



Climatic Perspectives

Getting back to "normal"?

At the beginning of the week most of eastern Canada was still digging out from the aftermath of the "storm of the century." Uncleared snow slowed road transportation, and the cold damaged emerging crops in the American south driving up the price of some commodities.

The aftermath in the Maritimes - no reprieve.

People in some areas continued to dig out from the past weekends storm, but there were other lingering effects. A fine layer of salt accumulated on power line insulators close to the ocean. This in combination with mild, damp weather on the 17th, caused power outages from Bridgewater to Halifax. Pack ice drifted inshore and jammed harbours forcing Nova Scotia communities to look for alternative transportation. Ice tied up the Dartmouth-Halifax ferry service.

Temperatures seasawed wildly this week in the Maritimes. The 5th major storm this month arrived Thursday. It began as a cold front, moving across New Brunswick, Wednesday evening, and developed as an intense storm south of Nova Scotia on the 18th. Temperatures had made it above freezing over these provinces early in the week, then parts of northern New Brunswick experienced a temperature drop of 25°C in 18 hours. The intensely cold air, which moved into the region, set a number of low temperature records Thursday and Friday. Snowfall from this system ranged from a few centimetres in northern New Brunswick to near 20 cm in the south. Accumulations over Nova Scotia ranged from 6 cm at Yarmouth to 43 cm at Sydney. So far, the Halifax-Dartmouth received 96 cm of snow, which is three times the monthly

normal, in fact, more than entire 1990-91 snowfall. From the same storm, Gander, Newfoundland accumulated a record snowfall of 58.6 cm. A ridge of high pressure brought sunny conditions and a return to milder conditions for the weekend, and the official start of spring.

Is it spring yet? - not everywhere.

By the calendar, spring has arrived. It is in full bloom in Victoria on trees and shrubs, and the daffodils are popping up everywhere. Keen gardeners are planting peas in Kelowna, but budding in local orchards is expected to be retarded due to past month's cool conditions. There was some much-needed precipitation this week over most of southern B.C. and the mountains.

Elsewhere, it was not so springlike. Significant snowfalls were reported through the mountain parks on the 15th. Amounts ranged from 20 cm at Jasper to 65 cm in Waterton Park. An Arctic high pressure area building southwards cleared skies by early Tuesday, allowing temperatures to drop well-below seasonal values. Record-low temperatures were set at Rocky Mountain House, -29.0°C, and Jasper, -26.1°C. As spring arrived Saturday morning so too did maximum temperatures in the double digits over most of Alberta.

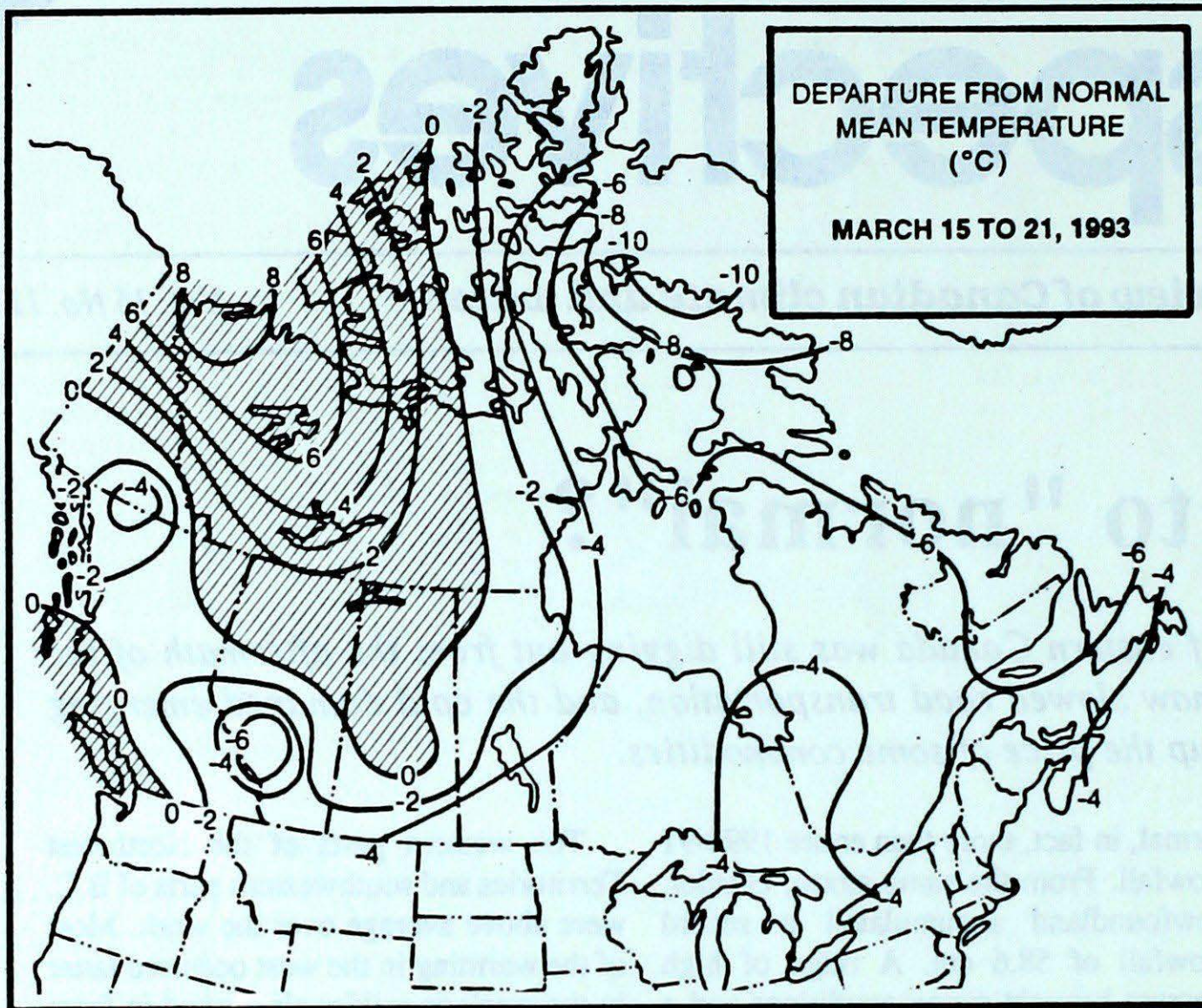
The western parts of the Northwest Territories and southwestern parts of B.C. were above average over the week. Most of the warming in the west occurred latter in the week as milder air pushed in from the Pacific, as a more westerly flow of air began to establish itself over the continent. Inuvik registered 9.3°C above normal.

