Environment Canada Environnement Canada

Climatic Perspectives

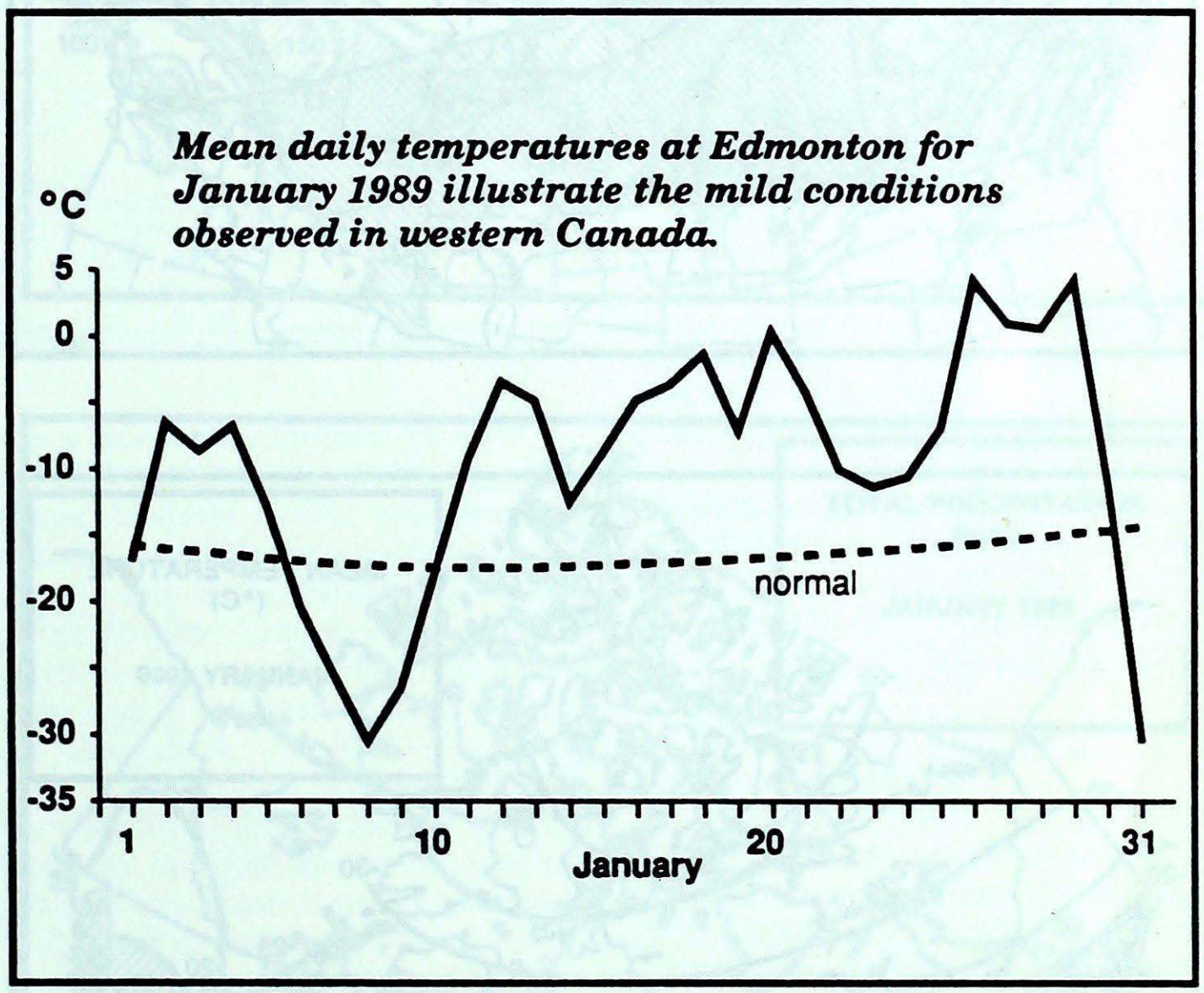
Monthly Review JANUARY – 1989 Vol. 11

CLIMATIC HIGHLIGHTS

Yet another mild winter month across most of Canada. However, winter delivered some of its harshest blows in the last two days of January in western Canada.

Once again this month, mild Pacific air brought well-above normal temperatures from B.C. to the Maritimes. Near the end of January, daytime readings climbed into the 5 to 10°C range on the Prairies. Owing to the mild weather, energy consumption for indoor heating was 10 to 20% below normal from Alberta to the Ottawa Valley. In southern Ontario, the first month of 1989 ranked as the mildest January since 1950.

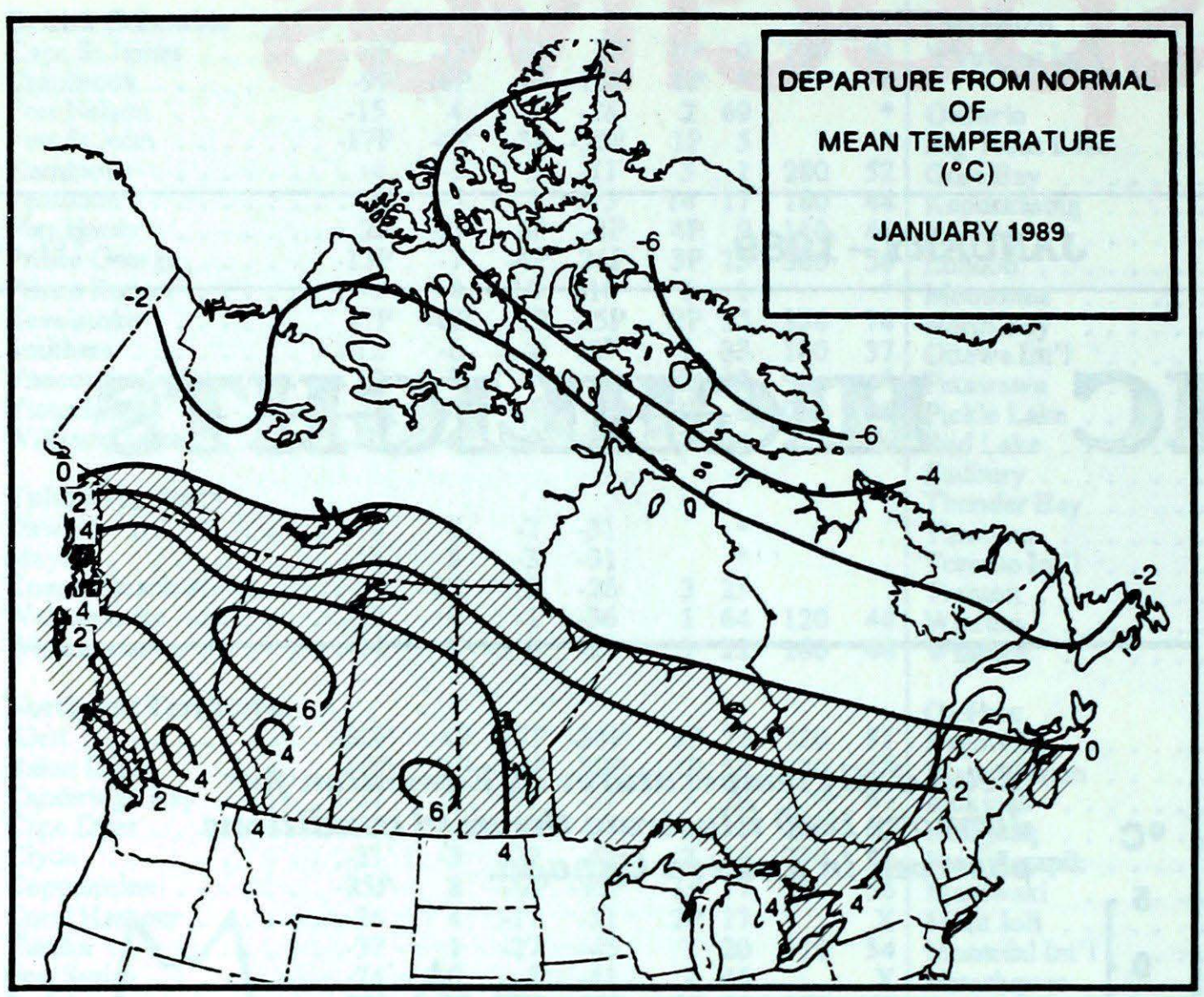
Storms approaching the Rockies from the west deposited heavy snow in northern B.C and most of the Prairies. Heavy snowfall in north central mountains of B.C. (over 400 cm at Stewart) resulted in numerous avalanches forcing closure of many highways north of Terrace. The Rogers Pass was also made impassable by heavy snow on a number of occasions. Major winter storms dumped from 30 to 50 cm of snow in southern Alberta and southern Saskatchewan, adding to the already well established snow base. Heavy snowfalls of this winter will help to recharge the depleted soil moisture reserves during the spring melt period. The spring snow melt will also provide much needed moisture to the forests in western Canada and will help alleviate threats of major forest fires in the summer. Southern Ontario had another relatively snow-free month. At Kingston, 12 cm of snow was the least January amount since 1933. The respite from winter storms ended in the Maritimes when a severe storm deposited 25 to 30 cm of snow.

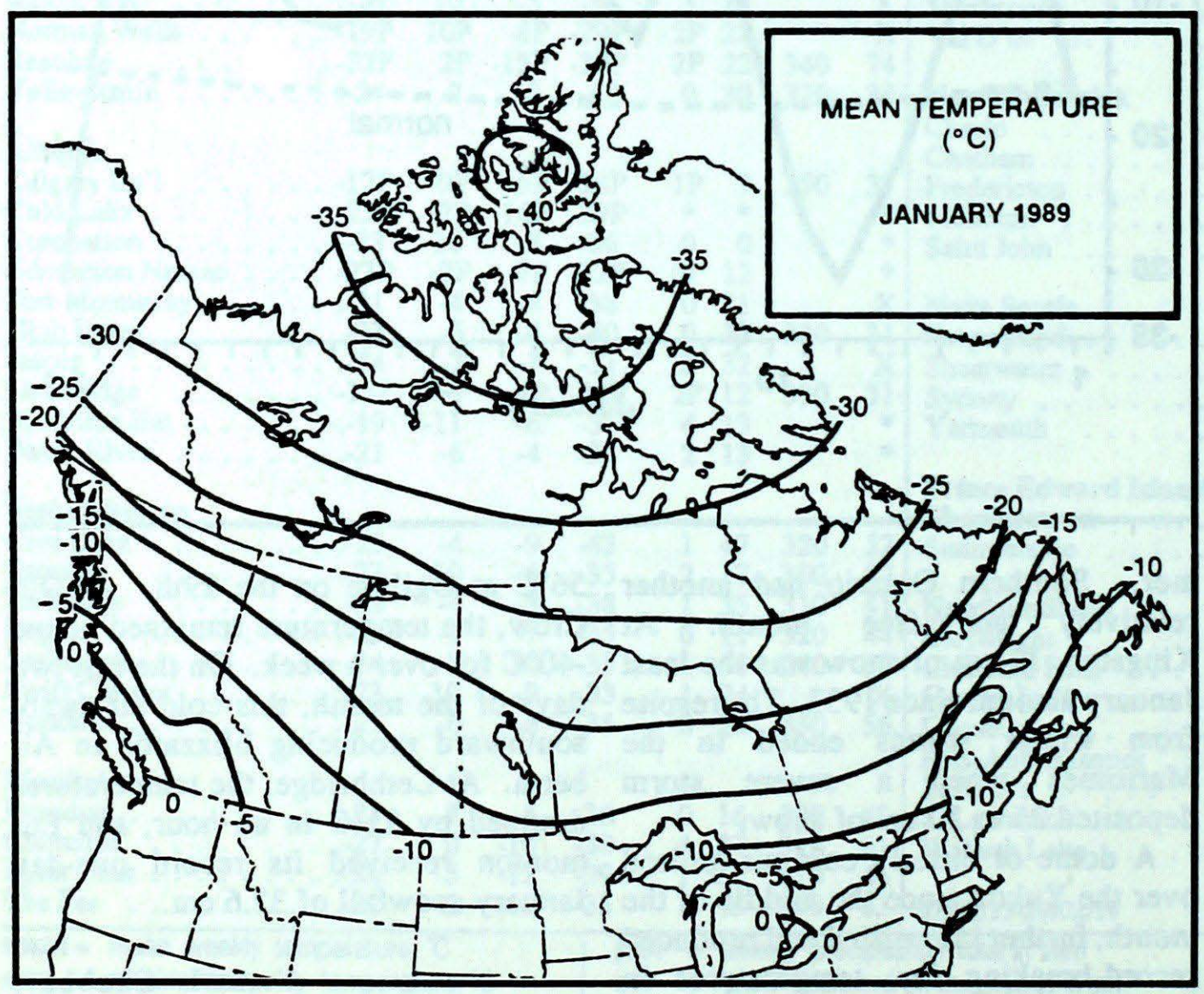


Mean daily temperatures at Edmonton for January 1989 illustrate the mild conditions observed in western Canada.

A dome of bitterly cold air, poised over the Yukon since the middle of the month, further intensified and produced record-breaking low temperatures in the Yukon. The mercury plunged to -56°C at Ogilvie on the 29th. At Old Crow, the temperature remained below -40°C for over a week. On the last two days of the month, this cold air swept southward producing blizzards in Alberta. At Lethbridge, the temperatures dropped by 21°C in an hour, and Edmonton received its record one-day January snowfall of 32.6 cm.

Amir Shabbar,
Monitoring and Prediction Division





Across the country

Yukon and Northwest Territories

Numbing-cold weather made the news across the the Yukon this month. Very cold arctic air, associated with an intense high pressure area, dominated the northern areas for most of the month. The southern areas remained just out of reach of the extreme cold until mid-month and by the end of the month, temperatures in the -40 to -50°C range were common. On the other hand, an unusual surge of mild Pacific air did push some stations in the extreme south above the freezing mark. Precipitation varied considerably across the Yukon this month. Major Pacific storms continued to affect the coastal mountain passes with copious amount of precipitation causing numerous slides and road closures.

