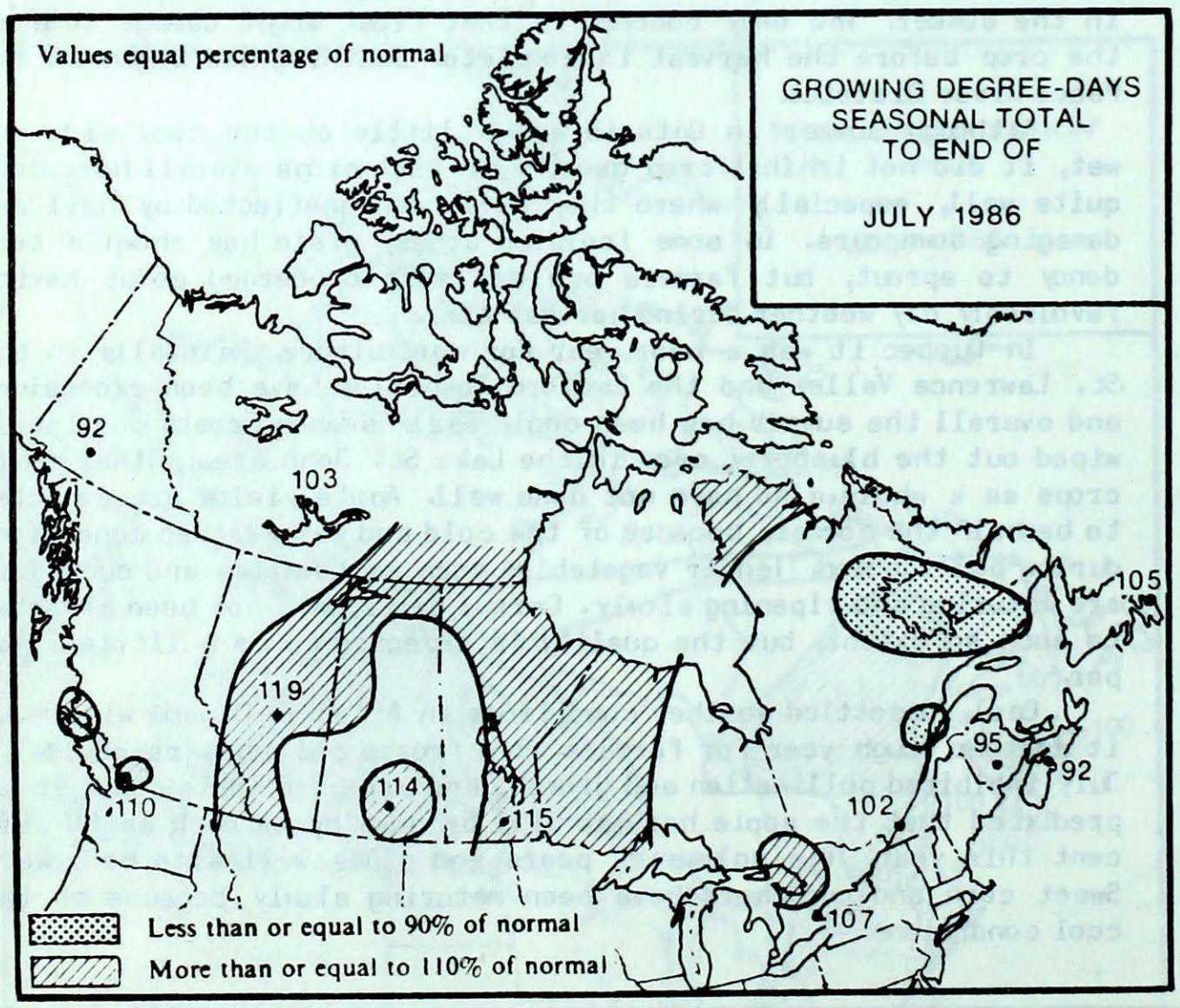
In Quebec it was a poor year for agriculture. Rainfalls in the St. Lawrence Valley and the Eastern Townships have been excessive, and overall the summer has been cool. Early season frosts completely wiped out the blueberry crop in the Lake St. John area; other berry crops as a whole also have not done well. Apple yields are expected to be half the normal, because of the cold and wet weather conditions during pollination. Tender vegetables such as tomatoes and cucumbers are maturing and ripening slowly. Cereal crops have not been affected to such an extent, but the quality is expected to be a little below par.

Cool, unsettled weather conditions in Atlantic Canada will make it another tough year for farmers. May frosts and heavy rainfalls in July inhibited pollination and growth, and promoted apple scab. It is predicted that the apple harvest will be down by as much as 50 percent this year. The volume of pears and plums will also be lower. Sweet corn and cucumbers have been maturing slowly because of the cool conditions.

