Environment Canada Environnement Canada

Climatic Perspectives

May 11 to 17, 1992 **A weekly review of Canadian climate and water** *Vol. 14 No. 20*

Slow retreat of winter in the northeast

The unusual warmth over the West during the 1992 winter and spring, has caught public attention. However, weather conditions in the northeast of the country were also very abnormal. The Arctic vortex, which has persisted over Baffin Island for more than 90-days, is responsible for the harsh winter and late arrival of spring to this area.

In addition, the precipitation pattern was particularly striking last week, as extremely dry conditions occurred over the west coast, while the eastern half of the country was covered by moisture.

The residents of southern Baffin Island, Hudson Strait, and the Ungava region, have been experiencing below normal temperatures for over 15 weeks. There are few encouraging signs of the arrival of spring as snow, freezing rain and even blizzard conditions were reported by the weather office in Iqaluit last week.

As a result of the persistent, cool temperatures the sea-ice thickness, in this region, is generally greater than average. However, even though temperatures are below the freezing-point, spring break-up is expected to occur only six to 10 days behind schedule, as solar radiation will accelerate the melting process. The ice in Hudson Strait which normally breaks up in July and clears out by August 6 is expected last until August 13 or 16 this year.

A few hundred kilometres south of this resistant bastion of winter, the seasonal increase in sunshine is rapidly melting the snow from James Bay to Labrador. Rain, snowmelt and ice jamming this week increased the flood threat for the village of Attawapiskat, Ont. On the 15th a precautionary evacuation of 74 sick and elderly residents took place, and two days later the rest of the community left. Rainfalls, up to 50 mm over the melting snowpacks of the Quebec-Labrador plateau, flooded low ground, but the hydro-electric power reservoirs have the capacity to handle a large spring discharge.

Severe weather strikes

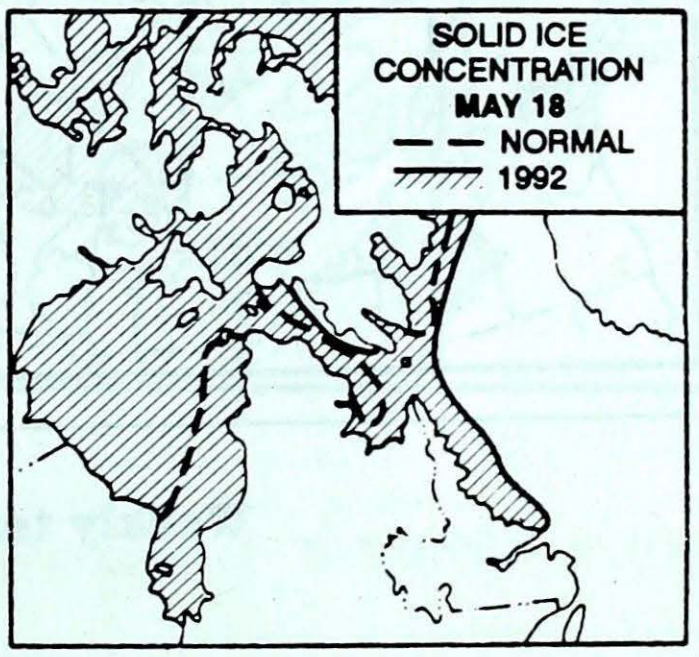
Thunderstorms, passing northeastward through southern Ontario and Quebec on May 17, terminated a warm spell, bringing wind damage, hail and local flooding to a number of communities. Unconfirmed tornado sightings were reported from Hickson, near Woodstock, Ont. and from Fort-Coulonge and Lac Bois-Franc near Maniwaki, Que.

More flooding in the Mackenzie District

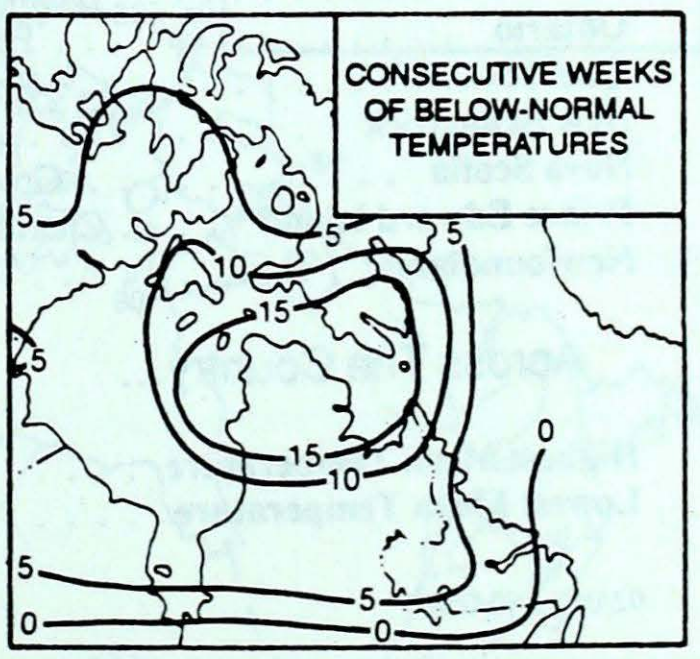
Ice jamming on the Mackenzie River, upstream from Fort Simpson, brought flooding to the village of Jean-Marie River, displacing some residents. The ice bridge at Arctic Red River has now been closed, and the ferry at Fort Providence has been delayed by an ice jam. At Wood Buffalo National Park in the Slave River Lowlands, a favourite calving ground for the bison herd has been inundated, causing some worry about feed supplies.

A look ahead...

For the week of May 25, below normal temperatures are forecasted across most of the country, with the cold core lying over extreme northern Ontario. Near to above normal temperatures are likely over British Columbia, the Yukon and the Atlantic provinces.

