



# Climatic Perspectives

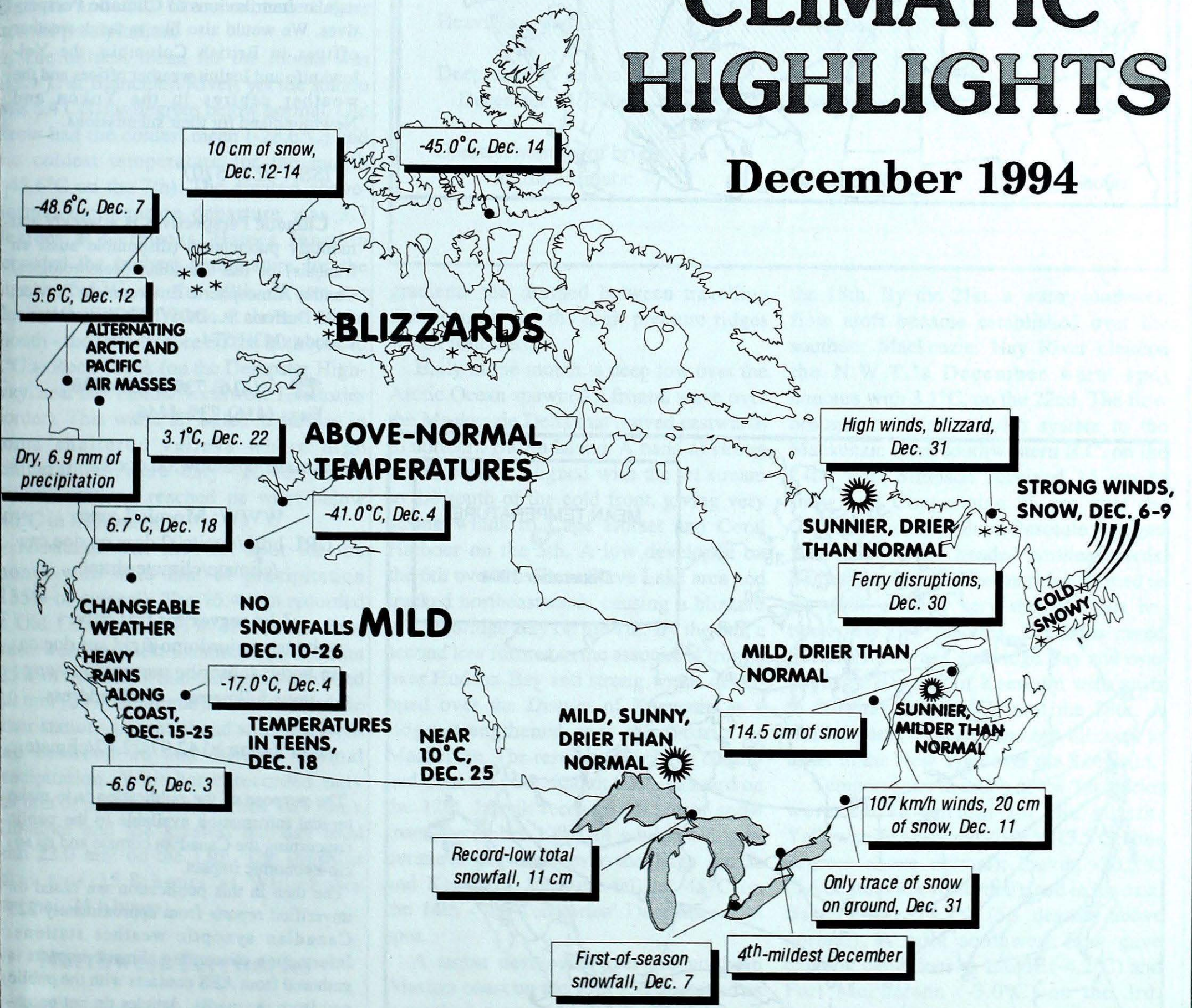
December 1994

Monthly review of Canadian climate and water

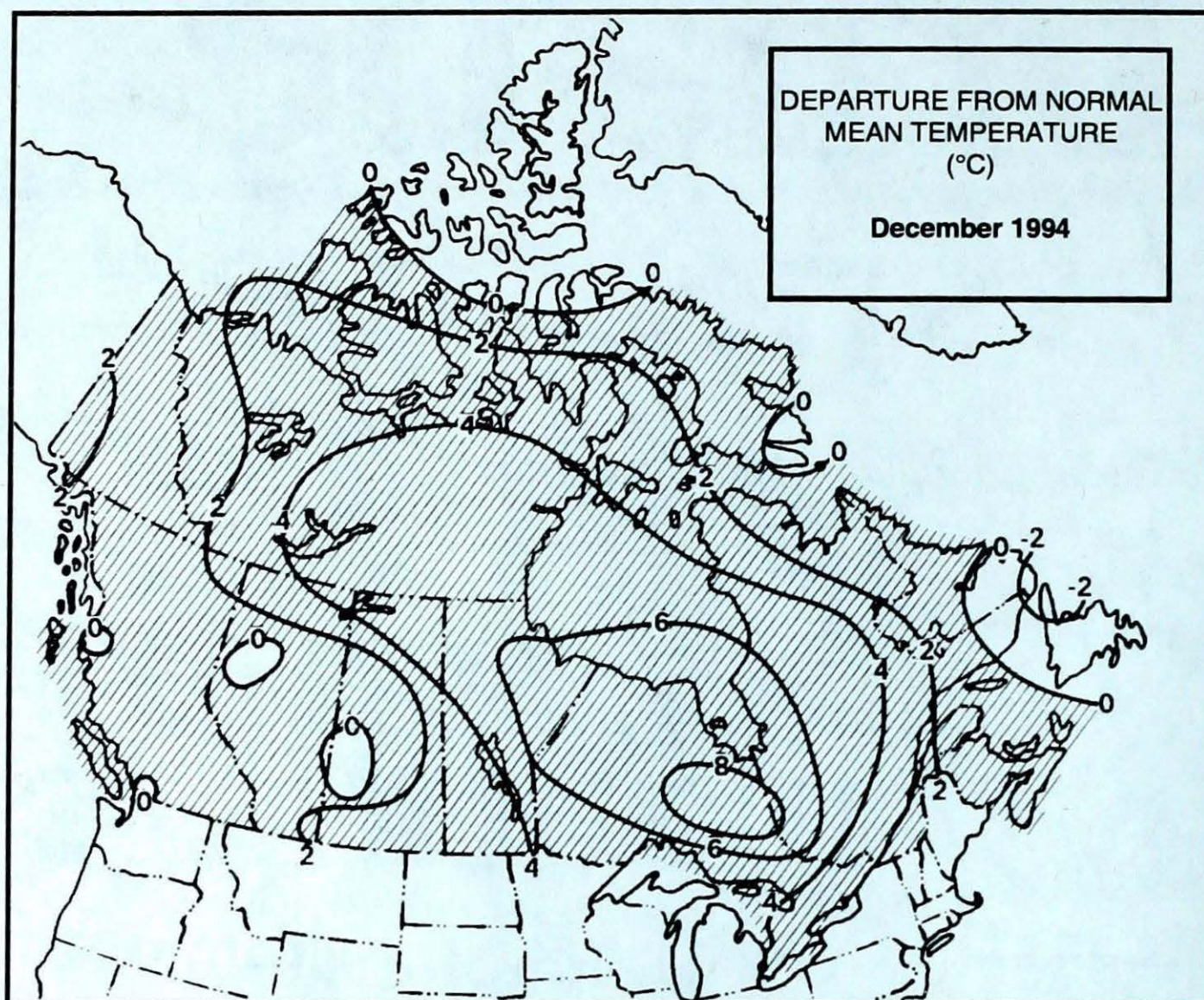
vol. 16

## CLIMATIC HIGHLIGHTS

### December 1994







## CLIMATIC PERSPECTIVES VOLUME 16

Managing editor . . . *Andrej Saulesleja*  
 Editor English version . . . *Brian Taylor*  
 French version . . . *Alain Caillet*  
 Associate editor . . . . . *Jenny Reycraft*  
 Long-range forecasts . . . *Aaron Gergye*  
 Data manager . . . *Mike Skarpathiotakis*  
 Computer support . . . . . *Robert Eals*  
 Art layout . . . . . *Krystyna Czaja*  
 Translation . . . . . *Daniel Pokorn*  
 Cartography . . . . . *Tom Chivers*

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☎ (416) 739-4438/4330

Fax: (416) 739-4446

Email: [cp@dow.on.doe.ca](mailto:cp@dow.on.doe.ca)

WWW: Mosaic/Lynx:

URL <http://cmits02.dow.on.doe.ca/climate/climate.shtml>

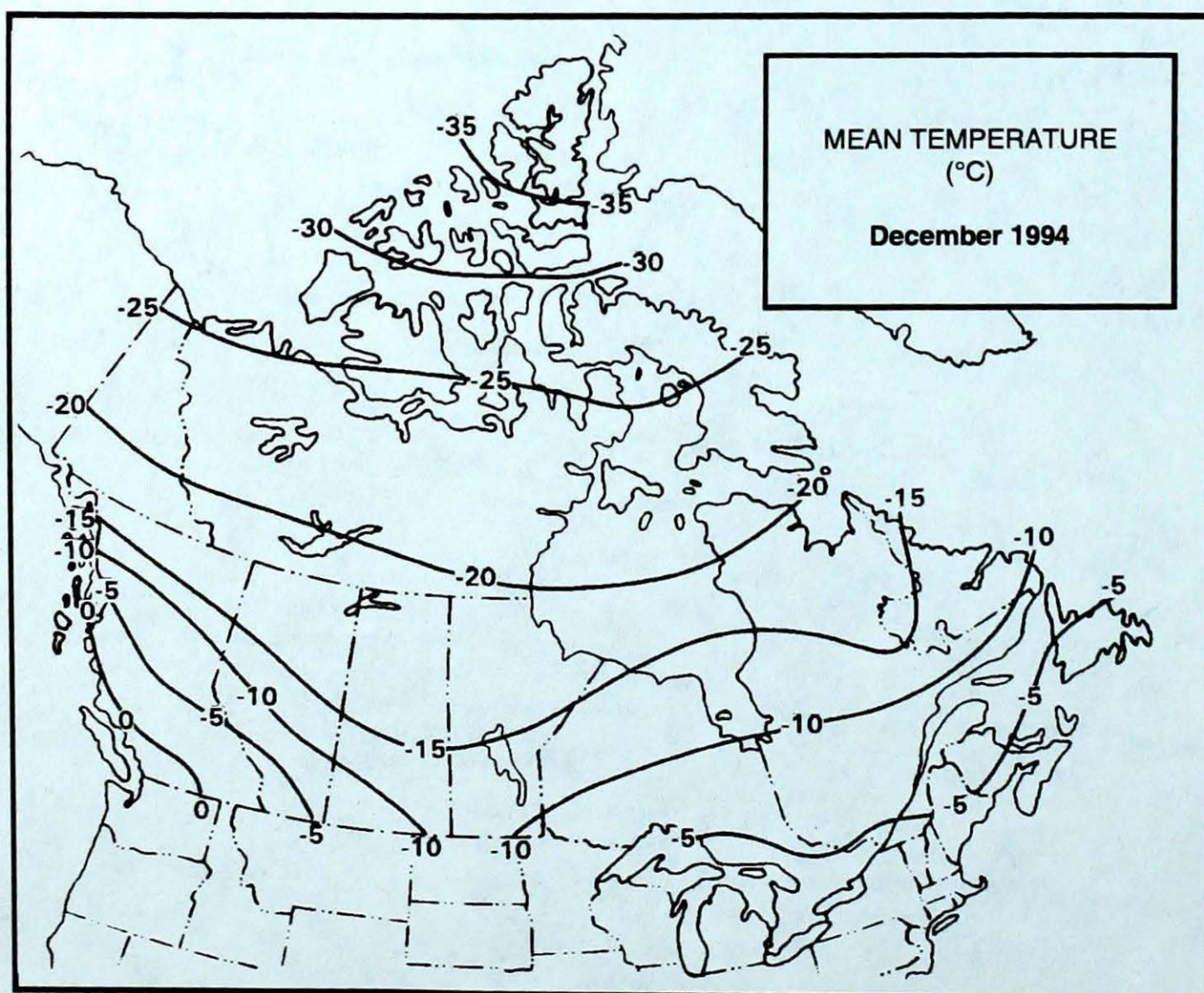
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The purpose of the publication is to make topical information available to the public concerning the Canadian climate and its socio-economic impact.

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





## Across the country

### Yukon

Both Arctic and Pacific air masses influenced the Yukon with no long periods of either cold or mild weather. The far north experienced more of the Arctic air than the south. Conditions in the south varied as mild Pacific air and cold Arctic air (with high wind-chill factors) moved back and forth over the region. Despite the mild Pacific air moving over the Territory, most stations had less than half their normal precipitation amounts - only Klondike, Ogilvie and Old Crow exceeded their normal precipitation.

The mildest mean for the month was  $-13.1^{\circ}\text{C}$  at Blanchard River, yet the station was 3.4 Celsius degrees below normal. Old Crow had the coldest mean ( $-28.6^{\circ}\text{C}$ ) and the coldest temperature for the month ( $-48.6^{\circ}\text{C}$  on the 7th). The greatest above-normal temperature departure was 3.7 degrees at Carmacks. Haines Junction recorded the highest temperature for the month,  $5.6^{\circ}\text{C}$  on the 12th. Warm air flooded across the Yukon at the end of the month - the temperature on the 30th rose to  $2^{\circ}\text{C}$  at Rock Creek (on the Dempster Highway, near the Yukon/Northwest Territories border). This warm air failed to surface in some sheltered valleys where high temperatures were only  $-20$  to  $-15^{\circ}\text{C}$ . Several stations reached or went below  $-40^{\circ}\text{C}$  in December.

