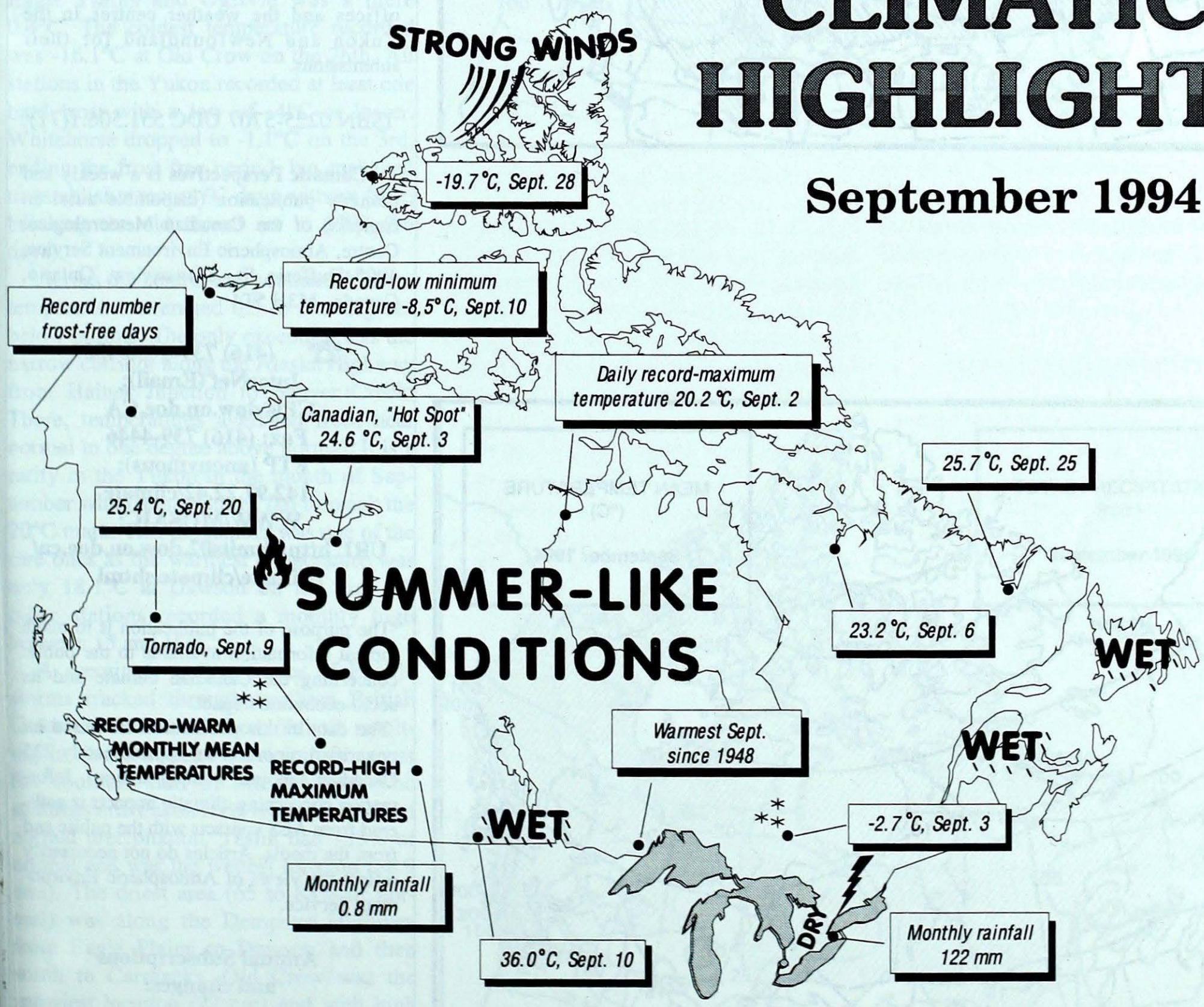
Climatic Perspectives

September 1994 — ***Monthly review of Canadian climate and water*** — *vol. 16*

CLIMATIC HIGHLIGHTS

September 1994



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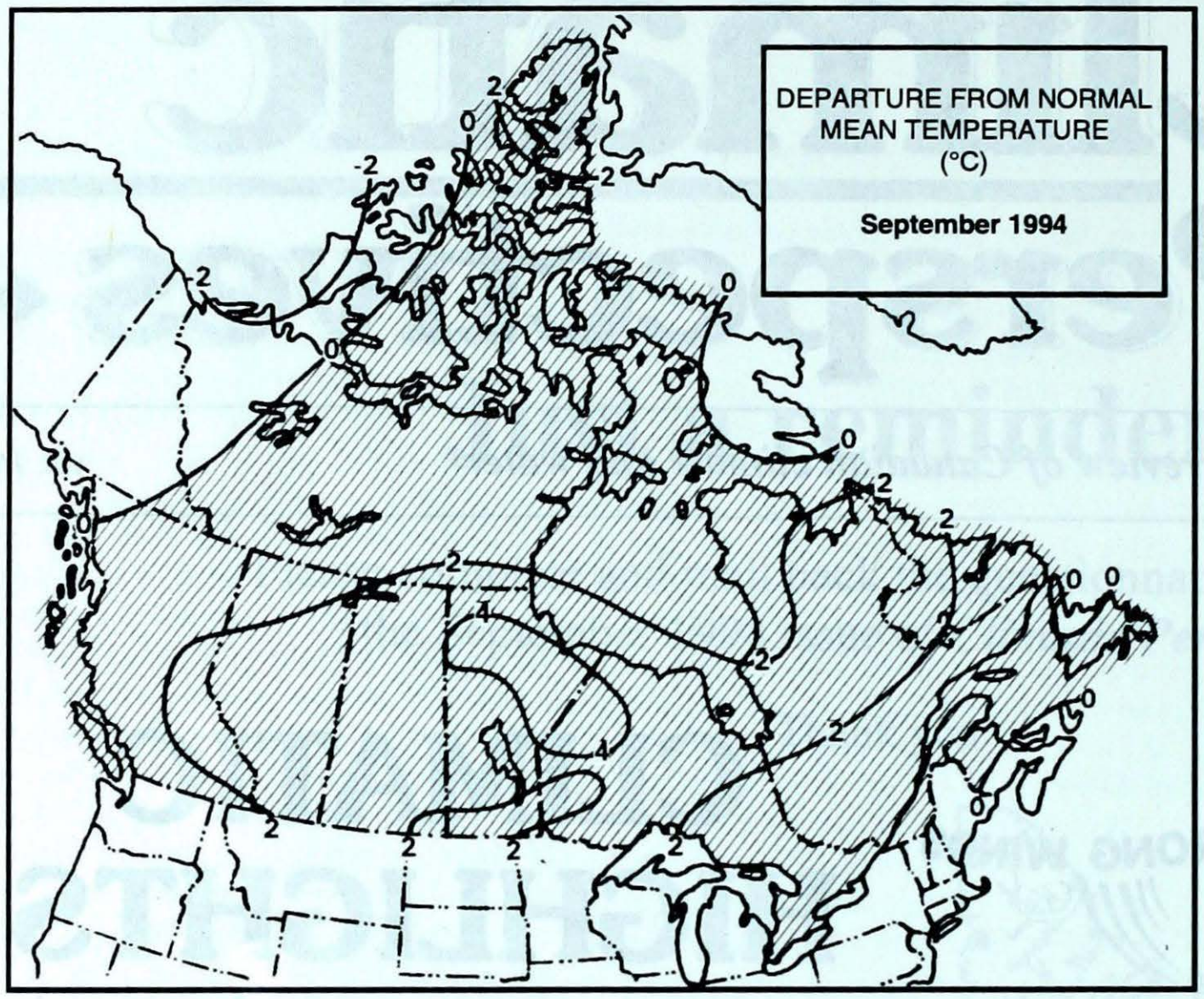

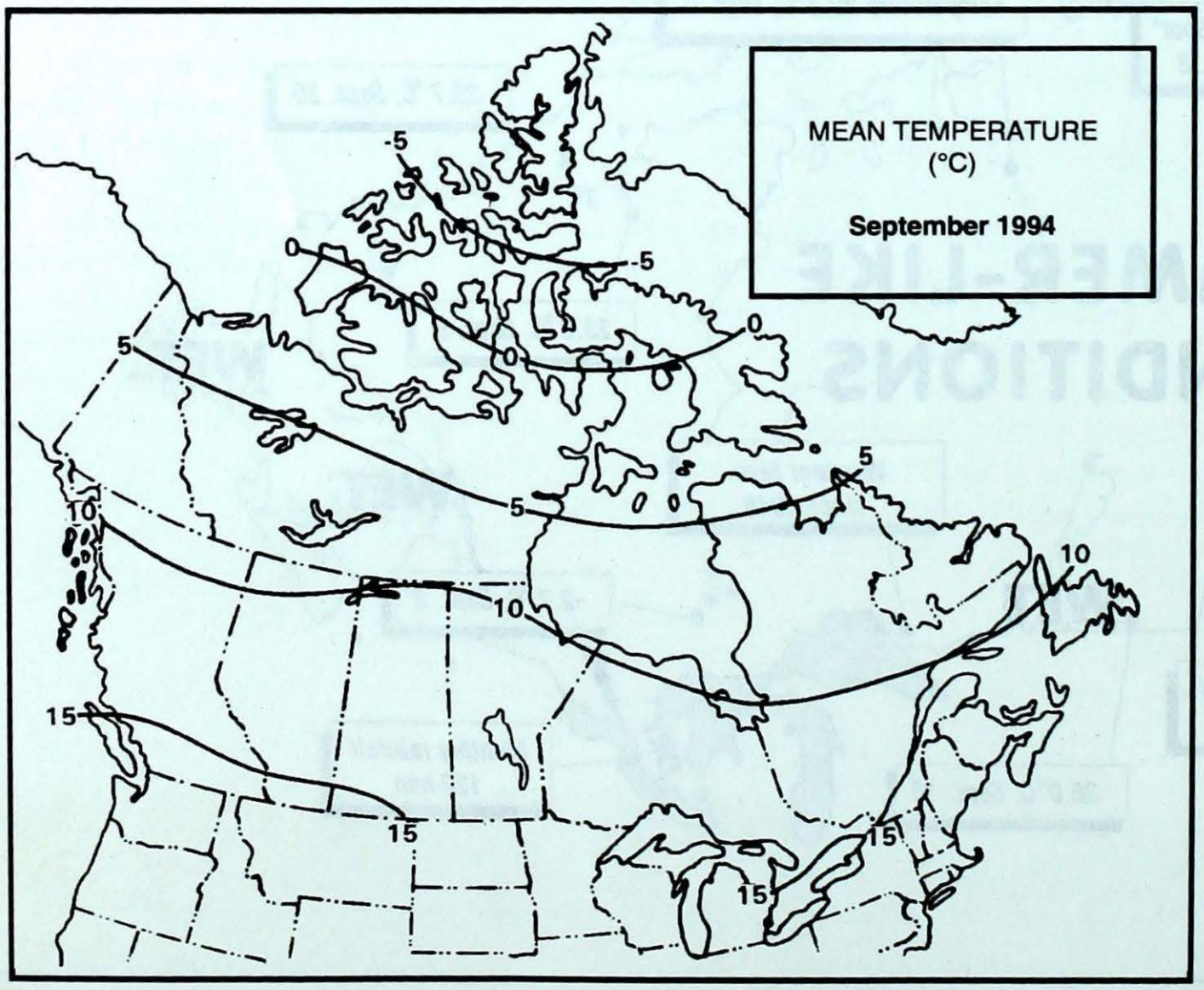

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VOLUME 16

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The purpose of the publication is to make topical information available to the public concerning the Canadian climate and its socio-economic impact.

