Climatic Perspectives

May 20 to 26, 1991 ***A weekly review of Canadian climate and water*** *Vol.13 No.21*

It's been a wet week

Abundant precipitation across southern B.C. has increased the threat of flooding, as the heavy snowpack at higher elevations melts and swells rivers and streams. Two areas of immediate concern are the Similkameen River and Osoyoos Lake, where sandbagging is underway to protect shoreline interests. In northern B.C., weather conditions were favourable in keeping down the forest fire hazard index.

The Prairies also continued to experience wet weather, with thunderstorms producing heavy downpours and hail. Heavy showers in some areas produced between 100 and 150 millimetres of rain, causing some local flooding. Funnel clouds were sighted in Manitoba and northwestern Ontario.

In Ontario, a record-hot stretch of dry weather came to a temporary end over the weekend. The rain that ensued, helped fire fighters bring several raging forest fires under control in northeastern Ontario, where temperatures have been averaging above normal for more than a month. In southern Ontario and southwestern Quebec, there has been little rain since April, and weekend rainfalls of up to 65 mm, were very beneficial for newly planted crops.

In eastern Canada this week's rainfalls were just a continuation of the generally damp and cool weather that has been in place for a number of weeks. Although the Maritimes did have a taste of some summer-like weather this week, the minimum temperature on the 23rd dropped to record-low, near-freezing values, and in fact, in addition to rain, Sydney, N.S., had several hours of snow.

Cool and unsettled weather continued to plague the Island of Newfoundland. Moderate to heavy rain fell in eastern sections, breaking daily rainfall records on the 25th. On the 23rd, there were also record breaking snowfalls of 6 and 7 centimetres at Gander and St. John's, respectively.

Yukon mountain snowpack

The snowpack at the beginning of May had become quite variable and was down considerably from a month earlier. Warmer than normal April weather brought most of the lower elevation snow courses to below average values, while snow at higher elevations continued to be at above normal levels. Given continued warm temperatures, the higher elevation snow is expected to melt very quickly.

Currently, stream flow conditions are above normal throughout the Yukon. The warm weather has brought high flows earlier this year, and should help distribute the runoff over a longer period. This should in turn lessen the chances of flooding.

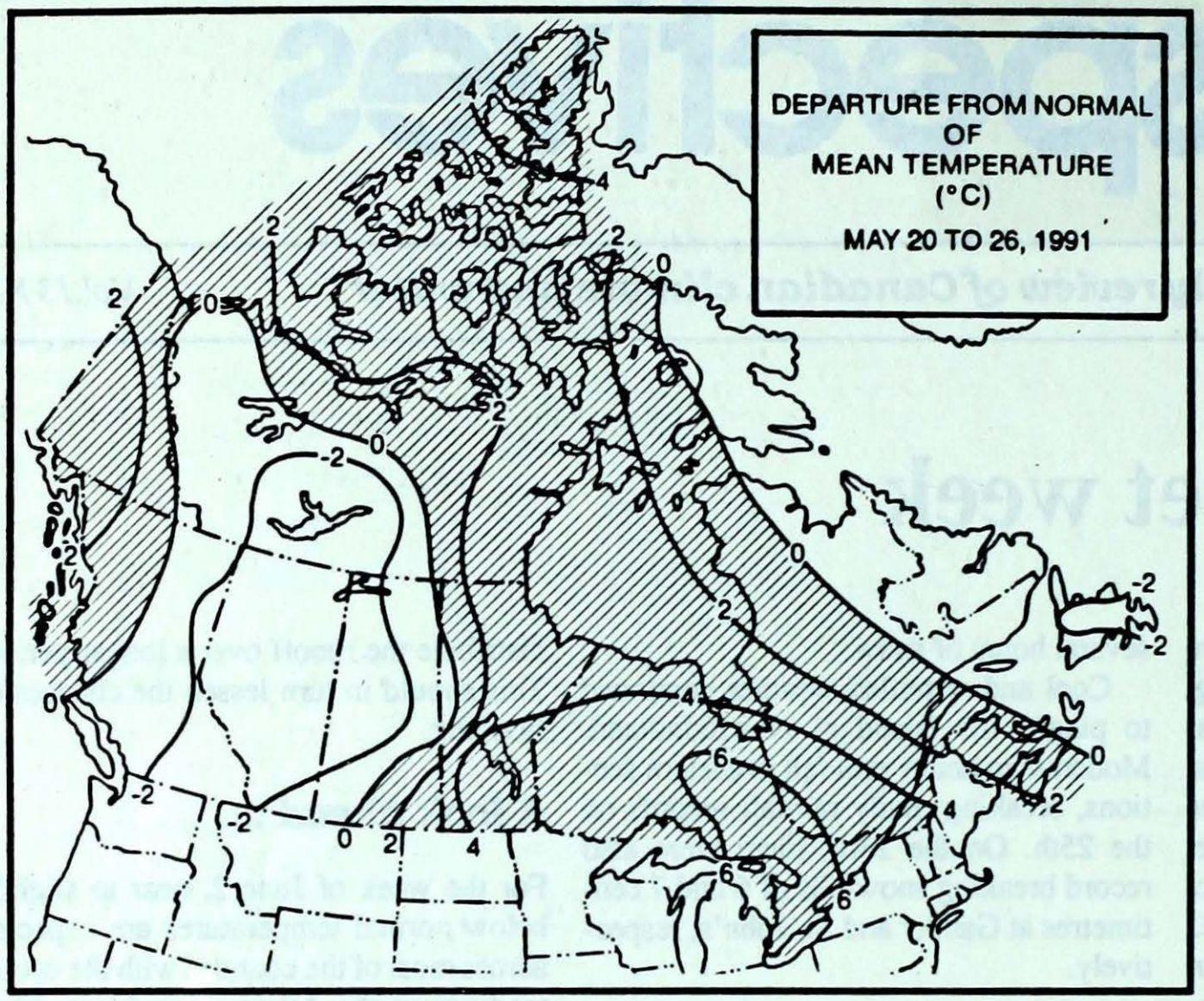
A look ahead ...

For the week of June 2, near to slightly below normal temperatures are expected across most of the country, with the cooler readings in the Atlantic Provinces. Marginally milder than normal temperatures are forecasted for northern Ontario and northern Quebec.