Further east, Manitoba, Ontario and Quebec were, for the most part, still far from spring like. Weekly mean temperatures averaged 4 to 6 degrees below normal. There was still snow on the ground almost everywhere, a welcome boon to the ski industry and snowmobilers.

Across the Arctic, numerous record-low temperatures were reported in the minus thirties and forties in the past week. For example, Clyde froze at -49.9°C on the 16th, breaking an old record of -42.2°C set in 1966. Again, frequent blizzards were reported. Spring's greenery does not usually appear there until after the snowmelt in June.

Looking ahead...

For the week of March 29, a broad ridge of high pressure is expected to drift eastwards across eastern Canada, giving generally above-normal temperatures from coast to coast, with the exception of Labrador and Newfoundland. Flooding can be expected in snow covered regions east of Manitoba.



**Weekly normal
temperatures (°C)**

	max.	min.
Whitehorse A	-2.0	-13.8
Iqaluit A	-17.8	-27.3
Yellowknife A	-13.5	-25.4
Vancouver Int'l A	9.9	2.7
Victoria Int'l A	10.1	2.2
Calgary Int'l A	3.5	-7.9
Edmonton Int'l A	0.7	-10.4
Regina A	-1.0	-11.6
Saskatoon A	-1.7	-12.3
Winnipeg Int'l A	-2.0	-12.5
Ottawa Int'l A	1.5	-6.7
Toronto (Pearson Int'l A)	3.4	-4.9
Montréal Int'l A	1.8	-6.2
Québec A	0.4	-8.8
Fredericton A	2.7	-7.6
Saint John A	2.0	-7.2
Halifax (Shearwater)	2.7	-4.8
Charlottetown A	0.5	-6.7
Goose A	-2.9	-14.0
St John's A	0.6	-5.9

Weekly temperature and precipitation extremes

	Maximum temperature (°C)	Minimum temperature (°C)	Heaviest precipitation (mm)
British Columbia	Lytton 16	Dease Lake -30	Port Alberni A 93
Yukon Territory	Whitehorse A 4	Watson Lake A -33	Shingle Point A 8
Northwest Territories	Fort Smith A 8	Hall Beach A -48	Alert 6
Alberta	Fort McMurray A 14	Edson A -29	Lethbridge A 10
Saskatchewan	Buffalo Narrows A 11	Uranium City A -37	Moose Jaw A 6
Manitoba	The Pas A 7	Thompson A -37	Norway House A 6
Ontario	Port Weller (aut) 5	Petawawa A -31	Warton A 29
Quebec	Gaspé A 7	La Grande IV A -41	Val d'Or A 14
New Brunswick	Moncton A 8	Fredericton A -25	Saint John A 32
Nova Scotia	Greenwood A 10	Amherst (aut) -20	Sydney A 59
Prince Edward Island	Charlottetown A 7	Charlottetown A -17	Charlottetown A 35
Newfoundland	St John's A 10	Wabush Lake A -33	Gander Int'l A 68

Across The Country...

Highest Mean Temperature	Vancouver Int'l A (B.C.) 7
Lowest Mean Temperature	Eureka (N.W.T.) -40