The N.W.T. were generally cold, especially over Baffin Island and the eastern parts of the Keewatin District, while precipitation was well below normal over the above mentioned areas. The Mackenzie District experienced both warm and cold spells during the month, with the last two weeks on the cold side.

British Columbia

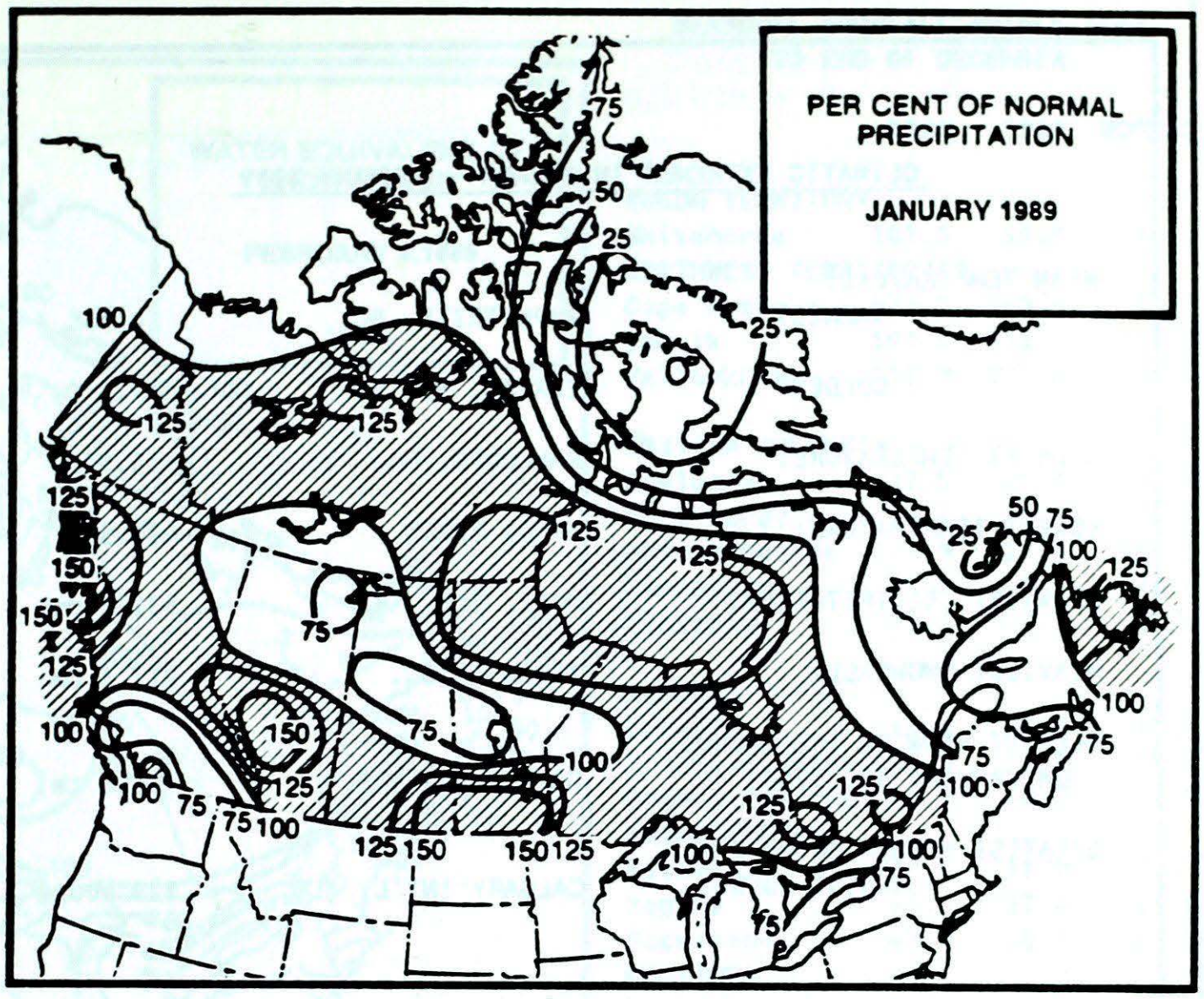
January was a mild and dull month for most of B.C. with the Arctic Front making only sporadic intrusions into the northern half of the province. However, by the end of the month, a major Arctic blast engulfed the entire province with well below freezing temperatures and cutting wind chills. Snowfall varied greatly throughout the province. Heavy snows in the northern coastal mountains resulted in numerous avalanches with many highway closures north of Terrace throughout the month.

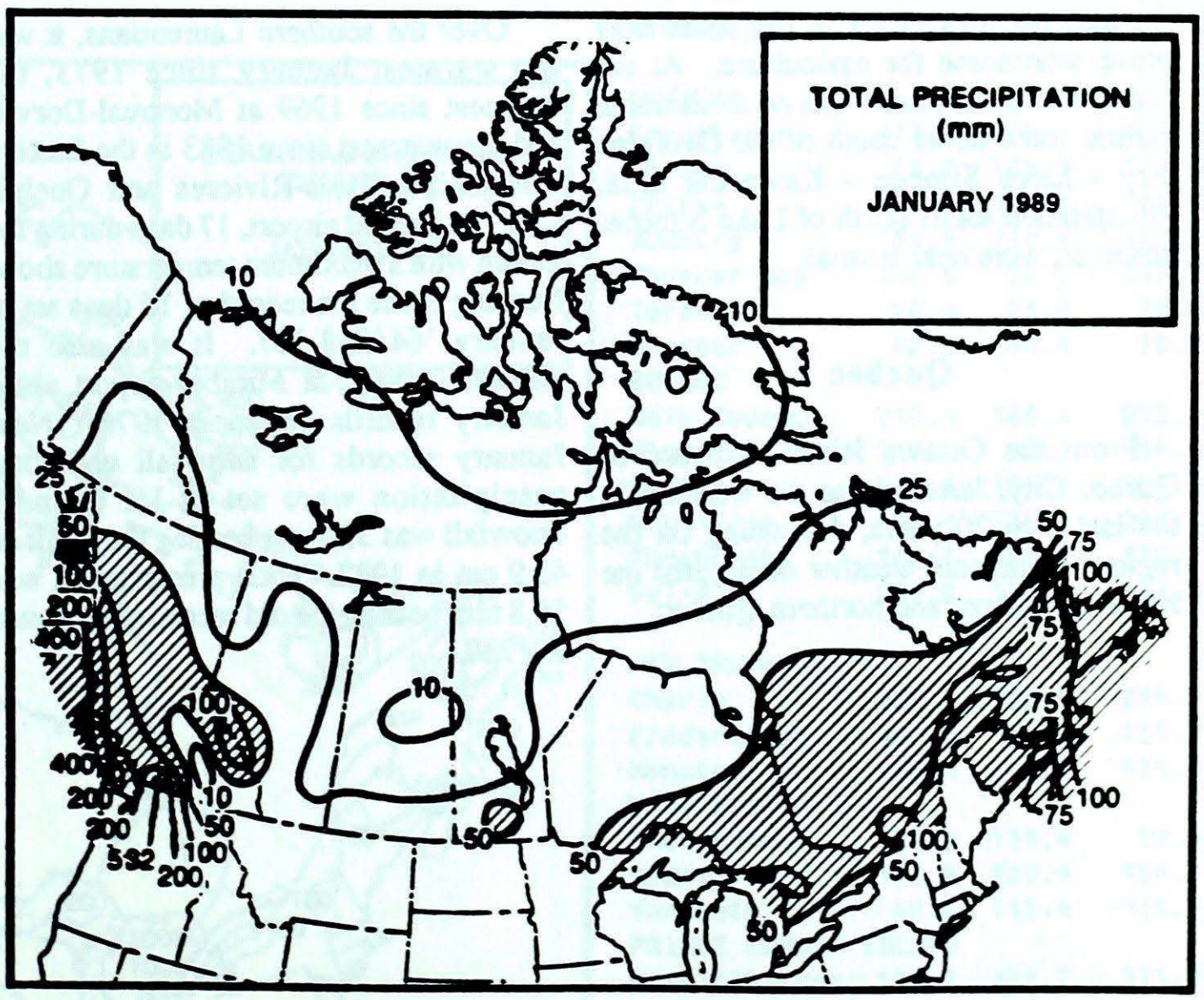
Prairies

It was a month of extremes in Alberta. Cold air early in the month was followed by a mild influx which tied or broke a few daily maximum records. Even milder air

between the 25th and 29th set numerous daily record maximum temperatures across the northern and central parts. Lethbridge recorded 13.0°C on the 30th. The next day, an intense cold front dipped the temperature to -31°C. The first snowstorm of the month, over the south and the southwestern foothills, occurred between the 3rd and the 6th. Some foothill areas received 50-100 cm of snow during this period, alleviating some of the concerns over the lack of snowpack in the southern Prairie and watershed sources. The most significant feature of the month was the blizzard-like conditions of the 30th and 31st. An intense arctic cold front dropped temperatures 10-15 degrees within an hour, while Lethbridge dropped 21 degrees in one hour. Plunging temperatures, snow, blowing snow and high wind chills wreaked havoc across the south. Hardest hit was Edmonton with record 32.6 cm of snow in 24 hrs - more than the accumulated seasonal total of 29.1 cm.

Manitoba and Saskatchewan were mild with heavy snowfall in the south, thanks to a blizzard early in the month that dumped more than 30 cm of snow in some areas. Some areas in southern Manitoba more than doubled their normal monthly snowfall. Through the northern and central parts of the provinces, snowfall was below normal, with some stations recording only slightly better than half their normal amounts.





Ontario

It seemed like a January Thaw all month. Across the province, remarkably mild, spring-like weather and the absence of snow in the southern portion of the province dominated the scenario. In southern Ontario, January '89 ranked as the mildest since 1950. Windsor led the way with their warmest January since records began in 1940. Northern Ontario was also mild, but not as mild as their record mild January '87. Snowfall showed a marked north-south contrast with southern Ontario well below normal. Trenton and Toronto City emerged with the lowest totals since 1983 and the Kingston area recorded their lowest total since 1933! Light precipitation totals and

CLIMATIC EXTREMES IN CANADA - JANUARY 1989

MEAN TEMPERATURE:		
WARMEST	AMPHITRITE, BC.	4.7°C
COLDEST	EUREKA, NWT.	-42.5°C
HIGHEST TEMPERATURE:	KAMLOOPS, BC.	15.9°C
LOWEST TEMPERATURE:	MAYO, YUKON	-53.5°C
HEAVIEST PRECIPITATION:	HOPE, BC.	532.2 mm
HEAVIEST SNOWFALL:	TERRACE, BC.	277.6 cm
DEEPEST SNOW ON THE GROUND ON JANUARY 31, 1989:	CAPE DYER, NWT.	128 cm
GREATEST NUMBER OF BRIGHT SUNSHINE HOURS:	CALGARY INT'L, ALB.	129 hours

the lack of snow cover in the south may prove worrisome for agriculture. At the end of the month, there was no measurable natural snow cover south of the Georgian Bay - Lake Simcoe - Kawartha area. Precipitation totals north of Lake Simcoe, however, were near normal.

Quebec

From the Ottawa River eastward to Quebec City, January was the warmest in the last 6 to 20 years, depending on the regions while cold weather dominated the lower northshore and northern Quebec.

Over the southern Laurentians, it was the warmest January since 1973, the warmest since 1969 at Montreal-Dorval, and the warmest since 1983 in the Eastern Townships, Trois-Rivieres and Quebec City. At Dorval airport, 17 days during the month with a maximum temperature above freezing broke the record of 15 days set in January '64 and '67. It was also the mildest January at Mirabel airport since January records began in 1976. New January records for snowfall and total precipitation were set at La Grande. Snowfall was 59.2 cm beating the mark of 45.9 cm in 1982. Total precipitation was 56.8 mm beating the old record of 44.1 mm in 1980.

