

Cold air invades prairies, storms strike the East.

The Prairies experienced a brief intrusion of cold air during mid week,

An intense storm struck the Maritimes on the 17th. The cities of Fred-

but temperatures rebounded by week's end. Mean weekly temperatures varied from more than 3° below normal in southern Ontario and northern Alberta to more than 13° above normal in Baffin Island.

Ontario marked winter's end with strong winds and locally heavy snowfalls. Winds gusting to 75 km/h created blizzard-like conditions across the province. ericton and St. John were shut down by snowfalls. All schools, industry and commerce were shut down in central and southern New Brunswick. Most marine transportation was disrupted.

The highest temperature, 18°, occurred at Abbotsford, British Columbia and the lowest, -44°, at Eureka, Northwest Territories. The greatest weekly precipitation, 62.4 mm, occurred at Gaspé, Québec.

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

YUKON AND NORTHWEST TERRITORIES

Cold air moved southward from the western Arctic reaching the Great Slave Lake area pushing weekly mean temperatures more than 3° below normal. Eureka recorded the lowest weekly temperature, -44°, on March 17th. Warm air moving in from the Atlantic Ocean pushed mean temperatures over 12° above normal in southern Baffin Island and in some areas of the Kewatin District. The highest weekly temperature, 11°, was recorded at Burwash on March 19th.

Contwoyto Lake recorded the most precipitation for the week with 14.3 mm. Snow depths in the Yukon continue to abate. Central points such as Mayo and Dawson report only 5 cm and 11 cm respectively. Southcentral and southeastern areas have depths still in the 30 cm to 50 cm range.

BRITISH COLUMBIA

Cool weather returned to northern areas during the middle of the week while southern areas continued to enjoy mild weather. Weekly mean temperatures varied from near normal along eastern border areas to over 3° above normal along northern coastal areas. The mercury rose to 18° at Abbotsford on March 19th and fell to -21° at Fort Nelson on March 21st.

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Only Castlegar and Cranbrook reported above normal weekly precipitation totals. The highest recorded total, 50.0 mm, was at Cape Scott.

In the south crop growth is about two weeks ahead of normal. There is still some skiing in the mountains. Due to the cold temperatures in the north, winter roads were open to night traffic and all drilling rigs will probably make it out. Snowfalls in the north appear to be well below normal so far this month. Only 1 cm of snow was received at Fort Nelson from March 1st to 23rd as compared to the normal 27.4 cm.

PRAIRIE PROVINCES

Cool air surged southwards over the Prairies during mid week pushing



2



temperatures to below normal values. By week's end temperatures rebounded to above normal values. Weekly mean temperatures varied from over 6° above normal in northeastern Manitoba to more than 4° below normal in northern Alberta. The mercury varied from 12° at Lethbridge and Estevan on March 22nd and 23rd respectively to -29° at Prince Albert and Cree Lake on the same respective days.

Many areas of Manitoba and Saskatchewan received 6 cm to 8 cm of new snow on March 20th. La Ronge recorded 16.0 mm of precipitation during the week. and locally heavy snowshowers. Winds gusting to 75 km/h on the 17th created blizzard-like conditions across the province; highways were closed in the Tweed area. Despite the winter conditions, weekly precipitation totals exceeded normal at only two stations. The last days of winter were distinguished by a temperature regime such that the highest temperatures were in the north of the province; on March 19th Moosonee and Earlton recorded the highest readings in the province (4°) . The arrival of spring was announced by an increase in temperature at all stations. Mean temperatures were above normal in all

The cooler temperatures reduced snowmelt which should help in keeping the forest snowcover; however, snowcover is well below normal. The Alberta forest service is gearing up for an early fire season and will man towers during the first part of April. ONTARIO

The end of winter was marked by below normal temperatures, strong winds

regions with the exception of southern Ontario. The mercury reached 9° on March 22nd at Muskoka and on the next day at Windsor. It fell to -28° at Kapuskasing on the 17th.

Despite the recent snow, significant snow cover is restricted to north of a line from Petawawa to Sault Ste. Marie. At Toronto the winter snowfall totaled only 94 cm, 46 cm less than normal.