Summary of total fires to-date

	Fires		Hectares	
	1990	**1991**	**1990**	**1991**
Yukon	15	30	58	111
Northwest Territories	3	3	4	7
British Columbia	379	357	3,731	4,390
Alberta	89	228	627	1,858
Saskatchewan	54	175	262	3,450
Manitoba	71	171	3,135	17,871
Ontario	381	412	1,244	3,381
Quebec	176	216	289	470
Newfoundland	12	20	15	378
New Brunswick	97	192	88	213
Nova Scotia	206	347	354	819
P.E.I.	0	0	0	0
Total	**1,486**	**2,151**	**9,807**	**32,948**

There have been more fires and hectares burned this year to-date than for the same period in 1990.



Weekly normal temperatures (°C)

	max.	min.
Whitehorse A	14.1	1.7
Iqaluit A	0.7	-5.6
Yellowknife A	12.3	2.3
Vancouver Int'l A	17.1	8.6
Victoria Int'l A	17.1	7.5
Calgary Int'l A	17.8	4.3
Edmonton Int'l A	19.3	4.8
Regina A	20.5	6.1
Saskatoon A	20.3	6.3
Winnipeg Int'l A	20.6	6.8
Ottawa Int'l A	20.5	8.4
Toronto (Pearson Int'l A)	20.1	7.5
Montréal Int'l A	20.2	9.0
Québec A	18.1	6.3
Fredericton A	18.8	5.7
Saint John A	15.7	4.8
Halifax (Shearwater)	14.7	5.5
Charlottetown A	15.0	4.9
Goose A	10.8	0.8
St John's A	10.9	1.9

Weekly temperature and precipitation extremes

	Maximum temperature (°C)		Minimum temperature (°C)		Heaviest precipitation (mm)	
British Columbia	Penticton A	24	Puntzi Mountain (aut)	-3	Abbotsford A	29
Yukon Territory	Whitehorse A	21	Komakuk Beach A	-6	Komakuk Beach A	8
Northwest Territories	Fort Simpson A	15	Jenny Lind Island A	-18	Hay River A	40
Alberta	Cold Lake A	27	Whitecourt A	-3	Banff (aut)	34
Saskatchewan	Estevan A	30	Cree Lake	-2	Broadview	47
Manitoba	Dauphin A	33	Grand Rapids (aut)	-4	Lynn Lake A	24
Ontario	Kapuskasing A	32	Moosonee	-1	Britt (aut)	65
Québec	Montréal Int'l A	30	Schefferville A	-10	Chibougamau Chapais a	38
New Brunswick	St Stephen (aut)	29	Moncton A	-3	Saint John A	18
Nova Scotia	Shearwater A	29	Sydney A	-3	Greenwood A	9
Prince Edward Island	Charlottetown A	24	East Point (aut)	0	Charlottetown A	6
Newfoundland	Comfort Cove	22	Wabush Lake A	-9	Bonavista	32

Across The Country...

Highest Mean Temperature	Windsor A(ONT)	28
Lowest Mean Temperature	Broughton Island(NWT)	-9

91/05/20-91/05/26

CLIMATIC PERSPECTIVES
VOLUME 13

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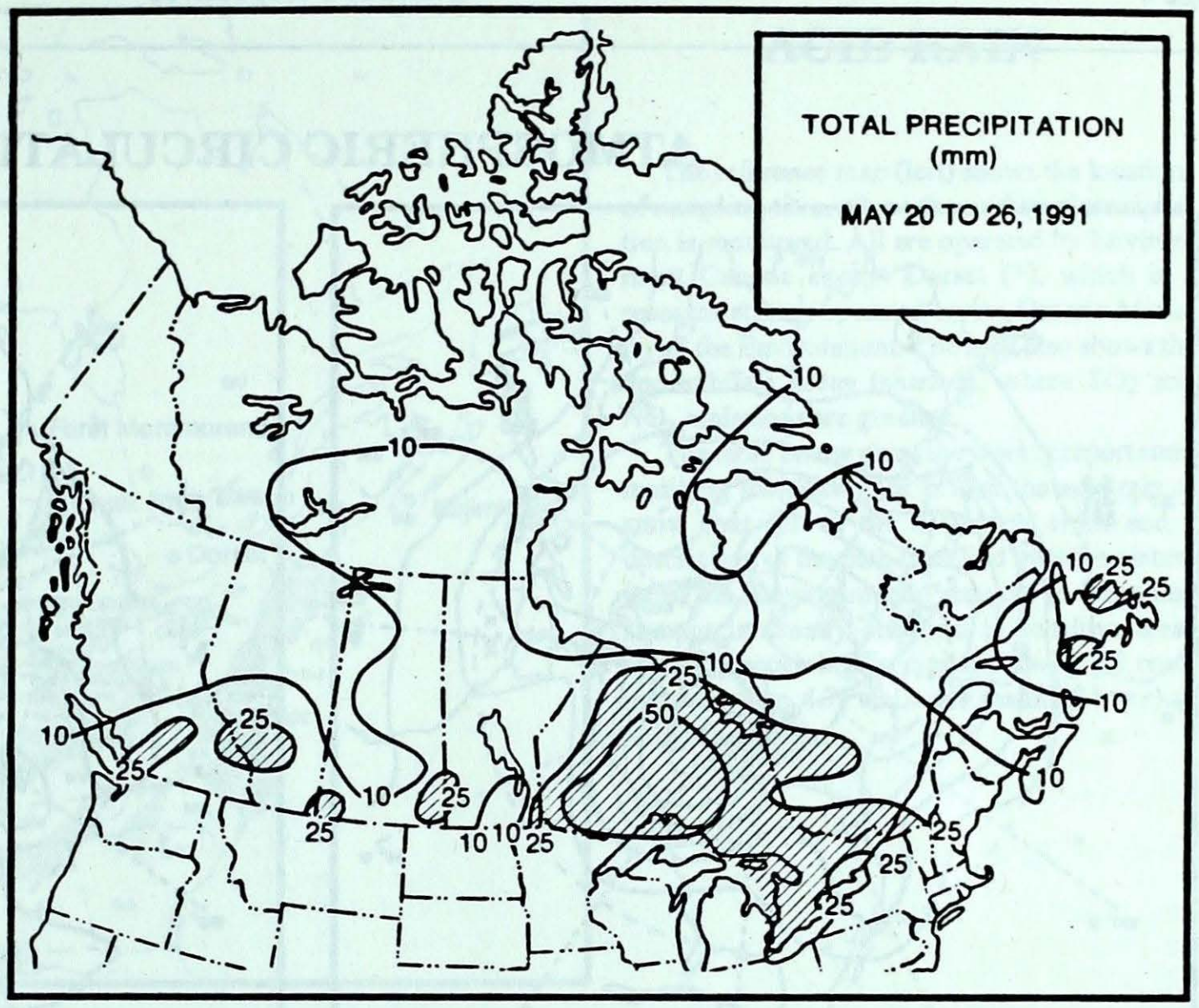

