



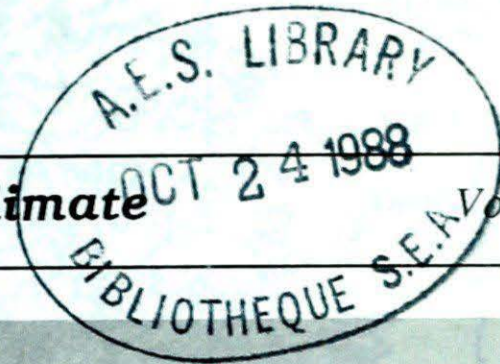
Environment
Canada

Environnement
Canada

Climatic Perspectives

October 4 to 10, 1988

A weekly review of the Canadian climate



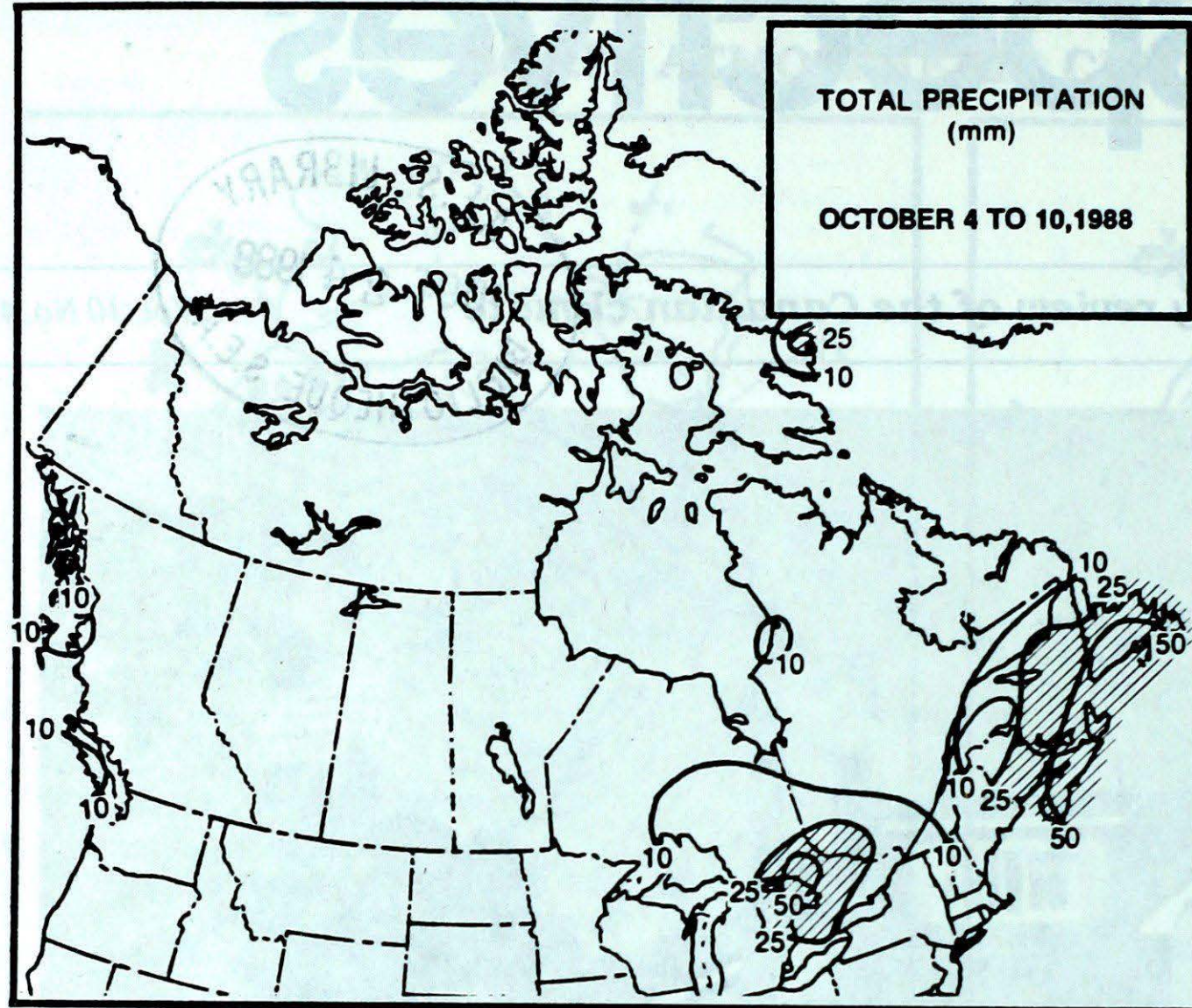
Vol. 10 No. 41



For more than 100 years, three generations of the Hollingworth family took daily weather observations and recorded the weather data at the Beatrice Climatological Station located in the Muskokas, approximately 150 km north of Toronto. For more information about Beatrice Ontario see page 3.

- **Record early autumn snowfalls
in Atlantic Canada**
- **Warm and dry weather aids harvest
in Western Canada**

Canada



ACROSS THE COUNTRY ...

Yukon and Northwest Territories

Except in the northern Yukon, where winter-like weather was evident, it was warm, sunny and windy. On October 8 and 9 strong winds blowing across the mountains produced turbulent flying conditions. Numerous daily maximum temperature records were broken in the south and in the Mackenzie Valley. A vigorous low pressure system, which tracked across the Arctic, gave heavy snowfalls across northern Baffin Island. At Clyde, winds gusting to more than 100 km/h during the night of the 7th produced heavy blowing snow. Very difficult ice conditions along the Alaskan north shore forced two Canadian and one American icebreaker to change course and instead transit the Northwest Passage eastwards in order to get into the southern waters before freeze-up. A fourth ice breaker, the John A MacDonald was directed to the Beaufort to assist.

British Columbia

A strong atmospheric ridge dominated the weather picture, resulting in a gorgeous fall week at most locations. Daytime maximums reached the twenties, breaking numerous daily records. Low cloud and fog formed during the early morning hours in some southern interior valleys, but usually burned off by mid-day. The weather was favorable for slash burning, but the smoke was frequently trapped near the surface by atmospheric inversions. In the Peace River district, combining is now complete because of the excellent weather. The grape harvest is almost finished.

Prairie Provinces

A large area of high pressure resulted in a picture-perfect week. The weather was excellent for finishing the harvest before the winter snow. Yields are excellent in central Alberta. There was plenty of sunshine and temperatures climbed to the unseasonably warm mid-twenties, breaking temperature records.

Brisk northerly winds swept cold arctic air across Saskatchewan and Manitoba during the early part of the week. On October 4 and 5, daytime maximums remained in the single digits, while minimums plunged well below freezing, breaking daily low temperature records. By mid-week a much warmer air mass advanced into western Saskatchewan and progressed eastwards, setting many new daily high temperature records in the low twenties.

