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WEEKLY REVIEW OF CANADIAN CLIMATE

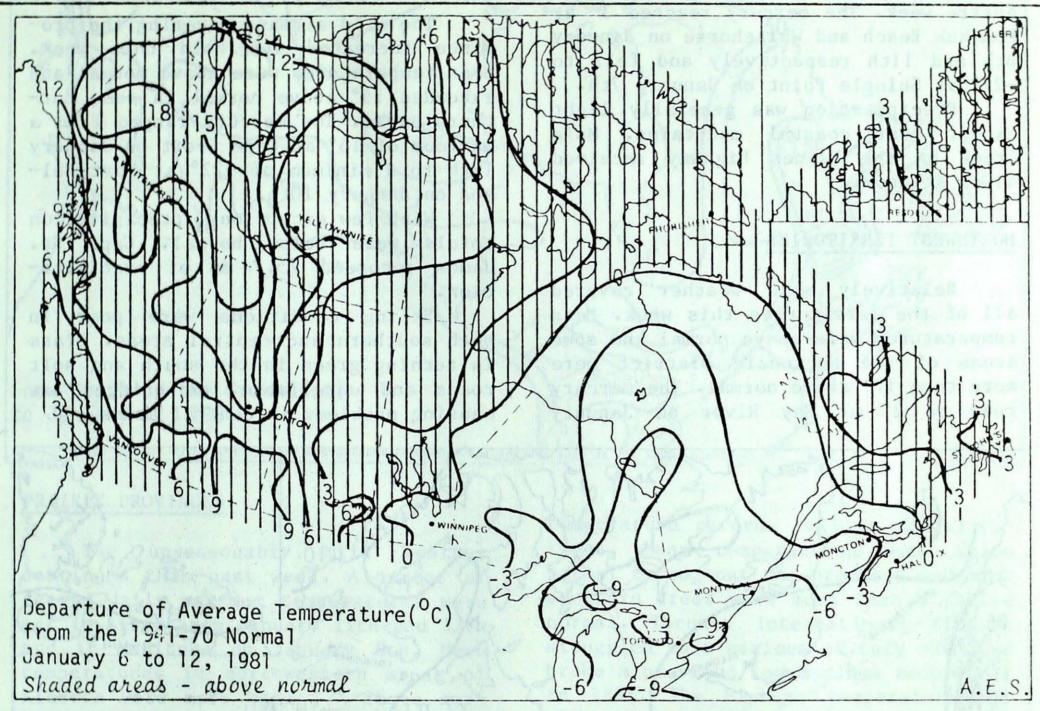
Environnement

THE CANADIAN CLIMATE CENTRE, ATMOSPHERIC ENVIRONMENT SERVICE, 4905 DUFFERIN ST., DOWNSVIEW, ONTARIO M3H 5T4

JANUARY 16, 1981

(Aussi disponible en français)

VOL.3 NO.2



WEATHER HIGHLIGHTS FOR THE PERIOD - JANUARY 6, 1981 TO JANUARY 12, 1981

East-west temperature contrast increases

With the exceptions of Ontario, A storm striking Quebec and the Québec and the Maritime Provinces, the country enjoyed relatively mild weather. Mean temperatures over most of B.C. and Alberta were more than 9° above normal and exceeded 18° above normal in the Yukon. Combining operations were reported east of Calgary. Mean temperatures in southern Ontario were more than 9° below normal. growers in the Niagara Peninsula were concerned about tree damage.

Maritime Provinces on January 10th created major transportation problems and resulted in the death of at least three people. Moncton received 40.1 cm of snow from the storm.

Temperatures varied from a maximum of 15° (Cape Scott on January 12th) to a minimum of -45° (Shepherd Bay on January 6th). Cape St. James received a total of 75.7 mm of precipitation for the week.

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

YUKON

A steady stream of warm Pacific air moving north from lower latitudes gave the Yukon above normal temperatures. Central areas enjoyed mean temperatures more than 18° above normal. Whitehorse never saw the mercury drop below the normal daily maximum for the entire week. The mercury reached 3° at Komakuk Beach and Whitehorse on January 8th and 11th respectively and fell to -27° at Shingle Point on January 7th.

Precipitation was generally light except near coastal mountains. Mule Creek on the Haines Highway received 41 cm of snow.

NORTHWEST TERRITORIES

Relatively mild weather covered all of the Territories this week. Mean temperatures were above normal and some areas of the Mackenzie District were more than 17° above normal. The mercury rose to 2° at Hay River on January 11th. The temperature fell to -45° at Shepherd Bay on January 6th.