Klondike was the wet spot for the month with 44.5 mm of precipitation (135% of normal). The 16.4 mm recorded at Old Crow was 141% of normal. Burwash was the driest location with 2.6 mm (25% of normal) while Carmacks recorded 4.0 mm (24% of normal). Almost all of the other stations in central and southern areas had between 28 and 60% of normal precipitation. Whitehorse recorded only 6.9 mm of precipitation (normal 18.9 mm). Klondike had the greatest one-day total with 23.0 mm on the 13th. The sunshine total was 35.8 hours at Whitehorse (normal, 24.6 hours).

### Northwest Territories

Blizzards were the predominant news items in the Territories. Bands of strong winds often resulted from tight pressure

### CLIMATIC EXTREMES IN CANADA - DECEMBER 1994

Mean temperature:		
Highest	Cape Scott, B.C.	$5.0^{\circ}\text{C}$
Coldest	Eureka, N.W.T.	$-36.5^{\circ}\text{C}$
Highest temperature:	Lethbridge, Alberta	$14.4^{\circ}\text{C}$
Lowest temperature:	Old Crow, Yukon	$-48.6^{\circ}\text{C}$
Heaviest precipitation:	Amphitrite Point, B.C.	483.9 mm
Heaviest snowfall:	Revelstoke, B.C.	142.2 cm
Deepest snow on the ground December 31, 1994:	Coppermine, N.W.T.	69 cm
Greatest number of bright sunshine hours:	Kentville, N.S.	165 hours

gradients that formed between travelling disturbances and the high pressure ridges which followed.

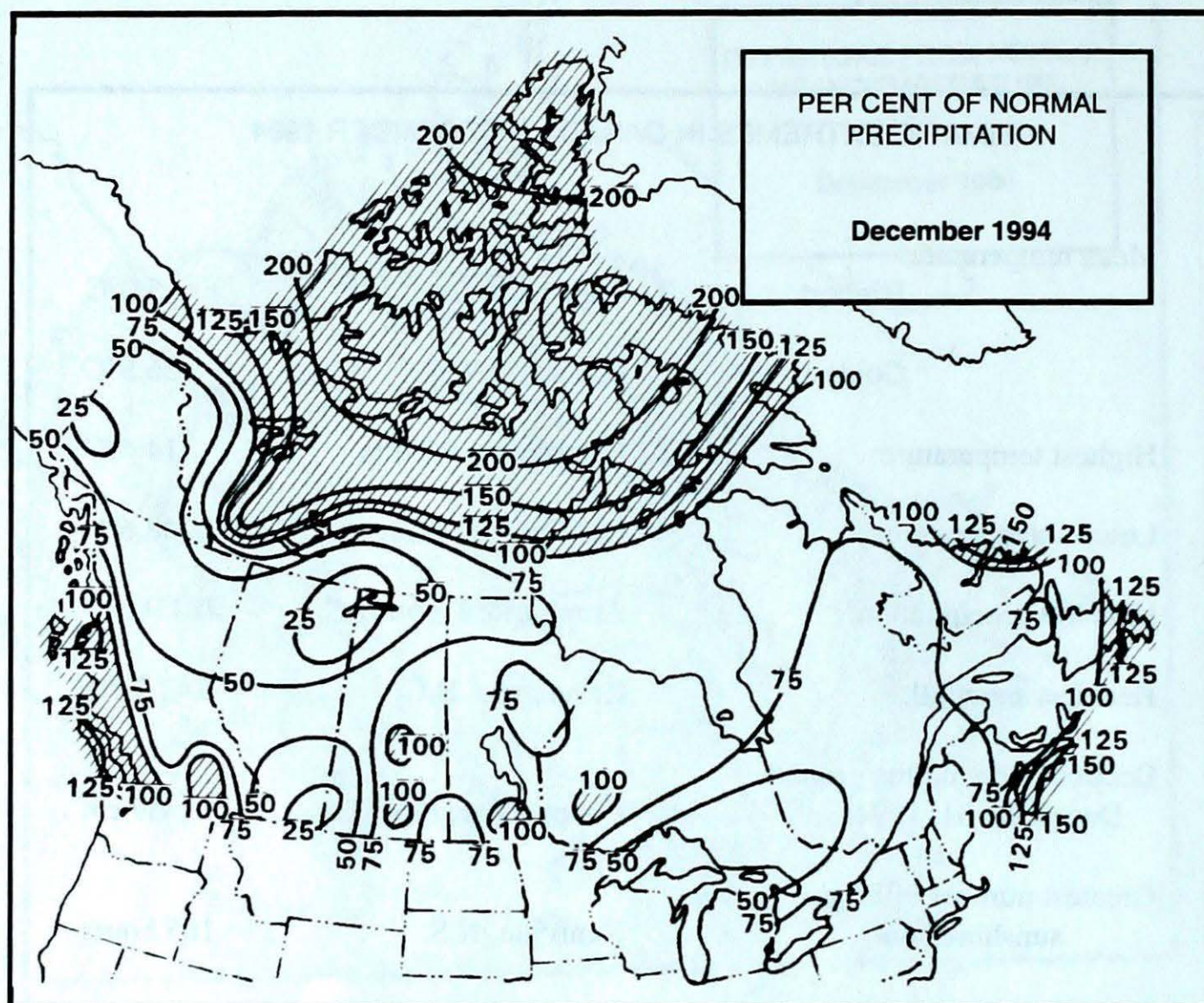
Early in the month, a deep low over the Arctic Ocean spawned a frontal wave over the Mackenzie Delta that moved eastwards to northern Baffin Island. A band of strong winds became aligned with the jet stream to the south of the cold front, giving very strong winds to Cape Dorset and Coral Harbour on the 5th. A low developed on the 6th over the Great Slave Lake area and tracked northeastwards causing a blizzard in Cambridge Bay on the 7th. By the 8th, a second low formed in the associated trough over Hudson Bay and strong winds developed over the District of Keewatin as a ridge strengthened over the District of Mackenzie. The resulting blizzards continued until the 10th. Iqaluit had a blizzard on the 12th. Inuvik received 10 cm of snow from December 12 to 14 while cold temperatures prevailed over the High Arctic and Keewatin. Resolute fell to  $-45^{\circ}\text{C}$  on the 14th - the Territories' December cold spot.

A storm developed over the northern Alaskan coast on the 15th and deepened as it tracked eastwards. Blizzards occurred from Cambridge Bay to Cape Dorset and over most of the District of Keewatin, until

the 18th. By the 21st, a warm southwest flow aloft became established over the southern Mackenzie. Hay River claimed the N.W.T.'s December warm spot honours with  $3.1^{\circ}\text{C}$ , on the 22nd. The flow brought a moisture-laden system to the Mackenzie from southwestern B.C. on the 24th. Fort Simpson received 15 cm of snow and Coppermine 26 cm over the Christmas holiday. Even Resolute received 10 cm as the low headed northeastwards. Behind the low, a massive ridge formed to the west, causing very strong winds between the two features. Blizzards raged from Resolute to Cambridge Bay and over the entire District of Keewatin with gusts to 80 km/h continuing until the 28th. A similar pattern caused another blizzard to usher in the New Year over the Keewatin.

Temperatures in much of the Territories were above normal for the month. Yellowknife averaged  $-20.6^{\circ}\text{C}$  (3.5 Celsius degrees above normal); Inuvik,  $-20.5^{\circ}\text{C}$  (5.6 degrees above normal); and in the east, Baker Lake,  $-23.2^{\circ}\text{C}$  (5.1 degrees above normal). A mild southwest flow gave chinook conditions to Inuvik ( $-4.2^{\circ}\text{C}$ ) and Fort McPherson ( $-3.0^{\circ}\text{C}$ ) on the 3rd. Despite overall milder-than-normal conditions in the District of Mackenzie, temperatures of  $-45$  to  $-35^{\circ}\text{C}$  were





recorded in the second week of the month. The Christmas holiday period saw generally above-normal temperatures with record warmth at Norman Wells ( $-10.0^{\circ}\text{C}$ ) and a record tied at Cambridge Bay ( $-14.7^{\circ}\text{C}$ ) on the 30th. Rankin Inlet had record-warm temperatures on the 16th ( $-10.6^{\circ}\text{C}$ ), 22nd ( $-7.9^{\circ}\text{C}$ ) and 23rd ( $-7.2^{\circ}\text{C}$ ). However, temperatures in the High Arctic were near two degrees below normal for the month. A ridge dominated the High Arctic islands with clear and cold conditions. However, some mild air did make local appearances. Resolution Island climbed to near  $-5^{\circ}\text{C}$  on December 11 and 12. During the last week of 1994, Pangnirtung and Clyde had a taste of North Atlantic air and briefly warmed to the  $-9$  to  $-7^{\circ}\text{C}$  range.

### British Columbia

Generally, December was a changeable month. It started cool and wet but quickly changed to cold and dry. After a short respite, milder air dominated and brought large amounts of precipitation to many areas. Just before the end of the month, the weather again turned cold and dry.

Monthly mean temperatures were at or above normal over most of the province. However, Terrace and Hope reported

means slightly below normal. The greatest departures from normal (near two Celsius degrees above normal) were in the eastern third of the province. There were no new monthly temperature records. However daily records included record cold on the 3rd at Victoria ( $-6.6^{\circ}\text{C}$ , old record  $-3.9^{\circ}\text{C}$ , 1954) and on the 4th at Kamloops ( $-17.0^{\circ}\text{C}$ , old record  $-16.7^{\circ}\text{C}$ , 1956). Record-mild temperatures included Port Hardy ( $10.1^{\circ}\text{C}$ , old record  $10.0^{\circ}\text{C}$ ) on the 17th and Prince George ( $6.7^{\circ}\text{C}$  on the 18th, tying the 1966 record).

Although most areas were dry in both the early and latter part of the month, many areas ended the month with at- or above-normal precipitation. Coastal regions reported just-above normal values except the northern sections of the north coast and central and west Vancouver Island. There, values ranged from 120 to 160% of normal. Other above-average areas were the upslope regions of the Cassiar/Omineca Mountains and farther south, the Selkirk Mountains where values ranged around 125% of normal. In the remainder of the interior, subsidence east of the Coast Mountains kept precipitation low: most regions reported 50 to 75% of average.

Many areas reported heavy rains between December 15 and 25. Port Alberni recorded 78 mm on the 18th. Just to the

south, near Jordan River, flooding destroyed a bridge, the only road connection for a community of 100 people. During this period, Port Hardy reported 80 consecutive hours of rain, and from December 21-24, 159.0 mm. Terrace had record-daily rainfalls on the 19th (56 mm) and 20th (53 mm).

Snowfall was minimal along the coast except on Vancouver Island where many central and northern locations reported 110 to 130% of normal. High freezing levels and mild temperatures resulted in snow disappearing from many southern interior valleys and some mountain areas. In the Interior, the upslope areas in the Columbia/Blue River regions reported slightly above-normal snowfall totals. Terrace recorded 130% of normal and combined with a record November total snowfall, depleted most of its 1994-95 snow-clearing budget by the middle of the month. Most other areas recorded 50 to 75% of normal. Many localities in the Revelstoke area reported 50 to 75 cm of snow within 24 hours, December 7-8, causing avalanche problems - the Trans-Canada Highway west of Revelstoke was closed for ten hours.

Much of the province reported 75 to 100% of normal sunshine. Exceptions were Revelstoke (65%) and the southern Cariboo-Chilcotins and eastern fringes of the province (near 125%).

Both Pacific storms and outflow winds contributed to a high occurrence of gales on the coast. General gales were reported on nine days on the north coast, eleven days on the central coast and ten days on the south coast. In addition, there were a few days of local gales. In the Interior, Prince George recorded wind gusts to 87 km/h, overnight December 18-19. Damage totalled \$200,000 - \$150,000 to a crane that toppled over and \$50,000 damage to B.C. Hydro lines in the Prince George, Quesnel and Williams Lake areas.

### Alberta

Most areas of the province experienced both high and low temperature extremes during the month, yet only a handful of record-daily values were observed. Monthly mean temperatures were near or above normal across the province, despite a frigid start to the month. Cold air blanketed Alberta for the first few days with