GROWING DEGREES

GROWING DEGREE DAYS



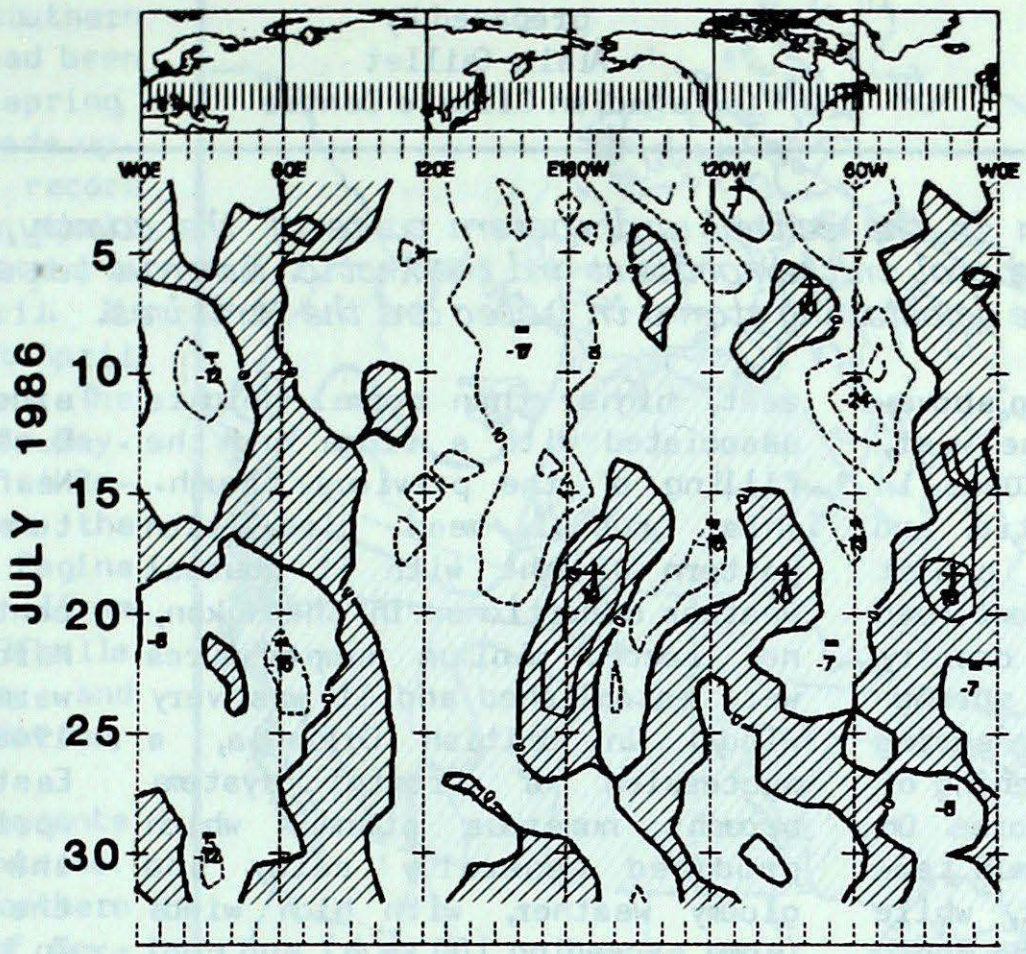


SEASONAL TOTAL OF GROWING

DEGREE-DAYS TO END OF JULY

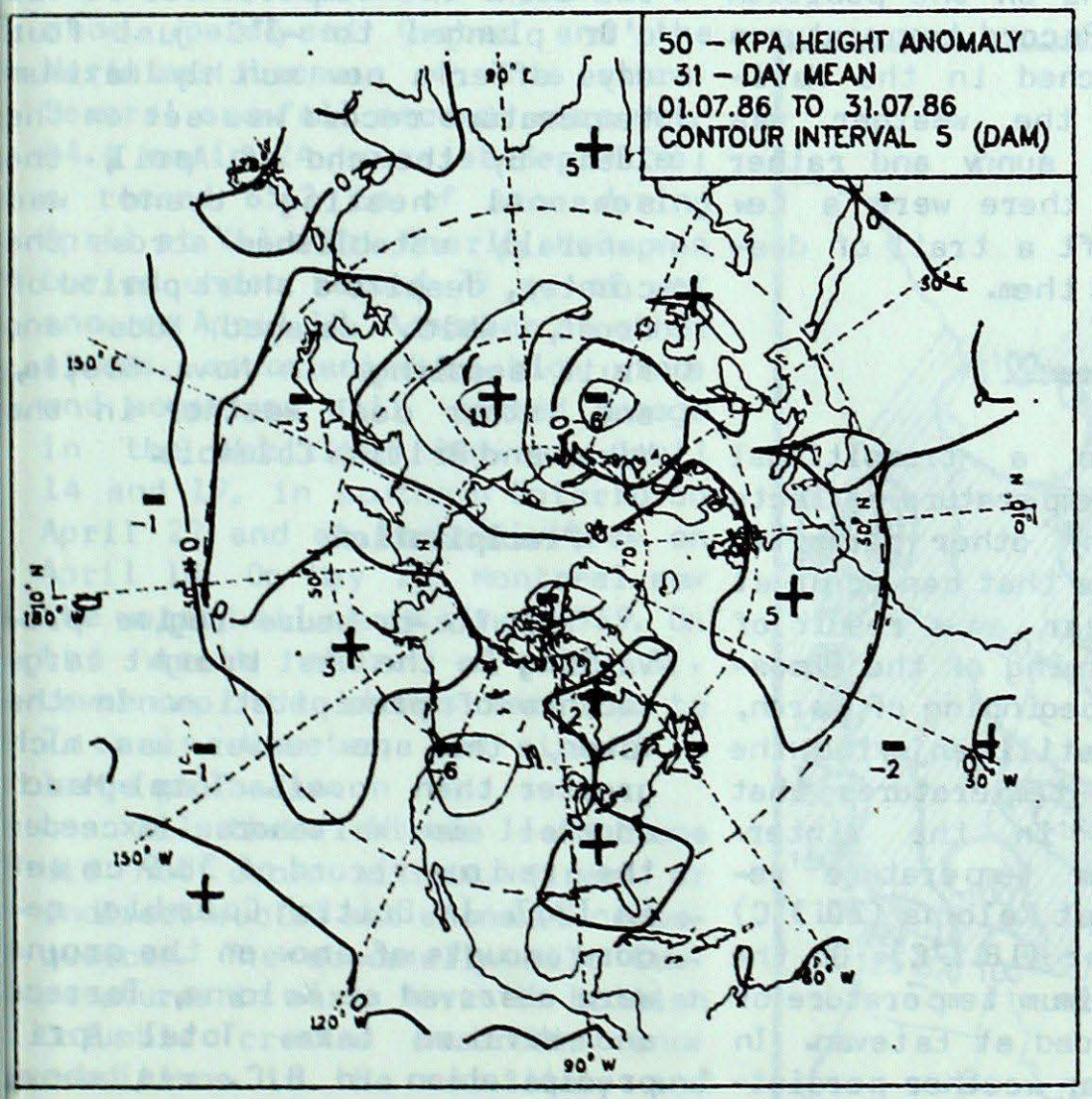
	1986	1985	NORMAL
BRITISH COLUMBIA			
Abbotsford	1116	1142	1021
Kamloops	1344	1472	1297
Penticton	1274	1412	1222
Prince George	735	832	700
Vancouver	1109	1152	1078
Victoria	1005	1025	991
ALBERTA			
Calgary	833	948	747
Edmonton Mun.	933	1026	794
Grande Prairie	765	902	767
Lethbridge	1035	1161	925
Peace River	804	874	757
SASKATCHEWAN			
Estevan	1108	1237	1017
Prince Albert	916	944	841
Regina	1050	1102	933
Saskatoon	979	1075	915
Swift Current	955	1082	899
MANITOBA			
Brandon	977	1078	944
Churchill	303	328	259
Dauphin	837	868	786
Winnipeg	1128	1164	986
ONTARIO			
London	1223	1351	1176
Mount Forest	1093	1061	961
North Bay	961	1023	929
Ottawa	1247	1284	1150
Thunder Bay	886	885	778
Toronto	1257	1264	1183
Trenton	1242	1232	1172
Windsor	1514	1627	1381
QUÉBEC			
Baie Comeau	571	662	628
Maniwaki	968	1043	919
Montréal	1202	1270	1180
Quebec	927	1070	962
Sept-Iles	527	658	549
Sherbrooke	987	1056	1033
NEW BRUNSWICK			
Charlo	732	890	795
Fredericton	999	1118	1045
Moncton	807	969	842
NOVA SCOTIA			
Sydney	754	963	801
Truro	630	837	696
Yarmouth	795	851	760
PRINCE EDWARD ISLAND			
Charlottetown	787	928	787
NEWFOUNDLAND			
Gander	597	727	602
St. John's	527	653	504
Stephenville	627	729	588

