



# CANADIAN Climate Summary

October 1996

Monthly review of Canadian climate and water

vol. 1

## CLIMATIC HIGHLIGHTS

### October 1996

Whitehorse experiences its coldest October on record. The mean temperature of  $-3.9^{\circ}$  is  $4.5^{\circ}$  degrees below normal. The cold spell that dominates the month breaks on the 29th, so that by Halloween temperatures are more than  $7^{\circ}$  above normal. Record-low temperatures are set at most Yukon locations. Old Crow is the coldest, with a monthly mean of  $-15.6^{\circ}$  and on the 28th, a morning value of  $-38^{\circ}$ .

26th - A minimum temperature of  $-40^{\circ}$  at Colville Lake is the coldest October temperature recorded so far in Canada during the nineties.

14th & 15th - A 43.8 cm snowfall at Goose Bay is the most ever recorded in a two-day period during October. Fortunately, much of the snow melts quickly as temperatures climb above the freezing mark; by the morning of the 17th only 9 cm are left on the ground.

28th - Street flooding occurs in Surrey after 50 mm of rain soaks the Fraser Valley. With this rainfall, the Lower Mainland's precipitation totals for the month reach values of 250 to 300 mm, almost twice the normal, and making this the third wettest October on record.

10th - The cold air that covers the west during the first week of the month is just a memory as warmer air spreads northward. Temperatures from southern British Columbia to southern Saskatchewan reach into the mid-twenties. A value of  $27.4^{\circ}$  at Osoyoos is the highest temperature in the country this month.

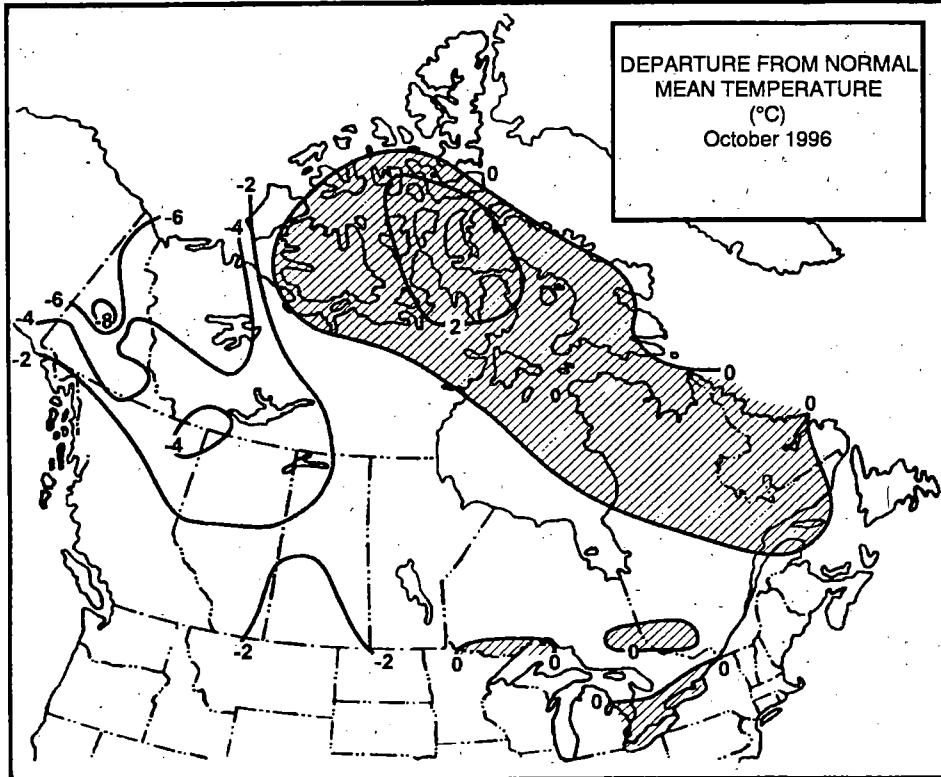
1st - An early snowfall across the southern Prairies — 15 to 30 cm falls across southern Alberta and Saskatchewan, 5 cm in southern Manitoba. In Calgary, the weight of the snow snaps trees and power lines, plunging 14,000 homes into darkness. The cost of cleaning up the debris and replacing trees is estimated at \$1 million. After the snow and heavy rain that marked the final week of September, this snowfall is particularly distressing for Prairies farmers. A harvest that, until the final week of September had appeared to be a record-setter was suddenly in jeopardy.

15th & 17th - High winds and heavy rains hit southwestern British Columbia. On the 15th, minor road flooding ensues and several thousand buildings in Surrey are without power due to falling branches. Ferry crossings between Swartz Bay and Tsawwassen are postponed. Two days later, a more powerful system that had started its life as a typhoon in the western Pacific and now characterized as a "marine bomb" hits the coast. Winds well in excess of  $150 \text{ km/h}$  are recorded on the west side of Vancouver Island. Off the northwest tip of the island wave heights reach 30 metres, the height of a ten-story apartment building. In Victoria hundreds of trees are downed and 23,000 homes are without power. At a nearby marina more than fifty boats are heavily damaged when three docks are broken and smashed.

30th - Strong winds, gusting over  $100 \text{ km/h}$ , blast across southern Ontario. Several people are injured when hit by falling trees or wind-driven debris. Near London, one person is killed when a partially-completed barn collapses on him.

15th - Thunderstorms whiten the ground with hail in southern and eastern Saskatchewan. Falling unusually late in the season, damage to crops is particularly expensive for affected farmers, as hail insurance generally does not extend beyond the end of September. As well, up to 20 mm of rain falls, delaying drying of already-wet crops awaiting harvest.