Weekly Temperature Extreme (°C)

Location	Maximum	Minimum
British Columbia Quesnel	27	Puntzi Mountain -5
Yukon Territory Faro	18	Komakuk Beach -13
Northwest Territories Hay River	22	Alert -26
Alberta Lethbridge	28	Banff -3
Saskatchewan Moose Jaw	27	Elbow -8
Manitoba Dauphin	25	Grand Rapids -9
Ontario Kenora	19	Sioux Lookout -6
Quebec Kuujuarapik	15	La Grande Rivière -8
New Brunswick Charlo	13	Charlo -5
Nova Scotia Sable Island	19	Greenwood -2
Prince Edward Island Summerside	12	Charlottetown 0
Newfoundland St. John's	19	Wabush Lake -6

Across The Country...

Warmest Mean Temperature	Hope (BC)	17
Coollest Mean Temperature	Eureka (NWT)	-15

88/10/04-88/10/10

Ontario

A complex low pressure system plagued the province, resulting in a blustery and unsettled weather regime. Measurable snowfalls were reported across northern Ontario, while frequent showers and even thundershowers affected the south. Freezing temperatures penetrated into southern Ontario. Thanksgiving was generally unsettled and cool, with heavy rain showers, causing delays during, what was for many, the final homeward trek of the year from cottage country. High winds on on October 10, forced the cancellation of several crossings of the ferry Chi-Cheemaun between the Bruce Peninsula and Manitoulin Island. Because of the dry summer, potato yields are down 30 - 40 percent.

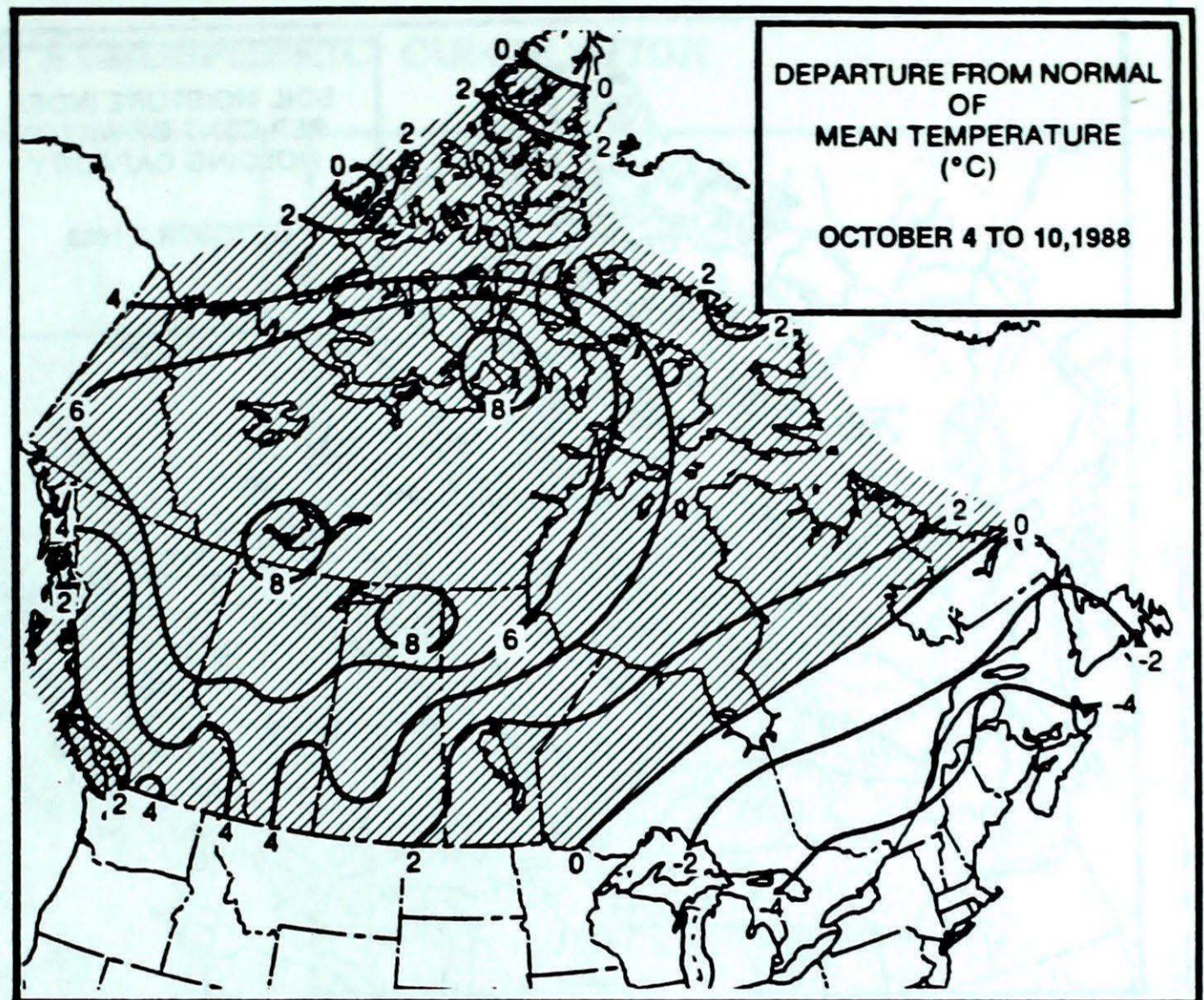
Quebec

A sharp atmospheric trough settled over the province, resulting in cold autumn weather conditions. Showers occurred frequently in the south and southwest, and at times were mixed with snow. As much as 5 to 10 cm of snow fell in some southern locations, especially along the north shore and in the Eastern Townships at higher elevations. Surprisingly, it was warmer and sunnier in the north, where temperatures actually nudged the teen values. Below zero overnight minimums were reported everywhere.

Atlantic Canada

It was a mainly cloudy period in the Maritimes, as several disturbances affected the east coast. Heaviest precipitation, which at times was mixed with snow, fell on the 4th and 5th and again during the weekend. Totals exceeded 90 mm on Cape Breton Island. Snowfalls, as much as 4 cm, set new records for the earliest occurrence of measurable snow at Halifax and Saint John N.B. The previous record at Saint John was October 9, 1902 and 1943, and October 17, 1939 at Halifax.

It was an unsettled period in Newfoundland with rain and showers almost every day. The most significant weather occurred on the 5th, with more than 90 mm of rain falling on the south. On the morning of the 6th, several centimetres of snow covered sections of northern and western Newfoundland. Also, easterly winds gusted to 102 km/h at Twillingate overnight. Weather-wise it was a mixed week in Labrador, with sun, cloud and a mixture of rain and snow falling on October 6 and 7. Daytime temperatures managed to climb to the double digits.