ATMOSPHERIC CIRCULATION

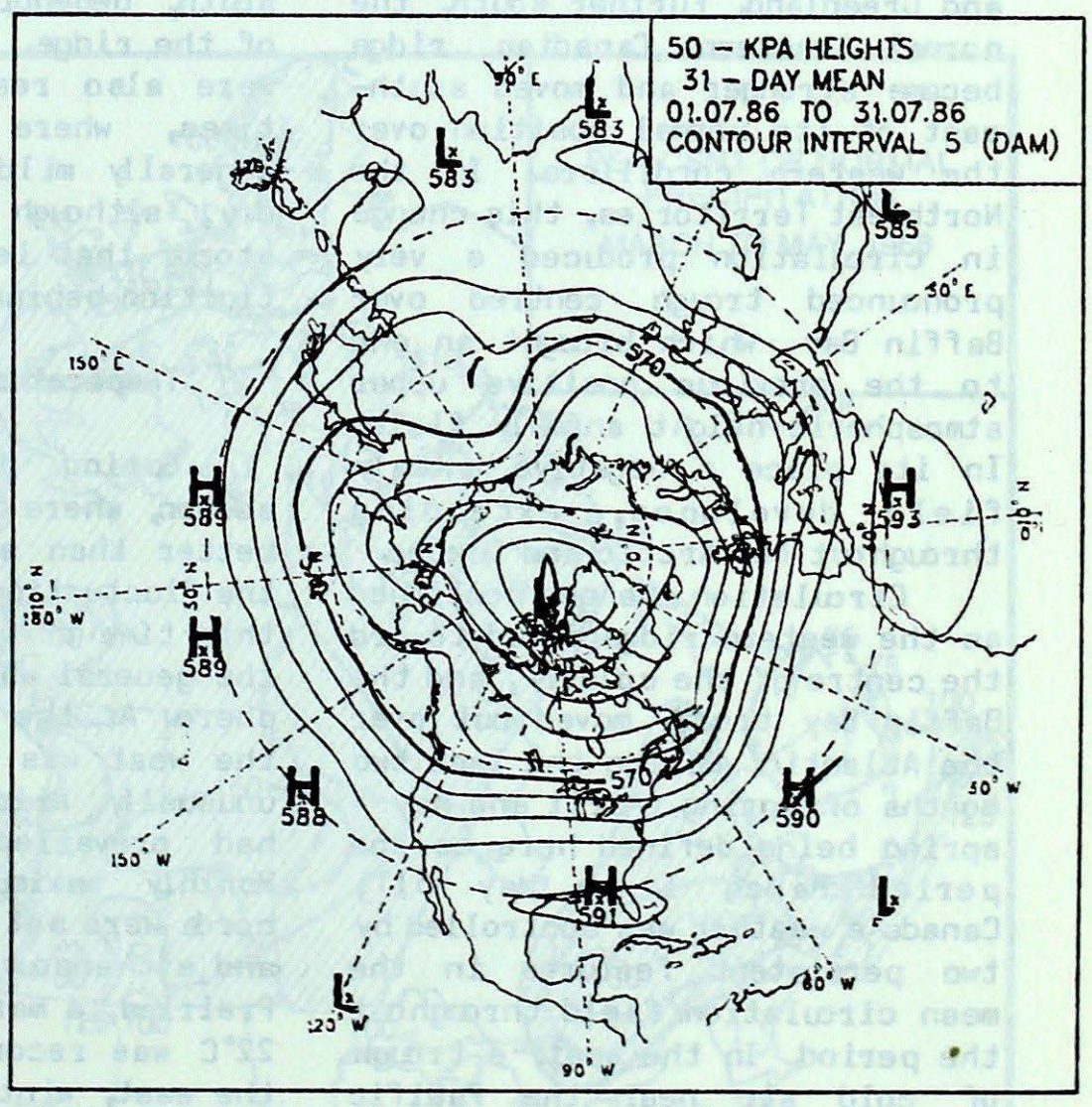


50 kPa 45° $\bar{Z}$ = 580 DAM

Time-longitude Hovmöller diagram of 50 kPa heights at latitude 45°N



Mean 50 kPa height anomaly (dam)
July 1986



Mean 50 kPa heights (dam)
July 1986

FEATURE

SPRING OF 1986 - A REVIEW

prepared by
Alain Caillet
Canadian Climate Centre

Spring was generally warm in the central and eastern parts of the country, from the Rockies to the St. Lawrence Valley, but it was cool in the northwest and the Arctic. Numerous temperature records were set across the country, and there were devastating storms in Québec and the Maritimes.

Winter, which has seen above-normal temperatures in the west, far above-normal temperatures in the northwest and the Arctic, and below-normal temperatures in most of Ontario and Quebec, continued its hold over much of the country for the first few weeks of spring. At the beginning of March, spring was in the air for the opening of the winter games in Whitehorse. On the Prairies, several maximum temperature records were set, while some minimum records for the month were established in Quebec and the Maritimes. Later in the month, the controlling upper atmospheric (50 kPa) circulation pattern changed dramatically, with an eastward shift and weakening of the upper level ridges, which have been firmly established over the Yukon and Greenland. Further south, the normal western Canadian ridge became stronger and moved southeast of its normal position over the western cordillera. In the Northwest Territories, this change in circulation produced a very pronounced trough centred over Baffin Bay, which brought an end to the previous positive upper atmospheric height anomaly field. In its place a negative anomaly field developed, extending throughout the Arctic and Quebec.

Circulation changes continued as the western ridge moved toward the centre of the country, and the Baffin Bay trough moved out over the Atlantic. During the last two months of spring (April and May - spring being defined here as the period March 1 to May 31), Canada's weather was controlled by two persistent features in the mean circulation field throughout the period. In the west, a trough of cold air near the Pacific coast, with its negative height anomaly field and its low-pressure regime; in the centre and the east, higher than normal heights associated with a ridge and the filling of the previous trough. This unusual mean circulation pattern brought with it unusual weather conditions. In the Yukon, new record minimum temperatures were established and it was very windy. In British Columbia, a succession of frontal systems brought numerous storms, which produced generally rainy and gloomy weather, with high winds (some exceeding 100 km/h) and cool temperatures. The sky was overcast for the opening of Expo '86. On the Prairies, in Ontario and Quebec, mean temperatures were generally above normal, but there were large day-to-day fluctuations caused by changing airmasses, coming either from the north or the south, depending on the position of the ridge. Record temperatures were also reached in the Maritimes, where the weather was generally mild, sunny and rather dry, although there were a few storms that left a trail of destruction behind them.

Temperatures

Spring is a transitional season, where temperature reflects better than any other parameter the fluctuations that can occur at this time of year, as a result of the general warming of the atmosphere. At the beginning of March, the west was still enjoying the unusually mild temperatures that had prevailed in the winter. Monthly maximum temperature records were set at Kelowna (20.3°C) and at Vancouver (18.1°C). On the Prairies, a maximum temperature of 22°C was recorded at Estevan. In the east, winter weather persisted. Southern Ontario experienced an outbreak of cold Arctic air on March 19, later than in any year since 1967. At Blanc Sablon in Quebec, and in several towns in Newfoundland, the mercury plunged to record March lows.

The first signs of a significant warming appeared in late March. In southern Ontario, the warmest March temperatures since 1946 were experienced over the Easter weekend. Soon after, record April minimums were recorded in the Yukon; Vancouver experienced the latest frost ever on April 30. In the west, under the alternating influences of arctic and maritime airmasses, temperatures went from one extreme to the next. On April 27 and 28, temperatures at Timmins and Val d'Or reached 30°C and 28°C respectively; readings exceeded 22°C at St. John's, Gander and Stephenville between the 23rd and the 26th. The temperatures at Val d'Or plunged to -3°C just four days after a new monthly maximum temperature record was set on the 28th. By the end of April, the seasonal heating trend was generally established across the country, despite a short period of frost, which damaged buds and fruit seedlings in Nova Scotia, and rather cool weather in the Yukon and British Columbia.