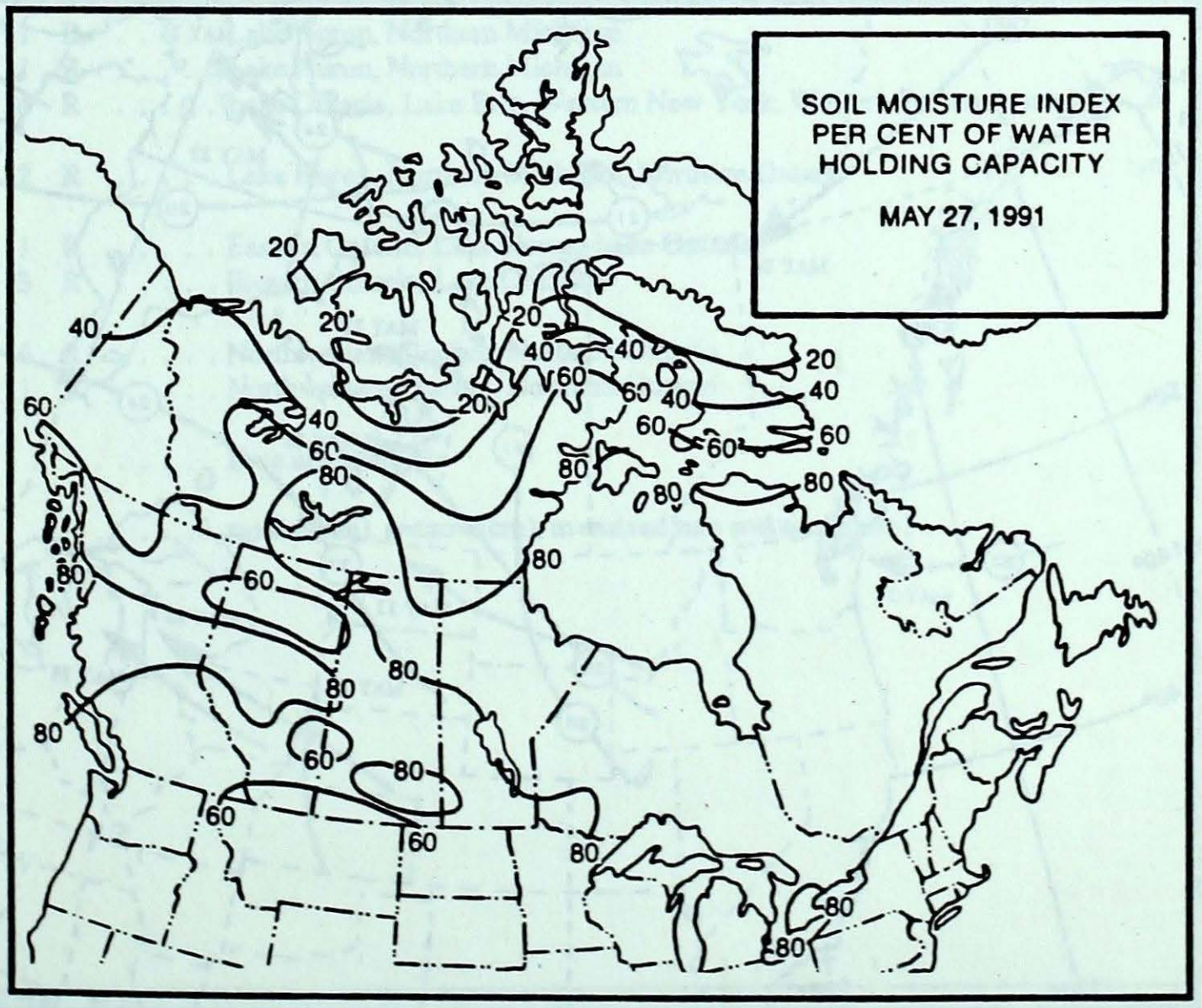

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