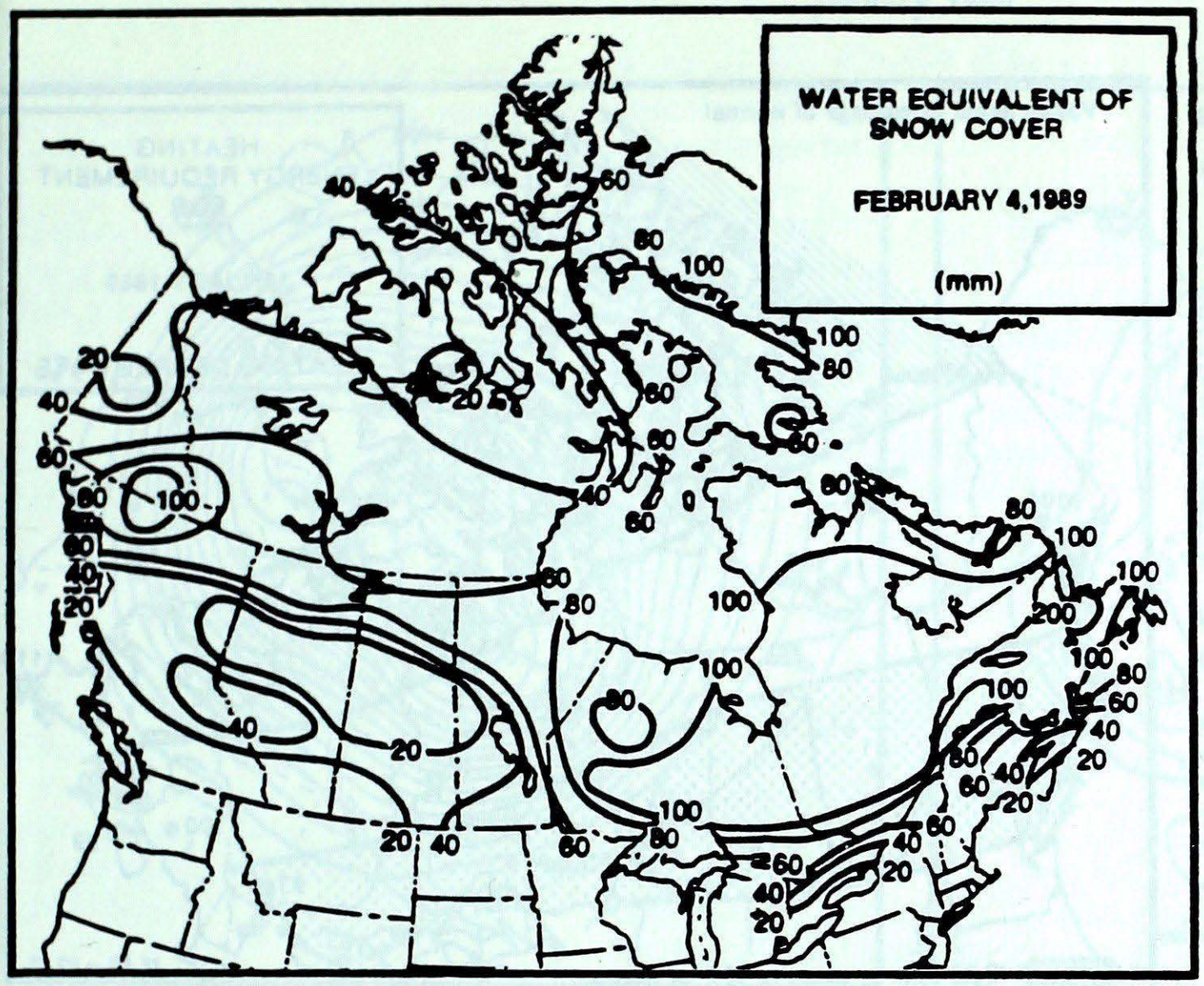
Maritimes

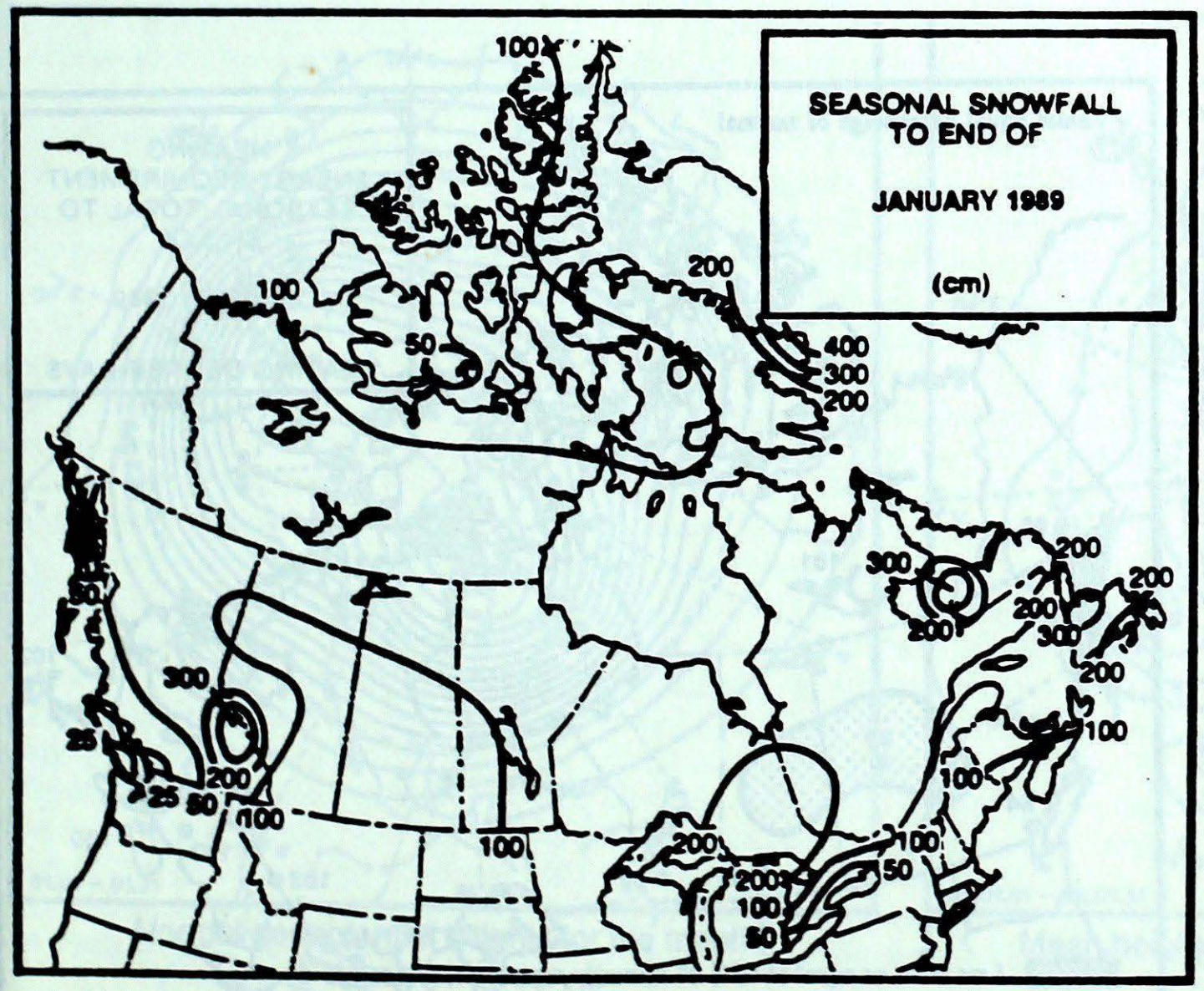
January was dry and generally on the sunny side. The dry conditions that occurred in December continued this month with most locations recording well below normal precipitation totals. Snowfall totals were slightly above normal in northern New Brunswick while the remaining locations were below normal. The lack of snow affected the skiing industry and those involved in snow removal. The exception to the lack of snowfall was Sable Island, which received their largest total since 1965. The absence of cold spells and a number of days with above normal temperatures helped ease winter's bite, particularly over southern New Brunswick and western Nova Scotia.

Newfoundland and Labrador

It was cold and snowy in Newfoundland this month. Stormy conditions prevailed early in the month with variable temperatures and abundant snowfall. A major storm on the 3rd and 4th dumped nearly 50 cm on the central and eastern regions. Another storm on the 21-22 gave 25 to 30 cm across the region. Several major storms brought strong winds to the area. On the 5th, hurricane force winds gusted to 140 km/h at Cape Race while St. Anthony reported gusts to 137 km/h. Several communities were evacuated due to storm surges.

Labrador was cold for most of the month with only brief mild spells. Extreme wind chills prevailed on several occasions during the month as wind gusts up to 60 km/h accompanied the cold air outbreaks. Snowfall was generally light.



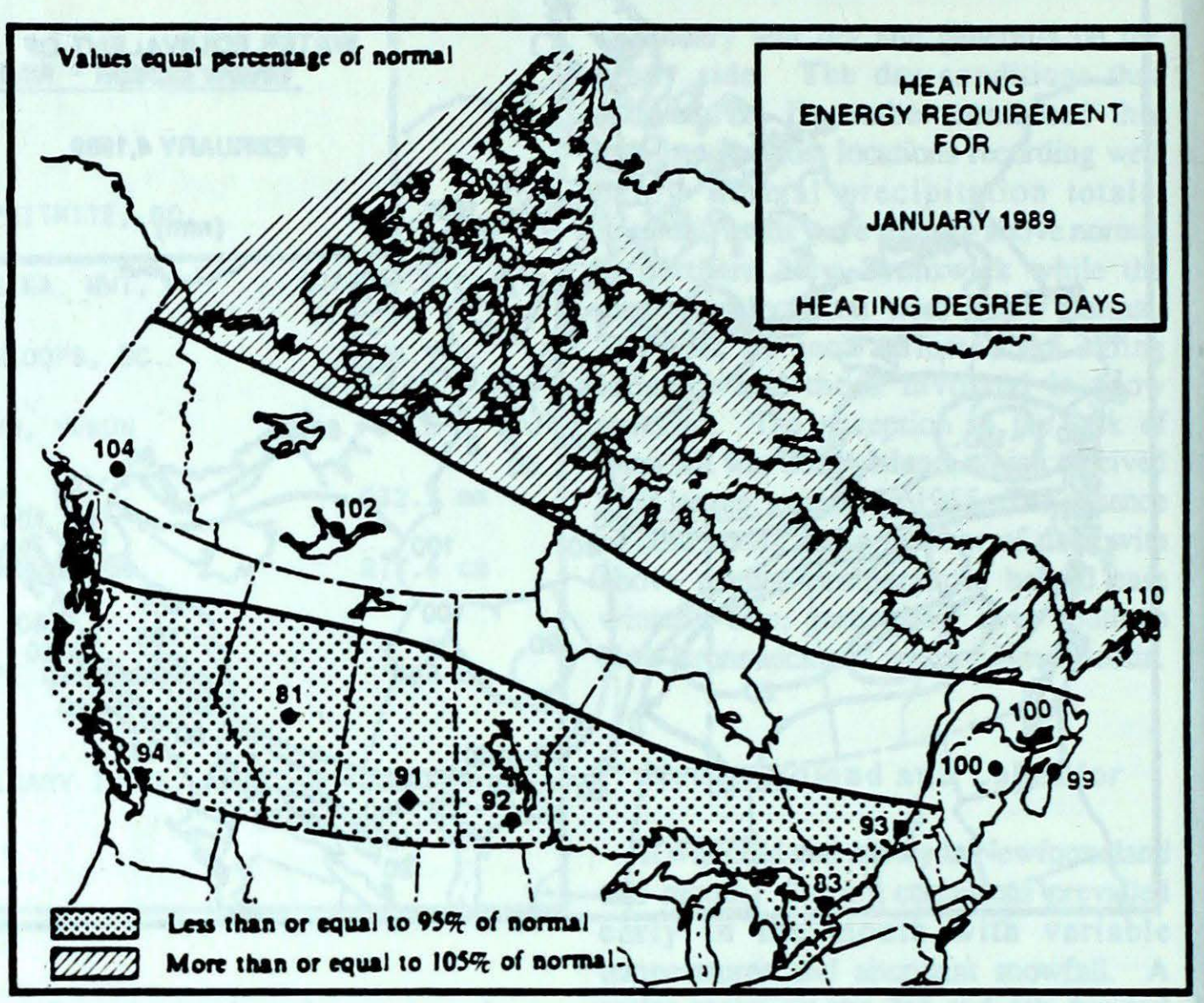


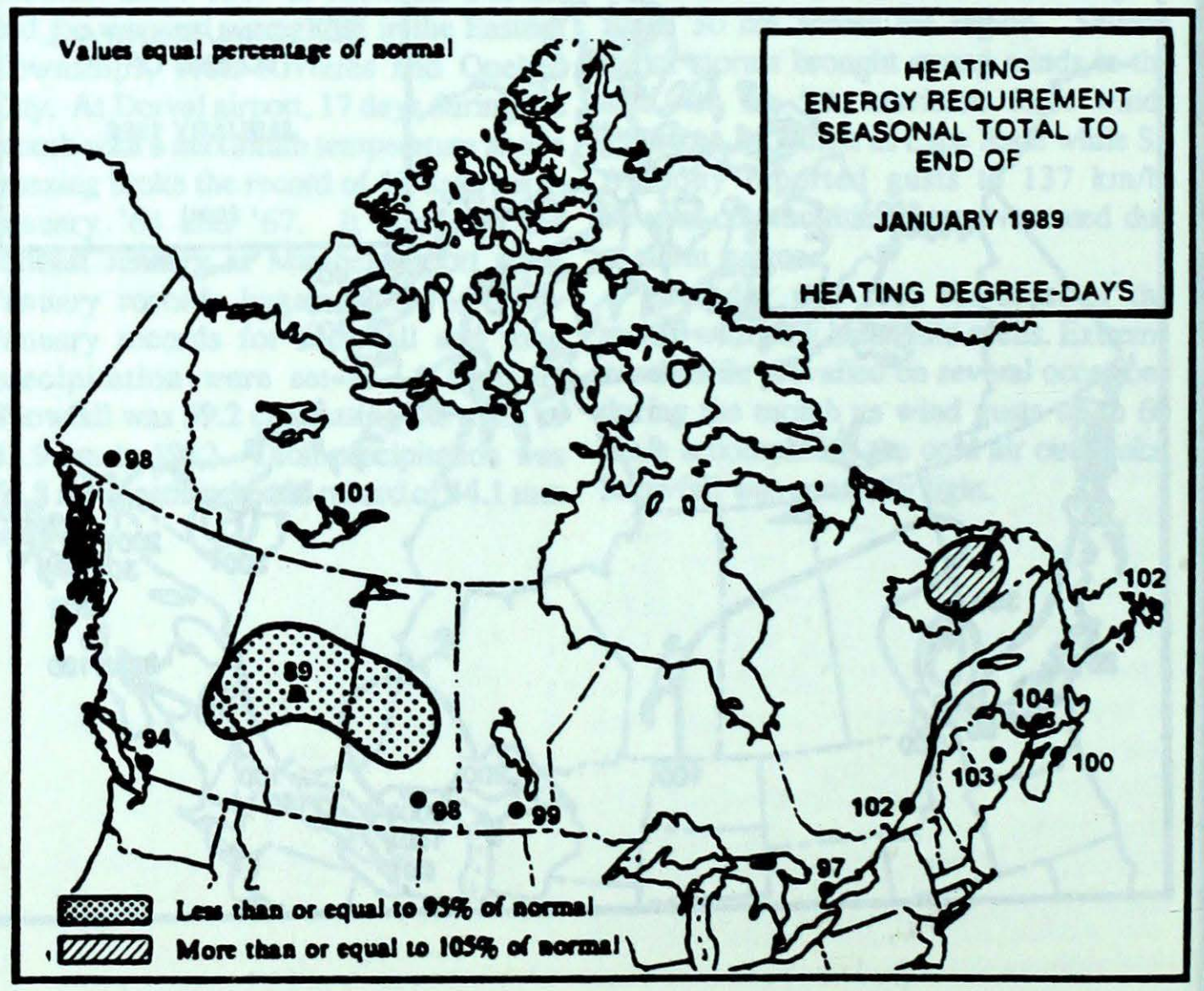
SEASONAL SNOWFALL TOTALS (CM)
TO END OF DECEMBER