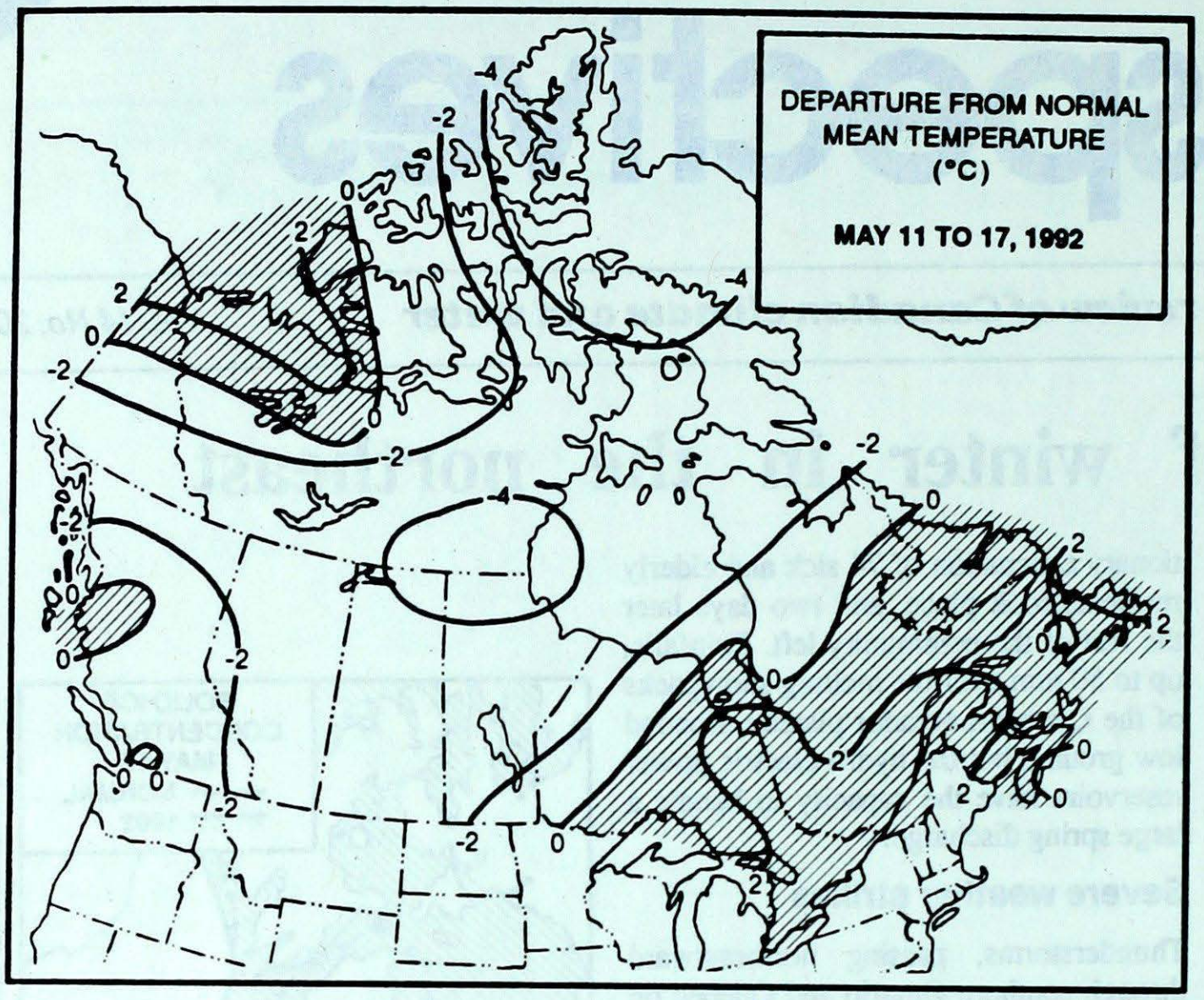


Normally by mid-May solid ice along the eastern coastline of Hudson Bay has retreated westward.



Over 15 consecutive weeks of below normal temperatures in the Hudson Strait region have caused winter to persist.

Canada



Weekly normal temperatures (°C)

	max.	min.
Whitehorse A	12.2	0.4
Iqaluit A	0.0	-6.7
Yellowknife A	9.7	-0.5
Vancouver Int'l A	16.4	7.7
Victoria Int'l A	16.3	6.5
Calgary Int'l A	16.0	2.5
Edmonton Int'l A	17.1	2.1
Regina A	18.6	3.6
Saskatoon A	18.0	3.9
Winnipeg Int'l A	18.0	3.8
Ottawa Int'l A	18.2	6.5
Toronto Int'l A	18.1	5.8
Montréal Int'l A	18.4	7.1
Québec A	16.9	4.7
Fredericton A	16.9	4.4
Saint John A	14.1	3.6
Halifax (Shearwater)	13.1	4.3
Charlottetown A	13.3	3.5
Goose A	9.8	-0.1
St John's A	9.5	1.1

Weekly temperature and precipitation extremes

	Maximum temperature (°C)		Minimum temperature (°C)		Heaviest precipitation (mm)	
British Columbia	Lytton A	29	Dease Lake A	-3	Cranbrook A	10
Yukon Territory	Whitehorse A	13	Komakuk Beach A	-15	Whitehorse A	7
Northwest Territories	Fort Simpson A	14	Eureka	-22	Cape Dyer A	23
Alberta	Medicine Hat A	27	Pincher Creek (aut)	-6	Lloydminster A	15
Saskatchewan	Moose Jaw A	26	Cree Lake	-6	North Battleford A	23
Manitoba	Winnipeg Int'l A	23	Churchill A	-15	Dauphin A	26
Ontario	Petawawa A	31	Pickle Lake	-4	Geraldton A	67
Quebec	Bagotville A	30	Inukjuak A	-9	La Grande IV A	51
New Brunswick	Charlo A	30	St Stephen (aut)	-3	St-Léonard A	22
Nova Scotia	Greenwood A	25	Sydney A	-3	Greenwood A	5
Prince Edward Island	Charlottetown A	22	Charlottetown A	-1	Charlottetown A	10
Newfoundland	Goose A	24	Churchill Falls A	-8	Burgeo	41

Across The Country...

Highest Mean Temperature	Windsor A (Ont.)	17
Lowest Mean Temperature	Eureka (N.W.T.)	-17

92/05/11-92/05/17

CLIMATIC PERSPECTIVES
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The data in this publication are based on unverified reports from approximately 225 Canadian synoptic weather stations. Information concerning climatic impacts is gathered from AES contacts with the public and from the media. Articles do not necessarily reflect the views of the Atmospheric Environment Service.

