Environnement

A WEEKLY REVIEW OF CANADIAN CLIMATE

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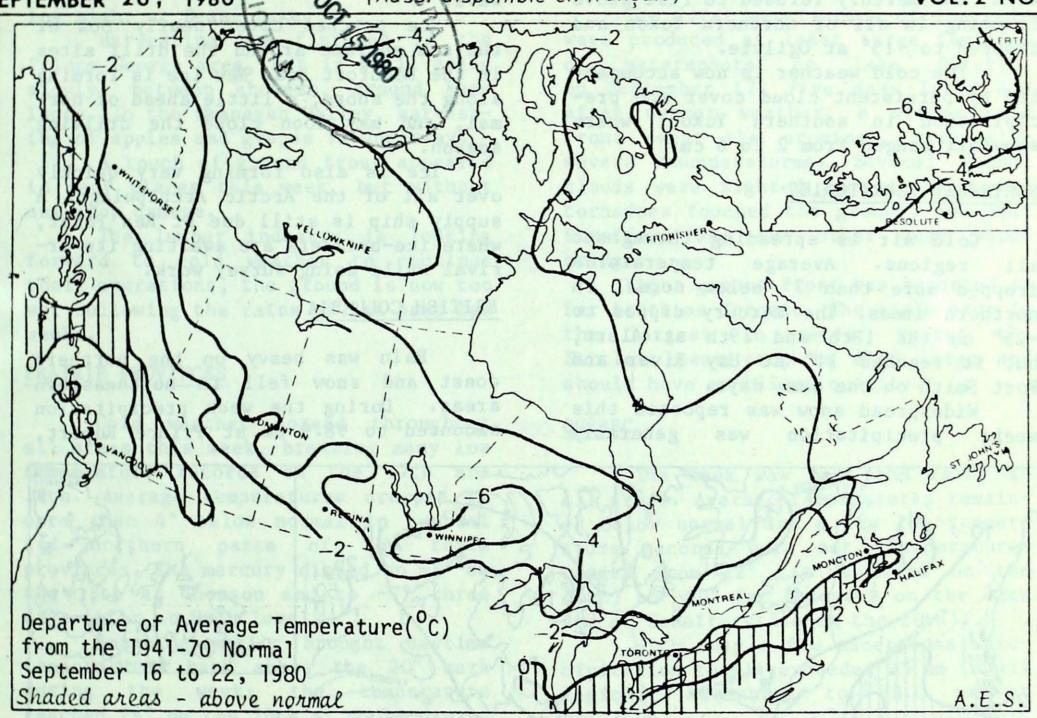
Snow[all tetalled more than 50 eastern baffin island. Showcover

THE CANADIAN CLIMATE CENTRE, TMOSPHERIC ENVIRONMENT SERVICE, 5 DUFFERIN ST., DOWNSVIEW, ONTARIO M3H 5T4

SEPTEMBER 26, 1980

(Aussi disponible en français)

VOL. 2 NO. 38



WEATHER HIGHLIGHTS FOR THE WEEK - SEPTEMBER 16 - 22, 1980

Arctic air ushers in the end of summer.

Cold air spread from the Arctic to all other regions of the country, only southern and coastal regions of British Columbia escaped. This invasion of cold air resulted in numerous low temperature records in the Prairies.

A cold front crossed Ontario and Québec over the weekend and triggered severe thunderstorms, several funnel clouds and at least two tornadoes.

The wet weather persistent over the Prairies and in Newfoundland further delayed harvesting. Yields generally exceed their forecast values. Fruit crops are excellent in the Okanagan valley and in Southern Ontario.

Temperatures ranged from 31° (at Windsor on the 22nd) to -25° (at Alert on the 18th). Rain amounted to 98.9 mm at Prince Rupert.

A.E.S.

NOTE: The data shown in this publication are based on unverified reports from approximately 225 Canadian and 115 northern United States Synoptic stations.

Cool weather did not wait long before returning to the Yukon. The average temperature dropped below normal in all regions. At the beginning of the week the mercury rose to 14° at Watson Lake.

During the last few days of the week, the mercury refused to rise above freezing in all of northern Yukon and dropped to -15° at Ogilvie.