	1989	1988	NORMAL
YUKON TERRITORY			
Whitehorse	101.3	69.9	90.7
NORTHWEST TERRITORIES			
Cape Dyer	471.2	260.6	383.6
Inuvik	104.0	115.4	117.3
Yellowknife	117.7	131.6	94.2
BRITISH COLUMBIA			
Kamloops	37.5	20.9	74.0
Port Hardy	37.4	7.8	49.3
Prince George	157.9	121.6	164.0
Vancouver	18.0	9.0	46.0
Victoria	13.6	2.4	35.4
ALBERTA			
Calgary	65.0	20.6	77.3
Edmonton Namao	63.3	26.2	78.2
Grande Prairie	83.2	68.7	114.7
SASKATCHEWAN			
Estevan	109.8	18.8	63.1
Regina	61.0	27.0	65.0
Saskatoon	43.0	30.7	64.7
MANITOBA			
Brandon	85.4	31.7	64.0
Churchill	157.0	77.5	117.0
The Pas	60.4	82.9	95.6
Winnipeg	123.9	31.7	71.7
ONTARIO			
Kapuskasing	212.8	190.4	193.4
London	95.0	104.3	132.6
Ottawa	125.6	117.8	132.0
Sudbury	184.4	180.4	149.6
Thunder Bay	168.6	74.5	127.7
Toronto	26.4	24.0	74.8
Windsor	42.2	60.8	70.4
QUEBEC			
Baie Comeau	210.4	160.4	203.2
Montréal	127.2	81.8	134.4
Quebec	175.4	151.8	201.9
Sept-Iles	265.4	136.4	243.9
Sherbrooke	145.6	173.5	179.8
Val-d'Or	216.8	177.8	187.3
NEW BRUNSWICK			
Charlo	207.1	195.9	219.1
Fredericton	103.8	155.8	155.9
Moncton	119.4	227.7	174.6
NOVA SCOTIA			
Shearwater	51.9	134.4	92.9
Sydney	142.4	200.4	154.7
Yarmouth	68.6	112.4	114.2
PRINCE EDWARD ISLAND			
Charlottetown	159.2	222.7	173.8
NEWFOUNDLAND			
Gander	350.9	188.4	193.7
St. John's	189.0	171.0	172.1

SEASONAL TOTAL OF HEATING DEGREE-DAYS TO END OF DECEMBER

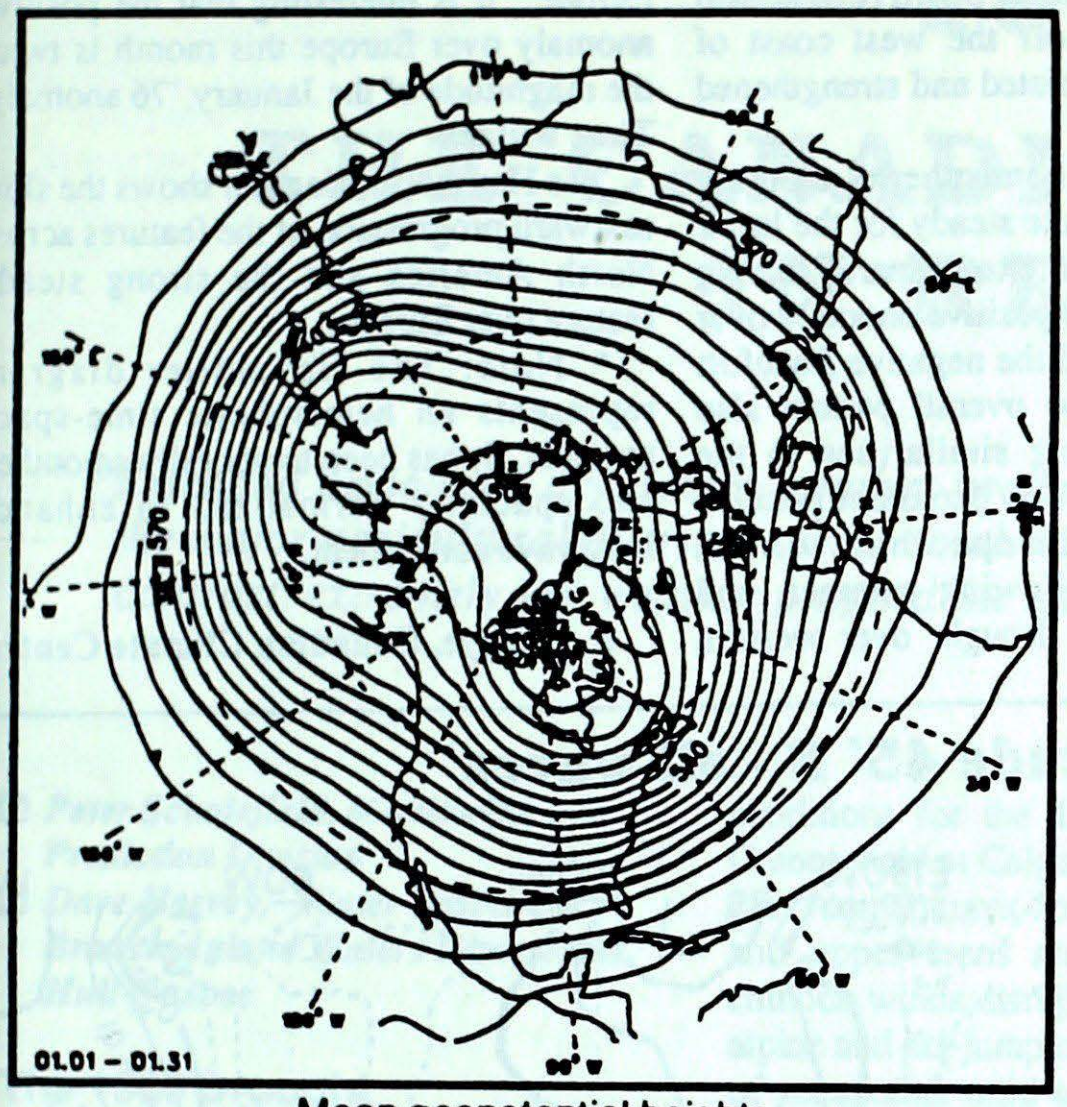
	1989	1987	NORMAL
BRITISH COLUMBIA			
Kamloops	2119	2042	2281
Penticton	1973	1921	2056
Prince George	2993	2895	3234
Vancouver	1599	1549	1698
Victoria	1733	1655	1745
YUKON TERRITORY			
Whitehorse	4139	3673	4224
NORTHWEST TERRITORIES			
Iqaluit	5343	5378	4205
Inuvik	5783	5169	5661
Yellowknife	4892	4429	4833
ALBERTA			
Calgary	2815	2670	3091
Edmonton Mun	2876	2762	3218
Grande Prairie	3347	3060	3644
SASKATCHEWAN			
Estevan	3018	2849	3146
Regina	3289	3081	3370
Saskatoon	3313	3195	3506
MANITOBA			
Brandon	3448	3265	3506
Churchill	4962	4769	4943
The Pas	3683	3661	3899
Winnipeg	3323	3096	3367
ONTARIO			
Kapuskasing	3563	3483	3602
London	2122	2132	2224
Ottawa	2619	2530	2617
Sudbury	2929	2862	2996
Thunder Bay	3168	3068	3210
Toronto	2150	2121	2225
Windsor	1887	1928	1983
QUÉBEC			
Baie Comeau	3368	3248	3310
Montréal	2571	2431	2516
Quebec	2956	2831	2856
Sept-Iles	3456	3331	3421
Sherbrooke	2863	2796	2900
Val-d'Or	3403	3349	3440
NEW BRUNSWICK			
Charlo	3073	2950	3006
Fredericton	2669	2682	2581
Moncton	2563	2594	2517
NOVA SCOTIA			
Halifax	2265	2179	2265
Sydney	2364	2317	2213
Yarmouth	2062	2120	2094
PRINCE EDWARD ISLAND			
Charlottetown	2477	2445	2381
NEWFOUNDLAND			
Gander	2758	2701	2603
St. John's	2477	2516	2424