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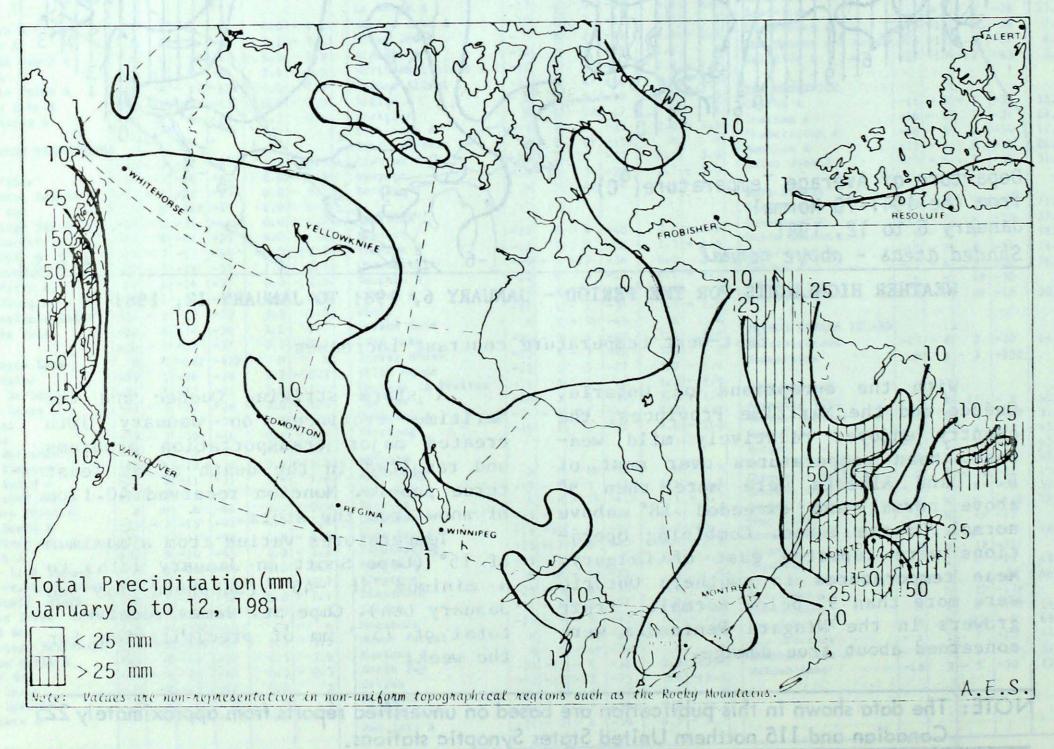
With a few exceptions precipitation totals were below normal. Cape Dyer received 19.0 cm of precipitation.

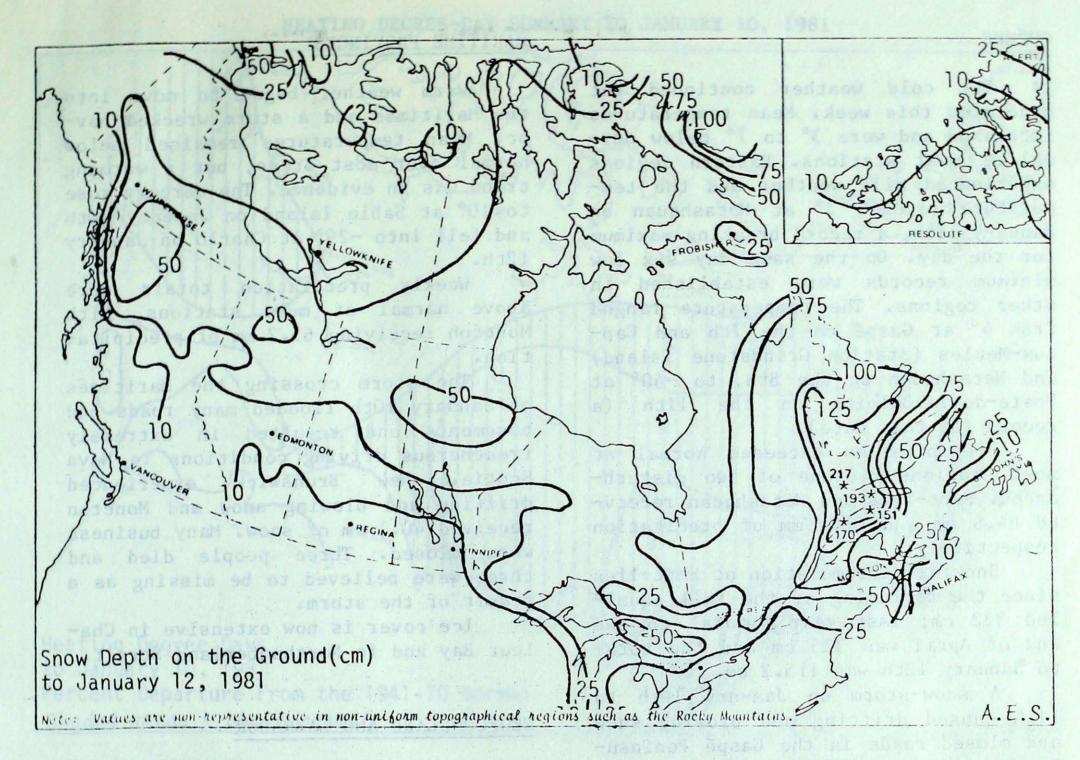
BRITISH COLUMBIA

The mild airmass covering the province increased its hold this week. Mean temperatures were above normal and exceeded 15° above normal in some northern areas. The mercury ranged from a maximum of 15° at Cape Scott on January 12th to a minimum of -22° at Fort Nelson on January 10th.