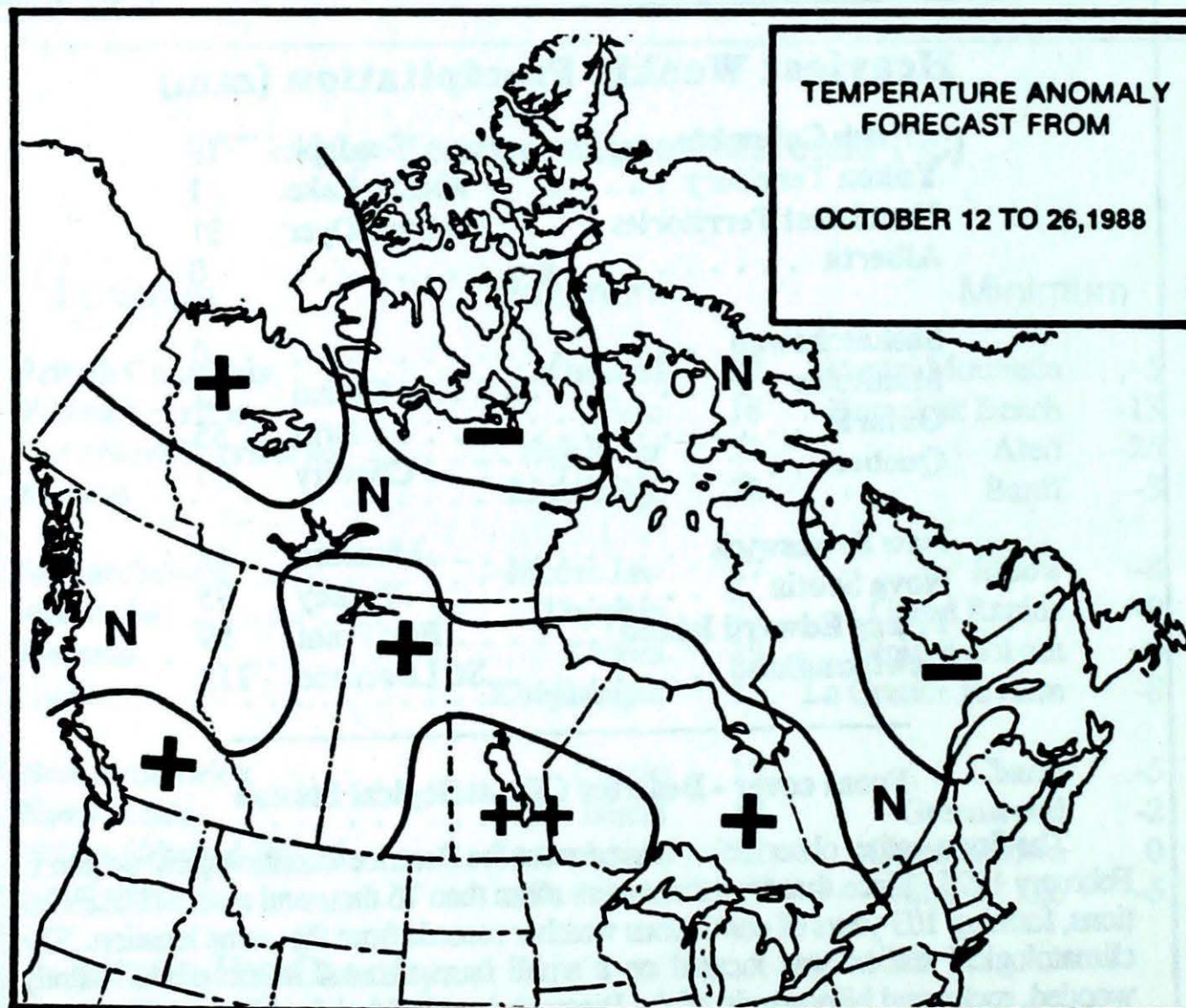
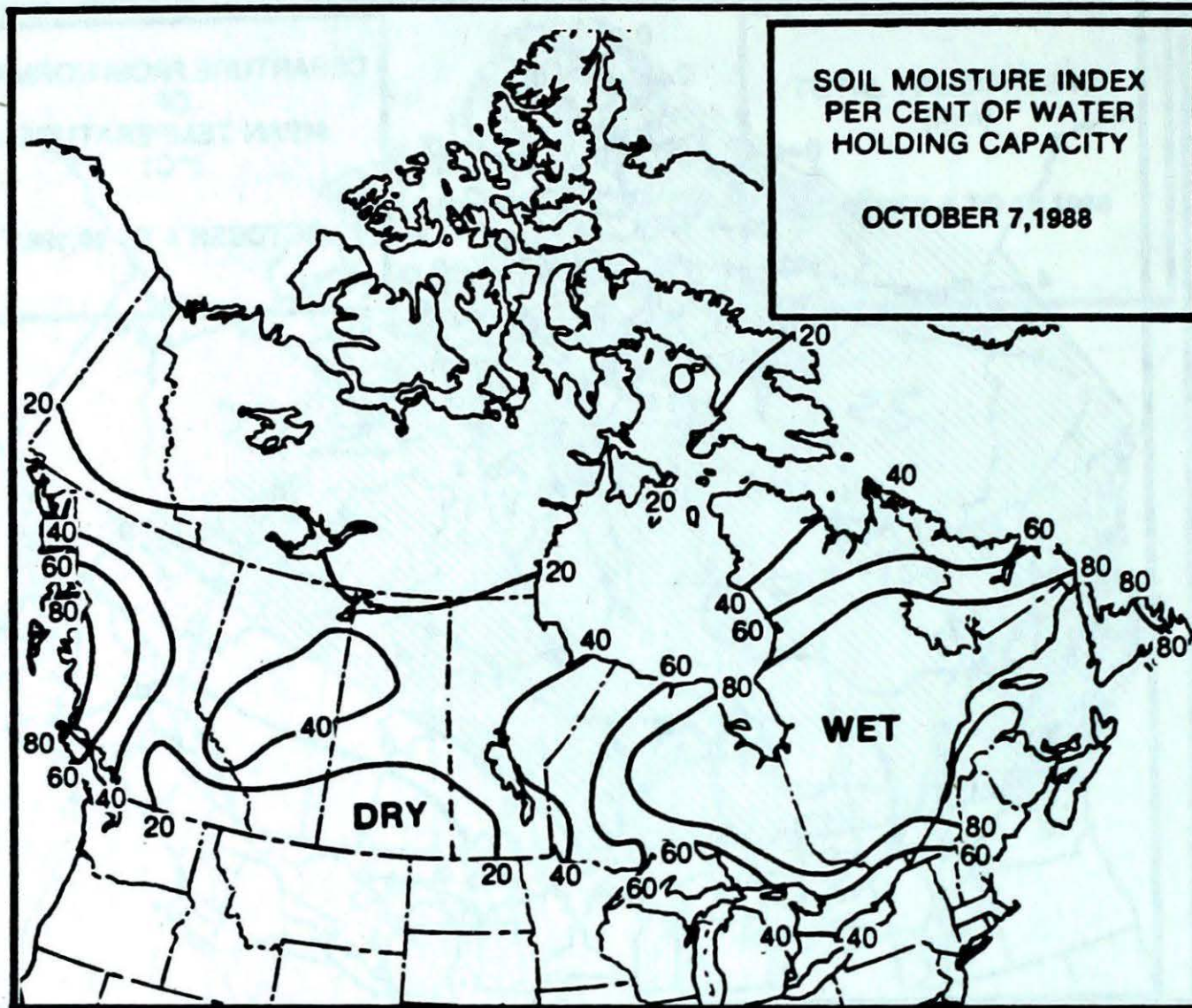