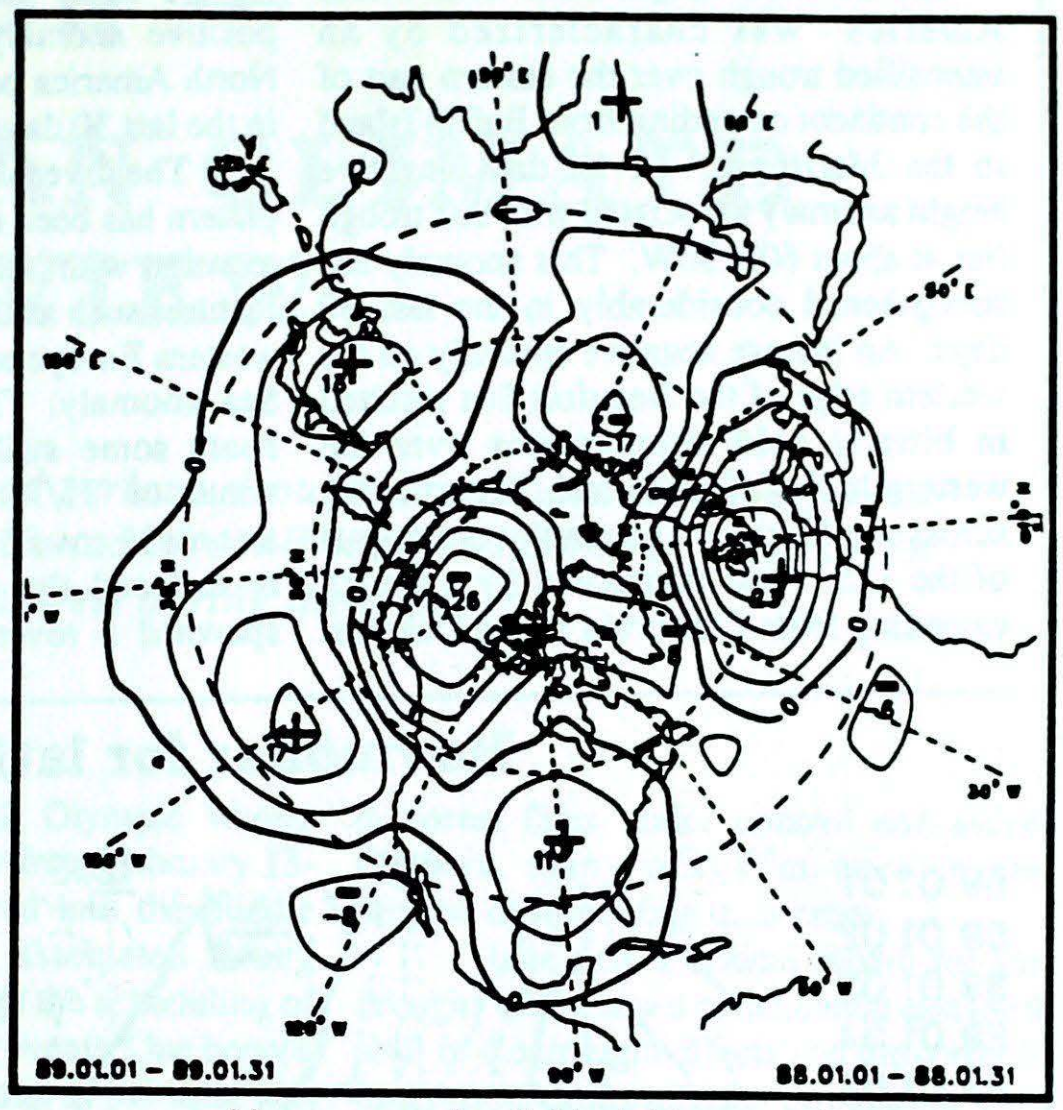


50 kPa ATMOSPHERIC CIRCULATION

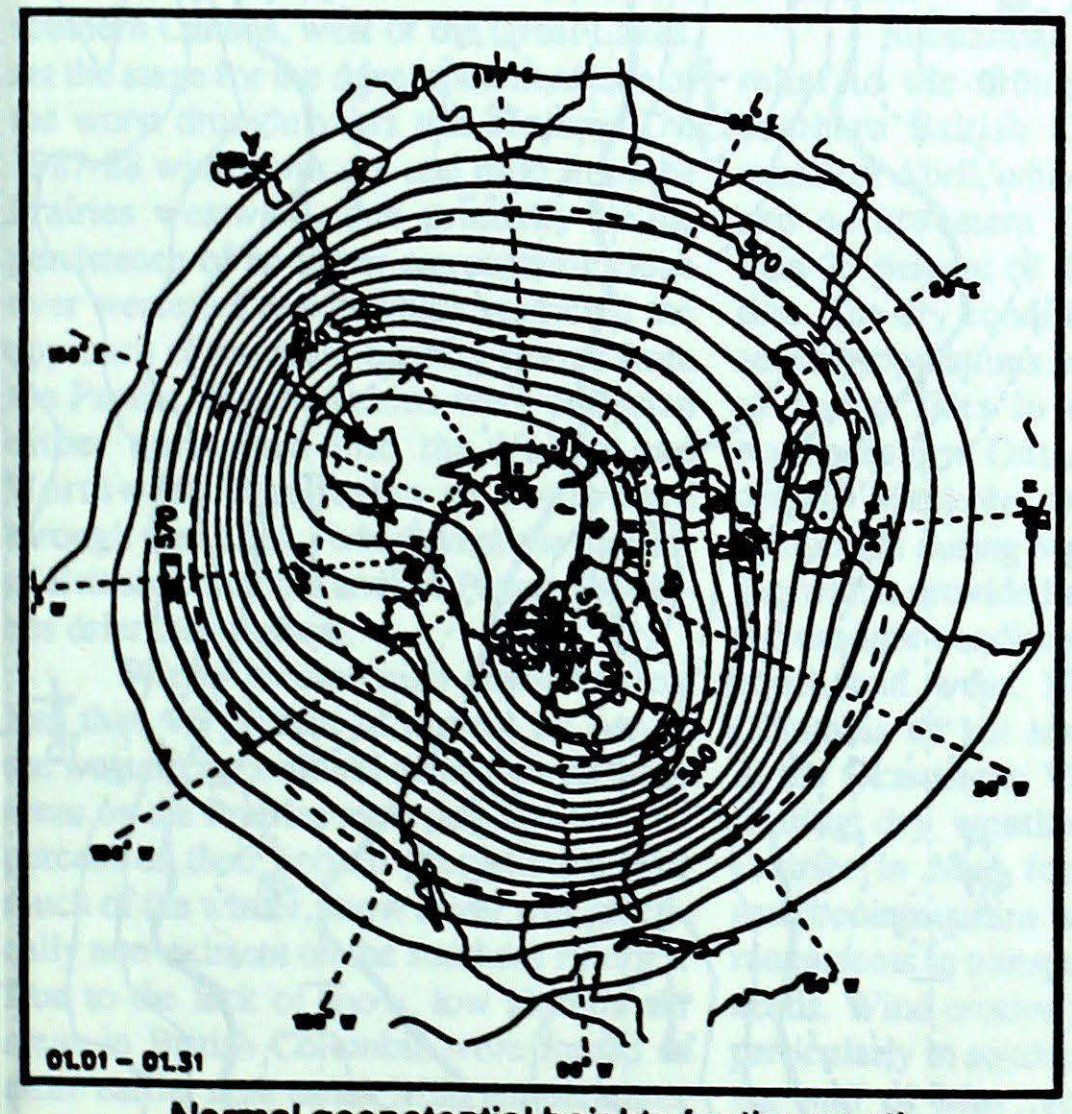
January 1989



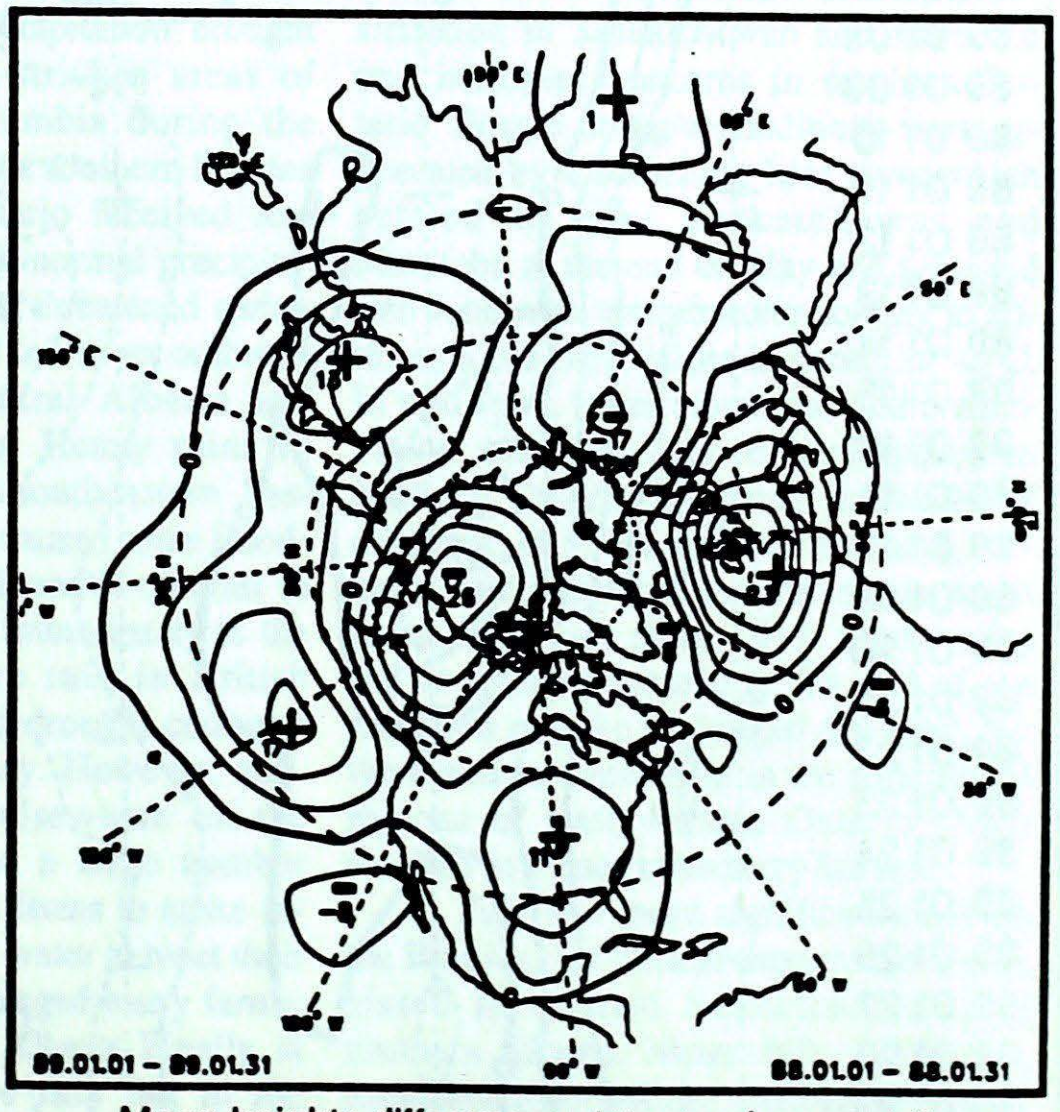
Mean geopotential heights
- 5 decametre interval -



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 -

50KP ATMOSPHERIC CIRCULATION - JANUARY 1989

The 50 KPa height field over North America was characterized by an intensified trough over the eastern part of the continent extending from Baffin Island to the Maritimes. A 16 dam negative height anomaly associated with this trough lies at about 60N 30W. This anomaly has strengthened considerably in the last 30 days. An intense negative anomaly on the western edge of the Beaufort Sea resulted in bitterly cold temperatures over the western half of Canada and, in particular, across the Yukon. The southwestern part of the U.S. was dominated by a trough extending from California to the Dakotas. At the same time, a positive 13 dam positive anomaly off the west coast of North America persisted and strengthened in the last 30 days.

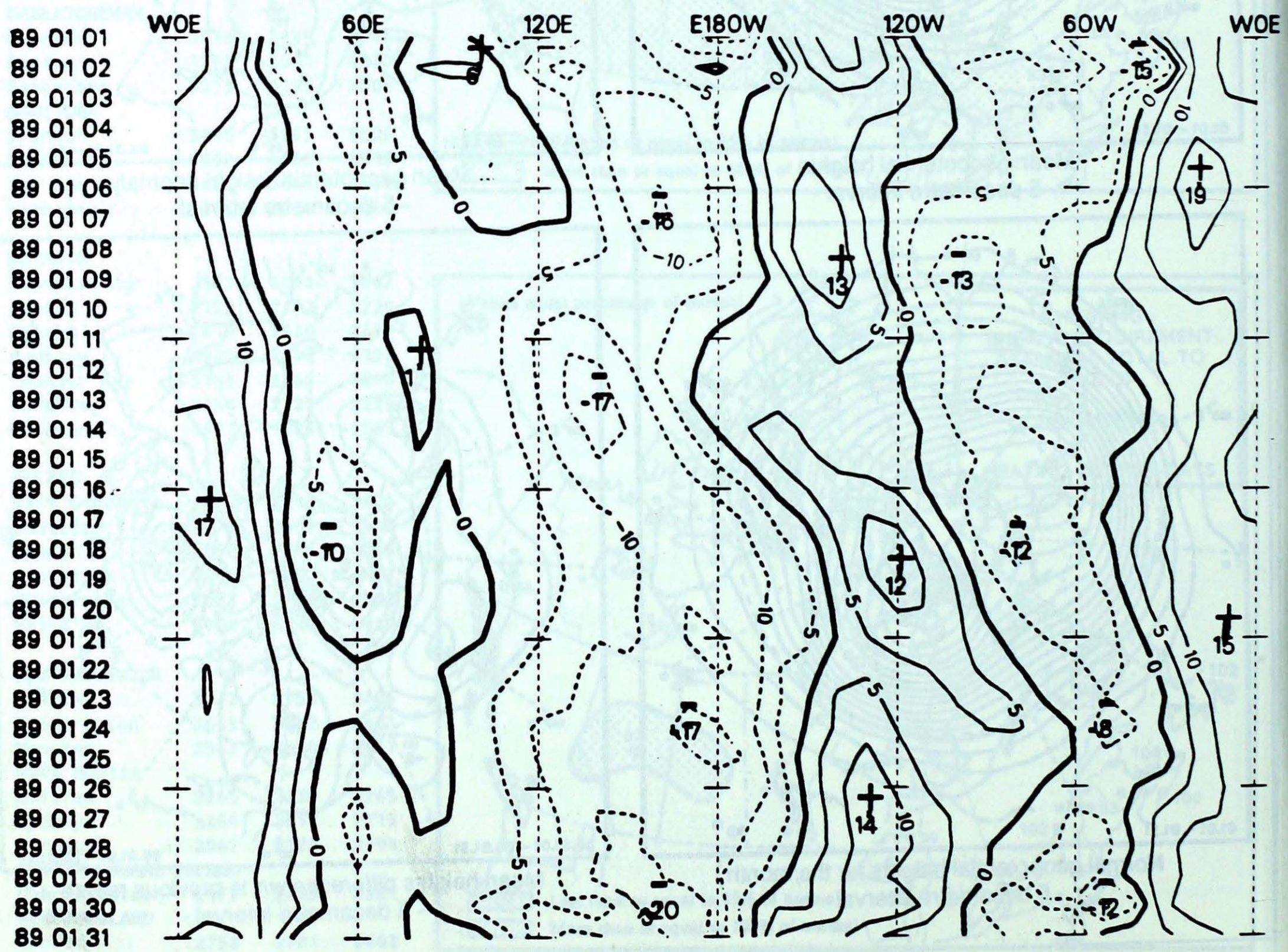
The overall hemispheric anomaly pattern has been quite steady for the last 2 months, with some extrordinarily strong features such as the positive anomaly over western Europe and the negative Beaufort Sea anomaly. The overall pattern also bears some striking similarities to the winter of '75/76. The persistent positive anomaly over Europe that winter, re-surfaced the following summer, and spawned a severe drought over western Europe. It is interesting that the positive anomaly over Europe this month is twice the magnitude of the January '76 anomaly. Time will tell.

The Hovmöller diagram shows the slow eastward progression of the features across North America and the strong steady feature over Europe.

* Note: The Hovmöller diagram represents an hemispheric time-space analysis. It has been temporally smoothed and spacially normalized to enhance longwave component.

A. Gergye, Canadian Climate Centre

Hovmöller for latitude 45° N - all waves



— 1988 —

THE CANADIAN CLIMATE IN REVIEW

Extended periods of dry, warm weather produced serious drought conditions which affected the major agricultural districts across southern Canada from British Columbia to Ontario. In contrast, extremely wet weather plagued the northwest during the summer

☐ ***Peter Scholefield, Monitoring and Prediction Division***
☐ ***Dave Harvey, Water Resources Branch, Inland Waters Directorate, Hull Québec***

The 1988 Drought

The very dry autumn of 1987 across southern Canada, west of the Great Lakes, set the stage for the development of one of the worst drought years this century. The 1987-88 winter was dry and mild from the Prairies westward, due primarily to the persistence of an upper atmospheric ridge over western Canada which restricted the approach of moisture-bearing storms from the Pacific Ocean. Storms were deflected either northward into the Yukon and Northwest Territories or southward through the U.S.A., which kept the interior of British Columbia and the Prairie Provinces drier than normal.

Winter precipitation amounts were less than 75 percent of normal all across the western agricultural districts with large areas on the Prairies receiving less than 50 percent of their normal precipitation. For much of the winter, snow cover was practically non-existent on the southern Prairies. Due to the lack of snow, low altitude ski areas in British Columbia were forced to close earlier than usual. Mild temperatures and a lack of snow provided less than ideal conditions for the 15th Olympic Winter Games, held at Calgary from February 13-28. Temperatures soared into the middle and upper teens and associated strong chinook winds disrupted the scheduling of alpine and ski-jumping events. One benefit of yet another mild winter in the west was a reduction of indoor heating costs by 10 - 14 percent.

Substantial precipitation brought relief to the drought-stricken areas of southern British Columbia during the month of April, while the southern Prairies and northwestern Ontario received less than 25 percent of their normal precipitation. The dry conditions threatened spring seeding operations and led to an outbreak of forest fires in central Alberta and northwestern Ontario. Heavy rains in central Manitoba and southeastern Saskatchewan during May caused some flooding which provided a dramatic contrast to the drought conditions immediately to the south and west. More rain in British Columbia all but ended drought concerns in the Okanangan Valley. However, continuing dry weather elsewhere on the Prairies in May forced a large number small communities and farms to make arrangements to transport water to meet their needs. Wind erosion ravaged many farms, particularly in southern Alberta. Finally, at the end of May, some rain fell in the western Prairies which helped bring Alberta forest fires under control and aided farmers, many of whom were in the process of re-seeding their crops.

June was a critical month for the drought which saw a coincidental eastward shift in the drought effects and the controlling upper atmospheric circulation patterns. This shift resulted in substantial drought relief in central Alberta, intensification in Saskatchewan and Manitoba and increased concerns in southern Ontario. Prairie drought conditions were aggravated by a scorching heat wave which settled in over Saskatchewan and Manitoba at the end of May and persisted into June with temperatures soaring to all-time record high values in excess of 40°C. In mid June, water restriction and conservation measures had to be imposed in southern Ontario following six weeks of extremely dry weather. At this time, Ontario was experiencing one of its worst forest fire years since 1917. Heavy rains fell in eastern Ontario at the end of the month to end the prolonged dry spell, but there was no such relief in the agricultural regions of southwestern Ontario which resulted in a poor strawberry harvest.

