Environment Canada Environnement Canada

Climatic Perspectives

July 1 to 7, 1991 **A weekly review of Canadian climate and water** *Vol. 13 No 27*

Beneficial rains reach Ontario

A depression passing over Lake Superior dominated the weather across all of Ontario for the first week in July. Some localities received more rain during the week than all of May and June combined. In Kitchener, 82.8 mm of rain fell in two days, compared to June with a total of 38 mm. The temperatures soared to above 30 degrees Celsius with the tropical air moving as far north as Moosonee.

These hot, dry conditions have caused worry in the agricultural sector. Drought stress has been reported in some crops. Soyabeans and barley in the southwest have been also affected by blights and pests. However, the corn and wheat crops are flourishing in the warm days, being two to three weeks ahead of schedule. The rain has topped up soil moisture reserves, and while genuinely appreciated by farmers, such heavy downpours can increase erosion, play havoc with crop appearance and herbicide distribution, and provide the potential for insect infestation.

Saskatchewan - excessive rain saturates fields

Southern Saskatchewan, under a cold front, received 45.6 and 39.8 mm in Wynyard and Regina, respectively. Such cool, wet and cloudy conditions, are now leading to a situation of excessive soil moisture over much of the southern Prairies which is rotting cut hay in the fields and promoting increases in crops diseases and parasites, soil erosion and flooding. Below normal temperatures have slowed plant development by up to 10 days.

Maritime provinces would welcome rain

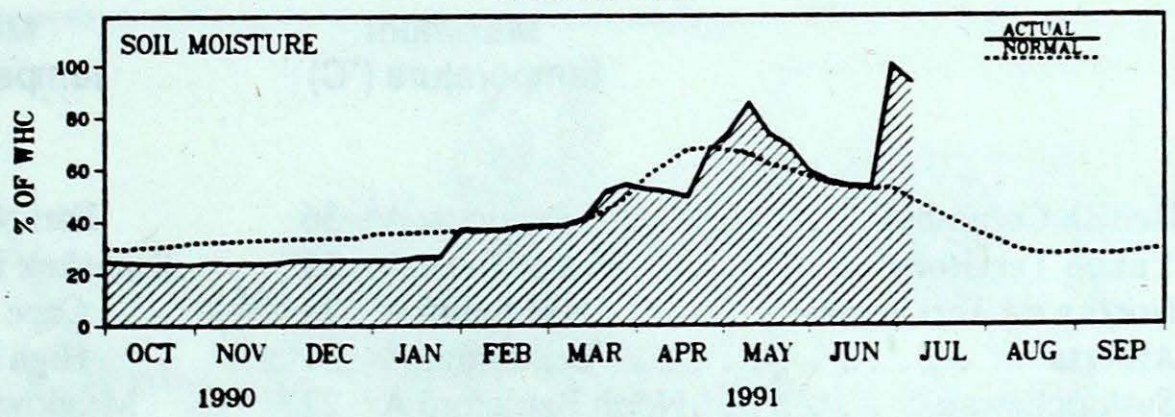
Showers were reported in selected areas of the eastern provinces, but the insignificant amounts will not alleviate a generally dry condition, persistent since mid-May. Average monthly stream flows, in Nova Scotia, are among the lowest since 1943, and rivers like the Margaree and St. Mary's are at 25% of their normal levels. In southern New Brunswick and Prince Edward Island conditions are better, with discharges at 68% and 67% of normal.

As a result of the drought, there is a critical forest fire risk. The Nova Scotia government banned open fires in parks on June 28 and could be forced to close many provincial parks, at the height of the tourism season, if the dry weather persists.

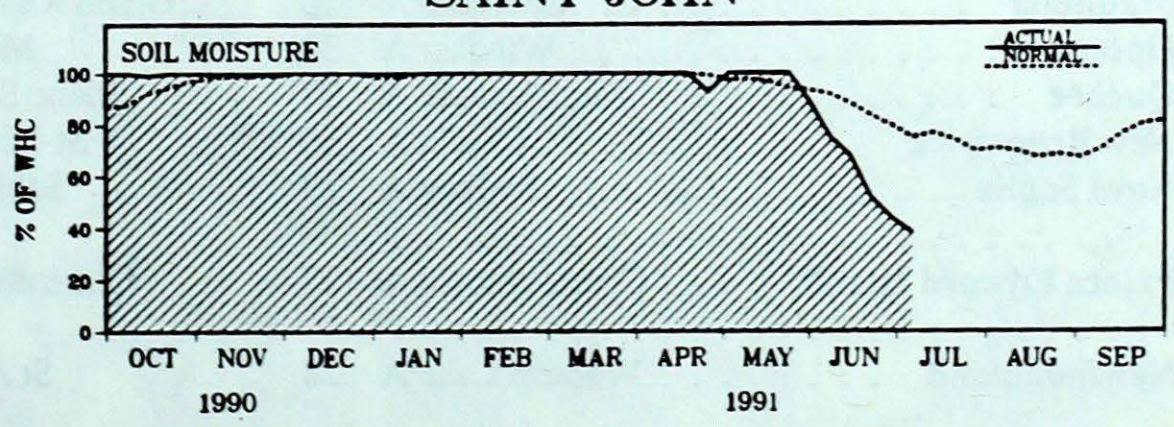
A look ahead ...

For the week of July 15, a mild westerly circulation should keep most of the country within seasonal temperatures with exceptions in the northern regions of The Yukon, Alberta and Quebec as well as the Atlantic provinces which are forecasted to be cooler than normal.