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

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Across the country

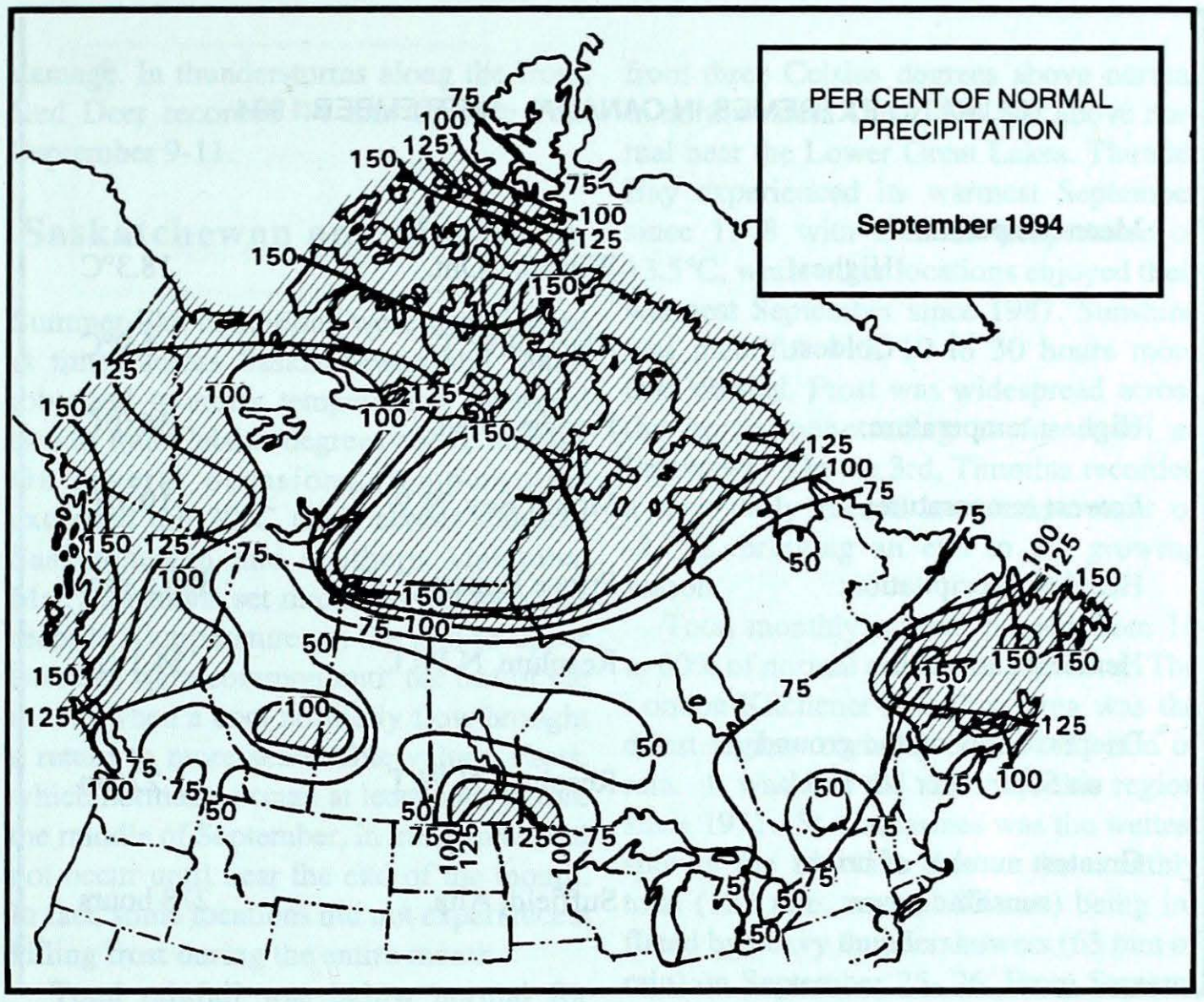
Yukon

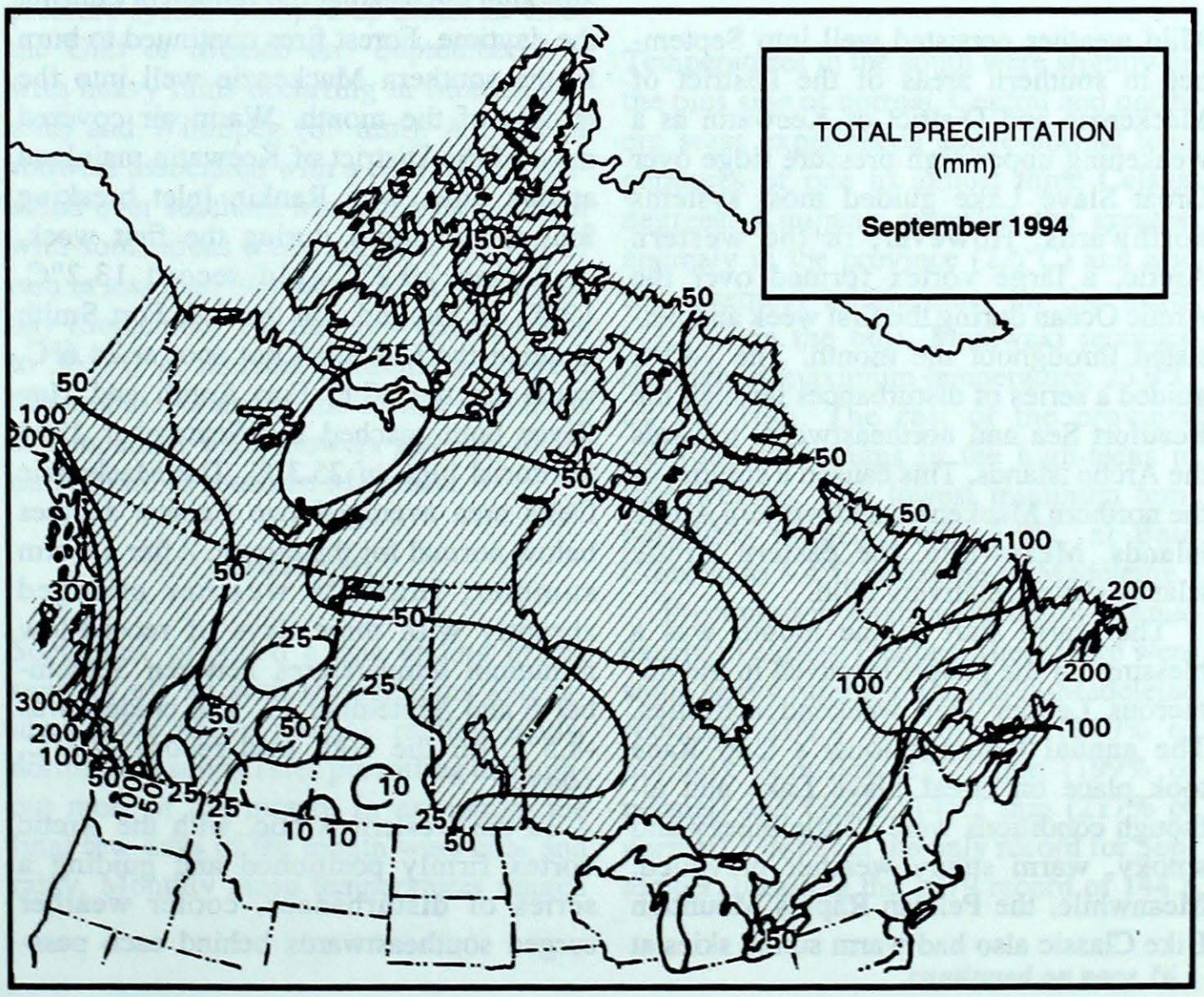
Memories of the hottest month on record (August 1994) were fresh on everyone's minds as September dawned across the Yukon. Hopes were high that the good weather would continue into the fall. It was not to be. On average, September turned out to be colder and wetter than normal and signs of winter appeared in the north.

Temperatures averaged below normal in all but the extreme southeast corner of the territory. The northern Yukon averaged two to three Celsius degrees below normal. The monthly mean temperature at both Eagle Plains and Ogilvie was a mere 0.4°C. The coldest temperature recorded was -16.1°C at Old Crow on the 26th. All stations in the Yukon recorded at least one hard frost with a low of -4°C or lower. Whitehorse dropped to -1.1°C on the 3rd, ending the frost-free period, but managed to establish a record 97 days without frost, breaking the old record set in 1993 (96 days).

Across the central and southern Yukon, temperatures averaged 0.5 to two degrees below normal. The only exception was the narrow corridor along the Alaska Highway from Haines Junction to Beaver Creek. There, temperatures averaged from near normal to one degree above normal. It is a rarity in the Yukon in the month of September when temperatures fail to reach the 20°C mark. This September was one of the rare ones as the warmest temperature was only 18.1°C at Dawson on the 3rd. All other stations recorded a monthly high between 15 and 18°C.

A seemingly-endless series of Pacific storms tracked through northern British Columbia and the southern Yukon, resulting in above-average precipitation across the southern half of the territory. The southeastern Yukon received over 150% of normal precipitation. Teslin had 185% of normal and was the wettest location (88.9 mm). The driest area (65 to 85% of normal) was along the Dempster Highway from Eagle Plains to Dawson and then south to Carmacks. Old Crow was the snowiest location (27 cm) and with high winds, poor visibility was recorded on more than one occasion. All stations recorded at least a trace of snow. The moun-





CLIMATIC EXTREMES IN CANADA - SEPTEMBER 1994

Mean temperature:		
Highest	Windsor, Ont.	18.3°C
Coldest	Alert, N.W.T.	-6.9°C
Highest temperature:	Pierson, Man.	36.0°C
Lowest temperature:	Mould Bay, N.W.T.	-19.7°C
Heaviest precipitation:	Prince Rupert, B.C.	386.5 mm
Heaviest snowfall:	Resolute, N.W.T.	54.1 cm
Deepest snow on the ground on September 30, 1994:	Resolute, N.W.T.	22 cm
Greatest number of bright sunshine hours:	Suffield, Alta.	278 hours

tain tops were dusted with snow across the southern Yukon and were well-covered in central and northern areas by the end of the month.

Northwest Territories

Mild weather persisted well into September in southern areas of the District of Mackenzie and District of Keewatin as a weakening upper high pressure ridge over Great Slave Lake guided most systems northwards. However, in the western Arctic, a large vortex formed over the Arctic Ocean during the first week and persisted throughout the month. The vortex guided a series of disturbances through the Beaufort Sea and northeastwards towards the Arctic islands. This caused a cooling of the northern Mackenzie and western Arctic islands. Meanwhile, the eastern Arctic islands stayed relatively mild.

The warm start to the month was a blessing for the people involved in the numerous Labour Day weekend activities. The annual Commissioner's Cup Race took place on Great Slave Lake and although conditions were a little breezy and smoky, warm sunny weather prevailed. Meanwhile, the Pelican Rapids Mountain Bike Classic also had warm sunny skies at Fort Smith. Farther north, Dizzy Daze in Aklavik was warm and sunny until Sunday evening, when a cold front swept over the Mackenzie Delta. Unfortunately, Coppermine remained cloudy and cool for the Labour Day Weekend Fishing Derby, although the weather did remain dry during the daytime. Forest fires continued to burn in the southern Mackenzie well into the middle of the month. Warm air covered most of the District of Keewatin mainland at this time, with Rankin Inlet breaking four record highs during the first week, including 20.2°C (old record 13.2°C, 1988) on the 2nd. On the 3rd, Fort Smith claimed the Canadian hot spot at 24.6°C, while on the 17th, Fort Smith and Hay River both reached the September 1994 territorial high of 25.3°C. The Mackenzie Delta area averaged two Celsius degrees below normal for the month. After a warm summer, Inuvik's weather changed abruptly with three days of record-low minimum temperatures between September 6 and September 11. The coldest was -8.5°C on the 10th (old record -7.8°C, 1963).

In the western Arctic, with the Arctic vortex firmly positioned and guiding a series of disturbances, cooler weather surged southeastwards behind each passing cold front. Mould Bay cooled steadily to -19.7°C by the 28th. These Arctic storms produced very strong winds over the Arctic islands, especially Ellesmere Island. From September 25-27, high winds and blizzard conditions covered a large area from Ellesmere Island to the Melville Peninsula. Alert recorded gusts to 140 km/h.

The District of Keewatin also had its share of winds. Baker Lake recorded gusts to 90 km/h on the 19th, as did Coral Harbour on the 29th. As these storms approached Baffin Island (District of Franklin), Iqaluit received 10 to 12 cm of snow on two separate occasions. Cape Dorset had a blizzard on the 16th. On the 27th, the school in Clyde River was closed due to flying debris caused by winds gusting over 100 km/h. By month's end in the High Arctic, low temperatures were in the -10 to -15°C range. Resolute Bay had 22 cm of snow on the ground on the 30th.

British Columbia

The month began on an unsettled note across the province but improved later in the month. The monthly statistics were quite variable. Above-average temperatures, below-average precipitation and below-average sunshine predominated. Sunshine totals were 65 to 90% of average in the north, near 105% on the coast and 120 to 130% in the interior.

In the south, temperatures were two to three Celsius degrees above average in the interior dropping to one to two degrees above on the coast and slightly-below average in the northwest. New monthly mean temperatures were established at Blue River (12.9°C, old record 12.7°C, 1990), Cape Scott (15.9°C, old record 14.9°C, 1967), Kelowna (16.0°C, old record 15.9°C, 1987) and Revelstoke (15.0°C, old record 14.7°C, 1987, 1990). On the 24th, Prince George set a daily record-maximum temperature of 25.4°C (old record 24.4°C, 1974), while in the south, Lytton recorded 31.1°C.

Precipitation was 125 to 165% of average in most southern coastal areas. In exception were a small area in the central Strait of Georgia, central Vancouver Island and the eastern Fraser Valley where values were near 75% of average. In the interior, totals ranged from 40% of average to just above average at Prince George. Cran-

brook, however, reported only 11% of normal. In the north, east of the Rocky Mountains, values were 70 to 85%, rising to 150 to 175% in western and coastal sections. Prince Rupert recorded 237.8 mm of rain from September 12-18. Drier weather in the middle of the month allowed harvesting in the Peace River region to resume after unsettled weather early in the month. Snow occurred at higher elevations in the south on the 9th, causing several traffic accidents. Close to 30 cm of snow fell along the Alaska Highway at Summit Lake, September 30-October 1.

Alberta

Temperatures were two to three Celsius degrees above normal across all but the northwest portions of the province. The central and northern areas of the province frequently experienced a seesaw of warming and cooling trends. Temperatures climbed well into the twenties on a few occasions and even into the low thirties. Medicine Hat recorded 30.6°C on the 8th. Fort McMurray set a daily record of 29.2°C on the 17th (old record 27.8°C, 1951). Warm Pacific air allowed daily record-maximum temperatures on September 22 that included Edmonton International (29.0°C, old record 27.8, 1987), Lloydminster (28.1°C, old record 28.9), and Calgary (29.0°C, old record 28.7, 1987). On the 23rd, Lethbridge recorded 31.7°C, (old record 31.1°C, 1949). In contrast, rain and wet snow hit central areas on the 30th with temperatures cooling to maximums of 5 to 10°C. Meanwhile, a small area in the southeast was still warm, including Lethbridge, which recorded a maximum of 26.3°C. The first general frost didn't occur until the 21st from the Peace River area to Lethbridge.

Precipitation totals were below normal across the south with the exception of Grande Prairie, 110% of normal and the Red Deer/Edmonton area (141 to 178% of normal). Red Deer recorded 36 mm of rain September 3-4. Unstable air along a cold front near Trochu (100 km northeast of Calgary) provided the right conditions for the formation of an F-0 tornado on the 9th. This was Alberta's only tornado of the month and fortunately there was no damage. In thunderstorms along the front, Red Deer recorded 44 mm of rain from September 9-11.

Saskatchewan and Manitoba

Summer-like conditions were experienced at times across Saskatchewan and Manitoba and monthly temperatures averaged two to four Celsius degrees above normal. On several occasions, temperatures exceeded the 30°C mark across southern Saskatchewan and southern Manitoba. Many locations set maximum temperature records. Temperatures in the mid-to-upper twenties were common until the last of the month when a cool northerly flow brought a return to more seasonable values. Frost, which normally occurs at least once before the middle of September, in most areas, did not occur until near the end of the month. In fact, some locations did not experience a killing frost during the entire month.

Total rainfall was below normal for most areas. In parts of southern Saskatchewan it was less than half the normal amount. Saskatoon, Saskatchewan, experienced its driest September in over 100 years, receiving only 0.8 mm of precipitation over the entire month. Southern Manitoba, however, received more than normal precipitation (near 130% of normal). A low pressure system pumped up moist air from the Gulf of Mexico on September 3-4, with heavy rains occurring in Morden (69 mm) and Winnipeg (63 mm). A band of showers associated with a cold front intensified over southern Manitoba on the 11th with some areas receiving over 30 mm of rain in less than two hours. This followed a day (September 10) that saw temperatures to 36.0°C at Pierson, (extreme southwest Manitoba). Again, on the 15th, a cold front accompanied with showers gave up to 25 mm of rain to southern Manitoba.