The cold weather is now accompanied by persistent cloud cover and precipitation in southern Yukon, where snowfall ranged from 2 to 6 cm.

NORTHWEST TERRITORIES

Cold air is spreading throughout all regions. Average temperatures dropped more than 7° below normal in northern areas. The mercury dipped to -25° on the 18th and 19th at Alert, but it reached 11° at Hay River and Fort Smith on the same days.

Widespread snow was reported this week; precipitation was generally

light, but still above normal at most stations.

Snowfall totalled more than 50 mm in eastern Baffin Island. Snowcover is now 35 cm at Cape Dyer; the snow extended sporadically into southern parts of the Territories.

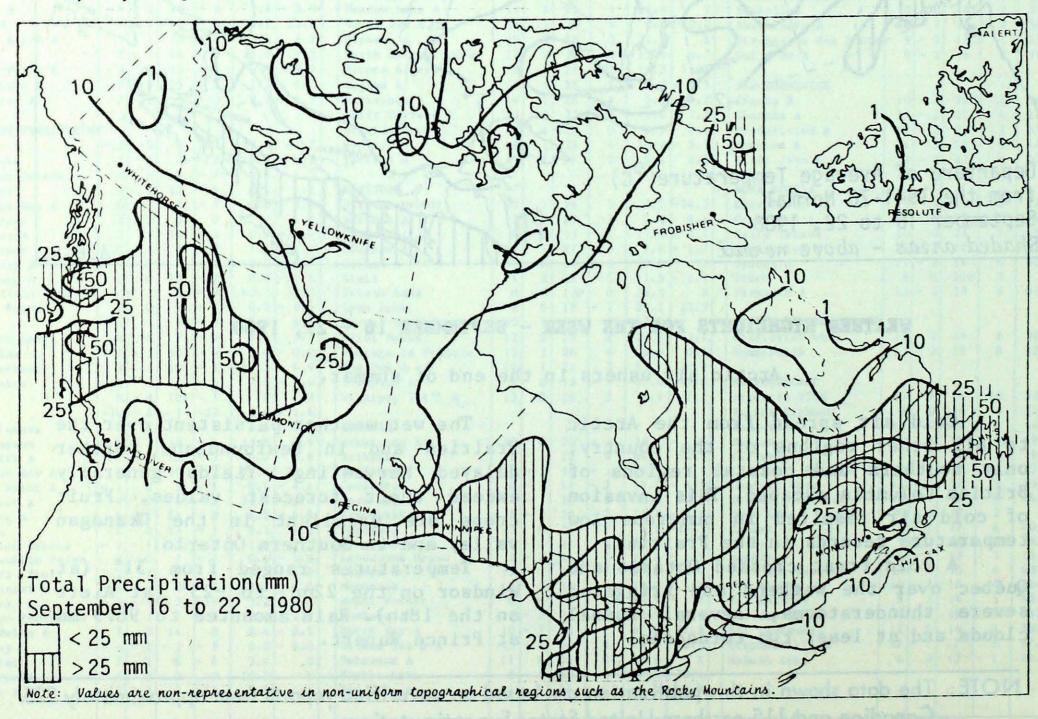
In the Arctic the young freeze-up season gained momentum with the cold wave.

Ice patches cover nearly 60% of the sea surface around the drill sites in the Beaufort Sea. New ice is forming along the shore, a little ahead of normal, and may soon close the drilling season.

Ice is also forming very quickly over all of the Arctic Archipelago. A supply ship is still due at Rea Point, where ice-breakers are awaiting its arrival while doing survey work.

BRITISH COLUMBIA

Rain was heavy on the northern coast and snow fell in northeastern areas. During the week precipitation amounted to 98.9 mm at Prince Rupert,



while the snowfall exceeded 12 cm at Fort Nelson.

Temperatures remained close to normal, except in the northwest where the weekly average was more than 4° below normal.

The mercury rose to 26° on the 16th at Lytton and on the 17th at Penticton, and fell to -3° on the following night at Dease Lake.

Harvesting has finished in the Prince George area, but is still going slowly, between showers, around Kamloops. In the Okanagan Valley, harvesting of apples and grapes is underway.