Heaviest Weekly Precipitation (mm)

British Columbia	Sandspit	19
Yukon Territory	Watson Lake	1
Northwest Territories	Cape Dyer	31
Alberta		0
Saskatchewan		0
Manitoba	Gillam	2
Ontario	Britt	55
Quebec	Chevery	37
New Brunswick	Moncton	48
Nova Scotia	Sydney	95
Prince Edward Island	East Point	59
Newfoundland	St. Lawrence	112

Front cover - Beatrice Climatological Station

The first weather observation was taken at the Beatrice Climatological Station in February 1876. Since that time there were more than 76 thousand recorded observations, forming 103 years of continuous weather records from this same location. The climatological station was located on a small farm situated in the predominantly wooded, rocky and hilly terrain of the Precambrian shield. Mr. Albert Hollingworth was always very conscientious and proud of the long standing set of weather records his family kept, without a single day being missed. Mr. Hollingworth took over the responsibility from his father in 1941, who in turn took over from his father in 1918. Weather information recorded at Beatrice was without a doubt always of excellent quality and in 1976 Mr. Hollingworth and his family were the recipients of a special centennial presentation. Due to ill health, Mr. Hollingworth was forced to end his dynasty of weather observation in February 28, 1979.



- ++ much above normal
- + above normal
- N normal
- below normal
- much below normal

Temperature Anomaly Forecast

This forecast is prepared by searching historical weather maps to find cases similar to the present. The historical outcome during the 15 days subsequent to the chosen analogues is assumed to be a forecast for the next 15 days from now.

CLIMATIC PERSPECTIVES VOLUME 10

Managing Editor P.R. Scholefield
 Editors-in-charge
 English A.K. Radomski
 French A.A. Caillet
 Data Manager M. Skarpathiotakis
 Art Layout K. Czaja
 Word Processing P. Burke/U. Ellis
 Translation D. Pokorn
 Cartography B. Taylor/G. Young
 T. Chivers

Regional Correspondents

Atlantic: F.Amirault; Quebec: J.Miron;
 Ontario: B.Smith; Central: J.F.Bendell;
 Western: W.Prusak; Pacific: E.Coatta;
 Yukon Weather Centre: J.Steele; Frobisher
 Bay and Yellowknife Weather Offices;
 Newfoundland Weather Centre:
 G.MacMillan; Ice Central Ottawa

ISBN 0225-5707 UDC 551.506.1(71)

Climatic Perspectives is a weekly bilingual publication 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.

Unsolicited articles are welcome but should be at maximum about 1500 words in length. They will be subject to editorial change without notice due to publishing time constraints. The contents may be reprinted freely with proper credit.

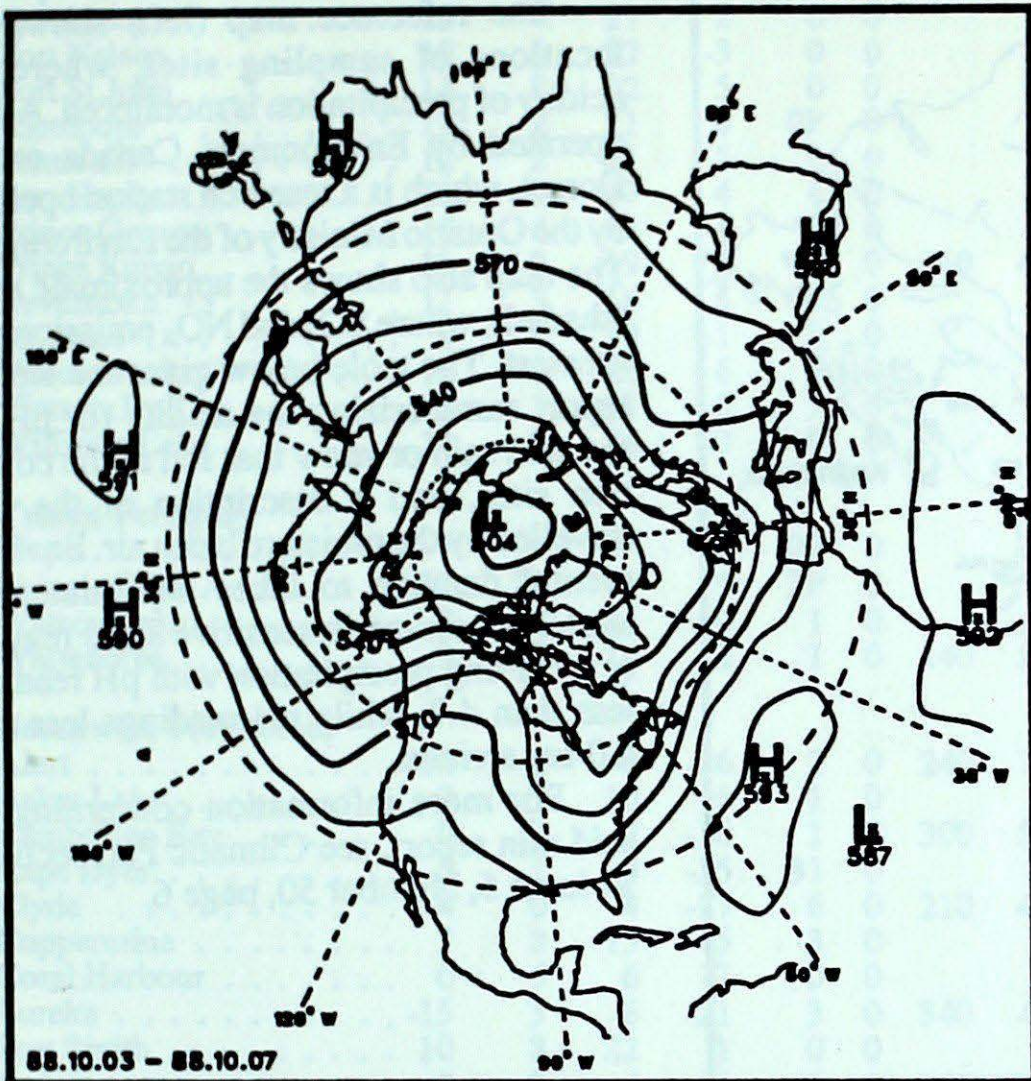
The data in this publication are based on unverified reports from approximately 225 Canadian synoptic weather stations. Information concerning climatic impacts is gathered from AES contacts with the public and from the media. Articles do not necessarily reflect the views of the Atmospheric Environment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