## CANADIAN CLIMATE SUMMARY VOLUME 1



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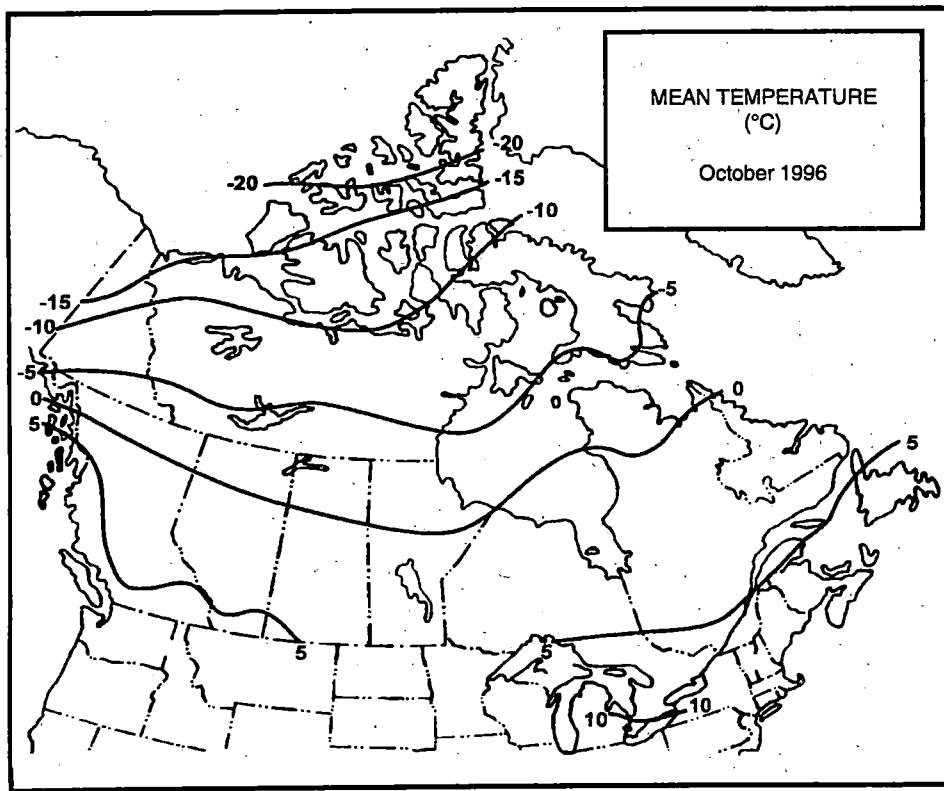
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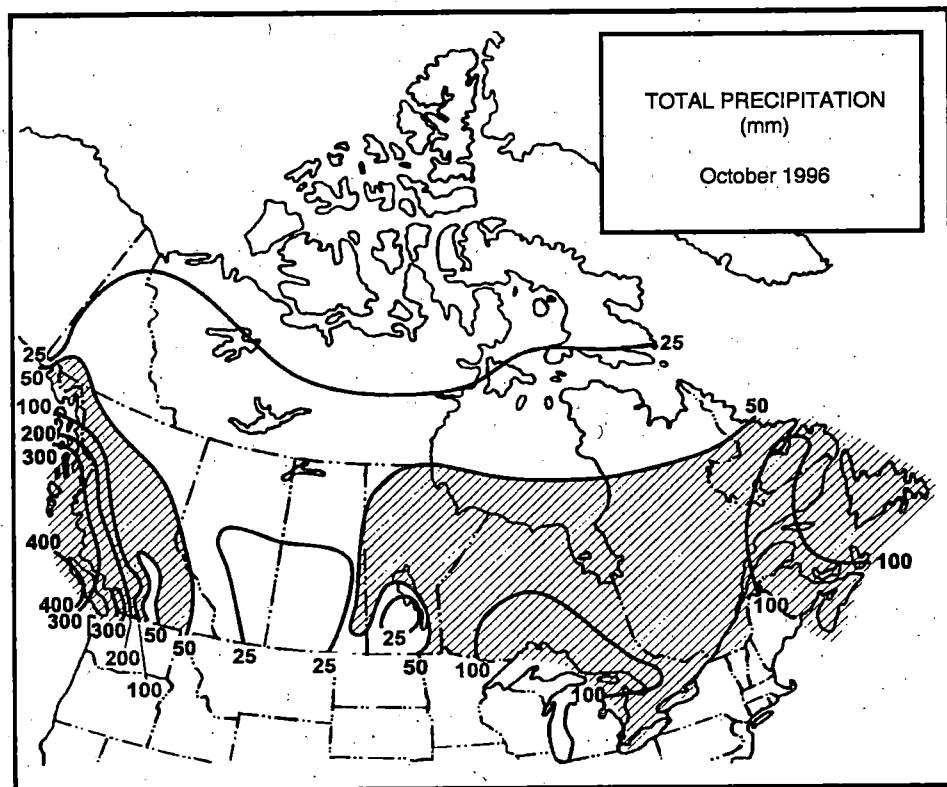
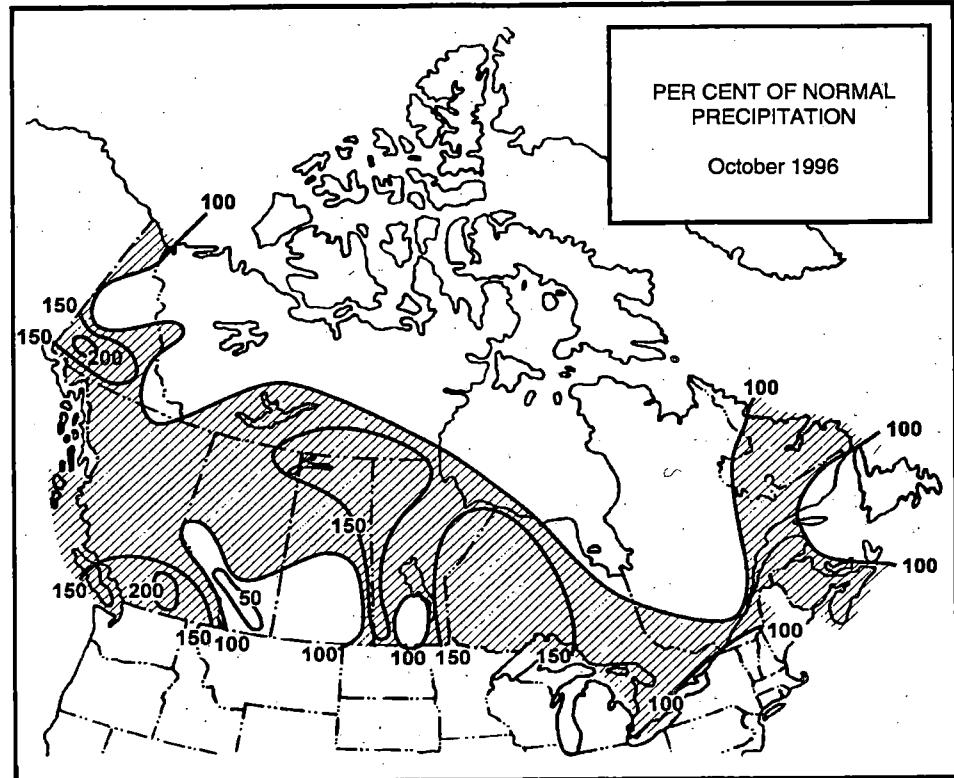


