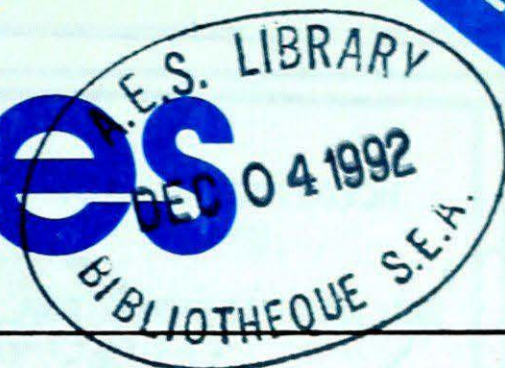


Climatic Perspectives

MONTHLY SUPPLEMENT INCLUDED



September 14 to 20, 1992 A weekly review of Canadian climate and water

Vol. 14 No. 38

Freeze-up begins in the Arctic

Ice conditions in the Canadian eastern Arctic remained heavier than normal throughout this year's shipping season, due to cooler than normal temperatures. In fact, the ice in some areas is currently near the maximum extent ever recorded for this time of year. This can be attributed to temperatures that, during the summer, have averaged as much as 2 °C below normal. Also, the slow decay of last winter's ice is raising concerns that the ice which has not melted this year, will harden and cause much greater difficulty for navigation next year.

The ice in Fox Basin, Hudson Bay and the approaches to Resolute has been heavier than normal this season, and first year ice in the high Arctic remains unusually thick. In Hudson Bay, the last remnants of last winter's ice finally disappeared in August - one month later than normal. In Fox Basin, resupply operations required ice breaker assistance, and this was the same case along the east coast of Baffin Island. In July, an ice breaker was damaged by ice, and in August, the bows of at least one freighter and tanker also succumbed to ice damage. Luckily, there was no petroleum spill, as the tanker was double hulled.

In August, the Canadian ice breaker C.C.G.S. Terry Fox had a difficult time escorting the passenger ship Frontier Spirit, and a smaller ice breaker C.C.G.S. Pearkes westwards through the Northwest Passage, due to consolidated first year ice in Queen Maud Gulf and Victoria Strait. The passenger ship was able to continue

its westward trek unassisted through the Beaufort Sea, where ice conditions have been more favourable this year. Both ice breakers have since returned to the east. The powerful ice-strengthened ship, the M.V. Arctic navigated through heavy ice to the oil depot on Cameron Island, located northwest of Resolute, in mid-August and again during the second week of September. The M.V. Arctic, an oil-bulkore carrier, is scheduled to arrive at Little Cornwallis Island later this month, with its final Arctic trip to Nanisivik, on northern Baffin Island, slated in mid-October.

In early September, the annual resupply convoy to Eureka encountered very heavy ice in Norwegian Bay. A cargo ship, accompanying a Canadian and a passenger-carrying Russian ice breaker, was unable to make headway and eventually had to be escorted back south. The cargo was eventually delivered by ice breaker to Eureka.

In July and August, ice islands, some 100 km² in size, were observed drifting southwards along the Labrador coast. Some were spotted as far south as Newfoundland and in the Strait of Belle Isle, causing a serious hazard to navigation. These flows of solid ice are believed to have originated from the east side of Ellesmere Island near Kane Basin.

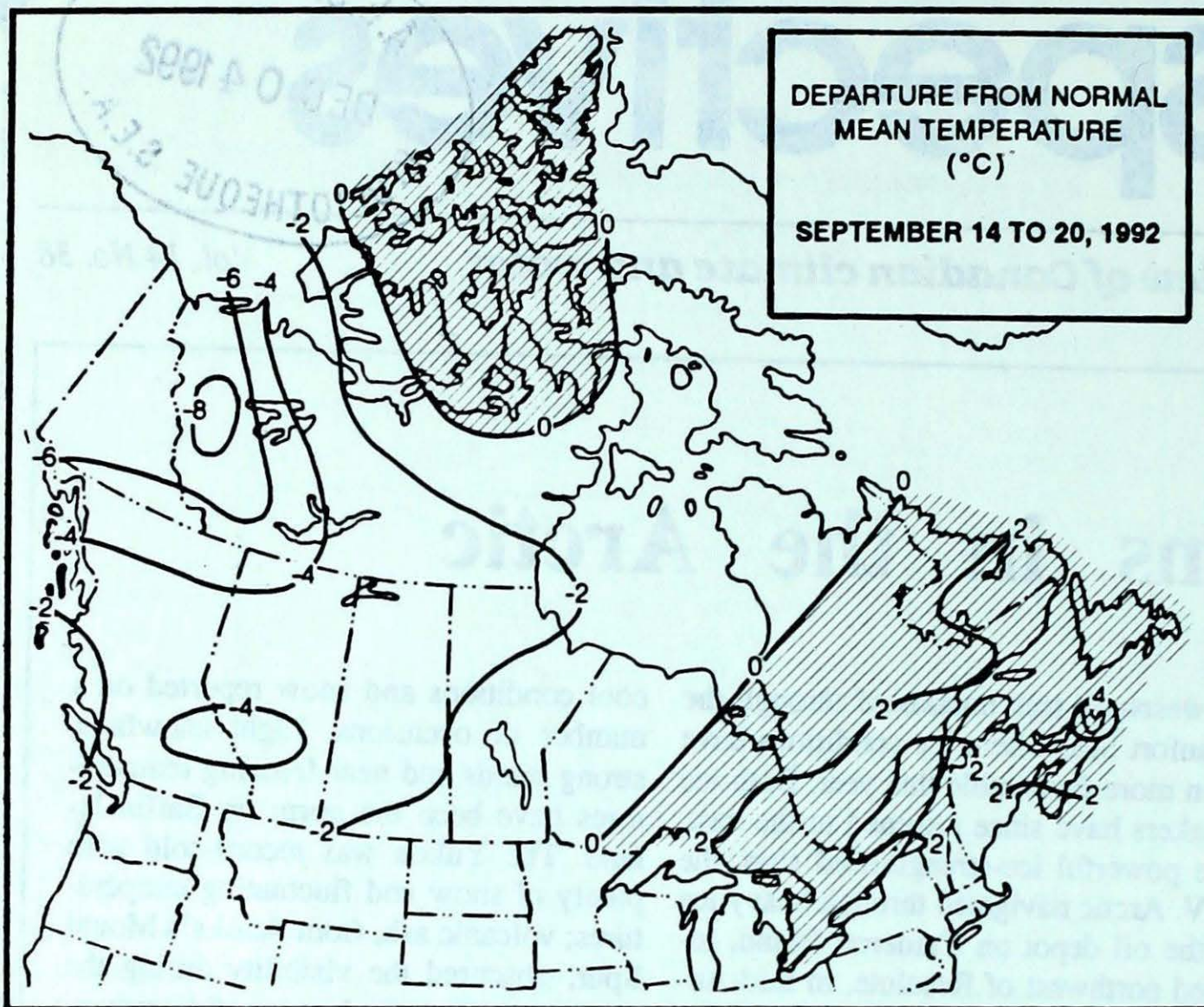
Elsewhere...