REGINA

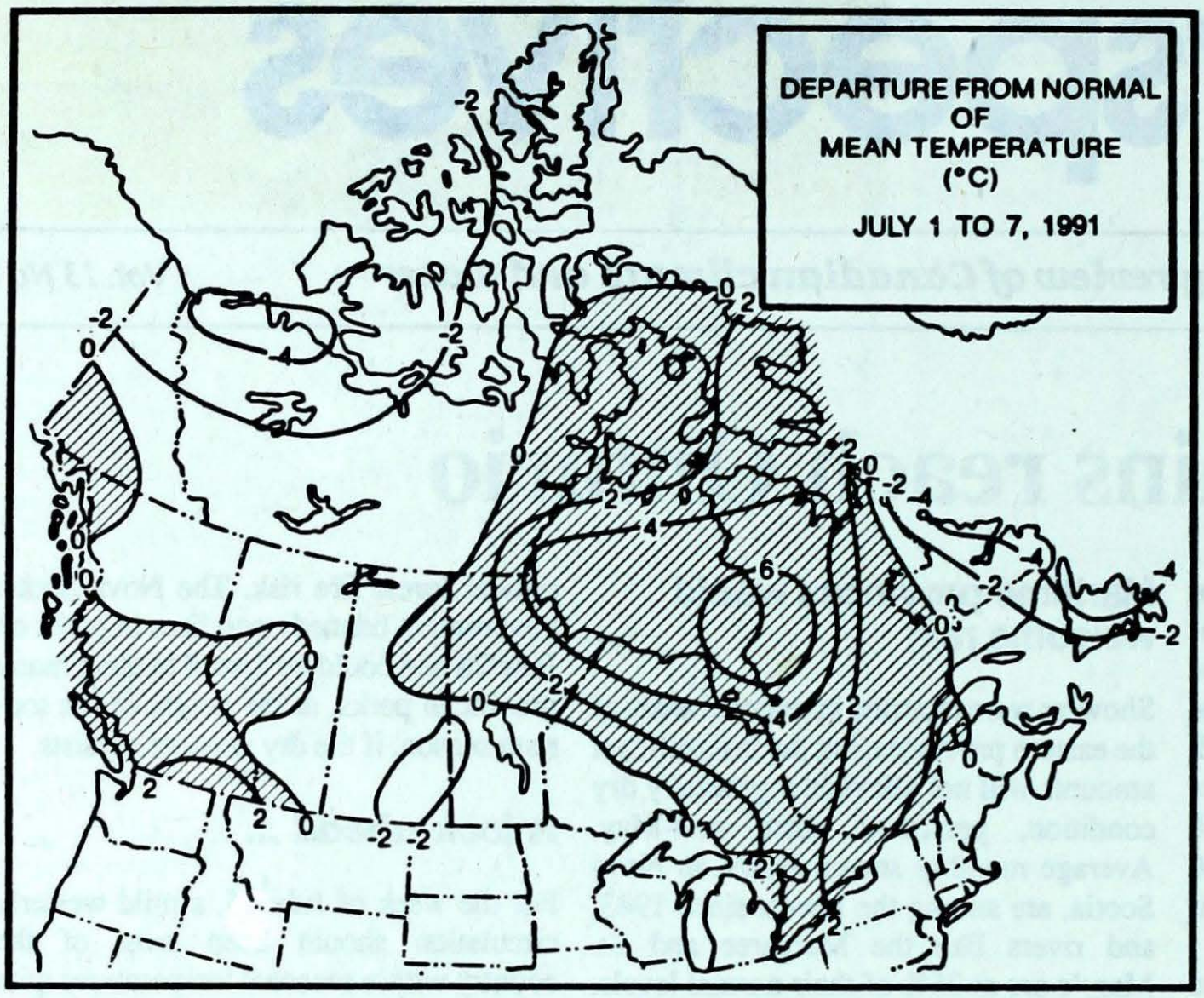


SAINT JOHN



The normally dry summer in the country's interior has changed places with the usually well-watered Maritimes. Soil moisture reserves at Regina have attained the rare level of near saturation, while at Saint John N.B., the soil water has declined to less than 40 per cent holding capacity - an unusual situation

Canada



Weekly normal temperatures (°C)

	max.	min.
Whitehorse A	20.0	7.1
Iqaluit A	10.4	2.7
Yellowknife A	21.1	11.8
Vancouver Int'l A	20.9	11.9
Victoria Int'l A	20.7	10.3
Calgary Int'l A	21.8	8.6
Edmonton Int'l A	22.4	8.9
Regina A	24.7	11.1
Saskatoon A	24.4	10.9
Winnipeg Int'l A	25.0	12.9
Ottawa Int'l A	25.4	13.7
Toronto (Pearson Int'l A)	25.8	13.1
Montréal Int'l A	25.1	14.3
Québec A	23.7	11.6
Fredericton A	24.4	11.6
Saint John A	21.4	10.5
Halifax (Shearwater)	21.0	11.9
Charlottetown A	21.5	12.1
Goose A	19.0	8.6
St John's A	18.5	9.0

Weekly temperature and precipitation extremes

	Maximum temperature (°C)		Minimum temperature (°C)		Heaviest precipitation (mm)	
British Columbia	Penticton A	36	Fort Nelson A	2	Prince Rupert A	39
Yukon Territory	Watson Lake A	25	Komakuk Beach A	-2	Faro (aut)	11
Northwest Territories	Fort Smith A	28	Cape Parry A	-3	Fort Smith A	52
Alberta	Lethbridge A	31	High Level A	0	Red Deer A	51
Saskatchewan	North Battleford A	27	Meadow Lake A	2	Moose Jaw A	67
	Prince Albert A	27				
Manitoba	Churchill A	30	Grand Rapids (aut)	4	Dauphin A	62
Ontario	Windsor A	34	Moosonee	0	Mount Forest	93
Québec	Kuujjuarapik A	33	Blanc Sablon A	0	Kuujjuarapik A	80
New Brunswick	Charlo A	30	St-Léonard A	3	St-Léonard A	19
Nova Scotia	Sydney A	27	Sable Island	3	Greenwood A	2
					Yarmouth A	2
Prince Edward Island	Charlottetown A	27	Charlottetown A	5	Charlottetown A	0
					East Point (aut)	0
Newfoundland	Wabush Lake A	28	St Anthony	-2	Cartwright	25

Across The Country...