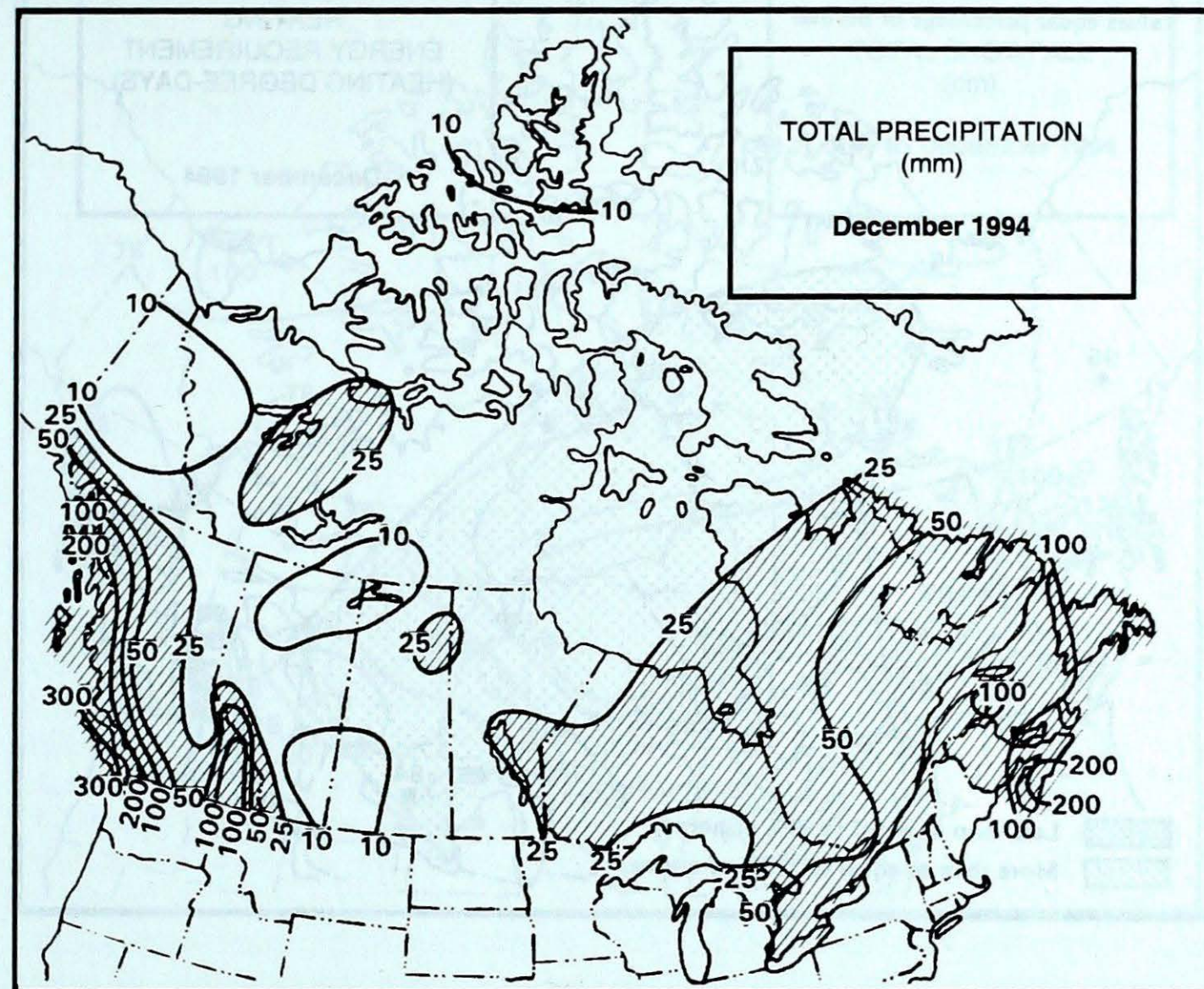


minimums near  $-40^{\circ}\text{C}$  in the northwest and  $-30^{\circ}\text{C}$  or colder, elsewhere. On the 4th, High Level recorded  $-41.0^{\circ}\text{C}$  (old record  $-40.4^{\circ}\text{C}$ , 1990). From the 6th to the 13th, temperatures fluctuated from near-normal to Arctic-like. Temperatures climbed steadily after that, reaching positive values, province-wide. Temperatures in the teens were reported in the south by the 18th. A few cloudy periods were experienced, but there was almost no snowfall in the province from December 10 to 26. The week before Christmas saw mean temperatures 10 to 15 Celsius degrees above normal. Cold air swept southwards on the 27th, bringing an end to the "heatwave" as the last few days of 1994 were near- to slightly-below normal.

Precipitation totals were below normal for all regions, except some areas in the mountain parks. The driest areas were in the northeastern and southeastern extremes of the province. The persistent ridge and dry arctic air also contributed to more-than-normal bright sunshine hours in many areas. Edmonton experienced its 9th-sunniest December since 1919.

## Saskatchewan and Manitoba

December 1994 will be remembered as a mild month, being very mild for several days around Christmas. However, the first week to ten days were colder than normal in most areas due to a cold northwesterly flow. Meadow Lake, Saskatchewan, recorded a daily record low of  $-36.5^{\circ}\text{C}$  on the 4th (old record  $-30.5^{\circ}\text{C}$ , 1983) and  $-38.7^{\circ}\text{C}$  on the 5th (old record  $-38.1^{\circ}\text{C}$ , 1977). By the middle of the month, a mild southwesterly flow of Pacific air established itself and the pattern persisted for the next 15 days. Many record-high temperatures were set in the week preceding Christmas and for the following few days. For the week of December 19, Island Lake, Manitoba was 16.7 Celsius degrees above normal. Above-zero temperatures were common across the southern Prairies. Snow cover dwindled and completely disappeared across southern Saskatchewan. Areas that were snow-free saw temperatures as high as  $10^{\circ}\text{C}$  on Christmas Day. A northerly flow in the final few days of the month brought near- or below-normal temperatures to end the year. Temperatures in



southern areas were nearly 20 degrees colder on New Year's Eve than they were on Christmas Day.

Precipitation was in the form of snow. Most precipitation totals ranged from 10 to 20 mm in the south. Broadview, Saskatchewan, recorded only 5 mm. Much of the month's precipitation fell on the 4th (5 to 10 cm of snow). Central and northern areas contended with a snowfall, December 29-30. This last snowfall of the year gave 11 cm to Meadow Lake, Saskatchewan, 21 cm to Norway House, Manitoba, and 13 cm to Lynn Lake. Northern and central areas ended up with the greatest precipitation totals, from 20 to 30 mm.

## Ontario

With the exception of cold and snowy weather in southern and central Ontario, December 7-10, mild temperatures, sunny skies and minimal precipitation provided Ontario with December weather that was more spring-like than winter-like. Christmas was exceptionally mild. Monthly mean temperatures ranged from two to eight Celsius degrees above normal. December 1994 went into the record books as the mildest on record in northeastern

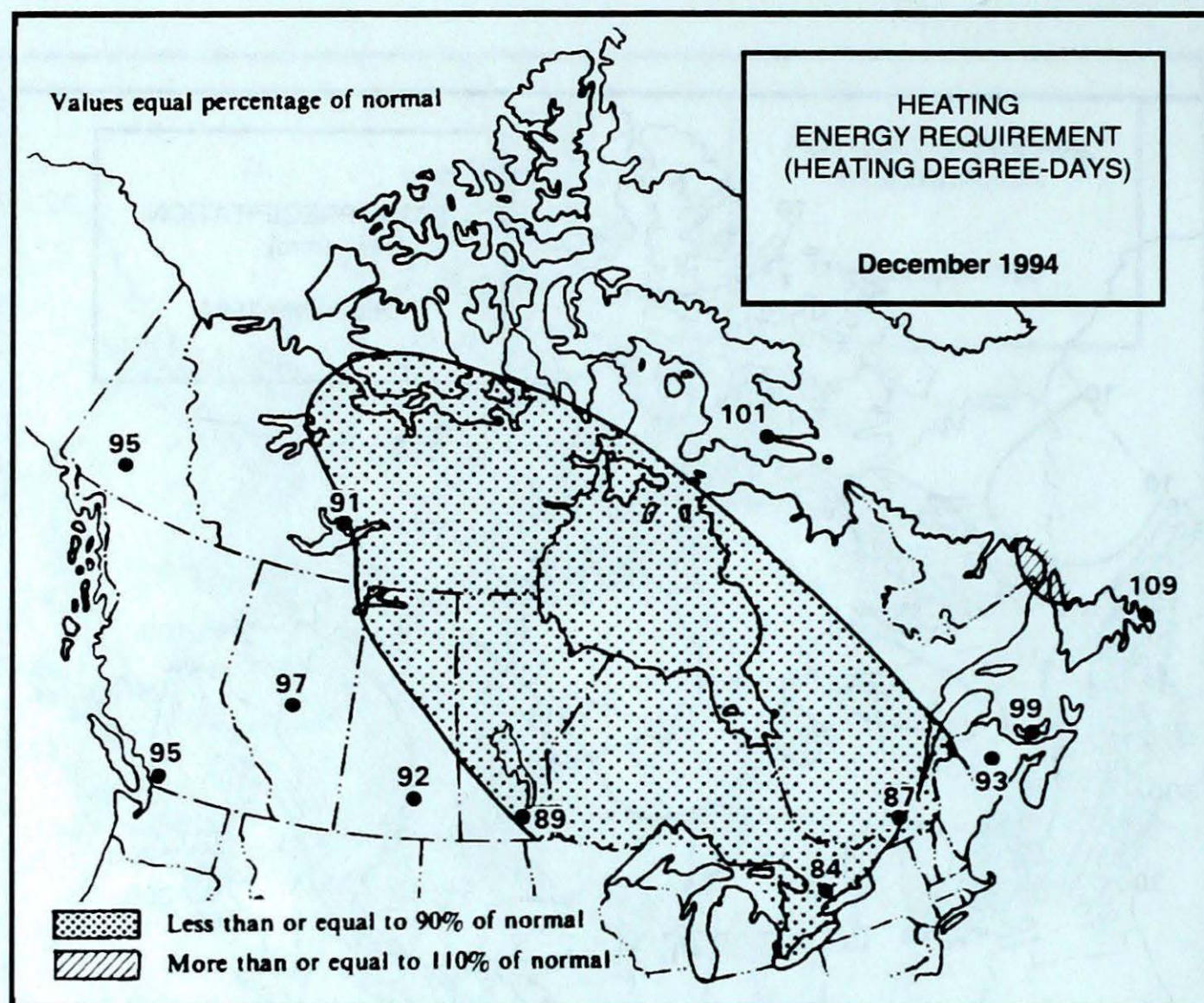
Ontario. In the south, Toronto had its 4th-mildest December in its 155-year history of observations. Considering that the three milder December's (1984, 1982 and 1923) were wetter and cloudier, December 1994 might actually rank as the finest December in history, in weather terms.

The greatest temperature anomalies were in the north with positive anomalies of five to eight degrees. Sudbury, Sault Ste. Marie, Timmins, Kapuskasing, Earlton, Wawa and Geraldton all recorded their mildest December on record.

Snowfall totals were below normal except in the extreme northwest. In southern and central regions, including the snowbelt areas, December totals ranged from 14 to 30 cm (25 to 75% of normal). The first snow of the season fell at Windsor on the 7th, the latest first measurable snow there since the snow of December 9, 1948. Wiarton recorded only 18 cm for the month (normal 109 cm), a new record low. East of Thunder Bay, snowfall totals ranged from a record-low of 11 cm at Sault Ste. Marie to 37 cm at Kapuskasing. Thunder Bay's 14 cm (normal 46 cm) was the lowest since 1960. To the west of Thunder Bay, snowfall totals of 30 to 40 cm were close to normal.

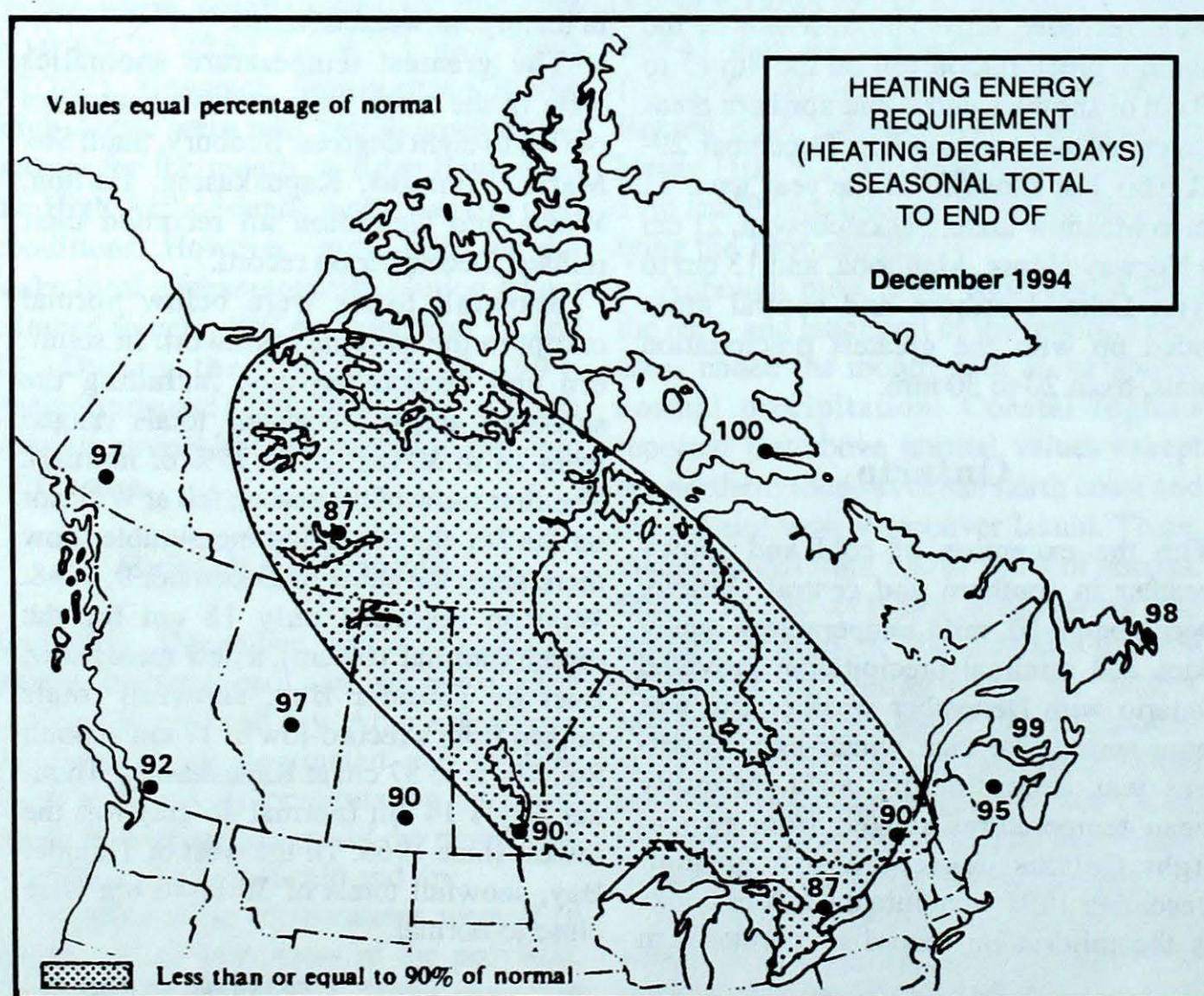
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**SEASONAL TOTAL OF HEATING DEGREE-DAYS TO END OF DECEMBER**