The weather across the Mackenzie Valley has been early winter-like, with cloudy,

cool conditions and snow reported on a number of occasions. Light snowfalls, strong winds and near-freezing temperatures have been the norm on Baffin Island. The Yukon was record-cold with plenty of snow and fluctuating temperatures; volcanic ash, from Alaska's Mount Spur, obscured the visibility during the middle of the week. A series of disturbances brought unsettled, cool weather to British Columbia, with widespread frost in the southern valleys. Heavy thunderstorms were reported in central B.C. and heavy snowfalls in the north. Record-cold, wet weather affected the Prairies until the weekend; a mix of snow and rain was common to many districts. The southern half of Ontario was warm hazy and humid; rain was heavy across the entire province. The Maritimes enjoyed sunny, record-warm and relatively dry harvest weather. Warm conditions in Newfoundland gave way to cloudy, cool weather. Heavy thunderstorms produced hail in central Labrador; winds to 110 km/h blew over Ungava Bay.

A Look Ahead...

For the week of September 28, mild temperatures will cover most of Canada except below normal conditions will occur west of Alberta. Significant precipitation will fall west of Saskatchewan and east of the Great Lakes. For long range forecast information contact Aaron Gergye at (416) 739-4442.



**Weekly normal
temperatures (°C)**

	max.	min.
Whitehorse A	12.7	3.0
Iqaluit A	4.7	-0.3
Yellowknife A	10.3	3.7
Vancouver Int'l A	18.1	10.0
Victoria Int'l A	18.8	8.7
Calgary Int'l A	16.6	3.7
Edmonton Int'l A	16.2	2.6
Regina A	17.9	4.2
Saskatoon A	17.2	4.2
Winnipeg Int'l A	18.1	6.0
Ottawa Int'l A	18.9	8.3
Toronto (Pearson Int'l A)	20.7	9.2
Montréal Int'l A	19.2	9.0
Québec A	17.5	6.4
Fredericton A	19.0	5.8
Saint John A	17.1	6.8
Halifax (Shearwater)	18.3	9.5
Charlottetown A	17.4	8.2
Goose A	13.6	3.8
St John's A	15.1	6.9

Weekly temperature and precipitation extremes

	Maximum temperature (°C)	Minimum temperature (°C)	Heaviest precipitation (mm)
British Columbia	Kamloops A 27	Dease Lake -8	Prince Rupert A 111
Yukon Territory	Whitehorse A 15	Beaver Creek -17	Teslin 30
Northwest Territories	Fort Simpson A 10	Eureka -16	Hay River A 26
Alberta	Medicine Hat A 26	Edson A -6	Medicine Hat A 21
Saskatchewan	Estevan A 26	North Battleford A -7	Cree Lake 31
Manitoba	Gretna (aut) 25	Thompson A -4	Churchill A 38
Ontario	Toronto Int'l A 29	Armstrong (aut) 0	North Bay A 83
Quebec	Montréal Int'l A 28	Schefferville A -2	Kuujuarapik A 58
New Brunswick	Fredericton A 28	Fredericton A 0	Miscou Island (aut) 31
Nova Scotia	Greenwood A 28	Greenwood A 2	Sable Island 14
Prince Edward Island	Charlottetown A 24	Charlottetown A 8	East Point (aut) 3
Newfoundland	Deer Lake A 25	Wabush Lake A -2	Wabush Lake A 28

Across The Country...

Highest Mean Temperature	Port Weller (aut) (Ont.)	20
Lowest Mean Temperature	Eureka (N.W.T.)	-8