A touch of ground frost appeared in many places this week, but without any crop damage.

The lumber industry is looking forward to cold weather to continue their operations, the ground is now too wet following the rains of the past few weeks.

PRAIRIE PROVINCES

Cold weather spread throughout all areas this week, breaking many low temperature records on the 17th and 18th. Average temperatures dropped to more than 4° below normal in central and northern parts of the three provinces. The mercury dipped to -8° on the 18th at Thomson and to -7° three days later at High Level.

Sunshine easily brought daytime temperatures back above the 20° mark during the week; the temperature reached 24° on the 20th at Moose Jaw.

Precipitation exceeded normal at most stations, except in southern Alberta and central Saskatchewan. Precipitation totals exceeded 50 mm in the Slave Lake area and 40 mm in southern Manitoba. Snowfalls extended southward to central areas of the provinces.

Crops are 70% harvested in Saskatchewan and Manitoba. Yields are better than originally forecast but the quality is slightly lower than that of the past few years.

ONTARIO

Cold temperatures remained throughout the entire province except in the southwest where temperatures

rose above normal. In the northwest the average weekly temperatures dropped to more than 7° below normal; the cold wave brought a few low temperature records to this area.

The mercury dipped to -5° on the 17th at Armstrong and on the following day at Pickle Lake. In Windsor, the mercury reached 31° on the 22nd.

The first penetration of the cold wave produced at least three families of waterspouts on Lake Ontario, on September 17. Five days later and after warmer weather, a strong cold front swept the province, triggering severe thunderstorms. Several funnel clouds were sighted and at least two tornadoes touched the ground, one near Stratford and the other near Woodbridge.

Light ground frost was reported as far south as Toronto. The apple crop is the largest in recent years; the Bartlett pear crop is also large and should have excellent quality.

QUÉBEC

The week was cool and rainy in all areas. Average temperatures remained below normal and a few low temperature records were set. Temperatures ranged from 22° (at Montréal on the 20th) to -40° (at Matagami on the 18th and at Schefferville on the 20th).

With only a few exceptions, precipitation totals exceeded 25 mm in all regions, amounting to 88.0 mm at Val d'Or.

The highest percentage of possible sunshine was 40.6% at Port Menier.

The cold front which swept across the province on the 20th and 21st triggered numerous thunderstorms resulting in overflowing sewers and numerous power black-outs in the Québec City area.

At Magog, near Sherbrooke, lightning set a house on fire during the night on September 21/22.

ATLANTIC PROVINCES

September continues to be cool, with mean temperatures remaining below normal almost everywhere. The night-

time temperature dipped to -50° at Deer Lake and Wabush while daytime temperatures reached 22° at Greenwood, Shearwater and Yarmouth. The minimum of -1° recorded at St. John's on the 16th and 17th, lowered by 0.1° the record for the lowest September temperature there.

Rain exceeded the normal in New Brunswick and in Prince Edward Island. Precipitation was lighter in Nova Scotia and in parts of Newfoundland. Rain exceeded 60 mm in other areas of this