Ontario

September provided a fine ending to the summer of '94 with temperatures averaging a little above normal, rainfall below normal and sunny skies prevailing throughout most of the month. In exception, the final few days of the month were cool and rainy. Monthly mean temperatures ranged from three Celsius degrees above normal in northwestern Ontario to just above normal near the Lower Great Lakes. Thunder Bay experienced its warmest September since 1948 with a mean temperature of 13.5°C, while other locations enjoyed their warmest September since 1987. Sunshine was plentiful with 10 to 30 hours more than normal. Frost was widespread across the north, penetrating as far south as Petawawa. On the 3rd, Timmins recorded a new daily record-low temperature of -2.7°C, bringing an end to the growing season.

Total monthly rainfall ranged from 10 to 60% of normal across the province. The London-Kitchener-Hamilton area was the driest region receiving only 30-35 mm of rain. It was also the driest for this region since 1971. St. Catharines was the wettest spot in the province due to the monthly total (122 mm, normal 80 mm) being inflated by heavy thundershowers (63 mm of rain) on September 25- 26. From September 27-29, St. Catharines recorded another 53 mm of rain. The September 25-26 storm, on an easterly track over Lake Ontario, generated some of the most intense lightning that residents in the Oshawa area had ever seen.

Quebec

Temperatures in the south were slightly on the plus side of normal. Central and northern areas experienced above-normal temperatures of one to almost three Celsius degrees. Kuujjuaq recorded the greatest anomaly in the province (2.6°C) and also the warmest temperature in the north (23.2°C on the 6th). Maniwaki recorded the highest maximum temperature, 25.9°C on the 16th. The rest of the province recorded maximums in the high-teens to low-twenties. The lowest minimum temperatures ranged from -1.9°C at Baie Comeau to 4.4°C at Îles-de-la-Madeleine.

Precipitation totals were below normal except in eastern Quebec where there were some heavy rainfalls. Îles-de-la-Madeleine recorded 109.4 mm of rain (140% of normal), Sept-Îles, 221.7 mm (199% of normal) and Gaspé, 145.2 mm (217% of normal). Gaspé set the only record for September, breaking the 1979 record of 144.8

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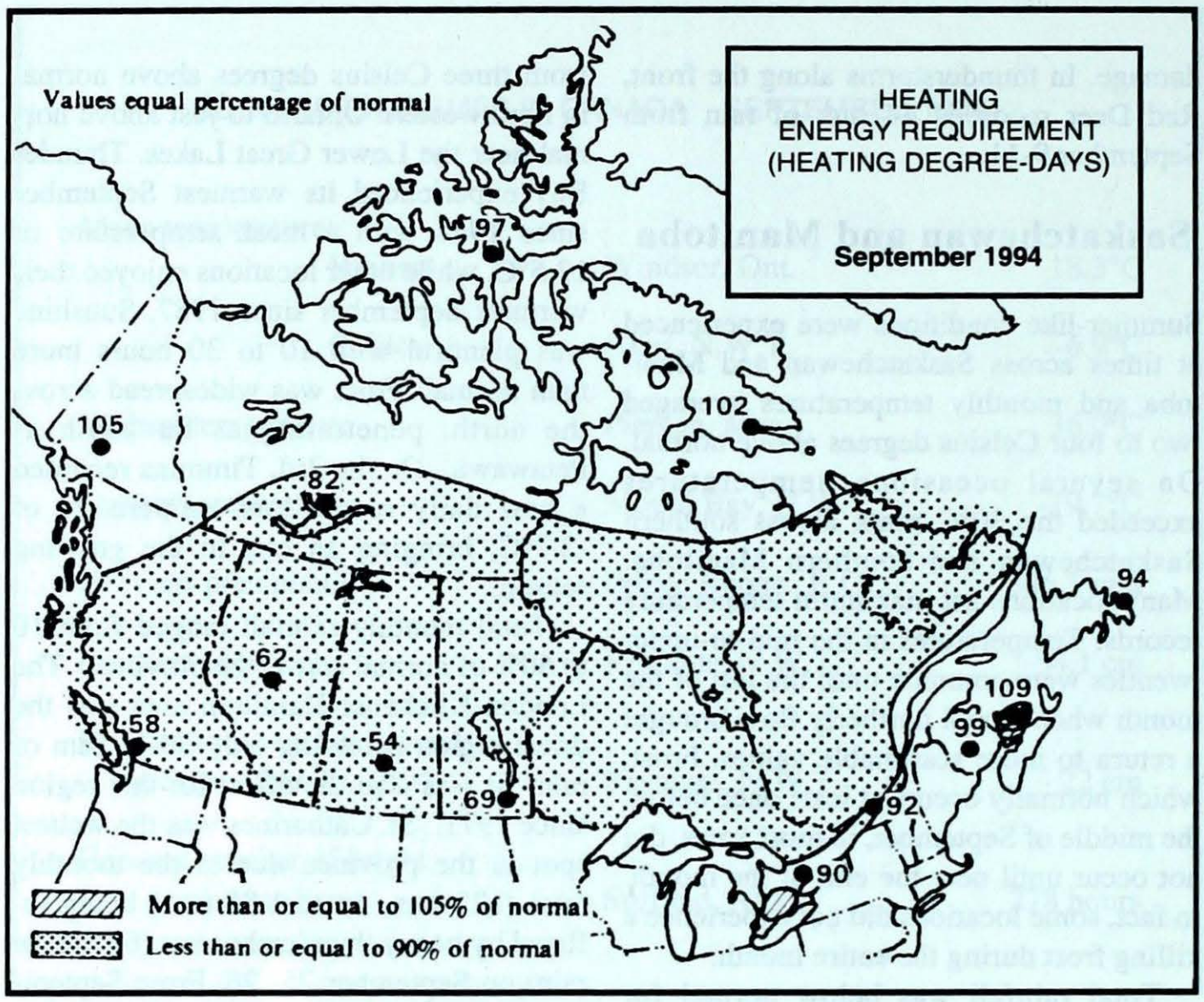
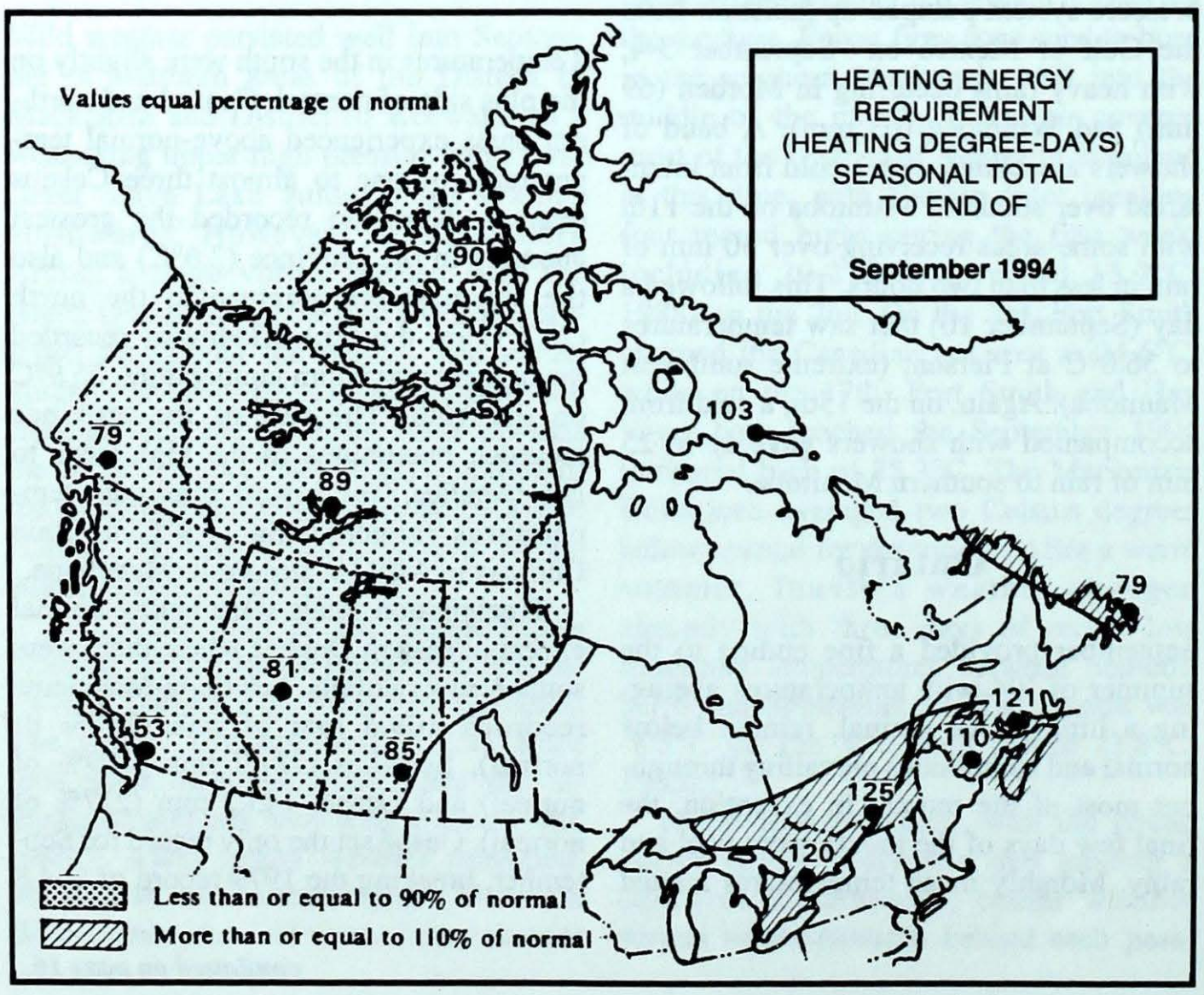