CLIMATIC PERSPECTIVES
VOLUME 14

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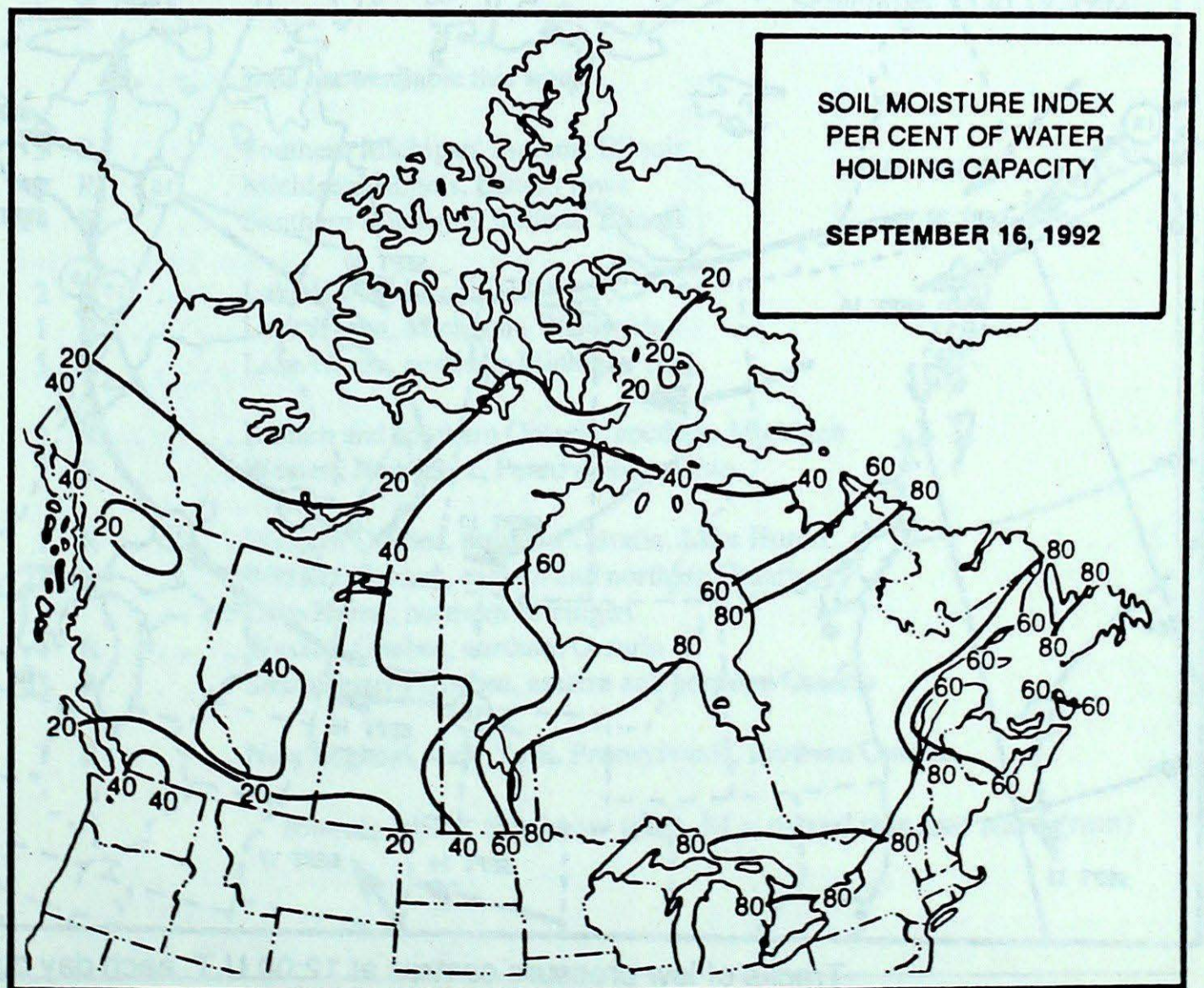
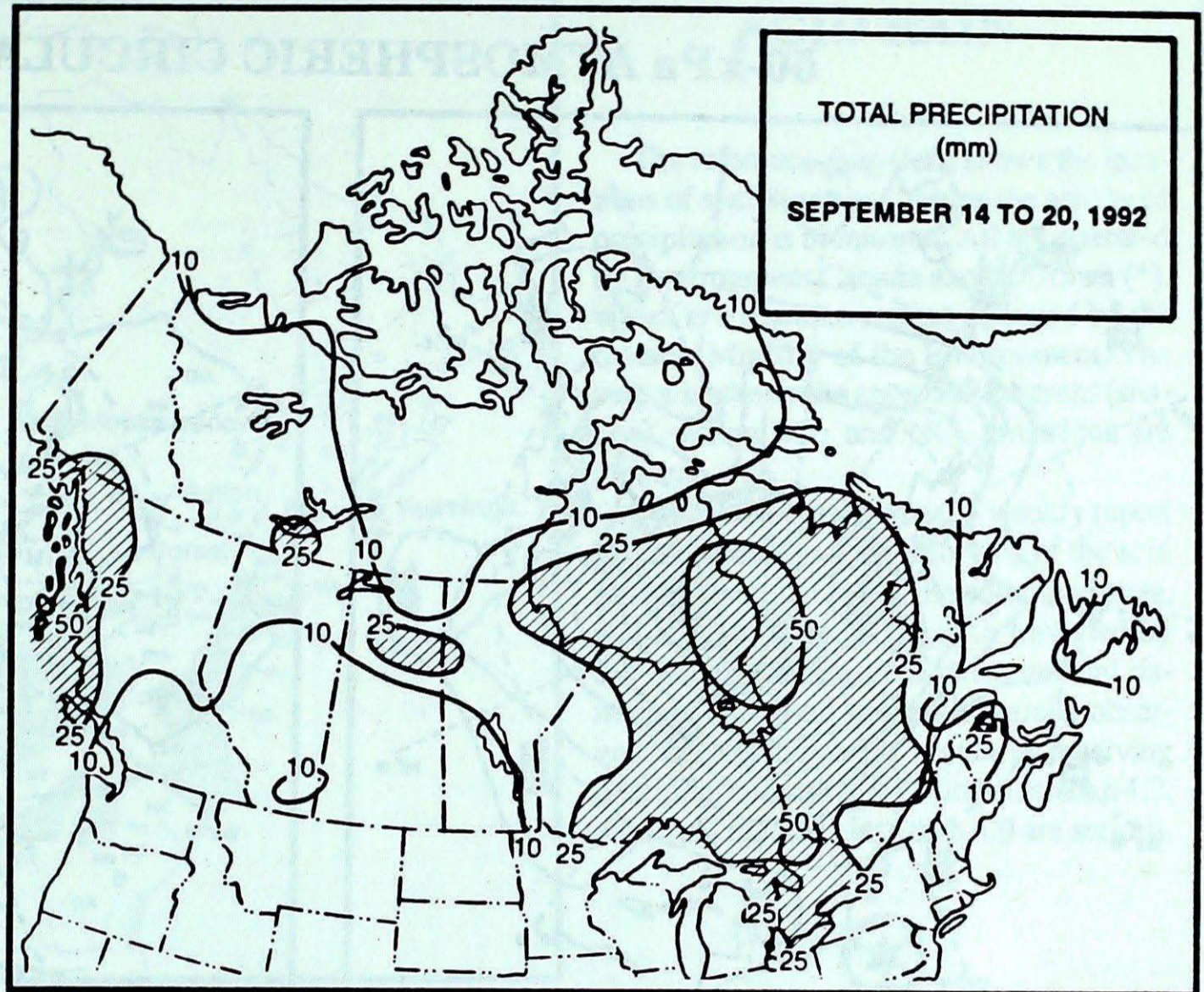
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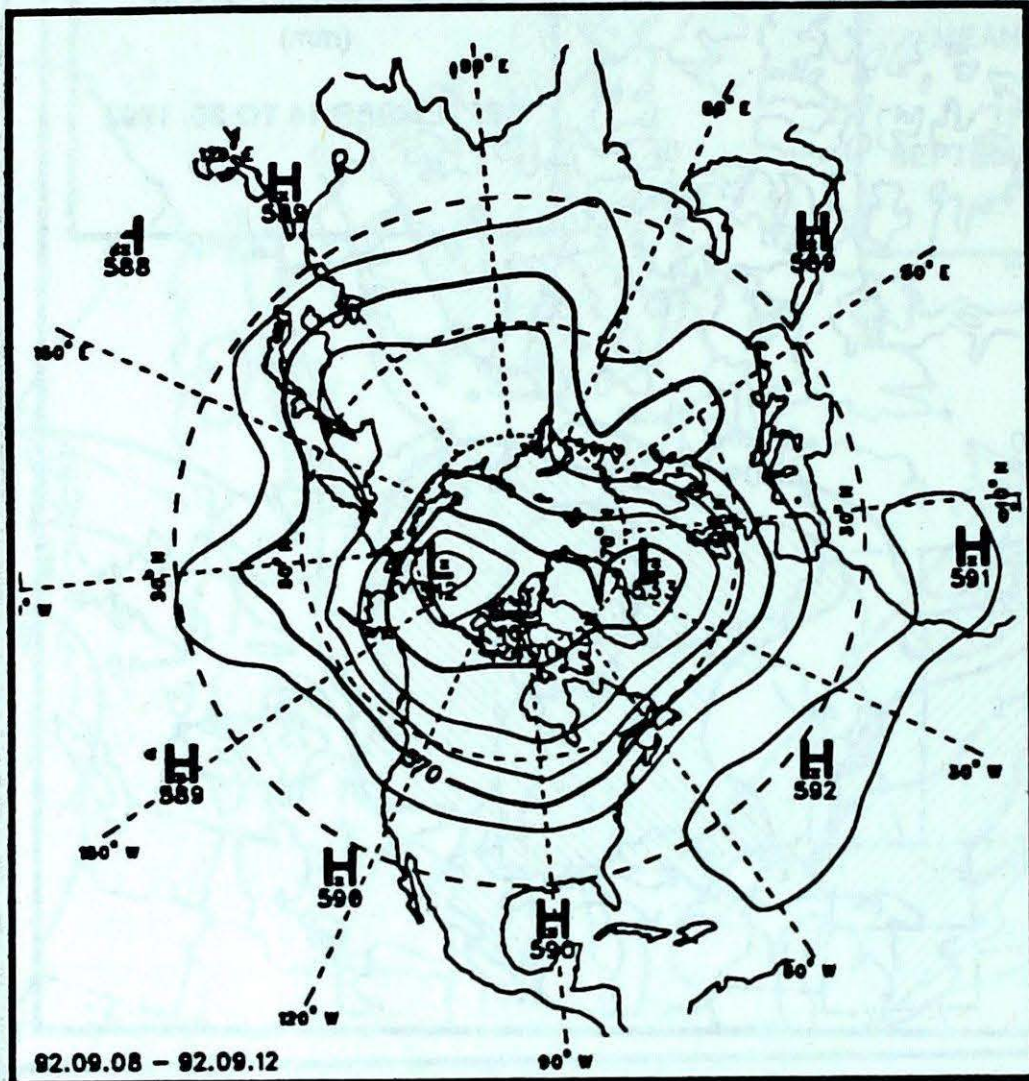