With few exceptions, precipitation totals were below normal. Cape St. James recorded 75.7 mm of precipitation.

Skiing conditions were poor in both southern and central areas. Grass is turning green in the south and soft roads and unreliable ice bridges are causing problems in central areas.





PRAIRIE PROVINCES

The unseasonably mild weather continued this past week. A number of record daily maximum temperatures were set in Alberta on January 11th and 12th and in Manitoba on January 9th. Mean temperatures in northwestern areas of Alberta were more than 17° above normal. The temperature reached 12° (Calagary on January 12th, Lethbridge on January 11th) and fell to -42° (Thompson on January 7th).

Precipitation was generally light, with most falling in a band from Peace River to Brandon. Slave Lake reported 21.3 mm of precipitation.

The snow cover has disappeared in the area of Calgary south to the border. Combining of last year's crops were reported east of Calgary this past weekend.

ONTARIO

Cold Arctic air continued its domination of Ontario and as a result

tions. Mean temperatures were below normal throughout the province and some southern areas were more than 9° below normal. Toronto International Airport struggled to a maximum of only -20° and broke a previous low maximum record set in 1886. The highest temperature for the week was -2° (at Kingston on January 7th) and the lowest -40° (at Moosonee on January 10th).

Precipitation totals were below normal at most stations. Wiarton recorded a total of 21 mm of precipitation.

Heating degree days are nearly 20% above normal in parts of southern On-tario, causing excessively high heating bills for householders. On the Niagara Peninsula, the extreme minimum temperatures are causing concern over possible damage to the fruit trees. Despite being sheltered by Lakes Ontario and Erie, St. Catharines has been recording temperatures near -25° some mornings.

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The cold weather continued but moderated this week. Mean temperatures increased and were 3° to 7° below normal at most stations. Eastern regions experienced mild weather and the temperature reached 3° at Natashquan on January 11th, a record breaking maximum for the day. On the same day six low minimum records were established in other regions. The temperature ranged from 4° at Gaspé on the 7th and Capaux-Meules (station Grindstone Island) and Natashquan on the 8th, to -40° at Poste-de-la-Baleine on the 11th (a record for this date).

Precipitation exceeded normal at most stations because of two disturbances. Sept-Iles and Natashquan received 64.6 mm and 65.6 mm of precitation respectively.

Snowfall accumulation at Sept-Iles since the beginning of the fall equal-led 332 cm; last year's total to the end of April was 325 cm and the total to January 12th was 115.2 cm.

A snow-storm on January 10th to 11th caused drifting and blowing snow and closed roads in the Gaspé Peninsula. Wind gusts of 85 km/h were recorded at weather stations, with higher values reported unofficially.

The ice has completely interrupted shipping in the St. Lawrence River. There were two ice jams; one at the Jacques Cartier Bridge in Montreal and the other near Sorel. For the first time in 25 years ice invaded Montreal harbour and imprisoned 4 ships. The Franklin was recalled from Newfoundland to help other icebreakers free up the river.

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MARITIME PROVINCES

Warm weather began to move into the Maritimes and a storm wrecked havoc. Mean temperatures remained below normal over most areas, but a warming trend was in evidence. The mercury rose to 10° at Sable Island on January 10th and fell into -29° at Charlo on January 12th.

Weekly precitation totals were above normal at most stations, with Moncton receiving 65.2 mm of precipitation.

The storm crossing the Maritimes on January 10th flooded many roads and basements and resulted in extremely treacherous driving conditions in Nova Scotia. New Brunswick experienced drifting and blowing snow and Moncton received 40.1 cm of snow. Many business were closed. Three people died and three were believed to be missing as a result of the storm.

Ice cover is now extensive in Chaleur Bay and in Northumberland Strait.