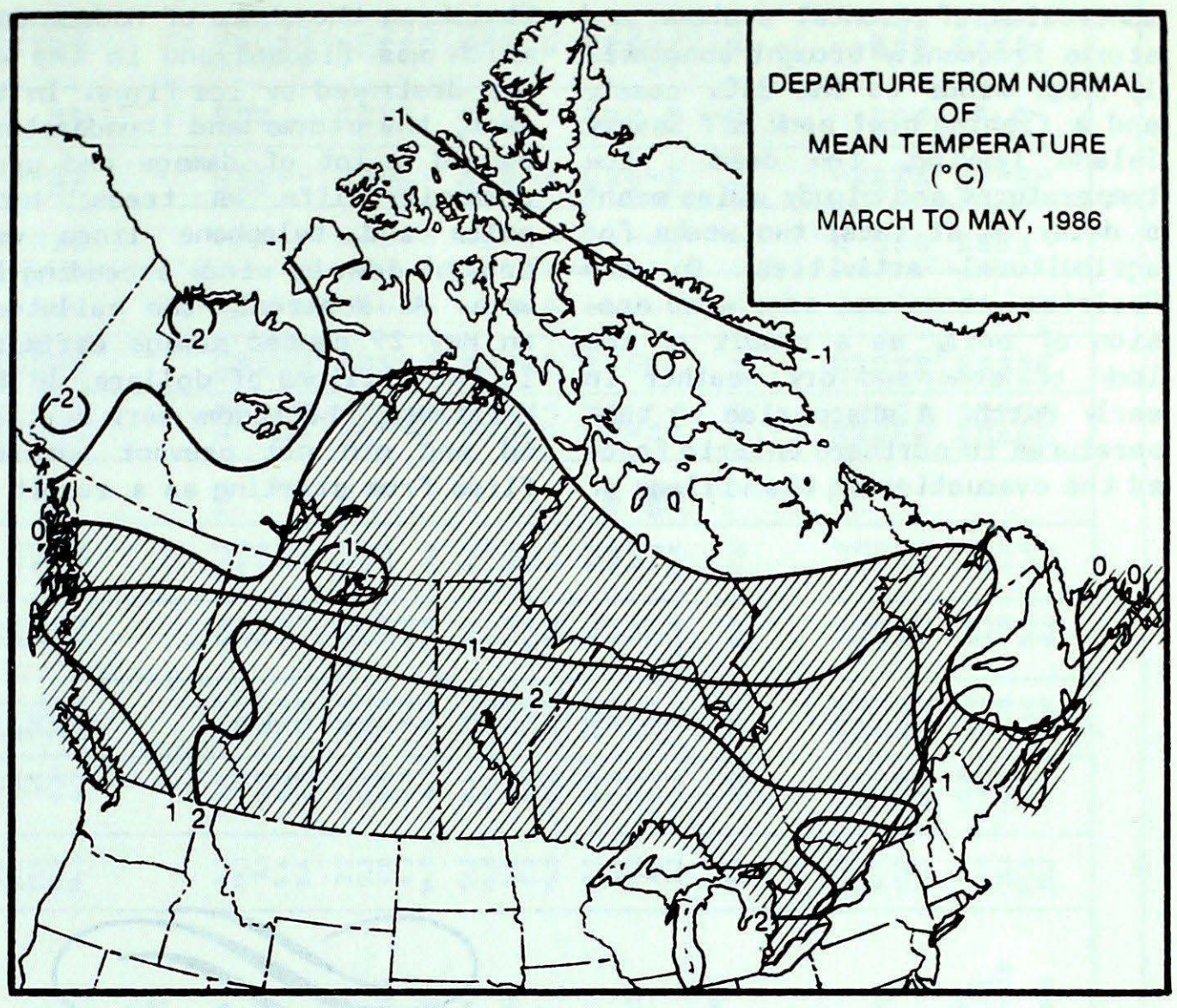
Precipitation

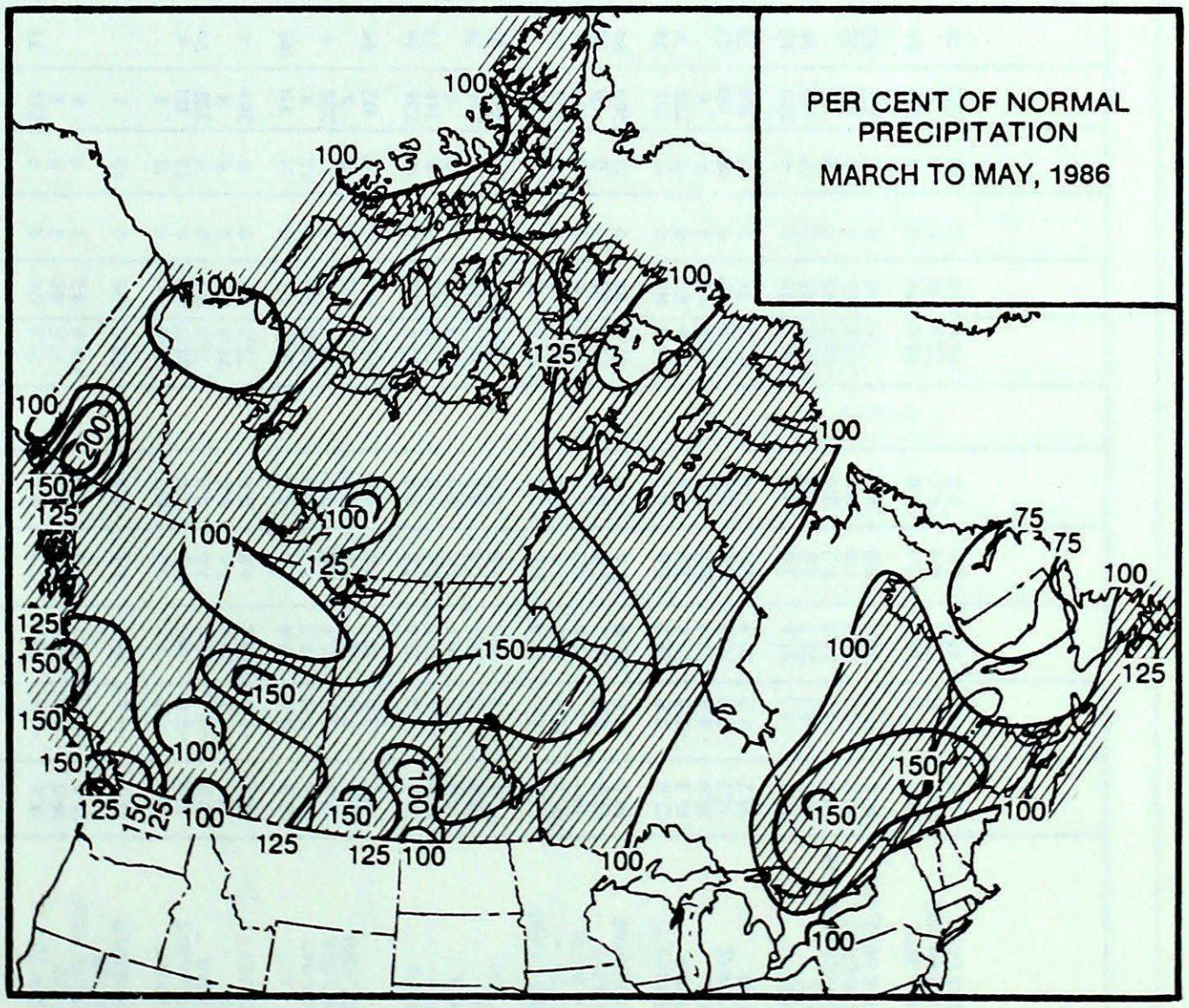
The low-pressure regime prevailing in the west brought large amounts of precipitation. In the Yukon, the snow cover was much greater than normal. Total March snowfall in Whitehorse exceeded the previous record of 38.9 cm set in 1967. In British Columbia, record amounts of snow on the ground were observed at Kelowna, Terrace and Williams Lake. Total April precipitation in B.C. was above normal, including double the normal snowfall along the coast. A late storm dropped 34 cm of snow

in the north in mid-May. On the Prairies, the precipitation pattern was more varied. In many southern and northern areas, which had been relatively dry in the early spring, the shortfall was quickly made up. Numerous storms deposited record amounts of precipitation. On April 30, Winnipeg had 44.1 mm of rain, a new 24-hour record for April. It was also the second wettest April ever in eastern Saskatchewan. The same situation continued into May. A new 24-hour record was set at Regina, with 60.4 mm. It was the third wettest May ever at Regina and Swift Current, with over 115 mm of rain. Hail the size of golfballs was reported at MacGregor, and there was a tornado near Borden, Manitoba.