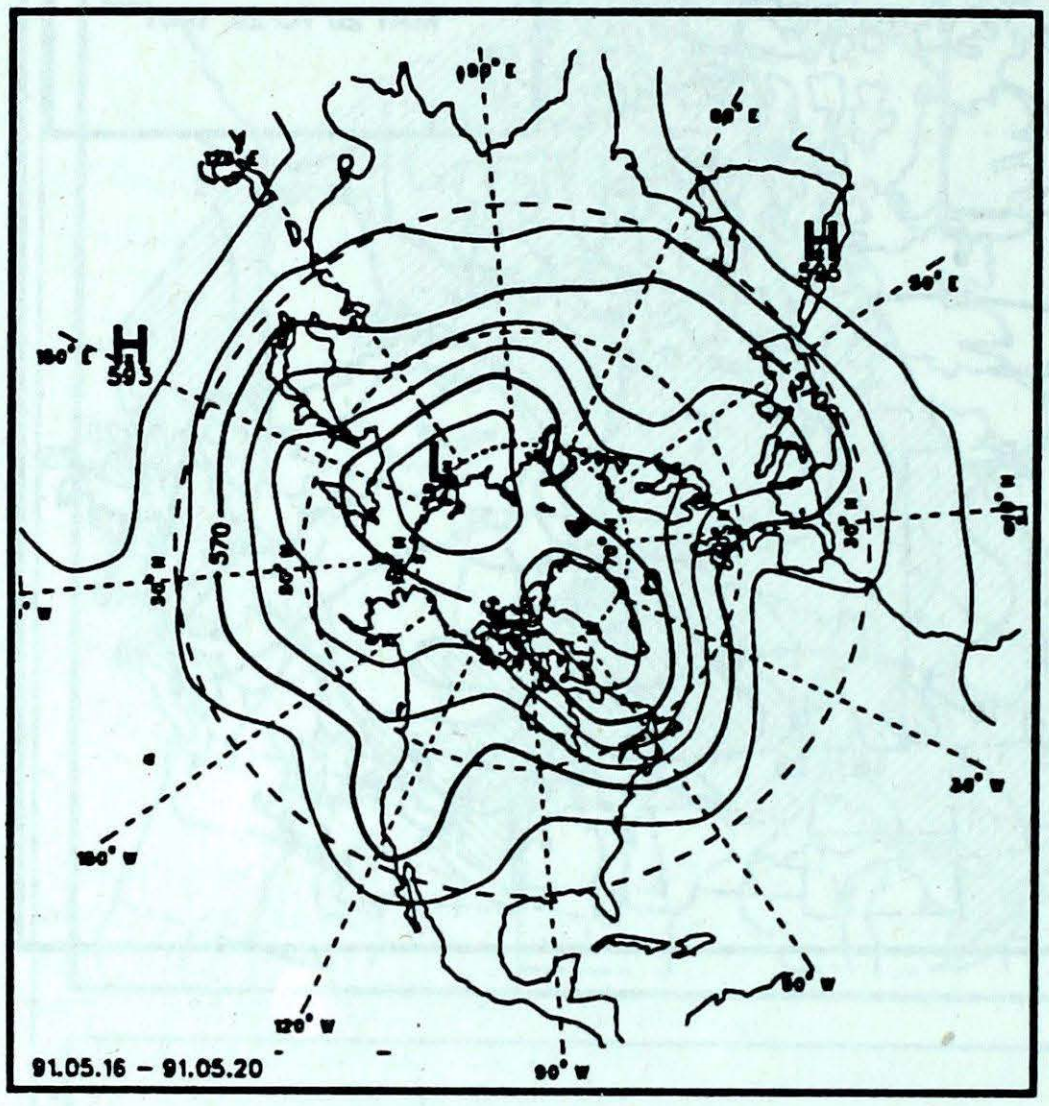
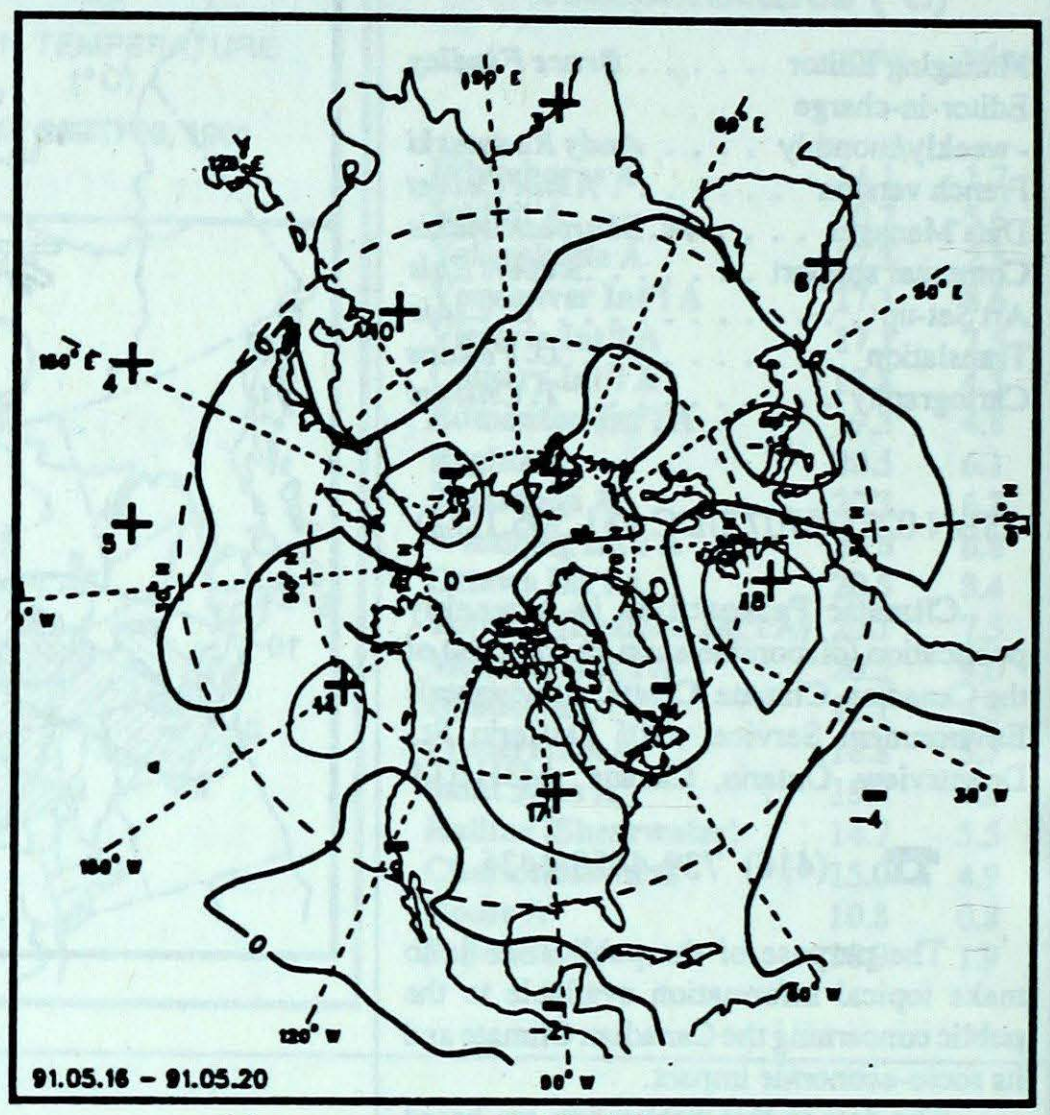
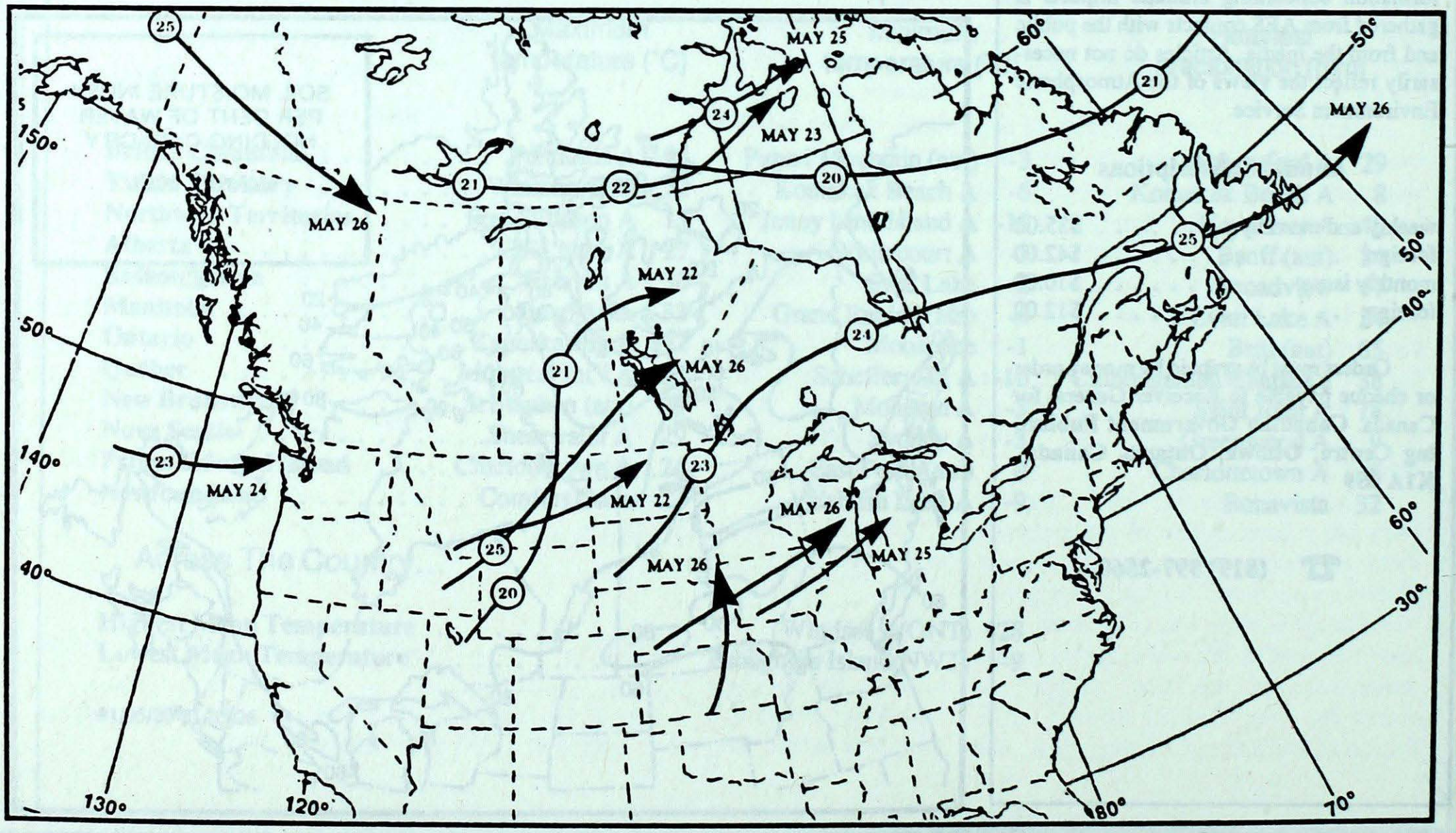


