

Climatic Perspectives

MONTHLY SUPPLEMENT INCLUDED

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May 14 to 20, 1990

A weekly review of Canadian climate and water

Vol.12 No.20

Recurring Prairie rains brighten crop prospects

There have been regular occurrences of precipitation on the Prairies this spring, which notably improved soil moisture reserves, especially when compared to last year. Growing degree-days (a measure of heat requirement for crop growth) however, are running well-below normal in all three provinces. In Saskatchewan, the cool weather has slowed pasture growth noticeably, keeping cattle from grazing.

In the last few weeks, the eastern agricultural farming areas have received substantial amounts of precipitation. As a result, the dryness in southwestern Manitoba and in the Interlake region has been alleviated, and the water supply outlook with respect to reservoirs and lake levels in the province is very good. In fact, the water supply is now sufficient to withstand two years of relatively dry weather.

In April, the central districts in all three provinces received double their normal precipitation. Although the moisture was beneficial, this excessive amount of precipitation has in fact delayed field work and seeding operations, which are now running behind schedule.

There still continues to be a lack of adequate moisture in southern Alberta, extreme southern Saskatchewan and southeastern Manitoba. Soil moisture reserves are especially low in the adjacent areas of southeastern Alberta and south-

western Saskatchewan. Although there has been some improvement when compared to last year, and there is enough moisture for crop germination, supplemental rainfalls will be needed soon and throughout the growing season to assist crop development and to ensure a good harvest.

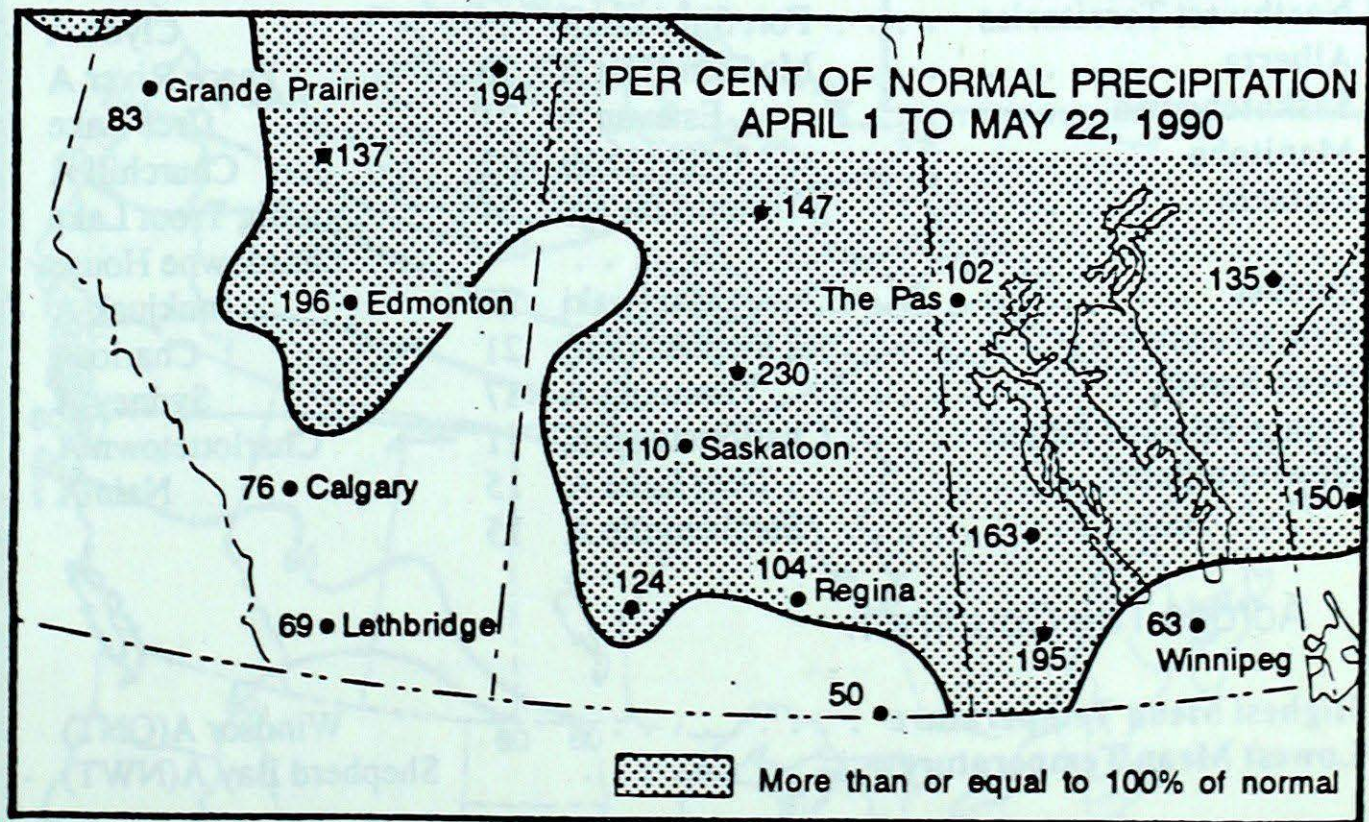
Labrador ice pack continues to retreat

Although the overall distribution of the ice pack is close to normal, there is more old Arctic ice than expected. The ice pack extends as far south as the approaches to the Strait of Belle Isle, which is still closed to navigation. Ice patches are still evident in the vicinity of Notre Dame Bay, off the