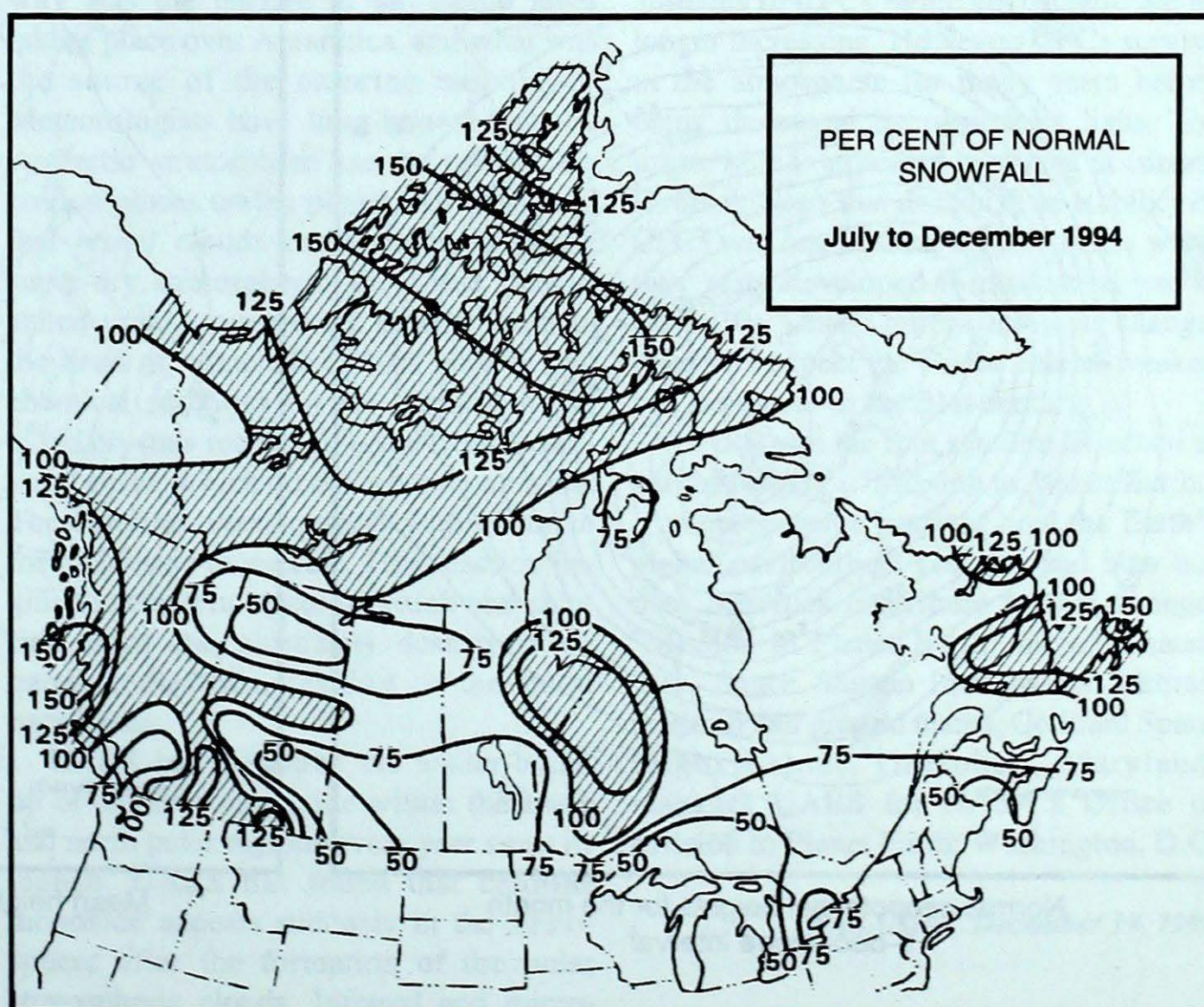
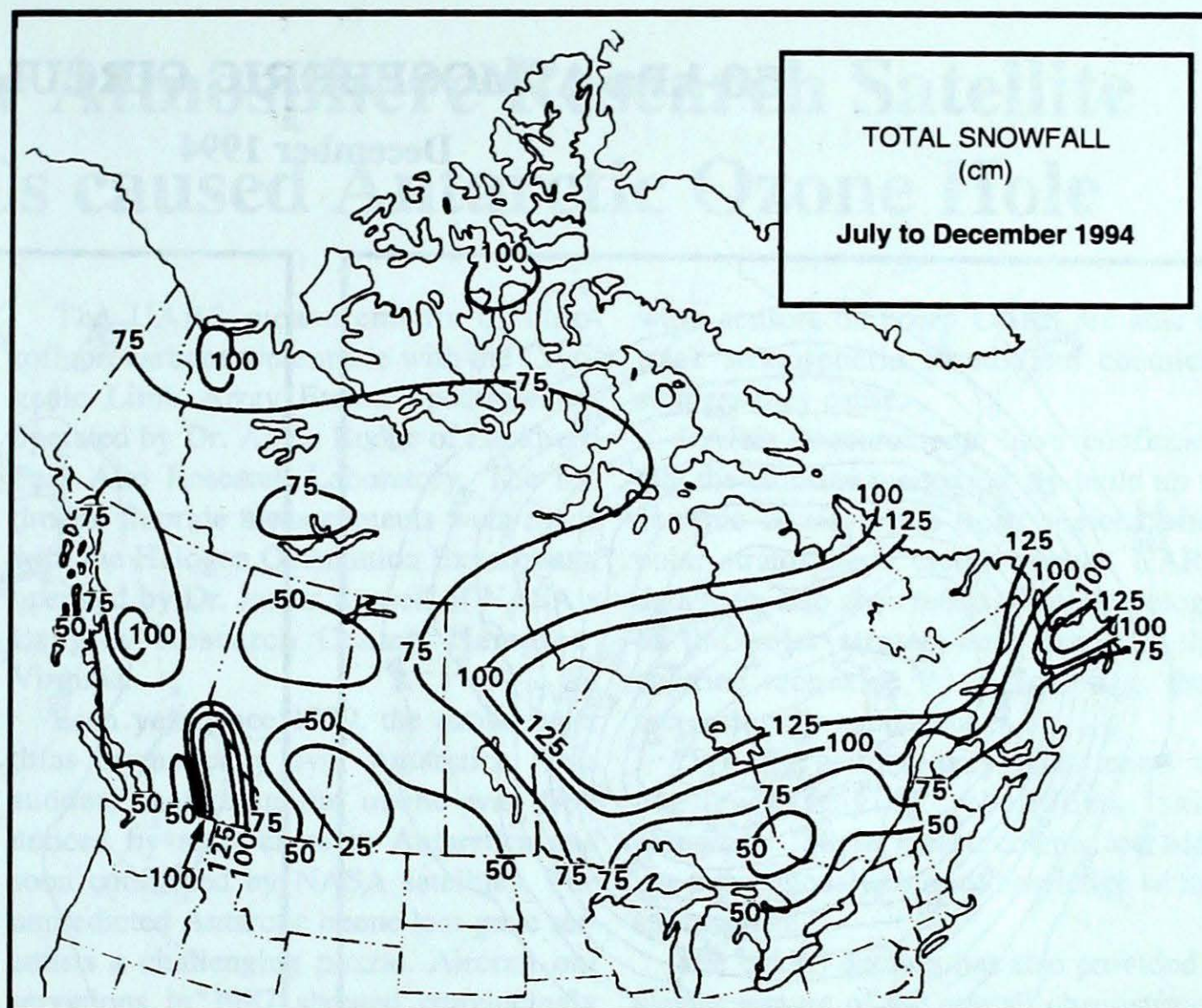
	1994	1993	NORMAL
<b>BRITISH COLUMBIA</b>			
Kamloops	1441	1500	1533
Penticton	1370	1443	1414
Port Hardy	1501	1446	1577
Vancouver	1123	1190	1218
Victoria	1170	1249	1280
<b>YUKON TERRITORY</b>			
Whitehorse	2929	2568	3025
<b>NORTHWEST TERRITORIES</b>			
Iqaluit	4019	4273	4010
Inuvik	3908	3723	4188
Yellowknife	2946	3330	3382
<b>ALBERTA</b>			
Calgary	2048	2090	2168
Edmonton Mun.	2124	2038	2197
Grande Prairie	2522	2214	2536
<b>SASKATCHEWAN</b>			
Estevan	2010	2358	2085
Regina	2037	2385	2257
Saskatoon	2264	2496	2352
<b>MANITOBA</b>			
Brandon	2174	2583	2337
Churchill	3111	3797	3534
Dauphin	2156	2477	2325
Winnipeg	1989	2399	2214
<b>ONTARIO</b>			
Kapuskasing	2030	2623	2468
London	1295	1508	1461
Ottawa	1516	1784	1721
Sudbury	1767	2175	2015
Thunder Bay	1905	2366	2176
Toronto	1275	1541	1459
Windsor	1071	1352	1274
<b>QUEBEC</b>			
Baie Comeau	2144	2372	2318
Montréal	1487	1702	1642
Québec	1741	2012	1942
Sept-Îles	2281	2532	2429
Sherbrooke	1787	1961	1981
Val-d'Or	2080	2531	2361
<b>NEW BRUNSWICK</b>			
Fredericton	1645	1760	1739
Moncton	1667	1791	1708
<b>NOVA SCOTIA</b>			
Yarmouth	1335	1402	1454
<b>PRINCE EDWARD ISLAND</b>			
Charlottetown	1583	1708	1603
<b>NEWFOUNDLAND AND LABRADOR</b>			
Gander	1833	2010	1854
St. John's	1704	1875	1746





**SEASONAL SNOWFALL TOTALS (cm)  
TO END OF DECEMBER**

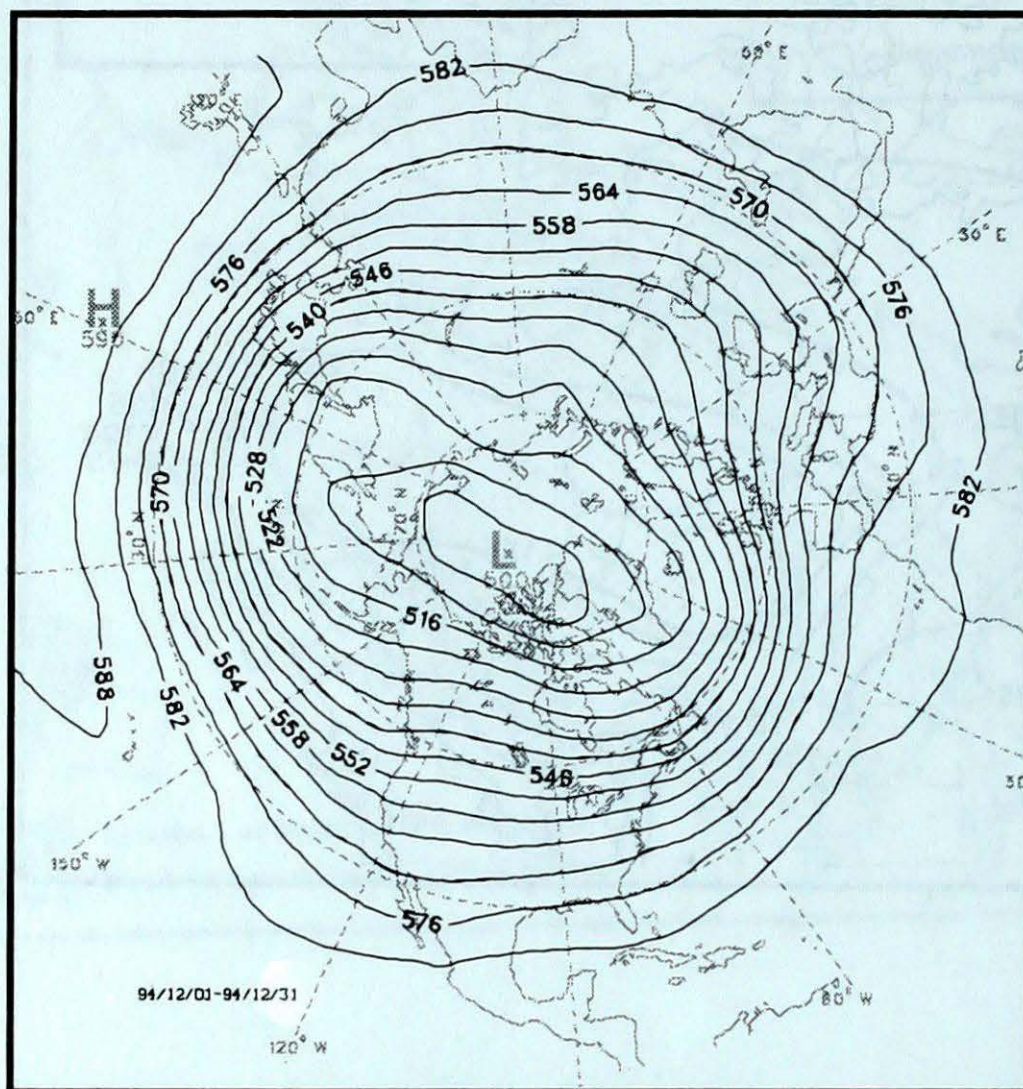
	1994	1993	NORMAL
<b>BRITISH COLUMBIA</b>			
Kamloops	25	17	42
Port Hardy	25	2	20
Prince George	93	40	103
Vancouver	4	0	20
Victoria	2	0	15
<b>YUKON TERRITORY</b>			
Whitehorse	75	67	69
<b>NORTHWEST TERRITORIES</b>			
Iqaluit	96	99	116
Inuvik	113	82	96
Yellowknife	86	88	79
<b>ALBERTA</b>			
Calgary	43	24	57
Edmonton Mun.	49	36	54
Grande Prairie	82	32	77
<b>SASKATCHEWAN</b>			
Estevan	28	55	43
Regina	39	42	45
Saskatoon	23	*	45
<b>MANITOBA</b>			
Brandon	27	23	49
The Pas	53	65	72
Winnipeg	33	42	48
<b>ONTARIO</b>			
Kapuskasing	89	123	139
London	43	30	78
Ottawa	58	59	82
Sudbury	44	91	96
Thunder Bay	25	70	80
Toronto	36	13	47
Windsor	27	14	40
<b>QUEBEC</b>			
Baie Comeau	95	91	134
Montréal	47	71	82
Québec	62	136	124
Sept-Îles	149	118	151
Sherbrooke	48	71	112
Val-d'Or	72	142	129
<b>NEW BRUNSWICK</b>			
Fredericton	40	36	92
Moncton	73	65	97
<b>NOVA SCOTIA</b>			
Sydney	50	93	80
Yarmouth	47	72	52
<b>PRINCE EDWARD ISLAND</b>			
Charlottetown	93	87	97
<b>NEWFOUNDLAND AND LABRADOR</b>			
Gander	150	182	115
St. John's	122	73	91