Highest Mean Temperature	Windsor A(ONT)	25
Lowest Mean Temperature	Mould Bay A(NWT)	1

91/07/01-91/07/07

CLIMATIC PERSPECTIVES
VOLUME 13

Managing Editor . . . . . *Bruce Findlay*
Editor-in-charge
- weekly/monthly . . . . *Darlene Lavigne*
French version . . . . . *Alain Caillet*
Data Manager . . . . *M. Skarpathiotakis*
Computer support . . . . . *Robert Eals*
Art Set-up . . . . . *K. Czaja*
Translation . . . . . *D. Pokorn*
Cartography . . . . . *T. Chivers*

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

☎ (416) 739-4438/4436

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

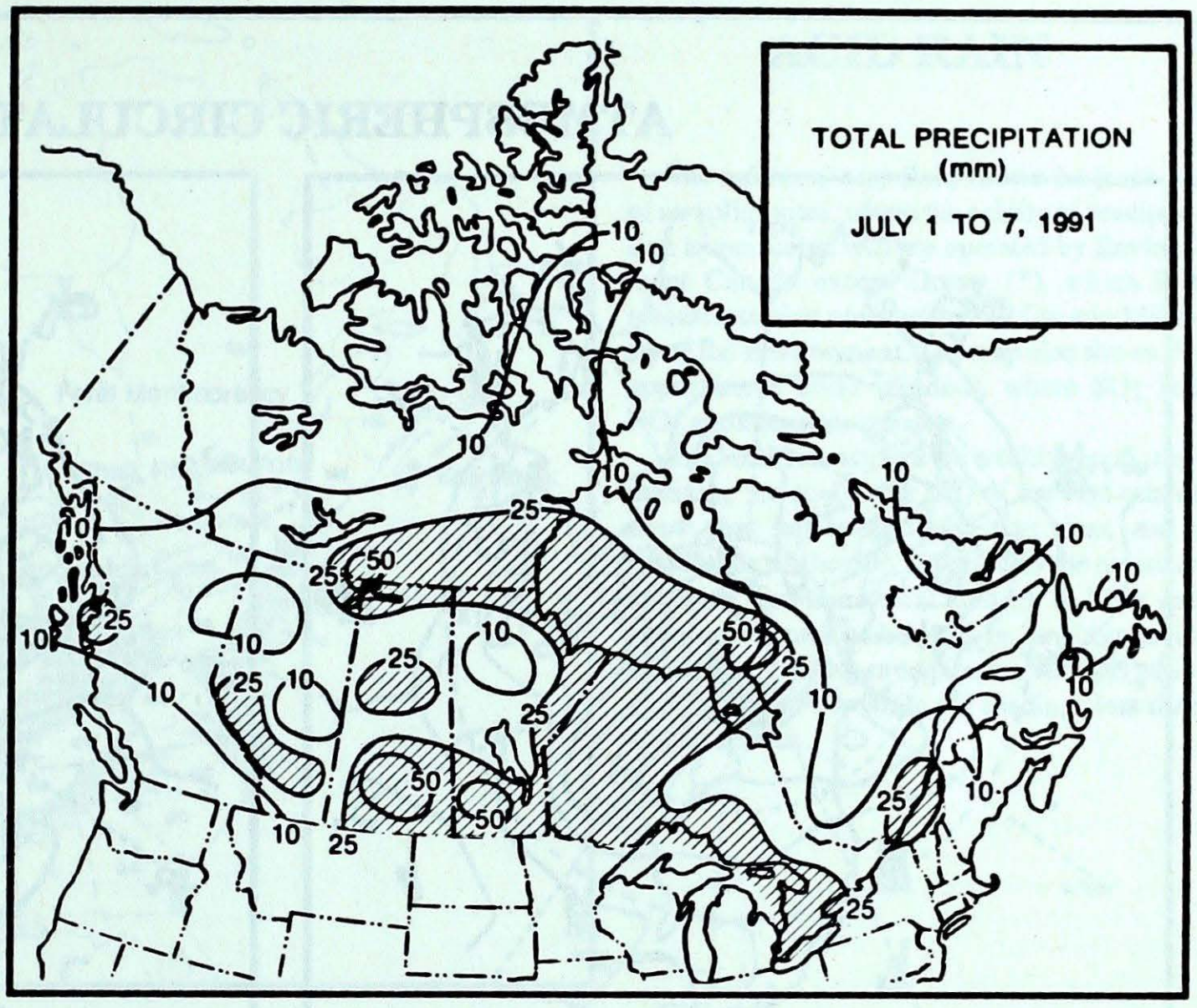
The data in this publication are based on unverified reports from approximately 225 Canadian synoptic weather stations. Information concerning climatic impacts is gathered from AES contacts with the public and from the media. Articles do not necessarily reflect the views of the Atmospheric Environment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