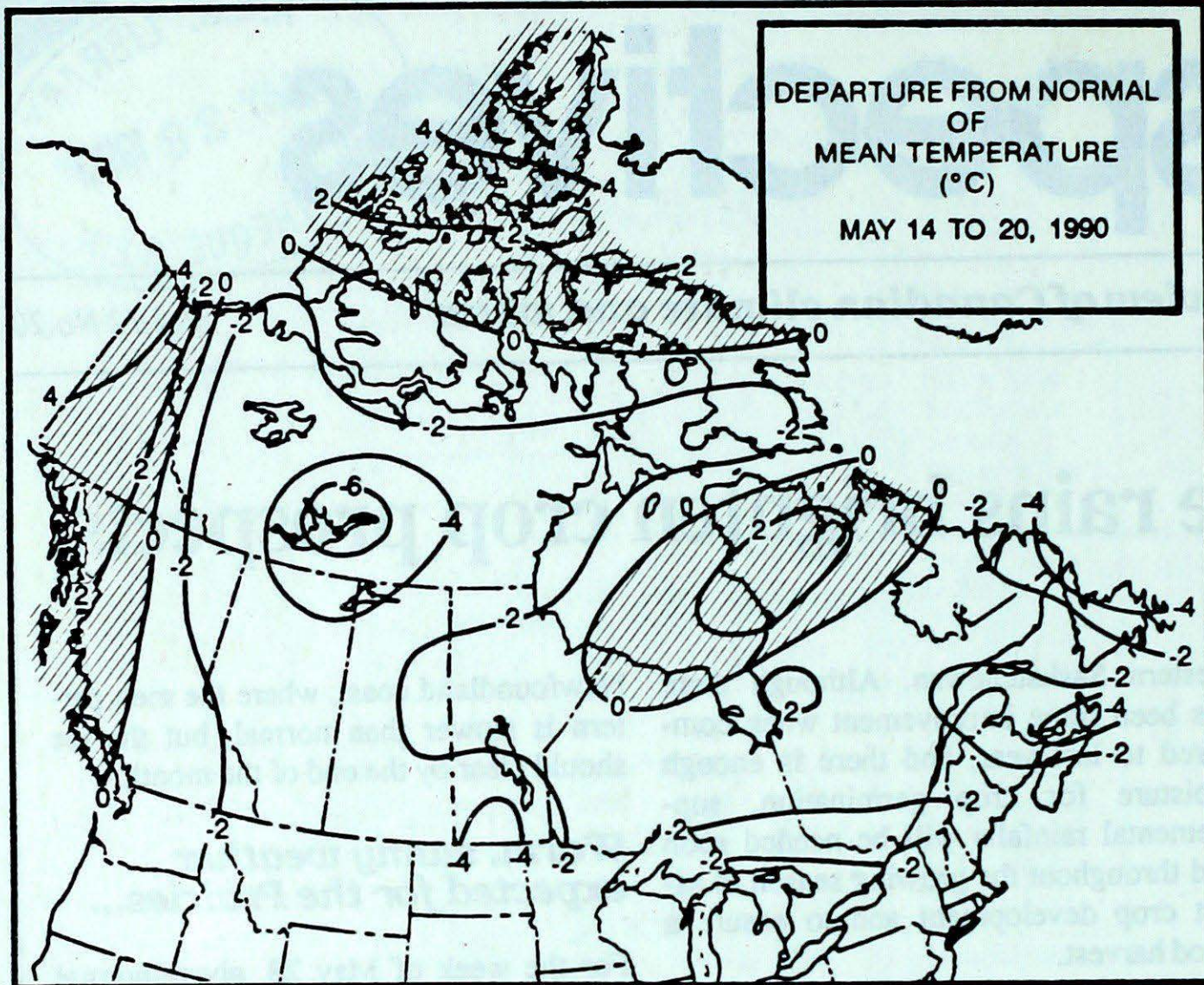
Newfoundland coast, where the melt pattern is slower than normal, but the ice should clear by the end of the month.

Warm, sunny weather expected for the Prairies...

For the week of May 28, above-normal temperatures are expected in British Columbia, the Yukon, the Prairies and the Northwest Territories. A strong upper atmospheric ridge will likely give mostly sunny weather to the western half of the country. However, precipitation is likely over the Yukon and coastal British Columbia. The eastern half of the country can expect below-normal temperatures. Southern Ontario and northwestern Quebec will be about 2°C below normal.



Rainfalls since the beginning of April have improved the crop outlook on the Prairies.



Weekly normal temperatures (°C)

	max.	min.
Whitehorse A	13.3	1.0
Iqaluit A	0.4	-6.0
Yellowknife A	11.0	0.5
Vancouver Int'l A	17.1	8.1
Victoria Int'l A	17.1	7.1
Calgary Int'l A	16.9	3.1
Edmonton Int'l A	17.6	2.5
Regina A	19.2	4.2
Saskatoon A	18.8	4.3
Winnipeg Int'l A	18.6	4.6
Ottawa Int'l A	19.2	7.4
Toronto (Pearson Int'l A)	19.3	6.7
Montréal Int'l A	19.4	7.9
Québec A	17.7	5.5
Fredericton A	18.0	5.1
Saint John A	14.9	4.3
Halifax (Shearwater)	13.7	4.7
Charlottetown A	14.3	4.2
Goose A	11.2	0.5
St John's A	10.6	1.4

Weekly temperature and precipitation extremes

	Maximum temperature (°C)	Minimum temperature (°C)	Heaviest precipitation (mm)
British Columbia	Kamloops A 22	Dease Lake -3	Cranbrook A 35
Yukon Territory	Whitehorse A 20	Komakuk Beach A -5	Whitehorse A 4
Northwest Territories	Fort Simpson A 15	Clyde A -21	Coral Harbour A 14
Alberta	Medicine Hat A 20	Peace River A -4	Whitecourt A 27
Saskatchewan	Estevan A 21	Cree Lake -7	Prince Albert A 36
Manitoba	Island Lake 22	Churchill A -9	Brandon A 66
Ontario	Toronto Int'l A 24	Big Trout Lake -5	North Bay A 108
		Lansdowne House -5	
Québec	Maniwaki 22	Inukjuak A -10	Gaspe A 62
New Brunswick	St Stephen (aut) 21	Charlo A 0	Moncton A 64
Nova Scotia	Yarmouth A 17	Sydney A 0	Sydney A 94
Prince Edward Island	Charlottetown A 11	Charlottetown A 1	Summerside A 54
Newfoundland	Deer Lake A 15	Nain A -7	St John's A 102
	Stephenville A 15		

Across The Country...

Highest Mean Temperature	Windsor A(ONT) 14
Lowest Mean Temperature	Shepherd Bay A(NWT) -11