Further to the east, amounts of precipitation were less extreme. North-central Ontario, northern Quebec, Labrador and most of Newfoundland failed to get their normal accumulations. However, there were numerous storms and violent thunderstorms, especially in Quebec and the Maritimes. A storm covered a large part of Ontario, with a thick layer of ice on March 9. In early April, a storm that left southern Ontario under a blanket of snow, paralysed Quebec and the Maritimes because of this storm. Several snowfall records were set: 44.4 cm in 24 hours at Sept-Iles; a record 65.2 cm of snow during April at Val d'Or. Charlo, N.B. was buried under record 75 cm of wet snow on April 10. A number of other storms, accompanied by high winds and sometimes hail, caused damage in the Maritimes between April 14 and 19, in southern Ontario on April 22 and at Trois-Rivières on April 18. On May 29, Montreal saw the worst hail storm since 1969. On the south shore of the St. Lawrence, the stones were up to 7 cm in diameter, the size of a large golfballs.

All these extreme conditions did not occur without direct or indirect social and economic consequences. The abnormally mild temperatures in early March in British Columbia created hazardous snow conditions in the mountains, and four people lost their lives in an avalanche in Yellow Head Pass. The





FEATURE

succession of frontal systems and storms frequently brought abnormally high winds to the B.C. coast, and a fishing boat sank off Savary Island leaving, ten dead. Low temperatures and cloudy skies meant a delay of at least two weeks for agricultural activities. On the Prairies, there was some wind erosion of soil, as a result of the lack of snow and dry weather in early March. A sharp rise in temperatures in northern Ontario forced the evacuation of the village of Winisk on the shore of Hudson Bay, which was flooded and in the end was destroyed by ice flows. In the east, the storms and thunderstorms caused a lot of damage and upset community life as trees, hydro poles and telephone lines were brought down by winds exceeding 100 km/h. At Montreal, the hailstorms on May 29 caused damage estimated in the millions of dollars, In the Maritimes, the storms were scattered and did not prevent numerous fires from starting as a result of the dry, mild weather prevailing there. By mid-May there were no less than 100 forest fires burning; 40,000 hectares of woodland were destroyed in New Brunswick, 25 times more than last year. In Newfoundland, 81,000 hectares of forest were destroyed.

As summer began, there was good reason to believe that the May situation of cool temperatures in the west and milder readings in the north and east would continue.

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
BRITISH COLUMBIA													
ABBOTSFORD	15.4	-1.6	26.1	7.2	0.0		71.8	174	0	7	224	77	71.3
ALERT BAY	14.0	0.0	22.0	6.5	0.0		41.8	80	0	9	X		142.8
AMPHITRITE POINT	13.4	-0.5	17.9	7.7	0.0		118.5	163	0	8	X		142.8
BLUE RIVER													
BULL HARBOUR	12.5	-0.6	18.4	5.8	0.0		83.4	135	0	13	X		171.3
CAPE SCOTT	12.5	-0.7	16.9	8.2	0.0		92.6	111	0	12	X		169.6
CAPE ST.JAMES	12.1	-0.6	16.2	8.5	0.0		89.3	152	0	13	151	*	181.3
CASTLEGAR	17.2	-3.1	30.0	7.6	0.0		71.0	199	0	11	237	74	39.1
COMOX	16.1	-1.3	25.4	7.4	0.0		39.8	143	0	6	X		62.4
CRANBROOK	15.6	-2.8	30.2	4.6	0.0		32.2	147	0	9	289	*	80.5
DEASE LAKE	13.3	0.8	27.9	2.3	0.0		46.3	83	0	11	211	105	146.9
ETHELDA BAY	12.6	-0.6	20.2	4.2	0.0		190.2	149	0	13	X		169.6
FORT NELSON	17.3	0.7	30.4	6.8	0.0		63.1	74	0	11	289	*	42.6
FORT ST.JOHN	15.6	0.0	28.1	7.2	0.0		78.1	101	0	9	X		79.6
HOPE	16.5	-2.0	26.1	7.8	0.0		89.5	241	0	8	172	66	52.7
KAMLOOPS	18.7	-2.1	32.0	7.5	0.0		57.4	255	0	16	234	74	21.0
KELOWNA	17.3	-1.4	31.8	5.0	0.0		32.6	135	0	9	240	77	36.2
LANGARA	11.8	-0.4	16.6	8.4	0.0		96.3	120	0	12	X		194.3
LYTTON	18.9	-2.7	34.9	7.6	0.0		38.1	346	0	5	234	79	
MACKENZIE	14.4	-0.5	28.1	0.8	0.0		98.4	190	0	16	220	81	112.0
MCINNES ISLAND	13.7	0.0	18.3	8.8	0.0		136.8	137	0	11	X		133.2
PENTICTON	18.3	-2.0	31.6	7.4	0.0		24.4	115	0	8	232	74	25.2
PORT ALBERNI	16.1	*	29.5	5.2	0.0	*	30.9	*	0	5	236	*	66.0
PORT HARDY	13.6	0.0	21.2	5.4	0.0		44.3	85	0	8	171	86	137.4
PRINCE GEORGE	14.5	0.6	28.8	3.4	0.0		57.4	96	0	12	253	86	110.4
PRINCE RUPERT	12.8	0.0	18.3	5.5	0.0		144.3	140	0	17	106	74	161.4
PRINCETON	15.3	-2.5	30.4	3.2	0.0		42.4	188	0	7	238	*	MSG
QUESNEL	15.8	-0.6	29.9	13.3	0.0		73.9	140	0	14	X		77.2
REVELSTOKE	16.1	-2.3	28.8	7.0	0.0		92.9	163	0	16	181	67	67.4
SANDSPIT	13.7	-0.3	20.9	9.0	0.0		33.9	78	0	11	148	79	137.0
SMITHERS	14.6	-0.1	27.4	1.9	0.0		17.6	38	0	4	228	93	106.3
TERRACE	16.0	-0.1	28.7	7.5	0.0		31.2	55	0	10	166	95	74.4
VANCOUVER HARBOUR	16.4	-1.2	24.9	8.2	0.0		62.2	145	0	8	X		53.1
VANCOUVER INT'L	16.2	-1.1	24.9	7.9	0.0		46.2	144	0	6	242	78	58.5
VICTORIA GONZ. HTS	14.4	-1.0	20.7	8.0	0.0		7.4	55	0	3	287	83	112.4
VICTORIA INT'L	15.3	-1.0	24.5	6.1	0.0		18.8	103	0	3	279	84	84.9
VICTORIA MARINE	13.2	-0.8	19.2	6.0	0.0		22.4	98	0	3	X		149.4
WILLIAMS LAKE	14.0	-1.4	27.3	3.0	0.0		65.9	136	0	16	238	76	127.0