Annual Subscriptions

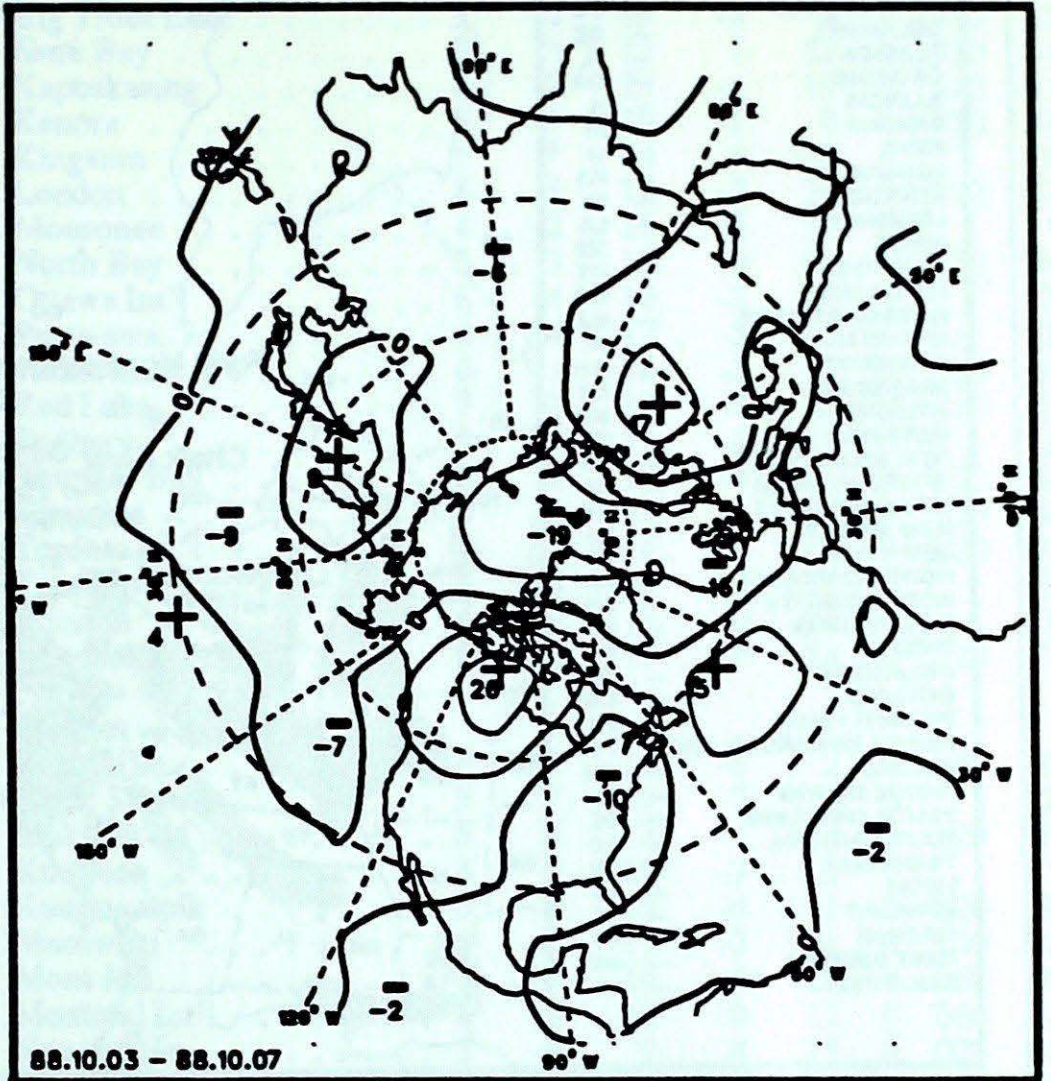
weekly and monthly supplement: \$35.00
 foreign: \$42.00
 monthly issue: \$10.00
 foreign: \$12.00