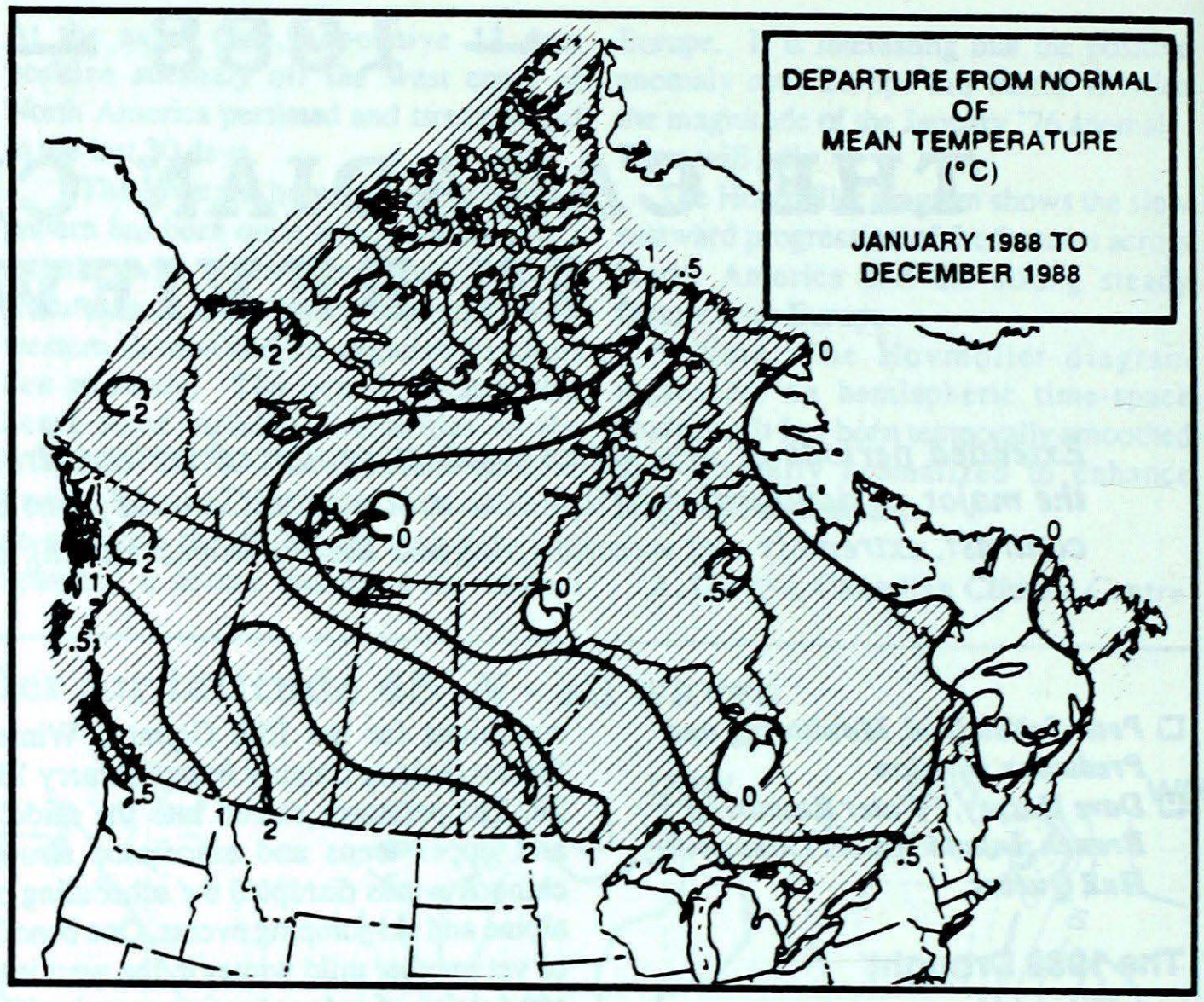
July saw more significant rains on the Prairies, but critical drought areas persisted in central Saskatchewan and southern Alberta. Meanwhile, in Ontario, excessively hot and dry weather continued in the southwest during the first half of the

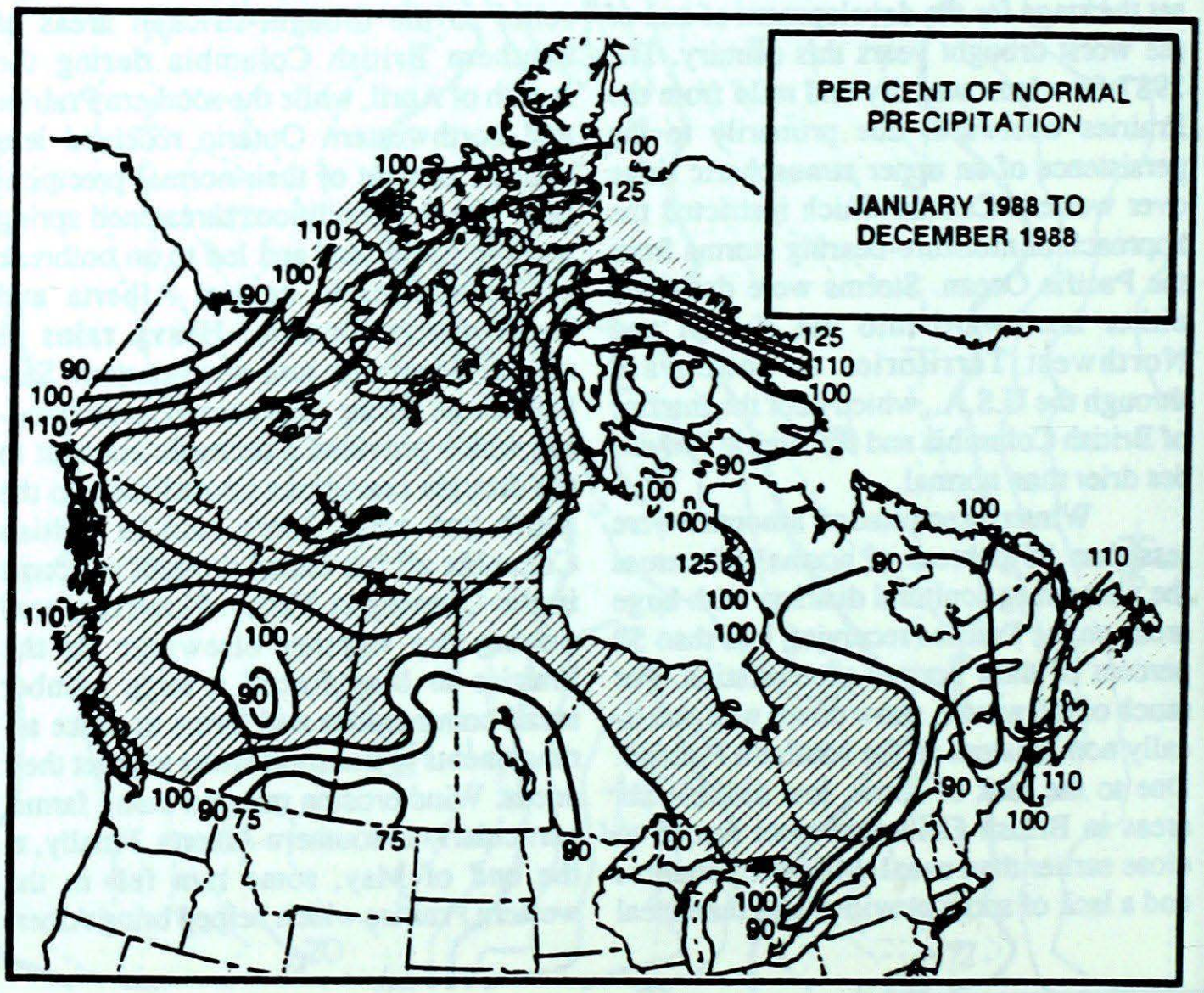
month, which notably stunted the growth of crops, particularly corn. Hot, humid air replaced the persistent drier air mass at mid month, bringing with it widespread thundershower activity. Continued rain in southern Ontario brought monthly totals up to near-normal values by the end of the month. Drought concerns across most of the country had subsided by the end of July with more beneficial rains falling in August. In many cases though, the rain was too late to fully repair the damage done to crops during the critical formative stages of plant development.

The agricultural sector was hardest hit by the drought. Statistics Canada September yield estimates of grains and oilseeds as a percentage of the five-year average were 90 percent for British Columbia; 97 percent for Alberta; 54 percent for Saskatchewan; and 60 percent for Manitoba. The near-normal values for Alberta and British Columbia can be directly related to the termination of the drought early in the growing season in southern B.C. and the northern half of Alberta. Dryland forage production was estimated to be about 54 percent of the five-year average in Saskatchewan and southern Alberta and 69 percent in Manitoba. In Ontario, the Ministry of Agriculture and Food estimated a 30 percent reduction from the 1987 yields of corn, soybeans and spring wheat. The Prairie drought affected the grain transportation system as some Great Lakes-St. Lawrence Seaway workers were laid off in July in anticipation of reduced shipments.

The Prairie drought had a significant impact on wetlands and waterfowl with Plains duck numbers falling to record lows. In the Prairie Lakes, numerous fish kills were caused by low water levels, high temperatures and low dissolved oxygen content. Also, spawning success was curtailed by loss of suitable habitat. An ongoing concern is that there is not enough water in the international river basins to meet domestic needs and meet Canada's treaty obligation to deliver 50 percent of the natural flow to the United States.

The intensity of the 1988 drought on the Prairies was comparable to, but not worse than the previous major drought





years of 1936, 1937, 1961 and 1984. In southwestern Ontario, it was the worst drought since 1963.

A Warm Year with a Hot Summer

It was another warmer than normal year across most of the country, with only regions along the Atlantic Coast having slightly below-normal mean annual temperatures. As was the case in 1987, the core of the warmth was experienced on the Prairies, where the annual temperature anomalies were slightly in excess of +2°C. These anomalies were about one degree cooler than the all-time record warm year of 1987. Much of this warmth can be attributed to an unusually hot summer across central and western Canada. It was the warmest June ever recorded over most of the Prairies with daily maximum temperatures soaring to as high as 44°C on the 5th. For several locations in southeastern Saskatchewan and southern Manitoba (including Winnipeg) it was the warmest summer (mean monthly temperatures averaged over June, July and August) ever recorded. In Toronto, it was the warmest summer since 1959 and the fourth warmest since records began in 1840. Record summer peak usage of electricity occurred during the heat wave of early August. This caused Ontario Hydro to cancel exports of power and issue a public appeal to reduce power consumption.

Heavy Summer Rains Create Havoc In Northwestern Canada

While much of southern Canada was being plagued by drought conditions, northern British Columbia, northern Alberta, southern Yukon and southern District of Mackenzie were being deluged by rain. The heaviest rains fell at the end of June and during the first half of July. A new 24-hour precipitation record was set at Yellowknife on June 27th which caused several road closures due to washouts in the surrounding area. During the same week, further south in Alberta on the Assumption Indian Reserve near High Level, families were forced to vacate their homes for a couple of weeks due to flooding. On the 5th of July, a state of emergency was declared in the town of Slave Lake, Alberta as 2,000 people fled their homes to escape massive flooding. On July 7th, the worst rainstorm in 35 years dumped 96 mm of rain on Edmonton in 30 hours, flooding basements and roads. In mid July, there were extensive closures of the Alaska Highway in northern British Coluimbia and southern Yukon due to mud and rockslides. Up to 185 mm of rain had fallen during the first 13 days of July at some northern British Columbia locations.

CONSEQUENCES OF ABNORMAL WEATHER ON CANADA'S WATER RESOURCES IN 1988

Streamflows in Canada during 1988 were, in general, in the normal range in the northern and coastal regions, and below-normal across the southern interior of Canada. The below-normal flow conditions led to water shortages in southeastern British Columbia, the southern Prairie Provinces, and southern Ontario and Quebec. Above-normal runoff occurred in several basins in Atlantic Canada and in the northwest, causing significant flooding in the Mackenzie River Basin.

The winter of 1987/88 began with normal streamflows occurring in most regions of the country. However, with below-normal flows in southern British Columbia and the Prairies, the stage was set in these areas for the drought conditions that followed.

Spring runoff was generally below-normal across southern Canada from British Columbia to Quebec, but normal in the north and on both east and west coasts. No severe flooding occurred in any region as a result of melting snow.

Lack of precipitation and above-normal temperatures in late spring and summer combined to extend drought and low-flow conditions across the southern regions of the country, from the interior of British Columbia, through the Prairies and the southern Canadian Shield, to the Great Lakes-Saint Lawrence basin. The persistence of drought in central and western Canada led to a wide range of water problems, including water supply shortages for agricultural and municipal uses; forest fires; decreased wetland areas and waterfowl populations; degradation of water quality; and decreased hydro-electric power production and recreational water use. In the Great Lakes-Saint Lawrence basin, the major impact of late-spring and summer low-flow conditions was on agriculture: damage to crops in Southern Ontario has been estimated to be $500 million. As well, in many areas, ground and surface water supplies became critically low. Unlike the situation in most of western Canada, however, relief came in late summer to Ontario and Quebec, gradually restoring water supplies to normal levels.

While southern Canada was drought-stricken, the east and west coasts and the north were generally experiencing normal flows. The exception was the southern part of the Mackenzie River Basin which experienced unusually high flows in July as a result of heavy rainfall. One-in-a-hundred-year flooding caused $20 million damage in the town of Slave Lake, Alberta.

By the fall of 1988, dry conditions were still persisting in south-eastern British Columbia and the southern Prairie Provinces. Normal flow conditions were the general rule for the rest of Canada, but above-normal runoff continued in southern regions of the Mackenzie Basin and occurred in northern Ontario and in New Brunswick and Nova Scotia. There was little change as winter set in, and 1988 came to a close under similar conditions.