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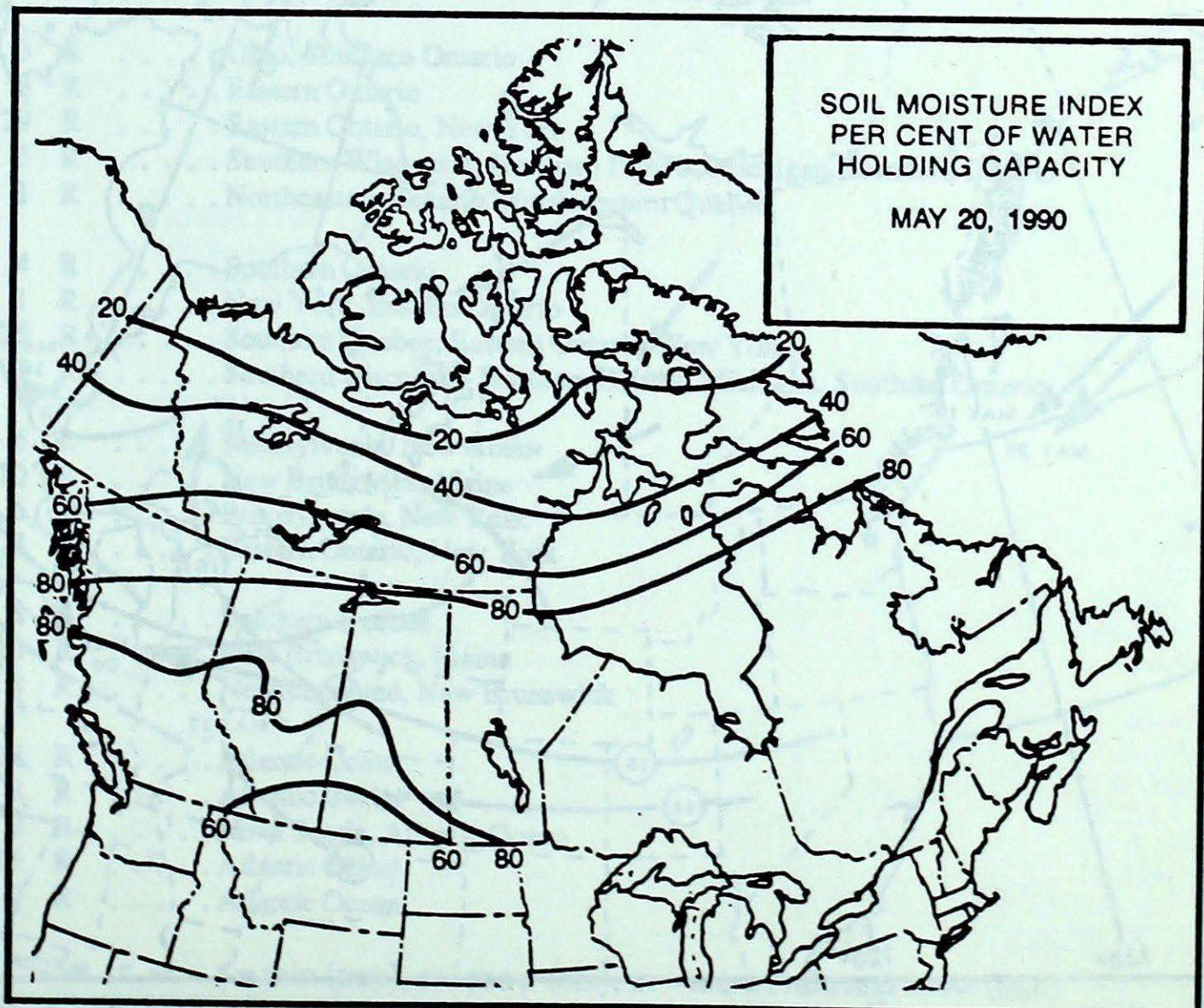
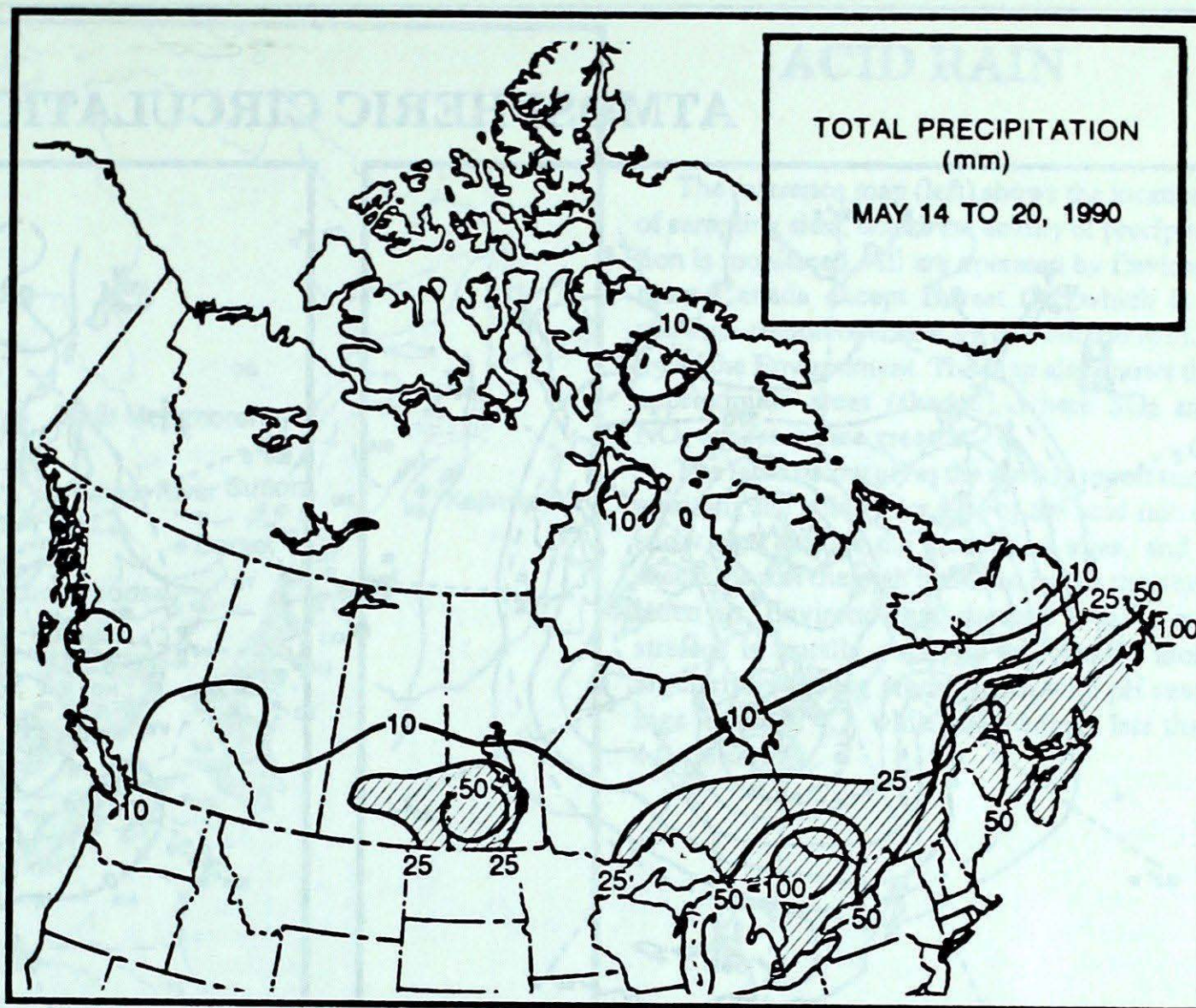
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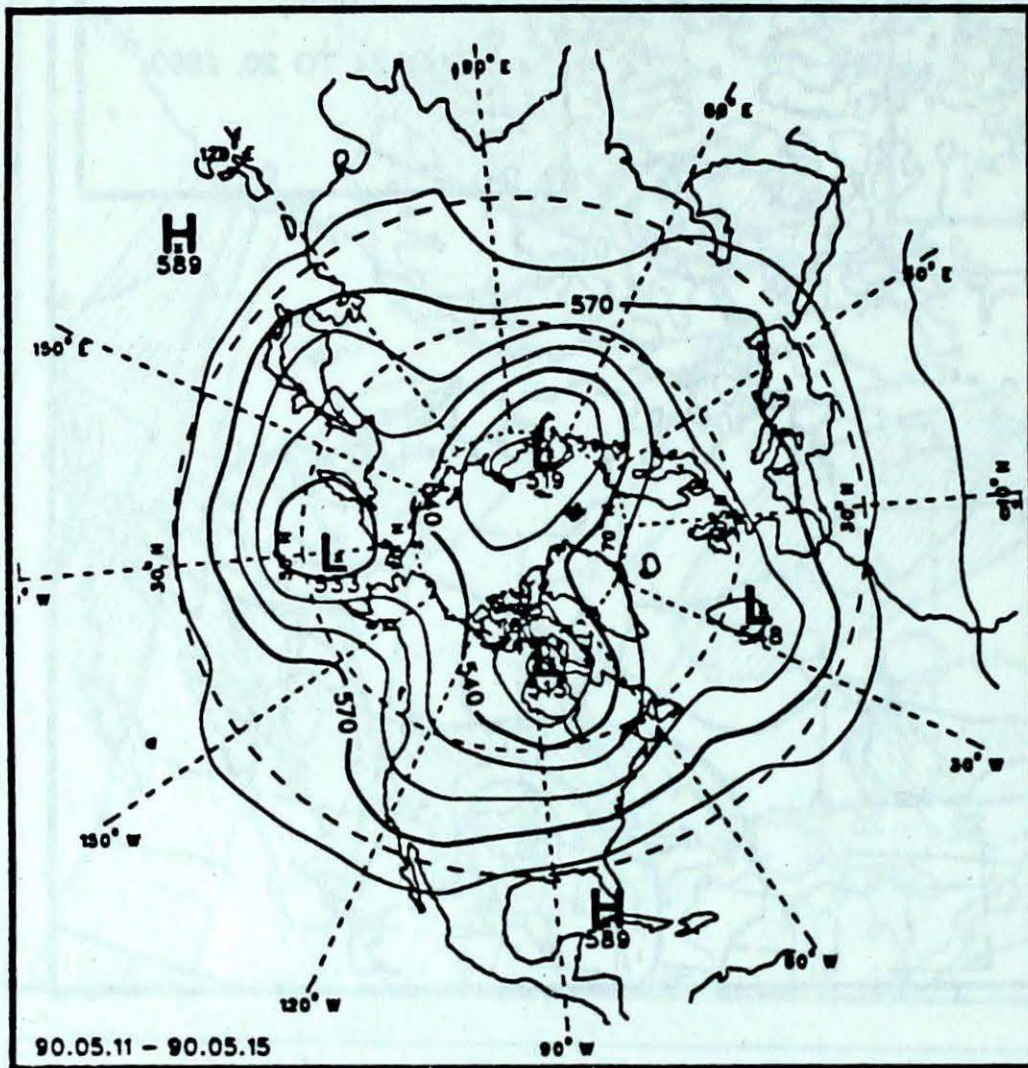
