

Climatic Perspectives

Monthly Review

SEPTEMBER - 1990

Vol. 12

CLIMATIC HIGHLIGHTS

Harvesting operations were in full swing across the country this month. Weather conditions during the month of September play a crucial role in determining if all the crops get harvested in time, before the fall frosts come, or as in the case of the Prairie Provinces, before the early winter snow flies.

Ideal autumn weather conditions existed in western Canada, with long stretches of sunny and warm conditions prevailing throughout the month. Snowfalls in the northern Prairies and B.C. were non-existent. By the end of the month, more than 90 percent of the bumper grain crop had been harvested. Even in the Peace River District, where all too often, snow covers the fields before the month is over, farmers managed to complete this year's harvest in time.

In B.C. sunny warm weather in September benefitted the grape harvest, by further increasing the sugar content of the grapes. But apple growers would have preferred cooler temperatures and even some frost, in order to stop apples from prematurely dropping off the trees, because of the unseasonably warm temperatures.

In Ontario and to some extent in Quebec it has been a different story. September was a dull and unsettled month. Quebec farmers had a tough time bringing in their third hay crop. In southwestern Ontario it was especially wet. Some climate stations in the Ontario food belt recorded 300 mm of rain. Windsor received two and one half times their nor-

mal precipitation for the month. Fields have become saturated, and harvesting has been difficult and delayed. Fresh market crops have been particularly hard hit, with rotting and molding of special concern. Some tomato fields had to be ploughed under. By month's end frost had occurred in most rural areas of the province. There was concern whether some of Ontario's corn crop, which has been a little late

maturing this year, was far enough advanced before the first killing frost hit.

In Nova Scotia's Annapolis Valley, weather conditions were considerably better, although it was wetter than normal elsewhere in the Maritimes. A good quality apple crop was ready for picking. In New Brunswick, showery weather was slowing down the potato harvest.

SASKATCHEWAN'S ESTIMATED 1990 CROP PRODUCTION

	1990		1980-89 Average	
	acres '000	Production '000 tonnes	acres '000	Production '000 tonnes
Winter Wheat	180.0	108.9	302.0	184.89
Spring Wheat	16,000.0	13,472.0	15,990.0	11,022.50
Durum	4,300.0	3,266.0	3,611.0	2,207.00
Oats	1,000.0	833.0	905.0	677.00
Barley	3,500.0	3,701.0	3,395.0	3,122.20
Rye	770.0	513.2	437.0	267.54
Flax	850.0	406.0	540.0	226.79
Canola	2,800.0	1,406.0	2,522.0	1,259.85
Total	29,400.00	23,706.1	27,702.0	18,967.77

At 23.71 million tonnes, 1990 production would be the second largest crop on record. Saskatchewan produced a record 25-26 million tonnes in 1986..

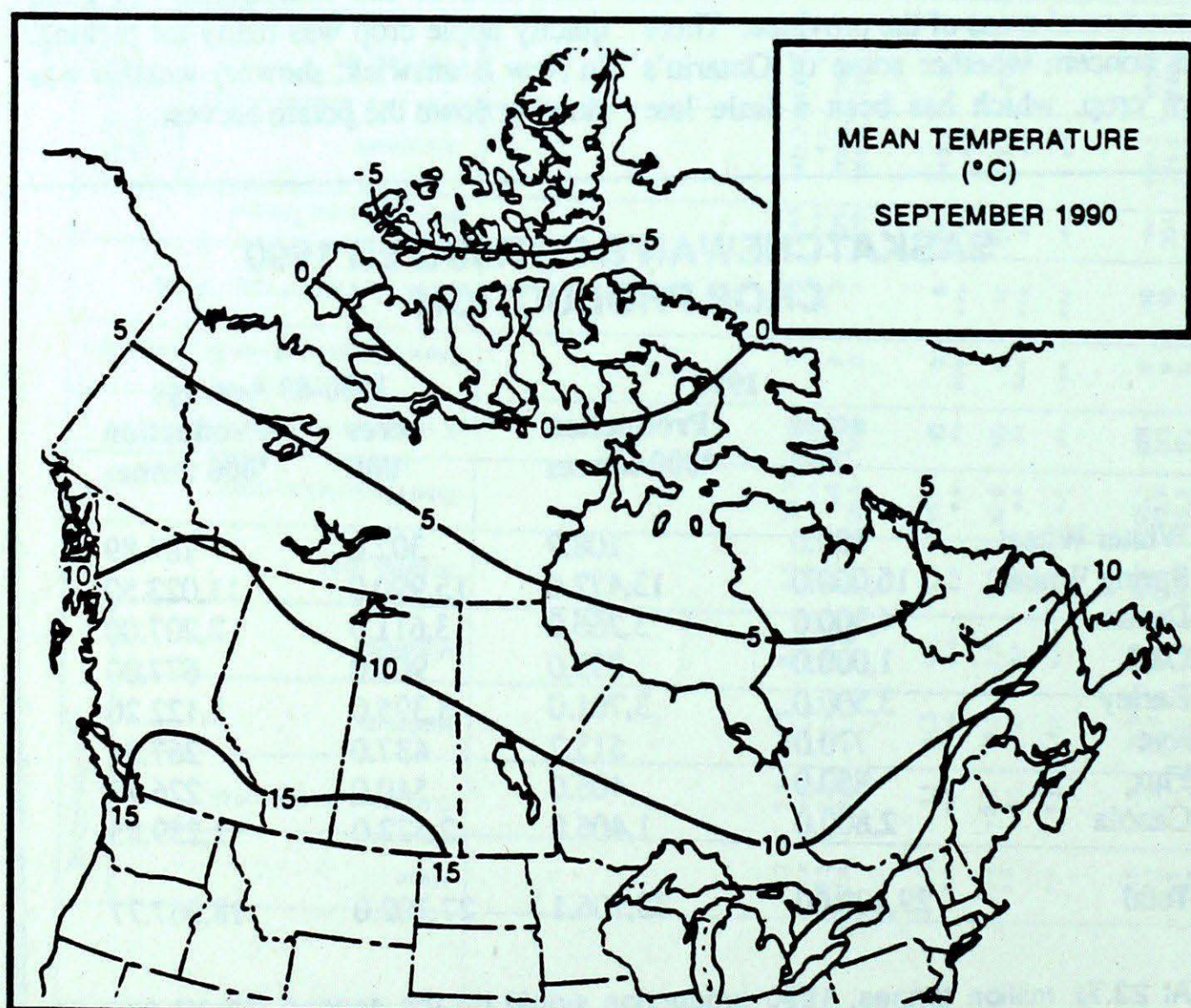
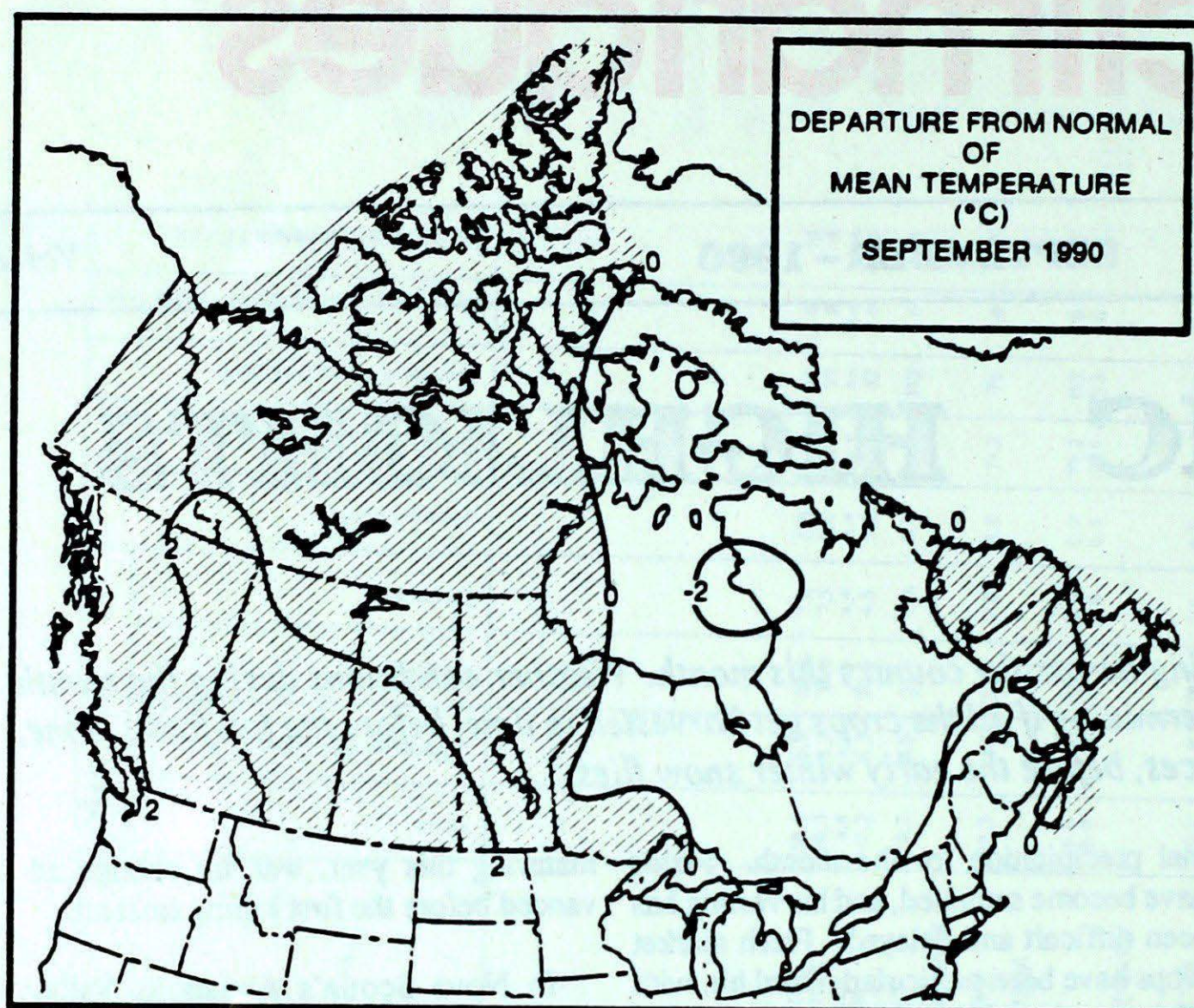
Across the country

Yukon and Northwest Territories

In the Yukon, this was a colourful month, as leaves changed to brilliant colours of yellows and orange, set against a backdrop of snow-covered mountain peaks. The northern parts of the Territory had snow early in the month, while the southern most locations were spared, receiving only a dusting of snow on the surrounding mountain tops. Heaviest precipitation fell along the south side of the Ogilvie Mountain range and along the west side of the Mackenzie Mountains. The communities of Klondike, Mayo and Drury Creek received more than twice their normal September precipitation.

Monthly mean temperatures ranged either side of normal. In the southern parts of the Yukon, outdoor gardeners saw frost nip their plants early in the month, but Whitehorse residents, who normally are treated to 5 cm of snow in September, this year saw snow only fall on the surrounding mountain tops. In Whitehorse, total hours of bright sunshine (129.1 hours) were a little below normal, but not unusually so.

In the Northwest Territories and the Arctic Islands, temperatures showed a steady decline as the autumn equinox approached and then passed. By month's end, below freezing temperatures and snow covered terrain was common throughout the Arctic Islands. The temperature at Alert remained below freezing through the entire month; their warmest reading was -0.6°C . The coldest reading in the Arctic was at Alert, -24.3°C . Strengthening fall weather systems produced strong winds and gales along the southern Arctic coastline and in Hudson Bay, where the Arctic shipping season was nearly over. The short summer season had definitely come to an end. Small inland lakes in the northern parts of the Northwest Territories started to freeze. Precipitation amounts were near normal along the Hudson Bay coast and throughout the Keewatin District of the Territories, but snowfalls were less than average. Coral Harbour received a near normal 9.4 cm of snow. Sunshine was well below normal.



Coral Harbour reported only 67 hours of bright sunshine, well short of the normal 108 hours.