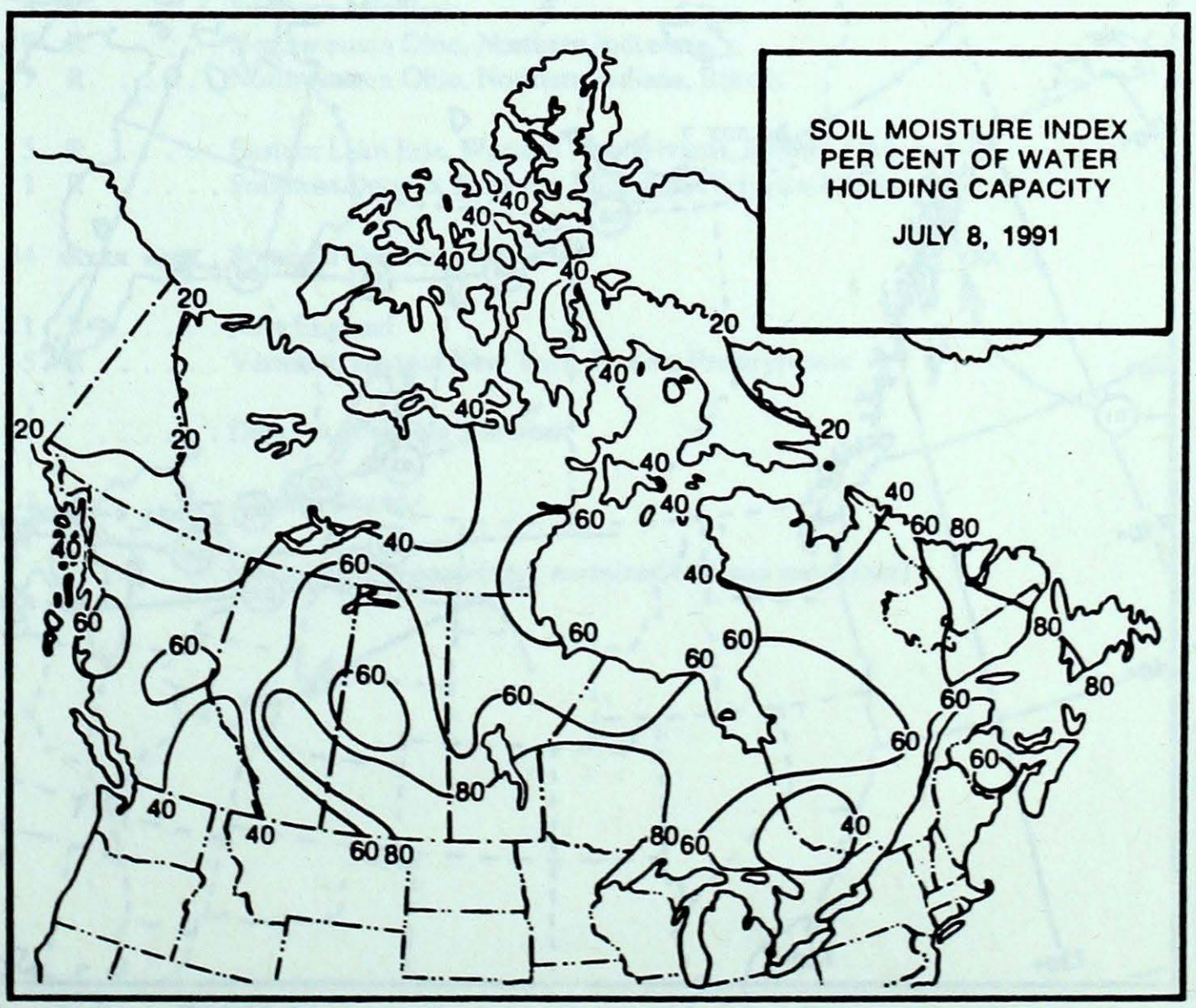
Annual Subscriptions

weekly and monthly : $35.00
foreign: $42.00
monthly issue: $10.00
foreign: $12.00