QUÉBEC

With the exception of the southern extremeties of the province, mean temperatures were above normal exceeding 10° above normal in the north of the province. The mercury oscillated between a maximum of 9° at Montréal on the 23rd and a mimimum of -29° at Nitchequon on the 17th.

The week was marked by a storm on the 17th and 18th. It produced winds of 120 km/h at Baie-Comeau. Precipitation fell mainly as rain on the northern coast but snowfall exceeded 30 cm in the Matapédia region where blowing snow caused road closures.

Maple syrup production seems good in the Trois-Rivières and Sherbrooke regions.

ATLANTIC PROVINCES

A very intense storm struck the Maritimes on St. Patrick's day (March 17th). The cities of Fredericton and St. John were virtually shut down. Fredericton received 46.4 cm of snow during the course of the storms. St. John received only 13 cm, but combined continuing civic workers with the strike crippled the city. Charlo received 24 cm of snow in 6 hours which afterwards turned to rain.

All schools, industry and commerce were shut down in central and southern New Brunswick during the storm. Most Atlantic marine transportation was interrupted. Winds caused a 24 hour power outage in the Yarmouth area and disrupted telephone service. Newfoundland managed to escape the brunt of the storm.

Some maximum temperature records were set during the storm's passage. The highest temperature of the week, 11°, was recorded at Stephenville on March 17th and the lowest, -23°, was recorded at Churchill Falls on the same day.

The Gulf is now almost all open water as are the areas east of Newfoundland. There is very little ice as far north as Cartwright. Ice conditions are at least a month ahead of normal.

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Assistant Editor: Technical Staff: Graphics and Layout:

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Terry Mullane, (Ice Forecasting Central) H.E. Wahl, (Whitehorse) (Western Region) Bill Prusak, (Central Region) Fred Luciow, (Ontario Region) the recent snow, signifi-Steve Hardaker during the Elevente of April. Jacques Miron, (Quebec Region) J.F. Amirault, (Atlantic Region) Staff of Prince George, Kamloops, Castlegar, Fort Selson, Penticton and Kelowna weather office (Pacific Region)

> Telephone Inquiries (416) 667-4711/4906 below normal temperatures, strong winds



STATION	MONTHLY CUMULATIVE TOTAL	MONTHLY DIFF. FROM 1941-70 NORMAL	SEASONAL TOTAL	SEASONAL DIFF. FROM 1941-70 NORMAL	SEASONAL PERCENT OF NORMAL
Resolute	983.0	-68.0	9044.0	-359.0	96
Inuvik	794.0	-126.0	7341.0	-639.0	92
Whitehorse	424.5	-140.5	5127.5	-466.5	92
Vancouver	224.0	-40.0	2164.0	-199.0	92
Edmonton Mun	373.0	-152.0	3934.0	-701.0	85
Calgary	358.0	-130.0	3631.0	-653.0	85
Regina	398.5	-196.5	4308.5	-617.5	87
Winnipeg	442.0	-148.0	4563.5	-352.5	93
Thunder Bay	476.0	-63.0	4551.0	-84.0	98
Windsor	379.5	4.5	3153.0	173.0	106
Toronto	438.5	14.5	3568.5	232.5	107
Ottawa	448.5	-26.5	4086.5	188.5	105
Montreal	443.5	-8.5	4052.0	340.0	109
Quebec	468.0	-26.0	4430.0	297.0	107
Saint John, N.B.	424.5	-33.5	3880.5	159.5	104
Halifax	381.0	-29.0	3340.6	219.0	107
Charlottetown	402.0	-59.0	3681.5	142.5	104
St. John's, Nfld.	381.0	-56.0	3591.0	107.0	103 👘

Within 1.2° of Mormal Within 1.1° of Mormal 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:

FROM 1941-70

Station	0.859-0	Current Temperature Anomaly Forecast
Whitehorse	Below Normal	From 0.9° to 3.1° below Normal
Victoria	Below Normal	From 0.3° to 0.9° below Normal
Vancouver	Below Normal	From 0.3° to 1.0° below Normal
Edmonton	Above Normal	From 0.9° to 3.2° above Normal
Regina	Near Normal	Within 1.0° of Normal
Winnipeg	Above Normal	From 0.9° to 3.1° above Normal
Thunder Bay	Below Normal	From 0.7° to 2.2° below Normal

6.0686

3591:0

Toronto Ottawa Montreal Quebec Fredericton Halifax Charlottetown St. John's Goose Bay Frobisher Bay Inuvik Near Normal Below Normal Near Normal Within 0.6° of Normal From 0.6° to 2.1° below Normal From 0.6° to 1.9° below Normal From 0.6° to 1.9° below Normal From 0.6° to 1.9° below Normal From 0.4° to 1.5° below Normal From 0.6° to 1.9° below Normal From 0.5° to 1.6° below Normal From 0.8° to 2.8° below Normal Within 1.2° of Normal From 1.1 to 3.7° below Normal

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

Atmospheric Circulation

7





A 50 KPa closed low was the predominant feature affecting the eastern half of the country. Mean height anomalies were 20 dam below normal over the lower great lakes and eastern sea board. As is usually the case in this type of situation, temperatures were below normal and weather conditions were unsettled and windy. Heavy snow squalls were reported in a northwesterly flow to the lea of the great lakes.

The Atlantic provinces were once again battered by strong cyclonic storms which developed off the American east coast. Feeding on an abundant moisture supply they tracked northeastwards across the Maritimes and Newfoundland. Heaviest precipitation fell on New Brunswick, mostly in the form of heavy snow. Some communities received close to 50 cm. Newfoundland and Nova Scotia escaped the bulk of the snow but



7-day Mean 50 kPa Height Anomally (in 5 dam intervals) March 16 to 22, 1981

not the high winds resulting from the intense circulation around this 96.0 KPa low. Heaviest precipitation amounts were reported in areas with a direct on-shore flow.

The nearly stationary 50 KPa ridge situated over western Canada sharpened its amplitude and shifted slightly more to the west. This permitted a strong northwesterly flow to cross the prairie provinces. Even though over all weather conditions remained fair, temperatures dropped significantly in time for the weekend as a dome of cold Arctic air

was tapped and penetrated southwards.

Towards the end of the period the base of the major upper ridge began to erode and flatten, possibly signifying a breakdown and return to a relatively more west-east 50 KPa circulation. This would allow milder air to penetrate eastward and encompass most of Canada.

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A weekly map of low pressure center trajectories is introduced this week in Climatic Perspectives. The purpose of this map is to illustrate the trajectory, the number, the frequency and the daily positions of the medium and large scale low pressure centers traversing North America during the week.

A long smoothed arrow will delineate the trajectory of each depression. The positions of the low prssure When a center disappears momentarily in the vicinity of geographical features, such as mountain ranges or large bodies of water, or when one depression is absorbed by another one, the trajectory will then be drawn in dashes.

Due to the seasonal migration of trajectories, several base maps will be used, either leaving out the southern or northern portion of the continent, or covering a larger portion of the Atlantic Ocean during the hurricane season. However, all maps will be drawn to the same scale. On this week's map, the northern Manitoba trajectory represents the displacement of a new depression formed on the 22nd and still distinct at the end of the week. In northern Quebec, the trajectory illustrates an old depression which disappeared after March 17th. We can see a short lived depression in northern British Columbia and northern Alberta (March 18th to the

centres at 12 GMT daily will be indicated by a perpendicular bar with the exception of the middle of the week, Friday, which will be marked by an X; this will allow an easy comparison of the relative position of each depression. The formation date of a depression will be labeled only if this center appeared during this week. Similarly, a date will accompany the tip of the arrowhead at the end of the trajectory only when this is the last 12 GMT position before its disappearance.