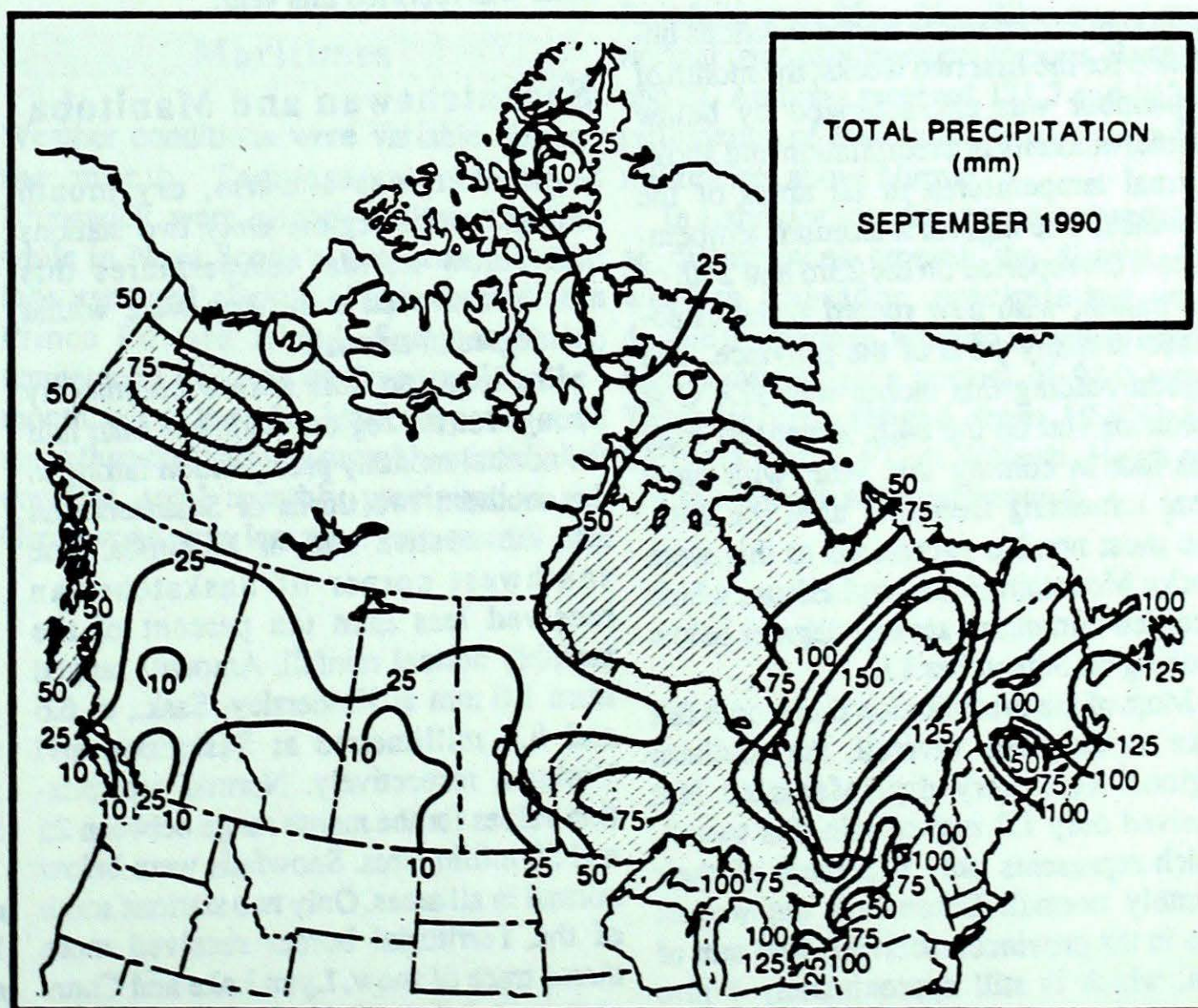
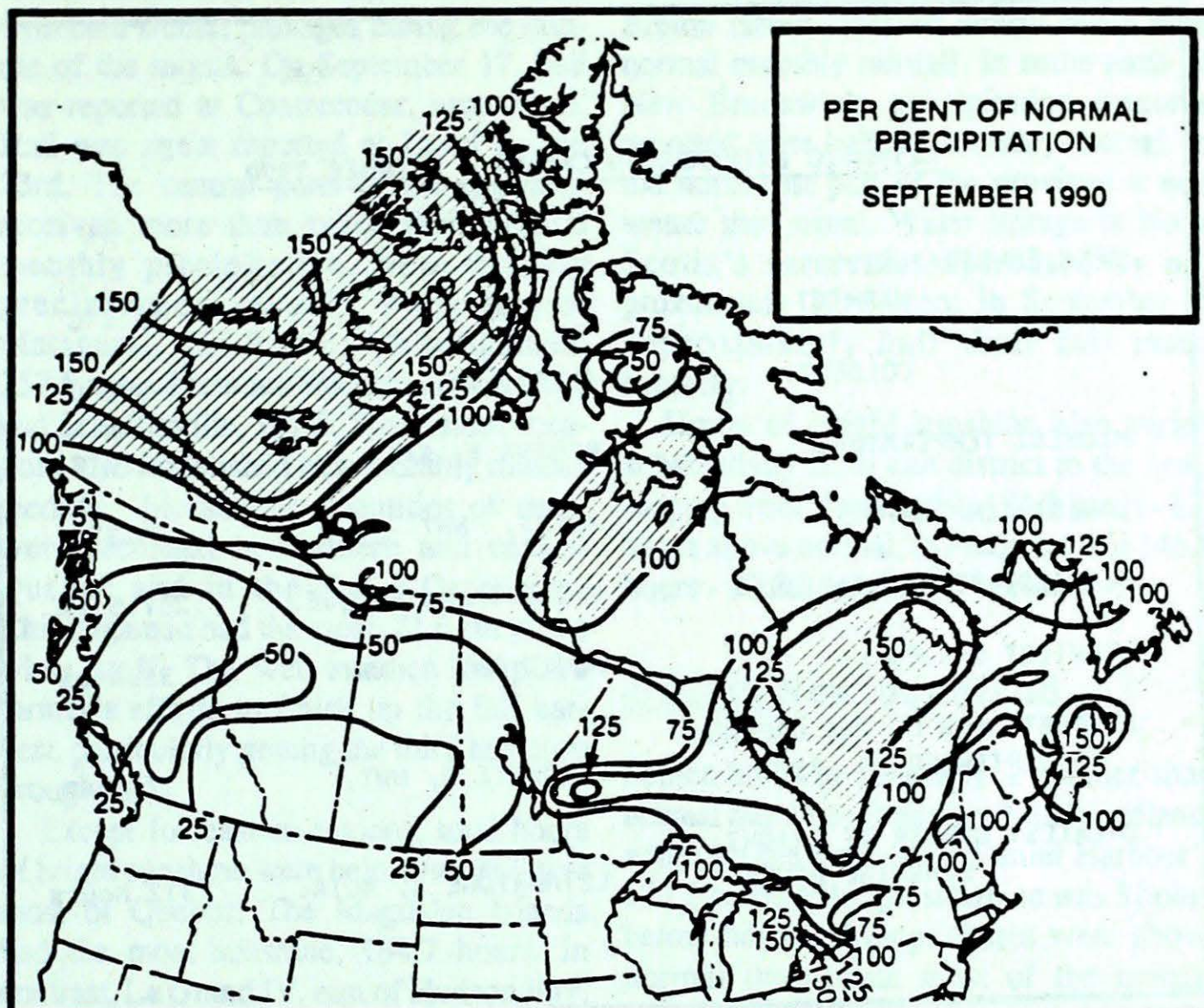
British Columbia

For the most part, summer-like weather continued throughout the province, with record and near record temperatures and low precipitation values being reported in many areas. Temperatures were above normal in all regions of the province. Record high mean temperatures were established at Blue River, Cranbrook, Lytton and Port Alberni, while Revelstoke, Kelowna and Vancouver tied their previous record high values. The warm, sunny weather was expected to give a high sugar content to Okanagan grapes, but on the other hand, the unusual warmth has caused Okanagan apples to drop off trees prematurely, forcing farmers to start picking early. Farmers were very happy with the extended haying season, as were most other agricultural interests.

The warm temperatures were accompanied by dry conditions. Many new monthly low precipitation records were set, including Amphitrite Point, Blue River, Castlegar, Comox, Cranbrook, Prince George, Prince Rupert, Revelstoke and Smithers. The warm, dry weather has curtailed much of the slash burning normally done at this time of year, but also extended the outdoor recreation season.

Sunshine was plentiful. The largest departures were recorded in the Mackenzie - Burns Lake - Prince George areas, as well as the North Columbia - North Thompson regions, with hours of bright sunshine totalling 50 to 65 percent above normal.

The north and central coasts were buffeted by gales several times this month. Once again the exposed northwest coast of Vancouver Island experienced the heaviest weather. The first severe storm of the fall season, sporting winds of 100 km/h, hit on September 27 and 28. Although storm warnings were issued, two fishing boats were unable to reach safety, and sank off Vancouver Island with the loss of several lives.



CLIMATIC EXTREMES IN CANADA - OCTOBER 1990

MEAN TEMPERATURE:		
WARMEST	LYTTON, B.C.	18.8°C
COLDEST	ALERT, NWT.	-9.5°C
HIGHEST TEMPERATURE:	REGINA A, SASK.	34.0°C
LOWEST TEMPERATURE:	ALERT, NWT	-24.3°C
HEAVIEST PRECIPITATION:	CHIBOUGAMAU A, QUE.	257.5 mm
HEAVIEST SNOWFALL:	MOULD BAY A, NWT.	35.4 cm
DEEPEST SNOW ON THE GROUND ON SEPTEMBER 30, 1990	RESOLUTE A, NWT.	17.0 cm
GREATEST NUMBER OF BRIGHT SUNSHINE HOURS:	LETHBRIDGE A, ALTA.	312 hours

Alberta

Although disturbances kept conditions unsettled for the first two weeks, the month of September was characterized by below normal amounts of precipitation and above normal temperatures in all areas of the province. The highest maximum temperatures were reported on the 23rd and 24th of the month, with new record highs established in many parts of the province. The highest reading this month was 32.4°C at Medicine Hat on the 24th. A general frost was late in coming this year, with most areas remaining frost-free until the 26th. The most notable exceptions to this were Rocky Mountain House and Edson, which recorded minimums several degrees below freezing on September 13.

Most of the precipitation this month fell prior to the 19th. Overall, the southern regions were very dry. Medicine Hat received only 1.2 mm of rain this month, which represents only 4 percent of their monthly normal. Edson was the wettest area in the province, receiving 40.4 mm of rain, which is still approximately 4 mm below normal. Although most stations

usually report some snow in September, none was reported this year.

Saskatchewan and Manitoba

September was a warm, dry month throughout the region. Only two stations had below normal temperatures this month, and even then, they were within one degree of normal.

Precipitation was a rare commodity throughout the region, with less than half the normal monthly precipitation falling in the southern two thirds of Saskatchewan and the western half of Manitoba. The southwest corner of Saskatchewan received less than ten percent of the monthly normal rainfall. Amounts ranged from 1.0 mm at Kindersley, Sask., to 6.6 and 8.0 millimetres at Saskatoon and Yorkton, respectively. Normal precipitation values for the month range between 25 and 50 millimetres. Snowfalls were below normal in all areas. Only two stations south of the Territorial border received more than a trace of snow, Lynn Lake and Churchill, with 0.8 and 0.6 centimetres, respectively. Normal September snowfalls range

from less than 1 cm in the south to as much as 9 centimetres in the northern districts of the Prairies.

All of Saskatchewan and Manitoba had above average amounts of sunshine, with many locations in Manitoba tallying between 30 and 50 hours more sunshine. In southern Saskatchewan there were 70 to 80 more hours sunshine this month. Moose Jaw was the sunniest location in the region with 274.0 hours of bright sunshine; an average of over 9 hours per day.

Ontario

Ontario recorded its coolest September since 1986, as cool, generally cloudy weather prevailed across the province. Rainfall, on the other hand, was quite variable, with southwestern Ontario being extremely wet, while sections of northern Ontario experienced a relatively dry month.

Overall, monthly mean temperatures lagged from one-half to one full degree below the long term normal. There was however one exception to this cold weather. From Lake of the Woods to Thunder Bay, monthly mean temperatures were actually on the positive side of normal by one degree, although even at Thunder Bay, this represented the coolest September in 4 years. During one influx of cold weather during the mid-month, an early frost penetrated well south into south-central Ontario, setting record low temperatures as far south as Kitchener and Peterborough.