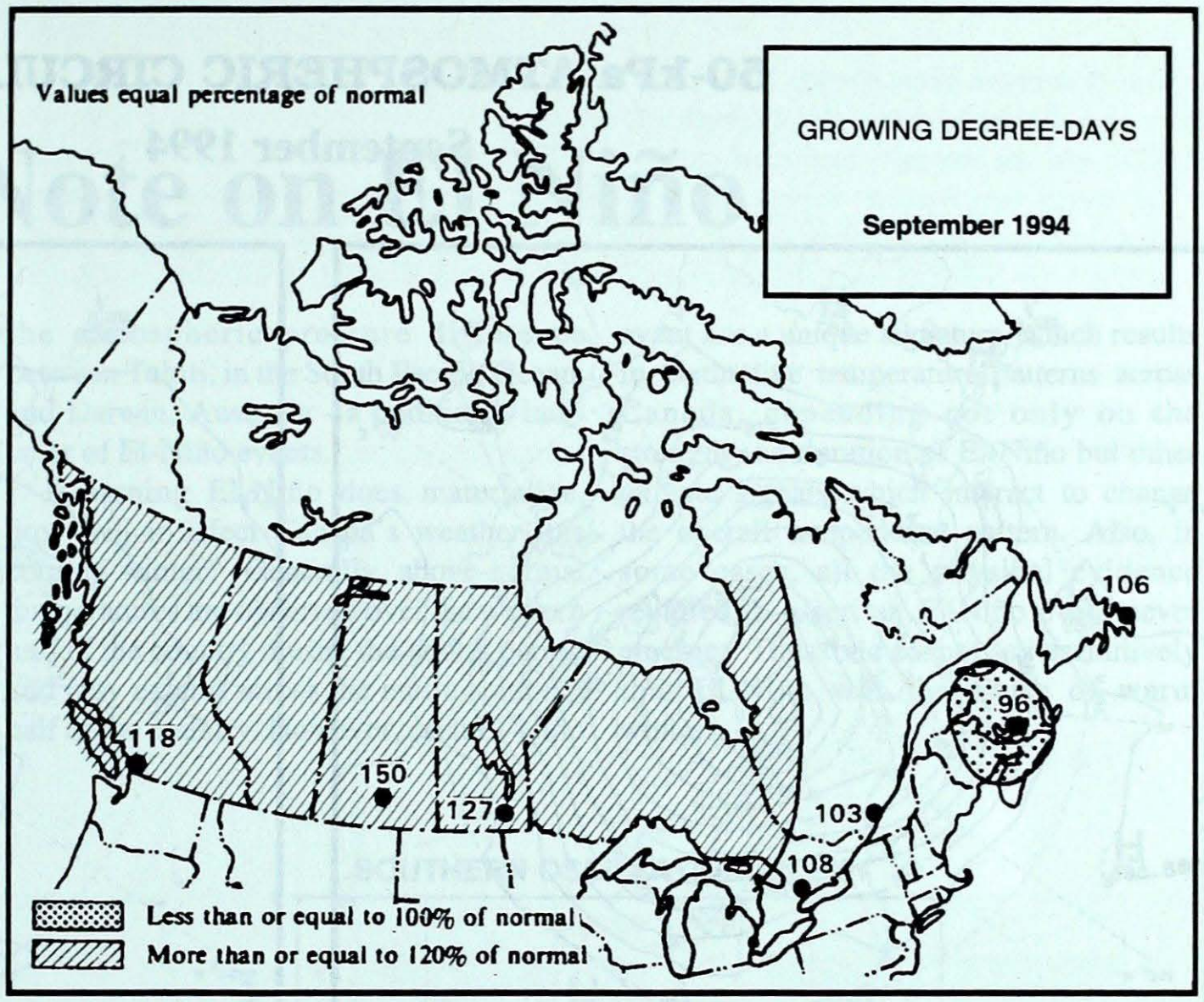


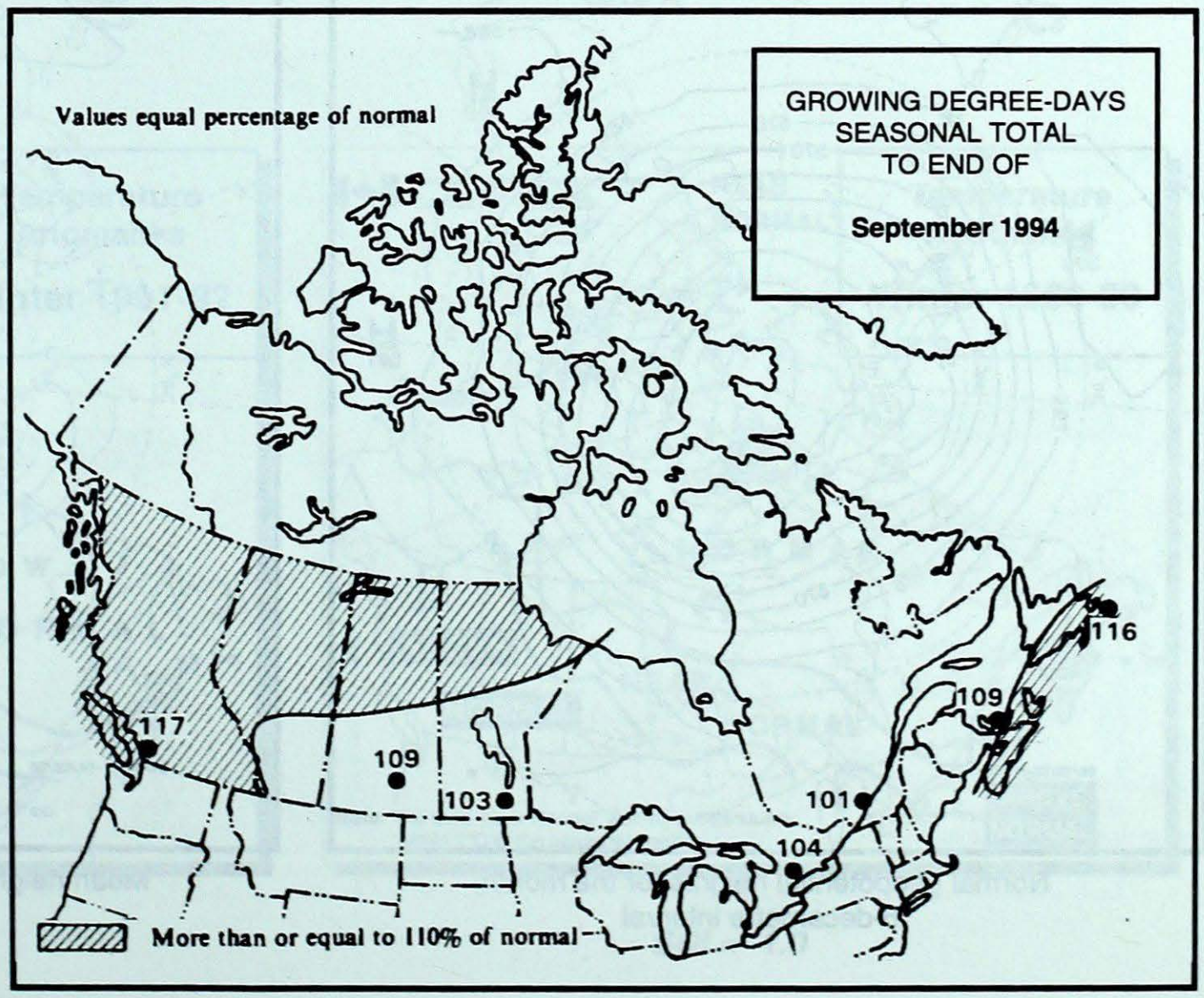
SEASONAL TOTAL OF HEATING DEGREE-DAYS TO END OF SEPTEMBER

	1994	1993	NORMAL
BRITISH COLUMBIA			
Kamloops	45	105	96
Penticton	58	142	104
Port Hardy	341	398	455
Vancouver	89	175	167
Victoria	145	244	239
YUKON TERRITORY			
Whitehorse	481	563	611
NORTHWEST TERRITORIES			
Iqaluit	1176	1200	1138
Inuvik	635	703	813
Yellowknife	356	555	515
ALBERTA			
Calgary	299	497	361
Edmonton Mun.	232	350	287
Grande Prairie	322	433	414
SASKATCHEWAN			
Estevan	199	359	175
Regina	178	369	210
Saskatoon	236	410	238
MANITOBA			
Brandon	264	403	221
Churchill	657	834	780
Dauphin	258	370	237
Winnipeg	213	298	177
ONTARIO			
Kapuskasing	365	384	364
London	122	164	80
Ottawa	127	455	113
Sudbury	230	257	203
Thunder Bay	282	358	276
Toronto	96	149	80
Windsor	48	99	35
QUEBEC			
Baie Comeau	424	434	424
Montréal	125	131	100
Québec	216	185	188
Sept-Îles	481	493	471
Sherbrooke	252	229	253
Val-d'Or	360	355	335
NEW BRUNSWICK			
Fredericton	173	177	156
Moncton	198	216	177
NOVA SCOTIA			
Sydney	*	*	173
Yarmouth	174	180	237
PRINCE EDWARD ISLAND			
Charlottetown	194	225	161
NEWFOUNDLAND AND LABRADOR			
Gander	315	451	321
St. John's	282	472	357

SEASONAL TOTAL OF GROWING DEGREE-DAYS TO END OF SEPTEMBER

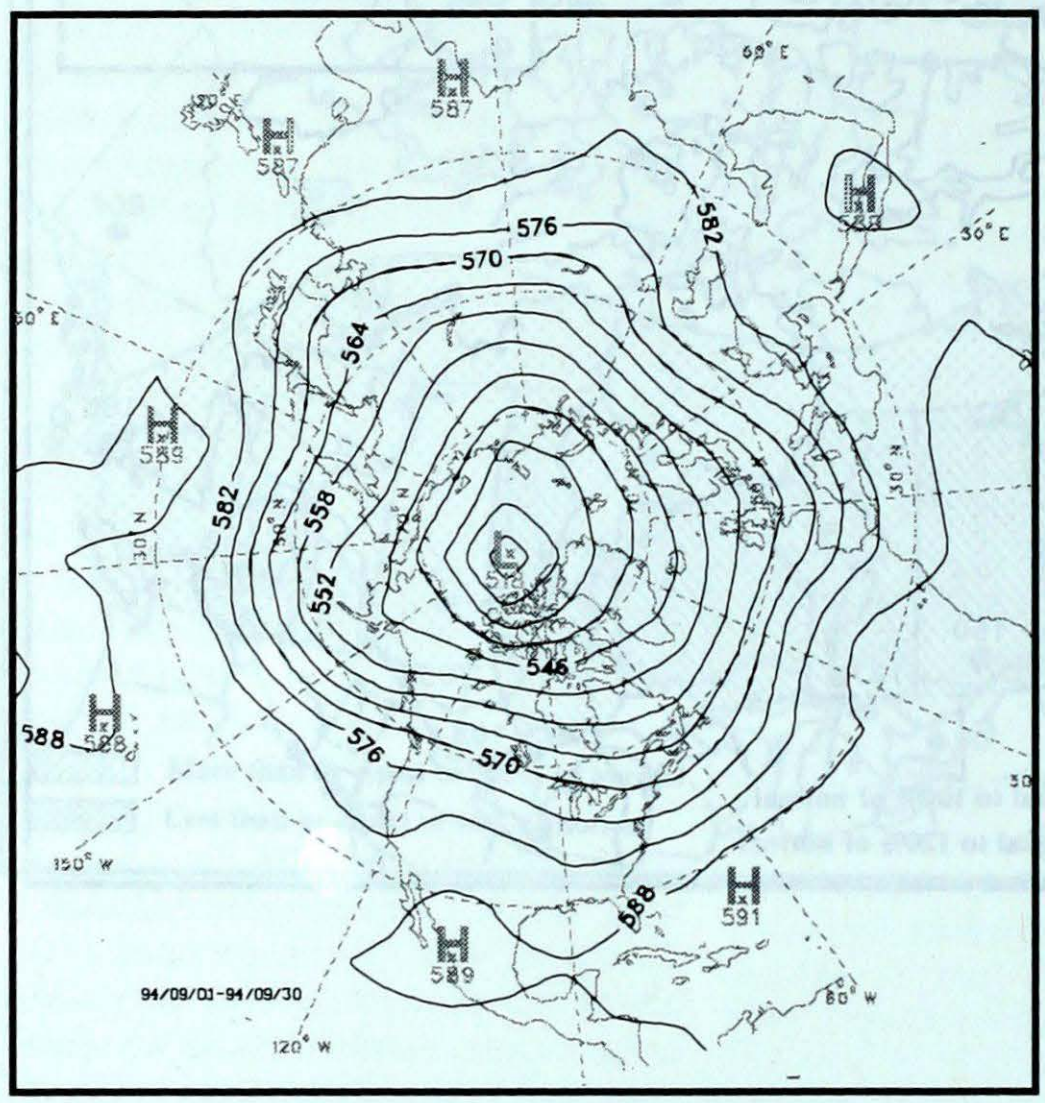
	1994	1993	NORMAL
BRITISH COLUMBIA			
Abbotsford	2010	1762	1644
Kamloops	2293	1923	2001
Penticton	2232	1918	1946
Prince George	1407	*	1112
Vancouver	1948	1733	1671
Victoria	1806	1605	1549
ALBERTA			
Calgary	*	*	*
Edmonton Mun.	*	1417	*
Grande Prairie	*	*	*
Lethbridge	*	*	*
Medicine Hat	1868	*	1697
Peace River	*	*	*
SASKATCHEWAN			
Estevan	1611	*	1607
Prince Albert	*	*	*
Regina	1649	*	1510
Saskatoon	1501	*	1456
MANITOBA			
Brandon	1482	*	1479
Churchill	*	*	*
Winnipeg	1649	*	1594
ONTARIO			
London	1770	*	1791
North Bay	1463	*	1387
Ottawa	1857	*	1801
Thunder Bay	1350	*	1299
Toronto	1910	*	1829
Trenton	1835	*	1845
Windsor	2167	*	2115
QUEBEC			
Baie Comeau	1031	*	1015
Bagotville	1354	*	1329
Montréal	1884	*	1866
Québec	1559	*	1489
Sept-Îles	934	*	909
Sherbrooke	1509	*	1365
NEW BRUNSWICK			
Fredericton	1538	1564	1423
Moncton	1495	1396	1392
NOVA SCOTIA			
Yarmouth	1407	1407	1315
PRINCE EDWARD ISLAND			
Charlottetown	1402	1349	1288
NEWFOUNDLAND AND LABRADOR			
St. John's	1103	764	953
Stephenville	1075	1154	1028