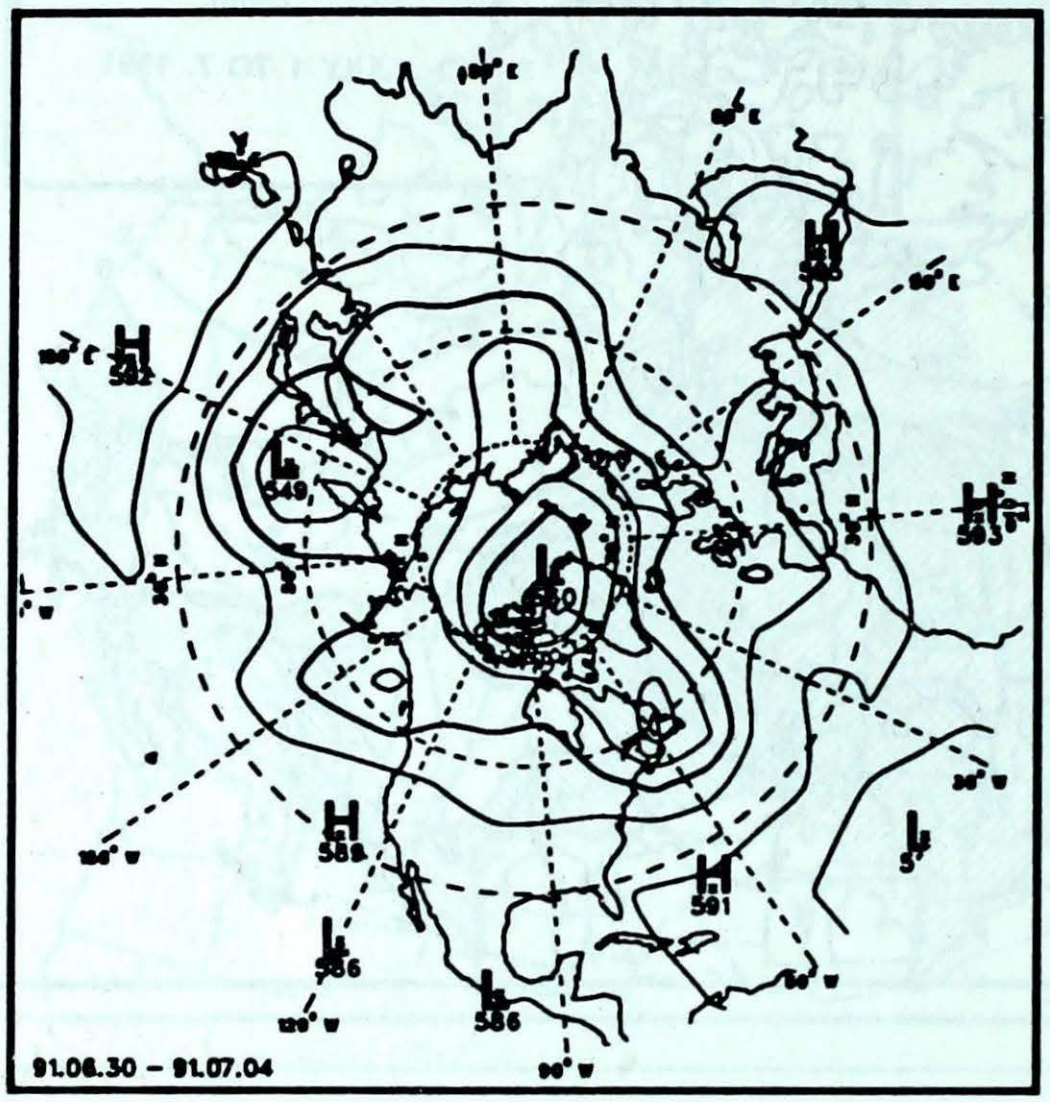
Orders must be prepaid by money order or cheque payable to Receiver General for Canada. **Canadian Government Publishing Centre, Ottawa, Ontario, Canada K1A 0S9**