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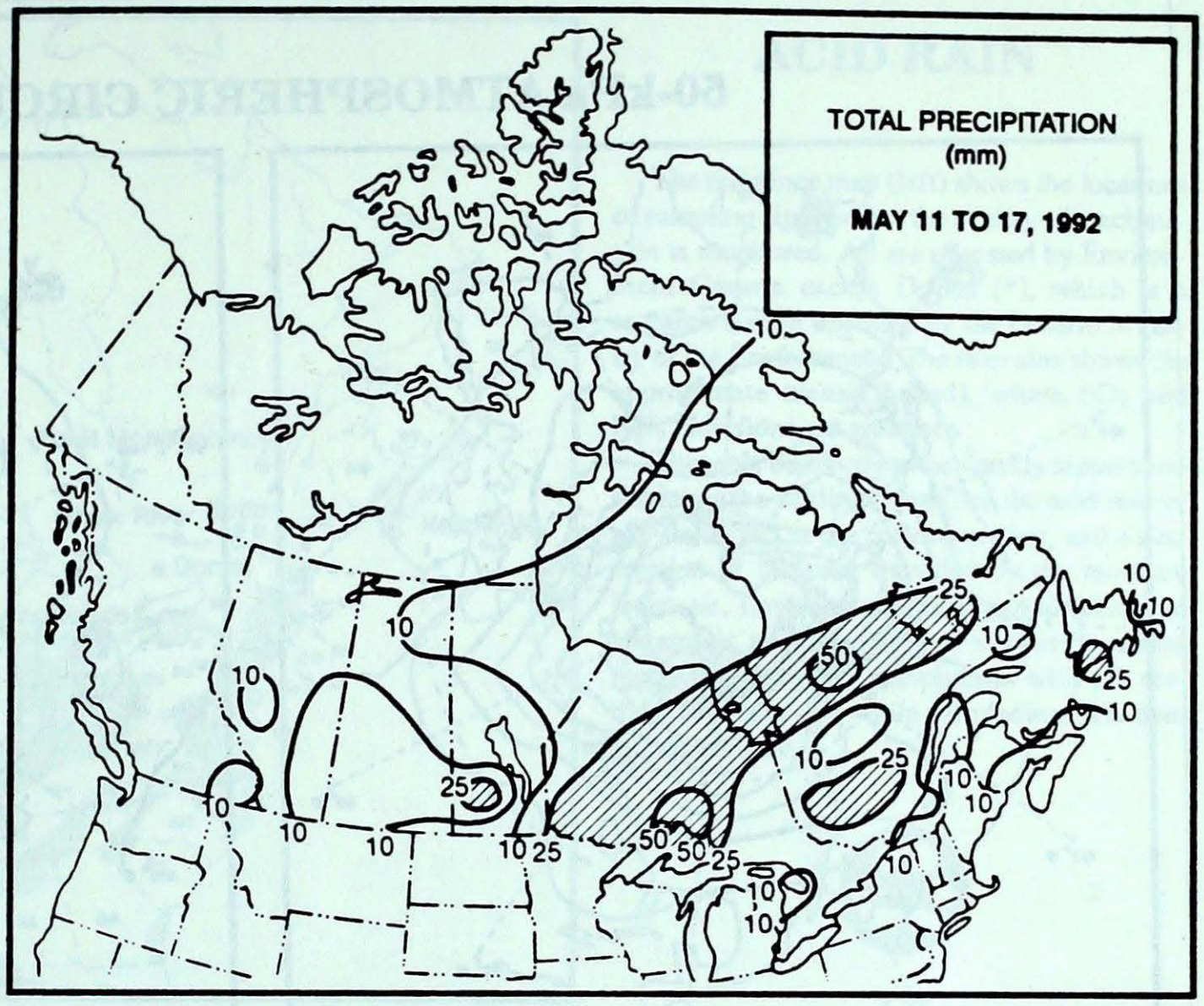