93/03/15-93/03/21

CLIMATIC PERSPECTIVES
VOLUME 15

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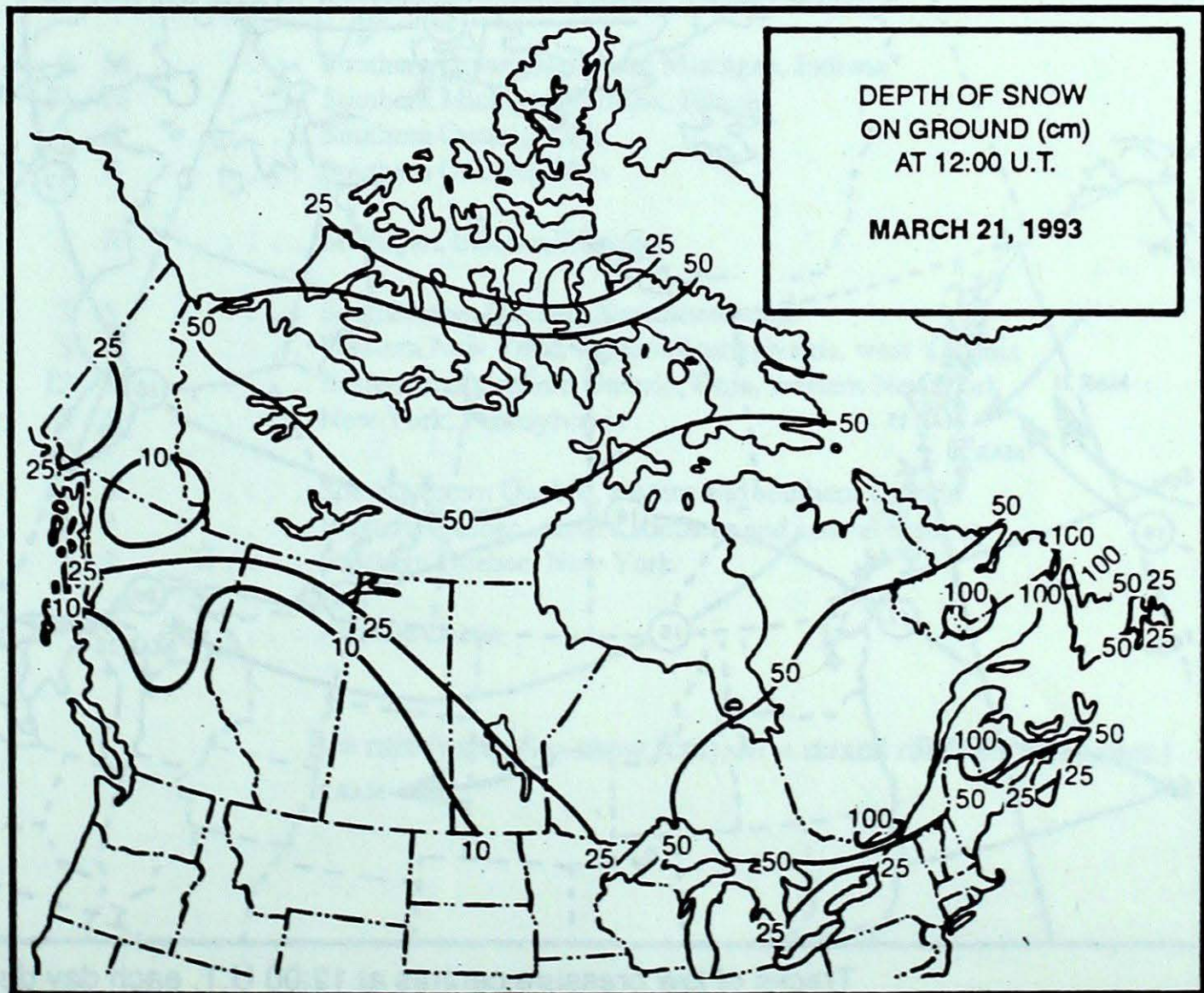
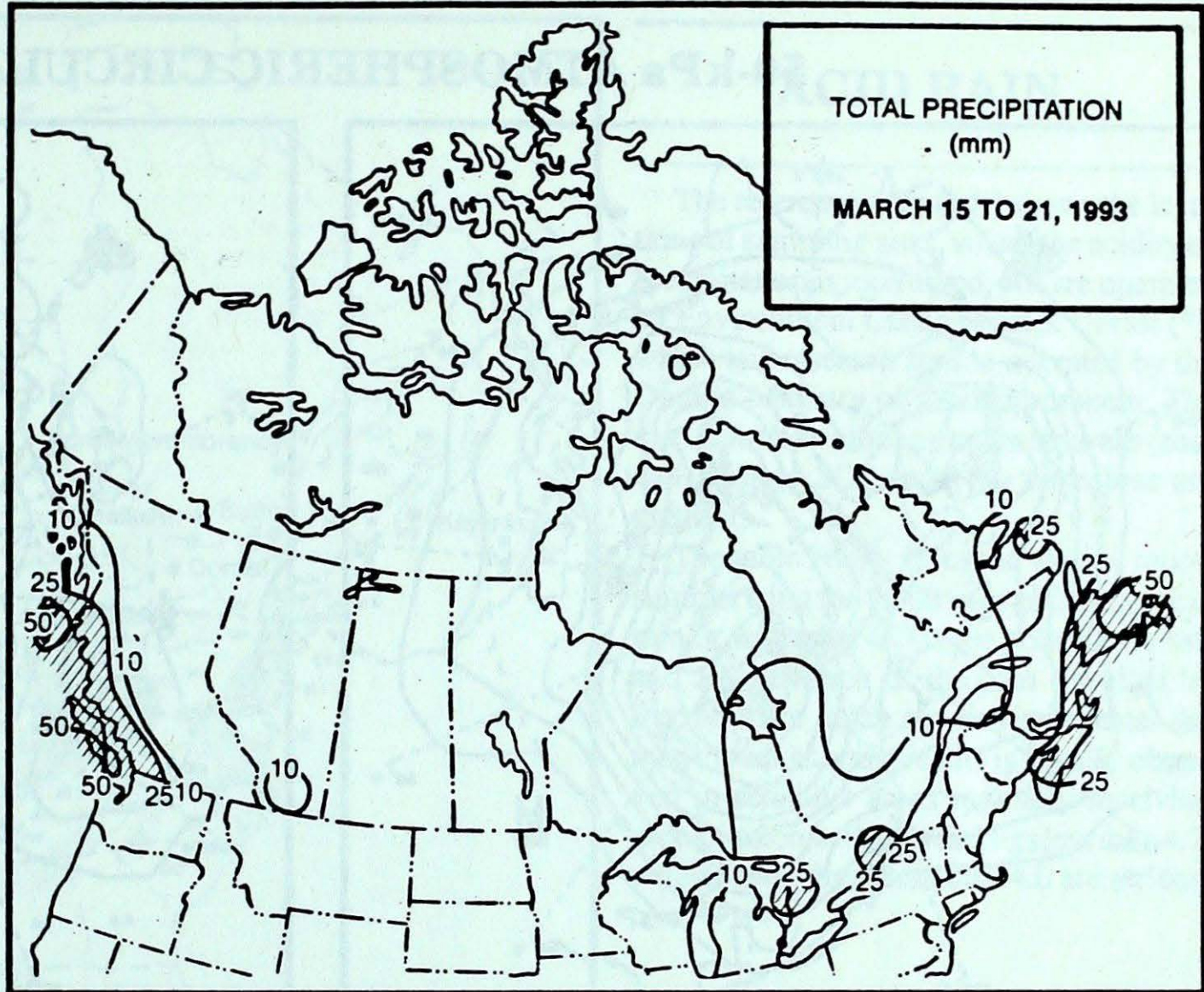
ISBN 0225-5707 UDC 551.506.1(71)

Climatic Perspectives is a weekly publication (disponible aussi en français) of the Canadian Climate Centre, Atmospheric Environment Service, 4905 Dufferin St., Downsview, Ontario, Canada M3H 5T4