severe thunderstorms. Several foundly

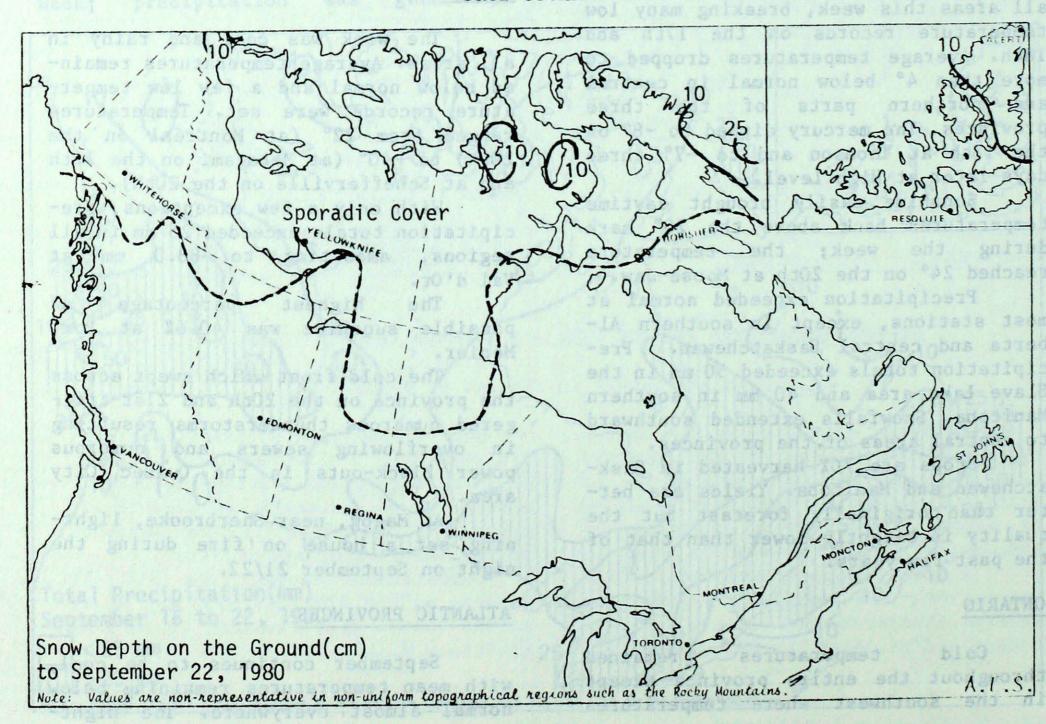
should have excellent quality risk tools

province and also at Chatham, New Brunswick.

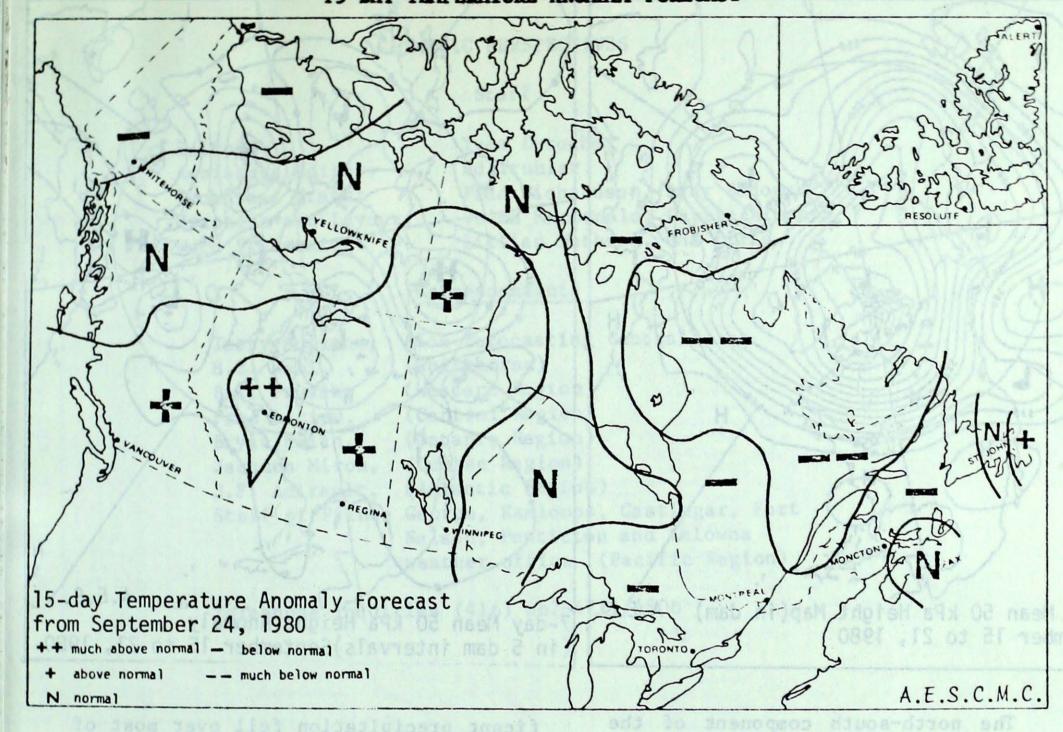
Harvesting is a few weeks late in Newfoundland as a result of the wet summer. The New Brunswick vegetable and fruit crop yields are low because of the fairly widespread fungus disease. In contrast, the potato crop is large and of excellent quality in Prince Edward Island. Harvesting is more than 85% complete in Nova Scotia and fall seeding is underway.