Rainfall was especially heavy in the London - Windsor corridor. Windsor's 179 mm of rain (270 percent of normal) was the most in the province, while London's 119 mm contributed to the muddy and difficult harvest conditions in this agriculturally intense region. In this area of the province, September stood out as the wettest in at least four years. Other wet areas included: North Bay, 148 mm, rainiest September since 1981; Sault Ste Marie, 120 mm, rainiest since 1986; Ottawa, 103 mm, wettest since 1986; and Moosonee, 100 mm wettest since 1988. In contrast, areas near Lake Ontario, including the Niagara Peninsula, were comparatively dry, with precipitation totals of less than 55

mm. Trenton's 39 mm was barely 50 percent of normal, making this their driest September since 1969, while Peterborough's 43 mm monthly rainfall total was the least since 1973. A second dry area was evident west and northwest of Lake Superior, where totals ranged from 30 to 60 millimetres. Big Trout Lake's 31 mm marked the driest September in 12 years.

Snow is a solemn reminder of the coming winter season and Timmins in north-eastern Ontario had 5 cm of it, with lesser trace amounts falling further south.

September was a cloudy month in central and southern Ontario. Hours of bright sunshine in both St. Catharines and Ottawa were 40 hours short of normal. It was a sunnier than normal month across northern Ontario.

September can serve as either a welcome extension of our summer season or as a stark reminder of just how brief that summer season can be. Given the cool, cloudy and for many, wet weather of September 1990, the brevity of the Summer of 1990 is duly noted.

Quebec

Except for the Eastern Townships and along the north shore of the Gulf, temperatures averaged below normal during September. The greatest negative departures were in the north. A number of daily low temperature records were broken.

Total monthly precipitation was above seasonal values over most of the province, as one weather system after another crossed the region. At times, the heavy rains were accompanied by strong winds, gusting to nearly 100 km/h. There were a

few incidents of severe weather associated with cold frontal passages during the middle of the month. On September 17, hail was reported at Contrecoeur, near Sorel. Hail was again reported at Laval on the 23rd. The central parts of the province received more than twice their normal monthly precipitation. New monthly precipitation records were set at: Matagami, 193.8 mm; Chibougamau, 257.5 mm; Fermont-Wabush, 172.3 mm; and Schefferville, 192.8. These same locations also established new monthly rainfall records. Measurable quantities of snow were recorded in northern and central Quebec and in the Val d'Or region. Chibougamau had the most, 21.6 cm of the white stuff. The wet weather hampered farmer's efforts to finish up the fall harvest, particularly getting the third hay crop brought in.

Except for eastern regions, total hours of bright sunshine were below normal over most of Quebec. The Magdalen Islands had the most sunshine, 184.7 hours. In contrast, La Grand IV, east of Hudson Bay, recorded only 53.9 hours of bright sunshine.

Maritimes

Weather conditions were variable during the month. Temperatures in New Brunswick were slightly below normal, while in Nova Scotia's temperature readings averaged slightly above average. In Prince Edward Island, Summerside's temperature was right on the normal for the month, but on the other hand, they received more than their normal monthly rainfall. In contrast, total monthly precipitation at Greenwood was less than one quarter of

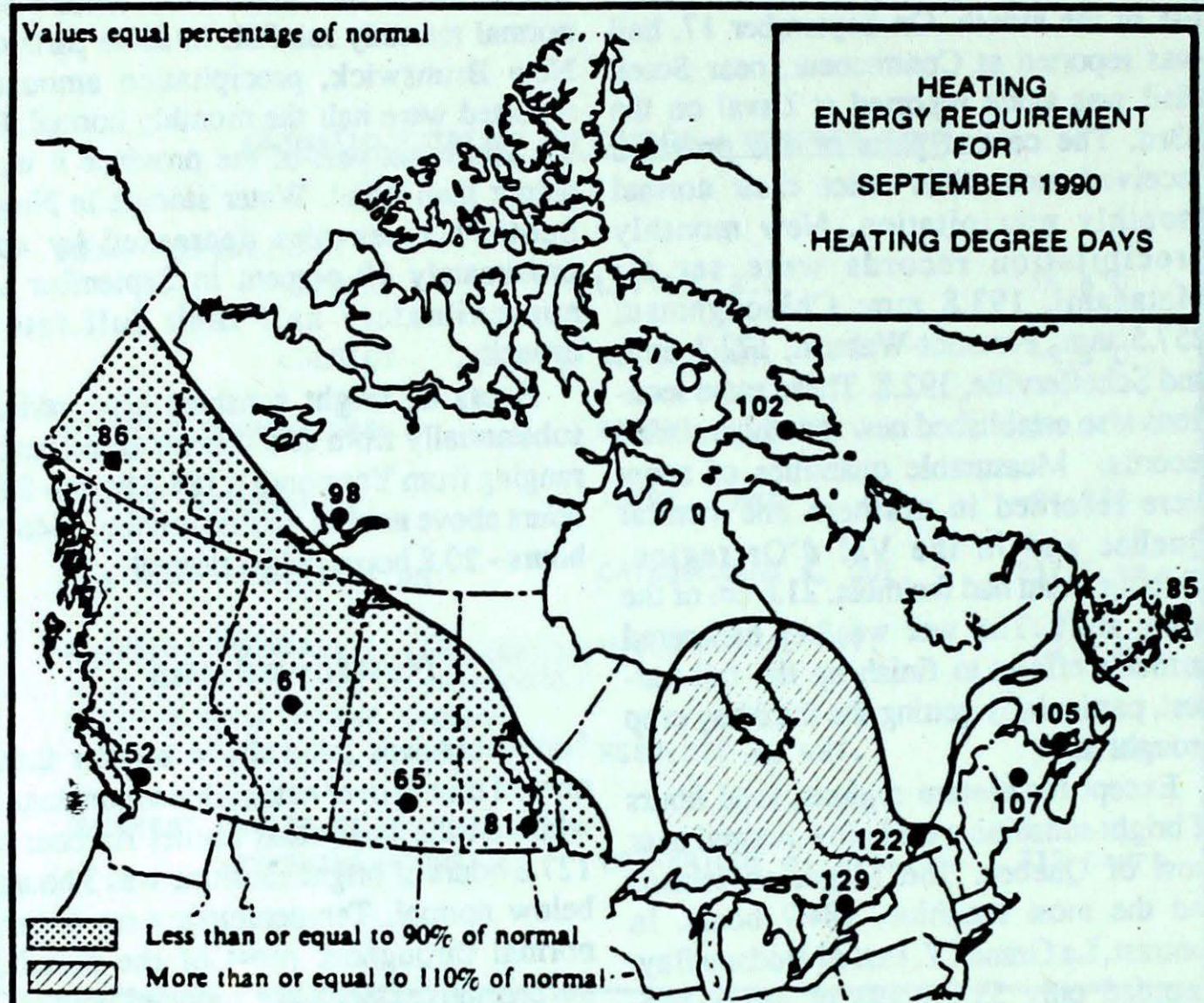
their normal amount, while parts of Cape Breton Island received almost twice their normal monthly rainfall. In some parts of New Brunswick, precipitation amounts reported were half the monthly normal. In the northwest part of the province it was wetter than usual. Water storage in Nova Scotia's reservoirs decreased by approximately 10 percent in September to approximately half their full rated capacity.

Hours of bright sunshine also varied substantially from one district to the next, ranging from Yarmouth's 184.8 hours - 8.8 hours above normal, to Fredericton's 146.5 hours - 20.8 hours below normal.

Newfoundland

September was generally a sunnier than normal month over eastern Newfoundland, while on the west coast Daniel Harbour's 127.8 hours of bright sunshine was 3 hours below normal. Temperatures were above normal throughout most of the month. Surprisingly, Deer Lake reported both the highest and lowest temperatures this month, 24.8°C and -2.7°C, respectively. Rainfalls were 25 to 30 millimetres above normal over southwestern regions. Burgeo and St. Anthony received 171.7 and 142.2 millimetres of rain, respectively; 50 to 60 millimetres above normal.

In Labrador, conditions were unsettled, as disturbances crossed the district. In western Labrador, precipitation was double the normal. Wabush received 172.3 mm compared to a normal of 94.0 mm. Temperatures ranged from 19.9°C at Cartwright to -2.4°C at Wabush. Hours of bright sunshine were near normal.



SEASONAL TOTAL OF HEATING DEGREE-DAYS TO END OF SEPTEMBER

	1990	1989	NORMAL
BRITISH COLUMBIA			
Kamloops	64	96	96
Penticton	81	103	104
Prince George	329	368	463
Vancouver	91	141	167
Victoria	184	243	238

YUKON TERRITORY			
Whitehorse	505	460	610
NORTHWEST TERRITORIES			
Iqaluit	1152	1156	1138
Inuvik	800	618	813
Yellowknife	573	470	514

ALBERTA			
Calgary	250	327	361
Edmonton Mun	234	307	287
Grande Prairie	316	364	413

SASKATCHEWAN			
Estevan	185	191	175
Regina	193	227	210
Saskatoon	249	252	238

MANITOBA			
Brandon	251	227	221
Churchill	753	657	781
The Pas	306	337	322
Winnipeg	173	184	177

ONTARIO			
Kapuskasing	437	355	364
London	122	133	80
Ottawa	154	132	113
Sudbury	266	228	203
Thunder Bay	295	289	276
Toronto	111	127	80
Windsor	70	83	35

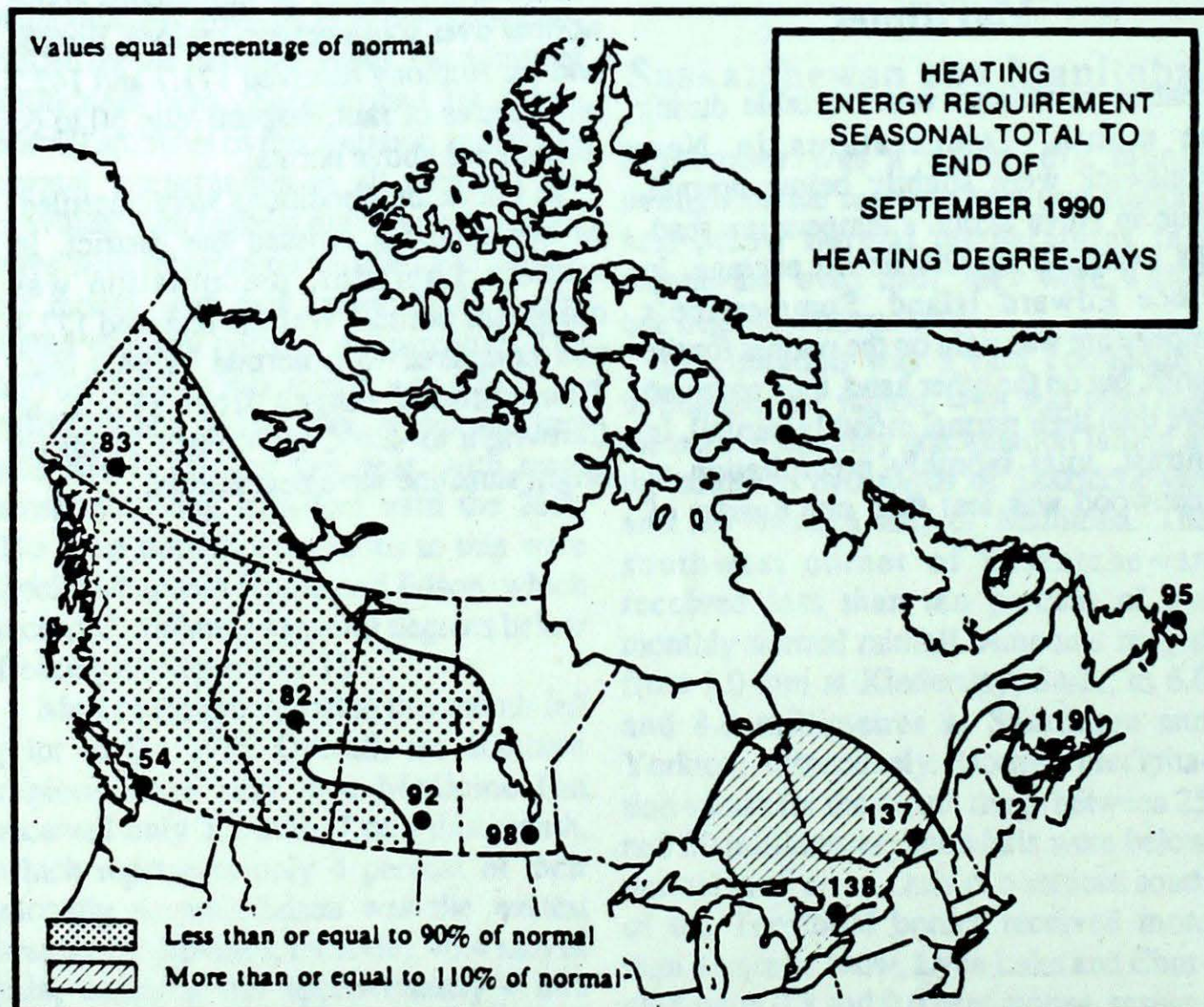
QUÉBEC			
Baie Comeau	410	420	424
Montréal	137	125	100
Québec	203	184	188
Sept-Îles	424	436	471
Sherbrooke	246	251	253
Val-d'Or	407	336	335