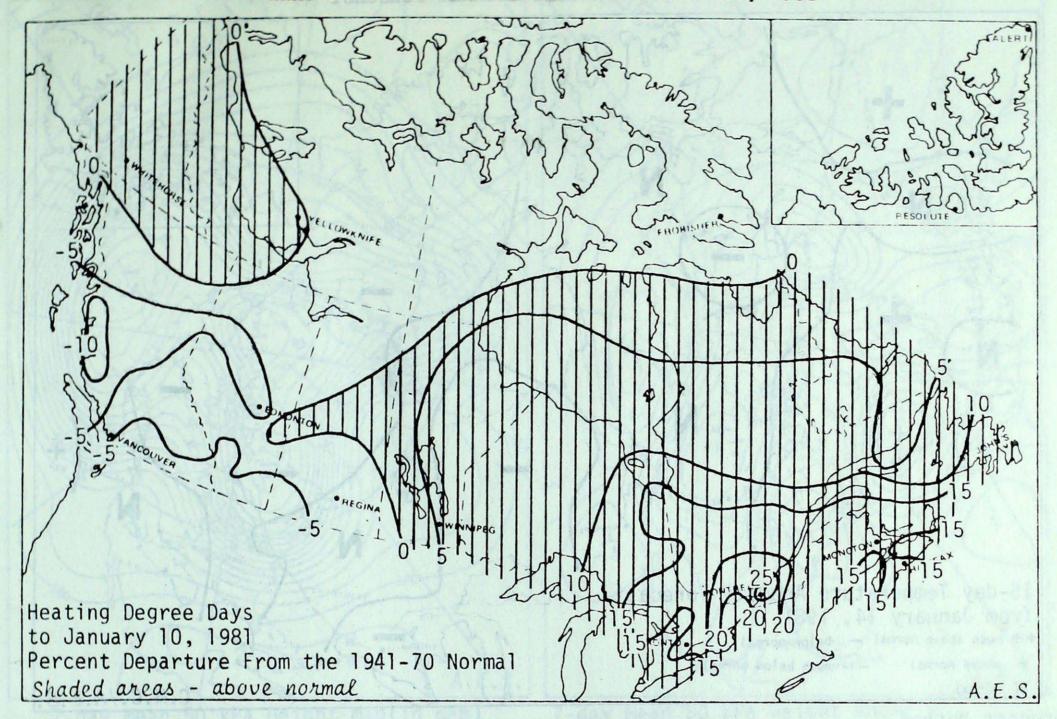
NEWFOUNDLAND AND LABRADOR

The mild weather continued this week. Mean temperatures over most areas were more than 3° above normal. Some high temperature records were set on January 11th. The mercury ranged from a high of 11° at St. Albans and Argentia on January 10th and 11th respectively, to a low of -35° at Wabush Lake on January 10th.

Precipitation totals for the week were close to or below normal at most stations. St. John's recorded 50 mm of precipitation.

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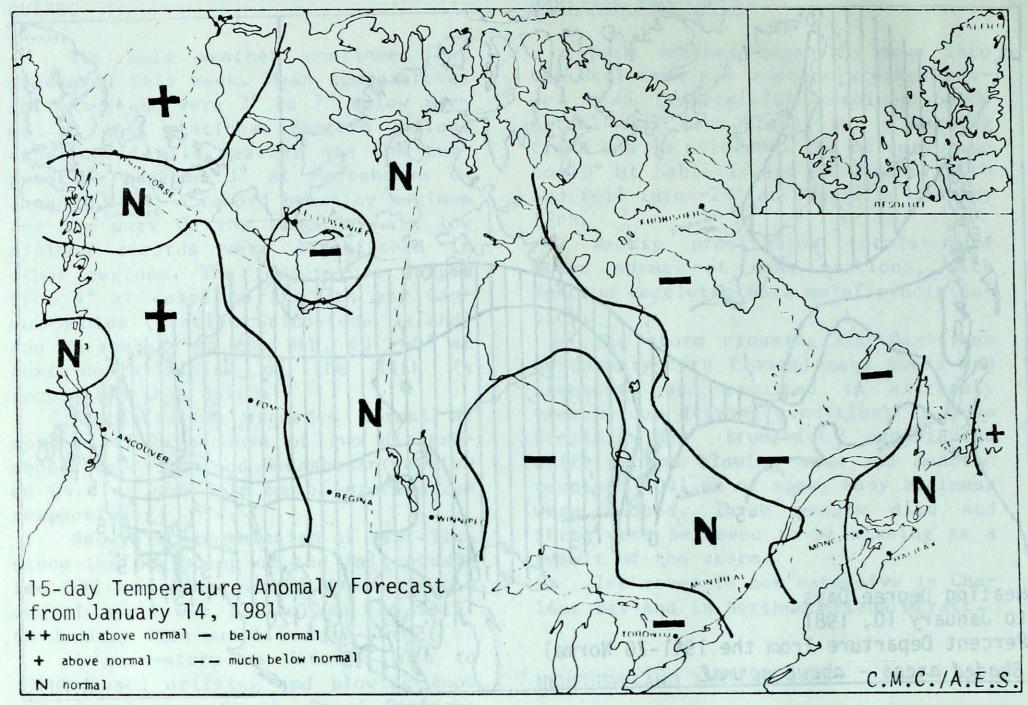
HEATING DEGREE-DAY SUMMARY TO JANUARY 10, 1981