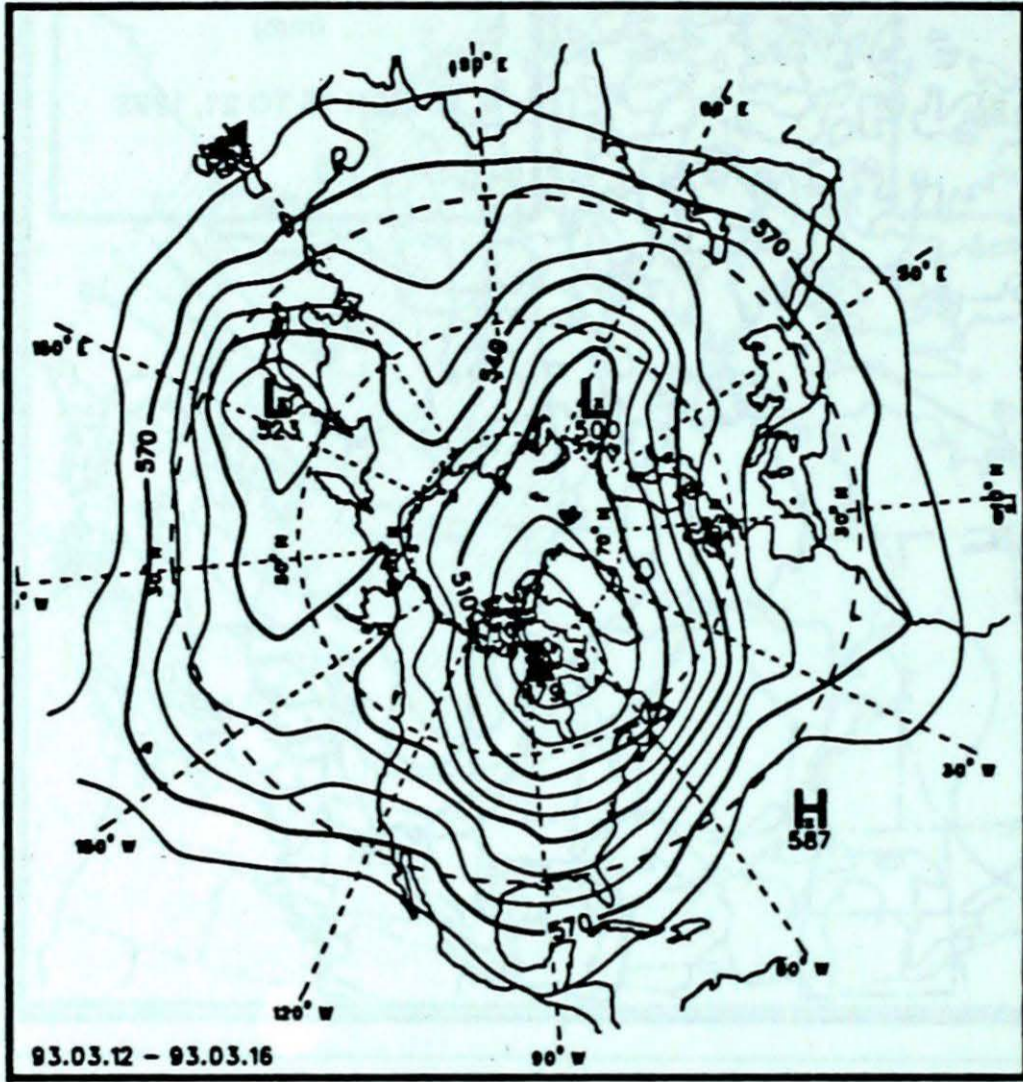
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The purpose of the publication is to make topical information available to the public concerning the Canadian Climate and its socio-economic impact.