TEMPERATURE AND PRECIPITATION DATA FOR THE WEEK ENDING 0600 G.M.T. MARCH 24, 1981

	Temperature (°C)			Precip. (mm	ecip. (mm)			Temperature (°C) Precip. (mm)				Temperature (°C)				Precip. (mm)	
Station	Average Departure	from Normal Extreme Moximum	Extreme Minimum	Total Departure from Normal	Station	Average Departure	Extreme Maximum	Extreme Minimum	Total	Departure from Normal	Station'	Averoge	Departure from Normal	Extreme Moximum	Extreme Minimum	Total .	Departure from Normal
BRITISH COLUMBIA Abbotsford	9	3 18	- 1	27.3 - 7.6	Sachs Harbour Shepherd Bay	-26 -22 1	3 -17 0 -10	-33	0.0	- 0.4	Simcoe Sioux Lookout	- 2 - 6	- 3	8 5 7	-13 -16 -23	8.8 3.4	- 7.9
Alert Bay Blue River	8 M	3 16 X 7	0	21.3 -10.8 M X	Yellowknife	-19 -	1 -10	-29	2.2	- 0.7	Thunder Bay	- 3	2	8	-13	0.2	- 9.2
Bull Harbour	7	2 16	- 1	23.4 -18.6		Cart S.					Timmins	- 5	- 4	8	-26	3.5	- 9.2
Burns Lake	M	X 11. 2 15	P - 9P	50.0 -22.2	Banff	м	M 8P	-13	M	M	Trenton	- 4	- 4	7	-16	9.3	- 6.6
Cape St James	9	4 15	5	14.4 -22.8	Calgary	- 1	1 12	-13	1.2	- 2.6	Trout Lake	- 6	6 X	67	-18	4.6	1./ X
Castlegar	5	1 14 2 16	- 5	16.4 3.7	Coronation	- 6 -	1 6	-24	10.0	5.1	Wiarton	- 4	- 2	7	-19	9.8	- 7.6
Cranbrook	3	1 11	- 7	11.3 8.4	Edmonton Intl	- 4	2 7	-19	2.2	- 2.3	Windsor	-1	- 3	9	- 8	1.1	-15.6
Dease Lake	- 4	2 10	-14	0.2 - 4.3	Edmonton Mun Edmonton Namao	- 4	0 6	-17	1.5	- 3.9	QUÉBEC .						
Estevan Point Fort Nelson	- 7	2 9	-21	0.2 - 6.8	Edson	- 4	0 8	-17	1.0	- 4.6	Bagotville Bada Campan	- 5	0	7	-24	26.5	18.0
Fort St John	- 5	1 8	-17	0.0 - 6.8	Fort Chipewyan	-17 -	5 - 2 2 6	-28	0.4	- 5.2	Blanc Sablon	0	7	4	- 6	6.4	-25.7
Langara	7	3 12	3	1.2 -33.7	Grande Prairie	- 6	0 5	-19	0.3	- 4.7	Border	M	M	M	-15P	M	M
Lytton	8	1 17	- 2	3.8 - 2.3	High Level	-12 -	4 4	-25	0.4	- 1.8	Fort Chimo	- 6	11	3	-16	0.6	- 3.4
Mackenzie McInnes Island	M 9	X 7 3 16	-11P	27.4 -19.4	Lethbridge	- i -	1 12	-11	7.2	1.9	Gaspé	0	X	4	- 8	62.4	X
Penticton	5	1 16	- 4	0.6 - 3.0	Medicine Hat	- 1 -		-15	6.8	- 4.2	Inoucd touac	- 8	11	1	-19	0.8	- 2.8
Port Hardy	6	1 14	- 2	0.6 - 9.2	Red Deer	- 3 -	2 7	-16	6.8	3.7	Koartak	- 7	X	0	-15	5.1	X
Prince Rupert	6	3 15	- 3	14.0 -32.3	Rocky Mountain House	- 3 -	1 7	-16	2.2	- 1.7	La Grande Rivière Maniwaki	- 3		8	-14	8.2	- 1.5