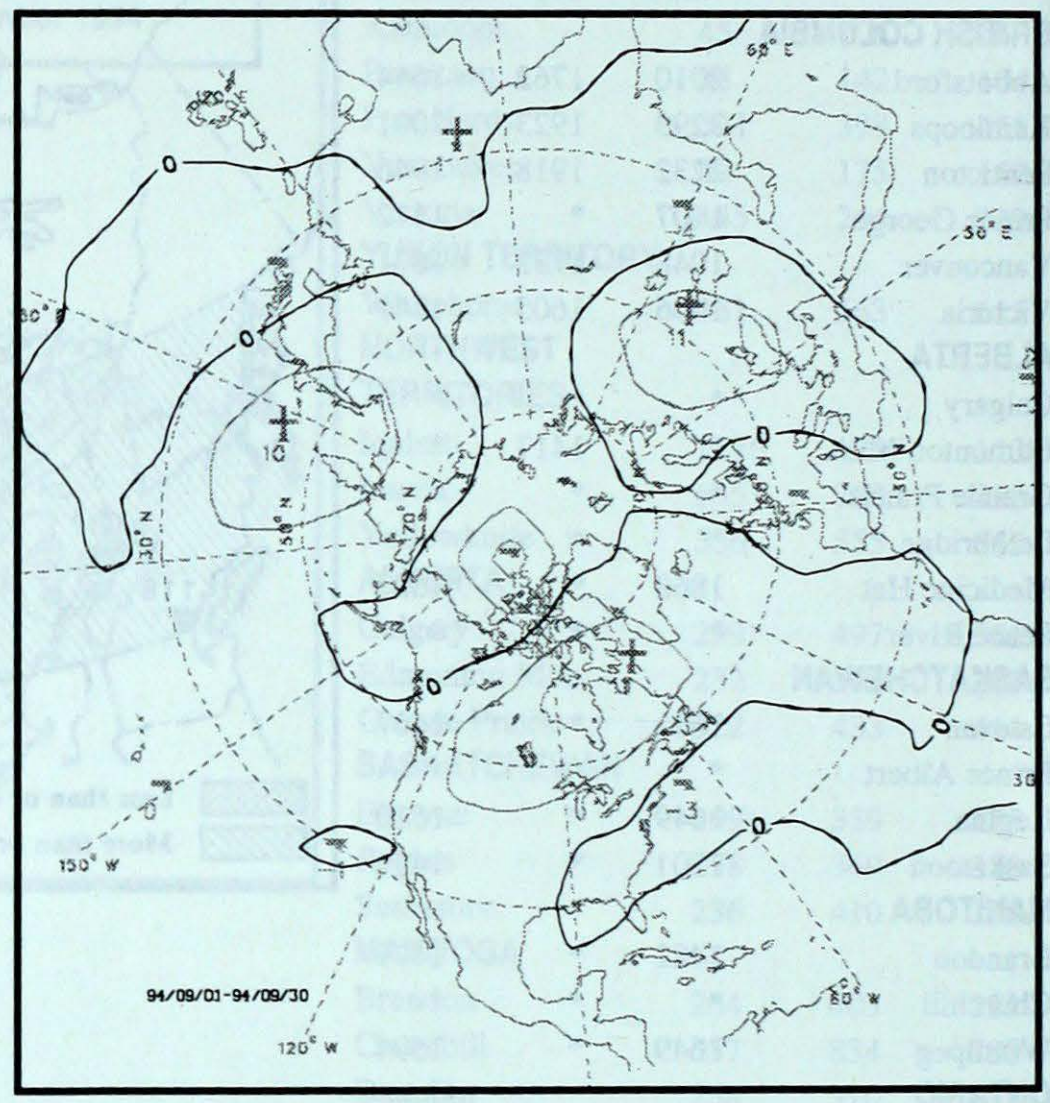


50-kPa ATMOSPHERIC CIRCULATION

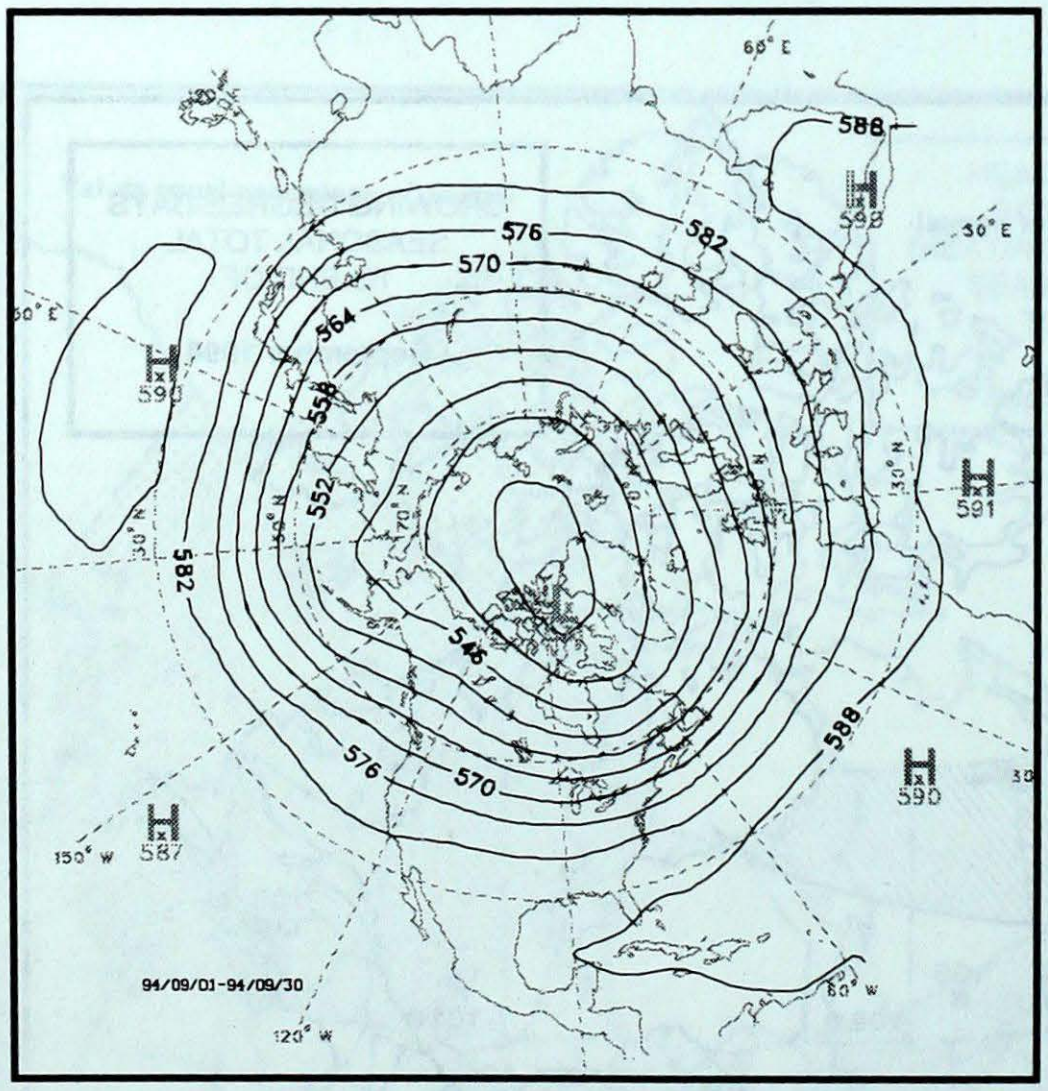
September 1994



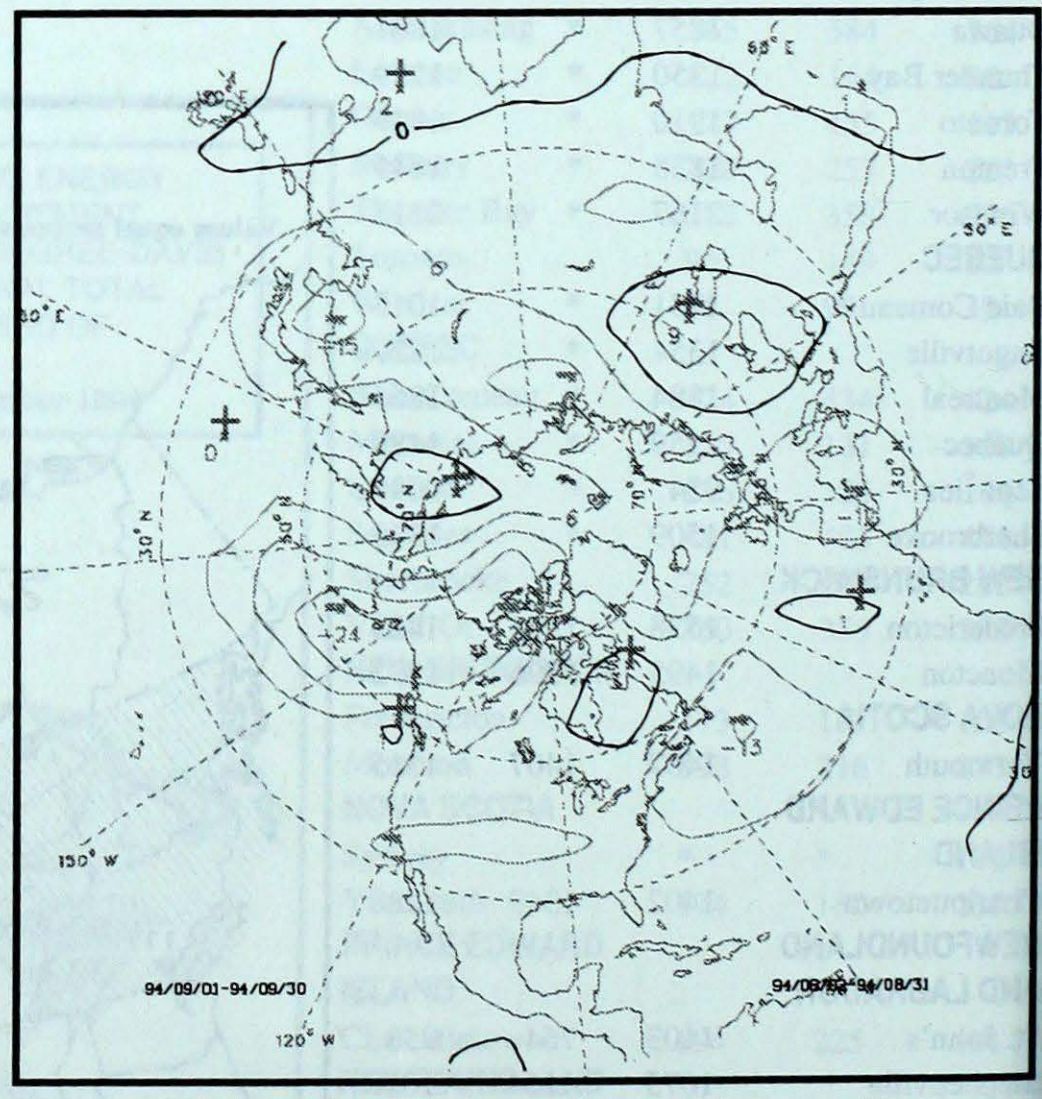
Mean geopotential heights
6-decametre interval



Mean geopotential height anomaly
6-decametre interval



Normal geopotential heights for the month
6-decametre interval



Mean heights difference w/r to previous month
6-decametre interval

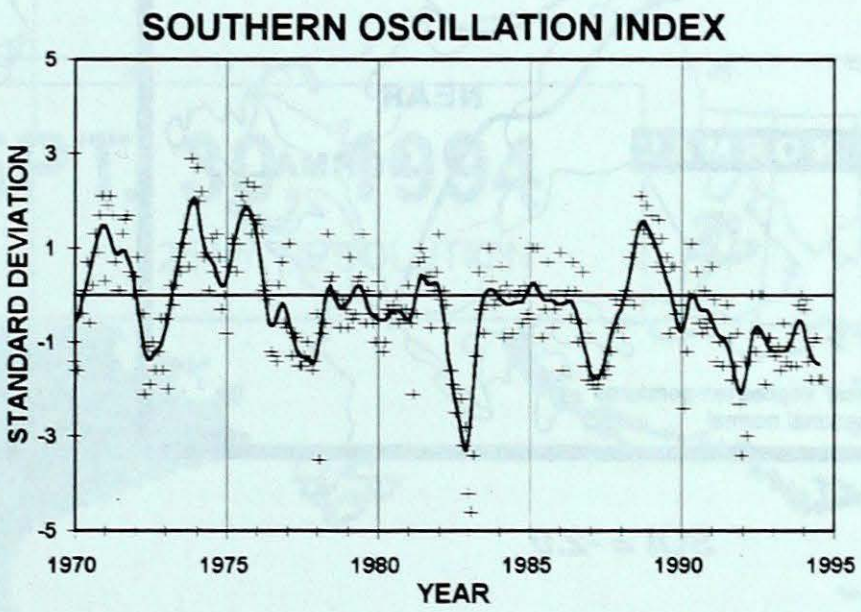
A Note on El Niño

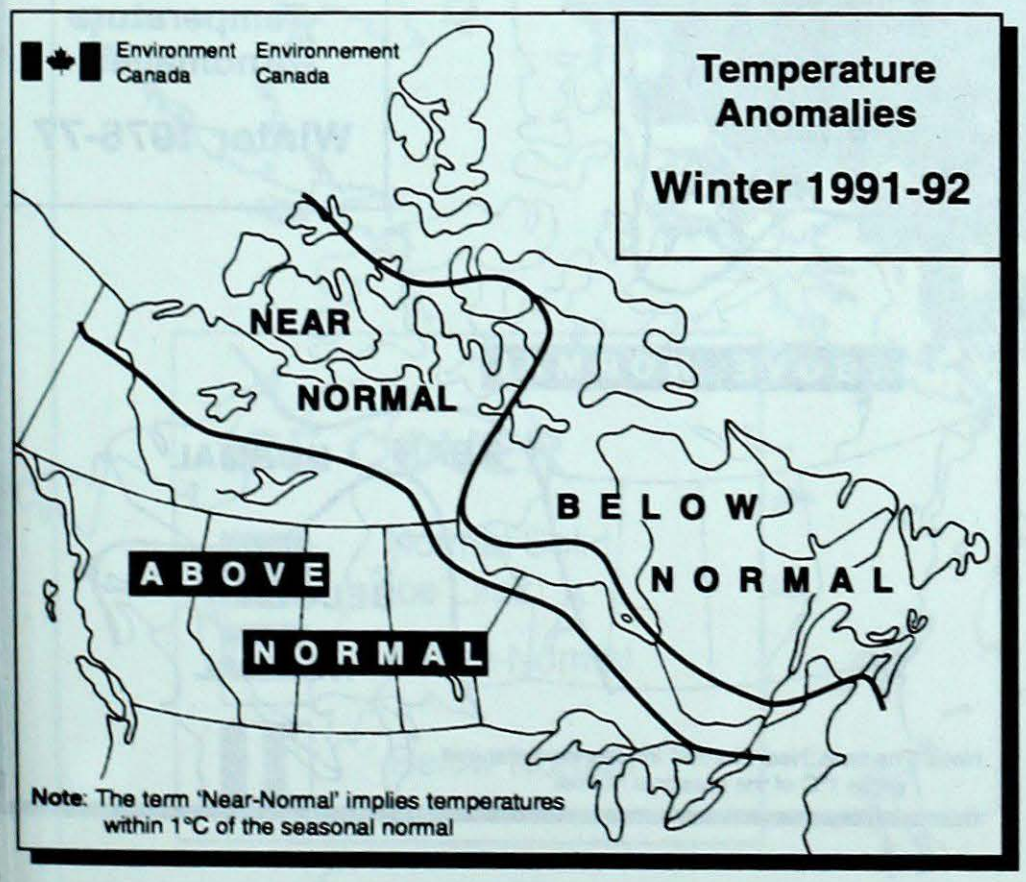
Several atmospheric and oceanic trends and anomaly patterns indicate that El-Niño (warm episode conditions) may be returning to the tropical Pacific. One of the features that supports this conclusion is that the core of the warmest equatorial water (greater than 30°C) has gradually shifted eastwards to a position near the International Dateline in recent months, with sea-surface temperature (SST) anomalies exceeding one Celsius degree during September 1994. These anomalies are similar in magnitude to those observed during September 1991 and September 1992.

An important factor in the development of an El-Niño event is the intensity of the convective activity that develops over the central tropical Pacific. In past warm episodes, the September-November period has been a critical time for the establishment of enhanced convection in that region and the subsequent development of an El-Niño event. During September, convective activity has indeed increased.

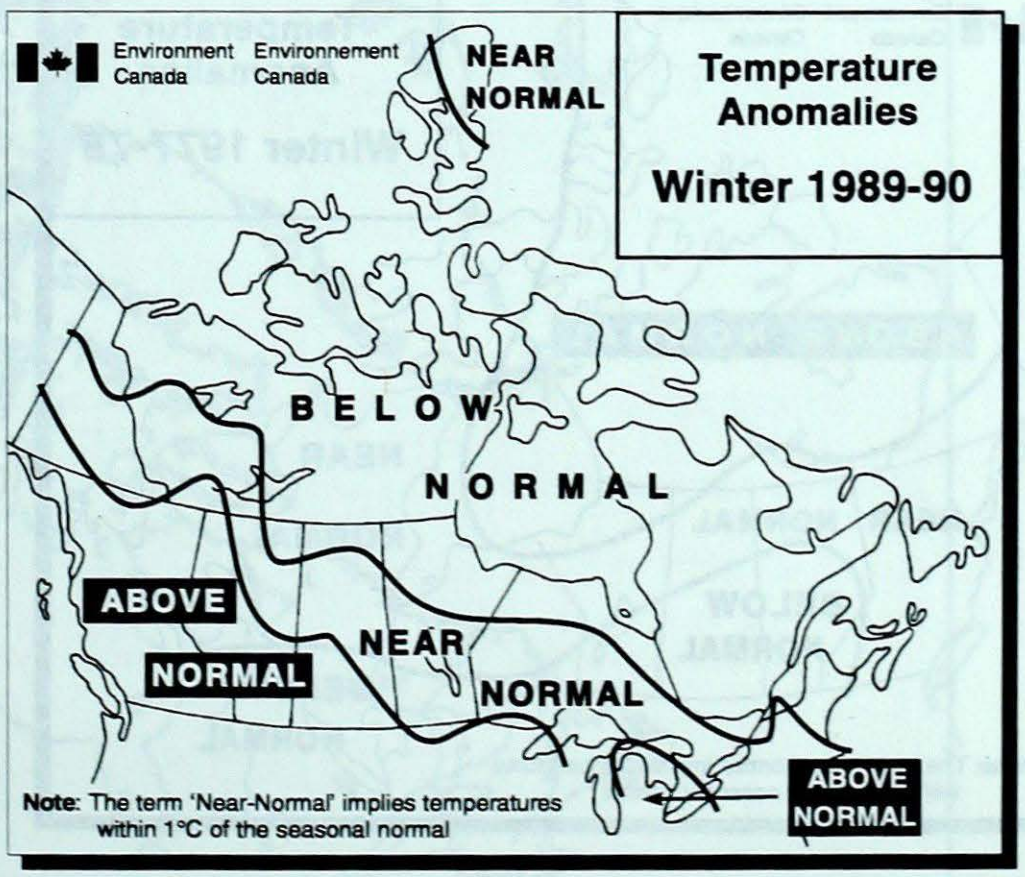
Another feature has been the strongly negative Southern Oscillation Index (SOI) for the last six months. The SOI measures the atmospheric pressure difference between Tahiti, in the South Pacific Ocean, and Darwin, Australia - a traditional indicator of El-Niño events.