STATION	MONTHLY CUMULATIVE TOTAL	MONTHLY DIFF. FROM 1941-70 NORMAL	SEASONAL TOTAL	SEASONAL DIFF. FROM 1941-70 NORMAL	SEASONAL PERCENT OF NORMAL
Resolute	496.0	2.0	5785.5	-37.5	99
Inuvik	362.5	-114.5	4477.0	-17.0	100
Whitehorse	209.5	-164.5	3405.0	26.0	101
Vancouver Int'l A	134.5	+18.5	1329.0	-56.0	96
Edmonton Mun A	232.0	-88.0	2455.0	-153.0	94
Calgary Int'l A	183.0	-97.0	2275.5	-182.5	93
Regina	305.0	-45.0	2553.0	-120.0	96
Winnipeg Int'l A	387.0	37.0	2725.5	128.5	105
Thunder Bay	386.5	62.5	2723.5	197.5	108
Windsor	289.0	69.0	1740.0	212.0	114
Toronto Int'l A	323.5	83.5	2016.5	290.5	117
Ottawa Int'l A	375.5	85.5	2429.5	393.5	119
Montreal Int'l A	376.5	96.5	2412.0	494.0	126
Quebec	383.0	96.0	2643.5	446.5	120
Saint John, N.B.	315.5	70.5	2286.5	289.5	114
Halifax	264.5	54.5	1925.5	308.5	119
Charlottetown	304.0	64.0	2149.5	312.5	117
St. John's, Nfld.	212.0	4.0	2190.0	238.0	112

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15 DAY TEMPERATURE ANOMALY FORECAST



Forecast Method

Analogue technique based on point prediction at 70 Canadian stations.

Temperature Scale

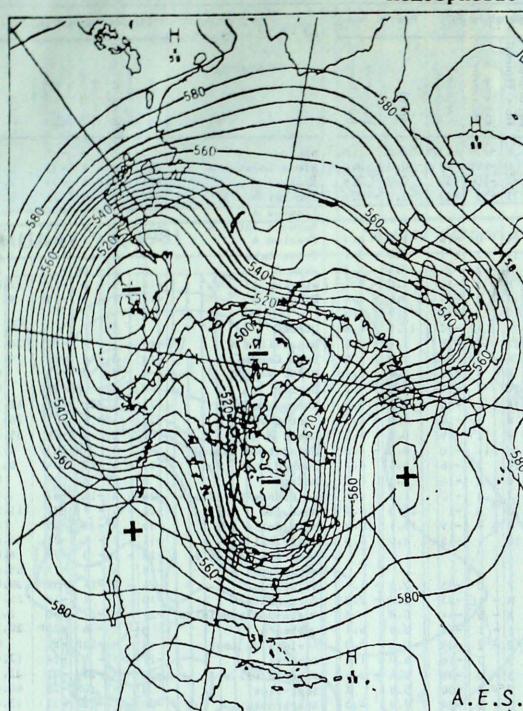
Each temperature class is designed to contain 20% of the historically observed 15 day means pertinent to specific location and time of year:

Station		Current	Temperature Anomaly Forecast
Whitehorse	Above Normal		From 1.8° to 6.0° above Normal
Victoria	Above Normal	Name of Street	From 0.6° to 2.0° above Normal
Vancouver	Above Normal		From 0.7° to 2.3° above Normal
Edmonton	Above Normal		From 1.5° to 5.0° above Normal
Regina	Near Normal		Within 1.3° of Normal
Winnipeg	Near Normal		Within 1.1° of Normal
Thunder Bay	Below Normal		From 0.9° to 3.0° below Normal
Toronto	Below Normal	8-23-20	From 0.7° to 2.4° below Normal
Ottawa	Near Normal		Within 0.8° of Normal
Montreal Montreal	Near Normal		Within 0.8° of Normal
Quebec	Near Normal		Within 0.9° of Normal
Fredericton	Below Normal		From 0.9° to 2.9° below Normal
Halifax	Near Normal		Within 0.7° of Normal
Charlottetown	Near Normal	4-44-5	Within 0.8° of Normal
St. John's	Above Normal	0.0818	From 0.6° to 2.2° above Normal
Goose Bay	Below Normal		From 1.3° to 4.4° below Normal
Frobisher Bay	Below Normal		From 1.5° to 5.0° below Normal
Inuvik	Above Normal		From 1.3° to 4.3° above Normal

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

Atmospheric Circulation



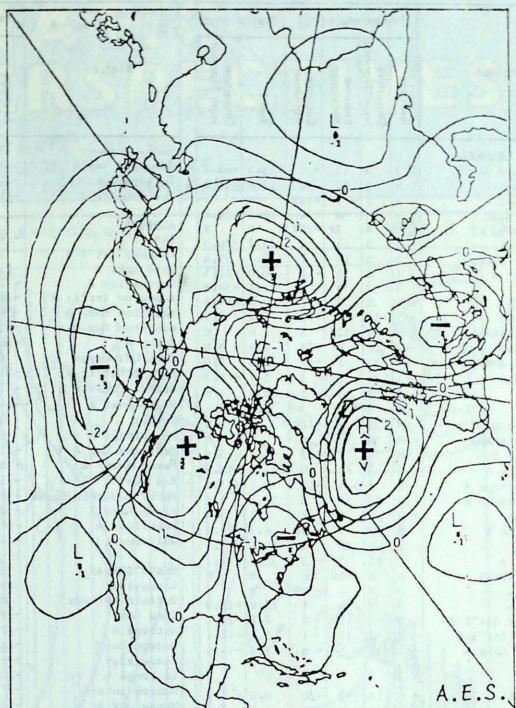
7-day Mean 50 kPa Height Map(in dam) January 5 to 11, 1981

Anomalous conditions prevailed across the continent.