SNOW COVER



15 DAY TEMPERATURE ANOMALY FORECAST



Forecast Method

Analogue technique based on point prediction at 70 Canadian stations.

Temperature Scale

Each temperature class is designed to contain 20% of the historically observed 15 day means pertinent to specific location and time of year:

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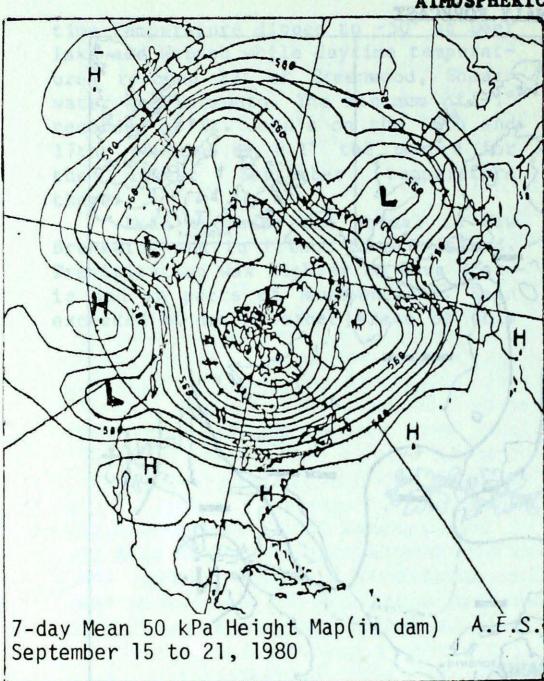
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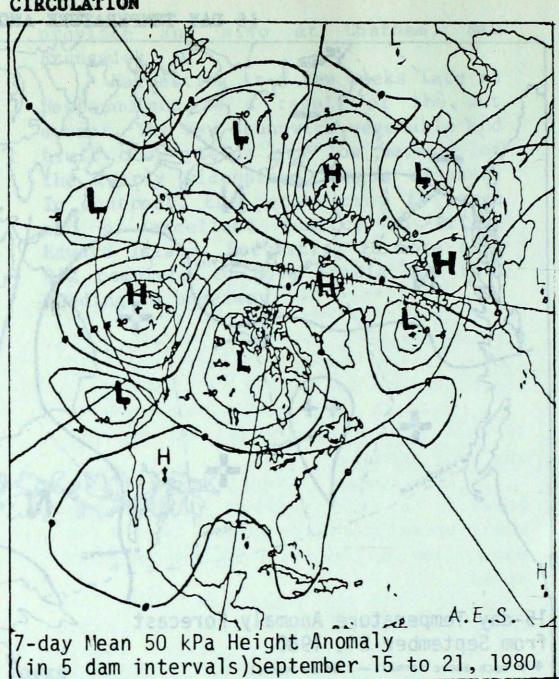
Station Current Temperature Anomaly Forecast

	Whitehorse	Below Normal	From 0.6° to 2.0° below Normal
	Victoria	Above Normal	From 0.3° to 1.1° above Normal
	Vancouver	Above Normal	From 0.3° to 1.1° above Normal
	Edmonton	Much Above Normal	More than 2.4° above Normal
	Regina	Above Normal	From 0.6° to 2.2° above Normal
	Winnipeg	Above Normal	From 0.6° to 2.0° above Normal
	Thunder Bay	Below Normal	From 0.5° to 1.6° below Normal
,	Toronto	Below Normal	From 0.5° to 1.7° below Normal
	Ottawa	Below Normal	From 0.5° to 1.7° below Normal
	Montreal	Below Normal	From 0.5° to 1.6° below Normal
	Quebec	Much Below Normal	More than 1.5° below Normal
-	Fredericton	Below Normal	From 0.4° to 1.5° below Normal
	Halifax	Near Normal	Within 0.4° of Normal
i	Charlottetown	Near Normal	Within 0.4° of Normal
*	St. John's	Above Normal	From 0.3° to 1.1° above Normal
N	Goose Bay	Much Below Normal	More than 1.5° below Normal
	Frobisher Bay	Below Normal	From 0.5° to 1.7° below Normal
	Inuvik	Below Normal	From 0.7° to 2.4° below Normal

Note: Anomaly denotes departure from the 1949-73 mean.