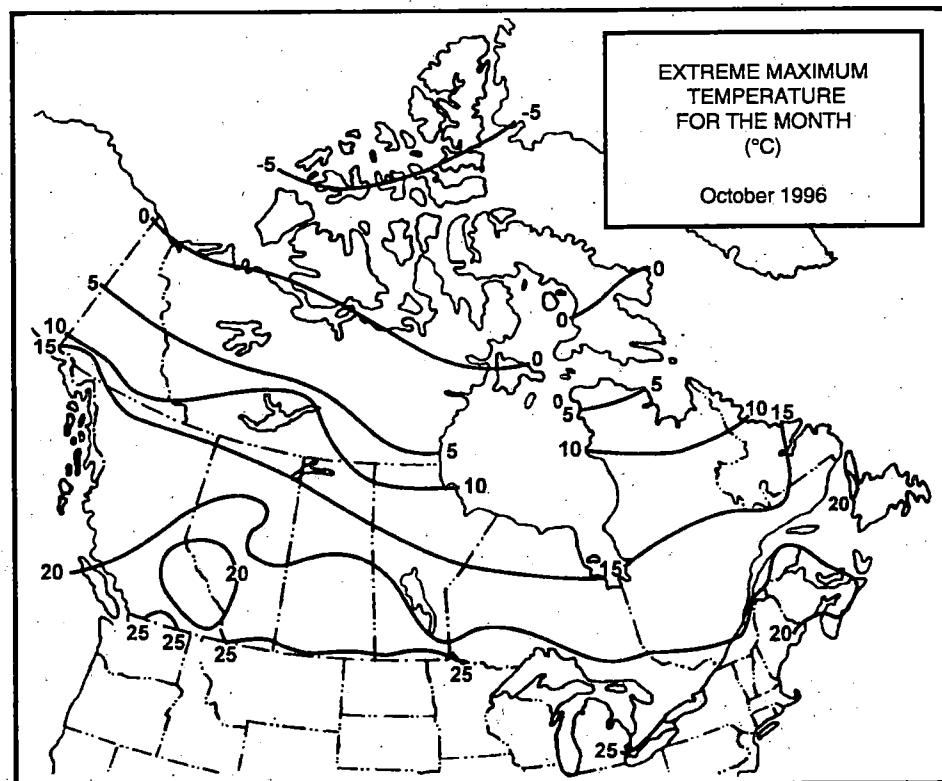
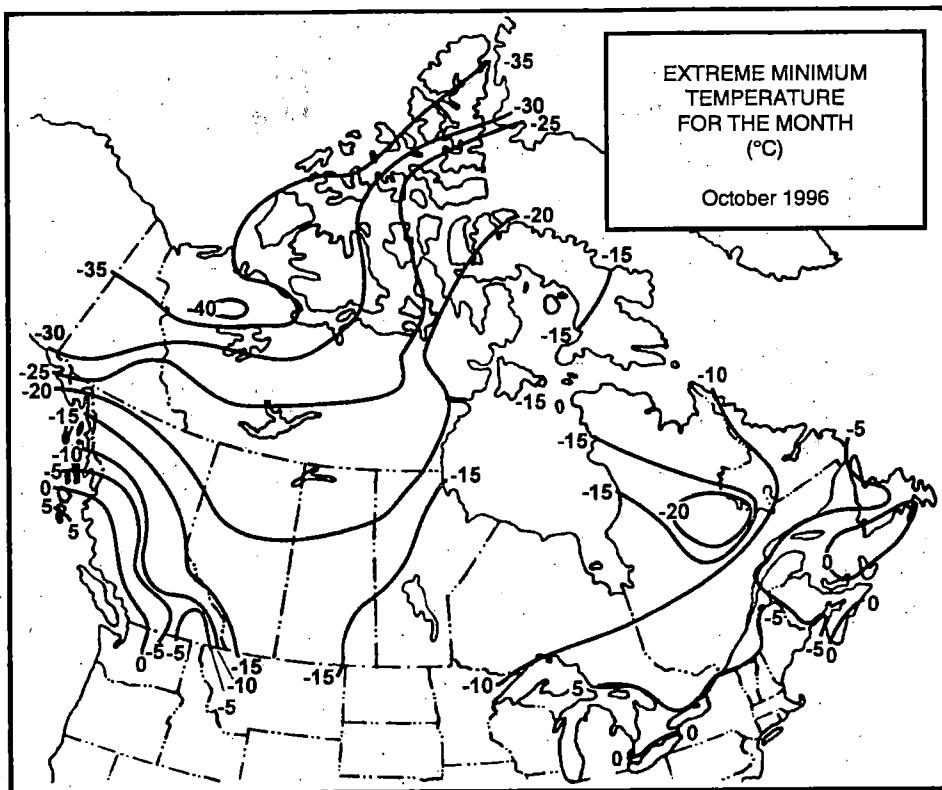
## Weather Extremes, October 1996