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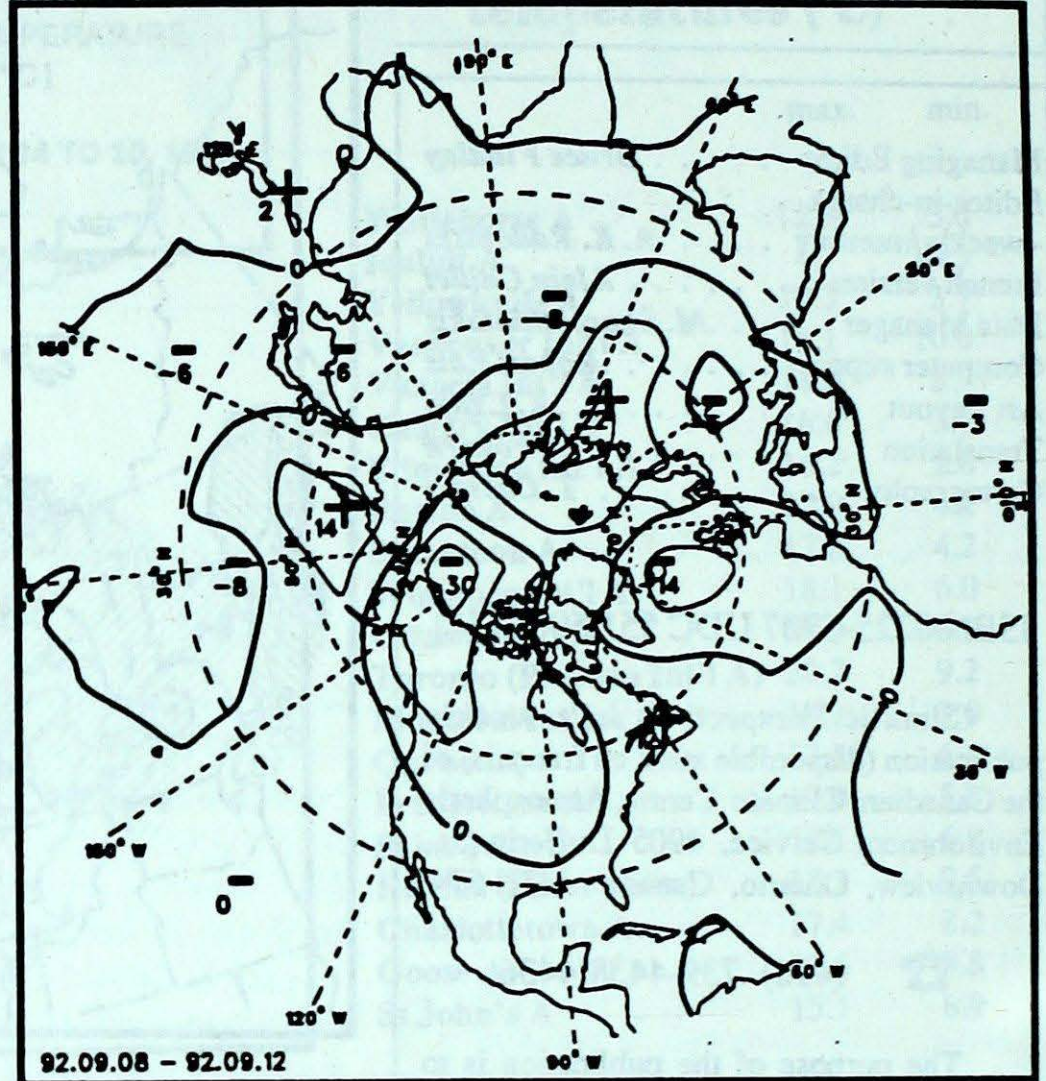
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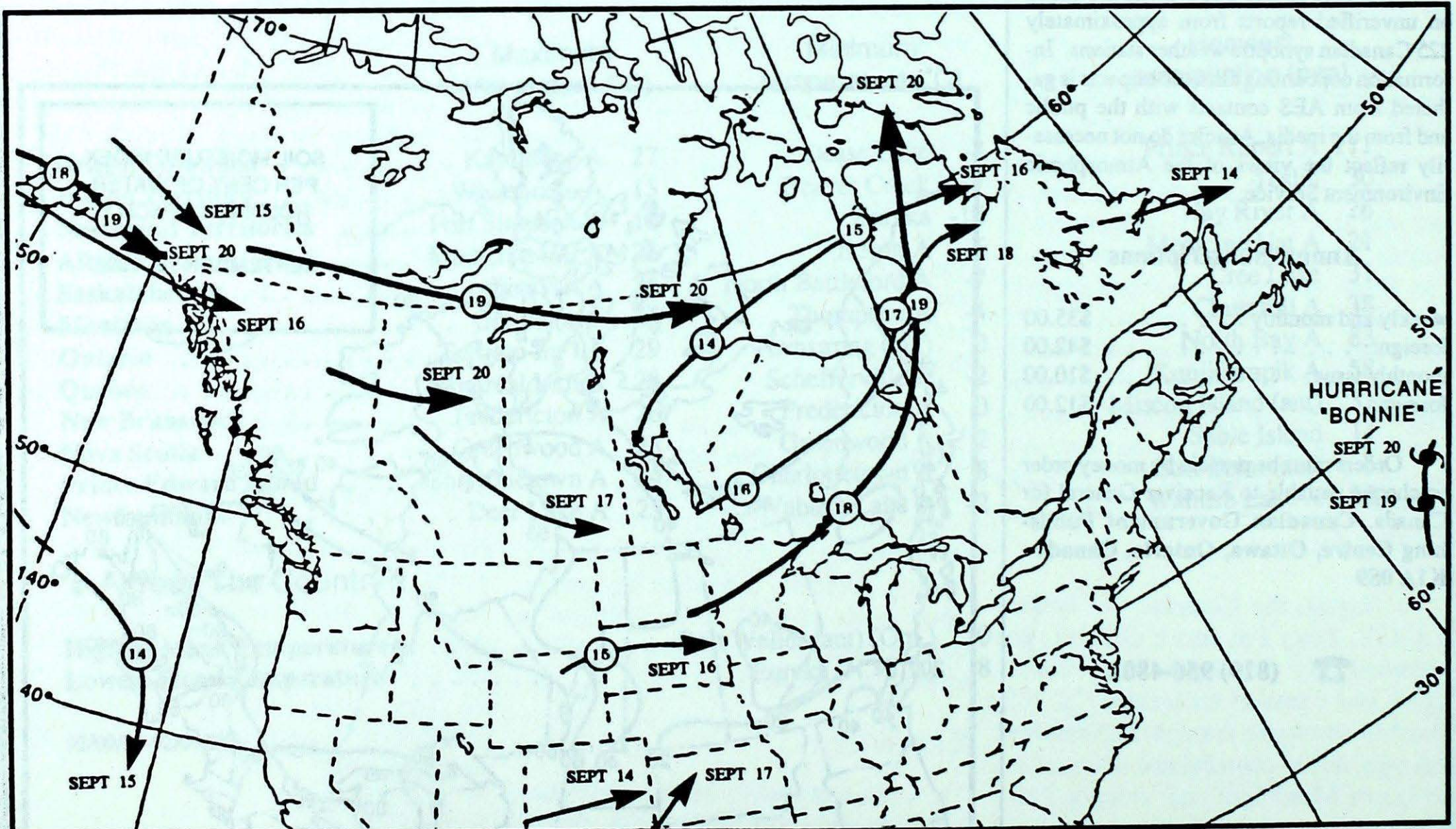
50-kPa ATMOSPHERIC CIRCULATION