ATMOSPHERIC CIRCULATION





The north-south component of the 50 kPa upper circulation increased during the period. Most of North America encompassed a mean long-wave trough while a mean tropospheric ridge was stationary near the Gulf of Alaska. The Arctic Vortex has now reorganized and is once again relocated near the Arctic Islands.

Western Canada came under the influence of a strong northwesterly upper flow. Low pressure systems developed to the lee of the upper ridge and moved eastwards across the Prairies to eastern Canada. Cells of cold Arctic air and their accompanying high pressure areas surged southeastward in between each system inducing temperatures to drop to record levels.

The frontal zone dividing the increasingly contrasting Arctic and Pacific air masses was very active, extending from northern British Columbia, across Ontario and the Atlantic Provinces. Temperatures were quite changeable because the frontal zone oscillated strongly from north to south. Signi-

ficant precipitation fell over most of British Columbia and central Alberta, snow falls are becoming more frequent in northern areas.

Eastern Canada had even higher precipitation amounts commonly exceeding 25 mm. The maritime tropical air mass, now generally located south of the border, penetrated northwards into the lower Great Lakes and St. Lawrence valley during the weekend. The much higher moisture content in the air mass produced very warm and hazy conditions and nighttime fog formation. Scattered showers and thunderstorms occurred fairly regularly owing to the closeness of the Arctic air mass just to the north. On Monday evening the leading edge of cold Arctic air advanced eastward across Ontario triggering a line of severe thunderstorms, violent winds, hail and several tornadoes.

The low pressure disturbances tracking eastwards from Ontario and Quebec brought cool and wet weather to the Atlantic Provinces.

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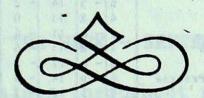
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	TEMPERATURE AND PRECIPIT						
Station	Average	Departure from Normal	Extreme	Extreme	Total	Departure from Normal	
BRITISH COLUMBIA Abbotstord A Alert Hay Blue River Buil Hirbour Burns Lake Cape Scott Cape St. James Castlegar A Comox A Cranbrooke Dease Lake Estevan Point Fort Nelson A Fort St. John A Kamloops A Langara Lytton Mickenzie A McInnes Island Penticton A Port Hardy A Prince George A Prince Rupert A Quesnel A Revelstoke A Sindspit Smithers A Spring Island Stewart A Terrace A Vancouver Int'l A Victoria Int'l A Williams Lake A	13 12 M 12 M 11 13 13 13 14 11 5 M 4 5 15 12 15 M 11 15 12 12 12 14 10 M 11 13 13 13 13 14 14 15 16 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18	0 1 0 1 1 M X	14 17 25 20 23 14 15P 13 25 15 26 19 16 26 16 21 14 25 20 21 23 12P 19 20 21 19	9	18.5 M 59.1 54.5 6.4 49.2 1.0 47.6 74.8 1.6 45.3 40.5 98.9 39.2 23.2 9.2 14.7 M 55.0 25.0 22.3 10.1	- 4.9	
Burwash A Dawson A Komakuk Beach A Mayo A Shingle Point A Watson Lake A Whitehorse A	2 - 5 2 - 3	- 5	1 13 9 14	- 5 -11 -12 - 7 -13 - 2 - 3	16.4 0.8 13.0 35.0	- 3.1 13.0 - 7.2	
Baker take Broughton Island Byron Bay Cambridge Bay A Cape Dorset Cape Dyer A Cape Hooper Cape Parry A Cape Young A Chesterfield Inlet Clinton Point Clyde Contwoyto Lake Coppermine Coral Harbour Dewar Lakes Ennadai Eureka Fort Reliance Fort Simpson Fort Smith A	-17 - 2 - 4 - 3 - 4 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7	- 4 - 2 - 3 X 0 M - 4 - 3 - 3 - 4 - 2 M - 4 - 2 0 M - 7 - 4 - 5 - 4 0 - 4	5 0 2 1 4 1 0 3 4 6 4 2 2 P 5 4 2 4 P -10 8 10 11 6 0 11 5 4 -3 -2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	-16 - 9 -11 - 5P - 6 - 7 - 6 - 7 - 8 - 8 - 9 - 8 - 9 - 8 - 22 - 4 - 4	11.0 4.1 12.8 12.5 52.9 12.2 12.4 13.7 0.8 9.3 11.6 4.2 4.0 6.1 4.2 M 0.4 3.2 14.3 4.4	- 7.3 0.3 8.1 X 30.1 1.8 7.1 10.7 - 9.3 2.2 - 0.2 - 1.4 - 2.0 - 3.2 - 0.5 M - 2.2 - 2.8 5.7 - 4.7 11.0 3.3 3.6 4.9 5.4 - 0.8 7.1 - 3.5 1.1 0.4 4.9	