Positive height anomalies in western Canada were as much as 20 dam above the normal. Negative 50 kPa anomalies continued over Ontario, Quebec and the Maritimes; only Newfoundland in the east had above normal heights for the second week running.

Mean temperatures compared very favourably to the height anomaly pattern. A southwesterly flow of warm Pacific air pushed inland as far north as the Yukon and the western Arctic and throughout the prairie provinces.

Precipitation amounts across most of Canada were generally light, with the exception of both the west and east coasts. A large amplitude ridge effectively blocked most storm systems approaching from the mid Pacific forcing



7-day Mean 50 kPa Height Anomaly (in 5 dam intervals) January 5 to 11, 1981

them to curve northeastwards and weaken in the Gulf of Alaska. Only extreme coastal areas of British Columbia received any significant precipitation.

The eastern half of the country continued to be influenced by a northwesterly flow of dry, very cold Arctic air. Weak distrubance tracking southeastward deposited only light snowfall amounts. As these systems approached the east coast, they came in phase with the stationary long-wave trough in the vicinity of the Great Lakes Basin, at the same time, tapping the large relatively warm moisture source of the Atlantic ocean. With both good thermal and dynamic support major development occurred. On several occasions this past week vigorous storms through the Atlantic Provinces bringing with them high winds, heavy snows and rain.

	Temperature (°C) Precip					o. (mm)
Station		Normal	, E	ų Ę		lormol
	Average	Deporture from Nor	Extreme	Extreme	Total	Deporture from Normal
BRITISH COLUMBIA						
Abbotstord A	5 8	5	11	- 1	22.0	-42.1 -31.6
Blue River Bull Harbour	M	X	- 1P	-10P	M 28.3	-30.8
Burns lake	14	×	14	-104	H	X
Cape Scott Cape St. James	8	5		4	35.7 75.7	35.6
Castlegar A	1 5	6	5	- 2 0	0.0	-21.5
Cranbrook	- 4	R	j	- 1	0.0	-14.2
Dease Lake Estevan Point	- 5 M	16 M	5 12P	-15 3	0.2 M	- 7.9 M
Fort Nelson A	-14	10	- 6	-22	1.8	- 5.8
Fort St. John A Kamloops A	- 4	6	7	-14	12.0	- 6.5
Langara	8	5	10	5	46.6	7.8
Lytton Mackenzie A	2 M	9 X		- 3 -10P	1.8 M	-13.1 X
Mc Innes Island	11	M	М	М	M	M
Penticton A Port Hardy A	7	5	7	- 3	1.4	- 5.9
Prince George A	- 2	8	4	-10	4.1	-13.1
Prince Rupert A Quesnel A	- 2	10	14	- 7	59.9	6.6
Revelstoke A	M	M	1	- 9P	4.2	-23.1
Sandspit Smithers A	7	11	10	- 2	50.6	-12.1
Spring Island	M	M	14P	6	M	M
Stewart A Terrace A	M 3	X 9	6	- 2P	M 27.6	-10.0
Vancouver Int'l A	5	2 2	12	0	7.2	-26.3
Victoria Int'l A Williams Lake A	- i	10	5	- B		-14.4
YUKON	a bra	10	2	-20	0.0	- 4.2
Burwash A Dawson A	- 8	The second second	- 1	-24	4.2	- 1.9
Komakuk Beach A	-16	10	103	-25 -23	0.0	
Mayo A Shingle Point A	- 8 -16	19	- 1		0.0	
Watson Lake A	-14	100000	- 6	-25	5.8	- 3.8
Whitehorse A	- 4	15	3	-15	3.2	- 1.5
NORTHWEST TERRITORIES	S -33	0	-25	-38	1.9	0.3
Alect Baker Lake	-27	O'LL HELD	-15			- 0.7
Broughton Island	-22 -23		-15 -10	-30 -36	5.0	
Byron Bay Cambridge Bay A	-26		-13	-37		- 1.1
Cape Dorset	-22		-14	-36	4.2	X
Cape Dyer A Cape Hooper	-22 -22	2	-13 -17		19.0	
Cape Parry A	-20 -21	100 May 100 Ma	- 8 - 7	-32 -35	2.5	2.0
Cape Young A Chesterfield Inlet	-29	100000	-13	-36	0.1	- 1.4
Clinton Point	-17 -23		- 3 -13	-31 -30	1.0	0.5
Clyde Contwoyto Lake 1980	-26	Donald	-13	-37	М	M
Coppermine	-21	9	- 7 -16	-35 -35		- 1.8
Coral Harbour Dewar Lakes	-26 -25	1	-13	-35	0.0	- 1.2
Ennadat	11	М	-17P	-36		4.0
Eureka Fort Reliance	-34 -23	6		-42 -37	3.8	0.5
Fort Simpson	-14	17	- 2	-25	6.9	3.0
Fort Smith A Frobisher Bay A	-17	1	- 1 - 8	-32	3.0	4.0
Gladman Point A	-28 -28		-17 -16		0.0	0.7
Hall Beach A Hay River A	-14	12	2	-31	2.0	- 4.1
Inuvik A	-17 N		- 3 -15P	-25 -38	1.0	- 3.7
Johny Lind Island Lady Franklin Point	-23	7	- 9	-34	0.0	0.0
Longstaff Bluff Mackar Inlet	-24 -30		-14 -20	-35 -42	0.5	0.2
Mould Bay	-28	7	-18	-39	2.4	1.9
Nicholson Peninsula	-20 -17		- 7 - 9	-33 -21	The state of the s	- 0.4
Norman Wells A Pelly Bay	-30	2	-20	-39	0.0	- 0.8
Pond Inlet Port Burwell	-29 M	X	-18 M	-38 M	0.2 M	X
Resolute A	-29		-21	-35		- 0.7
- ACCELL AN	83		500	ET H	100	Daw