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



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

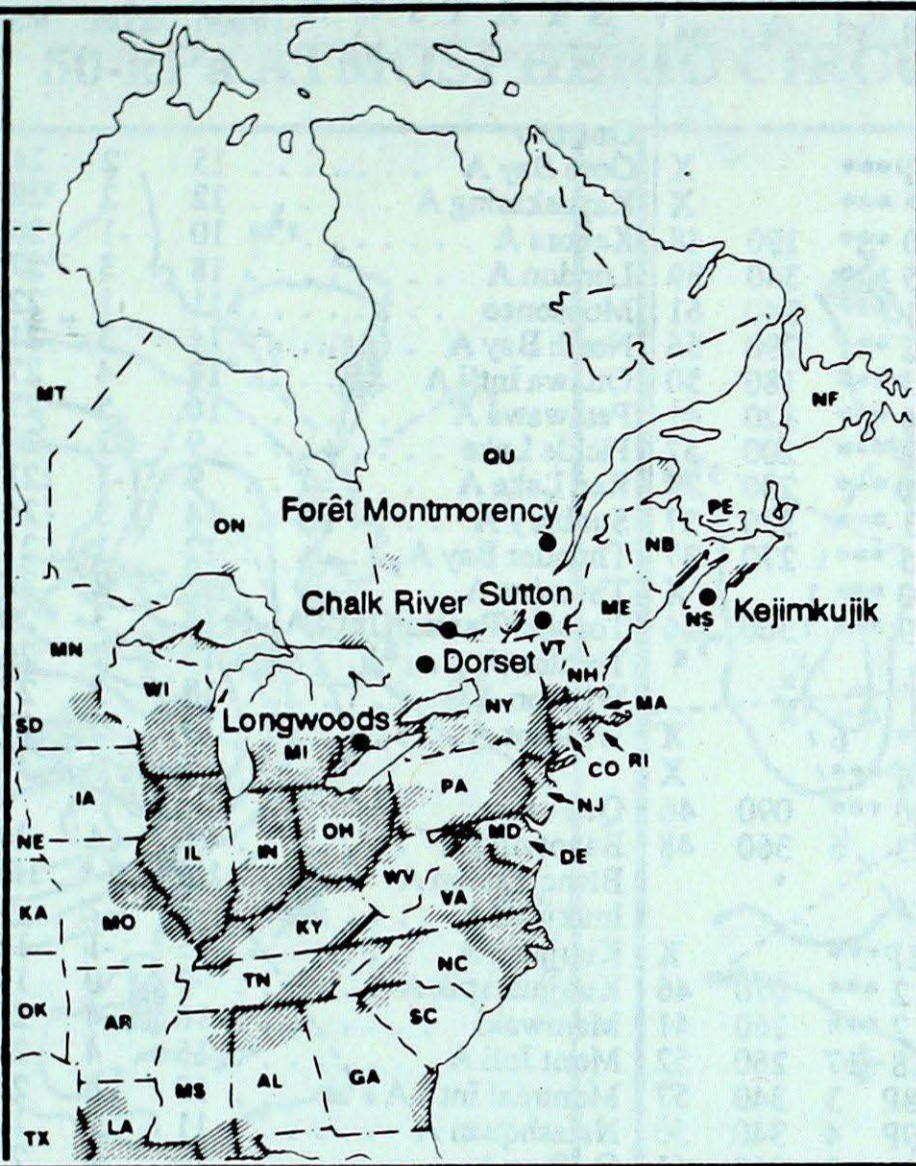


Tracks of low pressure centres at 12:00 U.T. each day during the period.