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

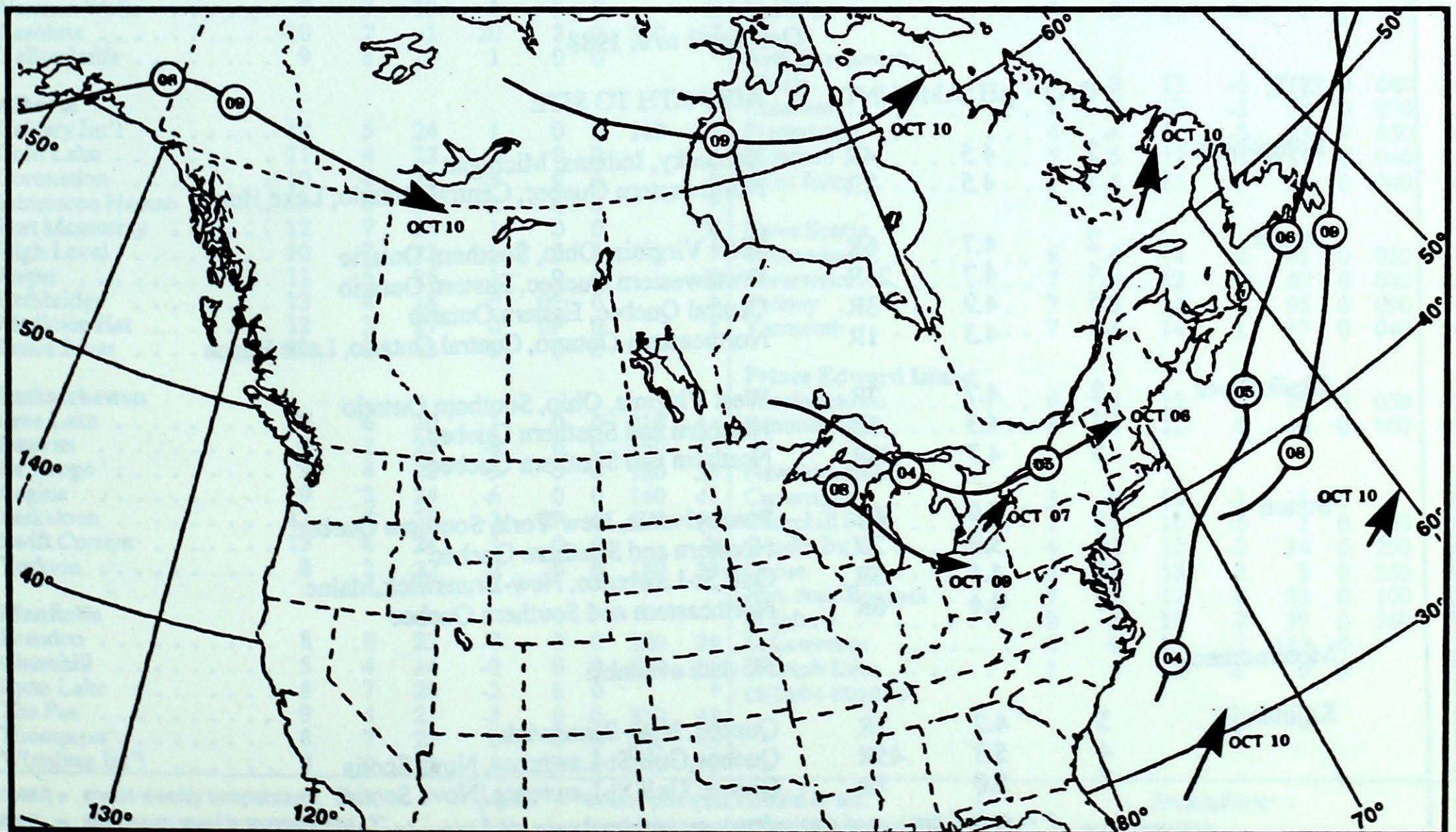
50 kPa ATMOSPHERIC CIRCULATION



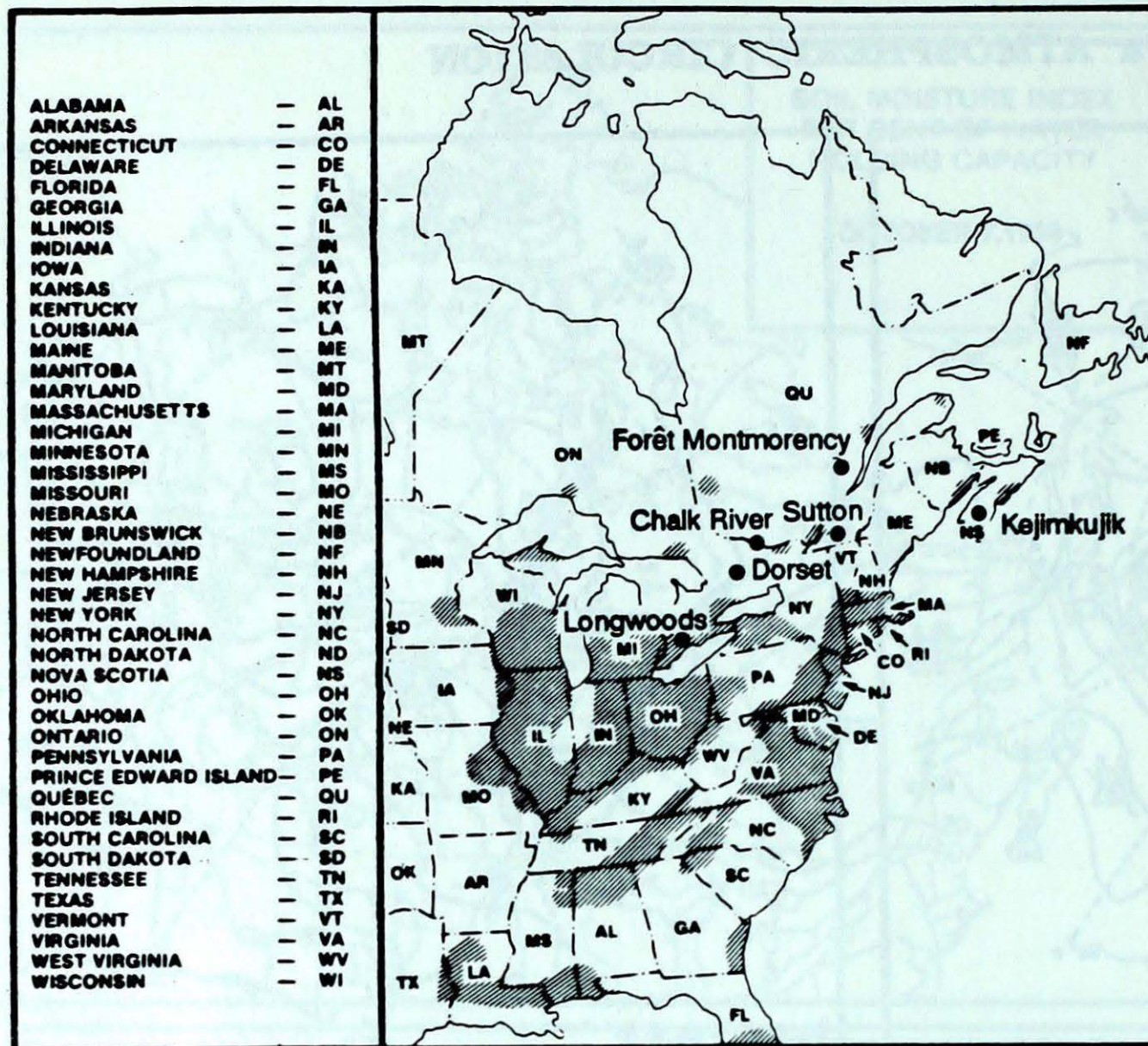
Mean geopotential height
50 kPa level (10 decameter intervals)



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



Storm track - Position of storm at 12 GMT during the period: October 4 to 10, 1988



ACID RAIN REPORT

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.

For more information concerning the acid rain report, see Climatic Perspectives, Volume 5, Number 50, page 6.

October 2 to 8, 1988

SITE	DAY	pH	AMOUNT	AIR PATH TO SITE
Longwoods	2	4.5	4R	Kentucky, Indiana, Michigan
	5	4.5	2R	Northwestern Quebec, Central Ontario, Lake Huron
Dorset	2	4.7	6R	West Virginia, Ohio, Southern Ontario
	4	4.7	24R	Northwestern Quebec, Eastern Ontario
	5	4.9	3R	Central Quebec, Eastern Ontario
	7	4.3	1R	Northeastern Ontario, Central Ontario, Lake Huron
Chalk River	2	4.7	7R	West Virginia, Ohio, Southern Ontario
	4	4.3	8R	Northern and Southern Quebec
	5	4.7	13R	Northern and Southern Quebec
Sutton	2	3.9	10R	Pennsylvania, New York, Southern Quebec
	4	3.9	2R	Northern and Southern Quebec
	5	4.4	5R	Gulf St-Lawrence, New-Brunswick, Maine
	8	4.4	6R	Northeastern and Southern Quebec
Montmorency			No data available	
Kejimikujik	3	4.2	2R	Quebec, New-Brunswick
	4	5.3	45R	Quebec, Gulf St-Lawrence, Nova Scotia
	8	5.0	7R	Quebec, Gulf St-Lawrence, Nova Scotia