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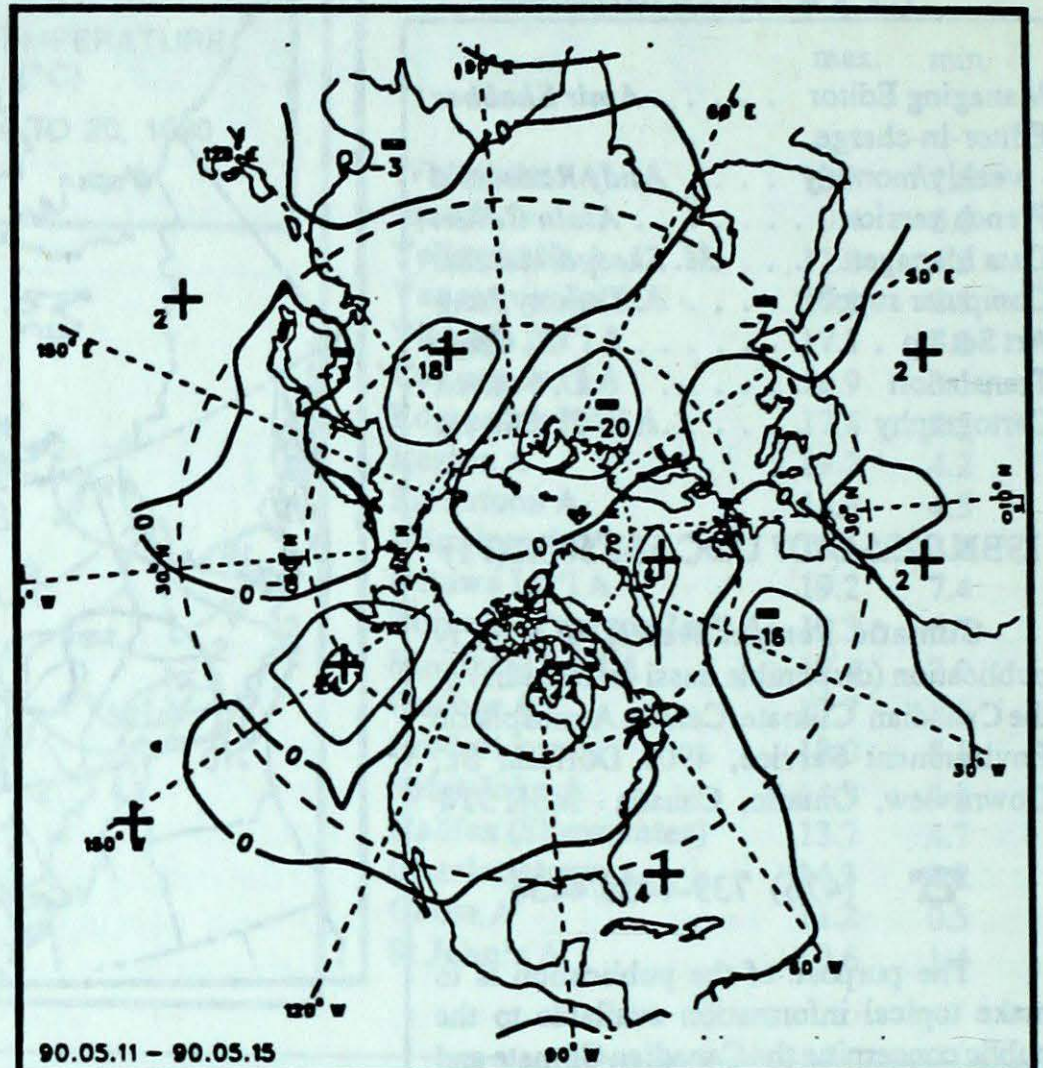
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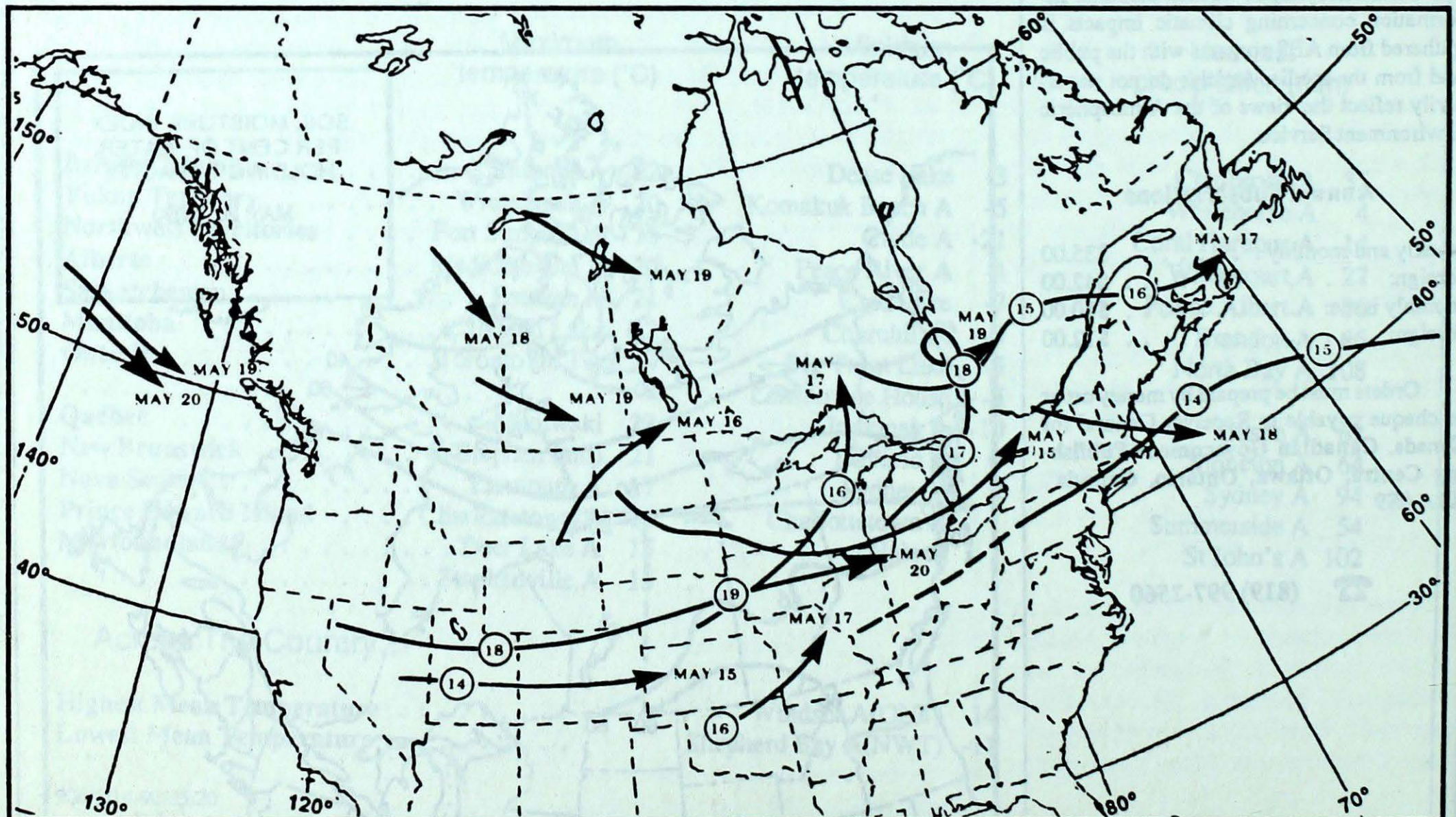
ATMOSPHERIC CIRCULATION