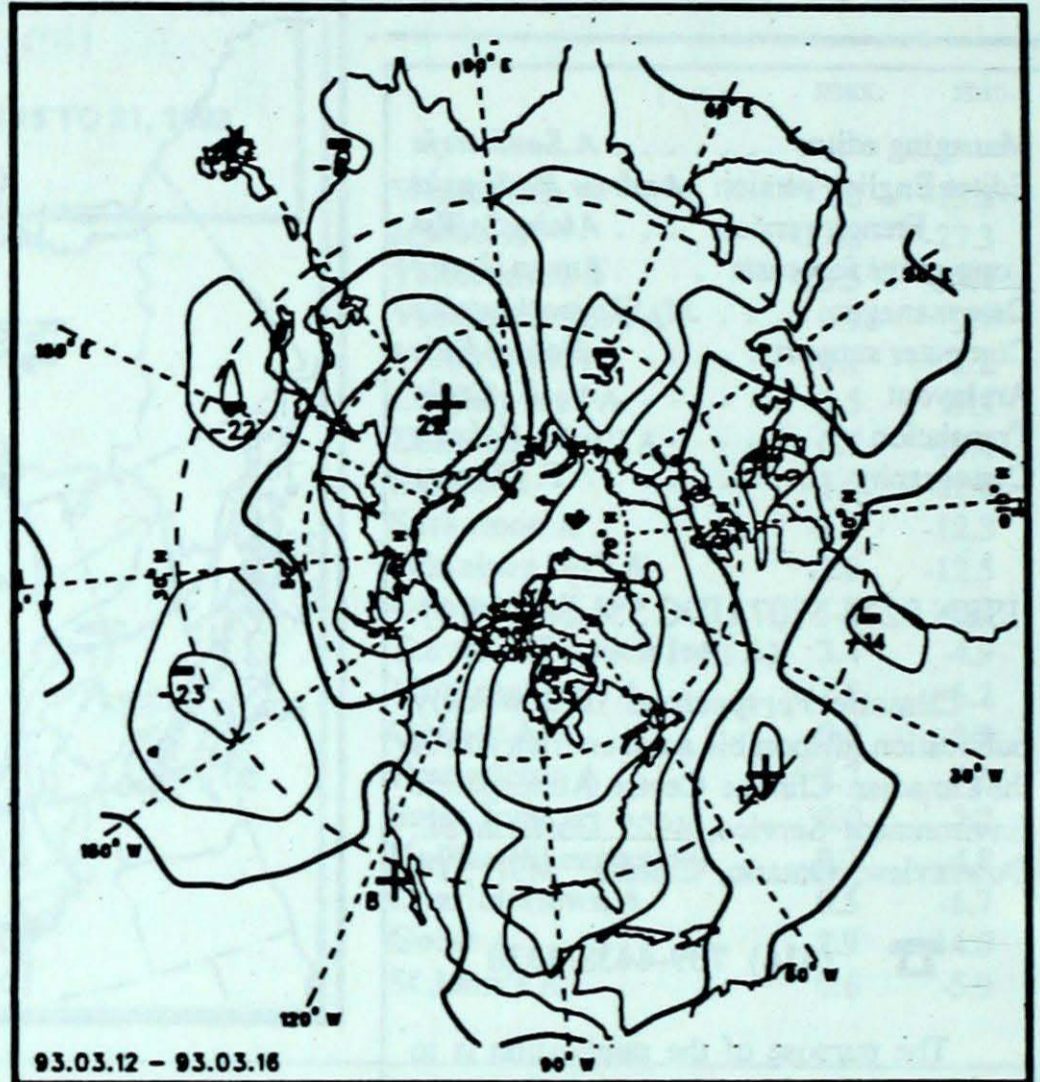
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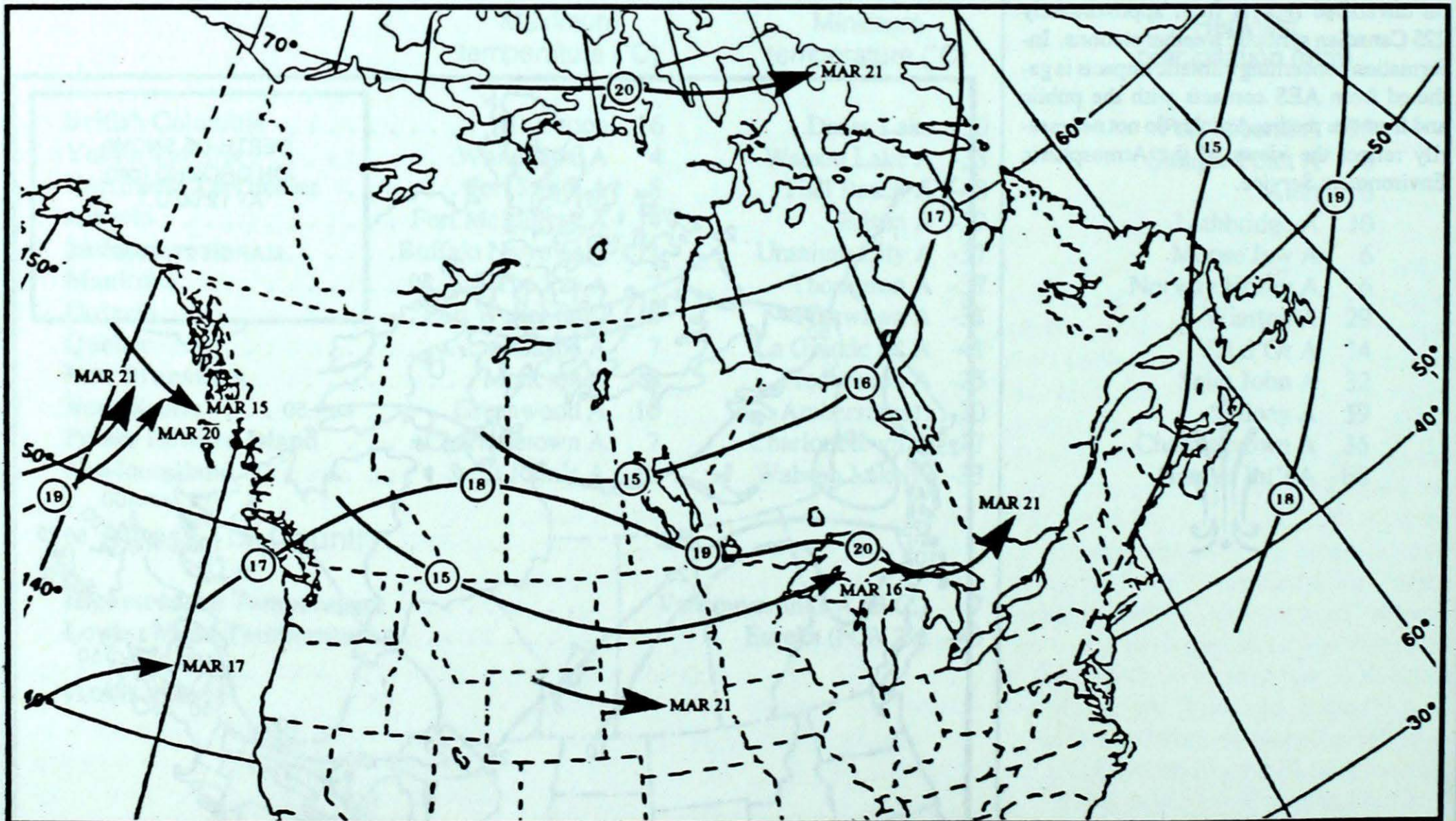
50-kPa ATMOSPHERIC CIRCULATION