Assuming El-Niño does materialize, how will it affect Canada's weather this coming winter? Generally, above-normal temperatures are observed over the western half of the country during the winter period and may extend across the entire southern half of the country. However, each El-Niño event has a unique signature, which results in distinctive temperature patterns across Canada, depending not only on the strength and duration of El-Niño but other climate signals which interact to change the overall temperature pattern. Also, in some cases, all the physical evidence required to assert an El-Niño event never emerges. Thus, one cannot say definitively that El-Niño was the cause of warm winters.





SOI = -2.2

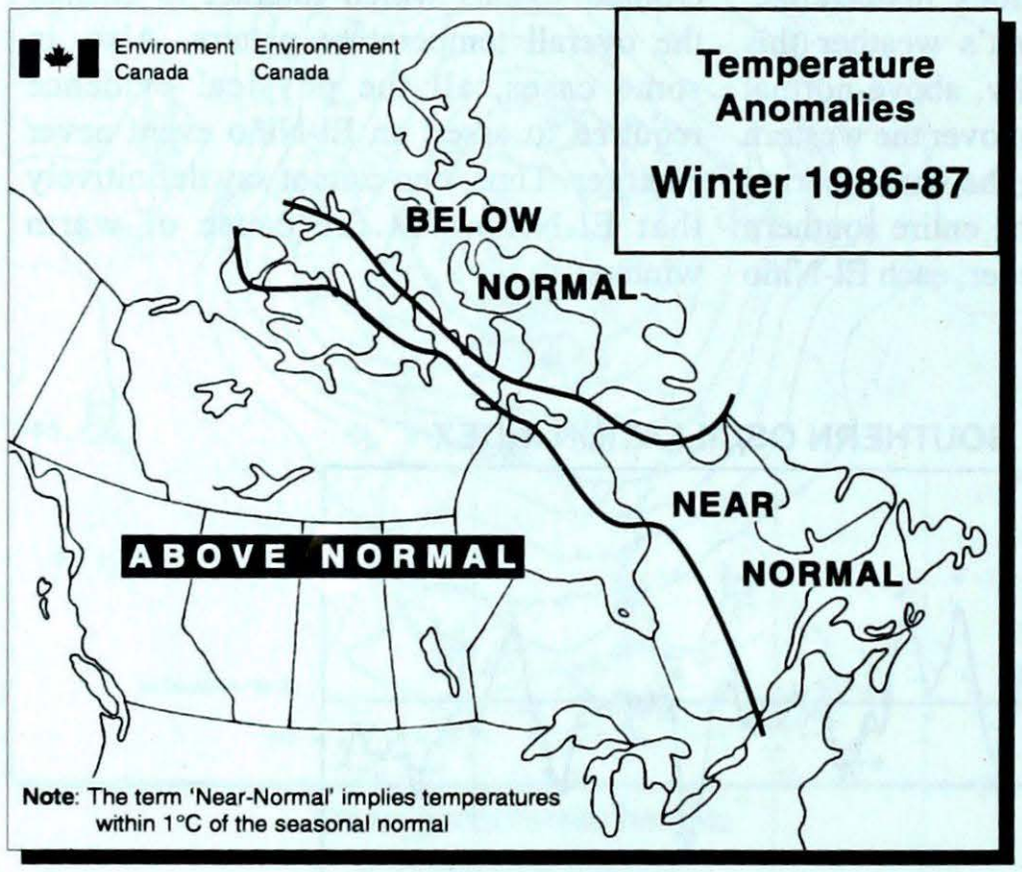


SOI = -1.0

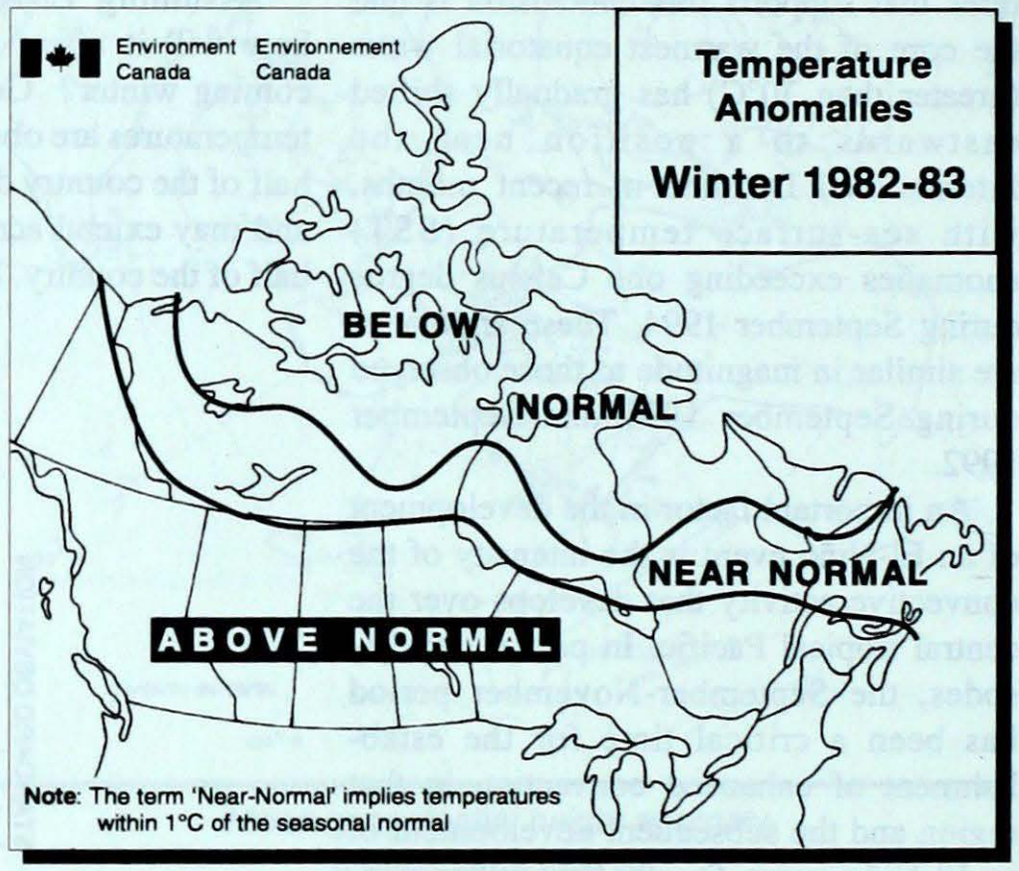
Note that in the maps shown, there is no direct correlation between the strength of the SOI, and the intensity and areal extent of the warm temperature anomalies. For example, comparing the winter of 1986-87 to 1982-83, El-Niño impacted more of the country during 1986-87, yet the SOI was weaker.

The El-Niño winter of 1976-77 was a winter of extremes, with warm weather across the western half of the country and bitterly cold weather in the east. Although the SOI remained negative, El-Niño faded late in 1977, There was a dramatic reversal of temperatures across the west during the winter of 1977-78.

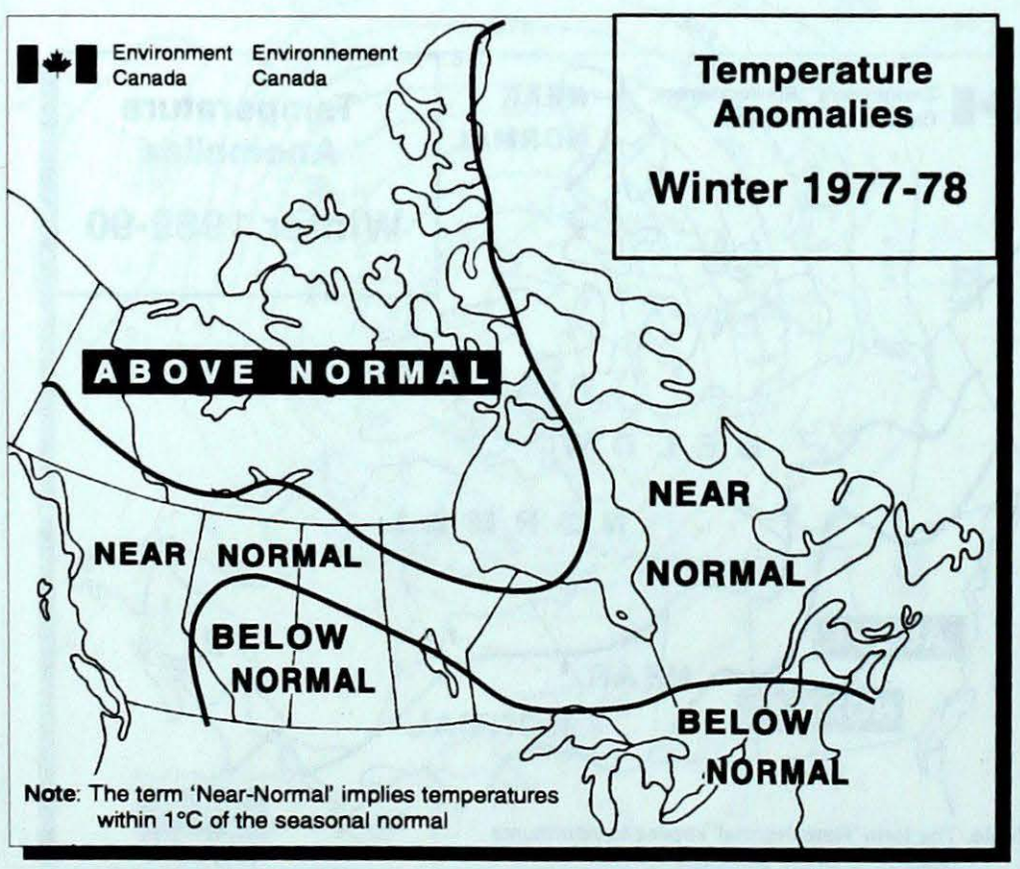
The prognosis for this winter is still uncertain.