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



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



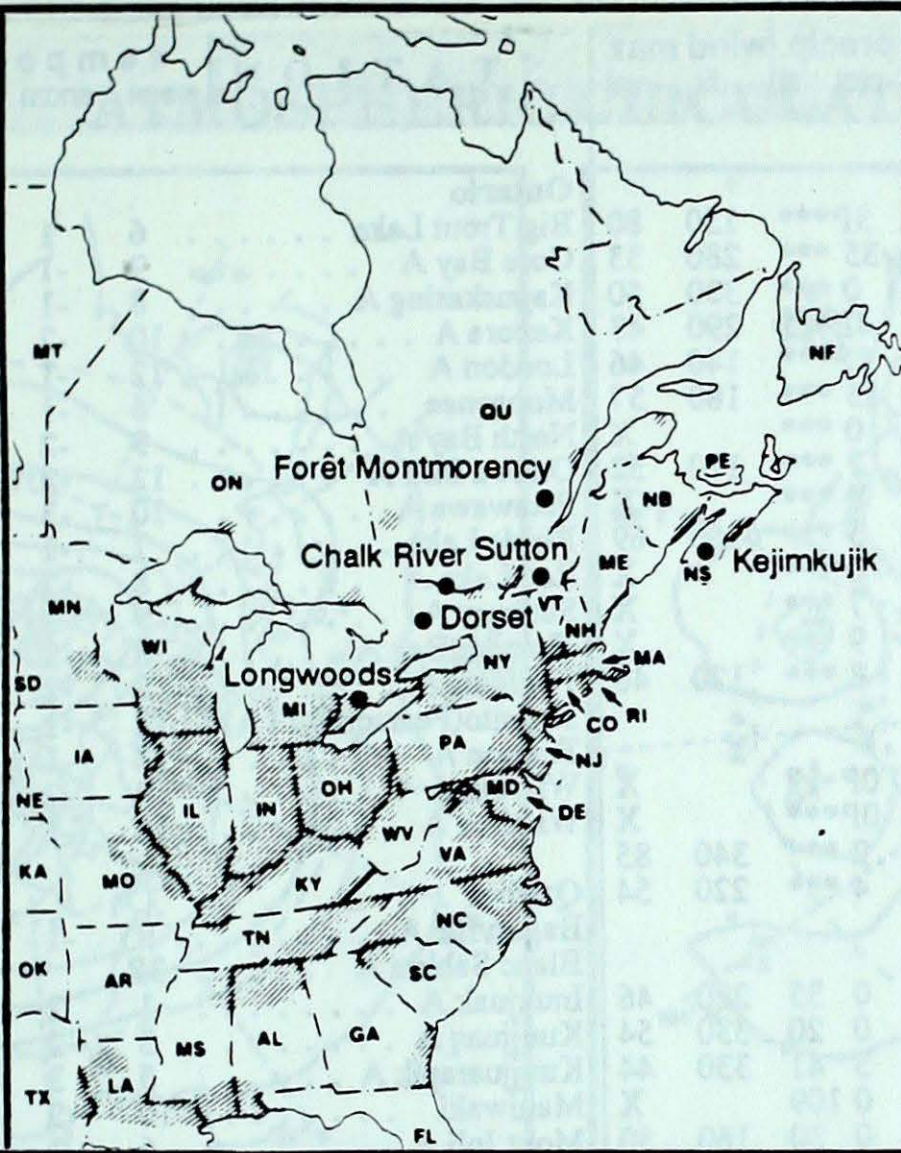
Tracks of low pressure centres at 12:00 U.T. each day during the period.