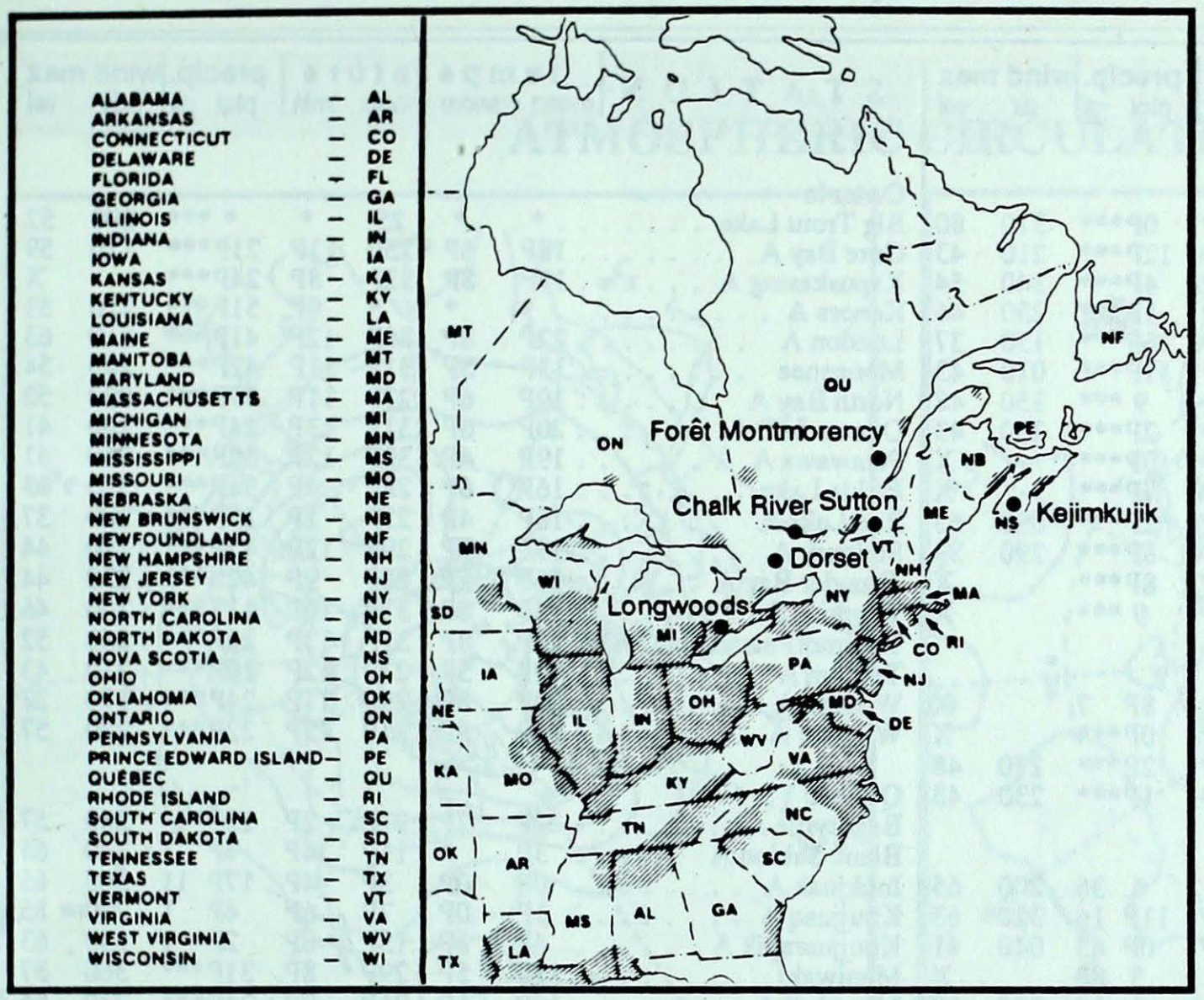
Mean geopotential height
50-kPa level (10-decametre intervals)