☎ (819) 997-2560

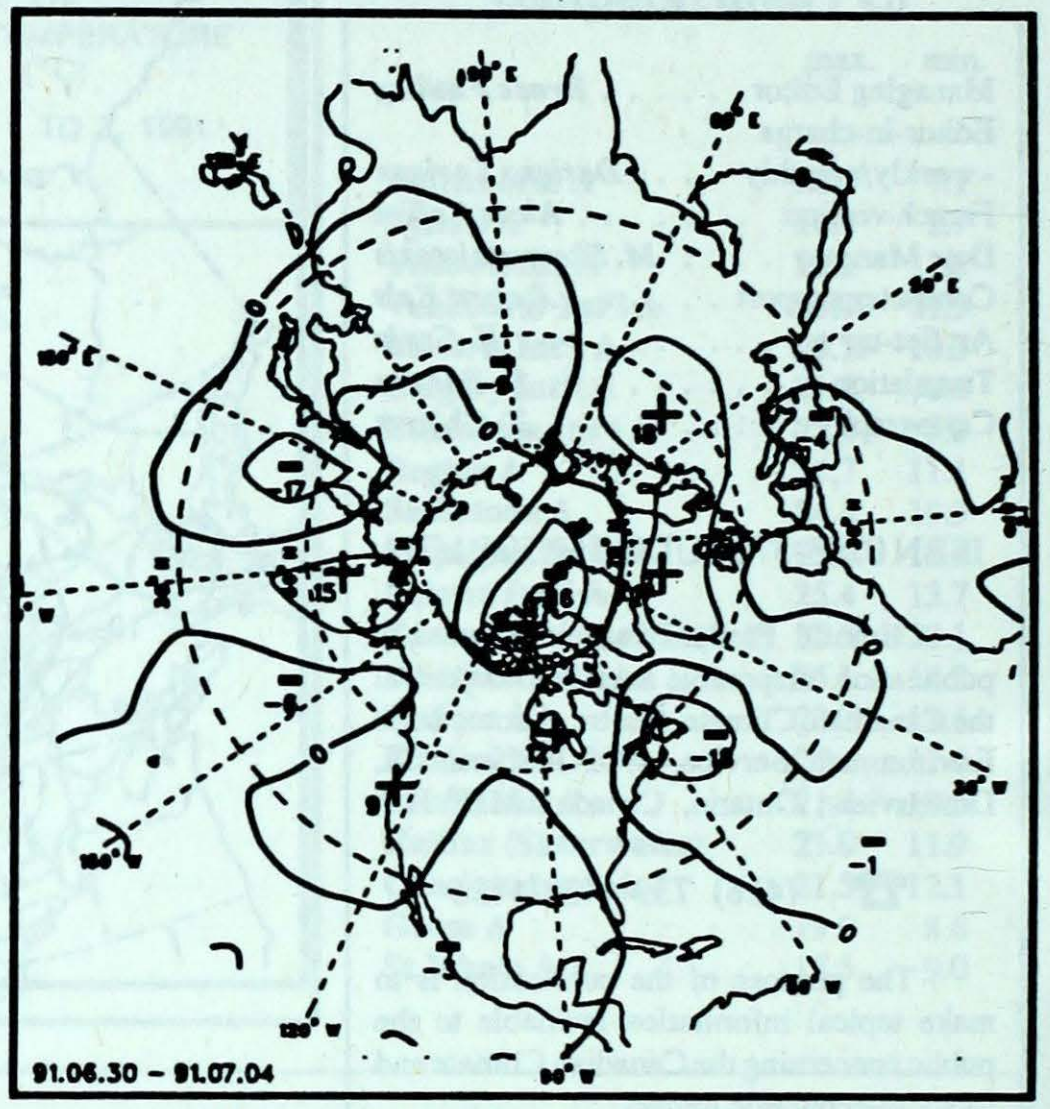




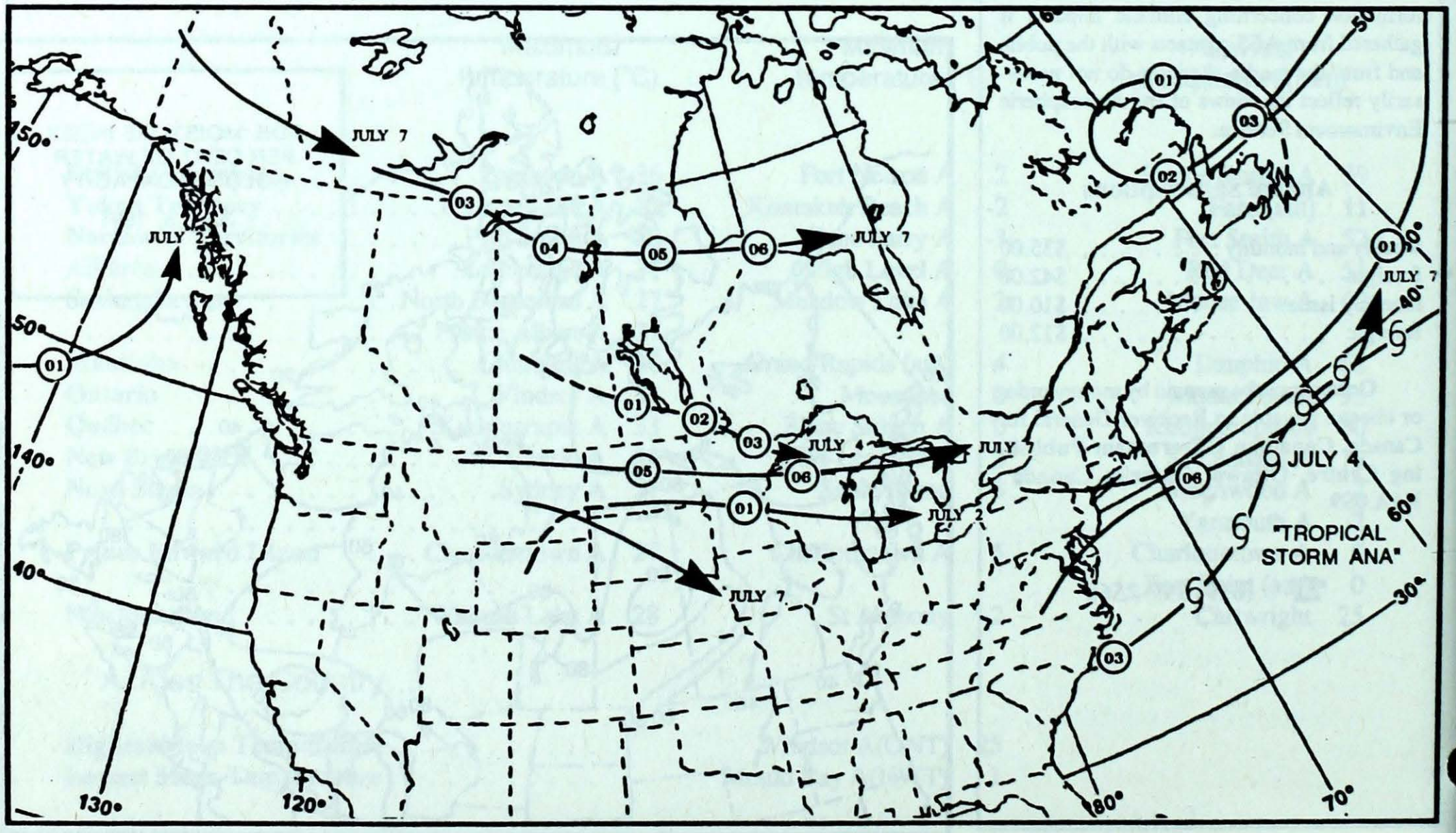
ATMOSPHERIC CIRCULATION



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

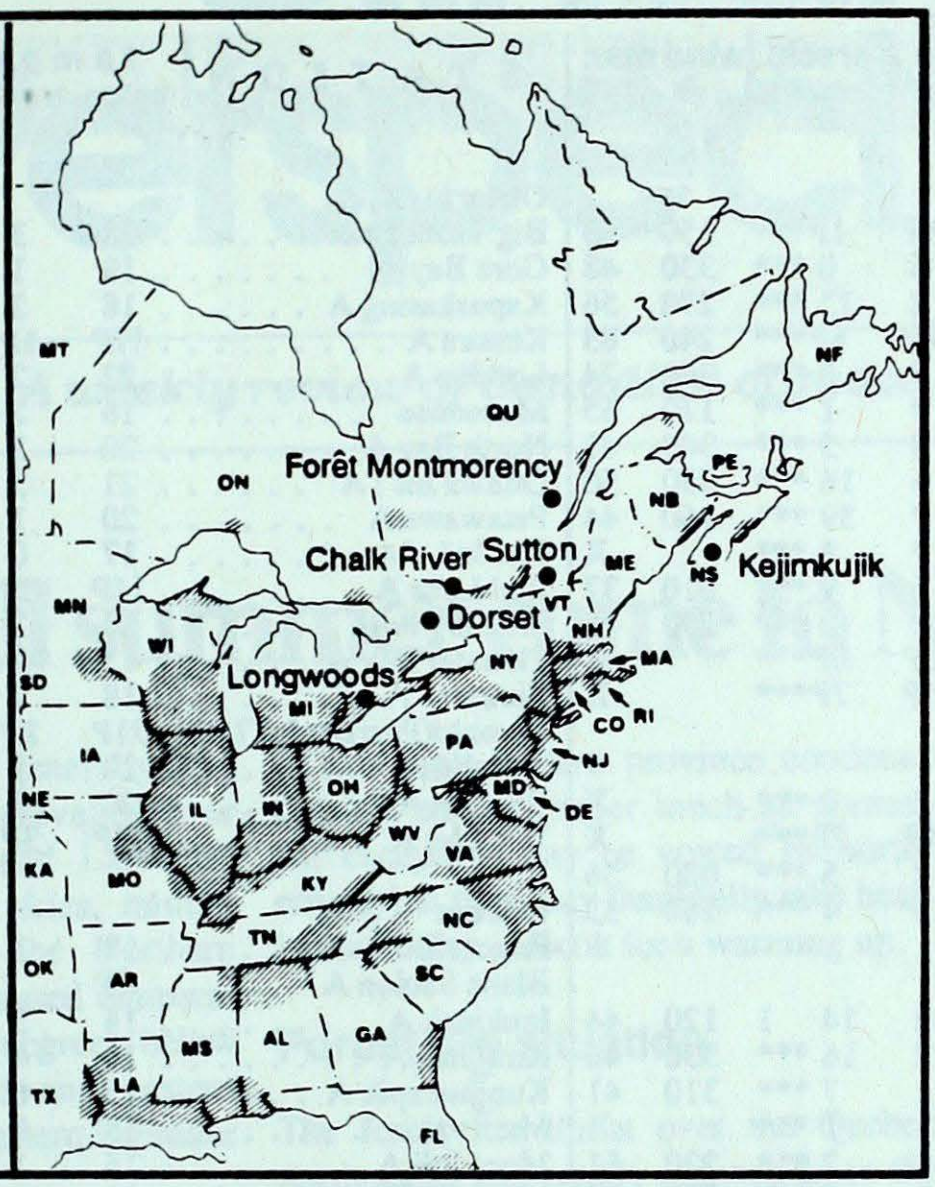


Mean geopotential height anomaly
50-kPa level (10-decametre intervals)



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

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
QUÉBEC	—	QU
RHODE ISLAND	—	RI
SOUTH CAROLINA	—	SC
SOUTH DAKOTA	—	SD
TENNESSEE	—	TN
TEXAS	—	TX
VERMONT	—	VT
VIRGINIA	—	VA
WEST VIRGINIA	—	WV
WISCONSIN	—	WI



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
					June 30 to July 6, 1991
Longwoods	03	4.0	4	R	. . . . . Southern Michigan
	04	4.6	19	R	. . . . . Northwestern Ohio, Northern Indiana
	06	4.5	7	R	. . . . . Northwestern Ohio, Northern Indiana, Illinois
Dorset*	04	4.1	5	R	. . . . . Eastern Lake Erie, Western Pennsylvania, Eastern Ohio
	05	4.0	1	R	. . . . . Southern Ontario, Southern Michigan, Northern Indiana
Chalk River	05	4.3	34	R	. . . . . Southern Ontario, Lake Erie
Sutton	04	5.1	1	R	. . . . . New England
	05	4.6	5	R	. . . . . Vermont, Eastern New York, Eastern Pennsylvania
Montmorency					. . . . . Data not available this week
Kejimkujik	05	3.9	1	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								
Cape St James	12P	1P	15P	9P	1P***		150	63
Cranbrook A	19	2	31	6	0 ***		330	48
Fort Nelson A	16	-1	27	2	13 ***		270	56
Fort St John A	14P	-1P	24P	8P	6P***		240	63
Kamloops A	21	2	35	9	0 ***		300	74
Penticton A	21	2	36	9	1 ***		170	65
Port Hardy A	14	2	21	8	5 ***		340	43
Prince George A	15	1	26	6	16 ***		280	50
Prince Rupert A	13	0	17	7	39 ***		160	44
Revelstoke A	*		*	*	* ***			X
Smithers A	14	-1	25	6	9 ***		010	37
Vancouver Int'l A	18	2	25	12	0 ***		290	48