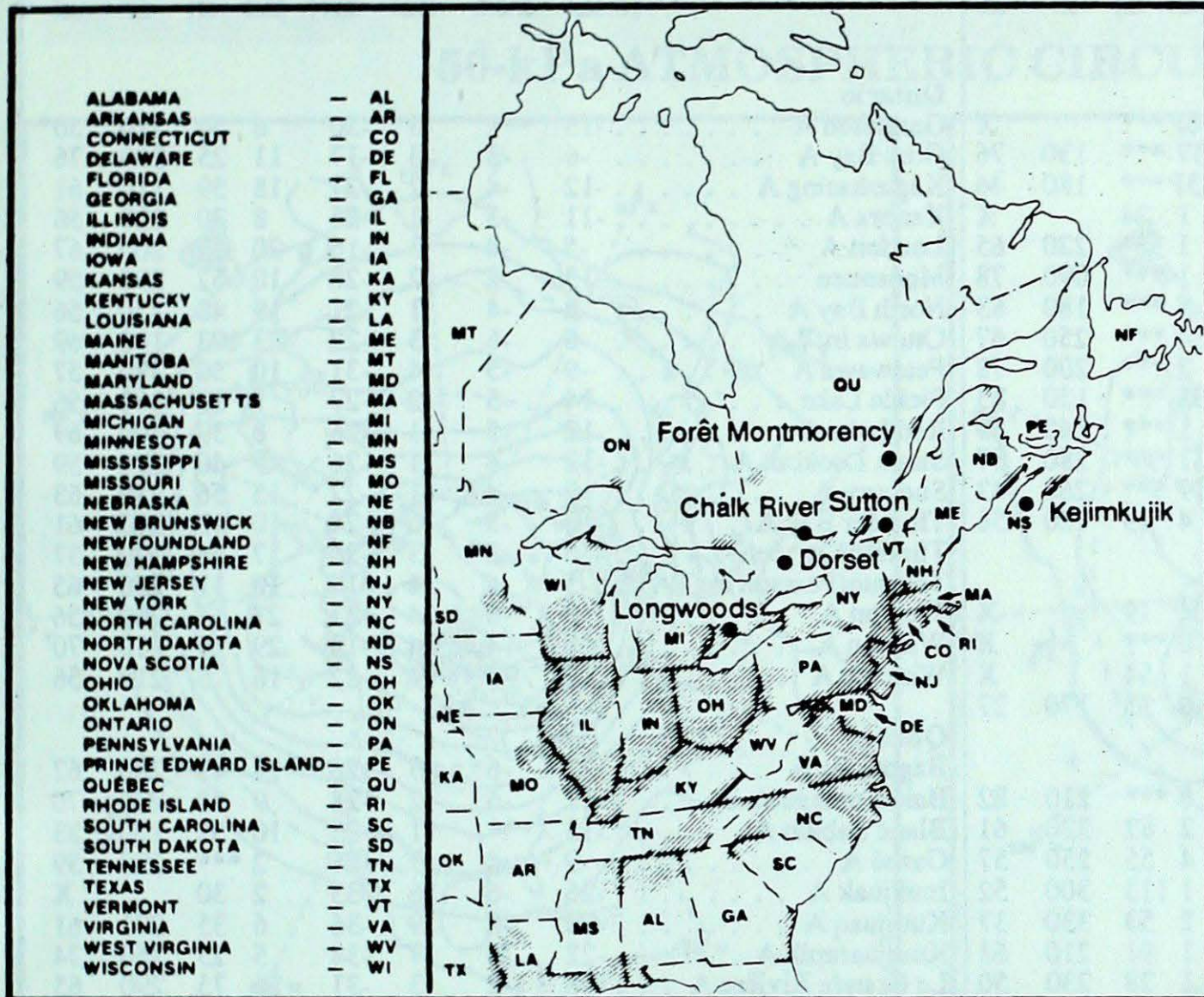
Mean geopotential height
50-kPa level (10 decametre intervals)



Mean geopotential height anomaly
50-kPa level (10 decametre intervals)



Tracks of low pressure centres at 12:00 U.T. each day during the period.



ACID RAIN

The reference map (left) shows the locations of sampling sites, where the acidity of precipitation is monitored. All are operated by Environment Canada except Dorset (*), which is a research station operated by the Ontario Ministry of the Environment. The map also shows the approximate areas (shaded), where SO₂ and NO_x emissions are greatest.

The table below gives the weekly report summarizing the acidity (or pH) of the acid rain or snow that fell at the collection sites, and a description of the path travelled by the moisture laden air. Environmental damage to lakes and streams is usually observed in sensitive areas regularly receiving precipitation with pH readings less than 4.7, while pH readings less than 4.0 are serious.

SITE	day	pH	amount	AIR PATH TO SITE
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March 14 to 20, 1993

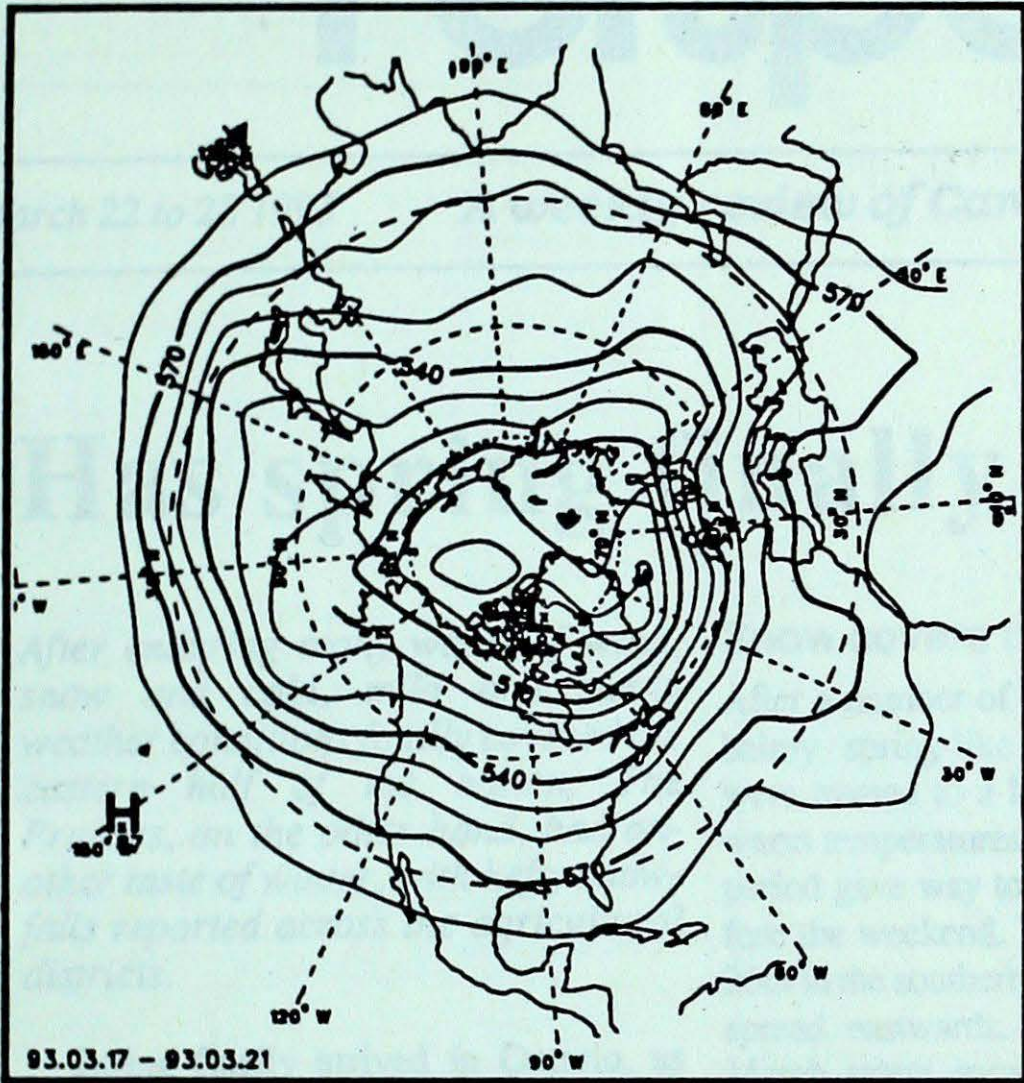
Longwoods	16	4.4	16 S Southern Michigan, Indiana, Illinois
Dorset *	15	4.2	3 M	..... Southern Ontario, southern Michigan, Indiana
	16	4.4	21 M	..... Southern Michigan, Indiana, Illinois
	19	4.1	1 S	..... Southern Ontario, Ohio
	20	4.0	5 S	..... Southern Ontario, Ohio
Chalk River	16	3.8	1 R	..... Michigan, Indiana, Illinois
Sutton	14	4.8	3 S	..... Southeastern Quebec, New Brunswick
	16	3.9	3 M	..... Western New York, western Pennsylvania, west Virginia
	17	4.4	12 M	..... Eastern and southern Ontario, Ohio, western New York
	20	4.0	5 S	..... New York, Pennsylvania
Montmorency	16	4.0	16 S	..... South western Quebec, eastern and southern Ontario
	17	4.3	2 S	..... Western Quebec, eastern southern and central Ontario
	20	3.9	1 S	..... Southern Quebec, New York
Kejimikujik	17	4.8	27 S	..... Atlantic Ocean