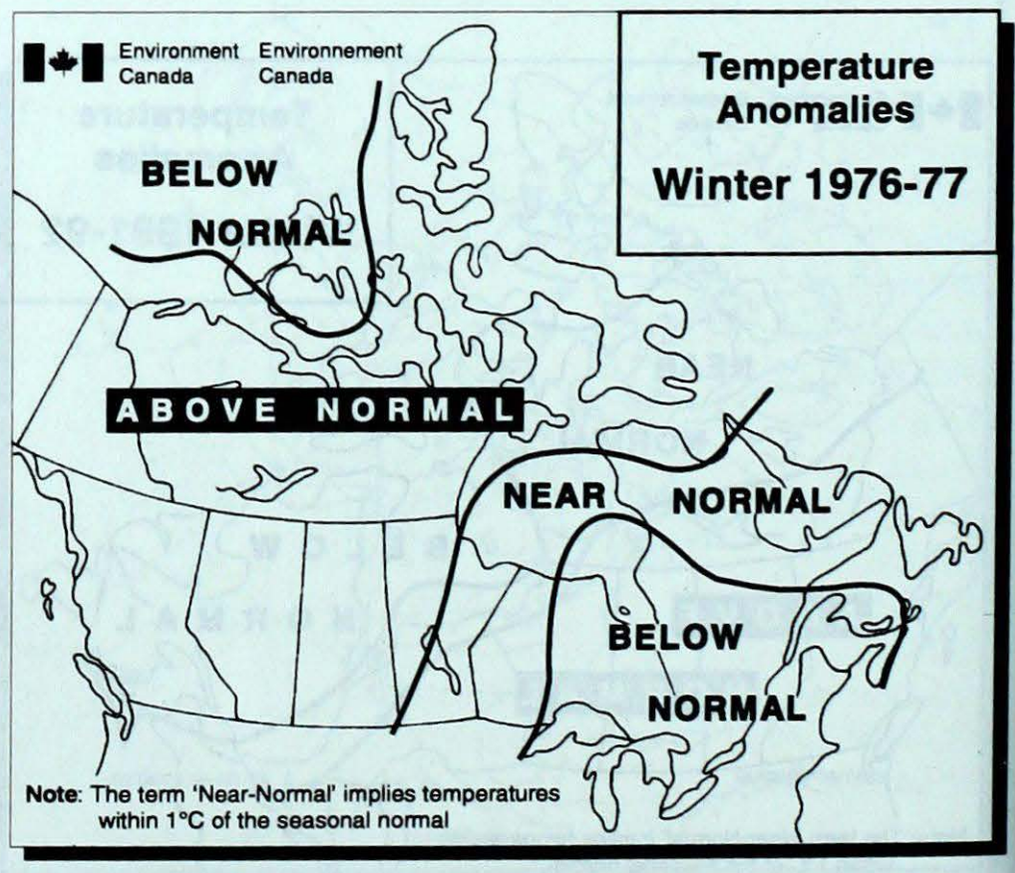
SOI = -2.0



SOI = -3.6



SOI = -1.5

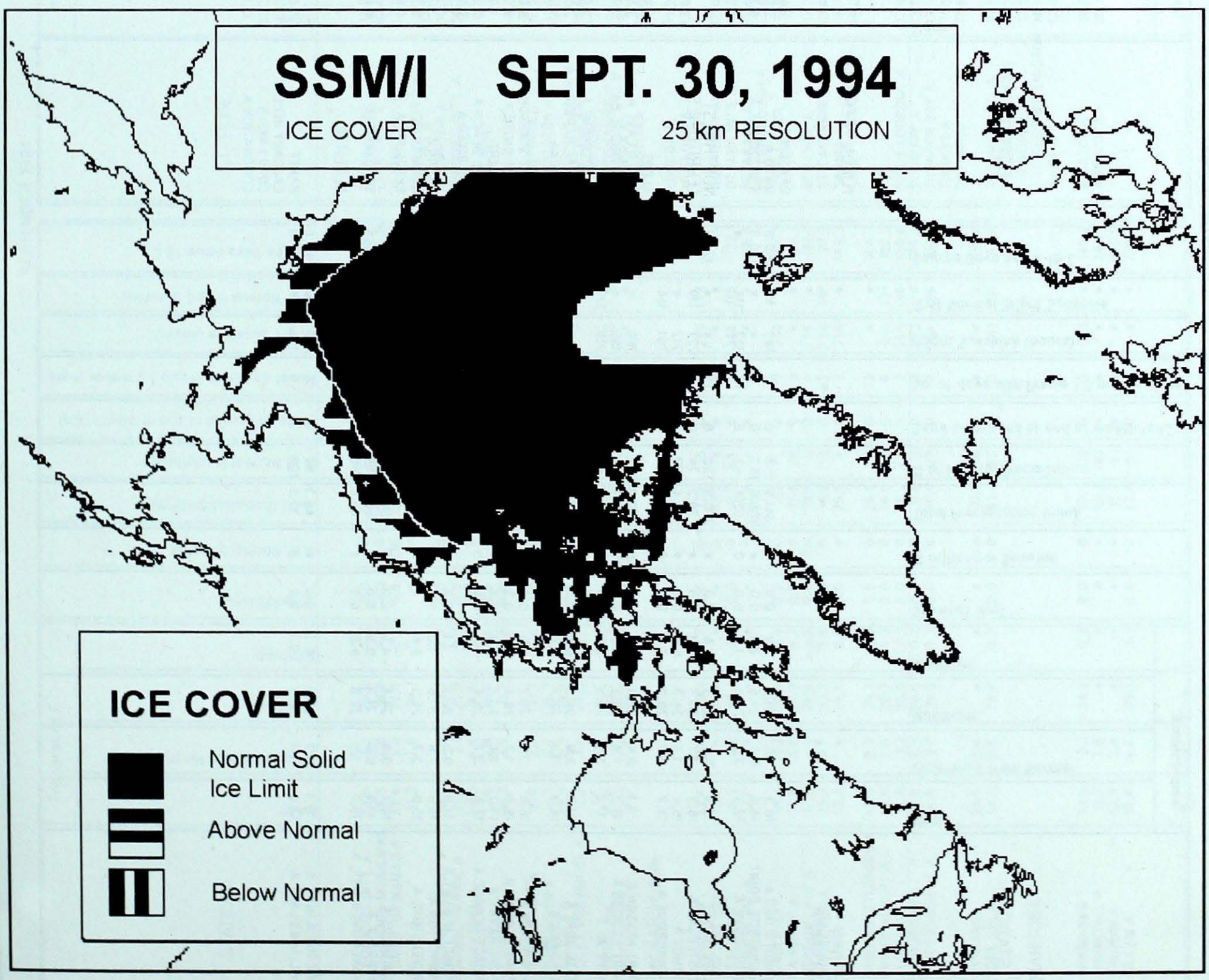


SOI = -0.5

End of September Ice Image

Arvids Silis
Climate Processes and
Earth Observation Division

The advance of ice in the Canadian Arctic has started. The Beaufort Sea area experienced below-normal temperatures for the month of September and therefore ice conditions were a few weeks ahead of normal. More than likely, the month of October will see the Beaufort Sea completely freeze over.



SEPTEMBER 1994

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 A	16.3	1.8	28.5	5.9	0.0	*	141.9	158	0	8	193	111	60.8
AMPHITRITE POINT	14.0	0.6	21.6	8.1	0.0	*	166.6	103	0	9	*	*	120.3
BLUE RIVER A	12.9	2.2	28.0	-1.5	0.0	0	52.4	62	0	10	152	114	*
CAPE SCOTT	15.9	3.4	20.3	8.4	0.0	*	270.8	130	0	15	*	*	124.3
CASTLEGAR A	16.3	1.7	30.7	4.1	0.0	*	29.2	74	0	4	227	119	57.9
COMOX A	15.4	1.7	24.3	8.6	0.0	*	37.4	72	0	6	212	*	75.4
CRANBROOK A	15.2	3.2	28.9	0.7	0.0	0	3.0	10	0	1	251	116	84.4
FORT NELSON A	9.1	0.4	22.3	-2.4	0.4	6	30.0	72	0	8	150	*	265.2
FORT ST JOHN A	11.3	1.8	23.5	-2.6	0.0	0	36.9	94	0	6	155	*	201.7
HOPE A	17.1	1.6	29.5	6.2	0.0	*	67.8	66	0	7	219	127	42.6
KAMLOOPS A	17.7	2.8	29.2	6.6	0.0	*	12.8	60	0	1	253	130	30.3
KELOWNA A	16.0	3.1	28.7	2.8	0.0	*	15.0	47	0	3	241	117	60.5
PENTICTON A	16.8	2.1	29.7	4.0	0.0	*	18.2	103	0	4	219	104	41.0
PORT ALBERNI A	16.0	1.7	30.4	4.0	0.0	*	54.8	65	0	6	196	*	62.2
PORT HARDY A	13.2	1.4	20.5	6.3	0.0	*	178.4	131	0	13	107	77	144.6
PRINCE GEORGE A	12.4	2.7	25.4	-2.1	0.0	0	63.0	107	0	9	135	84	170.6
PRINCE RUPERT A	11.8	0.5	20.5	1.1	0.0	*	386.5	159	0	19	90	77	118.5
PRINCETON A	15.5	2.6	31.6	1.0	0.0	*	9.4	52	0	3	232	*	*
REVELSTOKE A	15.0	2.7	26.5	4.4	*	*	*	*	*	*	*	*	*
SMITHERS A	10.7	0.9	24.6	-4.5	0.0	0	59.0	117	0	16	109	83	236.0
TERRACE A	11.9	0.0	21.3	0.0	0.0	*	166.4	169	0	24	83	66	182.5
VANCOUVER INT'L A	15.7	1.5	22.8	9.8	0.0	*	65.6	98	0	9	191	104	70.7
VICTORIA INT'L A	15.1	1.2	26.0	6.7	0.0	*	46.3	117	0	6	217	112	87.0
WILLIAMS LAKE A	12.4	2.1	28.0	0.1	0.0	0	32.5	108	0	6	156	94	167.8

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YUKON TERRITORY													
DAWSON A	5.4	*	18.1	-10.7	1.4	*	24.0	*	*	*	*	*	*
MAYO A	5.9	-0.6	17.3	-7.9	0.0	0	36.0	119	*	*	*	*	363.5
WHITEHORSE A	6.7	-0.8	16.3	-6.8	0.0	0	44.4	147	0	6	130	95	339.9
NORTHWEST TERRITORIES													
ALERT	-6.9	3.3	1.5	-18.0	*	*	5.4	20	*	*	*	*	746.0
BAKER LAKE A	3.5	1.2	21.4	-6.5	1.6	27	60.2	163	0	12	110	103	435.9
CAMBRIDGE BAY A	0.2	0.9	11.7	-9.8	9.4	111	18.0	104	1	5	87	105	536.1
COPPERMINE A	3.6	1.1	22.6	-6.4	11.8	223	22.6	94	1	10	70	100	631.1
CORAL HARBOUR A	2.5	1.6	12.8	-4.7	4.8	48	42.4	125	2	8	109	101	466.4
EUREKA	-5.0	3.3	2.5	-16.7	1.8	17	1.8	19	0	0	55	54	690.4
FORT SIMPSON A	8.6	1.3	23.4	-2.5	7.6	133	42.2	141	0	6	121	90	283.3
FORT SMITH A	9.0	1.5	25.3	-5.4	0.0	0	68.9	168	0	9	138	104	268.6
IQALUIT	1.9	-0.5	9.3	-4.5	32.6	235	61.6	134	0	13	82	100	483.3
HALL BEACH A	-0.3	0.3	7.6	-7.0	4.2	35	37.4	136	0	5	*	*	548.8
HAY RIVER A	9.5	1.4	25.3	-2.7	0.0	0	32.2	76	0	6	*	*	255.3
INUVIK A	1.2	-1.9	15.9	-11.2	15.2	127	31.7	133	6	8	84	77	505.4
NORMAN WELLS A	5.3	-0.8	20.2	-4.6	7.8	147	26.0	89	0	9	123	103	380.6
RESOLUTE A	-4.6	0.5	2.3	-14.2	54.1	354	54.7	304	22	10	41	70	680.2
YELLOWKNIFE A	8.6	1.9	21.2	-1.3	0.0	0	20.8	68	0	5	144	95	282.9
ALBERTA													
BANFF	11.8	2.5	25.5	-4.5	0.0	0	7.8	19	0	2	*	*	184.3
CALGARY INT'L A	13.1	2.5	29.4	-2.5	0.0	0	10.4	27	0	2	248	127	149.6
COLD LAKE A	13.2	3.4	28.5	1.1	0.0	0	45.7	102	0	4	232	132	145.3
CORONATION A	12.1	1.6	26.9	-1.0	0.0	0	24.8	76	0	4	*	*	*

SEPTEMBER 1994

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	Mean	Difference from Normal	Maximum	Minimum									
EDMONTON INT'L A	13.0	3.2	29.0	-0.3	0.0	0	64.4	141	0	8	215	118	149.7
EDMONTON MUNICIPAL	13.8	2.8	28.9	0.0	0.0	*	52.4	134	0	6	236	130	126.6
EDMONTON NAMAO A	13.4	3.0	29.0	-0.2	4.6	230	37.4	90	0	6	*	*	136.8
EDSON A	11.2	2.6	27.1	-0.5	*	*	46.6	82	*	8	*	*	*
FORT MCMURRAY A	12.0	3.0	29.7	-4.7	0.0	0	19.0	32	0	9	160	112	181.6
GRANDE PRAIRIE A	11.9	2.1	25.5	-0.7	0.0	0	41.3	110	0	8	178	*	182.4
HIGH LEVEL A	9.1	0.6	26.4	-5.2	0.0	0	28.8	71	0	6	154	103	267.9
JASPER	12.6	2.8	26.6	-1.6	0.0	0	*	*	*	*	*	*	91.9
LETHBRIDGE A	15.2	2.5	31.7	-2.8	0.0	0	8.6	23	0	1	271	126	90.1
MEDICINE HAT A	16.9	3.7	31.2	0.6	0.0	0	18.1	56	0	3	257	129	15.3
PEACE RIVER A	11.3	2.2	25.3	-3.0	0.0	0	28.5	74	0	8	*	*	210.1
RED DEER A	12.3	2.2	28.8	-2.9	0.0	0	78.3	178	0	7	*	*	170.5
ROCKY MTN HOUSE A	11.2	1.5	28.3	-3.3	*	*	28.6	58	*	5	*	*	*
SUFFIELD A	15.8	*	31.7	-1.9	0.0	*	14.9	*	0	4	278	*	83.0
WHITECOURT A	12.3	3.4	28.2	-1.1	10.2	300	13.8	40	2	6	*	*	174.6
SASKATCHEWAN													
BROADVIEW	13.4	2.6	29.1	-0.7	0.0	0	17.8	35	0	2	249	133	141.9
COLLINS BAY	13.7	*	*	*	*	*	48.0	*	*	*	*	*	*
ESTEVAN A	14.2	1.8	35.1	-1.8	0.0	0	19.0	44	0	4	246	116	122.1
HUDSON BAY A	12.5	*	*	*	*	*	22.4	*	*	*	*	*	166.8
KINDERSLEY	14.7	3.2	30.5	1.3	0.0	0	1.2	5	0	1	270	*	111.3
LA RONGE A	12.9	3.6	27.3	-2.2	0.0	0	17.6	28	0	3	*	*	157.7
MEADOW LAKE A	12.6	*	29.4	-3.2	0.0	*	18.6	*	0	4	234	*	161.7
MOOSE JAW A	15.2	2.7	31.3	1.8	0.0	0	4.8	13	0	2	238	117	97.7
NIPAWIN A	13.3	*	29.4	0.6	0.0	*	25.4	*	0	2	214	*	144.3
NORTH BATTLEFORD A	13.3	2.3	29.7	0.0	0.0	0	28.6	111	0	2	*	*	144.3
PRINCE ALBERT A	12.9	3.0	28.7	-0.2	0.0	0	19.6	50	0	4	217	131	152.6
REGINA A	14.8	3.1	30.5	0.1	0.0	0	16.2	44	0	2	260	136	106.8
SASKATOON A	13.5	2.3	30.5	0.2	0.0	0	0.8	3	0	0	222	*	139.4
SWIFT CURRENT A	14.8	3.1	31.6	0.3	0.0	0	10.9	32	0	2	264	136	109.5
WYNYARD	13.6	2.6	*	*	*	*	22.2	56	*	*	*	*	136.8
YORKTON A	13.3	2.4	28.8	0.3	0.0	0	41.0	88	0	5	241	131	143.6
MANITOBA													
BRANDON A	13.5	2.1	34.7	0.2	0.0	0	52.6	119	0	5	261	*	140.8
CHURCHILL A	8.2	2.8	*	*	*	*	92.3	181	*	*	*	*	294.7
DAUPHIN A	13.9	2.6	*	*	*	*	35.7	61	*	*	*	*	130.2
GILLAM A	10.4	4.4	25.7	5.1	0.0	0	33.8	61	0	9	*	*	229.4