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YUKON TERRITORY													
BURWASH	13.0	0.7	24.8	0.2			101.3	164	0	12	X		156.5
DAWSON	15.7	1.0	31.3	0.3	0.0		42.0	123	0	7	X		69.2
MAYO	17.0	1.8	30.2	3.4	0.0		49.0	94	0	11	X		54.7
WATSON LAKE	15.5	0.6	28.6	3.6	0.0		138.1	237	0	14	368	140	87.4
WHITEHORSE	14.3	0.2	28.5	4.2	0.0		66.9	197	0	10	269	107	120.6
NORTHWEST TERRITORIES													
ALERT	3.0	-0.6	10.7	-2.5	34.2	308	35.8	183	0	9	272	90	466.6
BAKER LAKE	13.1	2.1	25.7	2.1	0.0		6.3	16	0	2	319	105	237.5
CAMBRIDGE BAY	7.1	-0.8	22.4	0.8	0.0		11.9	60	0	4	298	97	337.0
CAPE DYER	5.4	0.3	15.8	-1.3	0.2	2	23.4	54		4	X		392.2
CAPE PARRY	3.4	-2.3	13.0	-1.7			18.9	111	0	5	X		453.0
CLYDE	3.2	-0.9	18.9	-3.0	33.4	445	35.6	155		6	216	83	467.4
COPPERMINE	9.3	-0.4	26.3	0.3	0.0		20.6	79	0	5	317	99	271.1
CORAL HARBOUR	9.0	0.3	21.8	1.0	0.0		11.5	28	0	4	310	108	279.9
EUREKA	4.3	-1.1	11.3	-0.3			6.4	52	0	1	279	81	425.5
FORT RELIANCE	14.0	0.1	24.9	5.3	0.0		14.4	42	0	5	X		123.5
FORT SIMPSON	17.2	0.6	29.1	5.8	0.0		41.3	69	0	8	368	127	48.4
FORT SMITH	15.8	-0.2	27.2	2.1	0.0		35.2	61	0	12	*		79.2
FROBISHER BAY	8.8	1.2	22.2	1.0	0.0		56.3	88	0	7	247	122	284.1
HALL BEACH	5.9	0.5	21.8	-0.4	0.0		27.4	79	0	7	X		357.9
HAY RIVER	15.0	-0.8	26.9	2.6	0.0		27.5	57	0	7	X		97.5
INUVIK	13.3	-0.3	28.3	1.2	0.0		18.4	54	0	6	277	81	150.2
MOULD BAY	2.6	-1.3	8.5	-1.5	4.6	139	13.5	91	0	6	187	67	479.2
NORMAN WELLS	17.1	0.8	30.0	7.4	0.0		12.3	21	0	3	331	114	56.6
POND INLET	4.1	-0.3	13.4	-6.1	0.6	600	46.8	87	0	9	X		430.8
RESOLUTE	2.2	-1.9	8.8	-2.4	10.4	315	38.6	171		10	198	72	489.8
SACHS HARBOUR													
YELLOWKNIFE	16.6	0.3	28.6	8.8	0.0		21.8	64	0	5	393	102	57.3
ALBERTA													
BANFF	12.5	-2.3	26.0	0.5	0.0		96.4	227	0	15	X		
BROOKS	16.5	-2.0	30.0	6.0	0.0		63.0	157	0		292	*	
CALGARY INT'L	14.6	-1.8	26.2	3.7	0.0		93.7	143	0	13	287	89	107.1
COLD LAKE	16.2	-0.7	28.4	3.8	0.0		150.1	175	0	19	179	57	66.0
CORONATION	14.7	-2.6	29.8	4.2	0.0		142.4	226	0	17	234	69	109.6
EDMONTON INT'L	15.2	-0.6	27.3	6.4	0.0		144.6	157	0	15	211	67	90.0
EDMONTON MUNI.	15.9	-1.5	27.3	8.2	0.0		123.8	139	0	16	218	71	74.0
EDMONTON NAMAO	15.1	-1.8	27.0	7.0	0.0		141.0	184	0	15	X		95.6
EDSON	13.6	-0.8	27.4	5.3	0.0		223.8	250	0	24	175	62	136.7
FORT CHIPEWYAN	15.7	-0.3	26.0	4.0	0.0		53.9	71	0		X		