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 SO_2 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
					May 19 to 25, 1991
Longwoods	25	4.1	36	R	. . . . . Western Ohio, Indiana, Southern Illinois
Dorset*	22	3.7	1	R	. . . . . Lake Huron, Northern Michigan
	23	3.6	1	R	. . . . . Lake Huron, Northern Michigan
	25	4.6	4	R	. . . . . Lake Ontario, Lake Erie, Western New York, Western Pennsylvania
Chalk River	23	3.8	2	R	. . . . . Lake Huron, Northern Michigan, Northern Ontario
Sutton	24	4.1	1	R	. . . . . Eastern Ontario, Lake Huron, Lake Ontario
	25	4.1	3	R	. . . . . Eastern Ontario, Lake Ontario
Montmorency	23	4.1	6	R	. . . . . Northwestern Quebec, Northern Ontario
	24	4.3	11	R	. . . . . Northwestern Quebec, Northern Ontario
Kejimkujik					. . . . . Data not available
					. . . . . r=rain(mm), s=snow(cm), m=mixed rain and snow(mm)

STATION	temperature mean	anom	max	min	precip. ptot	st	wind max dir	vel
British Columbia								
Cape St James	9P	0P	13P	6P	0P***		310	80
Cranbrook A	10P	-2P	20P	1P	12P***		210	43
Fort Nelson A	10P	-1P	19P	1P	4P***		340	54
Fort St John A	9P	-3P	21P	0P	1P***		250	46
Kamloops A	13P	-2P	23P	7P	26P***		150	37
Penticton A	12P	-2P	24P	3P	11P***		010	43
Port Hardy A	10	0	14	4	9 ***		330	48
Prince George A	10P	0P	21P	-1P	2P***		330	43
Prince Rupert A	9P	0P	15P	3P	0P***			X
Revelstoke A	12P	-1P	22P	7P	7P***			X
Smithers A	9P	0P	21P	-1P	2P***		090	63
Vancouver Int'l A	12P	-1P	16P	6P	8P***		290	39
Victoria Int'l A	11P	-2P	17P	5P	8P***			X
Williams Lake A	9	-1	21	-1	9 ***			X
Yukon Territory								
Komakuk Beach A	-2P	2P	6P	-6P	8P	7		X
Teslin (aut)	8P	*	19P	-1P	0P***			X
Watson Lake A	10P	2P	20P	0P	2P***		270	48
Whitehorse A	11P	3P	21P	-1P	1P***		230	43
Northwest Territories								
Alert	-6	4	-1	-10	6	36	200	65
Baker Lake A	-2P	3P	2P	-8P	11P	16	320	63
Cambridge Bay A	-6P	1P	-1P	-12P	0P	43	040	41
Cape Dyer A	-6	-1	-2	-10	5	80		X
Clyde A	-7	-1	0	-14	3	14	320	39
Coppermine A	-1P	2P	4P	-4P	3P	3	350	56
Coral Harbour A	-3P	2P	3P	-11P	6P	40	120	54
Eureka	-2P	6P	1P	-6P	1P	2	180	59
Fort Smith A	7P	-3P	15P	-1P	19P***			X
Hall Beach A	-6	2	1	-17	0	22	330	50
Inuvik A	1P	-2P	9P	-5P	6P	1		X
Iqaluit A	-3P	-1P	1P	-9P	18P	43	150	56
Mould Bay A	-6	3	-1	-13	8	31	240	41
Norman Wells A	6	-2	14	-1	10 ***		300	46
Resolute A	-6P	3P	-2P	-11P	2P	13		X
Yellowknife A	4P	-4P	9P	1P	13P***		090	44
Alberta								
Calgary Int'l A	7P	-4P	15P	0P	29P***		350	61
Cold Lake A	11	-2	27	-2	8 ***		300	39
Edmonton Namao A	10	-2	26	1	14 ***		330	52
Fort McMurray A	8P	-4P	20P	0P	1P***		270	57
High Level A	8	-3	21	-2	7 ***		310	44
Jasper	6P	-4P	16P	0P	6P***			X
Lethbridge A	12P	-1P	23P	5P	8P***		220	54
Medicine Hat A	12P	-2P	24P	4P	12P***		190	59
Peace River A	9	-2	23	-1	2 ***		240	41
Saskatchewan								
Cree Lake	7P	-3P	21P	-2P	3P***		240	44
Estevan A	16P	3P	30P	9P	11P***		180	74
La Ronge A	8P	-3P	22P	1P	13P***		270	50
Regina A	15P	2P	27P	6P	10P***		290	57
Saskatoon A	13P	-1P	28P	3P	2P***		270	63
Swift Current A	13P	0P	25P	5P	12P***		140	50
Yorkton A	17	4	30	5	30 ***		250	56
Manitoba								
Brandon A	19	6	30	9	10 ***		270	109
Churchill A	7P	6P	22P	-2P	3P***		300	67
Lynn Lake A	10	1	27	0	24 ***		270	70
The Pas A	10P	-1P	28P	2P	12P***		130	48
Thompson A	12	3	28	2	23 ***		270	63
Winnipeg Int'l A	20P	6P	29P	10P	1P***		160	54