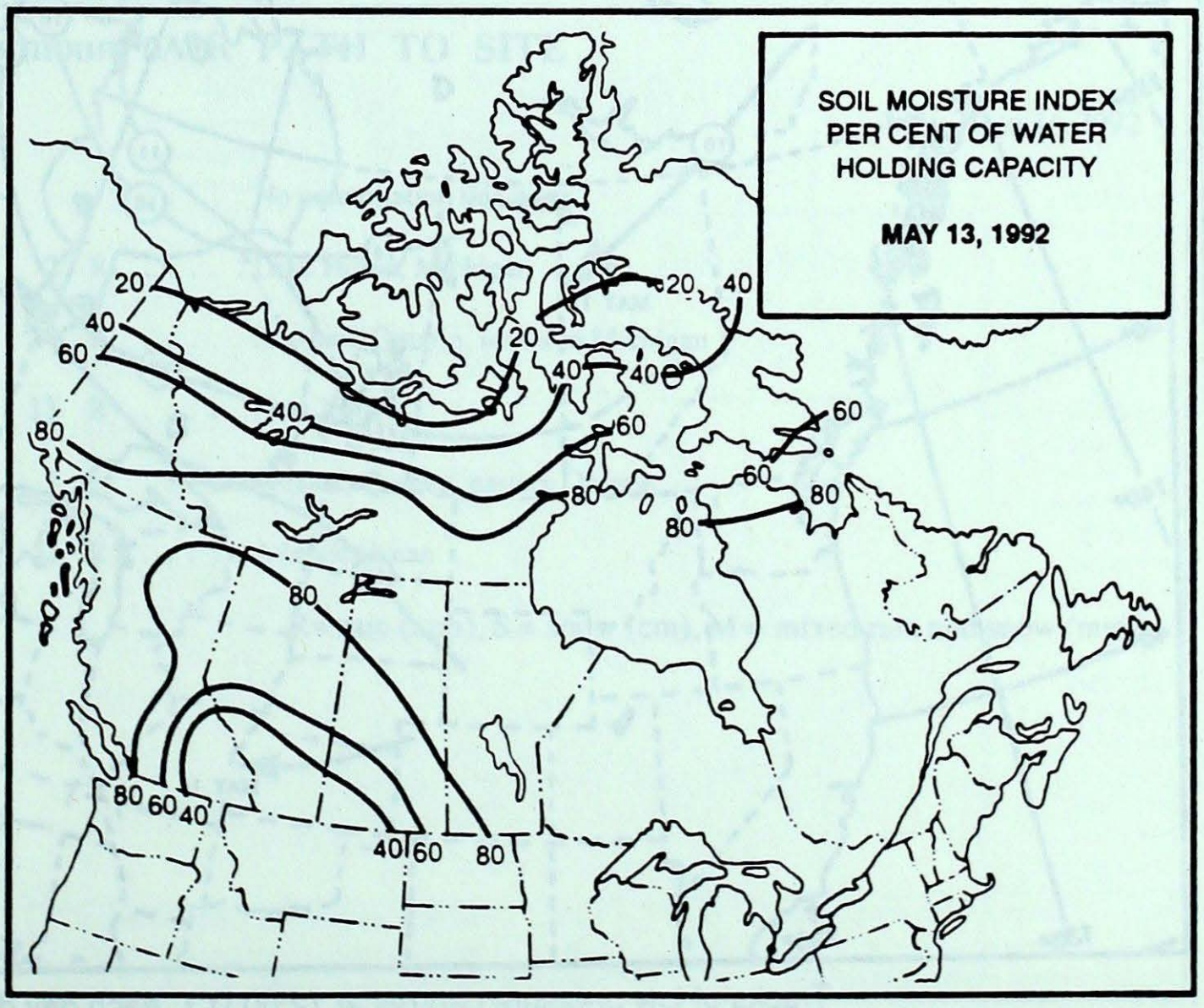
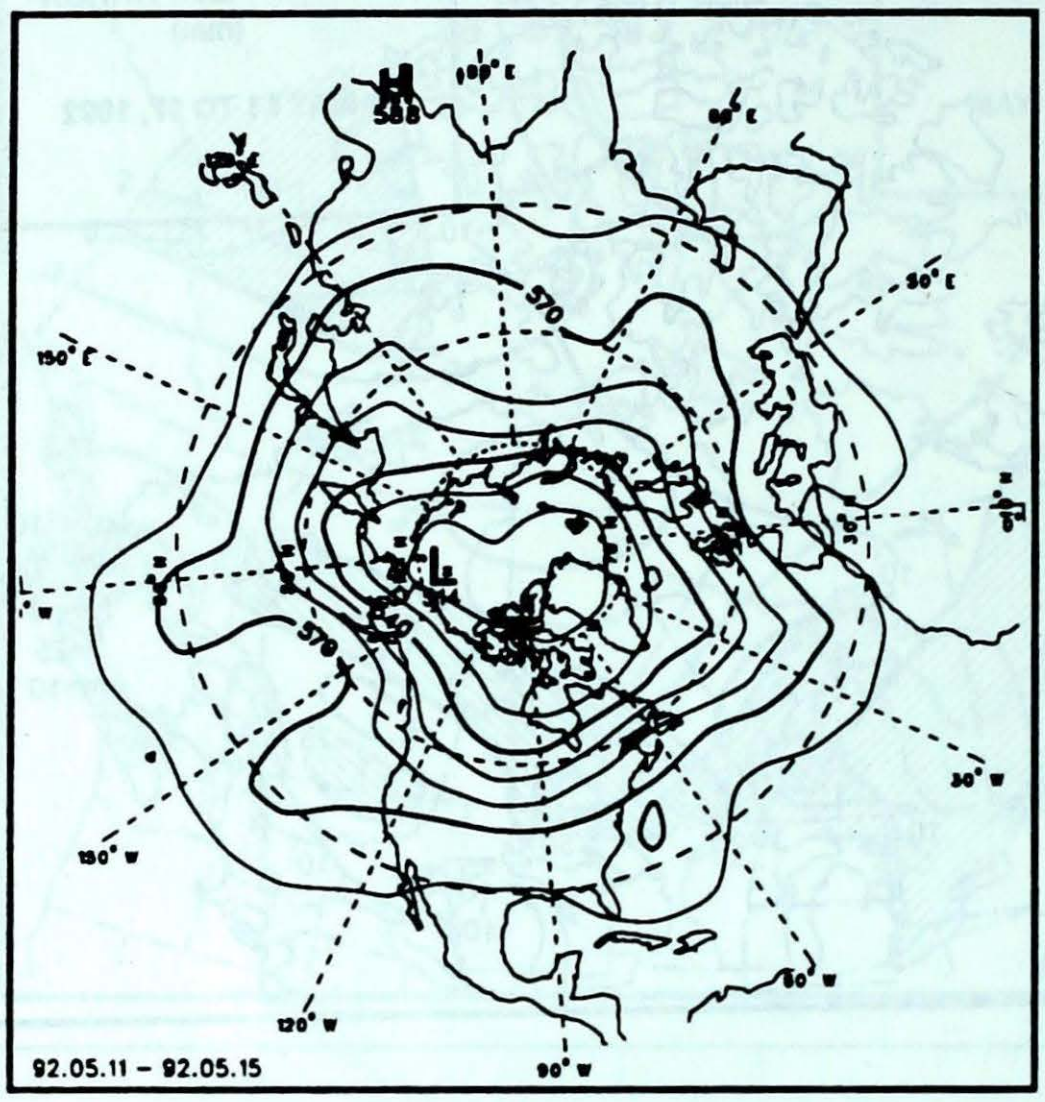
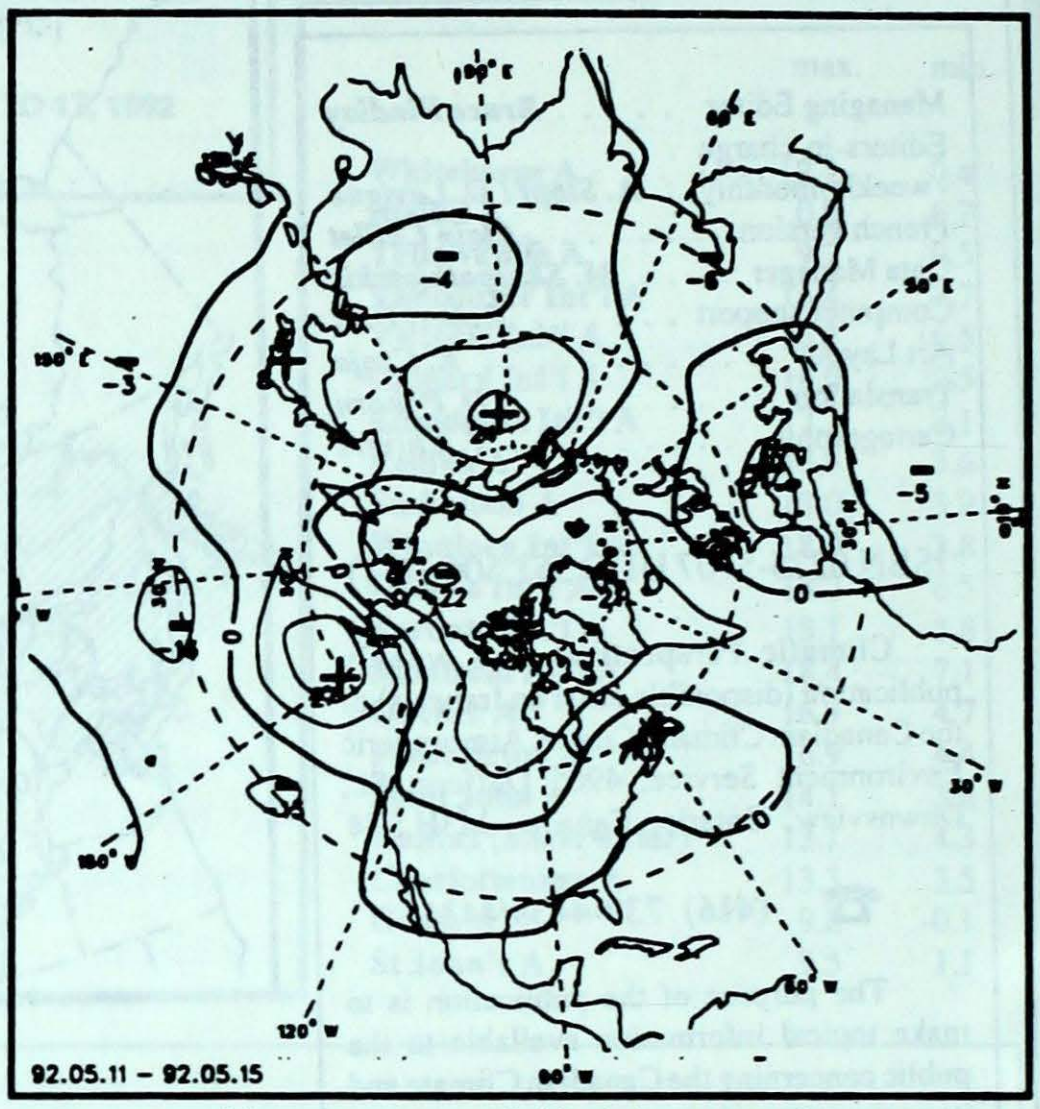