Quesnel	2	1 11	- 7	0.8 - 5.9	Vermilion	- 6	1 4	-19	4.4	- 0.1	Matagami	- 3	X	7	-22	8.3	21 O
Sandspit	7	2 11	- 1	20.6 - 7.3	Whitecourt	- 5 -	1 6	-21	2.6	- 3.0	Mont-Joli Montréal	- 3	- 2	9	-14	5.6	- 9.7
Smithers	3	3 13	- 7	1.6 - 6.2	SASKATCHEWAN	1.00	120		S.31	25	Natashquan	0	6	5	- 9	25.2	12.3
Spring Island Stewart	M	X 14	- 5P	2.3 X	Broadview	- 3	5 10	-15	1.6	- 0.8	Nitchecun Port Menier	- 0	6	4	-13	51.9	44.5
Terrace	7	4 15	- 3	3.4 -14.8	Buffalo Narrows	-11 -	x 0	-29	14.8	x	Poste-de-la-Baleine	- 4	11	7	-22	4.3	- 1.4
Vancouver	9	2 17	0	5.2 -10.8	Estevan	- 1	3 12	-14	0.6	- 3.7	Québec	- 4 M	- 1 M	4P	-10	19.0 M	M
Williams Lake	2	2 11	- 8	0.0 - 4.4	Hudson Bay	- 3	4 8	-12	5.2	3.6	Roberval	- 3	3	7	-23	14.9	7.4
VIRON		Printer Madericanadas			La Ronge	-11 -	2 0	-23	16.0	13.8	Schefferville	- 7	7	2	-23	0.3	41.8
Burwash	- 4	7 11	-21	1.1 - 1.3	Meadow Lake	- 7	X 5	-20	6.0	1.0	Sherbrooke	- 6	- 3	8	-22	9.1	- 8.2
Dawson Kanaka Basak	- 5	8 6	-19	0.8 - 1.2	Nipawin	- 6	X 3	-17	2.6	X	Ste Agathe des Monts	- 6	- 1	7	-25	10.8	-23.3
Mayo	4	7 4	-14	0.0 - 2.3	North Battleford	- 7	0 5	-20	4.4	0.2	val d'or						
Shingle Point	-22	3 - 6 2 9	-32	0.0 - 0.4	Regina	- 4	3 10	-19	2.6	- 2.1	NEW BRUNSWICK	- 1	4	6	-14	85.3	56.3
Whitehorse	- 2	5 6	- 9	0.8 - 2.7	Rockglen	M	X 11F	-14	10.3	6.8	Chatham	- i	2	7	- 9	39.6	24.6
		19 P			Swift Current	- 2	1 11	-19	2.6	- 0.8	Fredericton	- 2	0	9	- 9	45.4	21.8
Alert	-27 -	7 -17	- 32	0.0 - 1.5	Uranium City	-15	1 - 4	-28	10.1	2.3	Saint John	- 3	- 1	6	-13	53.9	33.8
Baker Lake	-15	12 - 5	-33	4.2 2.3	Yorkton	- 3	4 10	-15	0.6	- 4.5	NOUL COTTA				12		
Byron Bay	-28	3 -18	-37	1.0 0.4	Anatrale The						Eddy Point	0	x	6	- 5	22.8	X
Cambridge Bay	-27	2 -10	-41	1.7 0.1	Bissett	- 4	2 8	-15	2.2	- 2.7	Greenwood	- 2 M	- 1 M	9 5P	-12 - 1P	43.8 M	30.3 M
Cape Dorset Cape Dver	-11	13 - 2	-21	1.8 - 2.3	Brandon	- 2	5 10	-11	0.0	- 3.0	Sable Island	- ï	0	7	- 6	31.5	9.9
Cape Hooper	-18	7 -12	-25	1.0 0.4	Dauphin	- 4	3 7	-17	0.4	- 4.2	Sydney	- 0	2	7	- 7	40.7	20.6
Cape Parry Cape Young	-25	1 -19	-38	1.0 0.9	Gillam	-10	X 1	-26	6.2	- 4.0	Yarmouth	- 2	- 2	5	- 8	30.8	12.4
Chesterfield Inlet	M	MM	M	MN	Gimli Island Lake	M	x 21	-16	M	X	DELVOR POLINE TOLANT	08		11.	0e		