STATION	temperature mean	anom	max	min	precip. ptot	st	wind max dir	vel
Ontario								
Big Trout Lake	*	*	25	*	* ***		290	52
Gore Bay A	18P	6P	25P	11P	21P***		110	59
Kapuskasing A	19P	8P	32P	8P	24P***			X
Kenora A	*	*	*	9P	51P***		210	33
London A	22P	8P	30P	12P	41P***		210	63
Moosonee	13P	5P	31P	-1P	42P***		240	54
North Bay A	19P	6P	27P	11P	47P***		090	52
Ottawa Int'l A	20P	6P	31P	13P	24P***		260	41
Petawawa A	19P	4P	30P	12P	32P***		250	41
Pickle Lake	16P	6P	28P	4P	54P***		340	33
Red Lake A	16P	4P	27P	2P	17P***		200	37
Sudbury A	19P	7P	29P	12P	45P***		110	44
Thunder Bay A	16P	5P	28P	9P	42P***		230	44
Timmins A	19P	8P	31P	10P	11P***		240	46
Toronto(Pearson Int'l A)	21P	8P	31P	13P	26P***		260	52
Trenton A	19P	5P	27P	12P	10P***		210	43
Wiarton A	20P	8P	29P	11P	24P***		170	37
Windsor A	24P	8P	31P	15P	22P***		220	57
Québec								
Bagotville A	12P	2P	27P	2P	22P***		360	57
Blanc Sablon A	3P	*	11P	-4P	7P	1	340	65
Inukjuak A	0P	0P	3P	-4P	17P	11	300	65
Kuujjuaq A	1P	0P	7P	-6P	4P	1	290	85
Kuujjuarapik A	4P	1P	15P	-6P	2P	1	130	63
Maniwaki	18P	5P	29P	8P	31P***		360	37
Mont Joli A	10P	1P	26P	-2P	24P***		230	56
Montréal Int'l A	20P	5P	30P	10P	33P***		230	44
Natashquan A	5P	-1P	19P	-2P	16P***		330	43
Québec A	16P	3P	28P	7P	23P***		250	52
Schefferville A	0P	-2P	11P	-10P	4P	1	310	63
Sept-Îles A	6P	-1P	20P	-5P	1P***		260	61
Sherbrooke A	17P	5P	29P	3P	18P***		270	48
Val-d'Or A	17P	6P	29P	7P	20P***		260	48
New Brunswick								
Charlo A	12P	3P	27P	-3P	4P***		280	50
Chatham A	13P	2P	27P	-1P	6P***		060	50
Fredericton A	14P	2P	28P	-1P	12P***		270	54
Moncton A	11P	1P	27P	-3P	7P***		030	50
Saint John A	12P	2P	26P	-1P	18P***		330	57
Nova Scotia								
Greenwood A	13	1	28	-2	9 ***		230	67
Shearwater A	12P	2P	29P	1P	8P***		210	44
Sydney A	8P	-1P	23P	-3P	6P***		360	67
Yarmouth A	13P	2P	23P	3P	1P***		240	48
Prince Edward Island								
Charlottetown A	10P	0P	24P	1P	6P***		350	67
Summerside A	11P	0P	24P	3P	0P***		030	57
Newfoundland								
Cartwright	1P	-2P	10P	-4P	3P	47	330	69
Churchill Falls A	3	0	16	-7	8	18	300	63
Gander Int'l A	3P	-4P	21P	-3P	31P***		330	59
Goose A	5P	-1P	15P	-2P	1P***		300	56
Port Aux Basques	5	0	12	-1	27 ***		330	69
St John's A	3P	-3P	20P	-2P	20P***		190	70
St Lawrence	4P	-1P	14P	-1P	12P***			X
Wabush Lake A	3P	0P	14P	-9P	3P***		280	56