١	ION DATA FOR THE	WEEK ENDING OBOU G.M.I. SEP						
		Temperature (°C)			Precip. (mm)			
	Station.	Average	Departure from Normal	Extreme Maximum	Extreme Minimum	Total	Departure from Normal	
	Sachs Harbour Shepherd Bay A Tuktoyaktuk Yellowknife A	- 8 - 5 - 3	- 6 - 3 - 5 - 5	1 1 2 7	-14 - 9 - 8 - 4	5.3 11.6 1.2 4.6	5.7	
	ALBERTA Banff Calgary Int'l A Cold Lake A Coronation A Edmonton Int'l. A Edmonton Mun. A Edmonton Namao A Edson A Fort Chipewyan Fort McMurray A Grande Prairie A High Level A Jasper Lethbridge A Medicine Hat A Peace River A Red Deer A Rocky Mountain House	7 8 5 5 6 6 6 6 M 4 6 3 8 10 M 3 7 7 4	- 4 - 5 - 2 M - 4 4 - 1 M 6 2 3	13 21 13 15 13 14 12 14 M 11 15 11 16 19 21 8 15 15	1 - 1 - 3 - 3 - 3 - 3 - 1 0 0 - 4 - 3 1 - 7 1 0 0 P - 2 1 0 - 2	21.4 7.6 26.5 24.3 29.8 25.8 25.6 34.6 M 17.0 27.1 18.6 12.2 4.4 5.8 42.5 23.1 20.4	13.5 11.9 21.8 16.6 16.1 24.6 M 4.9 19.6 7.5 3.9 -10.8 -5.5 39.8 10.4 8.5	
	Slave lake A Vermilion A Whitecourt SASKATCHEWAN Broadview	6 5 7	- 4 - 3 - 3	9 14 11	- 3 - 2 - 2	50.6 15.1 26.0	41.5 2.5 19.7	
	Buffalo Narrows Cree Lake Estevan A Hudson Bay Kindersley La Ronge A Meadow Lake A Moose Jaw A Nipawin A North Battleford A Prince Albert Regina A Saskatoon A Swift Current A Uranium City Wynyard Yorkton A	4 5 8 6 6 6 7 7 8 3	- 4 X - 3 - 3 - 4 - 5 X - 4 X - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4	15 12 14 24 20 13 17 23 20	- 1 - 2 - 2 - 2 - 1 - 2 - 4 - 1 - 3 - 4 - 1 - 4 - 0 - 2	26.6 36.6 4.1 10.0 10.9 17.7 4.2 1.0 4.8 5.2 8.4 2.2 10.0 2.8 13.2	26.2 - 6.3 - 0.1 - 1.8 X - 2.7	
	MANITOBA Bissett Brandon A Churchill A Dauphin A Cillam A Cillam A Cimli Island Lake Lynn Lake Norway House Pilot Mound Portage la Prairie The Pas A Thompson A Winnipeg Int'l A	3 7 2 6 4 1 4 6 6 5	- 5 - 3 - 4 X - 5 X - 4 X - 6 - 5 - 5 - 6	15 11 14 11 11	- 4 - 2 - 3 - 6 - 2 0 - 4 - 5 - 2 - 3 - 8 - 4	16.3 14.8 13.8 4.6 9.2 43.2 25.2	9.9 3.9 -10.0 X 0.3 X - 5.8 X 27.0 10.8 - 2.0 6.6	
	ONTARIO Armstrong A Atikokan Earlton A Geraldton Gore Bay A Kapuskasing Kenora A Kingston A Lansdowne House London A Moosonee Mount Forest Muskoka A North Bay A Ottawa Int'l A Petawawa A Pickle Lake Red Lake A	3 5 9 4 12 7 5 15 4 16 6 M M 10 13 11	- 6 - 5 - 2 - 5 - 4 - 6 1 - 5 1 - 4 M M - 2 - 1 X 7 - 7	13 17 21 14 20 15 14 22 11 28 16 25 23P 19 21 22 12	- 5 - 3 0 - 4 5 - 2 0 5 5 - 1 3 - 3 M 0 2 4 0 - 5 - 4	21.2 27.8 71.1 46.2 33.3 53.7 29.6 6.9 18.0 29.5 23.5 74.3 M 49.4 26.2 20.6 32.1 39.6	6.5	