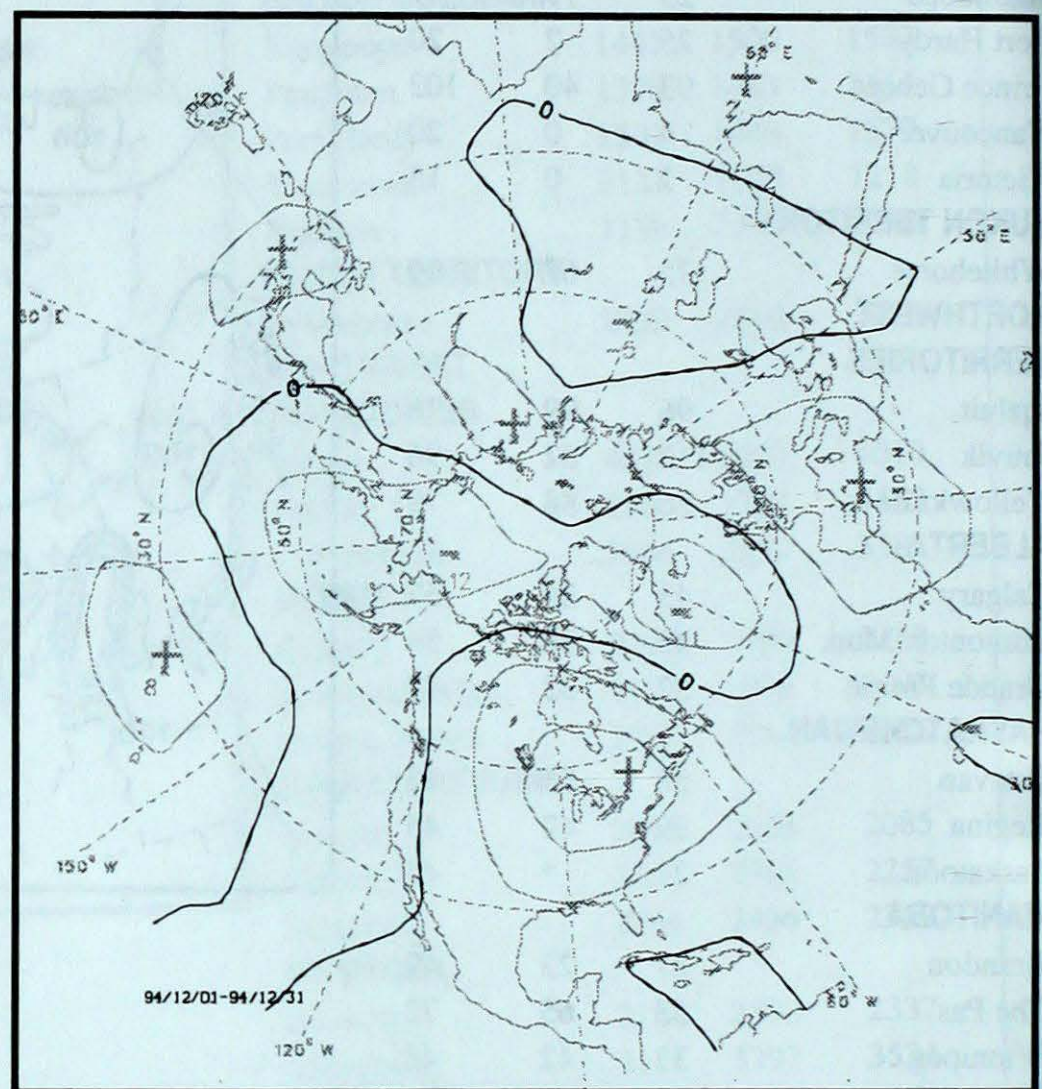


# 50-kPa ATMOSPHERIC CIRCULATION

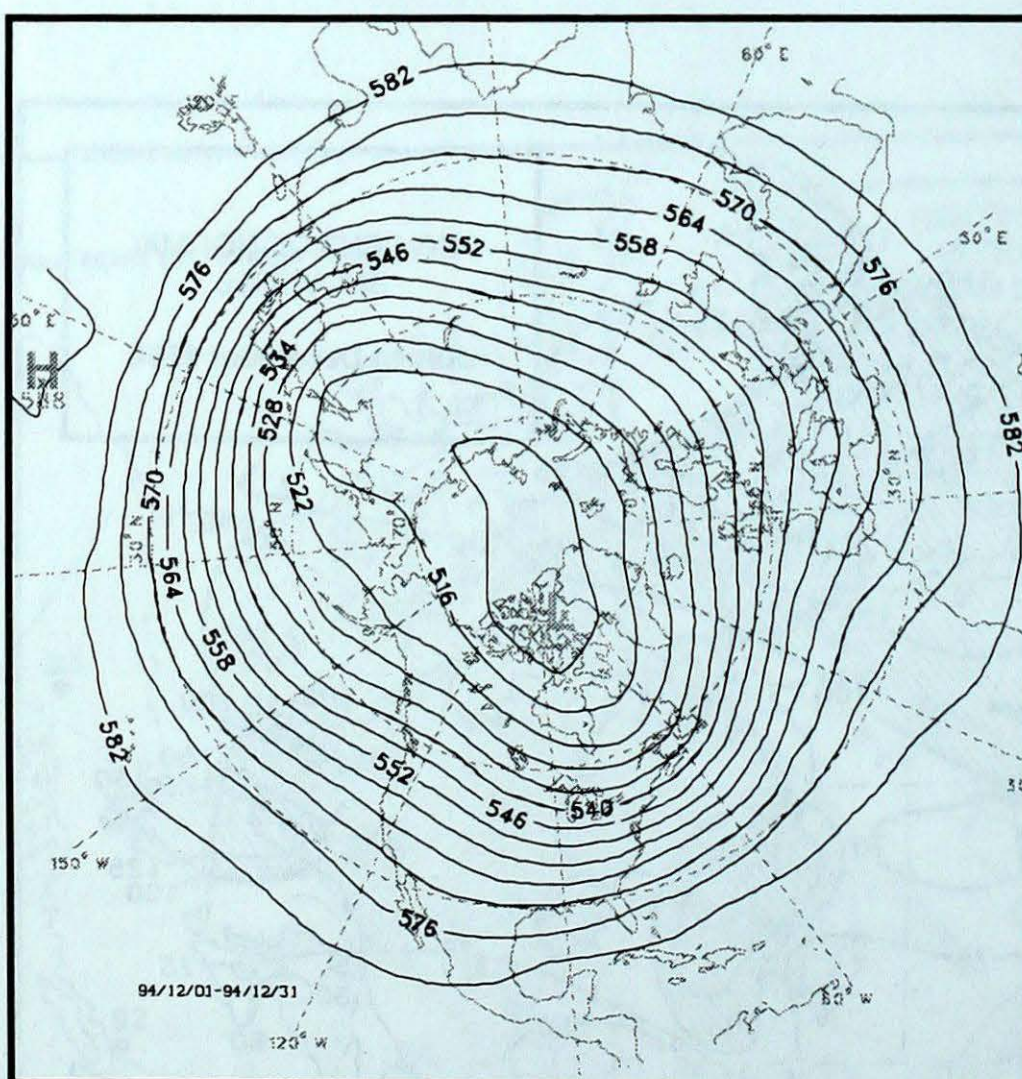
December 1994



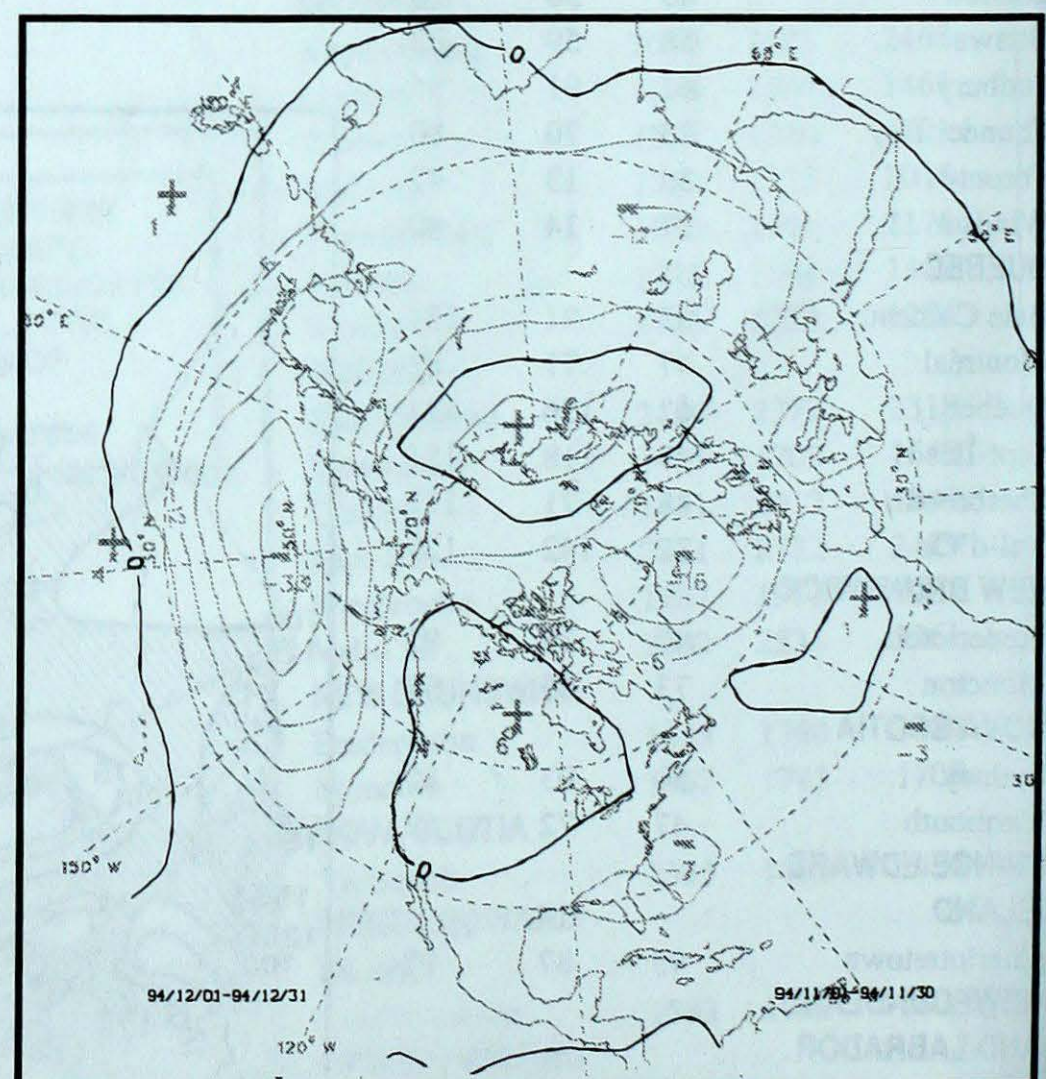
Mean geopotential heights  
6-decametre interval



Mean geopotential height anomaly  
6-decametre interval



Normal geopotential heights for the month  
6-decametre interval





# NASA'S Upper Atmosphere Research Satellite confirms CFCs caused Antarctic Ozone Hole

Three years of data from NASA's Upper Atmosphere Research Satellite (UARS) have provided conclusive evidence that human-made chlorine in the stratosphere is the cause of the Antarctic ozone hole.

UARS instruments have found chlorofluorocarbons (CFCs) in the stratosphere - human-made products used in electronics and refrigeration systems. The satellite's global data set has also traced worldwide build-up of stratospheric fluorine gases corresponding to the breakdown of CFCs, according to NASA scientists.

For many years, scientists have warned that the widespread use of chlorofluorocarbons in refrigeration, spray cans and foam packaging was responsible for stratospheric ozone loss. The stratospheric ozone layer protects people, animals and plants from too much ultraviolet sunlight. The Antarctic ozone hole is a dramatic example of stratospheric ozone loss, which most scientists believe is a new phenomenon caused by the release of chlorine from human-made chlorofluorocarbons.

In the past few years, some debate has occurred over the origin of ozone-destroying chlorine. Sea spray and volcanic gases have been put forth as possible sources for chlorine reaching the stratosphere. The UARS data have ended that debate.

"These results confirm our theories about CFCs," said Dr. Mark Schoeberl, UARS Project Scientist. "The detection of stratospheric fluorine gases, which are not natural, eliminates the possibility that chlorine from volcanic eruptions or some other natural source is responsible for the ozone hole." In addition to CFCs, UARS has detected hydrogen fluoride, a product of the chemical breakdown of CFCs, in the stratosphere.

"Hydrogen fluoride has no natural source, it is not produced by volcanic eruptions or salt spray," said Dr. Anne Douglass, UARS Deputy Project Scientist. "Furthermore, scientists can calculate how much chlorine in the stratosphere is man-made using the hydrogen fluoride data." This calculation shows that almost all of the chlorine in the stratosphere comes from human-made chlorofluorocarbons.

The UARS measurements of chlorofluorocarbons were made with the Cryogenic Limb Array Etalon Spectrometer, operated by Dr. Aiden Roche of Lockheed Palo Alto Research Laboratory. The hydrogen fluoride measurements were made with the Halogen Occultation Experiment, operated by Dr. James Russell of NASA's Langley Research Center, Hampton, Virginia.

Each year since 1979, the ozone layer thins dramatically over Antarctica. This sudden change in the ozone was first noticed by researchers in Antarctica and soon confirmed by NASA satellites. The unpredicted Antarctic ozone loss gave scientists a challenging puzzle. Aircraft observations in 1987 showed convincingly that the high concentrations of chlorine monoxide over Antarctica were destroying ozone in the lower stratosphere. Most scientists were convinced that a series of chemical reactions involving chlorine monoxide and ozone led to the formation of the ozone hole.