NEW BRUNSWICK			
Charlo	284	253	274
Fredericton	199	218	157
Moncton	223	229	177

NOVA SCOTIA			
Halifax	145	*	*
Sydney	205	237	173
Yarmouth	170	245	237

PRINCE EDWARD ISLAND			
Charlottetown	191	208	161

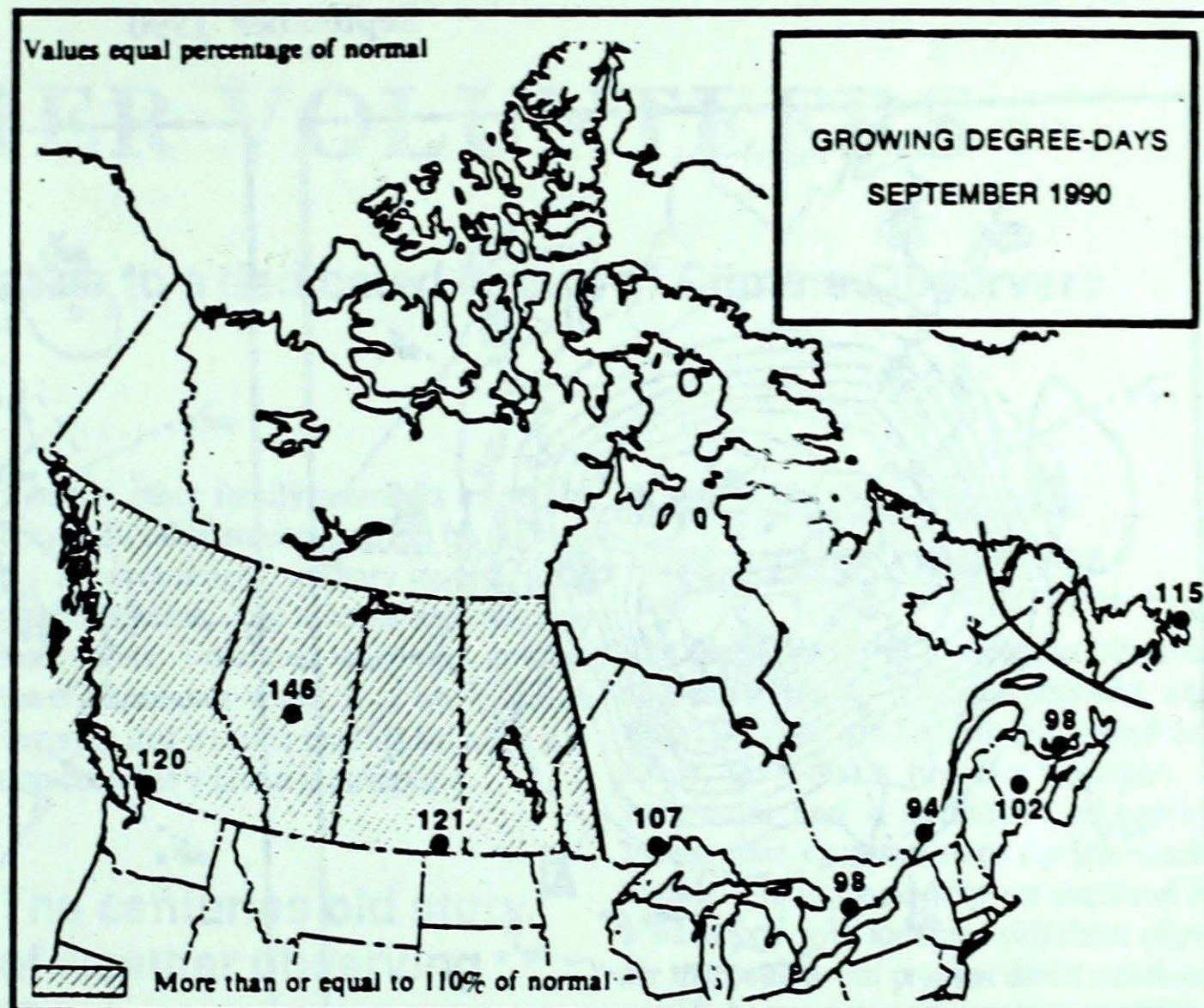
NEWFOUNDLAND			
Gander	321	294	321
St. John's	357	302	357



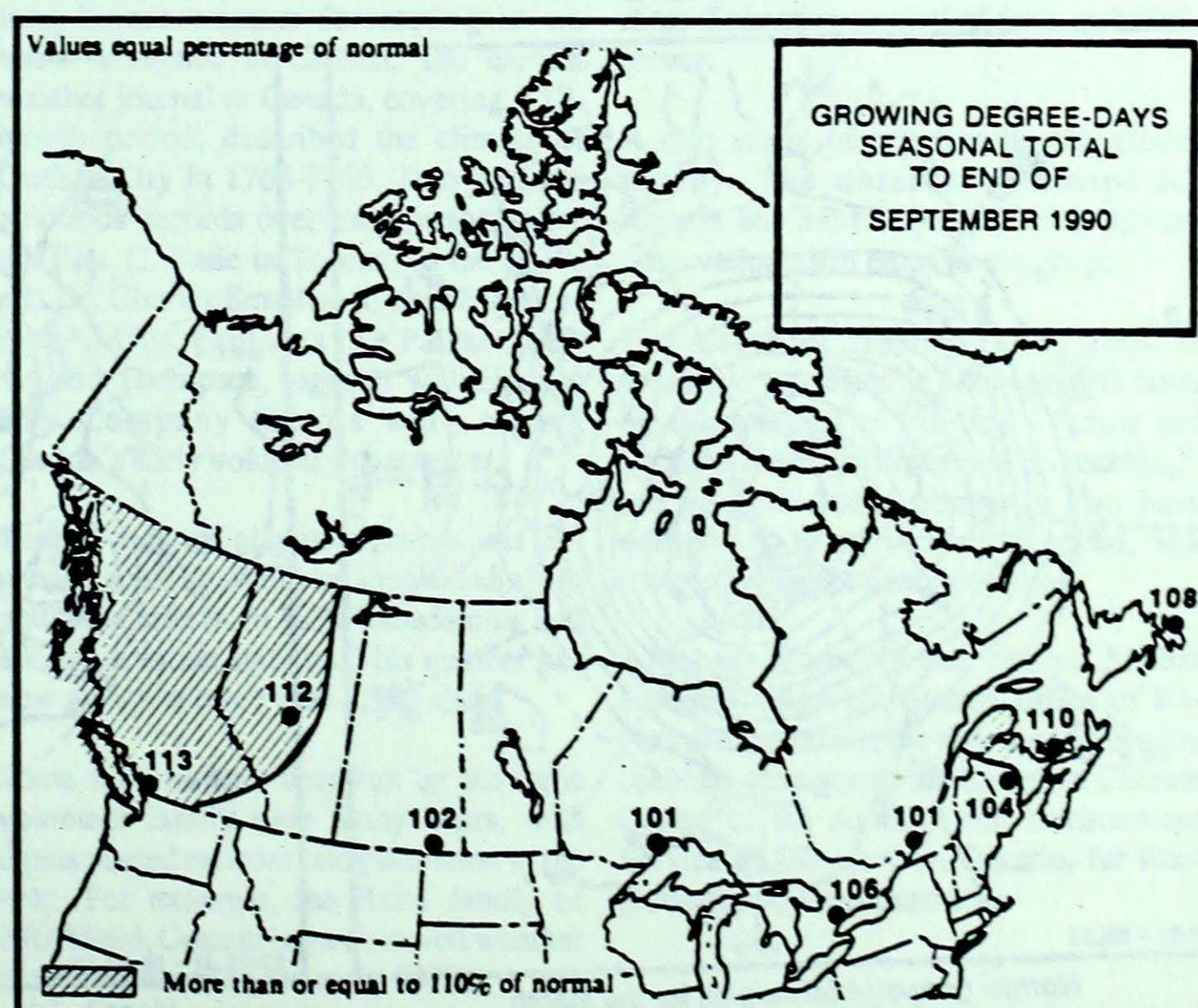
SEASONAL TOTAL OF GROWING
DEGREE-DAYS TO END OF SEPTEMBER

	1990	1989	NORMAL
BRITISH COLUMBIA			
Abbotsford	2036	1766	1701
Kamloops	2282	2092	2091
Penticton	2146	2021	1998
Prince George	*	1167	*
Vancouver	1947	1736	1718
Victoria	1722	1562	1590
ALBERTA			
Calgary	1334	*	1171
Edmonton Mun.	1492	*	1331
Grande Prairie	*	*	*
Lethbridge	1575	*	1479
Peace River	*	*	*
SASKATCHEWAN			
Estevan	1620	*	1585
Prince Albert	*	*	*
Regina	*	*	*
Saskatoon	*	*	*
Swift Current	1516	*	1403
MANITOBA			
Brandon	*	*	*
Churchill	*	*	*
Dauphin	*	*	*
Winnipeg	*	*	*
ONTARIO			
London	1925	1850	1916
Mount Forest	*	*	*
North Bay	*	*	*
Ottawa	1971	*	1897
Thunder Bay	1295	*	1282
Toronto	2032	1888	1920
Trenton	1904	*	1928
Windsor	2264	2152	2226
QUÉBEC			
Baie Comeau	*	*	*
Maniwaki	*	1650	*
Montréal	1973	2003	1952
Quebec	1674	*	1607
Sept-Îles	*	*	*
Sherbrooke	1368	*	1303
NEW BRUNSWICK			
Charlo	1349	*	1240
Fredericton	1525	*	1460
Moncton	1452	1558	1361
NOVA SCOTIA			
Sydney	1410	*	1296
Truro	*	*	*
Yarmouth	1379	1448	1231
PRINCE EDWARD ISLAND			
Charlottetown	1493	1572	1360
NEWFOUNDLAND			
Gander	1177	*	1077
St. John's	1011	*	939
Stephenville	1163	1350	1071