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 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
- QUÉBEC -- 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
------	-----	----	--------	------------------

September 13 to 19, 1992

Longwoods				..... Data not available this week
Dorset *	16	4.0	3 R	..... Southern Michigan, Indiana, Illinois
	17	4.1	1 R	..... Michigan, Illinois, eastern Iowa
	18	4.5	24 R	..... Southern Michigan, Indiana, Illinois
Chalk River	16	3.9	2 R	..... Lake Huron, Michigan
	17	4.3	1 R	..... Lake Huron, Michigan, Wisconsin
	18	4.6	5 R	..... Lake Huron, southern Michigan
Sutton	17	3.6	2 R	..... Eastern and southern Ontario, southern Michigan
	18	4.2	7 R	..... Western New York, Pennsylvania, Ohio
Montmorency	15	3.6	1 R	..... Western Quebec, northern Ontario, Lake Huron
	16	4.2	23 R	..... Western Quebec, eastern and northern Ontario, Lake Huron, northern Michigan
	17	3.9	4 R	..... Western Quebec, northern Ontario
	18	4.1	23 R	..... Southwestern Quebec, eastern and northern Ontario
Kejimikujik	19	4.0	7 R	..... New England, New York, Pennsylvania, southern Ontario

R= rain (mm), S = snow (cm), M = mixed rain and snow (mm)