Victoria Int'l A	17P	1P	26P	8P	0P***			X
Williams Lake A	15P	0P	28P	5P	7P***			X
Yukon Territory								
Komakuk Beach A	3	-4	10	-2	0 ***			X
Teslin (aut)	14P	*	23P	4P	2P***			X
Watson Lake A	14	0	25	2	5 ***		080	56
Whitehorse A	15	1	23	5	4 ***		160	33
Northwest Territories								
Alert	2	-1	8	-2	14	1	120	44
Baker Lake A	10	0	17	2	16 ***		330	46
Cambridge Bay A	5	-2	11	1	7 ***		310	41
Cape Dyer A	7	3	15	1	1 ***			X
Clyde A	4	0	15	-2	2 ***		220	61
Coppermine A	6	-2	13	-3	8 ***		350	57
Coral Harbour A	9	1	18	2	6 ***		090	48
Eureka	4	-1	7	0	7 ***		160	43
Fort Smith A	16	-1	28	3	52 ***			X
Hall Beach A	5	1	16	2	1 ***		320	48
Inuvik A	10	-4	20	0	1 ***		360	39
Iqaluit A	10	3	21	3	0 ***		320	37
Mould Bay A	1	-3	5	-1	1	2	250	39
Norman Wells A	14	-2	24	3	4 ***		040	37
Resolute A	2	-2	7	-2	6	1	270	43
Yellowknife A	15	-1	26	6	3 ***		350	61
Alberta								
Calgary Int'l A	15	0	29	2	6 ***		360	59
Cold Lake A	17	0	27	2	10 ***		300	44
Edmonton Namao A	16	0	26	6	5 ***		270	65
Fort McMurray A	16	0	29	2	16 ***		300	50
High Level A	15	0	27	0	4 ***		010	41
Jasper	14	0	27	2	30 ***			X
Lethbridge A	18	1	31	7	0 ***		330	63
Medicine Hat A	18	0	30	9	15 ***		360	56
Peace River A	15	0	27	6	7 ***		360	56
Saskatchewan								
Cree Lake	15	-1	25	3	16 ***		230	57
Estevan A	18	-1	27	11	45 ***		280	69
La Ronge A	17	1	27	5	34 ***		330	46
Regina A	18	0	27	11	54 ***		320	70
Saskatoon A	17	-1	27	6	29 ***		330	69
Swift Current A	17	0	27	8	39 ***		310	54
Yorkton A	23	5	25	8	28 ***		300	61
Manitoba								
Brandon A	17	-1	25	10	35 ***		300	52
Churchill A	16	6	30	5	25 ***		150	39
Lynn Lake A	18	1	29	5	4 ***		330	50
The Pas A	16	-1	24	7	12 ***		060	37
Thompson A	17	2	27	8	5 ***		130	43
Winnipeg Int'l A	18	-1	25	12	18 ***		010	56