		Maximum temperature (°C)	Minimum temperature (°C)	Greatest precipitation (mm)
<b>British Columbia</b>	OSOYOOS	27.4	FORT NELSON A	-21.1
<b>Yukon Territory</b>	HAINES JUNCTION	14.8	OLD CROW	-38.0
<b>Northwest Territories</b>	HAY RIVER	11.6	COLVILLE LAKE	-40.0
<b>Alberta</b>	ONEFOUR	27.2	HENDRICKSON CREEK	-26.2
<b>Saskatchewan</b>	CORONACH	26.0	STONY RAPIDS A	-24.4
<b>Manitoba</b>	MORDEN	26.5	LYNN LAKE A	-18.3
<b>Ontario</b>	BURLINGTON	25.4	PEAWANUCK	-12.8
<b>Quebec</b>	STE CLOTHILDE	24.8	LAC BENOIT	-18.9
<b>New Brunswick</b>	CHARLO A	24.3	ST LEONARD A	-5.6
<b>Nova Scotia</b>	GREENWOOD A	20.8	GREENWOOD A	-3.9
<b>Prince Edward Island</b>	CHARLOTTETOWN A	19.8	CHARLOTTETOWN A	-3.4
<b>Newfoundland</b>	DANIELS HARBOUR	21.0	WABUSH LAKE A	-12.6
				ESTEVAN POINT 424.2
				SWIFT RIVER 76.0
				FORT SMITH A 53.0
				LACOMBE 31.2
				MOOSOMIN 81.6
				ISLAND LAKE 92.3
				THUNDER BAY 146.0
				L'ASSOMPTION CDA 136.3
				MONCTON A 106.0
				YARMOUTH A 122.7
				CHARLOTTETOWN A 112.5
				GOOSE A 101.4

### Across The Country...

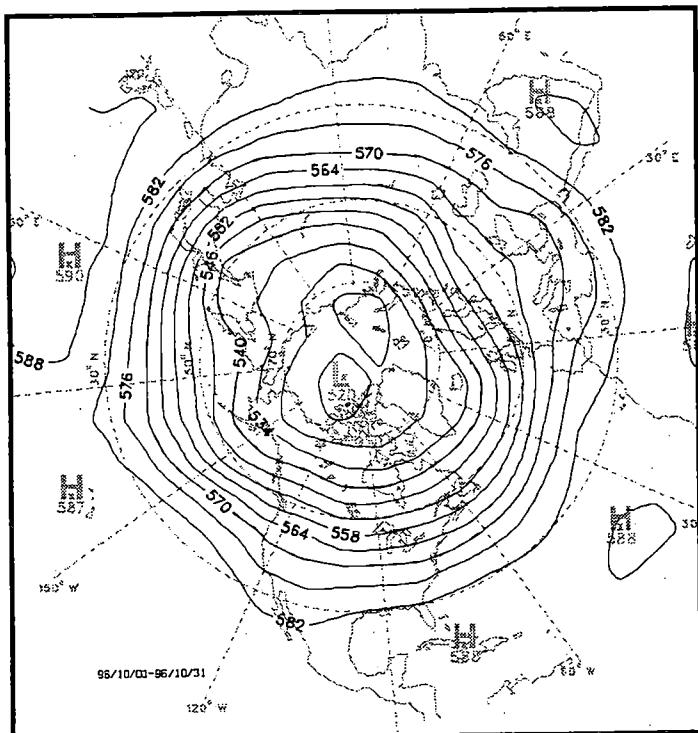
<b>Highest Monthly Mean Temperature</b>	BELLE RIVER	ONT	12.3	°C
<b>Lowest Monthly Mean Temperature</b>	EUREKA	NWT	-23.0	°C
<b>Highest Temperature</b>	PITT MEADOWS CAMPBELL SC	BC	-27.4	°C
<b>Lowest Temperature</b>	COLVILLE LAKE	NWT	-40.0	°C
<b>Heaviest Monthly Precipitation</b>	ESTEVAN POINT CS	BC	424.2	mm
<b>Greatest Number of Bright Sunshine Hours</b>	GILLAM A	MAN	52	hrs