TON DATA FOR THE	Temperature (°C)				Precip. (mm)		
Station.	Average	Departure from Normal		Extreme Minimum	Totol	Departure from Normal	
Sachs Harbour Shepherd Bay A Tuktoyaktuk Yellowknife A	M M -20 -21		-194	-33P -45 -30 -32	0.0 0.0 0.0 3.0	M U.U - U. 9 - 0. 2	
ALBERTA Hant's Calgary Int's A Coronation A Schmonton Int's A Edmonton Mun. A Edmonton Namao A Edson A Fort Chipewyan Fort McMurray A Grande Prairie A High Level A Janper Lethbridge A Medicine Hat A Peace River A Red Deer A Rocky Mountain House Slave Lake A Vermilion A Whitecourt	- 6 - 13 - 7 - 4 - 5 - 6 - 13 - 7 - 14 - 3 - 1 - 8 - 7 - 6 - 8 - 7 - 6 - 8 - 7 - 6 - 8 - 7 - 6 - 7 - 6 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7	4 111 7 8 13 10 12 12 12 10 18 8 10 14 8 7 13 8 10	12 - 2 2	-18 -7 -24 -15 -14 -12 -19 -30P -25 -11 -9 -10 -16 -14 -17 -21 -19 -15	4.0 3.6 7.9 11.6 2.4 M 6.8 5.2 2.7 0.6 0.0 0.0 9.4 3.6	- (1.) - 3.1 5.2 - 0.2 - 1.4 3.3 6.8 - 3.8 - 0.7 - 3.2 - 3.8 - 8.2 - 4.3 - 4.8 4.3 0.3 - 2.5 14.2 10.9 1.3	
SASKATCHEWAN Broadview 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 Rockglen Saskatoon A Swift Current A Uranium City Wynyard Yorkton A	-15 M -23 -13 -18 - 8 -20 -17 -10 -18 -14 -21 -14 M -14 - 5 -22 -14 - 17	X 3 - 1 2 X 4 8 6 8	- 1P - 6 - 1 - 2 0	-35 -33 -44 -26 -35 -16 -38 -36 -24 -33 -26 -35 -27 -14 -30 -16 -36 -32 -30	0.8 8.8 0.2 6.0 0.4 5.8 7.9 0.0 11.2 1.8 4.4 M 5.9 M 4.9 2.0	- 2.9 X	
MANITOBA Bissett Brandon A Churchill A Dauphin A Gillam A Gimit Island Lake Lynn Lake Norway House Pilot Mound Portage la Prairie The Pas A Thompson A Winnipeg	-22 -18 -24 -16 -24 -19 -22 -23 -23 -17 -16 -20 -24 -19	2 2 X - 1 X 5 X 0 1	-10 - 3 0 - 3	-35 -30 -34 -27 -38 -30 -35 -38 -38 -28 -26 -35 -42 -29	1.3 0.6 0.4 0.8 0.5 M 2.8 2.0 1.2 1.0 0.0	- 2.8 - 4.8 X - 5.8 X - 0.9	
ONTARIO Armstrong Atikokan Earlton Geraldton Gore Bay A Kapuskasing Kenora A Kingston Lansdowne London Moosonee Mount Forest Muskoka A North Bay Ottawa Petawawa Pickle Lake Red Lake	M -24 -18 -24 -20 -17 -23	- 1 M	- 8 - 6P -10 - 4 -10 - 6 - 2 -11 - 5 -12 - 6 - 7 - 4 - 6 - 9	-36 -34 -36 -35 -31 -37 -29 -29 -31 -24 -40 -24P -38 -34 -30 -34 -31 -35	1.3 M 0.8	- 7.2 - 8.2 M - 9.1 - 3.1 - 7.0 - 5.7 M - 6.2 1.6 - 9.1 - 2.2 M 1.0 M X - 9.7 - 9.8	