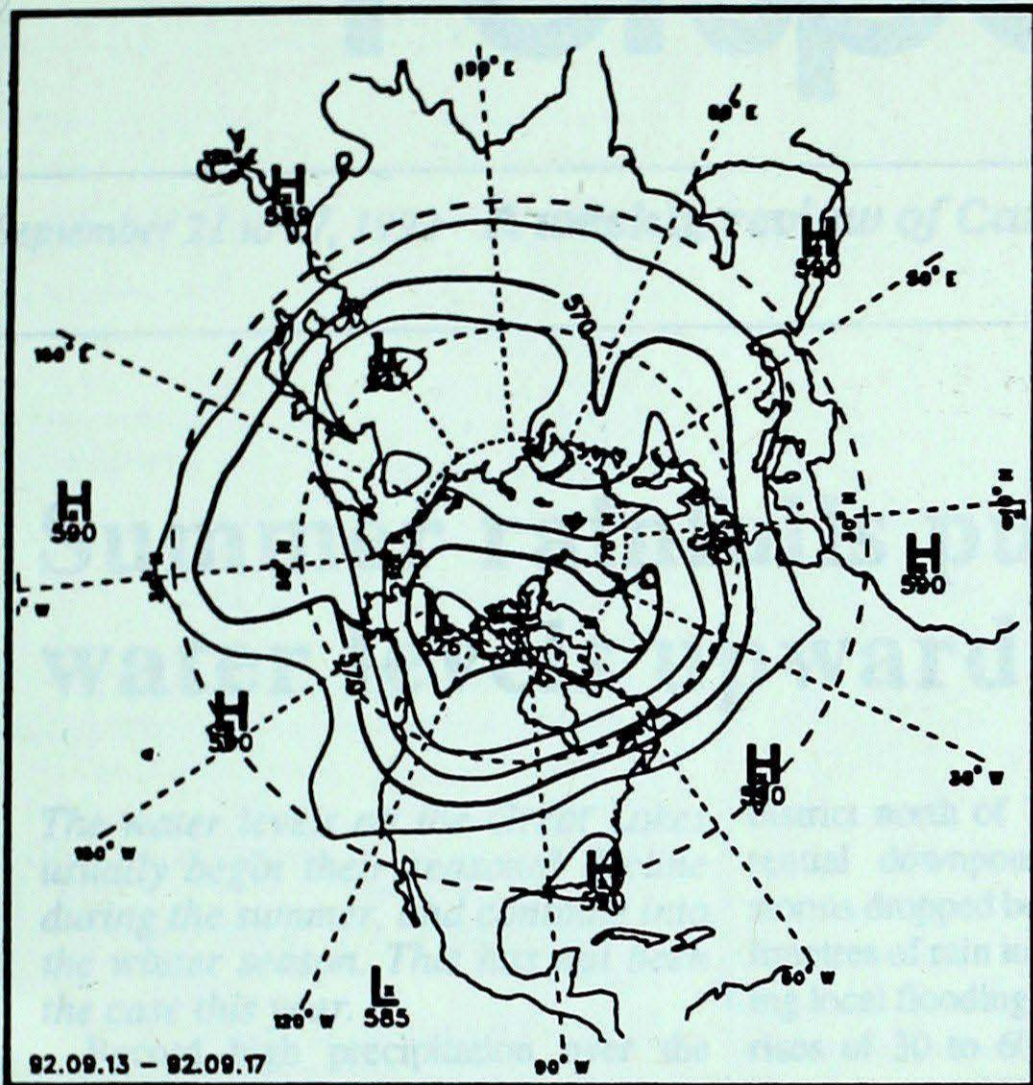
STATION	temperature				precip.		wind max		STATION	temperature				precip.		wind max	
	mean	anom	max	min	ptot	st	dir	vel		mean	anom	max	min	ptot	st	dir	vel
British Columbia									Ontario								
Blue River A	6P	-5P	21P	-4P	23P***			X	Gore Bay A	15	2	24	4	31 ***	270	74	
Cape St James	*	*	*	*	***			X	Kapuskasing A	12	2	22	1	32 ***	270	65	
Cranbrook A	9	-2	22	-2	0 ***	190	48		Kenora A	10	-1	20	2	21 ***	240	59	
Fort Nelson A	4	-6	14	-5	15 22	340	39		London A	18	3	27	5	33 ***	200	61	
Fort St John A	6	-4	16	-5	11 ***	340	61		Moosonee	11	1	22	1	30 ***	270	57	
Kamloops A	11	-4	27	1	2 ***	290	56		North Bay A	14	3	21	3	83 ***	210	89	
Penticton A	12P	-3P	27P	-1P	1P***	180	50		Ottawa Int'l A	17	4	27	7	18 ***	210	56	
Port Hardy A	10	-2	15	1	34 ***	320	41		Petawawa A	16	5	27	2	13 ***	230	61	
Prince George A	6	-3	17	-6	27 ***	200	57		Pickle Lake	9	-1	20	0	11 ***	230	59	
Prince Rupert A	9	-2	14	-1	111 ***	280	74		Red Lake A	9	-1	21	1	23 ***	240	59	
Smithers A	7	-3	18	-5	11 ***	330	37		Sudbury A	14	3	24	3	47 ***	210	35	
Vancouver Int'l A	13	-2	18	5	5 ***	270	37		Thunder Bay A	12	1	21	0	49 ***	300	59	
Victoria Int'l A	12	-2	21	2	0 ***			X	Timmins A	12	2	24	1	29 ***	280	74	
Williams Lake A	7	-3	20	-6	9 ***	360	56		Toronto(Pearson Int'l A)	18	3	29	5	28 ***	240	56	
Yukon Territory									Trenton A								
Komakuk Beach A	-5	-6	0	-9	* 6			X	Warton A	17	3	27	5	30 ***	290	65	
Teslin (aut)	2P	*	10P	-5P	29P***			X	Windsor A	19	2	27	8	48 ***	240	96	
Watson Lake A	3	-5	13	-6	20 ***	090	46		Québec								
Whitehorse A	1	-7	15	-6	23 6	360	48		Bagotville A	14	4	24	2	35 ***	290	54	
Northwest Territories									Blanc Sablon A								
Alert	-7P	5P	0P	-15P	1P***			X	Inukjuak A	3	-2	9	0	56 11	280	80	
Baker Lake A	1	-1	6	-5	2 ***	070	46		Kuujuuaq A	5	-1	12	-2	32 ***	250	102	
Cambridge Bay A	0	1	4	-3	2 ***	140	41		Kuujuuarapik A	7	0	19	2	58 ***	320	98	
Cape Dyer A	-3	-1	0	-6	18 17	260	52		Maniwaki	16	4	25	4	12 ***	210	52	
Clyde A	-2P	-2P	1P	-5P	8P 3	340	57		Mont Joli A	15	4	23	6	15 ***	230	89	
Coppermine A	0P	-2P	6P	-10P	9P 4	340	50		Montréal Int'l A	18	4	28	7	3 ***	220	46	
Coral Harbour A	-1	-2	4	-4	1 3	060	61		Natashquan A	11	2	17	1	8 ***	270	67	
Eureka	-8	1	-4	-16	0 3			X	Québec A	16	4	25	4	36 ***	240	72	
Fort Smith A	4	-3	10	0	11 ***	300	65		Schefferville A	6	1	14	-2	31 ***	300	87	
Hall Beach A	-1	0	1	-3	1 3	350	35		Sept-Îles A	11	2	21	1	12 ***	280	54	
Inuvik A	-5	-8	2	-13	8 5	310	50		Sherbrooke A	17	5	28	3	7 ***	200	56	
Iqaluit A	1	-2	5	-3	5 3	080	104		Val-d'Or A	12	3	24	1	43 ***	270	65	
Mould Bay A	-5	2	-1	-10	5 6			X	New Brunswick								
Norman Wells A	-2	-9	4	-9	11 12	130	48		Fredericton A	17	4	28	0	1 ***	310	46	
Resolute A	-4	1	-1	-8	1 3	070	46		Miscou Island (aut)	15P	3P	21P	2P	31P***			
Yellowknife A	3	-4	8	-3	18 ***	340	48		Moncton A	17	4	26	2	0 ***	250	44	
Alberta									Saint John A								
Calgary Int'l A	8	-2	23	-4	2 ***	250	70		14	2	23	2	0 ***	220	39		
Cold Lake A	6	-4	20	-5	4 ***	310	83		Nova Scotia								
Edmonton Namao A	7	-3	21	-4	2 ***	280	76		Greenwood A	17	4	28	2	2 ***	260	41	
Fort McMurray A	5	-4	18	-4	13 ***	320	44		Shearwater A	16	2	23	9	1 ***	200	33	
High Level A	4	-5	14	-3	13 6	330	35		Sydney A	17	4	24	9	3 ***	220	46	
Jasper	*	*	15	*	***			X	Yarmouth A	14	1	19	6	3 ***	270	48	
Lethbridge A	9	-3	23	-3	5 ***	250	80		Prince Edward Island								
Medicine Hat A	9	-4	26	-3	21 ***	180	56		Charlottetown A	17	5	24	8	2 ***	230	44	
Peace River A	6	-3	18	-3	12 ***	330	44		East Point (auto)	17P	*	21P	12P	3P***			
Saskatchewan									Newfoundland								
Cree Lake	4	-3	17	-1	31 ***	300	48		Cartwright	10	2	22	2	8 ***	180	70	
Estevan A	11	-1	26	-2	1 ***	320	63		Churchill Falls A	8	3	17	-1	15 ***	280	82	
La Ronge A	6	-3	17	-3	13 ***	270	67		Gander Int'l A	14	3	21	5	13 ***	240	50	
Regina A	10	-1	24	-1	4 ***	320	63		Goose A	11	2	23	2	6 ***	320	80	
Saskatoon A	8	-3	24	-5	3 ***	290	70		St John's A	15	4	22	8	13 ***	250	59	
Swift Current A	9	-2	23	-3	1 ***	330	57		St Lawrence	15	4	20	7	6 ***		X	
Yorkton A	9	-2	23	-1	8 ***	290	63		Wabush Lake A	7	1	16	-2	28 3	270	65	
Manitoba									92/09/14-92/09/20								
Brandon A	9	-2	23	0	21 ***	310	56										
Churchill A	3	-3	7	-2	38 ***	060	74										
Lynn Lake A	4	-2	10	-2	34 ***	300	41										
The Pas A	8	-2	20	0	9 ***	270	65										
Thompson A	5	-2	15	-4	22 ***	080	39										
Winnipeg Int'l A	10	-2	23	2	13 ***	280	56										