Values equal percentage of normal

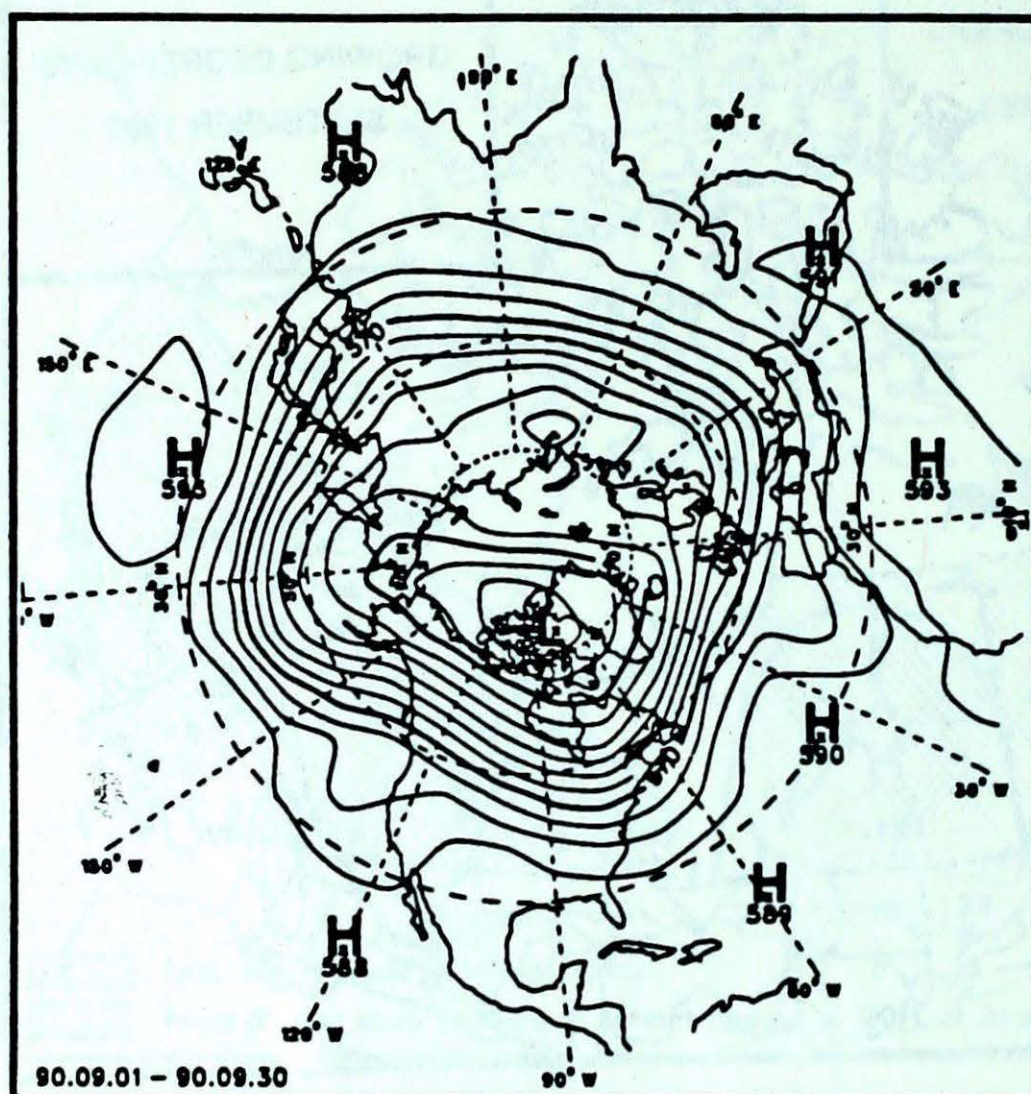


Values equal percentage of normal

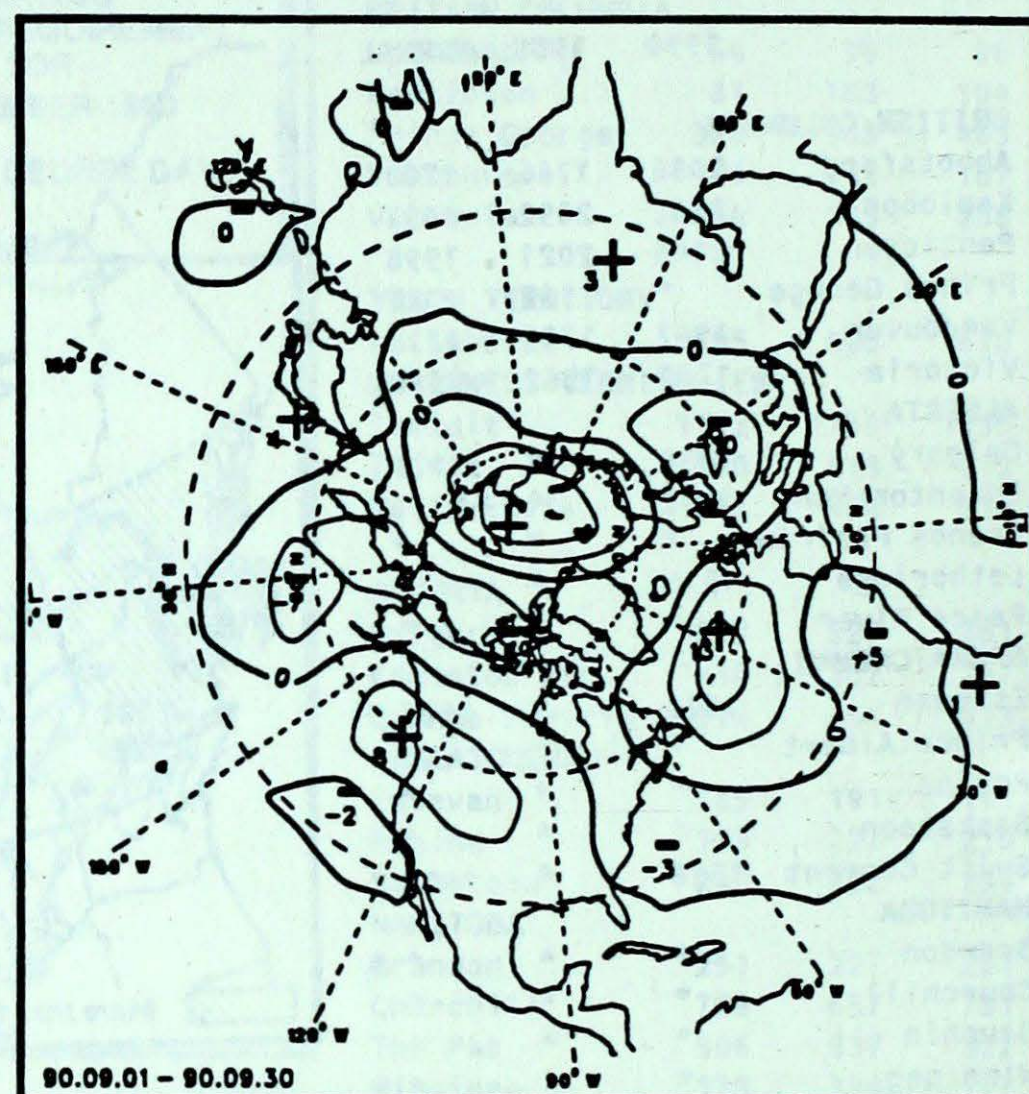


50-kPa ATMOSPHERIC CIRCULATION

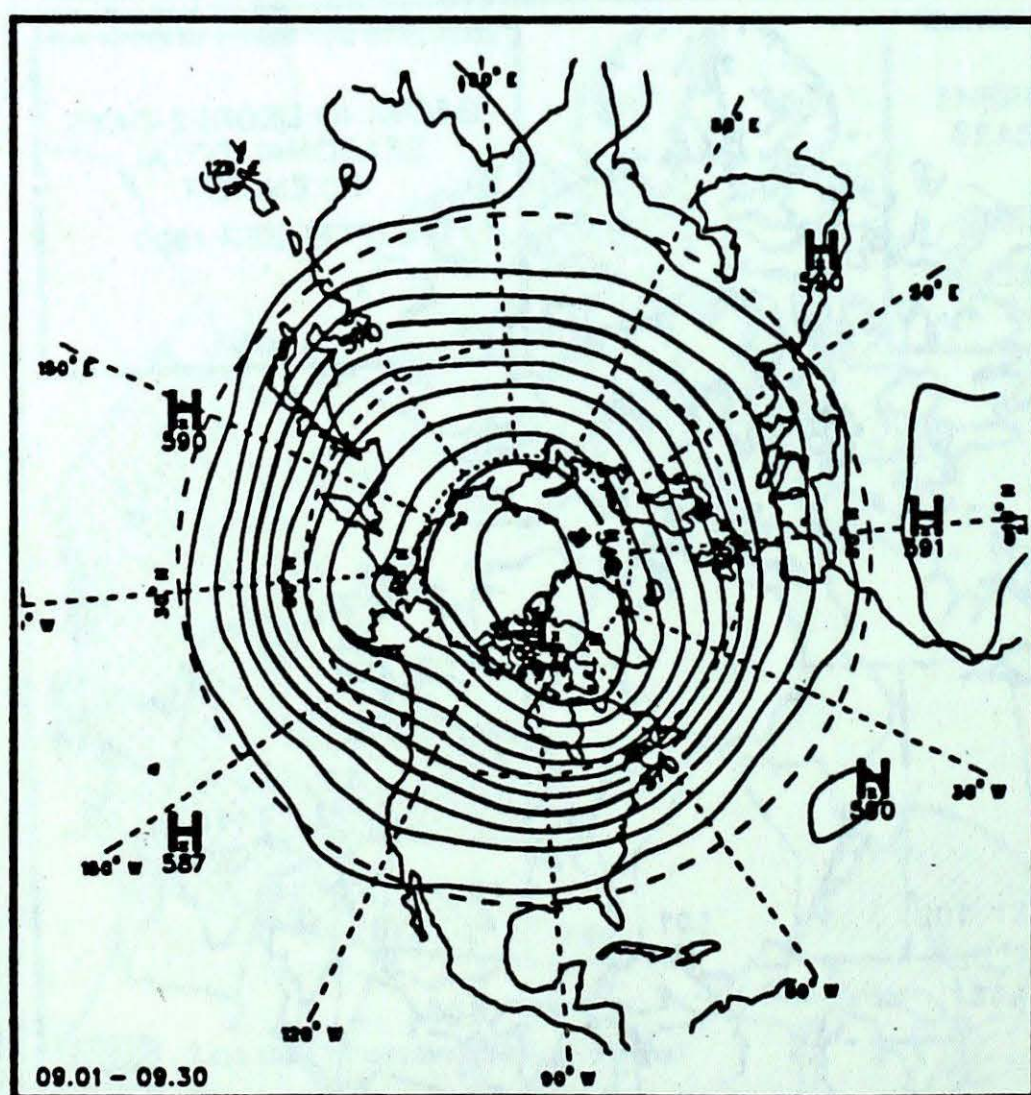
September 1990



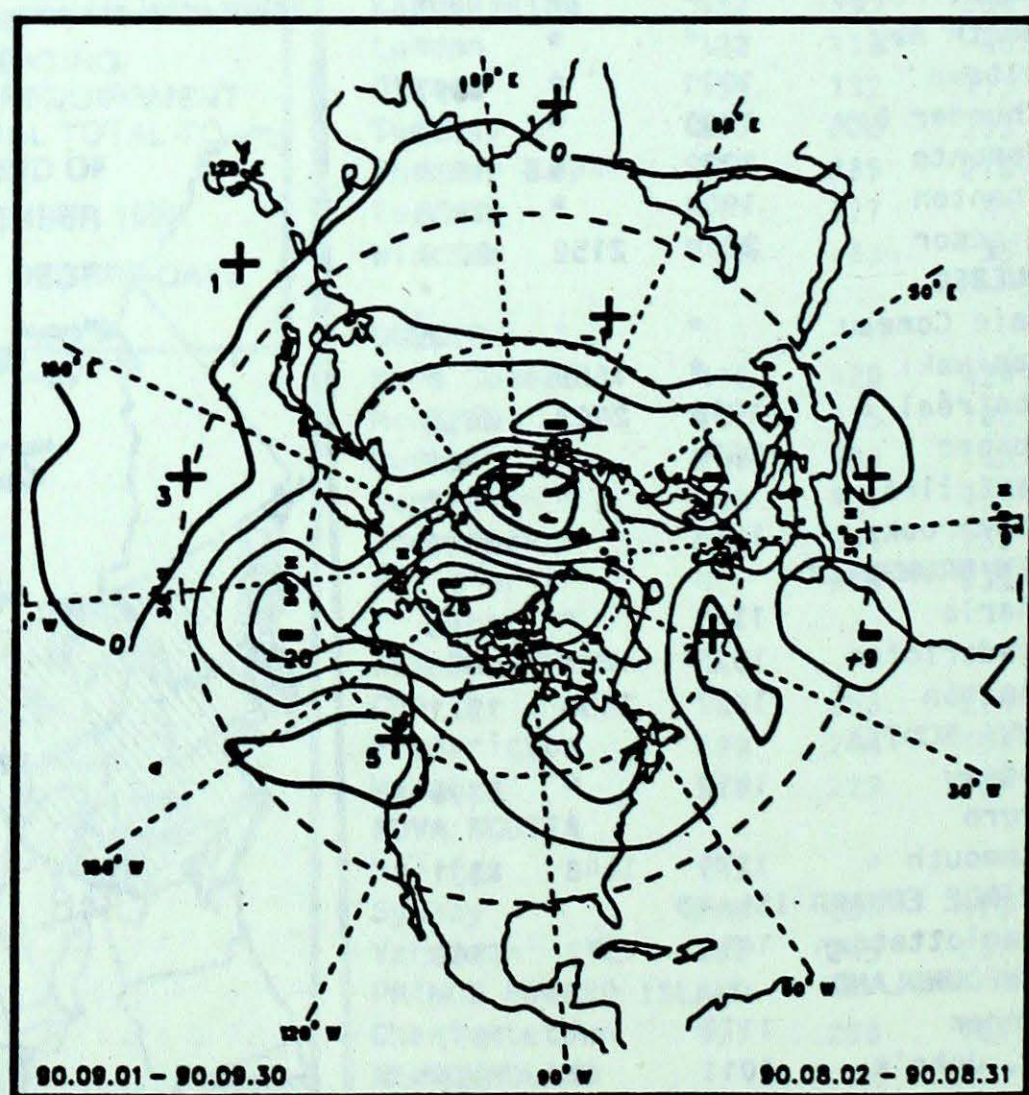
Mean geopotential heights
- 5 decametre interval -



Mean geopotential height anomaly
- 5 decametre interval -



Normal geopotential heights for the month
- 5 decametre interval -



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

WEATHER VOLUNTEERS

A 150th Anniversary Salute to a dedicated Group of Climate Observers

Most people are interested in the weather in a general, matter-of-fact way, especially when it is extreme or unseasonable. But since 1840, a small but growing group of people have been deeply committed to keeping track of rain, snow, temperatures and sunshine each day, year in, year out. More recently, volunteers include those who scan the skies whenever severe weather threatens and by phoning vital information to a weather centre can actually help save lives and prevent injuries.