JULY 1986

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	16.2	-0.2	30.4	6.4	0.0		134.0	177	0	21	328	114	68.1
GRANDE PRAIRIE	15.3	-0.6	28.8	4.0	0.0		105.2	161	0	15	266	*	86.7
HIGH LEVEL	15.9	0.2	29.2	4.5	0.0		80.8	117	0	12	304	103	70.7
JASPER	13.1	-2.0	27.3	4.5	0.0		115.4	232	0	14	188	*	151.9
LETHBRIDGE	16.6	-2.0	30.3	4.6	0.0		12.6	28	0	4	341	98	54.7
MEDICINE HAT	17.6	-2.3	31.4	16.9	0.0		56.9	140	0	11	348	100	36.2
PEACE RIVER	15.9	0.2	27.9	5.4	0.0		67.8	112	0	11	X		71.6
RED DEER	14.1	-2.0	26.2	3.0	0.0		189.5	243	0	20	X		123.1
ROCKY MTN HOUSE	13.4	-1.9	25.8	4.2	0.0		199.2	213	0	20	X		143.4
SLAVE LAKE	15.0	-0.6	26.4	4.6	0.0		99.6	128	0	11	238	97	93.0
SUFFIELD	17.2	-2.2	31.5	5.2	0.0		42.2	129	0	9	321	105	45.4
WHITECOURT	14.3	-0.8	27.0	6.4	0.0		150.2	147	0	22	X		123.1
SASKATCHEWAN													
BROADVIEW	17.2	-0.5	29.1	7.6	0.0		112.0	219	0	13	294	88	37.2
COLLINS BAY	12.8	-1.3	24.9	3.1	0.0		156.5	182	0	14	192	*	162.8
CREE LAKE	14.6	-1.0	26.8	5.8	0.0		160.2	202	0	13	185	66	104.8
ESTEVAN	19.1	-0.8	31.2	9.4	0.0		162.8	300	0	14	306	86	11.2
HUDSON BAY	16.3	-1.0	27.5	6.4	0.0		63.6	79	0	12	257	*	57.0
KINDERSLEY	16.2	-2.1	31.8	5.5	0.0		70.6	147	0	24	X		67.3
LA RONGE	16.1	-0.6	29.8	5.1	0.0		135.5	150	0	18	X		62.3
MEADOW LAKE	15.3	-1.9	29.9	4.2	0.0		169.2	205	0	15	189	*	82.8
MOOSE JAW	18.9	-0.8	33.3	7.8	0.0		35.8	67	0	10	326	94	14.3
NIPAWIN	16.9	*	28.6	7.9	0.0	*	73.8	*	0	13	269	*	39.6
NORTH BATTLEFORD	16.4	-1.7	30.0	5.2	0.0		142.6	219	0	13	X		58.1
PRINCE ALBERT	16.9	-0.5	31.6	6.3	0.0		105.8	162	0	12	239	80	43.3
REGINA	18.0	-0.9	29.9	7.8	0.0		76.8	144	0	11	304	88	25.0
SASKATOON	17.5	-1.0	33.4	4.6	0.0		119.8	221	0	11	X		34.0
SWIFT CURRENT	16.6	-1.7	32.2	7.0	0.0		51.3	109	0	9	317	92	53.4
URANIUM CITY											X		
WYNYARD	16.8	-1.2	28.2	5.2	0.0		88.1	156	0	10	285	87	44.3
YORKTON	17.2	-1.1	28.5	7.5	0.0		125.2	220	0	16	295	89	35.6
MANITOBA													
BRANDON	18.0	-0.8	29.1	7.3	0.0		79.0	118	0	13	X		23.4
CHURCHILL	10.1	-1.7	28.9	-0.3	0.0		48.8	107	0	10	247	86	247.2
DAUPHIN	18.0	-0.5	28.3	6.4	0.0		66.1	103	0	9	254	78	26.1
GILLAM	13.1	-1.9	27.1	3.1	0.0		120.4	128	0	15	X		153.4
GIMLI	18.8	0.2	31.0	9.0	0.0		63.6	109	0	12	283	86	17.9
ISLAND LAKE	16.7	-0.4	29.1	5.5	0.0		100.4	95	0	15	X		64.7
LYNN LAKE	13.6	-2.2	26.9	2.3	0.0		129.4	157	0	15	190	68	138.4
NORWAY HOUSE	16.4	*	26.1	3.9	0.0	*	123.4	*	0	10	*		63.5
PILOT MOUND	18.3	-0.3	29.5	8.9	0.0		153.0	212	0	17	X		23.7
PORTAGE LA PRAIRIE	19.5	-0.2	31.4	11.2	0.0		149.1	195	0	16	X		10.4
THE PAS	16.8	-0.9	28.4	5.0	0.0		116.4	165	0	10	269	88	47.3
THOMPSON	13.8	-1.8	26.7	1.0	0.0		210.7	226	0	14	232	91	210.6
WINNIPEG INT'L	19.5	-0.1	31.0	9.7	0.0		118.0	155	0	12	291	92	9.7
ONTARIO													
ATIKOKAN	17.9	0.7	31.5	4.9	0.0		27.2	25	0	10	250	87	38.2
BIG TROUT LAKE	15.3	-0.7	28.5	4.8	0.0		90.3	95	0	14	268	*	96.3
EARLTON	18.1	0.4	31.0	3.1	0.0		67.3	83	0	14	X		48.8
GERALDTON	17.4	1.1	29.1	4.5	0.0		65.2	79	0	9	X		49.4
GORE BAY	19.5	0.7	29.5	6.8	0.0		58.8	96	0	8	X		17.1
HAMILTON RBG	21.8	0.1	34.0	9.3	0.0		98.4	146	0	9	274	*	
HAMILTON	20.9	0.4	33.0	8.9	0.0		98.6	139	0	10	X		10.3
KAPUSKASING	17.0	0.2	30.5	3.1	0.0		53.0	55	0	9	X		71.0
KENORA	19.6	0.4	29.7	11.4	0.0		104.9	114	0	15	X		15.5
KINGSTON	19.6	-0.5	29.0	9.0	0.0		74.6	140	0	9	252	89	17.6
LANSDOWNE HOUSE	17.0	0.0	30.0	7.1	0.0		90.2	96	0	13	X		59.6
LONDON	20.9	0.6	32.6	7.8	0.0		113.8	157	0	10	260	94	9.0
MOOSONEE	14.7	-0.6	30.1	-1.2	0.0		189.3	197	0	13	241	101	124.6
MOUNT FOREST													
MUSKOKA	18.8	0.5	30.8	6.5	0.0		103.7	133	0	11	X		34.8
NORTH BAY	17.8	-0.5	27.4	5.6	0.0		171.4	167	0	7	237	86	42.0
OTTAWA INT'L	20.1	-0.5	32.5	9.6	0.0		144.4	168	0	10	241	*	20.2
PETAWAWA	18.6	-0.1	33.1	4.1	0.0		65.9	77	0	12	X		38.5
PETERBOROUGH	20.0	0.8	30.7		0.0		59.8	76	0	11	X		19.1
PICKLE LAKE	17.3	0.2	29.8	4.4	0.0		103.4	93	0	11	X		20.6
RED LAKE	18.2	0.0	29.1	6.4	0.0		70.3	80	0	12	260	*	32.1
ST. CATHARINES	21.9	0.2	32.6	9.5	0.0		86.4	125	0	8	X		5.6
SARNIA	21.3	0.4	34.2	9.2	0.0		95.4	157	0	12	291	99	10.0
SAULT STE. MARIE	18.0	0.7	30.0	4.5	0.0		99.9	179	0	8			41.1
SIMCOE											X		
SIOUX LOOKOUT	19.2	0.9	30.2	6.1	0.0		84.8	90	0	9	X		16.8
SUDBURY	18.6	-0.1	29.6	4.6	0.0		85.8	103	0	8	223	77	28.3
THUNDER BAY	17.7	0.1	32.4	4.9	0.0		97.6	129	0	10	232	76	47.2
TIMMINS	17.1	-0.1	31.3	0.8	0.0		64.1	70	0	9	X		61.6
TORONTO	20.6	-1.4	29.9	9.9	0.0		98.5	133	0	9			12.2
TORONTO INT'L	21.0	0.4	34.3	7.8	0.0		122.3	171	0	11	X		10.2
TORONTO ISLAND	20.6		29.9	9.9	0.0		98.5	*	0	9			12.2
TRENTON	20.5	-0.1	31.4	9.6	0.0		45.2	74	0	7	X		
WATERLOO-WELL	19.8	0.0	31.8	7.0	0.0		80.8	107	0	7	X		19.1
WAWA	15.3	*	28.8	1.9	0.0	*	170.0	*	0	11		*	91.2
WIARTON	19.0	0.5	30.6	6.8	0.0		88.5	117	0	7	289	97	29.6
WINDSOR	23.2	1.0	35.2	11.5	0.0		59.3	71			X		

JULY 1986

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	16.4	-1.5	31.9	5.0	0.0		122.3	101	0	13	X		71.3
BAIE COMEAU	14.5	-1.3	27.9	4.4	0.0		73.5	90	0	8	236	*	109.1
BLANC SABLON	10.9	-0.2	25.7	1.6	0.0		73.4	75	0	9	145	*	
CHIBOUGAMAU	15.1	-0.7	30.0	4.0	0.0		107.6	93	0	10	228	91	101.1
GASPE	15.3	-1.0	32.0	3.2			50.6	61	0	8	231	*	91.6
INUKJUAK	10.8	1.5	24.0	2.0	0.0		59.8	110	0	9	265	128	224.3
KUUJJUAQ	10.9	-0.5	30.2	0.8	0.0		22.0	38	0	6	236	119	220.4
KUUJJUARAPIK	10.2	-0.3	28.2	0.0			58.3	70	0	9	226	133	242.8
LA GRANDE RIVIERE	13.8	*	28.9	1.0	0.0	*	67.4	*	0	7	259	*	146.3
MANIWAKI	18.1	-0.2	30.2	4.9	0.0		85.0	92	0	12	216	79	46.4
MATAGAMI	15.7	0.1	31.0	2.5	0.0		69.7	66	0	8	232	92	69.5
MONT JOLI	15.5	-1.8	31.2	7.8	0.0		97.3	129	0	13	242	95	83.9
MONTREAL INT'L	19.6	-1.3	32.3	8.9	0.0		93.6	104	0	6	240	87	23.2
MONTREAL M INT'L	18.4	*	31.4	5.6	0.0	*	56.2	*	0	5	245	*	39.3
NATASHQUAN	13.1	-1.1	24.2	5.4	0.0		29.8	31	0	8	224	91	151.2
QUEBEC	17.5	-1.6	30.4	5.5	0.0		113.4	97	0	10	217	87	49.3
ROBERVAL	17.6	-0.3	31.5	6.3	0.0		141.2	118	0	11	228	*	49.1
SCHEFFERVILLE	11.8	-0.8	25.6	4.4	0.0		99.8	103	0	15	179	*	187.8
SEPT-ILES	14.5	-1.4	25.4	6.5	0.0		49.8	51	0	10	227	93	110.3
SHERBROOKE	17.1	-0.7	31.4	3.8	0.0		134.6	114	0	9	214	*	58.7
STE AGATHE DES MONTS	16.8	-0.4	29.6	4.7	0.0				0	8	211	76	68.9
ST-HUBERT	19.1	-1.6	31.8	6.9	0.0		104.6	107	0	8	*		28.5
VAL D'OR	16.8	-0.3	29.4	4.0	0.0		54.2	53	0	12	222	85	70.0
NEW BRUNSWICK													
CHARLO	16.3	-1.1	32.1	7.0	0.0		108.5	125	0	11	211	83	69.6
CHATHAM	17.0	-2.2	33.8	6.1	0.0		96.7	106	0	14	208	82	52.6
FREDERICTON	17.5	-1.8	33.1	7.0	0.0		83.3	93	0	14	207	*	44.0
MONCTON	16.9	-1.6	30.6	7.8	0.0		161.1	169	0	11	196	80	55.1
SAINT JOHN	16.2	-0.7	26.3	9.0	0.0		68.2	65	0	11	185	84	60.0