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

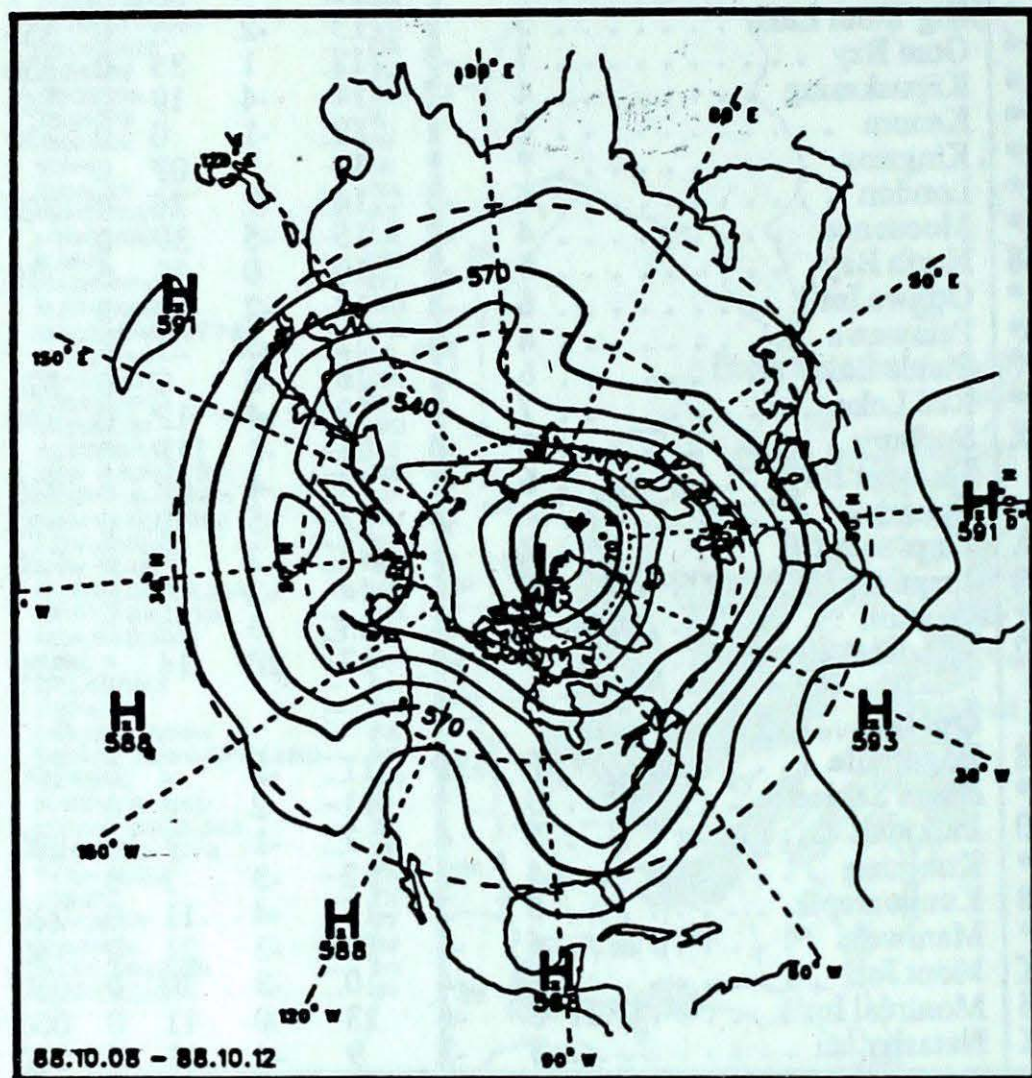
Station	temperature				precip.		wind max		Station	temperature				precip.		wind max	
	mean	anom	max	min	ptot	st	dir	vit		mean	anom	max	min	ptot	st	dir	vit
British Columbia									Ontario								
Cape St James	13	2	17	9	3	0	140	54	Atikokan	*	*	19	*	0P	0		*
Cranbrook	12	4	21	2	0	0		*	Big Trout Lake	5	2	13	-2	5	0	350	72
Fort Nelson	10	6	22	-3	0	0		*	Gore Bay	7	-3	12	1	33	0	330	54
Fort St John	14	8	22	5	0	0		*	Kapuskasing	4	-2	14	-4	19	0	340	56
Kamloops	12	2	21	6	0P	0		*	Kenora	8	1	19	-1	0	0	330	48
Penticton	12	2	21	5	0	0		*	Kingston	*	*	14	*	0P	0		X
Port Hardy	11	1	17	4	6	0		*	London	6	-5	14	-2	26	0	320	67
Prince George	10	4	24	-1	0	0		*	Moosonee	4	-2	15	-5	3P	0		*
Prince Rupert	11	2	19	3	17	0	160	48	North Bay	5	-3	10	0	33	0	110	44
Revelstoke	11	3	16	6	0P	0		*	Ottawa Int'l	6	-4	12	-2	23	0		X
Smithers	9	3	19	-1	2	0		*	Petawawa	4	-4	12	-5	21	0		X
Vancouver Int'l	12	1	18	6	2	0		*	Pickle Lake	6	1	16	-2	1	0	320	69
Victoria Int'l	12	1	21	5	3	0		*	Red Lake	7	1	19	-4	1P	0	330	59
Williams Lake	11	5	24	0	0	0		X	Sudbury	5	-4	11	-1	11P	0		X
Yukon Territory									Thunder Bay								
Mayo	*	*	*	*	0P	0		X	Timmins	4	-3	13	-5	19	0	320	46
Shingle Point A	-3P	2P	-3P	*	3P	0		*	Toronto Int'l	7	-4	14	1	14	0	230	52
Watson Lake	8	6	16	0	1	0		*	Trenton	6	-5	14	-2	17	0		X
Whitehorse	9	6	16	2	1	0	140	57	Warton	6	-4	13	0	42	0		X
Northwest Territories									Windsor								
Alert	-18	-2	-8	-26	2	0	240	78	Québec								
Baker Lake	3	7	10	-6	1	0		*	Bagotville	4P	-3P	11	-5	2	0	100	31
Cambridge Bay	0	7	7	-10	1	0	300	50	Blanc Sablon	3	*	11	-2	6	0		X
Cape Dyer	-5	1	4	-15	31	0		*	Inukjuak	5	4	7	-1	4	0	020	57
Clyde	-4	0	4	-17	6	0	210	48	Kuujuuaq	4	3	12	-3	1	0		*
Coppermine	3	8	13	-5	3	0		*	Kuujuuarapik	5	2	15	-4	11	0	020	50
Coral Harbour	0	6	6	-7	0	0		X	Maniwaki	4	-4	12	-3	21	0	140	35
Eureka	-15	3	-6	-21	3	0	340	46	Mont Joli	4	-4	10	-3	20	0	060	59
Fort Smith	10	8	22	1	0	0		X	Montréal Int'l	6	-4	13	0	11	0	060	41
Iqaluit	0	3	6	-5	7	0	340	43	Natashquan	3	-3	9	-4	13	0	070	57
Hall Beach	-2	5	4	-10	2	0	320	78	Quebec	5	-3	11	-1	9	0	060	50
Inuvik	-1	3	5	-6	2	0		X	Schefferville	2	1	10	-4	0	0		*
Mould Bay	-13	0	-4	-24	6	0		X	Sept-Iles	3	-2	11	-3	2	0		*
Norman Wells	7	7	19	-1	1	0		X	Sherbrooke	4	-4	12	-4	6	0		*
Resolute	-10	2	-1	-20	2	0	320	67	Val D'or	3	-3	10	-4	9	0	160	41
Yellowknife	9	8	19	1	0	0		*	New Brunswick								
Alberta									Charlo	3	-3	13	-5	18	0	080	44
Calgary Int'l	12	5	24	1	0	0	180	31	Chatham	4	-4	12	-5	33	0	070	63
Cold Lake	11	4	22	-2	0	0		*	Fredericton	4	-6	12	-5	23	0	050	54
Coronation	10	4	23	-3	0	0		*	Moncton	5	-5	12	-4	48	0	040	74
Edmonton Namao	13	6	22	2	0	0		*	Saint John	5	-5	11	-3	14	0	040	56
Fort McMurray	12	7	24	1	0	0		X	Nova Scotia								
High Level	10	7	23	-1	0	0		*	Greenwood	6	-4	14	-2	41	0	050	48
Jasper	11	5	25	-1	0	0		X	Shearwater	7	-4	12	0	69	0	040	46
Lethbridge	13	4	28	0	0P	0		*	Sydney	7	-3	12	2	95	0	090	74
Medicine Hat	12	3	27	0	0P	0		*	Yarmouth	7	-4	14	1	17	0	040	56
Peace River	11	6	23	0	0	0		*	Prince Edward Island								
Saskatchewan									Charlottetown	6	-4	12	0	35	0	050	63
Cree Lake	9	6	20	-1	0	0	210	44	Summerside	6	-4	12	0	40	0	050	80
Estevan	9	1	23	-6	0	0	160	35	Newfoundland								
La Ronge	9	4	22	-3	0	0	180	33	Cartwright	3	-2	10	-1	1	0		*
Regina	9	2	24	-6	0	0	160	41	Churchill Falls	1	-1	10	-5	1	0	280	56
Saskatoon	11	4	25	-2	0P	0	170	33	Gander Int'l	6	-2	12	-2	34	0	250	78
Swift Current	13	4	24	1	0	0		X	Goose	3	-2	13	-3	3	0	260	54
Yorkton	8	2	22	-7	0	0	180	33	Port-Aux-Basques	7	-2	12	2	53	0	100	85
Manitoba									St John's	8	0	19	2	39	0	260	70
Brandon	8	0	23	-7	0	0	320	39	St Lawrence	8	0	15	-1	112	0		X
Churchill	5	4	14	-2	0	0	330	85	Wabush Lake	1	0	10	-6	0	0		*
Lym Lake	8	7	20	-2	0	0		*	88/10/04-88/10/10								
The Pas	9	4	21	-3	0	0	330	48									
Thompson	8	7	22	0	0	0	340	43									
Winnipeg Int'l	8	0	22	-7	0P	0	340	56									