Their work is different from that of meteorologists and forecasters, but hardly less vital. One thing is certain: for some 170,000 climate and severe weather observers working from coast to coast with Environment Canada, weather is of all-consuming interest. More than a third of these observers take regular, twice-daily observations all year round and these data form the solid basis of Canada's computerized climate archives. They are people of all ages and from all walks of life - farmers, housewives, clergy, school teachers and pensioners. Carrying out their observations in all settled areas of the country, they keep careful records of such basic weather information as temperature and precipitation and at the end of the month pass on the data to Environment Canada.

The federal government offers training and supplies equipment to these observers and covers postage and other operating costs. But volunteers perform these tasks for their own inner satisfaction and receive no salary for their work.

Many observing stations are manned by individuals. Some share the task with

spouses, other family members or neighbors. Still other stations are run by personnel at government, military or industrial establishments, or at schools and religious institutions. Volunteer observers arrange for replacements when ill or on vacation, ensuring that weather records from the station continue without interruption.

The centuries old story of weather observing

Today's dedicated volunteers continue a service begun well over two centuries ago, long before weather forecasting as we know it existed in Canada. The earliest weather journal in Canada, covering a 12-month period, described the climate of Quebec City in 1765-1766. Two pioneers who took records over long periods were the Rev. C. Dade in Toronto in the 1830s and Dr. Charles Smallwood near Montreal in the 1850s. Explorers like Palliser, Kelsey and Thompson, together with Hudson Bay Company factors were among Canada's early voluntary observers.

Canada's entire climate network has expanded across the country thanks mainly to volunteer efforts. In 1871 Canada only had 126 observation stations. This number has now grown to more than 2,500 sites.

Some stations have been run by the same volunteer family over many years, with duties passed on from one generation to the next. For example, the Baird family of Brucefield, Ontario have observed weather at their home since the early 1900s.

A day in the life of a "backyard" observer

The daily routine of a volunteer observer rarely varies. Early in the morning and again in late afternoon, this volunteer reads, then resets two thermometers, a maximum and a minimum, recording temperature extremes since the last observation. The thermometers are sheltered in a white box with louvered sides that allow air to circulate but prevent direct sunshine or rain from reaching the instruments. This box, known as a Stevenson screen, resembles a beehive and is perhaps the most distinctive symbol of the weather observer.

A rain gauge usually sits on the ground nearby. The observer measures and records any rain collected since the last observation, then empties the gauge.

The depth of freshly fallen snow is measured too. Finally, some general notes on the weather of the day - "snow and strong winds" or "dense fog all morning", are penned. Some observers also have equipment to record wind speed, soil temperature or hours of sunshine.

After the observer has mailed his/her monthly report to regional office of Environment Canada, the data are thoroughly checked, then sent to the Canadian Climate Centre of the Atmospheric Environment Service in Downsview, Ontario, for final processing by computers.

From the resulting national records, information is available on demand in print form, on microfilm or on computer tape.

Weather observing takes a new direction

During the 1970s Environment Canada weather centres took advantage of several major advances in weather forecasting technology, from supercomputers to developments in weather radar. However, improvements in meteorological prediction, especially in the critical area of severe weather, were incomplete without the introduction of a new kind of volunteer observer - the severe weather watcher.

First recruited in parts of Canada especially prone to severe weather like Manitoba or southern Ontario, volunteer sky watchers were asked by Environment Canada to phone in to a special number if they spotted anything unusual in the sky like tornadoes, hailstorms or heavy thunderstorms. Severe weather meteorologists found this information very useful for determining the precise location of areas threatened by severe weather, something their advanced electronic equipment could not always pinpoint. In fact, these volunteer calls proved invaluable to meteorologists about to issue severe weather warnings to the public.

In the early 1980s the Severe Weather Watch Program spread rapidly to most other regions of Canada, from the Maritimes to Alberta. It is interesting to note that the approach of the deadly Edmonton tornado of July 31, 1987 was first spotted by volunteer observer Tom Taylor, a pharmacist in Leduc, 24 kilometres away. His prompt phone call to Environment Canada allowed the Weather Centre to issue a life saving warning to thousands of Edmontonians.

Many of those enrolled in the Weather Watch Program have little or no experience in meteorology. They include students, police officers, nature lovers or people at summer recreation centres. They

may only spot threatening weather conditions once or twice a year, but they are considered vital links in Canada's volunteer weather observing program.

The volunteer, vital link in the chain

Returning to the special work of climate observers, it's clear that they play a key role in Environment Canada's complex, technological weather service. In fact, the volunteer forms a valuable human link in a field increasingly dominated by impersonal machines.

Observations built up over the years by these volunteers provide basic facts about the climate of Canada. From these facts various climate statistics are calculated.

Environment Canada uses the information provided by volunteer observers to respond to nearly 200,000 annual requests for climate data. Enquiries could come from an entrepreneur planning to set up a new resource-based industry in a remote area, from an academic, researching the natural history of another part of Canada, or from a legal officer wishing to know what the weather was like in a particular spot on the night of a crime.

Despite its importance, the volunteer network has the support of several other meteorological observation networks. For example, there is a growing network of automated stations, especially in remote, sparsely inhabited areas of Canada. There is also a marine branch of the observer network with observations carried out by volunteers aboard ship in inland waterways, coastal waters or on the high seas. For several years in a row, the Port Meteorological Officer in Vancouver handed an observer award to the "star" of a famous TV series... "Loveboat".

The weather observer in the community

Volunteer weather observers are often the hidden resource of Environment Canada's weather service. Unlike the weather personality whose face or voice may be familiar to thousands of television viewers or radio listeners, "backyard" volunteers perform their round-the-clock duties with little fanfare.

In recent years volunteer observers have been asked to provide particular information to Environment Canada to help with flood forecasting, verify some weather forecasts and to pinpoint the location of severe weather. Observers also answer occasional enquiries from other government departments particularly federal or provincial agricultural agencies - hardly surprising since many observers are themselves farmers, and they often use their own data for managing their crop programs. City-based observers sometimes assist municipalities by supplying climate data of use to green belt planners or construction engineers. Finally, some observers are occasionally consulted by local newspapers, TV or radio stations.

Environment Canada honors the volunteers through a series of awards Certificates of Achievement are presented to those who maintain high standards for five or more years. Awards of merit are given for 20 years or more of continuous service. From time to time, Long Service Awards are given to individuals, families or institutions that have maintained records for 50 to 100 years at the same site. The Morley Thomas award goes to individuals who have kept records for 30 years or more. (Mr. Thomas, a former Director General of the Canadian Climate Centre has himself been a climate volunteer for 35 years).

So you want to be a weather volunteer!

The need for volunteer weather observers differs in various parts of the country and

sometimes within the confines of a single city. On the whole, Environment Canada's volunteer network is expanding, so if you are really interested in contributing to this important Canada-wide service, please consider the following.

The first thing is to decide which kind of weather observing you want to do. Many beginners prefer to get involved with the Weather Watch Program because it is designed for highly observant people on-the-go and does not require regular, year-round collection of data.

If you decide you'd like to be involved with the weather every day of your life, you could in addition run a "backyard" weather station. Of course you must have a settled location, be prepared to take the responsibility of maintaining Environment Canada instruments and send in complete results of your observations to a climate office at the end of the month.

You will most likely succeed as a volunteer if you have a strong community spirit... a desire to help both the country and your fellow Canadians, while enjoying a vital, scientific and practical program where the

main reward is knowing you have performed a job well done.

The weather service is one of the few federal agencies that uses more volunteers than paid employees to carry out its programs. Volunteer weather observers can be justly proud of a contribution that is as old as Canada itself and will benefit Canadians for generations to come.

If you are interested in joining a volunteer program, please contact your local weather office or one of the regional offices of the Atmospheric Environment Service.

Think recycling



Pensez à recycler

SEPTEMBER

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 A	16.5	2.0	31.0	4.0	0.0	*	29.0	32	0	3	210	121	49.3
ALERT BAY	12.7	0.1	26.8	6.0	0.0	*	26.2	22	0	6	*	*	157.8
AMPHITRITE POINT	14.7	1.3	23.5	9.3	0.0	*	6.3	4	0	2	*	*	91.9
BLUE RIVER A	12.7	2.0	28.7	-5.6	0.0	0	10.6	13	0	4	217	164	*
CAPE ST JAMES	14.7	1.8	20.7	9.4	0.0	*	65.0	52	0	8	187	*	99.6
CAPE SCOTT	13.5	1.0	23.3	8.9	0.0	*	40.4	19	0	5	*	*	135.6
CASTLEGAR A	16.5	1.9	32.0	3.6	0.0	*	1.6	4	0	1	246	130	45.4
COMOX A	15.8	2.1	25.3	5.1	0.0	*	0.6	1	0	0	237	*	66.1
CRANBROOK A	15.8	3.8	30.1	1.9	0.0	0	0.4	1	0	0	279	129	76.2
DEASE LAKE	8.2	1.1	21.7	-4.8	0.0	0	28.2	61	0	11	140	111	294.9
FORT NELSON A	11.4	2.7	27.3	-3.5	0.0	0	16.2	39	0	4	213	*	198.0
FORT ST JOHN A	12.7	3.2	25.1	1.0	0.0	0	8.1	21	0	2	219	*	160.1
HOPE A	17.9	2.4	31.2	5.3	0.0	*	30.7	30	0	3	231	134	32.3
KAMLOOPS A	17.1	2.2	32.2	3.4	0.0	*	0.0	0	0	0	286	147	43.1
KELOWNA A	15.9	3.0	30.9	2.2	0.0	*	5.7	18	0	1	272	133	68.0
LYTTON	18.8	2.7	33.3	6.7	0.0	*	30.6	130	0	3	212	115	23.0
MACKENZIE A	10.7	1.8	24.5	-3.9	0.0	0	11.6	22	0	4	215	162	218.5
PENTICTON A	16.7	2.0	30.0	4.0	0.0	*	7.8	44	0	2	263	124	44.3
PORT ALBERNI A	16.7	2.4	33.1	1.6	0.0	*	7.8	9	0	2	215	*	45.5
PORT HARDY A	12.5	0.7	23.3	4.0	0.0	*	38.9	29	0	4	167	121	163.7
PRINCE GEORGE A	11.8	2.1	26.3	-3.5	0.0	0	9.3	16	0	2	242	152	185.2
PRINCE RUPERT A	11.5	0.2	22.1	4.4	0.0	*	77.7	32	0	14	132	113	183.4
PRINCETON A	15.2	2.3	31.3	-2.6	0.0	*	5.2	29	0	2	271	*	*
REVELSTOKE A	14.7	2.4	26.7	3.3	0.0	0	9.4	14	0	1	246	163	98.1
SANDSPIT A	13.7	0.8	20.3	7.2	0.0	*	71.3	79	0	8	142	102	129.0
SMITHERS A	11.2	1.4	24.3	-1.1	0.0	0	6.9	14	0	2	196	149	204.4
TERRACE A	13.7	1.8	25.0	5.8	0.0	*	42.0	43	0	8	167	132	128.3
VANCOUVER INT'L A	16.0	1.8	24.5	6.6	0.0	*	43.0	64	0	2	218	143	58.6
VICTORIA INT'L A	14.4	0.5	28.1	4.6	0.0	*	15.4	39	0	2	237	122	109.4
VICTORIA MARINE	13.8	0.8	22.7	5.5	0.0	*	7.8	11	0	2	*	*	126.9
WILLIAMS LAKE A	12.4	2.1	26.4	-1.3	0.0	0	20.2	67	0	2	258	156	167.1