Two questions, however, remained: why was the change in the ozone layer taking place over Antarctica, and what was the source of the chlorine monoxide? Meteorologists have long known that the Antarctic stratosphere can be one of the coldest places on the planet. Air is so cold that wispy clouds can form even in the super-dry stratospheric air. These clouds, called polar stratospheric clouds, form in the dead of winter. Scientists believe that chemical reactions on the surface of the cloud crystals release chlorine from "reservoir" gases, which do not react with ozone. The chlorine reacts quickly with ozone to form chlorine monoxide. This reaction begins the catalytic cycle in which one chlorine atom can ultimately destroy many ozone molecules, leading to the polar ozone hole.

UARS has measured the winter-build-up of chlorine monoxide within the south and north polar regions every year since its launch. UARS has found that chlorine monoxide appears suddenly in the stratosphere after the formation of the polar stratospheric clouds. Infrared and micro-

wave sensors on board UARS are able to track stratospheric clouds and chemical changes they cause.

UARS measurements have confirmed that the chlorine monoxide can build up to extreme levels in the polar regions after polar stratospheric clouds appear. UARS data have also shown that the meteorology of the polar stratosphere prevents the chlorine monoxide from dispersing, thus increasing the ozone loss.

"We are getting daily polar maps of ozone-destroying chemicals," said Douglass. "These measurements are adding tremendously to our knowledge of the stratosphere."

The UARS data set has also provided a clearer picture of the overall chemistry of the stratosphere. UARS instruments have tracked the levels of chlorine "source" gases (CFCs), intermediate products (chlorine monoxide) and reservoir gases (hydrogen fluoride, hydrogen chloride and chlorine nitrate).

Under international treaties controlling the use of ozone-depleting chemicals, the amounts of CFCs in the atmosphere are no longer increasing. However, CFCs survive in the atmosphere for many years before being destroyed by ultraviolet light. The ozone hole is expected to persist at current levels through this decade. The stability of CFCs was one of their biggest assets when they were developed for industrial use in the 1930s. Unless other conditions change, scientists expect the ozone hole to weaken and disappear in the 21st century.

UARS was the first satellite launched as part of NASA's "Mission to Planet Earth," a comprehensive study of how the Earth's global environment changes and how human activities contribute to that change. "Mission to Planet Earth" includes satellites, Space Shuttle instruments, aircraft research and ground teams. Goddard Space Flight Center, Greenbelt, Maryland, manages UARS for NASA's Office of Mission to Planet Earth, Washington, D.C.

*NASA News, December 19, 1994*



# End-of-December Ice Edge (East Coast)

During the first half of December, air temperatures averaged about two Celsius degrees below normal along the Labrador coast, about three degrees below normal over Newfoundland waters and about one degree below normal over the Gulf of St.

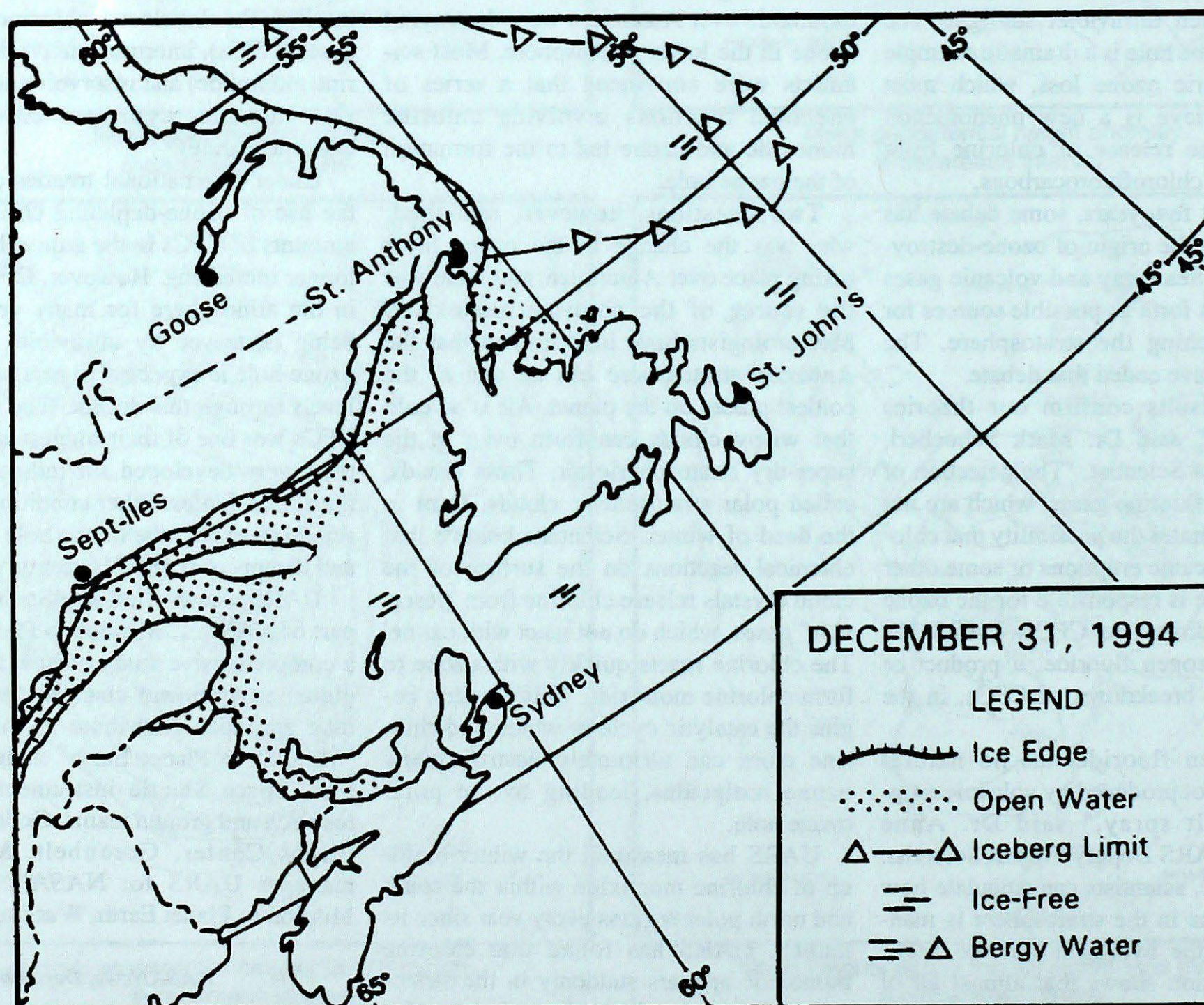
Lawrence. However, during the last two weeks of the month, mean air temperatures averaged about one degree above normal over most areas.

As a result, freeze-up along the Labrador coast, over Newfoundland waters and

over the Gulf of St. Lawrence occurred at a near-normal rate.

*Ice Branch-Ottawa*

December 1994	Freezing Degree-Days	
	Accumulated	Normal (1962-87)
Sept-Îles	299	380
Sydney	55	39
St. John's	113	128
St. Anthony	228	278
Goose	408	493



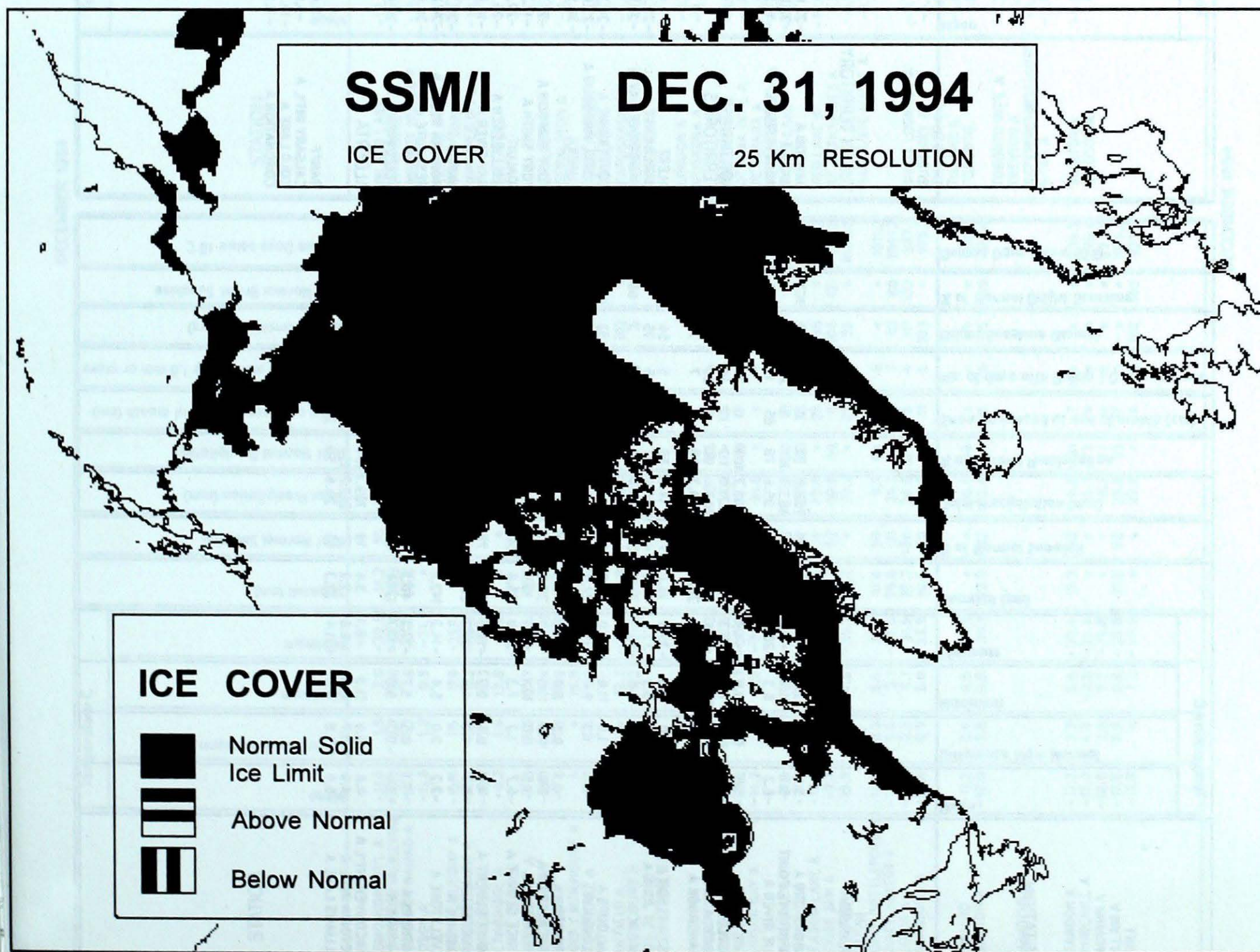


# End-of-December Ice Image

Hudson Bay completely froze over during the month of December. The solid ice limit along the east coast of Canada progressed

at a normal rate as it made its way down into the Labrador Sea.

*Arvids Silis  
Climate Processes and  
Earth Observation Division*





## DECEMBER 1994

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	3.7	0.5	13.9	-9.9	8.8	40	208.8	92	0	19	58	107	443.5
AMPHITRITE POINT	5.7	0.2	11.3	-7.6	4.0	35	483.9	107	0	23	0	*	380.5
BLUE RIVER A	-6.2	1.6	6.3	-28.2	118.4	109	95.6	78	65	15	26	87	0.0
CAPE SCOTT	5.0	0.2	11.0	-1.9	22.2	187	405.2	109	0	20	0	*	404.0
CASTLEGAR A	-1.6	0.4	7.3	-12.3	54.4	72	121.0	112	15	14	32	104	607.1
COMOX A	4.3	0.6	12.4	-5.4	5.3	18	203.4	96	0	20	37	*	426.7
CRANBROOK A	-5.5	1.1	7.2	-23.3	28.8	69	31.3	68	7	7	75	119	727.1
FORT NELSON A	-19.0	2.0	3.8	-35.5	19.8	73	14.6	68	36	5	54	*	1167.3
FORT ST JOHN A	-12.1	1.1	5.2	-33.6	19.6	49	16.9	47	11	5	75	*	933.1
HOPE A	1.0	-0.6	9.6	-10.3	38.9	85	307.0	106	0	17	3	68	527.5
KAMLOOPS A	-1.3	1.5	11.6	-17.0	3.9	13	14.6	45	0	3	52	109	597.3
KELOWNA A	-1.8	1.3	9.4	-19.2	22.4	59	46.2	107	0	8	36	88	615.0
PENTICTON A	0.1	0.5	8.9	-14.9	6.9	30	30.7	98	0	6	35	90	553.1
PORT ALBERNI A	2.6	0.0	11.6	-6.3	38.6	135	452.0	133	0	21	22	*	477.1
PORT HARDY A	3.5	0.0	10.1	-6.2	15.9	103	368.1	133	0	21	47	104	450.4
PRINCE GEORGE A	-6.7	1.2	7.3	-29.9	26.6	50	22.8	40	9	10	35	74	765.7
PRINCE RUPERT A	1.9	0.5	9.2	-10.5	27.9	77	285.1	100	0	19	24	75	499.6
PRINCETON A	-4.7	1.0	4.5	-22.2	28.4	63	24.4	46	9	7	54	*	0.0
QUESNEL A	*	*	*	*	*	*	*	*	*	*	*	*	0.0
REVELSTOKE A	-2.2	2.0	5.4	-14.2	142.2	102	157.4	109	20	15	17	64	625.5
SMITHERS A	-7.1	0.5	5.7	-27.2	40.2	71	31.4	53	19	9	32	83	778.5
TERRACE A	-3.6	-0.2	5.0	-17.7	121.4	115	265.2	138	29	19	29	96	670.2
VANCOUVER INT'L A	4.4	0.5	11.3	-8.1	3.4	19	189.1	104	0	17	46	97	423.0
VICTORIA INT'L A	4.9	0.7	11.3	-6.6	2.2	17	242.2	154	0	17	48	92	407.0
WILLIAMS LAKE A	-5.9	1.8	7.2	-31.4	22.3	45	20.6	50	20	6	63	128	742.1