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.

- ALABAMA — AL
- ARKANSAS — AR
- CONNECTICUT — CO
- DELAWARE — DE
- FLORIDA — FL
- GEORGIA — GA
- ILLINOIS — IL
- INDIANA — IN
- IOWA — IA
- KANSAS — KA
- KENTUCKY — KY
- LOUISIANA — LA
- MAINE — ME
- MANITOBA — MT
- MARYLAND — MD
- MASSACHUSETTS — MA
- MICHIGAN — MI
- MINNESOTA — MN
- MISSISSIPPI — MS
- MISSOURI — MO
- NEBRASKA — NE
- NEW BRUNSWICK — NB
- NEWFOUNDLAND — NF
- NEW HAMPSHIRE — NH
- NEW JERSEY — NJ
- NEW YORK — NY
- NORTH CAROLINA — NC
- NORTH DAKOTA — ND
- NOVA SCOTIA — NS
- OHIO — OH
- OKLAHOMA — OK
- ONTARIO — ON
- PENNSYLVANIA — PA
- PRINCE EDWARD ISLAND — PE
- QUEBEC — QU
- RHODE ISLAND — RI
- SOUTH CAROLINA — SC
- SOUTH DAKOTA — SD
- TENNESSEE — TN
- TEXAS — TX
- VERMONT — VT
- VIRGINIA — VA
- WEST VIRGINIA — WV
- WISCONSIN — WI



Site	day	pH	amount	air path to site	May 13th to 19th, 1990
Longwoods	13	5.1	2 R	..... Ohio, Southern Ontario	
				..... MAY 14 TO 19, DATA NOT AVAILABLE	
Dorset *	14	4.1	3 R	..... Ohio, Southern Ontario	
	16	4.2	8 R	..... Eastern Ontario	
	17	4.6	29 R	..... Eastern Ontario, New York	
	18	4.9	5 R	..... Southern Wisconsin, Northern Illinois, Michigan, Southern Ontario	
	19	3.9	1 R	..... Northeastern Ontario, Northwestern Quebec	
Chalk River	14	4.3	4 R	..... Southern Ontario	
	16	3.9	1 R	..... New York, Eastern Ontario	
	17	4.5	25 R	..... Southern Quebec, Eastern Ontario, New York	
	18	4.4	1 R	..... Southern Wisconsin, Northern Illinois, Michigan, Southern Ontario	
Sutton	13	4.2	6 R	..... Pennsylvania, New York	
	17	4.0	10 R	..... New Brunswick, Maine	
	18	4.5	6 R	..... Pennsylvania, New York	
	19	4.3	3 R	..... Eastern Ontario, New York	
Montmorency	15	3.8	4 R	..... Southern Quebec	
	17	4.7	15 R	..... New Brunswick, Maine	
	18	4.6	8 R	..... Newfoundland, New Brunswick	
Kejimikujik	13	4.6	24 R	..... Atlantic Ocean	
	14	4.8	8 R	..... Atlantic Ocean	
	15	3.6	2 R	..... Nova Scotia, Atlantic Ocean	
	17	4.5	15 R	..... Atlantic Ocean	
	18	5.2	2 R	..... Atlantic Ocean	

r = rain (mm), s = snow (cm), m = mixed rain and snow (mm)