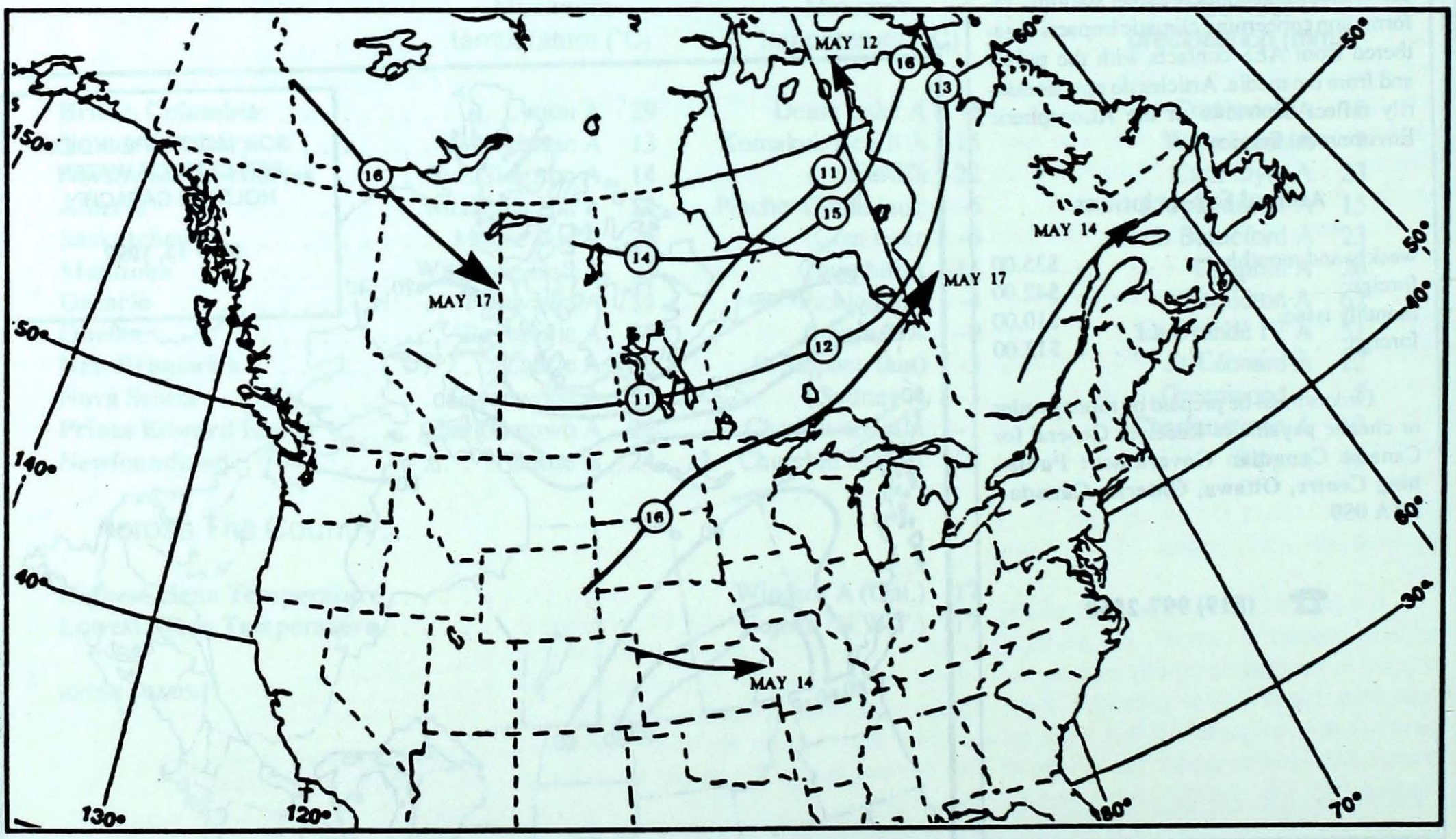
50-kPa ATMOSPHERIC CIRCULATION



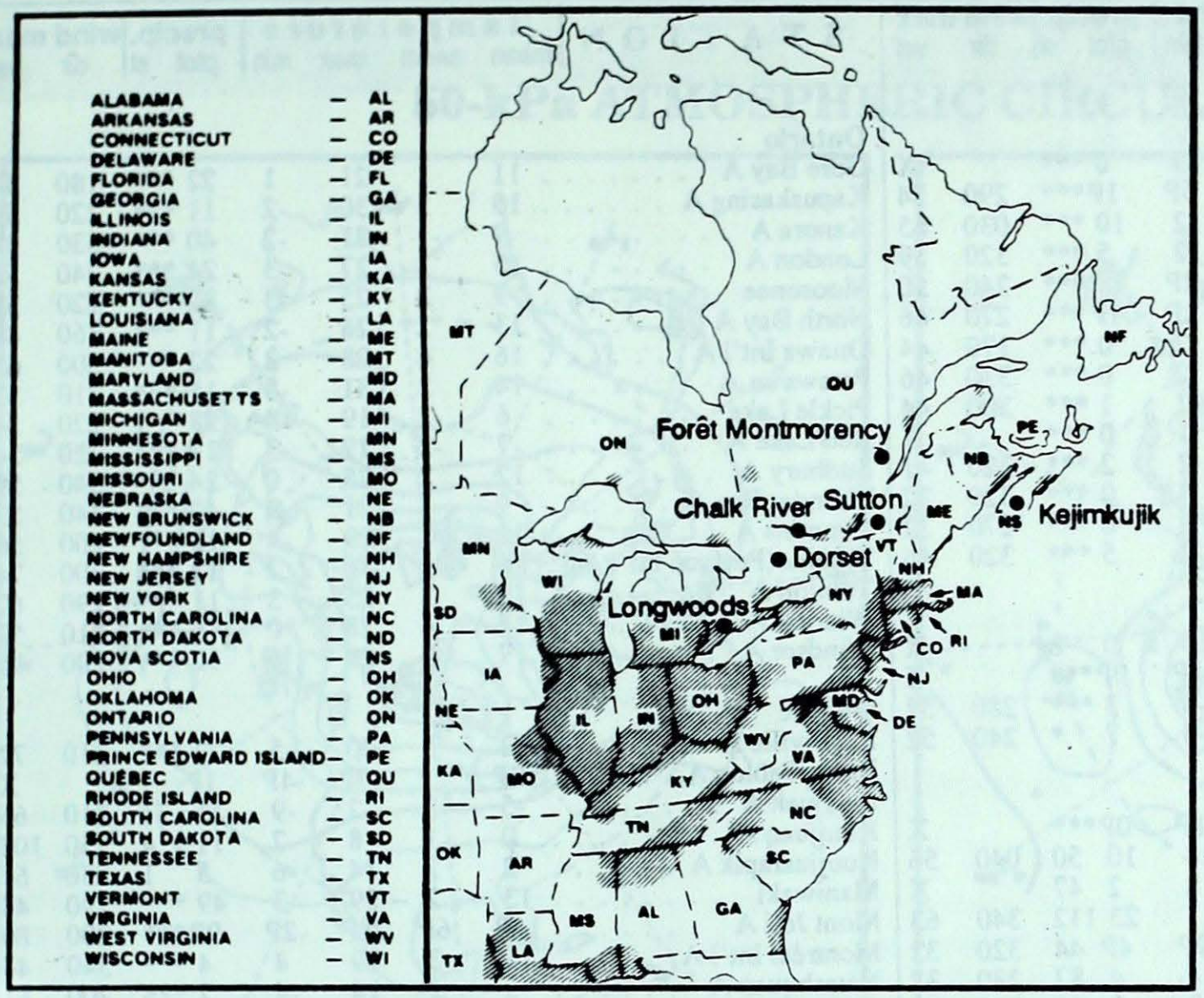
Mean geopotential height
50-kPa level (10 decametre intervals)