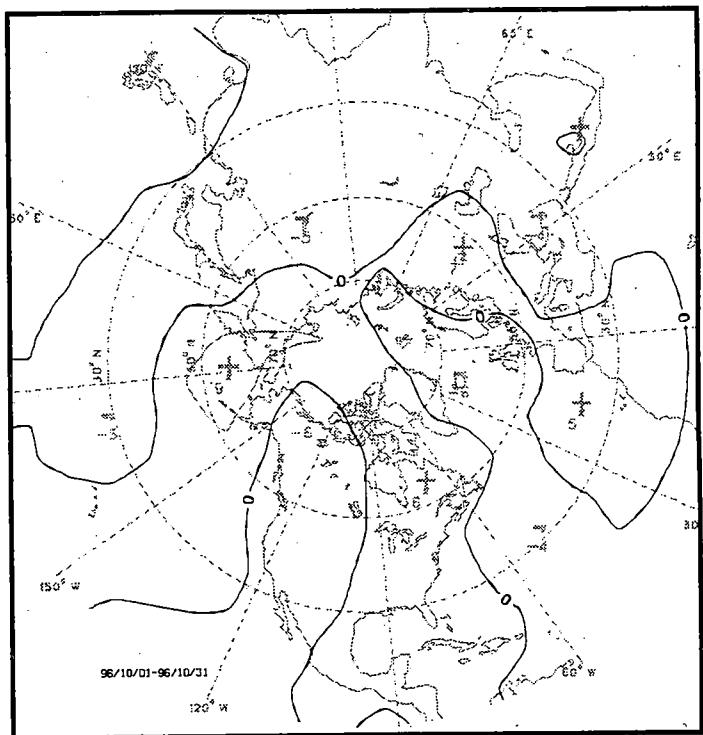


# 50-kPa ATMOSPHERIC CIRCULATION

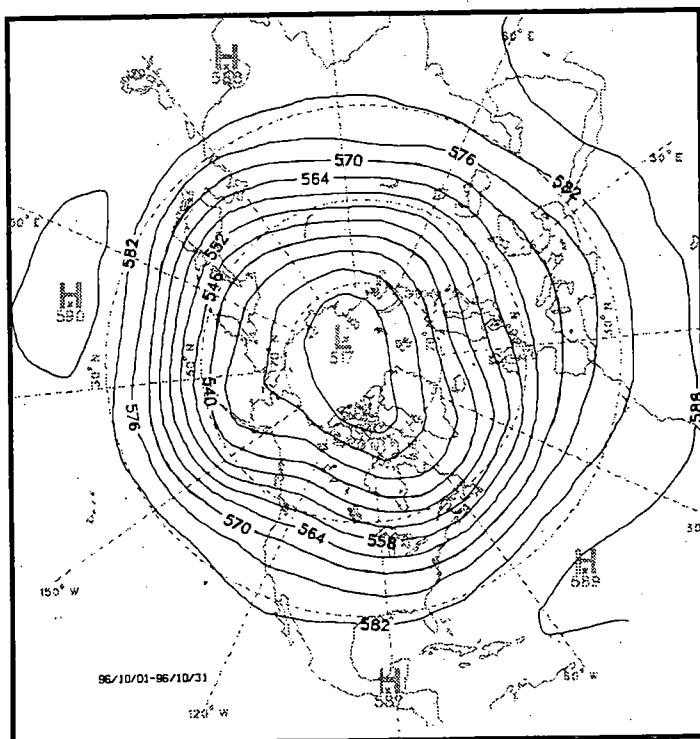
October 1996



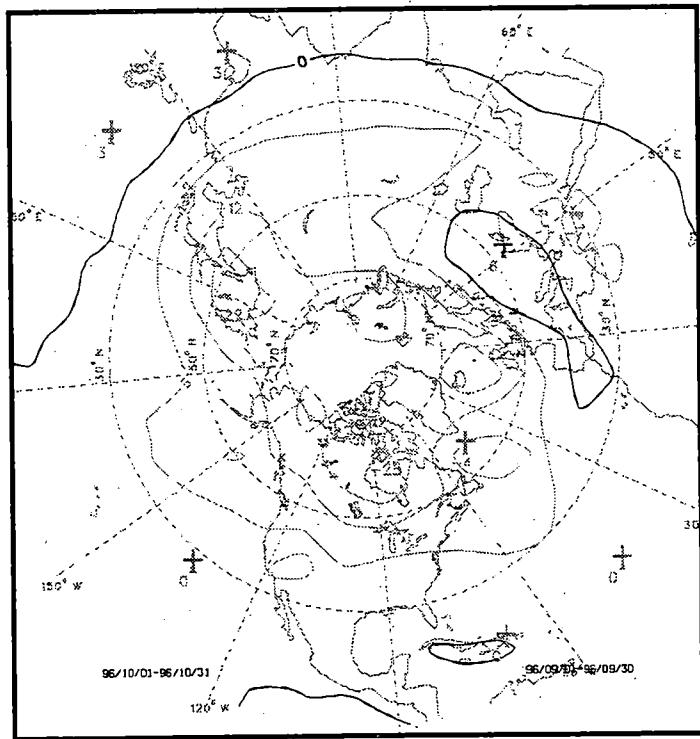
Mean geopotential heights  
6-decametre interval