JANUARY 1989

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	2.6	1.0	12.0	-11.0	28.5	87	231.1	110	0	19	36	53	472.3
ALERT BAY	3.0	0.2	12.9	-8.7	13.8	40	220.0	112		24	X		465.5
AMPHITRITE POINT	4.7	0.0	10.2	-2.0	29.9	206	481.2	118	4	26	X		415.0
BLUE RIVER	-4.5	6.2	8.6	-26.2	140.0	143	108.3	128	80	16	34	72	
CAPE SCOTT	4.2	0.1	8.4	-5.7	21.4	93	413.5	134	1		X		428.6
CAPE ST.JAMES	3.9	0.0	8.0	-9.7	10.8	66	132.5	81	2	28	35	*	437.1
CASTLEGAR	-1.8	2.0	9.3	-13.2	36.3	43	35.8	42	8	10	35	78	614.9
COMOX	3.0	0.8	13.4	-7.2	23.2	54	90.3	46	0	15	X		465.2
CRANBROOK	-6.1	2.5	9.4	-25.9	28.8	59	27.0	55	1	6	96	*	746.6
DEASE LAKE	-15.1	4.6	2.1	-37.5	65.1	192	37.4	134	73	10	59	93	1026.6
FORT NELSON	-23.3	0.5	6.8	-38.5	24.1	76	17.6	70	68	6	53	*	1280.5
FORT ST.JOHN	-11.2	6.5	8.9	-33.6	20.0	52	14.4	40	6	5	X		904.8
HOPE	1.7	2.1	13.8	-15.3	102.3	125	532.2	207	0	25	7	41	505.0
KAMLOOPS	-3.4	2.7	15.9	-23.0	15.0	46	9.9	31		4	88	151	664.6
KELOWNA	-3.0	2.1	14.8	-19.8	26.8	88	18.4	59	5	5	56	127	651.5
LANGARA	2.5	0.2	9.3	-11.0	52.2	167	322.7	203	2	29	X		480.2
LYTTON	0.2	4.0	16.1	-17.3	22.7	40	77.9	101	10	8	53	85	
MACKENZIE	-9.8	4.5	5.0	-38.3	93.8	116	75.6	85	70	15	32	57	851.9
MCINNES ISLAND	3.7	0.8	5.9	1.4	30.5	83	389.3	139	4	27	X		443.6
PENTICTON	-0.8	1.9	15.7	-16.0	19.0	65	12.0	37		4	56	116	581.4
PORT ALBERNI	2.6	*	12.5	-4.2	21.4	*	180.8	*		22	22	*	475.4
PORT HARDY	2.9	0.5	11.2	-6.6	28.8	97	353.1	167	3	25	19	29	467.4
PRINCE GEORGE	-7.7	4.4	6.0	-33.0	62.3	101	47.9	83	16	13	48	81	796.9
PRINCE RUPERT	2.0	2.2	9.4	-14.8	87.9	176	413.9	181	14	29	22	45	488.1
PRINCETON	-3.4	4.5	12.0	-21.6	19.0	34	57.4	105	13	8	54	*	
QUESNEL	-7.7	3.4	8.0	-22.0	60.8	99	72.5	129	21	14	X		793.6
REVELSTOKE	-3.6	3.0	9.8	-16.6	164.6	113	102.7	84	52	16	33	75	668.9
SANDSPIT	2.7	0.7	11.3	-11.1	31.3	92	219.4	152	3	23	30	51	436.6
SMITHERS	-6.9	4.0	9.7	-29.3	75.6	132	79.7	143	42	17	34	62	772.0
TERRACE	-3.2	2.7	5.4	-19.5	277.6	238	392.6	255	30	26	19	36	655.2
VANCOUVER INT'L	3.5	1.0	11.9	-5.1	14.8	57	148.2	96	0	19	X 34	63	449.3
VICTORIA INT'L	3.5	0.4	13.1	-6.6	13.0	65	104.2	67	0	14	46	72	450.8
VICTORIA MARINE	4.3	0.5	11.8	-5.0	3.2	28	186.1	82	1	20	X		426.5
WILLIAMS LAKE	-7.5	2.9	9.9	-31.2	41.8	84	33.2	75	33	12	60	86	789.6

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	Mean	Difference from Normal	Maximum	Minimum									
YUKON TERRITORY													
DAWSON	-32.1	*	-10.8	-51.2	19.2	*	13.8	*	56		X		
MAYO	-29.8	-0.8	-3.4	-53.5	31.0	165	31.0	177	59		X		
WATSON LAKE	-24.2	2.5	1.7	-46.4	55.5	137	39.8	120	72	11	55	121	1308.9
WHITEHORSE	-21.7	-1.0	0.7	-42.9	32.4	152	20.9	118	22	9	53	115	1231.3
NORTHWEST TERRITORIES													
ALERT	-35.1	-3.0	-18.3	-45.6	8.2	110	7.6	107	57	3	0		1644.6
BAKER LAKE	-34.4	-1.4	-20.6	-43.7	11.2	*	10.8	140	54	4	18		1622.9
CAMBRIDGE BAY	-35.2	-1.6	-20.2	-46.2	9.2	173	5.2	108	19	3	0		1651.0
CAPE DYER	-28.4	-6.3	-15.2	-42.0	19.0	25	18.9	29	128	3	X		1438.0
CAPE PARRY	-29.2	-0.4	-14.2	-39.8	6.4	65	5.4	76	13	1	X		1461.8
CLYDE	-33.0	-7.9	-24.1	-47.2	0.2	2	0.2	2	36	0	0		1582.5
COPPERMINE	-31.2	-1.1	-12.7	-42.5	24.2	263	16.2	174	69	5	0		1522.3
CORAL HARBOUR	-31.4	-1.7	-17.3	-43.0	0.4	4	0.4	4	15	0	43	97	1531.0
EUREKA	-42.5	-6.1	-22.8	-52.4	2.2	68	2.2	75	11	0	0		1876.0
FORT RELIANCE	-28.8	0.8	-6.3	-44.1	24.6	170	13.3	111	42	5	X		1451.5
FORT SIMPSON	-29.3	-1.1	-4.2	-43.1	22.0	106	20.7	104	49	9	67	140	1466.0
FORT SMITH	-24.4	2.4	3.3	-40.0	22.6	105	17.7	95	50	6	58	101	1313.6
IQALUIT	-31.6	-6.0	-11.5	-43.3	11.0	39	10.8	41	13	3	64	181	1537.4
HALL BEACH	-35.4	-4.4	-20.3	-46.4	1.0	11	1.0	11	40	0	X		1655.3
HAY RIVER	-24.5	1.3	-2.5	-40.3	14.5	64	14.5	69	42	6	X		1313.4
INUVIK	-32.4	-2.8	-13.9	-46.9	16.0	78	14.7	82	39	6	2	27	1562.9
MOULD BAY	-36.2	-2.7	-18.0	-48.0	3.3	100	2.2	81	28	0	0		1679.9
NORMAN WELLS	-30.9	-2.0	-12.1	-44.6	19.7	95	19.7	101	8	6	28	94	1515.9
POND INLET	-37.1	-6.0	-25.8	-46.6	2.4	30	1.8	36	43	1	X		1709.1
RESOLUTE	-35.7	-3.6	-22.2	-45.3	2.4	70	1.4	42	22	1	0		1663.4
YELLOWKNIFE	-29.1	-0.3	-10.0	-44.2	33.0	212	21.2	159	36	9	45	102	1461.5
ALBERTA													
BANFF	-6.3	5.2	8.5	-29.0	53.8	121	56.8	148	33	12	X		
CALGARY INT'L	-7.1	4.7	11.8	-34.1	34.2	164	23.4	144	4	7	129	126	778.7
COLD LAKE	-13.0	6.0	7.5	-37.5	16.7	70	13.6	61	13	4	84	92	960.4
CORONATION	-12.5	4.0	5.2	-36.9	26.4	104	21.8	101	20	6	78	65	946.8
EDMONTON INT'L	-9.8	6.7	9.6	-35.2	43.6	151	47.8	195	36	5	81	82	862.5
EDMONTON MUNI.	-8.3	6.7	10.7	-33.7	39.5	145	42.1	171	25	5	84	93	816.0
EDMONTON NAMAO	-9.0	6.6	10.0	-34.3	32.6	131	25.4	102	21	4	X		837.5
EDSON	-10.7	4.7	13.5	-37.2	45.9	127	41.7	161	28	5	92	110	888.1
FORT CHIPEWYAN	-22.5	3.6	7.5	-40.0	8.4	39	8.4	43	32		X		

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FORT MCMURRAY	-16.5	5.3	11.6	-38.0	31.8	120	19.6	86	22	6	68	77	1068.7
GRANDE PRAIRIE	-11.1	6.6	10.7	-36.8	38.3	100	26.7	78	17	8	97	*	903.4
HIGH LEVEL	-22.8	1.8	9.7	-40.1	28.9	108	25.6	124	43	6	52	96	1267.2
JASPER	-8.4	4.4	8.0	-32.6	67.0	175	72.6	211	48	9	69	*	819.1
LETHBRIDGE	-6.0	4.3	13.0	-38.2	43.0	151	24.0	101	1	5	119	124	743.9
MEDICINE HAT	-8.2	4.4	7.4	-34.2	24.4	94	15.1	66		4	128	137	818.7
PEACE RIVER	-13.9	6.5	6.1	-34.1	23.5	87	22.5	101	12	6	X		985.0
RED DEER	-13.0	2.5	8.0	-35.5	29.3	118	25.5	107	20	6	X		954.4
ROCKY MTN HOUSE	-11.9	1.1	13.4	-40.5	58.6	192	47.3	171	28	8	X		927.0
SLAVE LAKE	-11.8	6.2	12.3	-35.3	27.4	82	24.8	90	15	7	79	94	924.0
SUFFIELD	-9.6	*	9.3	-34.0	22.9	*	22.4	*	2	7	120		853.9
WHITECOURT	-9.5	7.1	13.2	-33.5	49.1	153	34.4	117	21	9	X		825.2
SASKATCHEWAN													
BROADVIEW	-13.7	5.2	2.8	-38.7	25.0	132	19.8	130	9	7	128	107	982.4
COLLINS BAY	-24.4	1.8	2.6	-41.2	52.2	266	37.2	220	62	7	80	*	1315.0
CREE LAKE	-22.4	2.7	4.7	-44.6	33.3	159	17.2	116	52	7	61	72	1251.5
ESTEVAN	-11.8	4.5	3.5	-38.3	57.4	281	47.0	244	21	10	116	95	924.7
KINDERSLEY	-13.6	3.6	3.3	-37.1	18.2	100	15.2	88	23	4	X		980.2
LA RONGE	-18.2	4.4	6.4	-42.1	17.3	78	17.3	87	35	5	X		1122.1
MEADOW LAKE	-14.8	4.7	6.4	-25.3	20.6	102	11.3	52	9	4	87	*	1017.7
MOOSE JAW	-11.4	4.4	5.5	-17.2	32.6	140	32.2	173	10	8	120	114	910.1
NIPAWIN	-16.8	*	6.7	-41.4	17.1	*	9.1	*	13	1	114	*	1079.7
NORTH BATTLEFORD	-13.8	5.2	5.0	-37.2	32.5	147	23.2	117	25	2	X		969.1
PRINCE ALBERT	-15.7	5.8	5.7	-39.1	12.6	69	12.3	74	11	3	99	103	1064.3
REGINA	-13.9	4.0	3.0	-38.2	25.8	129	22.1	133	10	8	114	114	987.7
SASKATOON	-14.1	5.2	3.6	-37.4	11.8	59			14	2	X		995.2
SWIFT CURRENT	-10.5	4.2	7.5	-34.6	27.3	122	25.0	118	17	7	128	138	883.2
WYNYARD	-13.7	5.3	3.7	-36.6	20.2	94	18.5	96	15	4	X 116	103	984.1
YORKTON	-14.2	5.7	4.5	-41.1	18.4	76	17.0	74	20	6	106	98	1031.8
MANITOBA													
BRANDON	-16.3	3.4	2.1	-38.2	39.4	186	30.4	156	18	9	X		1061.5
CHURCHILL	-27.8	-0.3	-2.9	-42.4	25.4	150	24.0	156	37	7	103	128	1421.0
DAUPHIN	-15.2	4.3	5.0	-41.6	25.4	98	21.3	86	20	6	108	90	1031.1
GILLAM	-25.3	2.7	2.4	-43.1	24.8	107	15.6	73	52	5	X		1343.4
GIMLI	-16.6	3.6	3.0	-34.2	49.3	153	33.2	126	29	10	100	81	1074.2
LYNN LAKE	-24.8	2.1	4.3	-43.2	52.3	196	23.3	104	49	6	X 93	98	1326.6
NORWAY HOUSE	-20.2	*	5.7	-43.8	15.2	*	11.4	*	20	7		*	1185.3
PORTAGE LA PRAIRIE	-15.2	3.1	5.6	-37.1	70.8	361	42.1	160	12	10	X X		1030.2