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 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 10 to 16, 1992

Longwoods					. . . . . No precipitation this week
Dorset *	13	4.3	2	R	. . . . . Lake Huron, Michigan
Chalk River	13	4.2	4	R	. . . . . Southern Ontario, southern Michigan
Sutton	13	4.7	13	R	. . . . . New York
Montmorency	13	3.9	5	M	. . . . . Western Quebec, eastern Ontario
Kejimkujik	13	5.1	2	R	. . . . . Atlantic Ocean

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								
Blue River A	9	-1	24	-3	0	***		X
Cape St James	9P	0P	13P	5P	1P	***	290	54
Cranbrook A	9	-2	25	-2	10	***	030	65
Fort Nelson A	8	-2	17	-2	5	***	320	59
Fort St John A	8P	-1P	18P	-2P	0P	***	240	50
Kamloops A	12P	-1P	28P	2P	1P	***	270	46
Penticton A	13	0	27	2	0	***	170	44
Port Hardy A	9	0	19	2	0	***	330	46
Prince George A	9	0	22	-2	1	***	300	44
Prince Rupert A	8	0	14	1	0	***		X
Smithers A	9	0	20	-2	2	***	320	41
Vancouver Int'l A	12	0	20	4	0	***	320	32
Victoria Int'l A	12	0	22	3	0	***	270	32
Williams Lake A	8	0	22	-2	5	***	320	46
Yukon Territory								
Komakuk Beach A	-4	2	4	-15	0	6		X
Teslin (aut)	4P	*	12P	-4P	0P	***		X
Watson Lake A	4	-3	11	-6	3	***	280	57
Whitehorse A	4	-2	13	-3	7	*	240	52
Northwest Territories								
Alert	-17P	-4P	-12P	-21P	0P	***		X
Baker Lake A	-11	-4	-4	-18	10	50	040	56
Cambridge Bay A	-12	-2	-4	-18	2	47		X
Cape Dyer A	-10	-4	-5	-17	23	112	340	63
Clyde A	-13P	-5P	-7P	-19P	4P	44	320	32
Coppermine A	-5	3	1	-14	4	87	280	37
Coral Harbour A	-10	-4	-4	-19	9	45	080	69
Eureka	-17	-6	-9	-22	1	14		X
Fort Smith A	5	-3	11	-3	2	***	310	50
Hall Beach A	-14	-4	-7	-21	1	39		X
Inuvik A	0	2	8	-13	4	34	310	56
Iqaluit A	-7	-4	0	-16	11	13	330	52
Mould Bay A	-13	0	-8	-19	6	20		X
Norman Wells A	3	-1	10	-4	5	***	300	76
Resolute A	-15	-4	-8	-19	1	23		X
Yellowknife A	2	-2	9	-4	1	***	330	56
Alberta								
Calgary Int'l A	7	-2	23	-3	9	***	320	83
Cold Lake A	7	-3	21	-3	11	***	290	61
Edmonton Namao A	8	-2	21	-3	2	***	310	57
Fort McMurray A	7	-3	17	-1	3	***	290	63
High Level A	6	-5	15	-5	10	***	320	63
Jasper	7	-2	21	-4	3	***		X
Lethbridge A	9	-2	27	-4	2	***	320	82
Medicine Hat A	10	-2	27	0	14	***	330	59
Peace River A	7	-2	18	-4	0	***	360	48
Saskatchewan								
Cree Lake	3	-4	11	-6	6	***	310	50
Estevan A	9	-2	23	-2	2	***	260	72
La Ronge A	6	-3	23	-5	2	***	180	50
Regina A	8	-3	25	-3	9	***	240	70
Saskatoon A	8	-3	25	-1	21	***	320	57
Swift Current A	9	-2	24	0	10	***	310	54
Yorkton A	7	-3	22	-3	5	***	250	43
Manitoba								
Brandon A	8	-3	20	-5	5	***	290	74
Churchill A	-6	-5	1	-15	11	23	310	63
Lynn Lake A	3	-3	12	-4	11	***	160	48
The Pas A	5	-3	19	-3	6	***	260	56
Thompson A	3	-3	14	-6	3	***	160	48
Winnipeg Int'l A	10	-1	23	-2	3	***	250	57