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	18.1	-1.0	33.1	7.0	0.0		185.1	238	0	10	X		36.1
HALIFAX INT'L	16.7	-1.5	28.3	8.2	0.0		138.4	146	0	11	*		58.7
SABLE ISLAND	14.5	-1.0	22.2	9.2	0.0		171.2	186	0	12	176	107	109.8
SHEARWATER	16.4	-1.0	26.6	7.8	0.0		133.1	137	0	11	207	94	62.2
SYDNEY	15.0	-2.7	30.5	5.2	0.0		115.8	142	0	13	196	80	102.7
TRURO	15.6	-2.2	28.6	3.5	0.0		160.8	175	0	12	190	84	85.3
YARMOUTH	16.1	-0.2	25.6	9.7	0.0		137.4	176	0	10	211	101	68.5
PRINCE EDWARD ISLAND													
CHARLOTTETOWN	16.6	-1.7	28.6	6.4	0.0		137.3	162	0	14	X		68.5
SUMMERSIDE	16.7	-2.2	27.4	9.0	0.0		138.5	177	0	12	197	74	57.7
NEWFOUNDLAND													
ARGENTIA	12.0	-2.0	23.7	5.6	0.0		70.6	97	0	9	X		186.1
BATTLE HARBOUR	10.7	-0.1	29.9	1.8	0.0		45.4	64	0	13	X		226.0
BONAVISTA	13.0	-1.7	25.1	5.7	0.0		94.8	155	0	14	X		157.7
BURGEO	12.9	-0.6	22.7	6.5	0.0		79.9	58	0	8	*		155.9
CARTWRIGHT	8.6	-4.1	27.8	1.8	0.0		118.6	142	0	10	163	82	268.0
CHURCHILL FALLS	12.8	-0.9	27.4	2.7	0.0		107.5	89	0	15	214	106	162.1
COMFORT COVE	13.8	-2.8	27.6	3.9	0.0		86.4	109	0	16	X		139.9
DANIEL'S HARBOUR	12.3	-2.1	23.5	6.2	0.0		55.0	61	0	10	206	100	175.4
DEER LAKE	14.9	-1.0	29.4	3.4	0.0		64.0	82	0	13	X		102.4
GANDER INT'L	14.0	-2.5	26.9	2.7	0.0		113.2	164	0	15	191	89	134.7
GOOSE	13.3	-2.5	29.0	1.2	0.0		87.8	83	0	11	188	95	153.5
PORT-AUX-BASQUES	13.6	0.4	22.5	7.3	0.0		84.8	78	0	15	201	*	148.9
ST ANTHONY	10.0	*	24.6	2.8	0.0	*	64.2	*	0	7	*	*	238.5
ST JOHN'S	13.0	-2.5	26.6	5.6	0.0		87.8	116	0	10	183	83	157.1
ST LAWRENCE	12.8	*	24.0	3.8	0.0	*	96.6	*	0	10		*	
STEPHENVILLE	14.8	*	27.5	7.4	0.0	*	79.2	*	0	10	187	*	107.6
WABUSH LAKE	13.0	*	25.0	3.5	0.0	*	129.8	*	0	11	196	*	

AGROCLIMATOLOGICAL STATIONS — **JULY 1986**

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	16.3	-1.6	27.0	7.0	0.0	89.0	193	0	8	184	349.0	1235.5
KAMLOOPS												
SIDNEY												
SUMMERLAND	18.1	-2.8	30.5	8.5	0.0	39.2	176	0	9	265	408.5	1244.0
ALBERTA												
BEAVERLODGE	15.0	-0.2	28.0	3.0	0.0	108.0	168	0	16	246	313.0	754.3
ELLERSLIE	14.6	-1.4	26.6	5.2	0.0	128.0	151	0	16	213	298.1	827.8
FORT VERMILLION												
LACOMBE	14.0	-2.1	26.0	5.5	0.0	143.7	198	0	20	250	283.0	795.7
LETHBRIDGE												
VAUXHALL												
VEGREVILLE	14.6	-1.7	26.5	4.0	0.0	130.2	174	0	18		300.5	853.0
SASKATCHEWAN												
INDIAN HEAD	18.0	-0.6	30.0	7.5	0.0	138.0	259	0	12		306.5	1068.0
MELFORT	16.7	-0.7	28.5	6.5	0.0	89.8	139	0	11	220	362.5	954.0
REGINA	17.3	-1.3	29.0	0.5	0.0	79.0	149	0	9		389.5	976.5
SASKATOON	17.1	-1.3	33.0	4.5	0.0	115.8	206	0	16	265	378.5	993.5
SCOTT												
SWIFT CURRENT SOUTH	17.0	-1.5	32.5	7.0	0.0	32.4	84	0	7	284	371.6	1019.4
MANITOBA												
BRANDON	18.9	-0.3	29.7	8.6	0.0	87.4	125	0	11		432.6	1100.6
GLENLEA	19.1	-0.5	29.9	8.5	0.0	189.6	256	0	16	283	437.5	1035.5
MORDEN	20.0	-0.2	33.0	11.5	0.0	99.2	135	0	13	272	472.5	1211.0
ONTARIO												
DELHI	20.9	0.2	33.0	7.0	0.0	70.2	99	0	8	273	400.8	1318.2
ELORA	19.4	0.3	31.4	7.2	0.0	84.6	115	0	10		444.6	1166.7
GUELPH	19.9	0.2	32.5	5.5	0.0	134.0	162	0	10	239	462.4	1227.1
HARROW	122	0.6	34.0	12.4	0.0	73.6	93	0	8	286	530.8	1468.6
KAPUSKASING												
MERIVALE												
OTTAWA	19.7	0.9	31.5	7.8	0.0	120.8	141	0	10	241	357.2	1271.0
SMITHFIELD	21.2	1.0	31.0	9.0	0.0	51.6	76	0	9		500.1	1306.2
VINELAND STATION	21.3	-0.2	32.2	9.8	0.0	142.6	230	0	10	238	506.1	1293.4
WOODSLEE												
QUEBEC												
LA POCATIERE												
L'ASSUMPTION	18.8	-1.4	32.5	5.5	0.0	47.8	51	0	8	237	428.9	1143.5
LENNOXVILLE												
NORMANDIN	15.6	-1.3	29.5	2.0	0.0	150.8	132	0	15	209	329.3	732.5
ST. AUGUSTIN												
STE CLOTHILDE	19.6	-0.6	33.0	5.5	0.0	184.2	203	0	12	219	453.9	1238.3
NEW BRUNSWICK												
FREDERICTON												
NOVA SCOTIA												
KENTVILLE												
NAPPAN												
PRINCE EDWARD ISLAND												
CHARLOTTETOWN												
NEWFOUNDLAND												
ST. JOHN'S WEST			25.5	6.0	0.0						266.2	632.5