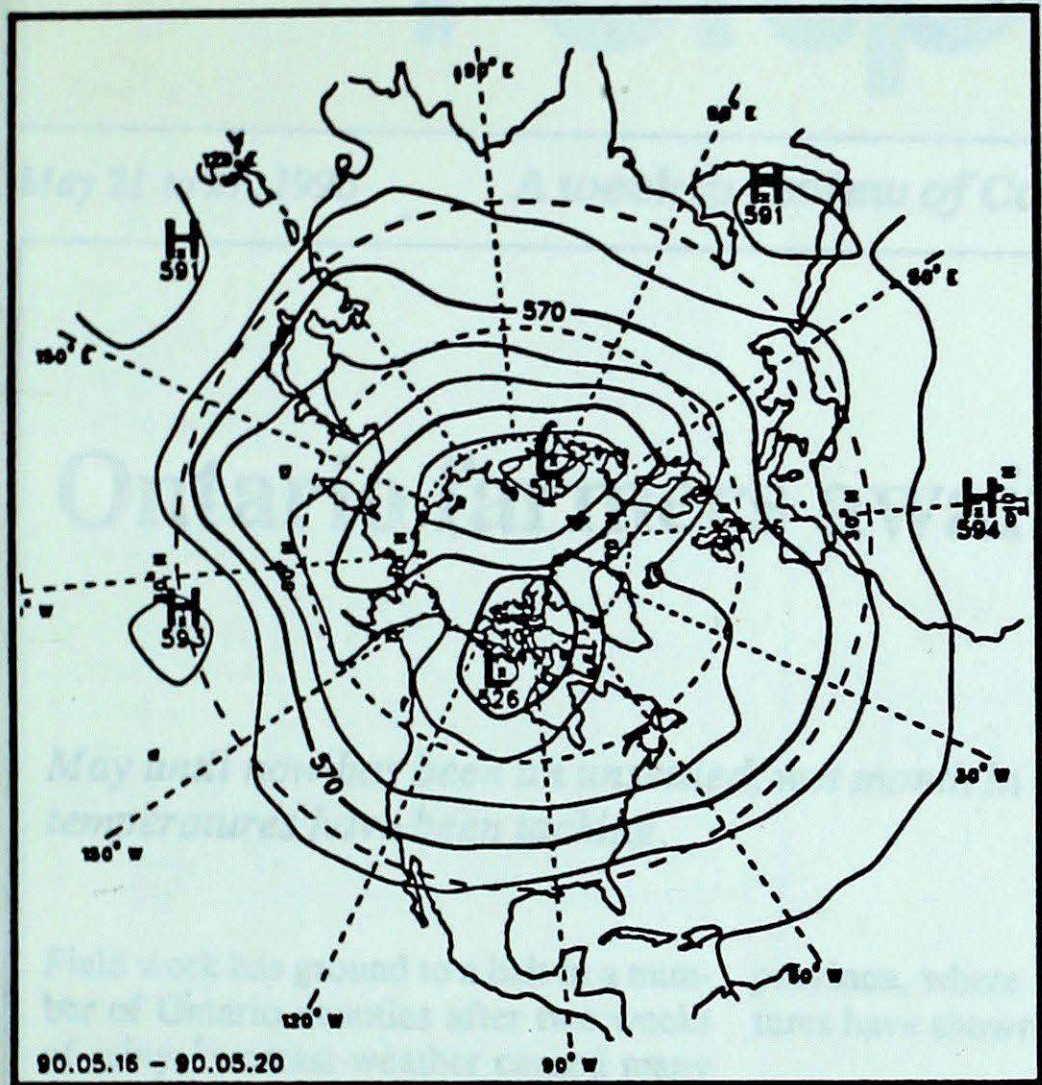
STATION	temperature				precip. ptot st	wind max		STATION	temperature				precip. ptot st	wind max									
	mean	anom	max	min		dir	vel		mean	anom	max	min		dir	vel								
British Columbia								Ontario															
Cape St James	9P	0P	14P	6P	3P***	150	80	Big Trout Lake	6	1	19	-5	1 ***	330	63								
Cranbrook A	8	-3	16	0	35 ***	280	33	Gore Bay A	9	-1	18	3	52 ***	280	72								
Fort Nelson A	8	-3	17	-2	0 ***	330	50	Kapuskasing A	8	-1	17	0	47 ***	110	69								
Fort St John A	8P	-3P	16P	2P	4P***	290	43	Kenora A	10	-2	21	0	10 ***	320	56								
Kamloops A	14P	-1P	22P	6P	8P***	140	46	London A	12	-1	22	2	71 ***	200	95								
Penticton A	12	-2	21	3	15 ***	180	57	Moosonee	6	-1	15	-2	19 ***	300	44								
Port Hardy A	10	1	16	4	0 ***		X	North Bay A	9	-2	18	2	108 ***	260	93								
Prince George A	9	-1	19	-2	7 ***	170	52	Ottawa Int'l A	12	-2	21	4	33 ***	250	65								
Prince Rupert A	10	2	17	4	0 ***		X	Petawawa A	10	-3	23	1	31 ***	240	48								
Revelstoke A	12	0	20	2	5 ***	160	69	Pickle Lake	7	-1	20	-3	1 ***	110	50								
Smithers A	11	1	20	1	0 ***		X	Red Lake A	8	-2	20	-2	13 ***	150	46								
Vancouver Int'l A	12	0	18	7	7 ***		X	Sudbury A	9	-2	18	2	105 ***	090	52								
Victoria Int'l A	11	-2	16	4	9 ***		X	Thunder Bay A	8	-2	15	-1	42 ***	310	63								
Williams Lake A	9	-1	16	0	8 ***	120	46	Timmins A	8	-2	21	0	45 ***	300	59								
Yukon Territory								Toronto(Pearson Int'l A)															
Komakuk Beach A	-1P	4P	2P	-5P	0P 17		X	Trenton A	12	-1	24	3	54 ***	270	93								
Teslin (aut)	8P	*	19P	-2P	0P***		X	Warton A	12	-1	23	5	48 ***	230	74								
Watson Lake A	9	1	18	-1	2 ***	340	85	Windsor A	9	-2	18	2	68 ***	260	63								
Whitehorse A	9	2	20	-1	4 ***	220	54	Québec															
Northwest Territories								Bagotville A															
Alert	-7	5	0	-13	0 35	220	46	Blanc Sablon A	3P	*	9P	-2P	0P 1	080	57								
Baker Lake A	-9	-3	-2	-16	0 20	330	54	Inukjuak A	1	2	12	-10	3 25	110	57								
Cambridge Bay A	-10	-1	-6	-17	3 41	330	44	Kuujuuaq A	3	2	11	-6	0 ***	120	37								
Cape Dyer A	-7	-1	5	-14	0 109		X	Kuujuarapik A	5	3	15	-4	4 1	130	82								
Clyde A	-8	-1	5	-21	0 30	160	50	Maniwaki	10	-2	22	0	32 ***	200	46								
Coppermine A	-8	-1	-1	-13	3 41	320	41	Mont Joli A	6	-3	17	1	40 ***	050	56								
Coral Harbour A	-8	-2	0	-20	14 49	050	57	Montréal Int'l A	11	-2	21	5	43 ***	120	56								
Eureka	-6	4	0	-12	0 21	350	35	Natashquan A	4	-1	13	-1	10 ***	080	56								
Fort Smith A	3	-5	15	-6	4 ***		X	Québec A	10	-2	22	4	47 ***	080	56								
Hall Beach A	-9P	0P	1P	-21P	5P 53	160	65	Schefferville A	1	-1	8	-8	0 2	160	50								
Inuvik A	2	2	9	-5	0 1	110	37	Sept-Îles A	4	-2	11	0	49 4	100	72								
Iqaluit A	-6	-3	0	-17	2 15	140	56	Sherbrooke A	10	-2	21	3	21 ***		X								
Mould Bay A	-9	3	-2	-15	1 16		X	Val-d'Or A	8	-1	21	0	31 ***	160	44								
Norman Wells A	3	-3	12	-6	7 ***	290	37	New Brunswick															
Resolute A	-9	2	-3	-14	3 35	030	57	Charlo A	6	-3	18	0	35 ***	220	59								
Yellowknife A	0	-6	5	-7	1 ***		X	Chatham A	6	-4	16	1	37 ***	040	50								
Alberta								Fredericton A															
Calgary Int'l A	7	-3	17	-1	3 ***	340	59	Moncton A	6P	-4P	13P	2P	64P***	360	56								
Cold Lake A	9	-1	19	1	6 ***	040	56	Saint John A	8	-1	17	3	60 ***	080	59								
Edmonton Namao A	10	-1	19	2	2 ***	170	46	Nova Scotia															
Fort McMurray A	7	-3	18	-3	7 ***	300	50	Greenwood A	9	-2	17	3	46 ***	100	74								
High Level A	7	-3	16	-3	6 ***	340	48	Shearwater A	7	-2	15	3	47 ***	100	67								
Jasper	7	-2	17	-3	8 ***		X	Sydney A	4P	-4P	11P	0P	94P***	100	52								
Lethbridge A	8	-3	19	-1	12 ***	360	50	Yarmouth A	9	0	17	4	60 ***	110	63								
Medicine Hat A	10	-2	20	-3	12 ***	210	74	Prince Edward Island															
Peace River A	8	-2	16	-4	1 ***	240	41	Charlottetown A	5	-5	11	1	53 ***	120	67								
Saskatchewan								Summerside A															
Cree Lake	4	-4	19	-7	6 ***	330	44	5	-5	10	2	54 ***	090	50									
Estevan A	9	-4	21	0	6 ***	330	78	Newfoundland															
La Ronge A	7	-1	16	-3	7 ***	010	33	Cartwright	1	-3	11	-5	6 58		X								
Regina A	9	-3	18	-2	21 ***	340	78	Churchill Falls A	3	-2	11	-6	7 26	100	48								
Saskatoon A	8	-3	17	1	18 ***	170	43	Gander Int'l A	3	-4	13	-3	71 ***	050	44								
Swift Current A	8	-3	18	-1	32 ***	200	57	Goose A	3	-3	12	-3	17 1	040	46								
Yorkton A	7	-4	17	-1	28 ***	350	67	Port Aux Basques	4	-1	11	0	84 ***	090	69								
Manitoba								St John's A															
Brandon A	8	-3	19	-2	66 ***	330	63	2	-4	9	-2	102 ***	060	48									
Churchill A	-4	-2	5	-9	5 7	300	54	St Lawrence	5	0	11	0	52 ***		X								
Lynn Lake A	5	-1	16	-6	7 ***	260	35	Wabush Lake A	3	-1	9	-3	11 ***	150	43								
The Pas A	8	0	21	-3	6 ***	220	44	90/05/14-90/05/20															
Thompson A	6	0	17	-5	2 ***	270	41																
Winnipeg Int'l A	8	-4	21	-4	18 ***	330	59																