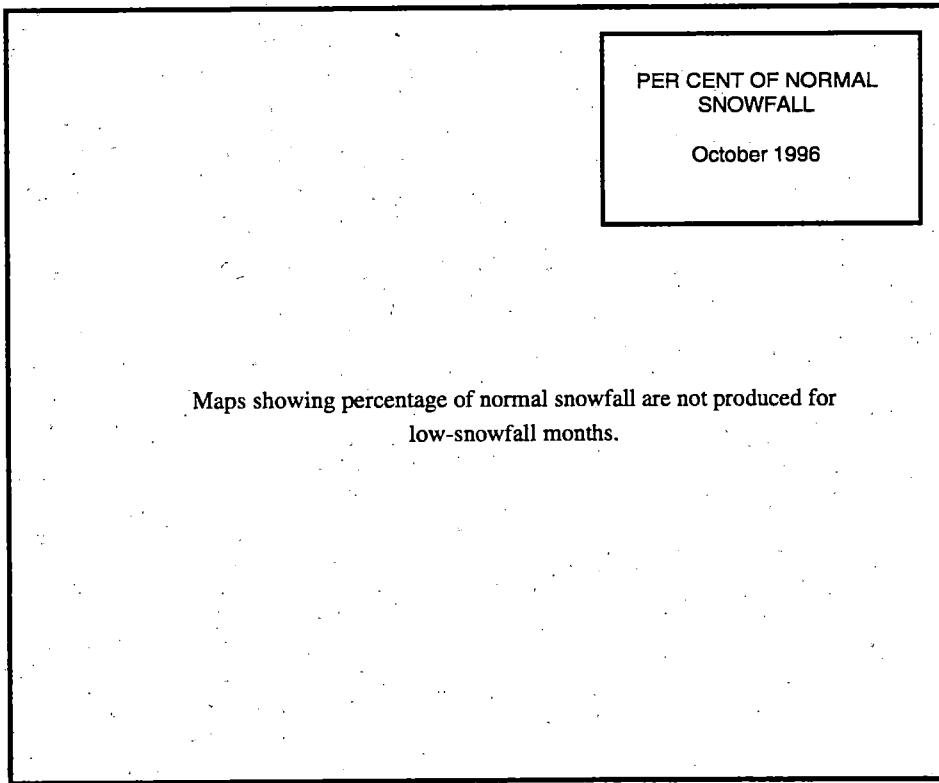
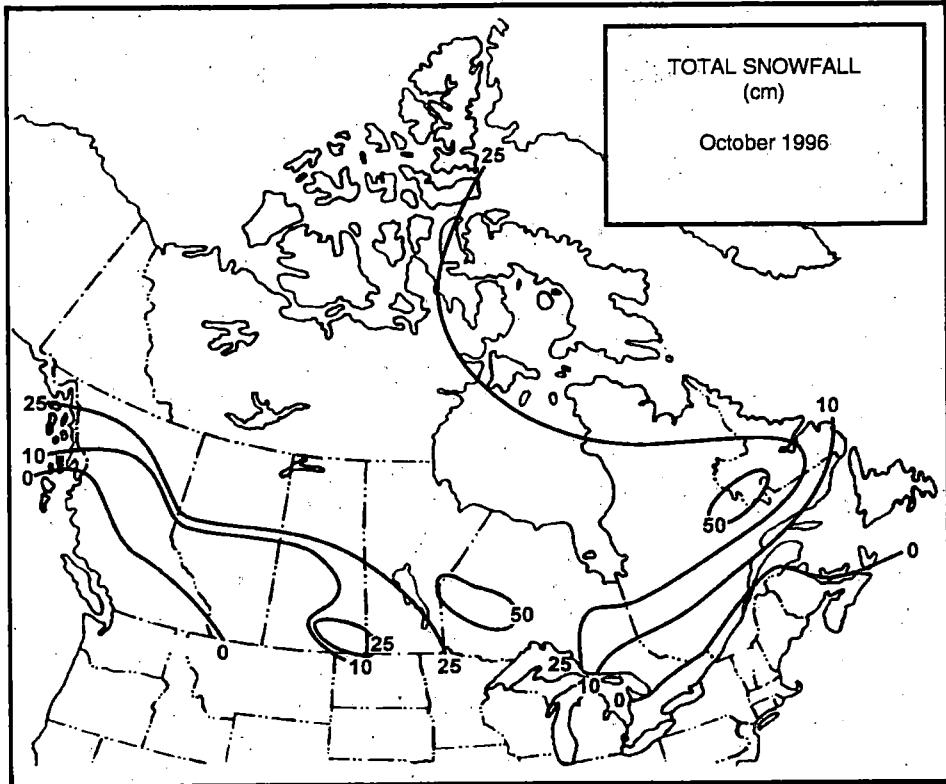
Mean geopotential height anomaly  
6-decametre interval



Normal geopotential heights for the month  
6-decametre interval



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



SEASONAL TOTAL OF HEATING  
DEGREE-DAYS TO END OF OCTOBER

1996 1995 Normal

**British Columbia**

VICTORIA INT'L A	496	447	511
PRINCE GEORGE A	933	842	859
VANCOUVER INT'L A	432	345	437
PENTICTON A	496	382	425
KAMLOOPS A	464	378	424

**Yukon Territory**

DAWSON	1610	*	*
WATSON LAKE A	*	1106	1138

**North West Territories**

INUVIK A	*	*	1633
YELLOWKNIFE A	*	1152	1138
IQALUIT A	1819	1798	1853
RESOLUTE A	2643	2737	2659

**Alberta**

EDMONTON INT'L A	865	875	840
CALGARY INT'L A	806	824	762
MEDICINE HAT A	595	560	547
PEACE RIVER A	1030	925	911

**Saskatchewan**

MOOSE JAW A	668	603	604
REGINA A	748	642	676
PRINCE ALBERT A	783	753	813
SASKATOON A	795	751	710

**Manitoba**

BRANDON A	701	694	693
WINNIPEG INT'L A	584	*	624
CHURCHILL A	1219	1321	1388
LYNN LAKE A	1005	1134	1123
THOMPSON A	1038	1134	1116

**Ontario**

KENORA A	609	641	649
THUNDER BAY A	*	*	712
SUDBURY A	564	590	630
KAPUSKASING A	771	772	842
NORTH BAY A	566	604	647
OTTAWA INT'L A	*	411	477
WINDSOR A	257	257	296
LONDON A	*	424	419
TORONTO INT'L A	358	368	424