R = rain (mm), S = snow (cm), M = mixed rain and snow (mm)

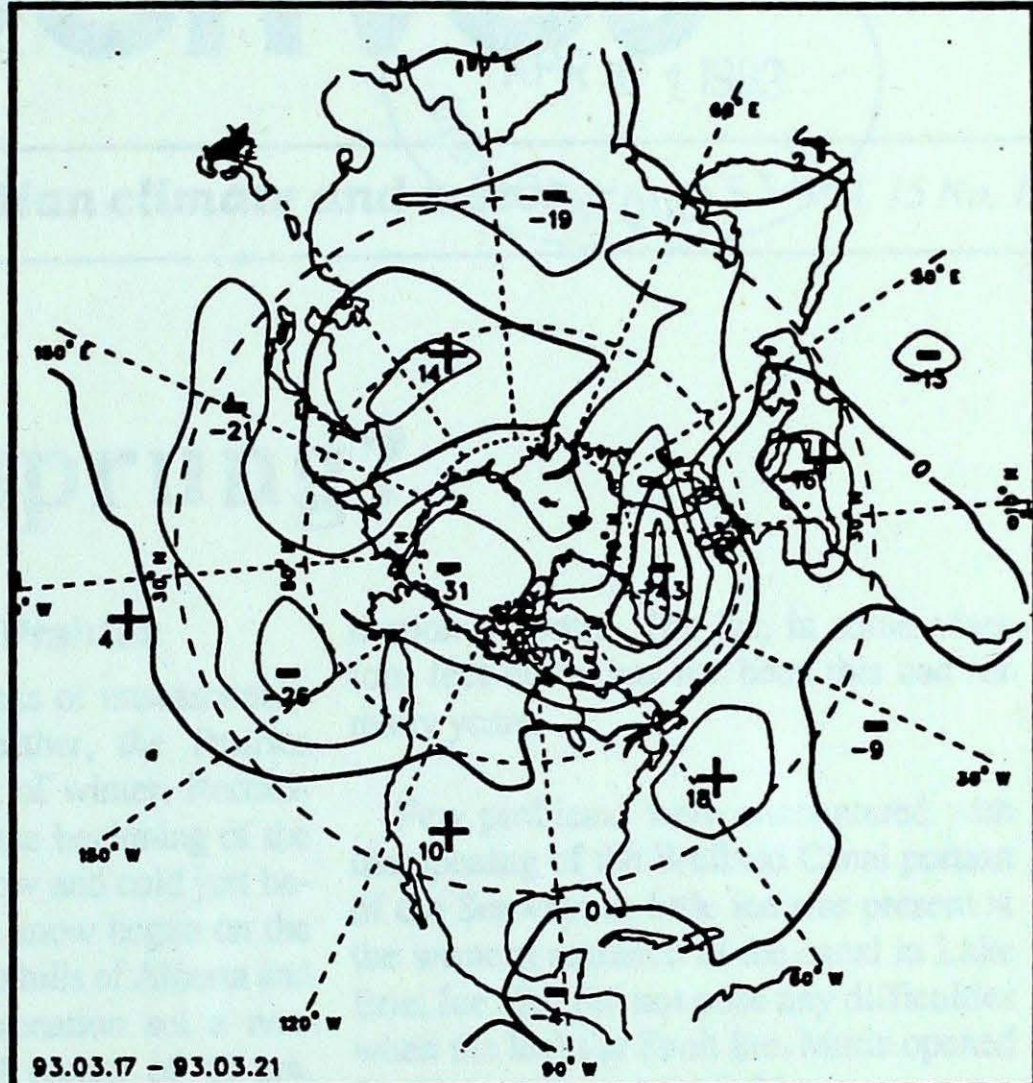
STATION	temperature				precip. plot	st	wind dir	max vel	STATION	temperature				precip. plot	st	wind dir	max vel
	mean	anom	max	min						mean	anom	max	min				
British Columbia									Ontario								
Blue River A	-4P	-4P	6P	-19P	0P***		X		Geraldton A	-13	***	-3	-30	6	50	310	50
Comox A	6	0	12	0	37***	130	76		Gore Bay A	-6	-3	3	-17	11	25	290	76
Cranbrook A	1P	-1P	10P	-7P	3P***	180	46		Kapuskasing A	-12	-4	2	-27	18	59	310	61
Fort Nelson A	-9	1	5	-24	1	24	X		Kenora A	-11	-5	-1	-25	8	30	320	56
Fort St John A	-4	2	10	-21	1***	220	65		London A	-5	-4	3	-16	20	17	200	67
Kamloops A	3	-2	15	-10	1***	090	78		Moosonee	-13	-2	2	-28	10	52	290	59
Penticton A	4	0	13	-4	5***	180	63		North Bay A	-8	-4	1	-21	19	48	350	56
Port Hardy A	5	1	12	-1	34***	250	67		Ottawa Int'l A	-8	-6	3	-22	23	103	190	69
Prince George A	-3	-2	13	-20	2***	200	78		Petawawa A	-9	-5	4	-31	10	30	320	57
Prince Rupert A	3	0	9	-5	35***	150	83		Pickle Lake	-14	-5	-2	-27	7	30	300	56
Smithers A	-1	-1	8	-12	1***	140	59		Red Lake A	-12	-5	-1	-26	8	39	200	69
Vancouver Int'l A	7	1	13	0	51***	280	57		Sioux Lookout A	-12	-4	-1	-26	9	40	270	59
Victoria Int'l A	7	1	12	-1	49***	260	43		Sudbury A	-9	-4	1	-22	15	56	210	63
Williams Lake A	-2	-2	11	-22	4	19	120	56	Thunder Bay A	-10	-5	0	-24	10	13	310	61
Yukon Territory									Québec								
Komakuk Beach A	-23P	4P	-14P	-31P	1P	19	X		Bagotville A	-12	-6	5	-26	14	49	280	67
Teslin (aut)	-13	***	4	-29	0	***	X		Baie Comeau A	-12	-6	2	-28	9	58	230	70
Watson Lake A	-16	-6	3	-33	1	54	X		Blanc Sablon A	-13	***	1	-25	10	52	220	83
Whitehorse A	-10	-2	4	-26	0	15	170	37	Gaspé A	-9	-4	7	-26	2	***	220	59
Northwest Territories									New Brunswick								
Alert	-34	-1	-28	-40	6	***	210	82	Fredericton A	-8	-6	7	-25	23	50	190	82
Baker Lake A	-29	-1	-11	-40	2	82	320	61	Miscou Island (aut)	-9P	-4P	6P	-19P	1P***			
Cambridge Bay A	-30	1	-14	-39	4	55	250	57	Moncton A	-8	-5	8	-22	22	33	220	74
Cape Dyer A	-30	-8	-22	-36	1	113	300	52	Saint John A	-8	-5	5	-22	32	52	360	74
Clyde A	-36	-10	-25	-45	2	53	330	37	St Leonard A	-10	***	4	-24	11	137	320	59
Coppermine A	-22	5	-9	-31	1	91	210	63	Nova Scotia								
Coral Harbour A	-31	-7	-15	-42	1	28	230	50	Greenwood A	-6	-5	10	-19	37	29	220	72
Eureka	-40	-4	-29	-47	1	18	X		Shearwater A	-5	-4	7	-17	41	29	350	74