STATION	Temperature C				Snowfall (cm)	% of Normal Snowfall	Total Precipitation (mm)	% of Normal Precipitation	Snow on ground at end of month (cm)	No. of days with Precip 1.0 mm or more	Bright Sunshine (hours)	% of Normal Bright Sunshine	Degree Days below 18 C
	Mean	Difference from Normal	Maximum	Minimum									
YUKON TERRITORY													
DAWSON A	-27.0	*	-10.5	-45.1	1.5	*	8.2	*	*	*	*	*	*
MAYO A	-22.8	1.4	4.3	-46.1	10.8	44	5.8	26	22	*	*	*	*
WHITEHORSE A	-15.2	1.4	1.1	-36.3	12.5	52	6.9	34	12	4	36	156	1028.9
NORTHWEST TERRITORIES													
ALERT	*	*	*	*	*	*	*	*	*	*	*	*	*
BAKER LAKE A	-23.2	5.0	-8.8	-35.4	17.6	202	13.8	168	21	5	12	166	1277.0
CAMBRIDGE BAY A	-27.5	2.5	-10.0	-42.8	12.9	205	12.7	235	24	5	0	*	1411.2
COPPERMINE A	-24.3	3.8	-6.5	-40.1	35.7	310	26.5	239	69	4	0	*	*
CORAL HARBOUR A	-23.0	2.5	-8.8	34.5	15.6	144	15.6	153	14	6	19	65	1272.4
EUREKA	-36.5	-1.7	-21.1	-44.1	4.2	168	4.2	175	7	2	0	*	1690.7
FORT SIMPSON A	-21.7	3.1	-5.1	-39.3	29.8	125	27.8	150	43	6	30	104	1231.1
FORT SMITH A	-17.2	4.4	2.4	-37.4	6.9	28	3.2	14	29	1	43	153	1099.9
IQALUIT	-22.1	-0.3	-6.4	-34.3	22.2	90	19.6	89	24	4	5	25	1243.7
HALL BEACH A	-25.1	2.3	-9.7	-39.7	27.2	296	18.8	216	38	7	*	*	1336.0
HAY RIVER A	-16.8	4.1	3.1	-36.8	12.6	49	10.6	43	41	4	*	*	1079.6
INUVIK A	-25.3	1.9	-3.0	-41.3	23.1	111	19.7	113	40	6	*	*	1340.9
NORMAN WELLS A	-24.8	1.7	-9.8	-39.0	9.2	48	7.6	40	22	1	11	87	1324.8
RESOLUTE A	-30.8	-1.5	-15.0	-45.0	16.6	313	14.6	298	48	3	0	*	1512.2
YELLOWKNIFE A	-20.6	3.4	-4.6	-39.8	25.4	115	18.4	101	20	6	30	142	1195.8
ALBERTA													
BANFF	-8.0	0.9	6.0	-32.5	25.1	56	*	*	23	6	*	*	805.5
CALGARY INT'L A	-5.9	1.9	10.9	-24.6	5.8	28	5.2	32	3	2	122	125	738.3
COLD LAKE A	-15.7	-1.5	2.8	-34.1	39.4	149	19.4	78	28	6	61	81	1045.6
CORONATION A	-11.5	0.3	5.8	-29.6	*	*	*	*	*	*	*	*	*



## DECEMBER 1994

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									
EDMONTON INT'L A	-11.6	1.5	7.0	-30.5	14.2	55	12.5	57	10	5	93	119	917.5
EDMONTON MUNICIPAL	-10.2	0.2	8.0	-25.6	24.3	•	19.6	79	•	6	102	130	875.2
EDMONTON NAMAQ A	-10.6	1.2	7.9	-25.7	25.6	95	19.2	73	15	6	•	•	885.9
EDSON A	-11.6	1.3	9.5	-31.1	•	•	•	•	•	•	•	•	•
FORT MCMURRAY A	-15.4	1.6	8.9	-35.4	9.0	31	5.8	23	12	1	72	115	1036.3
GRANDE PRAIRIE A	-14.4	-1.0	6.2	-39.5	24.6	72	20.0	63	34	5	68	•	1003.2
HIGH LEVEL A	-18.2	3.1	6.3	-41.0	12.8	41	10.6	44	22	3	•	•	1123.3
LETHBRIDGE A	-4.2	1.6	13.8	0.0	•	•	11.2	51	7	4	113	125	686.7
MEDICINE HAT A	-4.3	3.3	12.7	-22.6	3.4	18	3.2	20	3	2	113	129	691.3
PEACE RIVER A	-16.0	-0.7	4.4	-36.0	9.3	36	9.3	40	•	3	•	•	1013.3
RED DEER A	-9.5	1.9	8.9	-28.5	10.5	49	10.4	51	5	3	•	•	851.5
ROCKY MTN HOUSE A	•	•	10.8	-32.9	•	•	•	•	•	•	•	•	•
SLAVE LAKE A	-14.2	0.6	5.9	-31.9	•	•	•	•	•	•	•	•	•
SUFFIELD A	-5.4	•	12.3	-25.5	5.0	•	3.7	•	4	1	102	•	725.7
WHITCOURT A	-11.7	1.4	9.2	-31.5	26.7	97	19.0	71	23	7	•	•	917.8
SASKATCHEWAN													
BROADVIEW	-9.7	4.3	6.4	-28.2	•	•	5.1	26	•	•	•	•	859.7
COLLINS BAY	-17.1	•	2.5	-35.5	•	•	30.3	•	•	6	•	•	•
ESTEVAN A	-10.2	0.9	8.1	-30.2	14.8	76	13.4	69	7	8	133	130	875.0
HUDSON BAY A	-14.2	•	4.5	-31.5	•	•	51.0	•	•	•	•	•	•
KINDERSLEY	-9.9	2.9	9.0	-27.9	8.8	43	5.8	30	3	2	106	•	863.7
LA RONGE A	-15.9	1.7	2.7	-32.3	22.7	82	20.9	93	33	6	•	•	1050.5
MEADOW LAKE A	-17.9	•	2.1	-38.7	35.4	•	23.4	•	25	8	68	•	1112.2
MOOSE JAW A	-7.7	3.0	10.1	-29.2	15.7	62	10.6	50	9	4	104	121	797.8
NIPAWIN A	-15.3	•	4.8	-34.7	30.2	•	20.2	•	28	5	56	•	1030.5
NORTH BATTLEFORD A	-14.6	-0.5	6.6	-34.2	11.4	50	9.2	44	9	6	•	•	1011.2
PRINCE ALBERT A	-15.6	0.9	3.1	-34.6	26.6	111	24.2	111	26	7	62	88	1041.7
REGINA A	-10.6	2.2	9.1	-31.5	28.2	136	20.8	125	6	4	111	132	887.1
SASKATOON A	-13.6	0.5	5.0	-33.9	10.6	50	10.0	50	11	4	103	•	979.7
WYNYARD	-11.2	3.4	6.5	-30.5	•	•	19.8	90	•	•	•	•	904.8
YORKTON A	-12.0	2.6	5.8	-30.1	22.0	92	22.4	99	15	6	95	109	929.8
MANITOBA													
BRANDON A	-12.2	2.2	5.6	-30.4	12.3	63	9.8	51	7	•	•	•	936.9
CHURCHILL A	-17.3	4.9	-2.5	-36.6	•	•	15.3	73	•	•	•	•	1095.0
DAUPHIN A	-10.8	3.5	9.2	-29.8	•	•	18.7	77	•	6	•	•	893.6
GILLAM A	-17.0	6.5	0.9	-38.8	31.2	98	29.6	95	27	9	•	•	1079.7
GIMLI	-11.8	•	7.2	-30.6	•	•	22.6	•	•	6	102	100	923.7
ISLAND LAKE	-13.5	7.2	1.9	-32.6	32.8	56	20.4	61	27	6	•	•	977.8
LYNN LAKE A	-17.5	4.3	-0.6	-38.2	28.4	85	22.6	89	27	2	63	102	1101.5
NORWAY HOUSE A	-14.1	•	1.1	-34.9	44.8	•	33.0	•	27	8	•	•	994.3
THE PAS A	-14.4	3.2	2.3	-32.7	31.2	110	18.8	85	27	5	79	107	1006.5
THOMPSON A	-16.9	5.1	-0.8	-40.6	23.6	53	17.4	54	26	3	79	116	1086.8
WINNIPEG INT'L A	-10.9	3.1	6.9	-27.8	19.2	93	19.2	100	12	6	98	106	897.3
ONTARIO													
EARLTON A	-6.0	6.6	5.4	-24.6	26.9	50	26.8	48	5	4	•	•	743.7
GERALDTON A	-8.2	•	5.6	-28.0	33.0	•	29.0	•	17	8	•	•	812.2
HAMILTON RBG	0.7	•	11.5	-16.0	29.7	•	62.0	•	•	9	79	•	•
HAMILTON A	-0.4	3.0	11.7	-18.4	38.6	113	65.4	84	0	8	•	•	569.6
KAPUSKASING A	-6.6	8.1	7.7	-26.8	36.8	69	34.2	64	10	11	•	•	765.0
KENORA A	-8.6	5.5	6.1	-27.0	29.4	96	27.3	88	16	7	•	•	824.3
KINGSTON A	-1.4	3.6	10.1	-19.7	14.0	29	55.8	50	•	8	98	127	599.3
LONDON A	-0.2	3.3	11.0	-15.3	31.6	62	59.7	68	0	9	63	113	564.8
MUSKOKA A	-3.7	3.4	8.3	-27.3	25.5	35	58.6	60	4	10	•	•	673.3
NORTH BAY A	-4.9	4.8	7.5	-23.6	39.2	64	30.6	41	5	8	79	103	710.3
OTTAWA INT'L A	-4.6	3.1	8.4	-20.7	24.0	43	37.0	46	2	9	89	113	698.6
PETAWAWA A	-6.4	3.8	9.1	-27.0	33.6	62	45.0	59	7	7	•	•	757.3
PETERBOROUGH A	-2.9	3.5	10.0	-27.6	28.8	75	52.0	65	0	10	•	•	647.1
PICKLE LAKE	-10.9	6.8	2.9	-31.0	30.8	75	28.3	77	29	7	•	•	897.3
RED LAKE A	-10.9	5.2	4.0	-32.1	43.8	138	29.9	94	30	10	65	•	894.1
ST CATHARINES A	1.0	2.5	12.8	-15.5	27.4	95	60.0	75	0	8	82	•	526.7
SARNIA A	0.2	2.8	11.7	-14.9	18.5	49	56.7	78	•	7	69	104	550.4
SAULT STE MARIE A	-1.2	5.5	8.3	-14.2	10.9	14	10.9	14	1	4	50	81	596.4
SIOUX LOOKOUT A	-9.7	5.4	5.7	-30.6	39.2	114	38.8	115	20	10	•	•	843.2
SUDBURY A	-4.7	5.5	8.3	-21.7	33.6	59	30.4	47	0	6	57	67	703.3
THUNDER BAY A	-6.5	4.6	9.0	-24.6	13.6	29	19.3	46	6	5	84	91	758.7
TIMMINS A	-5.8	8.2	6.6	-26.9	34.8	49	31.8	50	11	11	•	•	738.6
TORONTO	1.6	•	11.0	-13.7	24.4	•	56.0	•	0	9	•	•	507.1
TORONTO INT'L A	-0.2	3.3	10.8	-19.5	27.0	83	51.4	79	0	13	•	•	562.5
TRENTON A	-1.7	2.8	10.4	-23.3	26.0	56	58.6	71	0	9	•	•	611.0
WATERLOO WELLINGTON	-1.1	3.2	10.6	-21.0	30.0	80	49.0	63	0	10	•	•	591.1
WAWA A	-3.4	•	5.6	-23.1	26.6	•	21.0	•	0	8	•	•	665.5
WIARTON A	-0.5	3.2	9.5	-14.3	18.1	20	31.7	30	0	10	90	195	574.0
WINDSOR A	1.4	3.3	13.9	-10.5	27.4	96	68.0	94	0	9	•	•	513.9



## DECEMBER 1994

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	Mean	Difference from Normal	Maximum	Minimum									
QUEBEC													
BAGOTVILLE A	-8.1	4.0	6.3	-26.2	60.6	71	50.5	64	21	13	•	•	809.0
BAIE COMEAU A	-8.4	1.9	4.2	-25.4	71.0	92	64.6	62	24	9	113	134	817.0
BLANC SABLON A	-9.6	-2.0	1.8	-21.8	80.4	96	80.4	54	23	16	73	•	856.9
CHIBOUGAMAU CHAPAIS	-9.9	•	2.6	-29.8	•	•	57.9	•	•	14	•	•	863.9
GASPE A	-6.3	•	6.7	-21.6	114.5	•	114.5	•	65	11	80	•	753.5
KUUJUAQ A	-18.0	0.4	-2.7	-31.2	24.8	63	24.8	65	16	11	58	107	1115.6
KUUJUARAPIK A	-9.5	6.4	0.8	-20.9	41.6	99	39.8	94	18	14	39	77	854.1
LA GRANDE IV A	-13.6	•	1.6	-34.5	68.2	•	51.4	•	29	15	47	•	980.5
LA GRANDE RIVIERE A	-10.6	•	-0.3	-26.5	43.6	•	43.8	•	29	11	16	•	887.2
MONT JOLI A	-6.0	2.3	5.6	-20.8	75.0	83	63.8	68	24	14	72	122	743.6
MONTREAL INT'L A	-3.5	3.4	9.6	-20.0	33.8	57	59.8	69	0	10	82	103	664.6
MONTREAL MIRABEL I/	-5.3	•	7.8	-22.5	41.3	•	66.5	•	11	9	107	•	721.1
NATASHQUAN A	-9.7	-0.5	2.7	-26.1	106.4	158	96.4	89	57	14	80	91	857.8
QUEBEC A	-5.9	3.1	5.3	-21.4	47.4	55	62.8	55	26	12	99	130	1112.2
ROBERVAL A	-8.6	4.1	5.8	-26.5	49.9	63	52.5	65	3	11	87	•	822.8
SEPT-ILES A	-9.6	1.4	4.0	-28.0	87.2	98	82.8	79	23	10	93	96	856.3
SHERBROOKE A	-4.9	3.7	9.8	-23.1	30.4	40	58.8	61	6	9	83	•	710.2
ST HUBERT A	-4.0	3.0	9.9	-22.8	32.6	•	67.1	67	0	9	89	•	680.6
VAL D'OR A	-7.8	5.4	4.8	-29.2	33.2	52	27.8	40	8	5	48	57	799.4
NEW BRUNSWICK													
CHARLO A	-6.7	2.0	6.2	-26.8	87.1	94	76.9	66	26	10	103	112	763.2
FREDERICTON A	-5.0	1.5	9.5	-20.4	25.2	36	75.4	64	9	110	•	•	711.3
MONCTON A	-5.1	0.3	8.7	-21.0	63.8	88	107.6	89	16	12	114	125	714.7
SAINT JOHN A	-3.8	1.0	10.1	-16.5	22.9	36	89.2	54	1	12	•	•	676.3