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

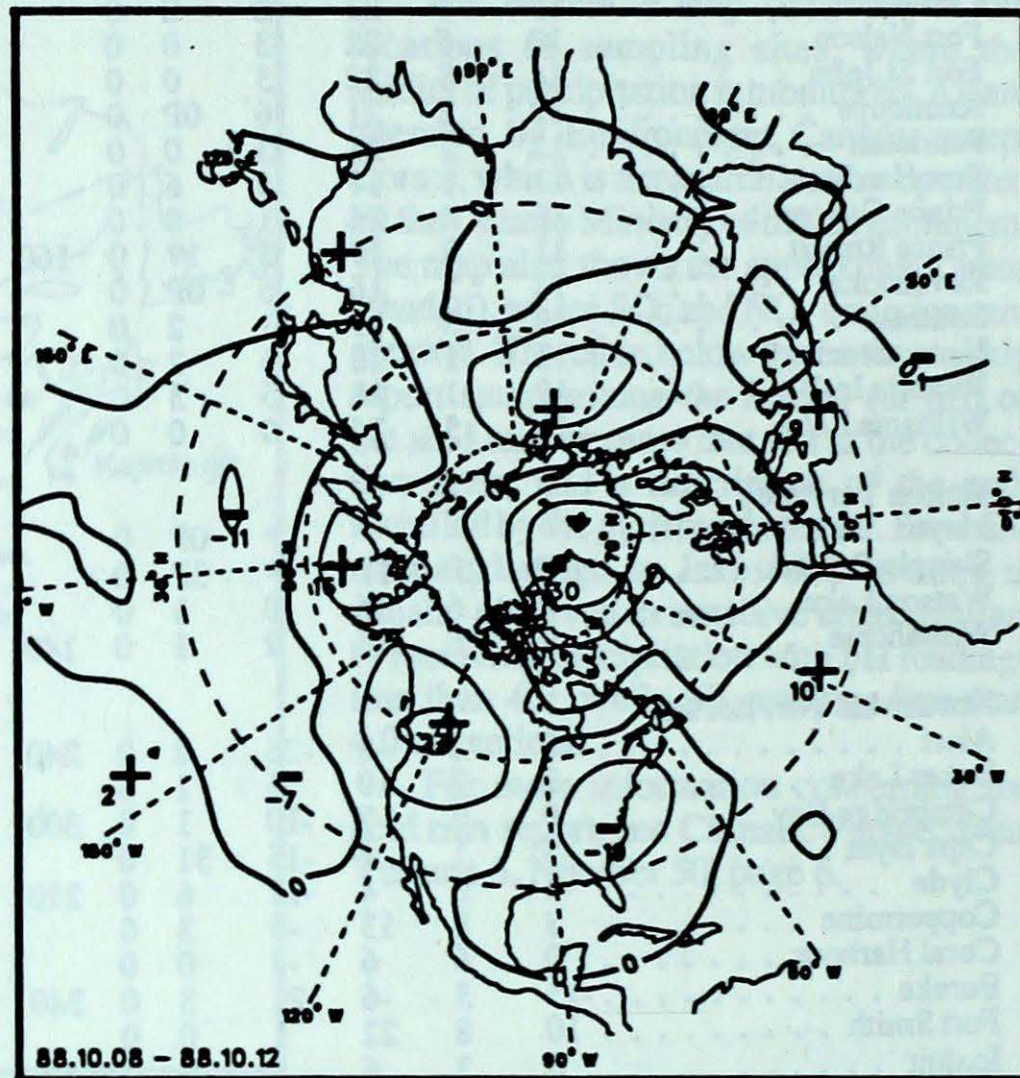
ptot = weekly precipitation total in mm
 st = snow thickness on the ground in cm
 dir = direction of max wind, deg. from north.
 vit = wind speed in km/h

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

50 kPa ATMOSPHERIC CIRCULATION



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



Mean geopotential height
50 kPa level (10 decameter intervals)