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	Mean	Difference from Normal	Maximum	Minimum									
YUKON TERRITORY													
DAWSON A	6.6	*	21.9	-4.6	0.0	*	60.6	*	*	*	*	*	*
MAYO A	7.0	0.5	17.9	-3.7	0.0	0	81.4	269	*	*	*	*	*
WATSON LAKE A	9.5	1.9	20.7	-5.8	0.0	0	37.3	85	0	9	168	132	255.3
WHITEHORSE A	8.9	1.4	20.3	-5.7	0.0	0	23.5	78	0	5	129	94	272.0
NORTHWEST TERRITORIES													
ALERT	-9.5	0.7	-0.6	-24.3	25.1	76	21.2	77	15	6	128	154	824.7
BAKER LAKE A	2.5	1.2	11.6	-6.7	1.8	31	31.0	84	0	6	72	67	466.0
CAMBRIDGE BAY A	-0.5	0.2	9.5	-8.6	11.2	132	25.1	145	0	8	57	69	553.8
CAPE PARRY A	1.2	0.5	11.9	-5.5	13.4	92	20.5	88	0	8	*	*	504.1
CLYDE A	-0.5	-0.3	7.8	-14.9	25.7	88	27.8	79	10	11	78	91	556.2
COPPERMINE A	3.3	0.8	19.4	-7.4	1.8	34	44.2	184	1	8	112	160	440.8
CORAL HARBOUR A	.2	-0.7	11.3	-7.0	9.4	95	59.8	176	0	10	67	62	532.9
EUREKA	-5.8	2.5	2.6	-17.4	5.7	55	5.7	59	1	2	107	105	715.3
FORT RELIANCE	6.4	0.3	19.0	-1.2	0.8	32	28.6	95	0	5	*	*	348.7
FORT SIMPSON A	8.9	1.6	25.7	-3.2	4.0	70	44.1	147	0	8	160	119	274.8
FORT SMITH A	8.6	1.1	24.7	-3.3	0.0	0	47.8	116	0	12	159	*	282.3
IGALUIT	2.0	-0.4	10.8	-3.9	9.8	71	45.4	99	0	8	96	117	481.0
HALL BEACH A	-1.0	-0.4	6.3	-7.6	8.6	71	9.6	35	0	3	*	*	569.6
HAY RIVER A	8.9	0.8	25.8	-0.6	0.0	0	38.3	91	0	9	*	*	261.7
INUVIK A	3.2	0.1	17.7	-7.5	5.4	45	31.7	133	0	5	124	114	443.8
MOULD BAY A	-5.5	1.0	3.2	-18.5	24.4	182	35.4	256	11	9	56	123	703.7
NORMAN WELLS A	6.3	0.2	20.9	-2.1	0.8	15	75.1	256	0	9	116	97	350.9
POND INLET A	-1.9	*	7.1	-11.5	26.0	*	21.6	*	10	8	80	*	595.6
RESOLUTE A	-4.9	0.2	4.3	15.3	27.0	176	26.9	149	17	6	73	124	688.2
YELLOWKNIFE A	6.9	0.2	18.7	-0.6	0.0	0	14.8	49	0	4	148	97	333.8
ALBERTA													
BANFF	12.8	3.5	27.5	-1.5	0.0	0	9.1	22	0	3	*	*	*
CALGARY INT'L A	14.1	3.5	29.7	-1.6	0.0	0	7.5	20	0	2	273	140	122.1
COLD LAKE A	11.9	2.1	27.0	-3.5	0.0	0	21.0	47	0	5	216	124	181.8
CORONATION A	13.1	2.6	29.8	-4.3	0.0	0	4.6	14	0	2	278	134	148.8

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	Mean	Difference from Normal	Maximum	Minimum									
EDMONTON INT'L A	13.0	3.2	29.1	-2.8	0.0	0	4.2	9	0	2	280	153	150.0
EDMONTON MUNICIPAL	13.8	2.8	28.4	0.4	0.0	*	14.0	38	0	5	272	150	127.0
EDMONTON NAMAQ A	13.2	2.8	27.8	-1.0	0.0	0	12.3	30	0	5	*	*	145.2
EDSON A	11.2	2.6	27.4	-4.7	0.0	0	40.4	71	0	4	239	146	204.1
FORT CHIPEWYAN A	9.4	1.4	26.0	-2.5	0.0	0	25.8	57	*	*	*	*	*
FORT MCMURRAY A	11.0	2.0	27.1	-3.1	0.0	0	32.0	55	0	8	175	123	208.5
GRANDE PRAIRIE A	12.0	2.2	25.8	-2.7	0.0	0	20.8	56	0	3	247	*	178.9
HIGH LEVEL A	9.2	0.7	26.0	-3.6	0.0	0	20.4	50	0	6	178	120	255.9
JASPER	11.9	2.1	26.9	-4.0	0.0	0	27.4	72	0	3	259	*	184.1
LETHBRIDGE A	16.0	3.3	31.3	-0.3	0.0	0	5.2	14	0	2	312	*	77.4
MEDICINE HAT A	16.6	3.4	32.4	-1.2	0.0	0	1.2	4	0	1	307	154	61.2
PEACE RIVER A	11.3	2.2	25.7	-2.0	0.0	0	16.2	42	0	6	*	*	201.0
RED DEER A	12.4	2.3	29.2	-4.7	0.0	0	4.1	9	0	1	*	*	164.9
ROCKY MTH HOUSE A	11.1	1.4	30.2	-4.6	0.0	0	7.0	14	0	1	*	*	205.5
SLAVE LAKE A	11.4	2.4	26.0	-2.7	0.0	0	15.6	29	0	4	243	150	199.2
WHITCOURT A	11.9	3.0	27.9	-1.4	0.0	0	28.7	83	0	6	*	*	181.9
SASKATCHEWAN													
BROADVIEW	13.4	2.6	31.9	-4.4	0.0	0	20.2	40	0	4	273	146	142.0
CREE LAKE	8.9	1.5	22.8	-2.2	0.0	0	30.0	55	0	7	138	103	272.8
ESTEVAN A	14.5	2.1	32.4	0.0	0.0	0	13.1	30	0	3	243	115	122.9
HUDSON BAY A	10.8	*	30.2	-4.2	0.0	*	11.4	*	0	2	207	*	216.1
KINDERSLEY	13.8	2.3	31.0	-5.9	0.0	0	1.0	4	0	0	278	*	129.8
LA RONGE A	10.3	1.0	25.5	-2.0	0.0	0	22.7	36	0	5	*	*	230.8
MEADOW LAKE A	11.4	*	29.2	-4.7	0.0	*	6.0	*	0	2	198	*	203.2
MOOSE JAW A	15.1	2.6	33.5	0.0	0.0	0	5.8	16	0	1	274	135	106.7
NIPAWIN A	12.1	*	30.2	-2.2	0.0	*	24.2	*	0	2	207	*	180.1
NORTH BATTLEFORD A	12.7	1.7	31.5	-2.3	0.0	0	5.6	22	0	2	*	*	161.2
PRINCE ALBERT A	12.2	2.3	29.8	-1.5	0.0	0	11.4	29	0	4	196	118	177.7
REGINA A	14.5	2.8	34.0	-3.1	0.0	0	6.4	17	0	2	264	138	123.1
SASKATOON A	13.4	2.2	31.5	-2.7	0.0	0	6.6	21	0	3	*	*	143.0
SWIFT CURRENT A	15.0	3.3	32.1	-1.7	0.0	0	3.0	9	0	1	297	153	108.6
YORKTON A	12.9	2.0	30.7	-1.7	0.0	0	8.0	17	0	3	223	121	158.8
MANITOBA													
BRANDON A	12.5	1.1	31.6	-1.8	0.0	0	23.2	52	0	4	243	*	173.4
CHURCHILL A	5.7	0.3	19.2	-1.8	0.0	13	51.8	102	0	12	101	91	371.0
DAUPHIN A	12.5	1.2	32.3	-3.4	0.0	0	23.3	39	0	4	199	111	170.7
GILLAM A	6.8	0.8	19.7	-5.2	0.0	0	30.8	56	0	7	*	*	338.0
GIMLI	12.9	*	28.9	-0.7	0.0	*	40.2	*	0	7	207	123	160.4
ISLAND LAKE	9.2	0.4	23.9	-0.3	0.0	0	49.0	71	0	9	*	*	262.9
LYNN LAKE A	8.3	1.8	23.1	-2.9	0.6	7	21.5	30	0	6	163	140	303.1
NORWAY HOUSE A	9.8	*	23.1	-2.4	0.0	*	32.0	*	0	5	*	*	247.0

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	Mean	Difference from Normal	Maximum	Minimum									
PORTAGE LA PRAIRIE	14.0	1.6	31.7	-1.0	0.0	0	19.2	38	0	4	*	*	138.3
THE PAS A	11.3	1.5	28.5	-2.0	0.0	0	19.7	34	0	2	214	136	200.3
THOMPSON A	7.3	0.4	24.5	-7.4	0.0	0	15.4	22	0	7	152	120	322.7
WINNIPEG INT'L A	13.9	1.5	32.7	-2.5	0.0	0	31.5	59	0	6	214	116	137.5
ONTARIO													
BIG TROUT LAKE	7.3	-0.8	23.2	-1.7	2.2	43	30.6	42	0	7	131	*	322.3
EARLTON A	10.2	0.6	29.5	-0.8	0.8	160	82.0	83	0	11	*	*	230.7
GERALDTON A	8.5	*	23.8	-4.8	0.4	*	64.0	*	0	11	*	*	286.5
GORE BAY A	13.8	0.0	27.4	3.1	0.0	*	97.8	107	0	11	*	*	137.0
HAMILTON RBG	16.6	*	29.3	3.5	0.0	*	49.4	*	0	9	174	*	*
HAMILTON A	15.1	-0.6	27.2	1.2	0.0	*	56.3	76	0	11	*	*	103.2
KAPUSKASING A	8.9	-1.1	25.1	-4.3	3.9	163	91.4	97	0	12	*	*	279.1
KENORA A	13.1	1.5	27.4	0.6	0.0	0	49.4	71	0	8	*	*	157.4
KINGSTON A	14.6	-0.6	26.5	2.0	0.0	*	53.2	56	0	11	138	82	110.8
LONDON A	15.0	-0.4	27.8	1.9	0.0	*	118.7	151	0	13	172	99	102.7
MOOSONEE	7.9	-1.6	24.0	-4.2	*	*	100.2	124	0	14	*	*	304.3
MUSKOKA A	12.4	-0.8	27.5	-2.5	0.0	*	99.8	97	0	14	*	*	172.5
NORTH BAY A	11.3	-0.9	26.6	0.0	*	*	147.6	127	0	15	124	80	204.2
OTTAWA INT'L A	13.4	-0.9	27.4	1.9	0.0	*	103.0	130	0	13	124	75	141.3
PETAWAWA A	12.2	-0.1	29.5	-1.5	0.0	*	58.2	79	0	12	*	*	179.1
PETERBOROUGH A	13.1	-0.7	25.8	-1.8	0.0	*	42.5	68	0	8	*	*	150.8
PICKLE LAKE	8.4	-1.0	23.8	-1.5	*	*	95.0	112	0	10	*	*	287.9
RED LAKE A	10.4	-0.1	25.7	-2.5	0.0	0	91.4	128	0	8	175	*	230.8
ST CATHARINES A	16.2	-0.3	28.4	3.7	0.0	*	55.4	60	0	9	151	*	82.2
SARNIA A	15.3	-1.0	29.2	2.2	0.0	*	97.0	154	0	10	176	90	99.2
SAULT STE MARIE A	12.7	-0.1	27.4	-2.3	0.0	0	119.6	125	0	9	174	111	166.9
SIOUX LOOKOUT A	11.7	1.0	25.9	-1.0	0.0	0	51.4	63	0	10	*	*	199.8
SUDBURY A	11.6	-0.6	28.2	-0.6	*	*	72.7	68	0	10	133	88	199.5
THUNDER BAY A	11.6	0.5	27.3	-1.7	0.0	*	63.2	71	0	9	166	99	196.7
TIMMINS A	9.4	-0.9	27.5	-2.0	4.8	369	83.4	91	0	14	*	*	260.0
TORONTO	16.9	*	28.7	5.1	0.0	*	51.2	*	0	8	*	*	72.7
TORONTO INT'L A	15.3	-0.2	28.5	2.6	0.0	*	42.8	67	0	8	*	*	102.6
TORONTO ISLAND A	16.1	*	28.9	5.9	0.0	*	42.9	*	0	9	*	*	89.9
TRENTON A	14.2	-1.1	26.5	0.4	0.0	*	39.2	54	0	9	*	*	125.0
WATERLOO WELLINGTON	14.1	-0.3	28.0	-0.1	0.0	*	72.4	87	0	13	*	*	126.2
WAWA A	10.1	*	21.9	-3.4	*	*	58.2	*	0	9	*	*	238.3
WIARTON A	13.6	-0.6	26.9	1.0	0.0	*	91.5	97	0	13	146	86	144.2
WINDSOR A	17.1	-0.3	32.1	3.8	0.0	*	178.8	267	0	10	*	*	68.0