**Quebec**

MONTREAL INT'L A	398	*	454
SHERBROOKE A	*	*	660
SEPT-ILES A	855	839	930
MONT JOLI A	722	608	731
BAGOTVILLE A	672	594	733
VAL D'OR A	*	754	816

**New Brunswick**

FREDERICTON A	533	493	549
MONCTON A	552	523	562
SAINT JOHN A.	636	555	592

**Nova Scotia**

GREENWOOD A	472	408	497
YARMOUTH A	537	418	518

**Prince Edward Island**

CHARLOTTETOWN A	532	474	520
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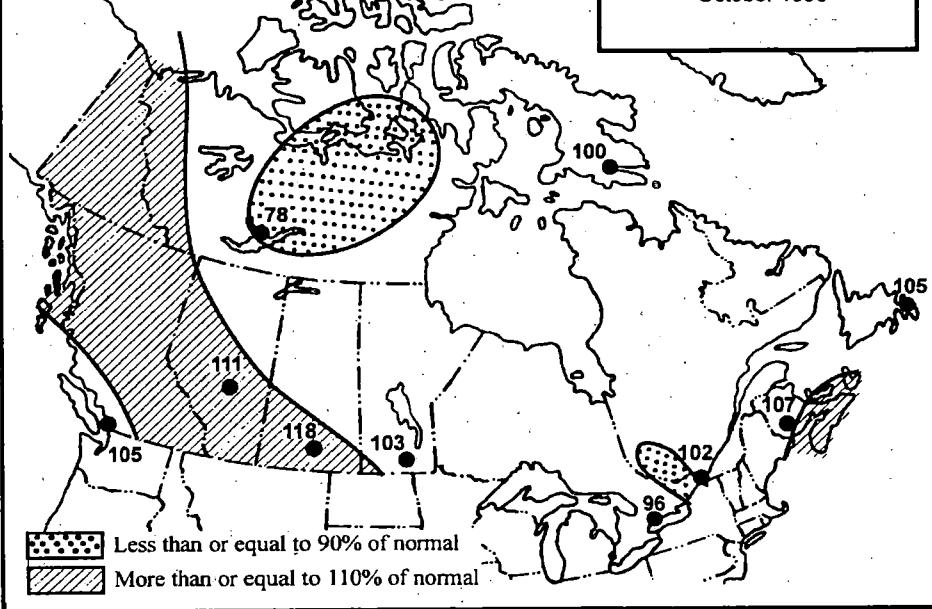
**Newfoundland**

GANDER INT'L A	724	732	753
ST JOHN'S A	695	715	729
GOOSE A	954	866	981

Values equal percentage of normal

HEATING  
ENERGY REQUIREMENT  
(HEATING DEGREE-DAYS)