1	19, 1901							
		Te	Temperature (°C) Precip. (mm		
	Station	Average	From Normal	Extreme	Extreme	Total	Departure from Normal	
200	Simeoo	-13			-21	М	М	
	Stoux Lookout A Sudbury A	-21	1	- 9	-33	7.1		
-	Thunder Bay A	-18 -24	- 4	- 6	-28 -39	0.4	- 8.7	
	Toronto Int'l A	-15	- 8	- 4	-26	3.8	- 9.9 - 7.4	
	Trenten A Trout Lake	100		-13	= 14 -32	17.4	- 4.8	
	Wawa A Wiarton A	M		- 6P	-35P	M	X	
	Windsor A	-12			-33 -19	9.1	The state of the s	
R	QUÉBEC							
	Bagotville A Baie Comeau	-17 -14	- 1		-29 -29	28.3	15.6	
	Blanc Bablon	M	14	34	-19	H	H	
	Border Chibougamau	M -23	The second	- 6P	-29 -32	12.5	M	
	Fort Chimo A	-22	1	- 4	-35	26.1	13.3	
	Caspé A Crindstone Island	M	Alata .	4P 4P	THE RESERVE	55.8	-17.9	
	Inoucd jouac Koartak	-27 M	1000	-20 M	-34 M	0.2 M	- 1.7 X	
	La Grande Rivière A	-28	X	-16	-37	3.4	X	
	Maniwaki Matagami A	-20 -25		- 7 - 8	-32 -39	11.8 M	1.6 X	
	Mont-Joli A	-14	- 2	- 4	-21	61.0	40.4	
	Montréal (A int.) Natashquan A	-18	3	- 3	-28 -17	65.6	- 6.7 46.1	
	Nitchecun Port Menier	-24 -10	200	-14	-32 -18	20.0	12.4	
	Poste-de-la-Baleine	-27	- 6	-17	-40	2.3	- 4.8	
	Rivière du Loup	M		- 6 -12P	-29P -24	20.3 M	2.5 M	
	Roberval A Schefferville A	-17	100	- 9 -15	-24	17.9	1.5	
	Sept-Iles	M	М	90	-28	64.6	44.3	
	Sherbrooke A Ste. Agathe des Monts			- 2	-32 -32		- 4.9	
	Val d'Or A	-22	- 5	- 8	-36	10.8	- 4.9	
	NEW BRUNSWICK	0	L.A.	nua	66			
	Charlo A Chatham A		- 4		-29 -25	29.8	14.5	
d	Fredericton A	-13	- 4	5	-28 -21	45.2	23.7	
	Moncton A Saint John A	1000		5	-24	16.0	4.9	
SIL.	NOVA SCOTIA		180	910		17.5		
100	Eddy Point	- 5 - 8	- 3	8	-16 -15	37.7	33.8	
N.	Greenwood A Sable Island		100	10	- 6	37.6	4.7	
	Shearwater A Sydney A	- 5	- 1	7	-14 -18	51.1	15.8 -17.6	
1	Truro	- 5		8	-14P	M 62.3	28.2	
	Yarmouth A		- 2	2	B.F.C.	01.3		
	PRINCE EDWARD ISLAND Charlottetown	- 9	- 2	6	-18	30.5	3.4	
	Summerside	N	M	6P	-19	14.6	- 9.6	
	NEWFOUNDLAND	Y	d.a		VEL			
1	Argentia VTMS	O M	X		-11	37.8	-10.1	
7	Bonavista	- 2	1		-10	24.2	- 1.2 5.5	
1	Burgeo Cartwright	- 1 - 8		5	-18	24.8	4.6	
	Churchill Falls A Comfort Cove	-18 - 4		9	-32 -15		5.0	
	Daniel's Harbour	- 4 - 2 - 4	4	9	- 9		-14.1	
13	Deer Lake Gander Int'l A	- 4	2	8	-14	20.4	- 4.2	
	Goose A Hopedale	-13	2	5 4	-27 -25	19.5	7.9	
	Port aux Basques	M M	M	5	- 9P -16P	13.4	29.9	
1	St. Albans St. Anthony	- 5 - 3	X	2	-13	5.6	X	
	St. John's A St. Lawrence	- 3	1 4	7	-14 -11	50.0	12.9	
	Stephenville A	- 3	2	8	-10 -35		-10.2 -33.2	
10	Wabush Lake	-22	0	- 8	-33	10.2	33.2	
			1			THE STATE OF		