Fort Smith A	-12	3	8	-30	1	***	330	52	Sydney A	-6	-3	7	-16	59	51	220	65
Hall Beach A	-37	-8	-20	-48	1	54	350	46	Yarmouth A	-4	-4	7	-15	22	8	240	61
Inuvik A	-16	9	-4	-31	2	75	280	50	Prince Edward Island								
Iqaluit A	-29	-7	-15	-40	3	21	280	50	Charlottetown A	-7	-4	7	-17	35	58	200	65
Mould Bay A	-31	1	-22	-40	2	18	X		East Point (auto)	-7	***	4	-16	22	***		
Norman Wells A	-12	7	3	-26	1	24	310	54	Newfoundland								
Resolute A	-35	-4	-28	-41	1	16	130	74	Cartwright	-15	-7	3	-29	25	***	210	74
Yellowknife A	-16	4	-2	-28	1	38	340	63	Churchill Falls A	-18P	-5P	-2P	-29P	1P	100	290	57
Alberta									Gander Int'l A								
Calgary Int'l A	-6	-4	11	-25	5	5	340	54	Goose A	-16	-7	4	-29	14	78	270	67
Cold Lake A	-6	0	11	-22	1	***	320	54	Stephenville A	-8	-5	4	-20	37	92	240	83
Edmonton Namao A	-6	-3	10	-21	3	5	330	41	St John's A	-6	-3	10	-13	56	19	250	104
Fort McMurray A	-7	1	14	-27	0	7	250	44	St Lawrence	-4	-3	6	-12	45	15	X	
Grande Prairie A	-6	0	13	-25	2	5	310	59	Wabush Lake A	-17	-3	-2	-33	12	56	180	46
High Level A	-10	0	8	-28	1	9	320	37	93/03/15-93/03/21								
Lethbridge A	-3	-3	12	-21	10	***	250	67									
Medicine Hat A	-2	-1	14	-21	2	***	010	44									
Peace River A	-6	2	11	-22	1	***	340	41									
Saskatchewan									Manitoba								
Cree Lake	-12	0	7	-33	1	30	330	63	Brandon A	-11	-3	1	-27	5	11	320	48
Estevan A	-9	-5	7	-28	2	6	320	50	Churchill A	-22	-2	-4	-37	1	24	310	61
La Ronge A	-9	0	9	-27	1	10	320	48	Lynn Lake A	-15	-2	5	-32	3	32	310	57
Regina A	-8	-2	7	-28	5	5	170	46	The Pas A	-11	-1	7	-25	2	5	340	59
Saskatoon A	-6	1	9	-20	1	***	320	41	Thompson A	-17	-4	4	-37	1	38	230	46
Swift Current A	-7	-3	11	-25	6	7	190	59	Winnipeg Int'l A	-13	-6	-1	-25	4	19	170	72
Yorkton A	-8	0	6	-22	1	5	320	52									

mean = mean weekly temperature, °C	ptot = weekly precipitation total in mm	Annotations
max = maximum weekly temperature, °C	st = snow thickness on the ground in cm	X = no observation
min = minimum weekly temperature, °C	dir = direction of max wind, deg. from north.	P = less than 7 days of data
anom = mean temperature anomaly, °C	vel = wind speed in km/h	* = missing data when going to printing.

50-kPa ATMOSPHERIC CIRCULATION



Mean geopotential height
50-kPa level (10 decametre intervals)



Mean geopotential height anomaly
50-kPa level (10 decametre intervals)



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