STATION	temperature mean	anom	max	min	precip. ptot	st	wind max dir	vel
Ontario								
Gore Bay A	11	1	21	1	22	***	180	57
Kapuskasing A	10	3	30	-2	11	***	220	59
Kenora A	9	-1	21	-2	40	***	330	37
London A	15	3	27	3	24	***	240	52
Moosonee	9	3	25	-3	32	***	220	52
North Bay A	13	2	26	-2	11	***	360	48
Ottawa Int'l A	16	4	28	3	22	***	300	63
Petawawa A	14	2	31	-3	15	***	210	52
Pickle Lake	6	-2	19	-4	28	1	220	54
Red Lake A	7	-2	19	-3	17	***	220	54
Sudbury A	12	2	25	0	24	***	340	59
Thunder Bay A	9	1	21	-3	40	***	340	52
Timmins A	11	2	29	-4	12	***	200	56
Toronto(Pearson Int'l A)	15	3	30	2	12	***	300	74
Trenton A	15	3	25	3	11	***	290	67
Wiarton A	14	4	28	0	6	***	210	59
Windsor A	17	3	29	5	12	***	200	95
Québec								
Bagotville A	12	3	30	-5	22	***	210	72
Blanc Sablon A	2P	*	7P	-4P	1P	1		X
Inukjuak A	-5	-3	2	-9	15	31	310	65
Kuujjuaq A	0	-1	8	-7	11	4	250	102
Kuujjuarapik A	2	2	14	-6	5	1	230	61
Maniwaki	13	2	29	-3	49	***	190	48
Mont Joli A	14P	6P	28P	-2P	9P	***	200	80
Montréal Int'l A	16	3	29	4	4	***	340	44
Natashquan A	5	1	14	-4	2	***	200	61
Québec A	14	3	29	0	5	***	250	70
Schefferville A	2	1	11	-6	21	4	250	67
Sept-Îles A	7	1	20	-2	10	***	350	37
Sherbrooke A	13	2	27	-1	10	***	320	37
Val-d'Or A	11	3	27	-4	31	***	320	70
New Brunswick								
Fredericton A	10	0	23	0	6	***	200	61
Miscou Island (aut)	10P	3P	23P	0P	0P	***		
Moncton A	12	2	23	-1	10	***	210	41
Saint John A	10	1	21	0	0	***	350	39
Nova Scotia								
Greenwood A	12	2	25	-1	5	***	210	41
Shearwater A	8	-1	17	1	3	***		X
Sydney A	8	1	23	-3	4	***	220	52
Yarmouth A	10	1	21	2	0	***	160	41
Prince Edward Island								
Charlottetown A	10	2	22	-1	10	***	340	46
East Point (auto)	5P	*	18P	-1P	8P	***		
Newfoundland								
Cartwright	5	2	16	-5	12	225	220	65
Churchill Falls A	3	0	13	-8	35	9	240	57
Gander Int'l A	10	4	22	-3	3	***	270	57
Goose A	7	2	24	-6	15	1	250	67
St John's A	8	3	23	-3	1	***	270	87
St Lawrence	6	2	16	-2	16	***		X
Wabush Lake A	5	2	17	-6	24	1	190	59