	Te	Temperature (°C)		Precip. (mi			
Station	Averoge	Departure	from Normal	Extreme	Extreme Minimum	Total	Departure from Normal
Simcoe Sioux Lookout A Sudbury A Thunder Bay A Simmins A Soronto Int'l A Trenton A Srout Lake Jawa A Jindsor A	177 55 100 77 7166 15 4 8 14		1 6 3 4 4 0 0 4 X 0 1	28 14 20 17 16 28 24 10 17 26 31	4 - 1 4 - 1 2 4 - 2 0 4 6	4.2 35.7 63.0 44.4 43.2 23.5 10.9 31.9 63.2 52.8 18.4	11.
Sagotville A Saie Comeau Slanc Sablon Sorder Chibougamau Fort Chimo A Saspé A Grindstone Island Inoucd Jouac Soartak A Grande Rivière A Saniwaki Satagami A Sont-Joli A Sont-J	12 M 9 2		0 M X 1 X 1 0 X X 1 X 2 1 2 2 2 1 M 2 3 2 1	20 15 13 7P 16P 11 18 16 8 8P 12 19 15 19 22 15 11 14 14 20 18P 20 10 15 21 19	- 1 - 1 - 1 - 9 - 1 - 1 - 2 0 - 4 1 6 - 1 - 2 - 1 - 2 - 1 - 4	17.3 34.3	19. 8. - 6. 14. 24. 7. 2. 10. 34. 8. 35.
harlo A hatham A redericton A oncton A aint John A	9 11 12 12 12	-	1	20 20 20 20 20 19	0 1 2 2 5	33.4 67.0 38.0 34.0 30.8	
OVA SCOTIA ddy Point reenwood A able Island hearwater A ydney A ruro armouth A	14 13 15 14 12 12 13		X 0 0 0 1 0 0	19 22 21 22 19 21 22	8 2 9 6 4 1 4	9.0 20.3 17.7	-16. - 9. - 3.
RINCE EDWARD ISLAND harlottetown ummerside	13		0	21 20	6	26.4	- 0.
EWPOUNDLAND rgentia VTMS attle Harbour onavista urgeo artwright hurchill Falls A omfort Cove aniel's Harbour eer Lake inder Int'l A oose A opedale ort aux Basques . Albans . Anthony . John's A . Lawrence eephenville A ibush Lake			X 1 2 1 2 0 2 1 1 2 2 1 0 2 X 3 1 1 3	16 13 17 17 17 14 18 19 18 17 20 14 16 16 16 18 14	4 3 4 4 - 1 - 2 2 2 - 5 3 - 2 2 4 0 - 1 - 1 3 3 - 5	9.0 27.2 43.0 30.8 36.3 10.4	6.6 51.1 23.4 - 7.1 - 15.7 16.0 27.5 14.5 15.8 - 8.0 -15.2 45.1 27.7 36.5 32.8 29.1