91/05/20-91/05/26

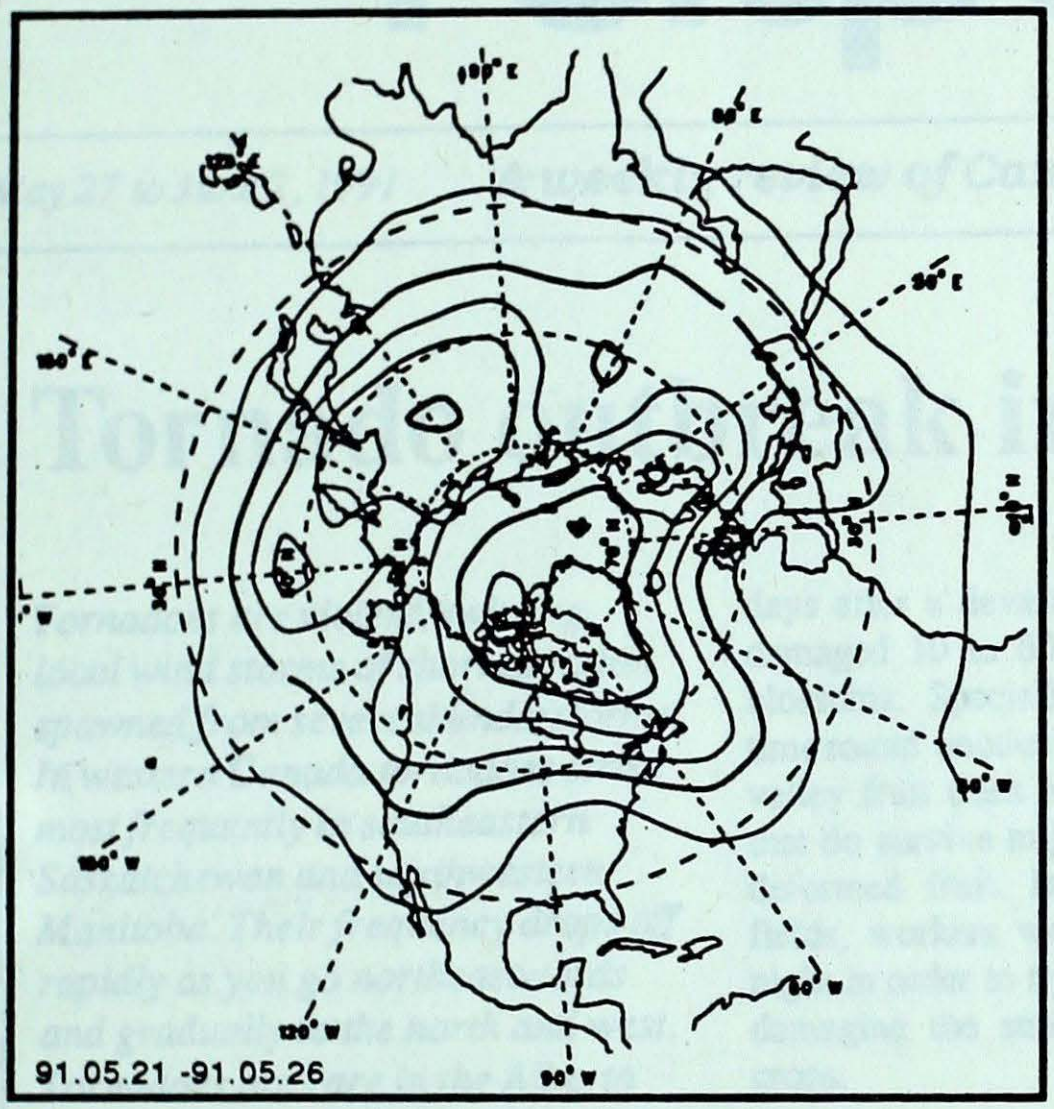
mean = mean weekly temperature, °C
max = maximum weekly temperature, °C
min = minimum weekly temperature, °C
anom = mean temperature anomaly, °C

ptot = weekly precipitation total in mm
st = snow thickness on the ground in cm
dir = direction of max wind, deg. from north.
vel = wind speed in km/h

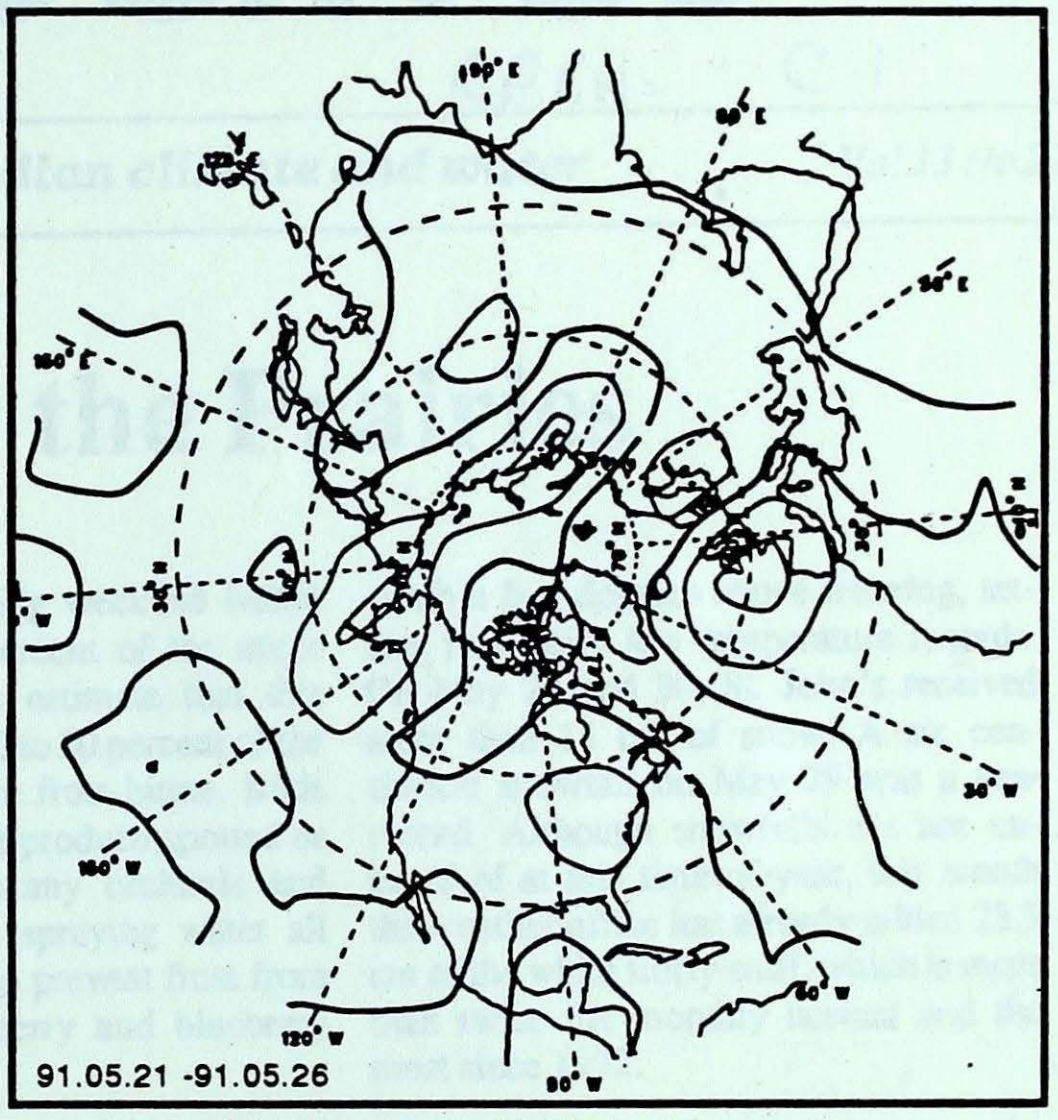
— Annotations —

X = no observation
P = less than 7 days of data
* = missing data when going to printing.

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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