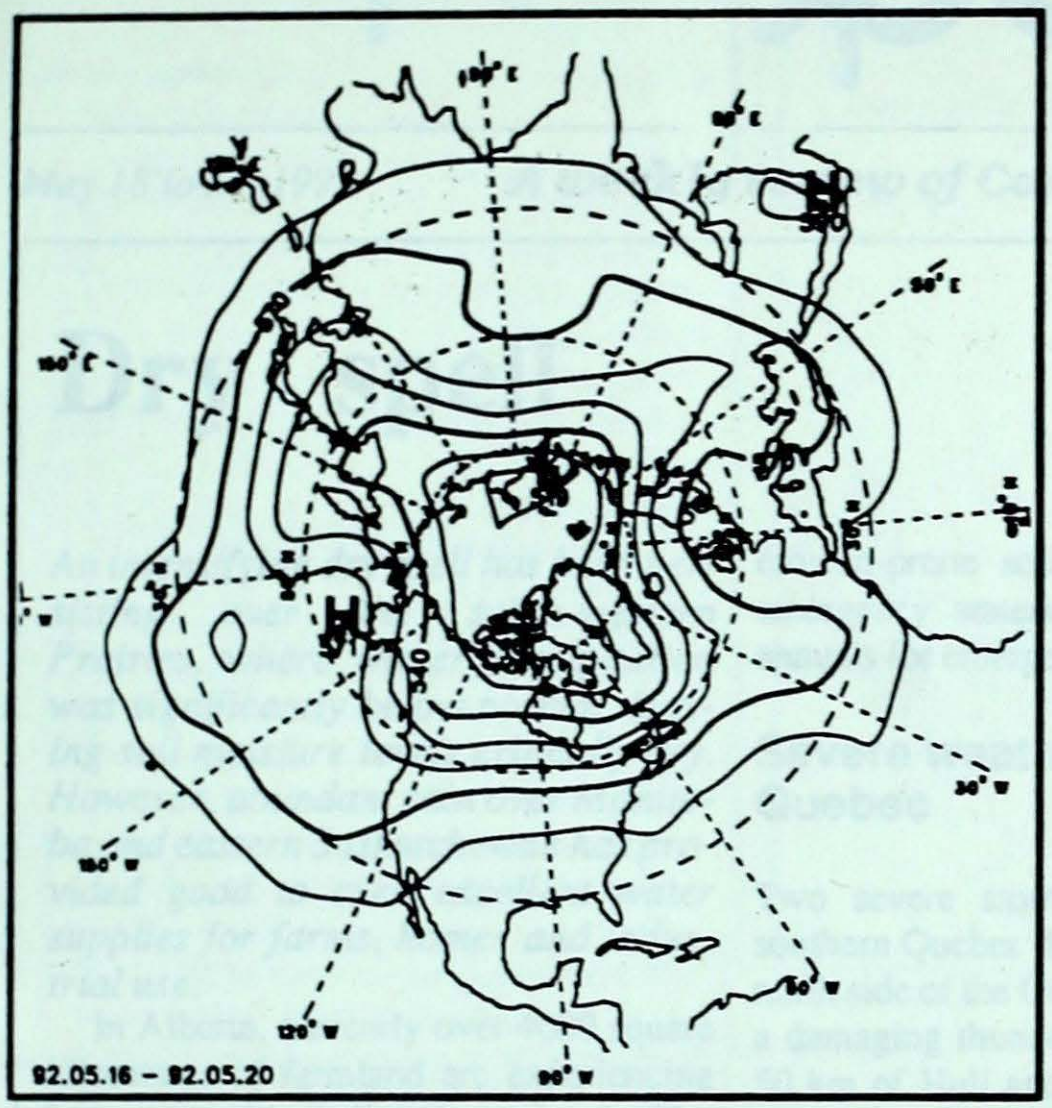
92/05/11-92/05/17

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

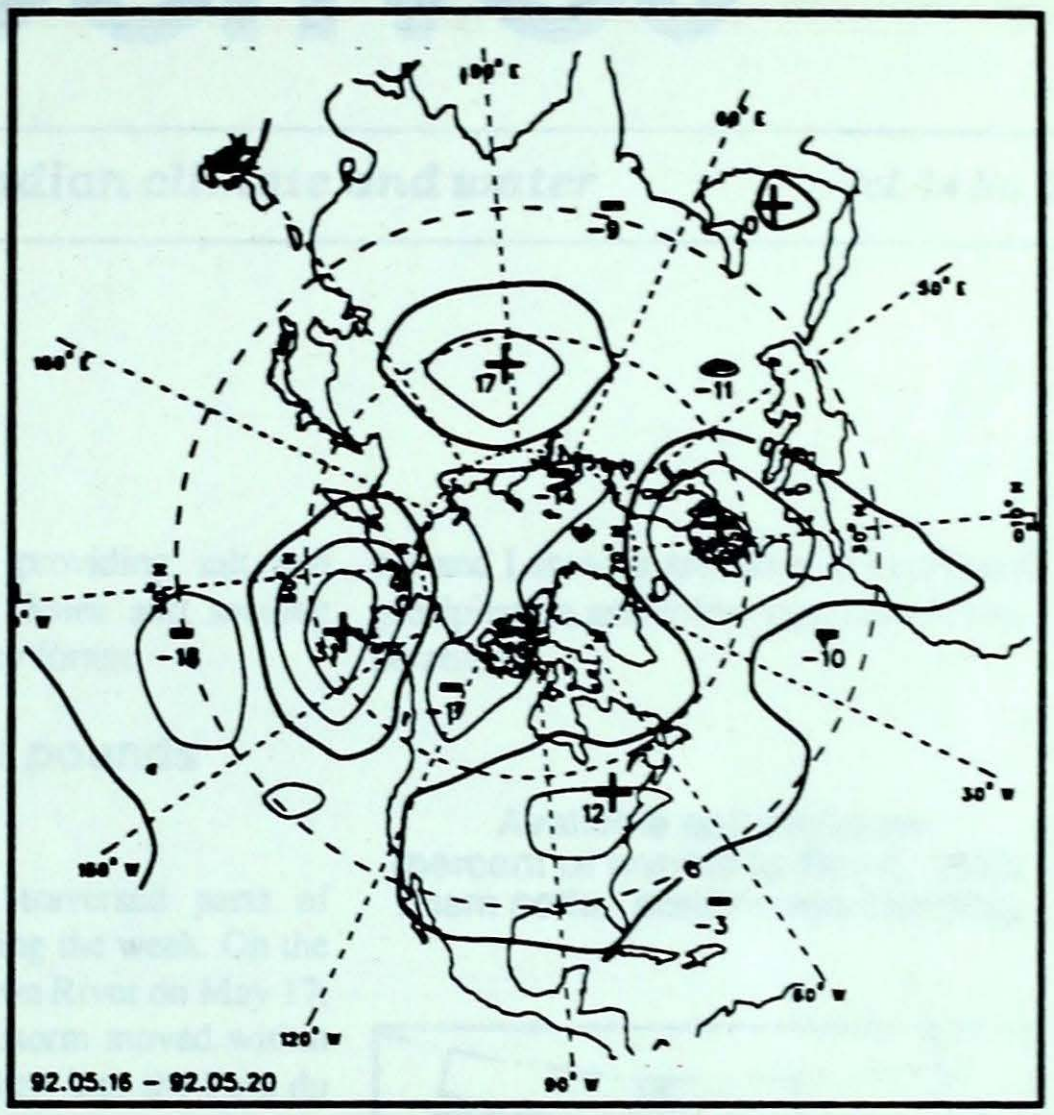
ptot = weekly precipitation total in mm
st = snow thickness on the ground in cm
dir = direction of max wind, deg. from north.
vel = wind speed in km/h

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

50-kPa ATMOSPHERIC CIRCULATION



Mean geopotential height
50 kPa level (10 decametre intervals)



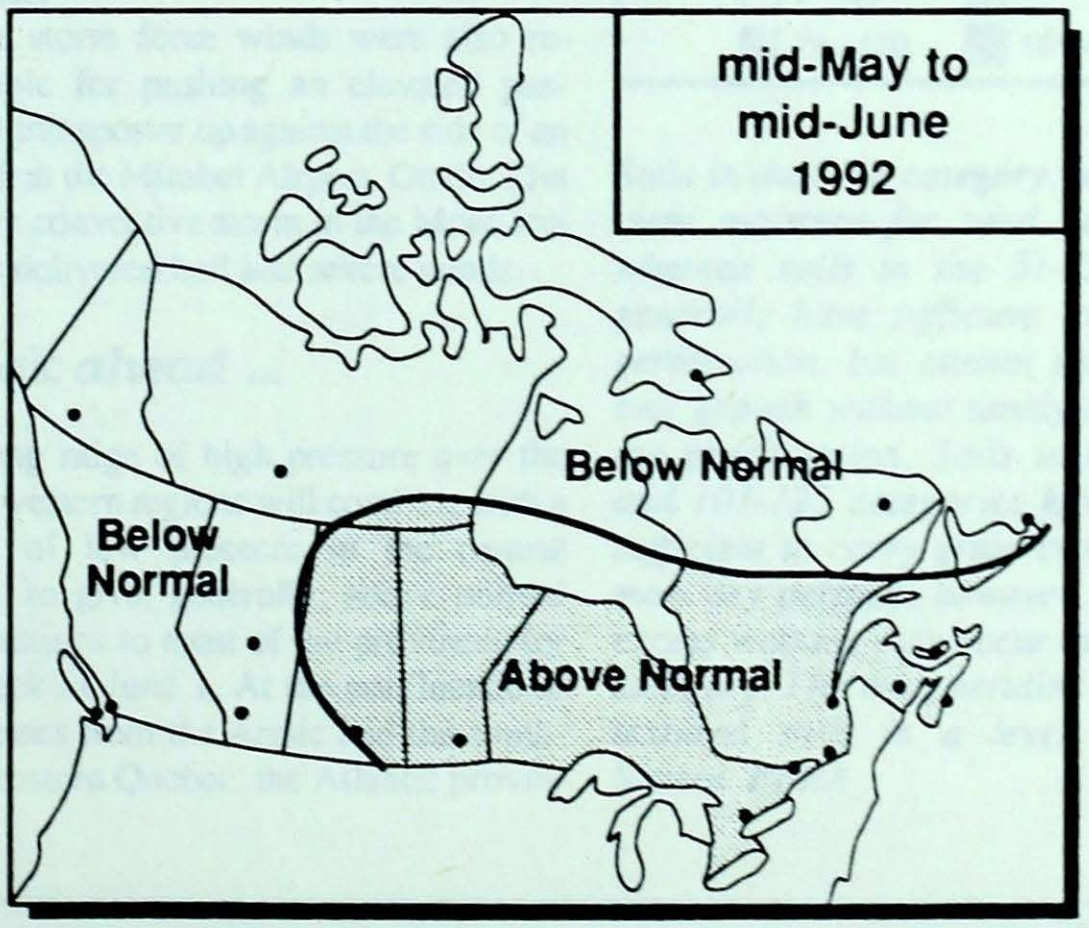
Mean geopotential height anomaly
50 kPa level (10 decametre intervals)

Environment Canada / Environnement Canada
Atmospheric Environment Service / Service de l'environnement atmosphérique

MONTHLY TEMPERATURE FORECAST

Normal temperatures for mid-May to mid-June, °C

Whitehorse	9	Toronto	15
Yellowknife	9	Ottawa	15
Iqaluit	-1	Montréal	16
Vancouver	14	Québec	14
Victoria	13	Fredericton	13
Calgary	11	Halifax	11
Edmonton	13	Charlottetown	12
Regina	14	Goose Bay	8
Winnipeg	14	St. John's	8



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