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	Mean	Difference from Normal	Maximum	Minimum									
NOVA SCOTIA													
GREENWOOD A	-2.3	0.0	11.3	-16.8	65.8	107	160.4	133	13	13	•	•	628.1
HALIFAX INT'L A	-2.3	0.6	11.0	-14.8	39.4	73	155.4	86	15	14	•	•	627.7
SABLE ISLAND	2.5	-0.1	11.4	-6.2	3.8	20	152.6	106	2	12	50	92	480.2
SHEARWATER A	-1.0	0.5	11.3	-12.6	14.5	38	228.9	155	1	10	110	119	591.8
SYDNEY A	-1.3	0.5	8.8	-10.1	35.6	54	108.8	67	4	13	73	110	596.2
YARMOUTH A	0.3	0.6	12.2	-10.8	41.0	94	159.0	112	9	13	96	156	548.2
PRINCE EDWARD ISLAND													
CHARLOTTETOWN A	-3.9	0.0	6.5	-14.7	74.8	103	111.3	86	30	13	•	•	678.0
NEWFOUNDLAND													
BONAVISTA	-2.4	-0.9	4.2	-13.3	82.8	213	128.0	133	30	17	•	•	632.2
BURGEO	-1.9	-0.1	5.3	-13.0	57.0	112	96.6	52	13	13	•	•	621.6
CARTWRIGHT	-9.1	0.0	0.2	-19.1	115.7	171	116.3	155	60	14	76	124	839.3
COMFORT COVE	-4.9	-0.8	4.1	-18.2	85.0	119	89.0	82	50	15	•	•	711.0
DANIELS HARBOUR	-4.9	-1.0	5.2	-15.2	55.2	79	60.3	66	7	12	44	147	708.8
DEER LAKE A	-7.1	-1.9	4.4	-27.0	116.6	135	99.8	89	43	18	•	•	778.3
GANDER INT'L A	-4.9	-1.1	3.8	-15.5	123.0	173	124.8	115	59	18	71	103	711.6
GOOSE A	-13.2	-0.2	2.1	-26.6	64.0	87	65.8	91	85	14	77	106	967.5
MARY'S HARBOUR	-9.5	-2.4	2.1	-21.8	40.8	63	40.2	49	43	8	•	•	854.0
ST ANTHONY	-7.3	-0.8	1.5	-18.8	105.3	168	105.9	96	45	14	•	•	782.6
ST JOHN'S A	-3.4	-1.9	4.1	-14.5	86.6	133	213.0	132	9	18	63	•	663.1
ST LAWRENCE	-1.9	-1.1	5.9	-1.3	45.3	138	198.7	160	10	17	•	•	618.4
STEPHENVILLE A	-3.2	-0.6	4.5	-16.5	88.6	110	93.3	82	12	17	43	•	658.2
WABUSH LAKE A	-16.1	2.5	1.3	-34.6	70.4	•	47.0	64	38	12	75	•	1058.6



## AGROCLIMATOLOGICAL STATIONS

DECEMBER 1994

STATION	Temperature C				Snowfall (cm)	Total Precipitation (mm)	% of Normal Precipitation	Snow on ground at end of month (cm)	No. of days with Precip 1.0 mm or more	Bright Sunshine (hours)	Degree days above 5 C	
	Mean	Difference from Normal	Maximum	Minimum							This month	Since Jan. 1st
<b>BRITISH COLUMBIA</b>												
AGASSIZ	3.1	0.1	9.5	-8.0	4.0	274.8	105	0	17	51	13.3	2420.1
SIDNEY	..	..	..	..	..	..	..	..	..	..	..	..
SUMMERLAND	-0.9	0.2	9.5	-15.0	7.2	43.6	133	0	7	40	12.8	2438.2
<b>ALBERTA</b>												
BEAVERLODGE	-10.7	0.9	4.0	-33.0	24.0	25.8	80	33	6	73	0.0	1426.5
LACOMBE	-10.6	0.9	7.8	-30.4	4.9	4.9	26	9	2	..	0.0	1499.4
VEGREVILLE	..	..	..	..	..	..	..	..	..	..	..	..
<b>SASKATCHEWAN</b>												
INDIAN HEAD	-10.5	2.5	5.5	-31.5	23.4	17.0	79	17	5	..	0.0	1708.3
MELFORT	-13.0	3.5	3.0	-30.5	19.8	10.8	43	38	5	49	0.0	1553.5
REGINA	..	..	..	..	..	..	..	..	..	..	..	..
SCOTT	-15.2	1.0	4.0	-34.0	2.0	9.8	48	2	4	45	0.0	1534.1
SWIFT CURRENT	-6.0	4.3	11.9	-25.3	4.4	3.1	19	4	0	123	..	1816.5
<b>MANITOBA</b>												
BRANDON	-12.0	2.1	7.2	-33.7	10.7	10.7	53	11	5	..	0.0	1726.5
MORDEN	-9.4	5.0	9.0	-28.0	13.6	13.6	59	8	4	125	0.0	1997.0
GLENLEA	-6.0	6.3	6.0	-29.0	15.9	15.9	71	15	5	100	0.0	1847.9
<b>ONTARIO</b>												
DELHI	-0.1	2.8	12.0	-22.0	32.0	77.7	91	0	8	..	13.8	2272.9
ELORA	-1.8	3.4	9.5	-22.3	28.8	57.0	80	0	5	..	..	1951.5
GUELPH	..	..	..	..	..	..	..	..	..	..	..	..
HARROW	5.0	6.7	14.0	-16.0	7.8	49.2	67	0	5	57	41.1	2505.2
KAPUSKASING	-6.6	8.1	7.5	-29.5	21.7	27.5	54	TR	9	59	..	1390.6
OTTAWA	-3.9	3.6	8.9	-20.7	31.7	47.2	65	TR	8	59	..	2170.3
SMITHFIELD	-0.7	3.8	11.1	-14.5	34.4	73.4	76	0	8	..	7.9	2282.7

Courtesy of Agriculture Canada

STATION	Temperature C				Snowfall (cm)	Total Precipitation (mm)	% of Normal Precipitation	Snow on ground at end of month (cm)	No. of days with Precip 1.0 mm or more	Bright Sunshine (hours)	Degree days above 5 C	
	Mean	Difference from Normal	Maximum	Minimum							This month	Since Jan. 1st
<b>QUEBEC</b>												
LA POCAIERE	-5.5	2.7	6.5	-22.0	44.0	52.0	58	5	9	95	0.0	1624.9
L'ASSOMPTION	-5.2	3.2	-0.6	..	24.4	67.7	78	6	6	99	0.0	1968.0
NORMANDIN	-10.7	3.4	5.0	-31.3	..	46.4	65	10	8	95	0.0	1350.6
<b>NEW BRUNSWICK</b>												
FREDERICTON	-4.1	2.3	11.0	-21.0	17.8	65.0	53	5	10	116	0.0	1936.5
<b>NOVA SCOTIA</b>												
KENTVILLE	-2.1	0.3	12.0	-18.0	55.0	165.1	127	20	12	165	2.5	2038.8
NAPPAN	-3.2	0.8	10.5	-17.0	56.7	119.8	101	15	12	86	0.3	1842.8
<b>PRINCE EDWARD ISLAND</b>												
CHARLOTTETWN	..	..	..	..	..	..	..	..	..	..	..	..
<b>NEWFOUNDLAND</b>												
ST.JOHN'S WEST	-2.4	-1.0	4.0	-15.5	66.2	231.5	131	9	20	52	0.0	1439.0

Courtesy of Agriculture Canada



Precipitation totals were also less than usual due to less rain than normal. Overall, precipitation totals ranged from 15 to 80% of normal with only the northwest within 5% of normal. North Bay, 31 mm (normal 75 mm), Sudbury, 30 mm (normal 66 mm) and Sault Ste. Marie, 11 mm (normal 82 mm) all registered their driest December on record. Sunshine totals were greater than the past four or five years with Kingston being the sunniest location in Ontario (98 hours, normal 73 hours).

## Quebec

The last month of 1994 was 4.1 Celsius degrees above normal, based on 24 stations that supply data for the Normals. The highest maximum temperatures were St-Hubert (9.9°C, December 4), followed by Sherbrooke (9.8°C, December 22) and Montréal-Dorval (9.6°C, December 2). Monthly minimum temperatures ranged from -34.6°C at Wabush (neighbouring Labrador), -20.0°C at Montréal-Dorval to -8.4°C at Îles-de-la-Madeleine. Two record monthly mean temperatures were set: Chibougamau, -9.9°C (old record -11.7°C, 1982) and La Grande, -10.6°C (old record -12.5°C, 1987).

The average total precipitation, based on 24 stations, was 53.9 mm (normal 85.5 mm). However, there was only one record-low precipitation total, that being 27.8 mm at Val-d'Or (old record 30.2 mm, 1963). Snowfall amounts ranged from 24.0 cm at neighbouring Ottawa, Ontario (normal 55.8 cm) to 114.5 cm at Gaspé (normal 88.0 cm). Generally, snowfall totals were below normal, especially over southern Quebec where totals at some locations were 40 to 60% of normal. There were, however, a few daily-record snowfalls. On the 11th, Québec City had a record 17 cm of snow (old record 10.4 cm, 1957) and though not a record, the Lac St-Jean area recorded 20 cm of snow and winds gusted to 107 km/h. Also on the 11th, Gaspé received 21.2 cm of snow (old record 9.7 cm, 1973).

Sept-Îles recorded 21.0 cm of snow on the 29th (old record 19.7 cm, 1981). Snow on the ground at the end of the month ranged from a trace in the Montréal area to 65 cm at Gaspé. Sunshine averaged 66.7 hours for the province (normal 71.4 hours). Baie Comeau was the sunniest location with 112.9 hours.

## Maritimes

The month was generally sunnier and milder than normal. Precipitation totals varied greatly. Rainfall totals in both New Brunswick and Prince Edward Island were well below normal but above normal in Nova Scotia (except Cape Breton Island). Snowfall was below normal except slightly above normal in the Annapolis Valley.

Mean temperatures in New Brunswick ranged from 0.6 Celsius degree above normal to 2.0 degrees above normal at Charlo. Charlottetown, P.E.I., averaged 0.2 degree above normal. The range in Nova Scotia was 0.2 degree above at Sable Island to 0.7 degree above normal at most stations. Collectively, the mean for the Maritimes was -2.9°C (normal -3.8°C). There were no monthly mean temperature records broken. However, cold temperatures on the 14th included a daily minimum record of -29.6°C at St. Leonard, N.B. (old record -19.9°C, 1989).

Precipitation totals ranged from 53 to 152% of normal. Saint John, New Brunswick, recorded only 53% of normal, Charlottetown 84% and the greatest departure was 152% of normal at Shearwater, Nova Scotia. Snowfall totals ranged from 21% of normal at Sable Island, 36% at both Fredericton and Saint John, 99% at both Charlo, N.B., and Charlottetown to 101% at Greenwood, Nova Scotia. Strong winds accompanied the 15.2 cm of snow that fell at Charlottetown on the 30th, virtually closing down the city. With the storm, ferry operations were hampered to and from Prince Edward Island.

## Newfoundland and Labrador

For most of Newfoundland, December was a cold and snowy month. Temperatures were below normal for all areas except St. Anthony (0.1 Celsius degree above normal). Snowfall amounts were significantly above normal (by 30 to 45 cm) for most locations except the northwest coast where the total was 32 cm below normal. Total monthly precipitation was 130 to 150% of normal on the east and south coasts but only 57% of normal at Daniel's Harbour on the northwest coast. Sunshine hours were well above normal for the west coast (130 to 150% of normal) but only marginally higher on the east coast. From December 6-9, the first major snowfall of the season broke daily records. On the 6th, Deer Lake recorded 20.5 cm (old record 18.4 cm, 1993), and Gander, 21.4 cm (old record 12.7 cm, 1964). Gander set another record on the 8th, recording 31.6 cm (old record 20.6 cm, 1970). St. John's recorded 17.8 cm on the 9th (old record 14.2 cm, 1964). One death occurred during the storm, off Cape Bonavista as a Spanish fisherman was swept overboard. The storm caused havoc with transportation, communications and business as power was cut off to parts of eastern Newfoundland for three days. For only the seventh time in its 115-year history, the Evening Telegram didn't publish its daily paper. Winds of 158 km/h were reported along the south coast.

Above-normal sunshine and below-normal precipitation categorised the weather for Labrador. Goose Bay received 75% of normal snowfall while Wabush was only slightly below normal. Mean temperatures varied on both sides of the normal. Wabush, in the west, was 2.6 degrees above normal while in the east, Mary's Harbour was 4.1 degrees below normal. The year ended with high winds and blizzard conditions on coastal Labrador. Cartwright set a new daily snowfall record of 27.8 cm on the 31st (old record 21.8 cm, 1954).