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QUEBEC													
BAGOTVILLE A	10.7	-0.4	27.0	-1.5	0.0	0	114.1	114	0	17	*	*	221.2
BAIE COMEAU A	9.6	-0.1	22.4	-1.2	0.0	*	119.0	115	0	10	***	680	249.8
BLANC SABLON A	9.6	1.1	16.7	-0.4	0.0	*	68.6	76	0	12	131	*	250.8
CHIBOUGAMAU CHAPPAIS	7.5	*	24.2	-2.3	21.6	*	257.5	*	0	22	78	64	312.8
GASPE A	10.5	*	23.8	-1.6	0.0	*	65.0	*	0	6	174	*	22.3
INUKJUAQ A	3.0	-2.0	10.9	-3.1	7.0	143	56.0	95	0	9	74	84	448.7
KUUJJUAQ A	3.9	-1.5	15.1	-4.0	1.2	14	48.2	84	0	9	85	86	422.9
KUUJJUARAPIK A	5.2	-1.9	16.2	-0.7	1.0	59	94.9	109	0	12	85	80	383.9
LA GRANDE IV A	5.3	*	18.1	-1.7	4.6	*	104.8	*	0	16	54	*	381.6
LA GRANDE RIVIERE A	5.8	*	18.0	-1.5	0.0	*	65.8	*	0	15	11	*	367.4
MANIWAKI	11.9	-0.2	27.2	-2.5	0.0	0	76.0	79	0	14	120	79	186.7
MATAGAMI A	*	*	25.7	-3.6	0.6	*	193.8	*	0	15	98	78	309.8
MONT JOLI A	11.8	0.6	27.5	-0.5	0.0	*	93.2	111	0	8	177	115	193.5
MONTREAL INT'L A	14.1	-0.7	26.5	3.0	0.0	*	79.2	90	0	7	118	70	120.5
MONTREAL MIRABEL I/	12.4	*	25.8	-0.6	0.0	*	90.9	*	0	11	137	*	167.7
QUEBEC A	12.6	0.0	26.3	2.1	0.0	*	113.0	95	0	12	161	105	163.3
ROBERVAL A	11.1	-0.1	26.9	-0.1	0.0	0	94.8	104	0	17	150	*	201.4
SCHEFFERVILLE A	4.2	-1.0	15.4	-2.6	16.4	83	192.8	231	0	16	92	93	414.3
SEPT-ILES A	8.9	-0.4	21.5	-0.4	0.0	*	120.7	108	0	11	158	100	281.0
SHERBROOKE A	12.2	0.4	25.7	-1.5	0.0	*	108.1	103	0	13	137	*	174.4
STE AGATHE DES MONT	11.0	-0.1	24.9	-1.3	0.0	*	90.6	87	0	11	120	74	209.8
ST HUBERT A	13.5	-0.9	25.8	1.2	0.0	*	67.2	75	0	7	119	*	138.7
VAL D'OR A	9.1	-1.3	26.5	-2.9	5.4	450	153.0	142	0	15	112	80	268.0
NEW BRUNSWICK													
CHARLO A	11.0	-0.1	23.5	0.6	0.0	0	47.2	47	0	7	165	103	211.5
CHATHAM A	12.5	-0.5	26.0	-0.7	0.0	*	46.5	55	0	6	155	87	170.5
FREDERICTON A	12.9	-0.3	26.4	1.1	0.0	*	83.0	96	0	7	147	*	154.9
MONCTON A	12.7	-0.3	25.4	1.3	0.0	*	86.3	114	0	7	163	98	15.9
SAINT JOHN A	12.8	0.1	24.8	3.2	0.0	*	114.2	102	0	7	174	105	156.3

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									
NOVA SCOTIA													
GREENWOOD A	13.5	-0.3	27.9	0.9	0.0	*	64.3	77	0	6	*	*	137.7
HALIFAX INT'L A	13.9	0.1	24.5	5.0	0.0	*	85.3	91	0	5	*	*	124.3
SABLE ISLAND	16.1	0.4	23.2	5.1	0.0	*	75.8	82	0	10	183	117	64.8
SHEARWATER A	14.8	0.3	23.4	6.3	0.0	*	97.4	112	0	7	172	96	100.9
SYDNEY A	13.7	0.2	25.0	4.0	0.0	*	153.0	175	0	12	175	105	133.6
YARMOUTH A	14.3	0.7	4.7	5.4	*	*	82.6	92	0	6	185	105	112.4
PRINCE EDWARD ISLAND													
CHARLOTTETOWN A	13.3	-0.2	24.3	1.7	0.0	*	118.0	137	0	8	*	*	140.6
SUMMERSIDE A	14.1	0.0	23.8	4.8	0.0	*	87.6	111	0	6	168	99	119.2
NEWFOUNDLAND													
BONAVISTA	13.4	1.7	22.8	3.3	0.0	*	97.4	113	0	12	*	*	138.1
BURGED	13.0	1.5	20.6	4.3	0.0	0	171.7	134	0	12	*	*	151.4
CARTWRIGHT	8.5	0.2	19.9	0.9	0.0	0	86.9	96	0	15	98	91	284.0
CHURCHILL FALLS A	5.8	0.1	16.1	-2.0	15.0	153	138.0	136	0	18	87	88	368.0
COMFORT COVE	12.4	1.5	23.8	1.3	0.0	0	77.4	86	0	10	*	*	171.2
DANIELS HARBOUR	12.0	1.2	21.5	0.0	0.0	0	90.0	98	0	12	128	98	178.8
DEER LAKE A	11.0	0.5	24.8	-2.7	0.0	*	78.4	85	0	12	*	*	211.1
GANDER INT'L A	12.7	1.3	23.0	1.0	0.0	0	81.9	101	0	11	179	123	159.1
GOOSE A	8.5	-0.6	19.1	-0.3	0.6	15	79.8	90	*	12	112	93	286.2
MARY'S HARBOUR	9.5	1.2	19.6	-3.3	0.0	*	88.2	129	0	11	*	*	264.4
PORT AUX BASQUES	12.2	0.9	19.9	2.8	0.0	*	124.6	108	0	13	152	*	175.0
ST ANTHONY	9.8	1.7	18.4	0.0	0.0	0	142.2	106	0	13	*	*	245.1
ST JOHN'S A	12.6	1.0	24.3	2.9	0.0	*	136.4	117	0	8	177	120	163.2
ST LAWRENCE	12.8	1.5	20.4	3.2	0.0	*	99.9	79	0	10	*	*	149.2
STEPHENVILLE A	12.9	1.0	22.5	1.9	0.0	*	129.1	124	0	12	*	*	148.2
WABUSH LAKE A	5.7	-0.5	16.6	-2.4	15.0	169	172.3	183	0	19	93	100	367.2

AGROCLIMATOLOGICAL STATIONS

SEPTEMBER

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	17.7	2.2	30.5	5.5	0.0	27.8	26	0	3	243	381.8	2215.6
KAMPLOOPS	15.5	1.4	28.0	7.0	0.0	15.8	39	0	2	217	309.0	1811.5
SIDNEY	17.2	2.0	29.0	6.5	0.0	9.6	51	0	2	282	368.5	2168.9
ALBERTA												
BEAVER LODGE	12.3	2.8	26.5	-1.0	0.0	16.6	40	0	3	238	219.5	1340.0
ELLERSLIE	12.5	2.4	29.5	-6.0	0.0	1.4	3	0	1	270	227.9	1340.9
LACOMBE	12.5	2.4	29.5	-6.0	0.0	1.4	3	0	1	270	227.9	1340.9
LETHBRIDGE	12.5	2.4	29.5	-6.0	0.0	1.4	3	0	1	270	227.9	1340.9
VEGREVILLE	12.5	2.4	29.5	-6.0	0.0	1.4	3	0	1	270	227.9	1340.9
SASKATCHEWAN												
INDIAN HEAD	14.3	2.8	30.0	-3.5	0.0	4.6	11	0	2	22	244.8	1685.6
MELFORT	12.2	1.9	30.0	-1.0	0.0	9.4	23	0	3	216	216.0	1688.7
REGINA	13.9	2.7	34.0	-6.0	0.0	10.3	29	0	3	22	268.4	1667.0
SASKATOON	12.4	2.0	30.5	-4.0	0.0	7.0	25	0	2	256	218.9	1501.5
SCOTT	15.2	3.4	32.0	-2.5	0.0	3.5	12	0	1	260	304.9	1684.6
MANITOBA												
BRANDON	13.4	1.6	32.3	-2.6	0.0	30.0	60	0	5	22	254.9	1754.3
GLENLEA	15.1	2.9	33.0	-1.0	0.0	17.0	34	0	2	228	308.5	1946.0
MORDEN	14.0	0.9	31.5	-3.0	0.0	41.4	80	0	7	207	266.0	1824.5
ONTARIO												
DELHI	15.8	-0.1	27.5	0.0	0.0	88.6	111	0	12	22	323.2	2037.9
ELORA	13.3	-0.9	25.8	-1.3	0.0	64.8	91	0	10	22	250.4	1768.7
GUELPH	14.4	-0.6	27.4	-0.5	0.0	88.4	139	0	12	165	282.8	1894.5
HARROW	17.4	-0.1	30.5	3.5	0.0	200.4	303	0	10	174	371.4	2762.0
KAPUSKASING	9.4	-0.9	25.0	-5.0	3.0	79.5	88	0	12	114	152.2	1285.7
OTTAWA	13.8	-0.8	27.2	2.5	0.0	96.0	119	0	13	124	265.0	2009.4
SMITHFIELD	15.3	0.3	27.9	1.6	0.0	43.2	55	0	9	22	306.0	2097.6
VINELAND	15.3	0.3	27.9	1.6	0.0	43.2	55	0	9	22	306.0	2097.6
WOODSLIE	15.3	0.3	27.9	1.6	0.0	43.2	55	0	9	22	306.0	2097.6

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 POCAIERE	12.9	0.3	26.5	2.0	0.0	104.0	109	0	10	172	236.5	1617.9
L'ASSOMPTION	13.6	-0.3	27.0	0.5	0.0	93.4	106	0	10	136	257.7	1876.4
LENNOXVILLE	8.8	8.8	8.8	8.8	8.8	8.8	88	888	88	88	8.8	8.8
NORMANDIN	10.0	-0.4	25.5	-2.0	0.0	96.4	101	0	13	141	155.0	1353.8
STE.CLOTILDE	13.7	-0.5	28.0	0.0	0.0	73.4	85	0	13	127	254.2	1907.1
NEW BRUNSWICK												
FREDERICTON	13.7	0.3	26.5	3.0	0.0	51.0	58	0	10	147	8.8	1830.8
NOVA SCOTIA												
KENTVILLE	14.6	0.3	27.5	3.0	0.0	95.2	65	0	7	168	278.9	1831.1
NAPPAN	13.3	-0.1	25.5	1.0	0.0	105.5	130	0	8	174	249.2	1502.5
PRINCE EDWARD ISLAND												
CHARLOTTETWN	14.5	0.4	24.0	3.5	0.0	166.6	200	0	9	183	286.2	1709.5
NEWFOUNDLAND												
ST.JOHN'S WEST	13.1	1.5	23.0	2.5	0.0	155.0	146	0	11	161	245.4	1260.1