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	Mean	Difference from Normal	Maximum	Minimum									
ISLAND LAKE	12.9	4.1	28.7	0.2	0.0	0	19.6	28	0	4	*	*	156.7
LYNN LAKE A	10.4	3.9	29.3	-1.0	0.0	0	32.7	46	0	7	166	142	227.1
NORWAY HOUSE A	12.3	*	26.5	-1.8	0.0	*	27.8	*	0	5	*	*	169.9
THE PAS A	12.9	3.1	30.1	0.0	0.0	0	35.4	62	0	3	225	143	159.6
THOMPSON A	10.1	3.2	28.2	-5.9	0.0	0	37.2	54	0	7	194	153	237.2
WINNIPEG INT'L A	14.2	1.8	30.1	1.0	0.0	0	69.6	131	0	7	201	109	123.7
ONTARIO													
EARLTON A	12.5	1.4	25.5	-1.0	0.0	0	78.0	79	0	10	*	*	166.6
GERALDTON A	11.4	*	24.9	-0.7	2.0	*	74.4	*	0	12	*	*	199.1
HAMILTON RBG	16.6	*	29.0	6.0	0.0	*	54.6	*	0	7	186	*	*
HAMILTON A	15.3	-0.4	28.5	4.2	0.0	*	36.1	49	0	*	*	*	*
KAPUSKASING A	11.7	1.7	24.5	-0.2	0.2	8	72.0	76	0	8	*	*	190.5
KENORA A	14.1	2.5	25.9	1.1	0.0	0	76.2	110	0	6	*	*	122.2
KINGSTON A	15.4	0.2	25.3	5.0	0.0	*	53.8	57	0	8	164	97	86.5
LONDON A	15.5	0.1	28.4	4.3	0.0	*	37.8	48	0	7	182	105	91.7
MUSKOKA A	13.6	0.4	27.5	2.7	0.0	*	88.9	87	0	12	*	*	136.1
NORTH BAY A	13.4	1.2	25.0	0.9	0.0	0	97.2	84	0	11	179	116	139.7
OTTAWA INT'L A	14.8	0.5	28.3	3.5	0.0	*	56.0	71	0	8	185	111	100.1
PETAWAWA A	12.6	0.3	29.3	-2.2	0.0	*	52.6	72	0	7	*	*	164.2
PETERBOROUGH A	13.9	0.1	29.0	0.5	0.0	*	55.4	89	0	9	*	*	128.4
PICKLE LAKE	11.8	2.4	25.6	-2.8	0.0	0	41.0	48	0	6	*	*	187.4
RED LAKE A	12.2	1.7	26.8	-1.3	0.0	0	43.2	61	0	6	198	*	176.9
ST CATHARINES A	16.4	-0.1	29.0	4.6	0.0	*	122.0	131	0	8	203	*	67.6
SARNIA A	16.7	0.4	29.2	5.5	0.0	*	50.4	80	0	4	206	105	62.9
SAULT STE MARIE A	14.0	1.2	25.5	1.7	0.0	0	54.1	57	0	8	177	113	128.9
SIOUX LOOKOUT A	12.9	2.2	26.6	-1.5	0.0	0	69.1	85	0	10	*	*	153.4
SUDBURY A	13.5	1.3	25.4	0.9	0.0	0	64.2	60	0	8	157	104	136.7
THUNDER BAY A	13.5	2.4	26.4	-0.3	0.0	*	54.6	61	0	10	164	98	137.4
TIMMINS A	11.5	1.2	25.8	-2.7	0.0	0	79.5	87	0	14	*	*	198.1
TORONTO	17.4	*	27.6	7.5	0.0	*	54.8	*	0	8	*	*	42.6
TORONTO INT'L A	15.9	0.4	29.8	5.4	0.0	*	51.4	81	0	8	*	*	76.2
TORONTO ISLAND A	16.5	*	25.8	8.1	0.0	*	60.6	*	0	8	*	*	51.4
TRENTON A	15.5	0.2	25.5	4.1	0.0	*	49.2	68	0	8	*	*	80.5
WATERLOO WELLINGTON	14.9	0.5	28.4	3.6	0.0	*	31.0	37	0	8	*	*	105.1
WAWA A	12.0	*	25.0	-0.4	0.0	*	75.0	*	0	10	*	*	181.0
WIARTON A	14.2	0.0	26.5	2.9	0.0	*	76.1	80	0	8	181	107	124.3
WINDSOR A	18.3	0.9	30.9	6.1	0.0	*	53.4	80	0	7	*	*	38.7

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QUEBEC													
BAGOTVILLE A	11.3	0.2	20.5	0.2	0.0	0	104.0	104	0	14	*	*	200.2
BAIE COMEAU A	10.3	0.6	19.3	-1.9	0.0	*	82.6	80	0	7	148	94	232.1
BLANC SABLON A	8.7	0.2	20.5	-0.7	0.0	*	72.8	81	0	11	131	*	272.7
CHIBOUGAMAU CHAPAIS	10.1	*	23.0	-1.7	*	*	*	*	*	10	*	*	*
GASPE A	10.4	*	23.2	-0.8	0.0	*	145.2	*	0	11	165	*	22.8
KUUJJUAQ A	8.0	2.6	23.2	-1.6	0.2	2	25.2	44	0	9	40	40	298.2
KUUJJUARAPIK A	8.5	1.4	22.1	-1.1	0.0	0	59.3	68	0	14	99	93	284.9
LA GRANDE IV A	8.7	*	21.0	1.1	0.6	*	33.0	*	0	13	89	*	278.0
LA GRANDE RIVIERE A	8.7	*	21.8	-0.5	0.0	*	52.2	*	0	9	98	*	304.0
MANIWAKI	12.5	0.4	25.9	-0.9	*	*	44.0	46	0	7	*	*	165.2
MONT JOLI A	11.0	-0.2	21.7	1.7	0.0	*	63.2	75	0	110	38	25	211.1
MONTREAL INT'L A	14.8	0.0	24.5	4.0	*	*	67.2	76	0	13	170	100	95.9
MONTREAL MIRABEL I/	13.6	*	24.1	2.5	0.0	*	69.6	*	0	12	167	*	132.1
NATASHQUAN A	9.6	0.4	18.8	-0.7	0.0	*	113.4	120	0	11	172	110	252.8
QUEBEC A	12.6	0.0	22.7	2.4	0.0	*	94.4	79	0	13	119	78	162.2
ROBERVAL A	11.7	0.5	21.7	0.9	0.0	0	81.7	90	0	11	137	*	189.7
SEPT-ILES A	9.7	0.4	18.8	0.6	0.0	*	221.7	198	0	11	150	95	248.1
SHERBROOKE A	12.3	0.5	23.7	0.1	0.0	*	94.9	90	0	15	137	*	171.6
ST HUBERT A	14.4	0.0	24.4	2.1	*	*	55.0	61	0	*	162	*	108.6
VAL D'OR A	11.4	1.0	24.3	-2.0	0.0	0	92.0	86	0	14	156	111	199.3
NEW BRUNSWICK													
CHARLO A	11.5	0.4	20.2	0.5	0.0	0	104.0	104	0	10	159	99	190.4
FREDERICTON A	13.0	-0.2	25.4	-0.8	0.0	*	63.4	73	0	8	*	*	149.5
MONCTON A	12.7	-0.3	24.8	-0.2	0.0	*	64.7	85	0	7	151	91	159.5
SAINT JOHN A	12.8	0.1	22.7	2.2	0.0	*	62.0	55	0	7	166	100	156.1

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NOVA SCOTIA													
GREENWOOD A	13.4	-0.4	24.9	1.1	0.0	*	80.5	96	0	8	*	*	139.5
HALIFAX INT'L A	13.5	-0.3	22.6	4.3	0.0	*	68.7	73	0	6	*	*	136.5
SABLE ISLAND	16.2	0.5	22.8	5.3	0.0	*	148.6	161	0	10	223	143	59.3
SHEARWATER A	14.2	-0.3	22.4	4.9	0.0	*	104.6	121	0	10	190	105	114.6
SYDNEY A	13.1	-0.4	22.4	2.5	0.0	*	126.1	145	0	9	187	112	143.9
YARMOUTH A	13.7	0.1	21.5	4.7	0.0	*	97.4	109	0	11	164	93	130.0
PRINCE EDWARD ISLAND													
CHARLOTTETOWN A	13.0	-0.5	22.3	2.8	0.0	*	87.6	102	0	*	*	*	150.7
SUMMERSIDE A	*	*	*	*	*	*	*	*	*	*	*	*	*
NEWFOUNDLAND													
BONAVISTA	11.8	0.1	21.4	4.7	0.0	*	130.0	151	0	14	*	*	185.1
BURGEO	11.8	0.3	21.9	2.7	0.0	0	155.2	121	0	11	*	*	183.1
CARTWRIGHT	8.2	-0.1	24.7	0.4	0.0	0	74.2	82	0	11	89	82	292.9
COMFORT COVE	10.7	-0.2	20.2	-0.2	0.0	0	127.8	143	0	17	*	*	219.4
DANIELS HARBOUR	10.5	-0.3	20.0	0.5	0.0	0	89.6	98	0	12	163	124	225.6
DEER LAKE A	10.8	0.3	23.2	-1.6	0.0	*	86.9	95	0	7	*	*	218.2
GANDER INT'L A	11.0	-0.4	20.5	1.1	0.0	0	106.0	131	0	14	104	71	210.2
GOOSE A	9.5	0.4	25.7	-0.2	0.0	0	60.2	68	0	10	122	101	253.9
MARY'S HARBOUR	9.0	0.7	25.2	0.0	0.0	*	54.8	80	0	9	*	*	282.1
PORT AUX BASQUES	12.2	0.9	21.7	3.8	0.0	*	170.4	148	0	11	161	*	173.4
ST ANTHONY	9.0	0.9	21.0	0.0	0.0	0	107.4	80	0	11	*	*	271.0
ST JOHN'S A	11.8	0.2	23.1	2.4	0.0	*	177.0	152	0	15	115	*	186.5
ST LAWRENCE	12.5	1.3	22.0	0.8	0.0	*	217.4	171	0	9	*	*	164.2
STEPHENVILLE A	12.0	0.1	21.3	2.1	0.0	*	171.6	164	0	10	151	*	181.5
WABUSH LAKE A	8.3	2.1	21.7	-1.2	1.3	*	*	*	38	14	106	*	292.3

AGROCLIMATOLOGICAL STATIONS — SEPTEMBER 1994

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	16.9	1.4	30.5	5.5	0.0	75.3	71	0	8	219	356.5	2214.5
SUMMERLAND	17.2	2.0	31.0	5.5	0.0	13.0	69	0	5	206	367.1	2312.1
ALBERTA												
BEAVERLODGE	11.9	2.4	24.5	0.0	0.0	43.8	104	0	11	160	209.7	1398.5
LACOMBE	13.0	2.9	29.0	-2.5	0.0	53.8	132	0	6	**	238.6	1475.8
SASKATCHWAN												
INDIAN HEAD	13.7	2.2	30.0	0.0	0.0	31.2	74	0	2	**	261.7	1627.0
MELFORT	13.5	3.2	28.0	-0.5	0.0	21.6	53	0	5	192	253.5	1511.5
SCOTT	13.4	3.0	30.0	0.5	0.0	3.8	13	0	2	248	250.4	1504.5
SWIFT CURRENT	15.1	3.3	32.0	0.5	0.0	6.1	21	0	2	229	722.1	1746.1
MANITOBA												
BRANDON	14.3	2.5	34.5	0.2	0.0	60.0	121	0	4	**	278.4	1636.3
MORDEN	15.5	3.3	32.0	5.0	0.0	92.4	184	0	5	228	321.0	1868.0
GLENLEA	14.5	1.4	30.0	1.0	0.0	73.3	141	0	14	205	284.6	1733.2
ONTARIO												
DELHI	16.1	0.2	28.0	3.0	0.0	57.9	72	0	8	**	322.9	2028.6
ELORA	14.6	0.4	27.7	1.8	0.0	43.6	61	0	10	**	*****	773.9
HARROW	17.1	-0.4	29.5	3.1	0.0	71.2	108	0	9	214	362.4	2168.9
KAPUSKASING	12.0	1.7	24.5	-1.0	0.0	61.9	69	0	9	126	205.7	1292.4
OTTAWA	15.3	0.7	28.3	4.7	0.0	59.3	74	0	7	185	309.8	1968.8
SMITHFIELD	16.7	1.7	28.0	3.9	0.0	31.4	40	0	5	**	350.2	2039.0

Courtesy of Agriculture Canada

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
QUEBEC												
LA POCATIERE	11.8	-0.8	21.5	2.0	0.0	68.6	72	0	13	129	196.8	1497.1
NORMANDIN	10.5	0.1	21.2	-0.8	0.0	73.0	76	0	11	140	166.4	1281.4
NEW BRUNSWICK												
FREDERICTON	13.8	0.4	25.0	1.0	0.0	60.6	69	0	9	167	263.2	1775.0
NOVA SCOTIA												
KENTVILLE	13.9	-0.6	24.0	3.5	0.0	88.6	104	0	9	172	265.6	1851.6
NAPPAN	13.4	0.0	25.0	0.0	0.0	70.8	87	0	9	148	249.2	1657.5
PRINCE EDWARD ISLAND												
CHARLOTTETWN	*.*	*.*	*.*	*.*	*.*	*.*	**	***	***	**	*.*	*.*
NEWFOUNDLAND												
ST.JOHN'S WEST	12.0	0.4	22.5	4.5	0.0	160.2	151	0	16	114	204.0	1301.2

Courtesy of Agriculture Canada

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mm. Much of Gaspé's total came from the heavy one-day total of 52.8 mm on the 6th and 40.8 mm on September 10-11. Sept-Îles recorded 84.6 mm of rain on the 29th. Sunshine amounts were slightly-below normal except well-below normal for Kuujjuaq where only 39.9 hours of sunshine were recorded (normal, 94 hours).

Maritimes

Near-normal temperatures prevailed. The regional average was 13.2°C, compared to the normal of 13.3°C. Individual locations varied from 0.7 Celsius degree below normal to 0.7 degree above normal.

Precipitation totals were between 56% and 142% of normal. In New Brunswick, Saint John recorded 62 mm (56% of normal) while Charlo recorded 104 mm (121% of normal). In Nova Scotia, Halifax International Airport recorded 69 mm (72% of normal) while Sable Island recorded 149 mm (142% of normal). Charlottetown, Prince Edward Island, recorded 88 mm of rain (93% of normal). Much of the precipitation was in the form of showers and also scattered thundershowers which occurred along the Atlantic coast. A storm on the 5th sunk a fishing boat off the coast of Nova Scotia and five people drowned. Winds and high seas from the storm caused extensive damage to the New Brunswick herring fishing industry along the Bay of Fundy coast.

Bright sunshine hours in the Maritimes varied either side of normal. Values in New Brunswick were three to sixteen hours below normal. Charlottetown, P.E.I., reported seven hours below normal. Sunshine hours in Nova Scotia were 17 hours below normal at Yarmouth and 66 hours above at Sable Island. Due to the relatively-dry summer, streamflow conditions approached record lows in the Nova Scotia counties of Lunenburg, Hants and Halifax.

Newfoundland and Labrador

Damp best describes the weather for the Island. The month began with sunshine and above-seasonal temperatures but by the second week, an increase in cloud cover brought a drop in temperatures. Overnight lows dropped below freezing in central areas. A series of low pressure systems passed to the south of the Island, giving two weeks of rain, drizzle and fog. As a result, most southern areas, including the Avalon Peninsula, received approximately 50 mm more than normal rainfall. St. Lawrence reported 217.4 mm (165% of normal). Overall, temperatures were near-seasonal, with Deer Lake recording the highest temperature (23.2°C, September 25) on the Island. With the abundance of cloud cover, sunshine totals were 30 to 40 hours below normal.

Clear skies and cool temperatures prevailed over Labrador during the first week of the month followed by cloud and warmer air the following week. Cloud persisted until near the end of the month when a ridge of high pressure brought clearer skies and warmer temperatures. Many maximum temperature records were set near month's end. On the 25th, Goose Bay recorded the highest temperature (25.7°C) for the entire province. For the month, temperatures in Labrador averaged from slightly-above normal to two Celsius degrees above normal. Precipitation totals were 10 to 30 mm below normal. Nain measured 30.0 mm, 50% of normal. Sunshine totals were near normal.