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

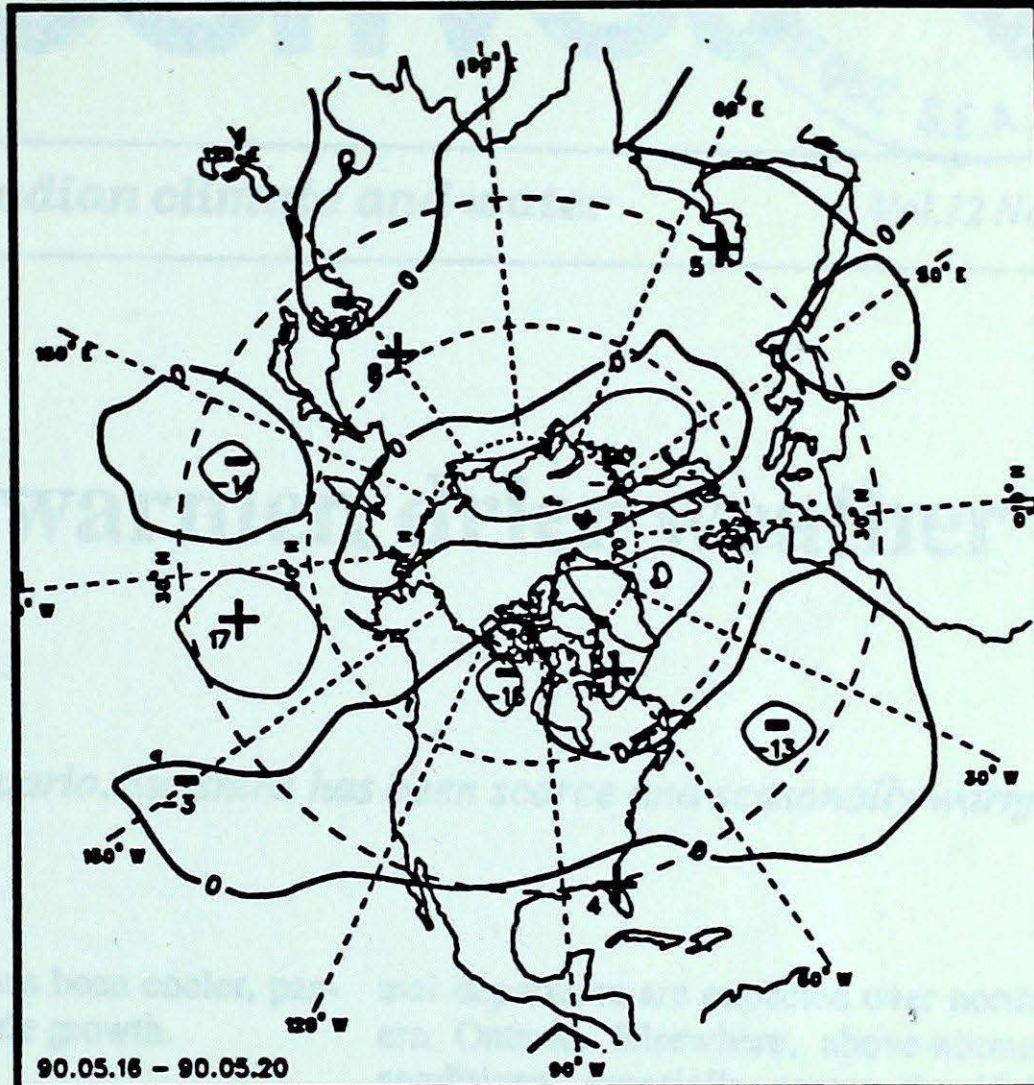
ptot = weekly precipitation total in mm
 st = snow thickness on the ground in cm
 dir = direction of max wind, deg. from north.
 vel = wind speed in km/h

— 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)



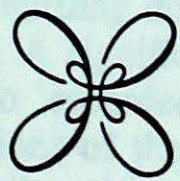
Mean geopotential height anomaly
50-kPa level (10-decametre intervals)

...received anywhere from 85 to 130 mil-
limes of rain. This is already ap-
proximately 30 mm above normal, when
compared to a full month's total, making
this the wettest May since 1963 or 1964.
Meanwhile in central Ontario, Sudbury
has received 141 mm of precipitation
this month, making this the wettest May
in 28 years.

The wet weather has delayed the
planting of corn and soybeans, and
farmers now have to also catch up on
spraying their crops. Early planted corn
has emerged, but is yellow due to the
lack of warmth. Grains and cereals are
going reasonably well, but the cool
weather has slowed their growth. Be-
cause of the rain, pasture is lush in the
south and farmers are anticipating hay
making a good first hay crop since a drier
start, but in the more central areas of the

A number of western Alberta rivers
have overflowed their banks this week,
as a combination of heavy rain and in-
creased mountain snowmelt has swelled
flood water levels. Heaviest rainfall, in
some cases more than 100 mm, fell in the
foothills of southwestern Alberta. In the
Rocky Mountain community of Cam-
bridge, a dam burst, sending a three-metre
wall of water cascading down a normally
shaded slope. An amount of
rain was also reported in the dry
southern portion of the province, im-
proving the soil moisture situation and
crop prospects somewhat.

Cool weather expected
for the most of the
country...
For the week of June 4, below-normal
temperatures are forecast across
Manitoba, Ontario, Quebec, and the At-
lantic provinces. The greatest below-nor-



Total precipitation April 26 to May 27, 1990		
Location	Amount	Average
Windsor	115.2 mm	65.0 mm
London	122.4 mm	61.5 mm
Toronto	85.8 mm	61.4 mm
Thunder	114.0 mm	67.4 mm
North Bay	160.8 mm	58.5 mm
Sudbury	143.1 mm	83.5 mm

In the last four weeks, heavy
precipitation was recorded across
the southern half of Ontario.