Clinton Point Clyde	-20	5 -12	-32	2.2 0.9	Lynn Lake	-10	5 - 2 X 1	-21	3.0	- 0.3 X	Charlottetown	0	2	7	- 6	23.5	6.8
Contwoyto Lake	-22	7 -10	-29	14.3 13.0	Pilot Mound	- 2	5 7	-11	0.0	- 3.0	Summerside	0	2	8	- 5	13.2	- 2.8
Coppermine Coral Harbour	-13	11 - 7	-20	1.2 - 1.0	Portage la Prairie	- 2	3 8	-11	0.0	- 3.5	NEWFOUNDLAND	25	1	8		00.0	
Dewar Lakes	-15	13 -10	-21	10.0 9.9	The Pas Thompson	- 9	4 - 1	-25	2.9	- 0.2	Argentia	2	X	10	- 2	25.8	0.6
Ennadai Eureka	-38 -	- 3 - 34	-44	0.0 - 0.	Winnipeg	- 2	4 10	-11	0.0	- 4.2	Bonavista	- i	2	1	- 4	33.8	23.3
Fort Reliance	-19	3 - 7	-32	9.4 7.2	ONTABIO						Burgeo	2	4	9	- 4	24.8	- 4.3
Fort Simpson	-16	3 - 3	-29	3.1 - 1.1	Armstrong	- 4	5 6	-14	4.1	- 2.4	Cartwright Churchill Falls	- 6	7	3	-23	0.2	-18.5
Frobisher Bay	- 8	14 1	-22	0.6 - 2.	Atikokan	4	2 7	-24	3.6	- 5.9	Comfort Cove	- 1	2	5	- 7	39.4	-11.8
Gladman Point	-21	M -10 8 -12	-29	0.0 - 2.0	Geraldton	- 5	5 6	-15	3.6	- 4.9	Deer Lake	- i	3	3	-12	37.6	18.7
Hay River	-19 -	- 3 - 8	-29	3.9 - 0.2	Gore Bay Kapuskasing	- 5	3 7	-28	11.7	- 1.7	Gander	- 1	2	4	- 9	3.2	-11.3
Inuvik Jenny Lind Island	-23 M	M - 2	P -39	4.2 3.1	Kenora	- 4	1 5	-14	0.0	- 6.3	Hopedale	- 3	8	2	- 8	6.8	- 6.9
Lady Franklin Point	-28	1 -17	-36	4.0 3.1	Kingston	- 5	6 7	-16	4.2	- 3.1	Port aux Basques	1	4 M	7 7 P	- 9	21.6	-11.2
Longstaff Bluff Mackar Inlet	-15	12 - 7	-23	0.0 - 0.	London	- 4 -	4 7	-17	10.0	- 7.3	St Albans St Anthony	- 2	X	1	- 5	4.4	21 S
Mould Bay	-33	- 2 -23	-42	0.0 - 0.	Moosonee Mount Forest	- 6 -	4 5	-17	13.2	- 7.5	St John's	0	3	5	- 4	47.5	- 1.6
Nicholson Peninsula	-25	2 -19	-26	2.0 - 0.	Muskoka	- 5 -	2 9	-22	6.3	- 9.3	Stephenville	2	5	11	- 4	13.7	- 0.1
Pelly Bay	-19	12 - 4	-33	4.0 3.	North Bay Ottawa	- 4 -	1 8	-13	4.8	- 8.2	Wabush Lake	M	M	IP	- 99	M	, n
Pond Inlet Port Burwell	-26 M	X	1 M	M	Petawawa	- 4	X 8	-15	11.2	- 5.7	ra (Marsh Li		1 20				
Resolute	-27	3 -1	-36	0.6 - 0.	Red Lake	- 7	0 5	-18	3.3	- 0.2	Contraction of the				1		
											- not evailable at or		time				
P - ex!	treme	value	based	on less than	7 days X = no non	rmal due	to sl	nort p	eriod	M	- HOL AVAILADIC at P					1	

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