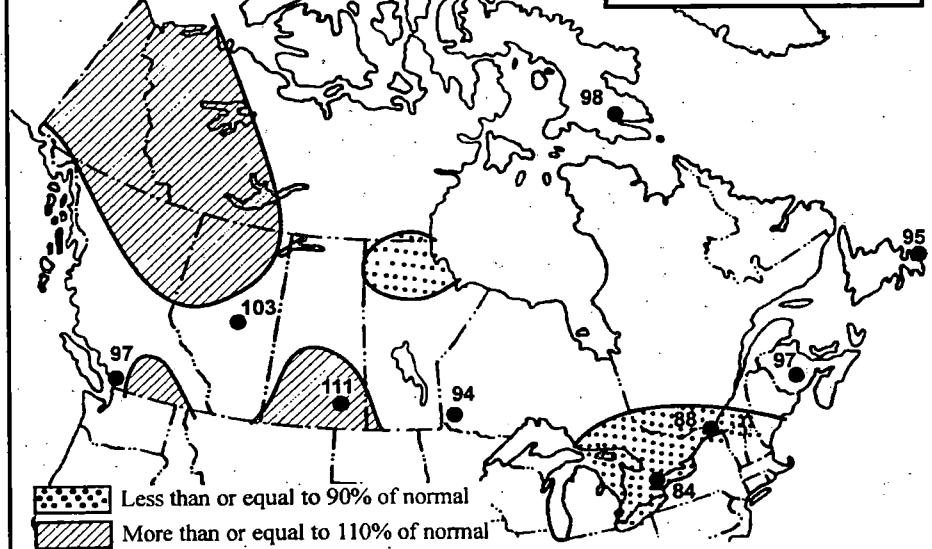
October 1996



Values equal percentage of normal

HEATING ENERGY  
REQUIREMENT  
(HEATING DEGREE-DAYS)  
SEASONAL TOTAL  
TO END OF

October 1996



October 1996

STATION	Temperature C					Temperature C									
	Mean		Difference from Normal		Snowfall (cm)	Mean		Difference from Normal		Snowfall (cm)					
	Max	Min	Max	Min	% 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	No. of days with Precip 1.0 mm or more	Bright Sunshine (hours)	% of Normal Bright Sunshine
<b>BRITISH COLUMBIA</b>															
ABBOTSFORD A	10.2	0.2	25.6	0.0	0.0	234.4	150		15	109		241.8			
AGASSIZ CS	10.2		25.4	-1.5		277.0			17			244.2			
CLINTON	1.9		17.5	-12.9		104.0			13						
COWICHAN A	8.9	-0.3	19.3	-0.7								283.1			
CRANBROOK A	5.1	-0.4	21.8	-8.5		39.9	229		10	148	90	401.3			
DEASE LAKE CAMPBELL	-1.2		11.9	-17.7		11.2			4			594.8			
ESTEVAN POINT	9.9		21.2	1.5		424.2			17			252.0			
FORT NELSON A	-3.3	-4.3	15.2	-21.1					24			658.8			
FORT ST JOHN A	1.3	-3.0	18.9	-17.3	33.2	220			9			516.8			
HOPE	9.6		23.5	1.3											
KAMLOOPS A	7.5	-1.0	21.1	-6.6								326.1			
KELOWNA A	5.6	-1.4	22.2	-8.3		55.0	251		12			384.4			
LANGARA	8.4	-0.6	14.7	2.7		303.6	112		27			296.8			
LYTTON	8.7		21.2	-3.0		34.8			6			286.9			
MACKENZIE A	1.9	-1.7	15.5	-13.5		79.5	128		15			499.3			
MALAHAT BEACH	8.9		19.9	-0.2		186.4			15			283.2			
MCINNES ISLAND	9.4	-0.2	15.8	3.2		391.3	113		24			267.3			
NELSON	7.2		19.4	-2.7		88.8			14			336.2			
PENTICTON A	7.6	-1.1	22.9	-4.9								323.0			
PORT ALBERNI	8.6		23.0	-0.5											
PORT HARDY A	8.4	-0.2	18.0	-1.1	6.4	80	69.9	118		12	86	298.7			
PRINCE GEORGE A	3.2	-1.6	18.8	-12.4								460.2			
PRINCE RUPERT A	8.1	0.1	16.8	-1.3								308.1			
PRINCETON	5.3		22.5	-9.4								392.6			
QUESNEL A	4.4	-1.3	20.3	-10.7								363.0			
REVELSTOKE	6.3		15.2	-4.1								280.3			
SANDSPIT A	9.0	-0.1	16.7	2.2		214.1	109		16			266.5			
SHERINGHAM POINT	9.4		18.4	2.2											
SMITHERS A	3.6	-1.1	15.9	-8.8	7.2	99	71.4	115		17	82	91	447.7		
SPARWOOD	3.3		20.4	-11.5						6			456.1		
SQUAMISH	8.5		25.0	-1.2								295.0			
SUMMERLAND CS	7.5		22.2	-4.2								325.9			
TERRACE A	5.9	-0.6	13.7	-1.5	0.0	0	202.5	101		22	70	375.7			
VANCOUVER INT'L A	9.7	-0.3	20.5	-0.7						14	98	73	258.4		
VICTORIA INT'L A	9.3	-0.4	22.1	-0.2	0.0	91	144.5	194		7			269.3		
WILLIAMS LAKE A	3.1	-2.0	20.4	-12.2	7.4	91	48.0	146					462.0		

October 1996

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STATION	Temperature C				October 1996																				Temperature C				
	Mean			Difference from Normal	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		Temperature C			
	Mean	Difference from Normal	Minimum	Maximum	Mean	Difference from Normal	Minimum	Maximum	Mean	Difference from Normal	Minimum	Mean	Difference from Normal	Minimum	Mean	Difference from Normal	Minimum	Maximum	Mean	Difference from Normal	Minimum	Maximum	Mean	Difference from Normal	Minimum	Maximum	Mean		
SAULT STE MARIE A	6.8	-0.6	21.6	-5.0																									
SIOUX LOOKOUT A	4.2	-0.3	21.1	-11.8																									
SUDSBURY A	5.8	-0.3	20.0	-7.0																									
THUNDER BAY A	5.6	-0.2	22.2	-9.6																									
TIMMINS A	4.3	-0.2	21.5	-6.8																									
TORONTO ISLAND A	10.0	-0.1	20.3	1.3																									
TORONTO LESTER B. P.	9.2	-0.3	23.4	-2.0																									
TRENTON A	8.1	-0.5	22.1	-4.1																									
WATERLOO WELLINGTON	8.3	0.3	23.5	-3.3																									
WAWA A	5.9		19.7	-6.4																									
WIARTON A	8.5	-0.2	22.7	-2.2																									
WINDSOR A	11.3	0.4	24.4	-0.1																									
QUEBEC																													
BAGOTVILLE A	4.9	-0.1	20.6	-6.5																									
BAIE COMEAU A	4.0	-0.2	14.7	-4.9																									
BLANC SABLON A	3.2		13.5	-3.5																									
CHIBOUQUAMAU	2.0		18.0	-9.5																									
GASPE A	5.0		24.8	-6.5																									
ILES DE LA MADELEINE	7.9		17.8	0.3																									
JONQUIERE	5.0		19.7	-6.6																									
KUUJUUAQ A	0.1	0.9	8.1	-9.3																									
KUJJUARAPIK A	2.2	0.1	13.9	-9.8																									
L'ASSOMPTION CDA	7.6	-0.1	20.9	-3.7																									
LA GRANDE RIVIERE A	1.2		13.1	-8.8																									
LACEON	0.1		14.0	-9.0																									
MANIWAKI	6.4		21.0	-4.5																									
MATAGAMI	2.2		18.0	-14.9																									
MONT JOLI A	4.8	-0.7	20.8	-4.3																									
MONTRÉAL/DORVAL INT	8.1	-0.2	22.3	-4.0																									
NATASHQUAN A	4.1	0.2	15.0	-6.3																									
NORMANDIN	3.7		17.8	-8.1																									
QUEBEC CS	6.0		17.8	-3.6																									
ROBERVAL A	4.0	-1.3	18.6	-6.6																									
SEPT-ILES A	3.9	0.5	15.6	-5.7																									
SHERBROOKE A	6.2	-0.2	22.0	-7.0																									
ST HUBERT A	7.7	-0.3	21.5	-5.1																									
VAL D'ORA A	4.8	0.4	19.6	-7.6																									

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