STATION	temperature mean	anom	max	min	precip. ptot	st	wind max dir	vel
Ontario								
Big Trout Lake	18	3	27	9	38 ***		140	50
Gore Bay A	19	1	28	13	48 ***		210	56
Kapuskasing A	18	2	29	3	34 ***		220	32
Kenora A	17P	-1P	24P	11P	48P***		090	39
London A	22	2	30	13	45 ***		220	83
Moosonee	16	2	30	0	23 ***		260	41
North Bay A	20	3	29	8	14 ***		270	46
Ottawa Int'l A	21	2	30	12	12 ***		350	37
Petawawa A	20	1	31	6	13 ***			X
Pickle Lake	17	0	26	10	45 ***		250	54
Red Lake A	16P	-2P	24P	11P	44P***		250	52
Sudbury A	20	2	29	10	15 ***		150	33
Thunder Bay A	15	-2	27	9	42 ***		280	41
Timmins A	18	2	28	2	10 ***		120	33
Toronto(Pearson Int'l A)	21P	2P	30P	13P	54P***		070	98
Trenton A	20	1	28	10	14 ***		220	32
Wiarton A	20	3	29	13	52 ***		180	65
Windsor A	25P	3P	34P	18P	17P***		240	44
Québec								
Bagotville A	18	1	29	4	37 ***		280	61
Blanc Sablon A	7P	*	15P	0P	5P***		060	50
Inukjuak A	14	5	27	4	6 ***			X
Kuujjuaq A	14	4	26	4	0 ***		350	61
Kuujjuarapik A	15	6	33	3	80 ***		240	65
Maniwaki	18	1	30	5	5 ***		050	37
Mont Joli A	16	1	27	7	21 ***		320	44
Montréal Int'l A	20	0	28	9	35 ***		300	44
Natashquan A	12P	-1P	23P	3P	4P***		360	39
Québec A	18	0	29	6	26 ***		320	41
Schefferville A	12	1	27	1	5 ***		340	80
Sept-Îles A	14	-1	24	6	5 ***		340	63
Sherbrooke A	17P	1P	28P	4P	11P***		300	50
Val-d'Or A	18	2	28	4	4 ***		150	41
New Brunswick								
Charlo A	*		30	*	* ***			X
Chatham A	17	-1	30	7	2 ***		300	39
Fredericton A	17	-1	28	6	1 ***		330	59
Moncton A	16	-1	29	7	0 ***		320	52
Saint John A	16	0	25	8	2 ***		300	44
Nova Scotia								
Greenwood A	17	-1	27	7	2 ***		270	59
Shearwater A	16	-1	23	8	0 ***		260	37
Sydney A	14	-2	27	4	0 ***		260	44
Yarmouth A	15	0	24	9	2 ***		320	41
Prince Edward Island								
Charlottetown A	16	-1	27	5	0 ***		340	46
East Point (auto)	15P	*	22P	10P	0P***			
Newfoundland								
Cartwright	5	-6	14	0	25 ***		340	52
Churchill Falls A	13	0	26	1	11 ***		320	63
Gander Int'l A	10	-5	21	4	22 ***		190	46
Goose A	10	-4	25	1	15 ***		340	39
Port Aux Basques	11	0	19	4	7 ***		280	50
St John's A	11	-3	22	5	1 ***		210	41
St Lawrence	11	1	21	4	0 ***			X
Wabush Lake A	13	1	28	1	3 ***		340	56

91/07/01-91/07/07

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.