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THE PAS	-18.1	4.6	6.2	-39.4	12.2	51	8.3	46	16	2	98	95	1118.5
THOMPSON	-23.6	3.0	4.1	-46.3	24.8	98	19.4	89	46	7	113	119	1291.2
WINNIPEG INT'L	-15.8	3.5	2.2	-35.7	58.3	246	52.2	246	22	11	108	89	1047.6
ONTARIO													
BIG TROUT LAKE	-23.3	1.2	1.6	-41.1	33.4	*	29.5	118	81	11	73	*	1279.5
EARLTON	-13.7	2.6	5.0	-36.9	48.9	80	58.7	104	46	14	X		991.3
GORE BAY	-6.2	3.9	5.2	-23.9	70.4	123	50.7	82	21	13	X X		749.4
HAMILTON RBG	-1.0	4.0	11.7	-21.1	18.0	48	35.8	54	0	9	116	*	
HAMILTON	-2.3	4.1	11.1	-21.2	21.8	55	32.2	50	0	8	X		628.4
KAPUSKASING	-16.5	2.1	2.3	-38.9	63.8	115	54.2	101	84	12	X		1017.5
KENORA	-14.6	3.9	1.8	-34.2	48.7	156	41.9	148	64	12	X		1011.7
KINGSTON	-4.0	3.7	6.3	-23.7	12.0	23	44.2	63	0	11	105	104	685.2
LANSDOWNE HOUSE	-21.1	1.6	1.0	-42.2	38.6	106	35.4	117	49	12	X		1210.6
LONDON	-2.2	4.4	11.2	-18.4	26.1	47	53.3	70	0	11	88	124	626.1
MOOSONEE	-19.8	0.6	-3.4	-38.7	63.4	148	47.6	116	68	10	91	110	1173.8
MUSKOKA					76.6	94	98.7	114	23	18	X		
NORTH BAY	-10.0	3.0	5.1	-31.9	80.7	136	88.7	139	38	15	97	99	867.4
OTTAWA INT'L	-8.0	2.9	5.6	-26.9	50.8	100	63.8	104	18	14	106	*	807.1
PETAWAWA	-9.8	3.0	7.0	-31.4	57.2	122	52.5	112	20	10	X		880.6
PETERBOROUGH	-5.1	4.5	8.7	-24.4	19.8	*	36.4	65	TR	14	X		716.8
PICKLE LAKE	-18.1	3.3	0.4	-39.5	32.2	76	29.9	78	69	7	X		1148.0
RED LAKE	-17.1	3.9	2.8	-41.5	34.8	111	30.6	106	84	8	102	*	1089.2
ST. CATHARINES	-0.9	3.4	12.9	-18.0	16.4	49	28.6	50	0	8	X		584.1
SARNIA	-1.2	4.5	12.3	-16.1	32.4	112	46.2	88	0	10	120	143	596.1
SAULT STE. MARIE	-7.1	3.0	4.7	-31.1	77.2	101	63.2	85	31	18	62	81	777.2
SIOUX LOOKOUT	-15.4	4.0	2.5	-36.3	42.0	110	40.4	112	92	12	X		1031.4
SUDBURY	-10.5	3.2	4.0	-30.6	77.4	143	81.6	141	63	17	115	114	879.5
THUNDER BAY	-12.2	3.2	4.0	-36.5	70.7	146	52.1	127	40	12	92	77	935.5
TIMMINS	-14.8	2.5	5.5	-38.3	59.8	90	58.2	103	54	14	X		1016.3
TORONTO	-0.3	4.3	11.5	-20.5	12.6	34	30.4	49	0	8			568.2
TORONTO INT'L	-2.2	4.2	10.7	-22.8	11.2	33	26.0	51	0	8	X		625.3
TORONTO ISLAND	-1.0	3.9	10.0	-20.0	8.2	26	30.2	54	0	8			591.1
TRENTON	-3.8	3.8	10.1	-22.2	14.8	30	46.2	67	0	11	X		673.7
WATERLOO-WELL	-3.2	4.0	9.5	-21.9	25.8	63	49.8	88	0	11	X		657.1
WAWA	-11.3	*	2.9	-36.0	95.0	*	79.6	*	61	12		*	872.1
WIARTON	-3.4	3.7	7.5	-20.7	91.2	89	75.8	78		18	77	113	663.8
WINDSOR	0.4	5.3	15.0	-11.7	15.8	52	32.6	59	0	9	X		545.9

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QUEBEC													
BAGOTVILLE	-15.2	0.6	5.9	-32.3	65.3	95	60.5	95	54	13	X		1031.3
BAIE COMEAU	-14.1	-0.4	2.0	-33.8	69.2	81	54.3	59	51	14			996.7
BLANC SABLON	-14.7	-4.3	3.3	-29.4	83.1	73	84.5	63	16	18	109	*	998.1
CHIBOUGAMAU	-18.3	1.4	2.5	-37.1	93.4	119	67.4	93	87	16	103	118	1127.5
GASPE	-11.5	-0.6	4.8	-25.6	80.6	86	51.4	48	27	10	113	*	914.5
INUKJUAK	-29.7	-1.2	-9.4	-38.0	12.4	124	12.2	124	33	4	86	165	1355.6
KUUJJUAQ	-25.8	-2.5	-7.8	-36.6	30.6	93	30.0	90	40	9	95	151	1360.8
KUUJJUARAPIK	-24.3	-1.8	-2.3	-38.7	35.7	132	34.6	134	19	8	80	111	1266.7
LA GRANDE RIVIERE	-24.4	*	-1.5	-37.5	99.2	*	56.8	*	7	12	82	*	1314.9
MANIWAKI	-10.4	3.1	6.2	-31.8	61.8	127	72.6	132	28	13	95	103	878.8
MATAGAMI	-18.0	2.1	1.9	-37.2	82.4	133	69.5	118	57	16	95	121	1115.7
MONT JOLI	-11.0	0.6	5.6	-25.7	58.0	66	51.6	59	35	12	98	120	896.6
MONTREAL INT'L	-7.3	2.9	7.5	-27.7	51.0	96	66.0	91	10	11	104	98	786.0
MONTREAL M INT'L	-9.1	*	7.4	-29.0	78.4	*	110.1	*	26	13	113	*	841.5
NATASHQUAN	-14.6	-2.5	1.1	-31.4	60.6	88	68.2	74	34	14	128	117	1013.3
QUEBEC	-11.0	1.1	6.3	-30.5	77.8	100	95.2	106	46	13	111	114	898.4
ROBERVAL	-15.4	0.4	4.5	-33.6	47.4	67	49.6	73	30	13	101	*	1035.3
SCHEFFERVILLE	-24.8	-2.0	-2.4	-44.6	30.2	*	30.6	65	46	10	91		1326.8
SEPT-ILES	-15.5	-1.5	1.8	-33.3	106.2	113	83.7	87	34	15	108	100	1039.2
SHERBROOKE	-9.4	2.3	5.1	-31.8	75.0	120	76.6	107	24	15	85	*	851.5
STE AGATHE DES MONTS	-10.8	2.6	4.3	-30.1	81.4	99	97.6	104	66	14	78	81	893.3
ST-HUBERT	-7.7	2.4	8.0	-29.8	57.1	100	73.4	88	16	13	*		796.6
VAL D'OR	-14.6	2.2	3.3	-34.9	61.2	102	65.0	108	41	15	94	92	1011.9
NEW BRUNSWICK													
CHARLO	-12.7	-1.0	3.4	-24.4	91.3	108	89.1	66	97	11	120	102	951.3
CHATHAM	-10.0	-0.3	4.2	-25.5	73.1	109	68.2	69	20	10	118	103	868.1
FREDERICTON	-8.6	0.6	6.1	-25.3	57.0	89	69.0	66	21	10	113	*	823.1
MONCTON	-7.3	0.8	8.0	-23.0	54.7	70	49.8	39	8	12	108	100	784.3
SAINT JOHN	-6.4	1.4	7.9	-23.2	34.8	45	101.0	67	3	12	114	107	756.2

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	-4.7	0.3	10.4	-24.4	47.1	62	64.2	51	0	14	X		709.0
HALIFAX INT'L	-5.4	0.6	8.1	-18.4	40.4	64	84.7	55	0	13	*		725.0
SABLE ISLAND	-0.8	-0.9	7.6	-10.0	89.8	247	168.5	114	0	15	65	122	580.7
SHEARWATER	-4.0	0.1	8.8	-18.7	23.0	50	105.2	73	0	11	101	89	681.7
SYDNEY	-5.4	-0.7	7.5	-16.8	68.9	92	124.1	83	8	17	99	115	722.3
YARMOUTH	-2.1	0.6	7.8	-14.8	26.8	43	61.4	43	0	13	102	142	625.1
PRINCE EDWARD ISLAND													
CHARLOTTETOWN	-7.4	-0.3	5.7	-19.1	67.8	88	83.9	71	23	12	X		787.1
SUMMERSIDE	-7.3	-0.1	5.6	-19.1	54.0	80	58.3	56	12	11	112	103	778.4
NEWFOUNDLAND													
											X		
BATTLE HARBOUR	-14.6	-5.0	5.1	-30.9	49.8	72	49.4	77	59	6	X		1009.5
BONAVISTA	-5.8	-1.5	7.2	-15.9	95.0	186	115.8	128	51	15	X		736.2
BURGEO	-6.0	-1.9	4.6	-17.3	62.7	109	141.9	94	25	17	*		746.1
CARTWRIGHT	-16.1	-2.9	3.0	-29.8	55.9	67	55.9	62	82	8	111	123	1065.6
CHURCHILL FALLS	-23.0	-2.7	-2.0	-40.0	44.8	52	39.6	46	78	9	121	121	1274.4
COMFORT COVE	-9.0	-2.6	6.4	-21.4	92.8	114	104.5	99	92	13	X		835.7
DANIEL'S HARBOUR	-10.4	-3.5	9.0	-24.7	75.0	84	84.0	84	21	16	60	107	871.4
DEER LAKE	-10.4	-2.3	7.0	-28.2	119.7	138	94.4	101	96	17	X		879.4
GANDER INT'L	-8.9	-2.7	5.9	-22.0	133.0	168	144.3	132	46	16	117	137	834.4
GOOSE	-18.9	-2.5	1.1	-30.2	24.5	30	17.1	22	35	6	122	138	1142.4
PORT-AUX-BASQUES	-5.4	-1.3	3.4	-13.4	108.8	148	141.4	106	1	23	57	*	719.0
ST ANTHONY	-13.6	-2.3	2.1	-28.5	121.7	212	103.3	107	55	17		*	981.7
ST JOHN'S	-6.0	-2.1	8.8	-17.6	93.3	115	141.7	91	4	18	88	124	743.8
ST LAWRENCE	-5.2	-1.1	5.6	-15.7	78.6	154	153.8	130	30	16		*	718.0
STEPHENVILLE	-7.2	-2.2	6.4	-17.8	112.9	119	129.3	112	52	22	58	132	781.5
WABUSH LAKE	-22.3	0.0	-2.8	-39.3	38.2	53	34.7	53	48	11	104	128	1352.9

AGROCLIMATOLOGICAL STATIONS **JANUARY 1989**

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	2.3	1.1	13.0	-4.5	33.8	319.5	139	1	21	28	0.0	6.3
KAMPLOOPS	**	**	**	**	**	**	**	***	***	**	**	**
SIDNEY	4.1	1.0	13.0	-1.5	8.0	149.7	*	0	13	35	13.5	13.5
SUMMERLAND	-1.2	2.2	15.5	-13.5	16.0	14.4	40	0	4	72	0.0	0.0
ALBERTA												
BEAVERLODGE	-9.3	6.6	10.5	-35.0	22.0	25.0	76	10	5	87	0.0	1.0
ELLERSLIE	**	**	**	**	**	**	**	***	***	**	**	**
LACOMBE	-11.4	4.1	8.5	-37.0	21.5	19.3	90	30	5	88	0.0	0.0
LETHBRIDGE	**	**	**	**	**	**	**	***	***	**	**	**
VEGREVILLE	**	**	**	**	**	**	**	***	***	**	**	**
SASKATCHWAN												
INDIAN HEAD	-13.1	4.8	4.0	-38.0	34.0	26.6	127	26	8	**	0.0	0.0
MELFORT	-15.3	5.6	1.0	-38.0	9.9	9.9	52	25	2	88	0.0	0.0
REGINA	-14.6	3.4	5.0	-38.0	35.0	32.6	181	19	9	**	0.0	0.0
SASKATOON	-13.6	4.4	4.0	-37.5	27.7	32.6	181	15	3	100	0.0	0.0
SCOTT	-14.3	4.8	4.0	-40.0	11.0	21.4	127	14	4	99	0.0	0.0
SWIFT CURRENT	-10.0	4.8	7.5	-33.0	15.6	13.9	84	18	4	115	0.0	0.0
MANITOBA												
BRANDON	-15.6	3.7	3.6	-38.6	28.1	28.1	132	22	7	**	0.0	0.0
GLENLEA	-13.8	5.9	4.5	-37.0	48.0	40.4	158	22	8	96	0.0	0.0
MORDEN	-16.7	0.6	1.0	-37.5	37.8	37.8	161	70	12	106	0.0	0.0
ONTARIO												
DELHI	-2.1	3.9	10.5	-20.0	17.1	44.1	68	0	9	0	**	**
ELORA	-3.8	3.8	8.4	0.0	**	46.0	79	0	0	**	**	**
GUELPH	-3.3	3.7	9.5	-23.5	18.0	49.0	87	0	11	84	0.0	0.0
HARROW	0.0	4.8	12.5	-14.5	24.0	34.0	58	0	7	118	0.0	1.3
KAPUSKASING	-16.8	1.8	3.0	-41.0	55.3	46.8	95	49	9	95	0.0	0.0
OTTAWA	-3.0	7.8	6.6	-27.3	41.8	46.0	83	6	11	106	0.0	0.0
SMITHFIELD	-2.0	5.5	8.0	-22.9	15.9	59.9	73	0	11	**	0.0	0.0
VINELAND	-0.2	3.9	11.8	-16.9	12.8	37.0	59	0	8	108	0.0	1.4
WOODSLIE	**	**	**	**	**	**	**	***	***	**	**	**

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	-9.5	1.8	7.0	-29.0	42.4	46.9	58	28	9	122	0.0	0.0
L'ASSOMPTION	-9.0	2.9	7.5	-32.0	60.0	94.8	127	23	15	96	0.0	0.0
LENNOXVILLE	**	**	**	**	**	**	**	***	***	**	**	**
NORMANDIN	-17.5	0.5	4.0	-38.0	42.6	36.6	58	38	14	110	0.0	0.0
STE.CLOTILDE	-6.2	3.8	10.0	-26.5	32.7	44.9	63	9	10	105	0.0	0.0
NEW BRUNSWICK												
FREDERICTON	-8.0	1.1	6.0	-25.5	29.3	34.6	34	17	10	113	0.0	0.0
NOVA SCOTIA												
KENTVILLE	-4.1	0.9	10.0	-20.0	32.8	57.2	42	1	12	71	0.0	0.0
NAPPAN	-6.1	0.7	9.0	-24.0	32.5	48.0	42	4	9	84	0.0	0.0
PRINCE EDWARD ISLAND												
CHARLOTTETWN	-6.6	0.0	6.0	-19.0	49.0	71.0	70	15	11	168	0.0	1.0
NEWFOUNDLAND												
ST.JOHN'S WEST	-4.0	0.2	8.0	-18.0	84.2	81.2	46	30	9	76	0.0	0.0