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

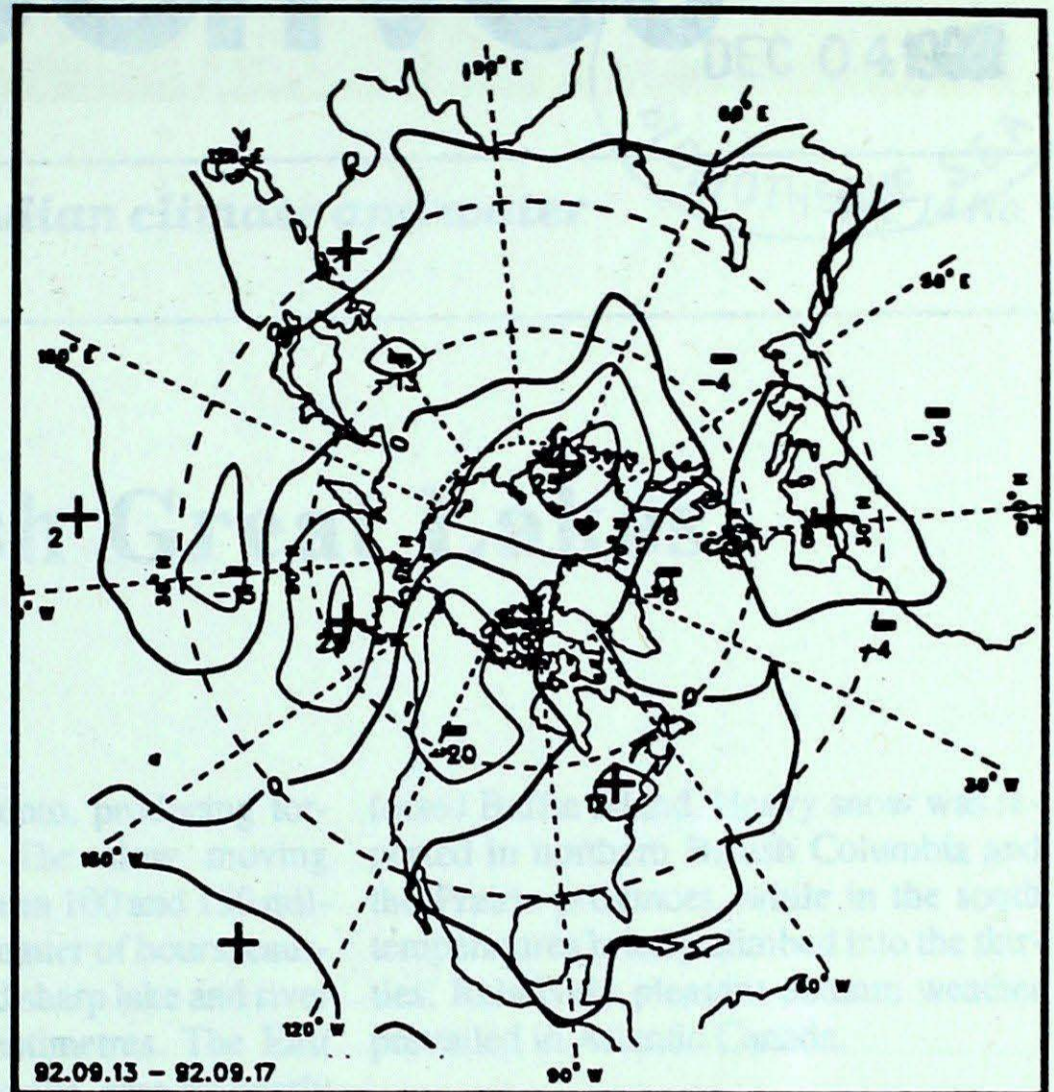
ptot = weekly precipitation total in mm
 st = snow thickness on the ground in cm
 dir = direction of max wind, deg. from north.
 vel = wind speed in km/h

— 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)

...of rain, the highest amount ever recorded in the region. The heavy rain was accompanied by strong winds, which caused some damage to property. The rain was particularly heavy in the Ottawa Valley, where it fell in excess of 100 mm. The rain was also accompanied by a cold front, which moved across the region from the west. The rain was also accompanied by a cold front, which moved across the region from the west.

Precipitation in August continued its above-normal trend, approximately 113 percent of normal. The overall water supply and outflow conditions in Lakes Ontario, Superior, Huron and Georgian Bay were such that the water levels remained relatively constant during the month. In contrast, the level of Lake Erie began its seasonal decline after rising considerably in July.

In September, rainfall continued its above-normal trend, exceeding the normal water level declines expected at this time of year. On average, the North has received 136 percent of its normal rainfall in September. Only Lake Ontario's water level declined, due to the regulated higher outflow into the St. Lawrence River.

draw-down period, but even so, currents in some of the connecting rivers and channels became unusually strong - a hazard to boaters.

On Sunday, September 27, in the wake of a cold frontal passage, gale-force winds picked up and blew across southern and central Ontario. The strong, gusty westerly winds, approaching 100 km/h, brought a heavy rain to the region. The rain was particularly heavy in the Ottawa Valley, where it fell in excess of 100 mm. The rain was also accompanied by a cold front, which moved across the region from the west.

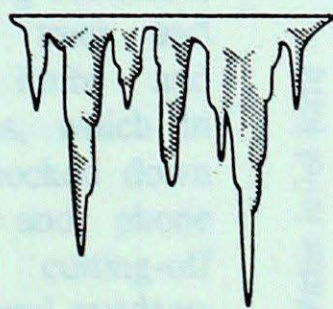
Elsewhere, low and cold clouds accompanied the system, bringing drizzle and rain to the region. The rain was particularly heavy in the Ottawa Valley, where it fell in excess of 100 mm. The rain was also accompanied by a cold front, which moved across the region from the west.

will be above normal across most of the region. The heavy rain was accompanied by strong winds, which caused some damage to property. The rain was particularly heavy in the Ottawa Valley, where it fell in excess of 100 mm. The rain was also accompanied by a cold front, which moved across the region from the west.

Yukon, the Mackenzie District of the Northwest Territories and British Columbia. The sunny weather is likely over the Maritime.

Great Lakes water levels Sept. 1992

Lake	Current Level (m)	1991 Average (m)
Superior	180.5	180.5
Michigan	178.5	178.5
Huron	176.5	176.5
St. Clair	174.5	174.5
Ontario	172.5	172.5
Erie	170.5	170.5
St. Lawrence	168.5	168.5



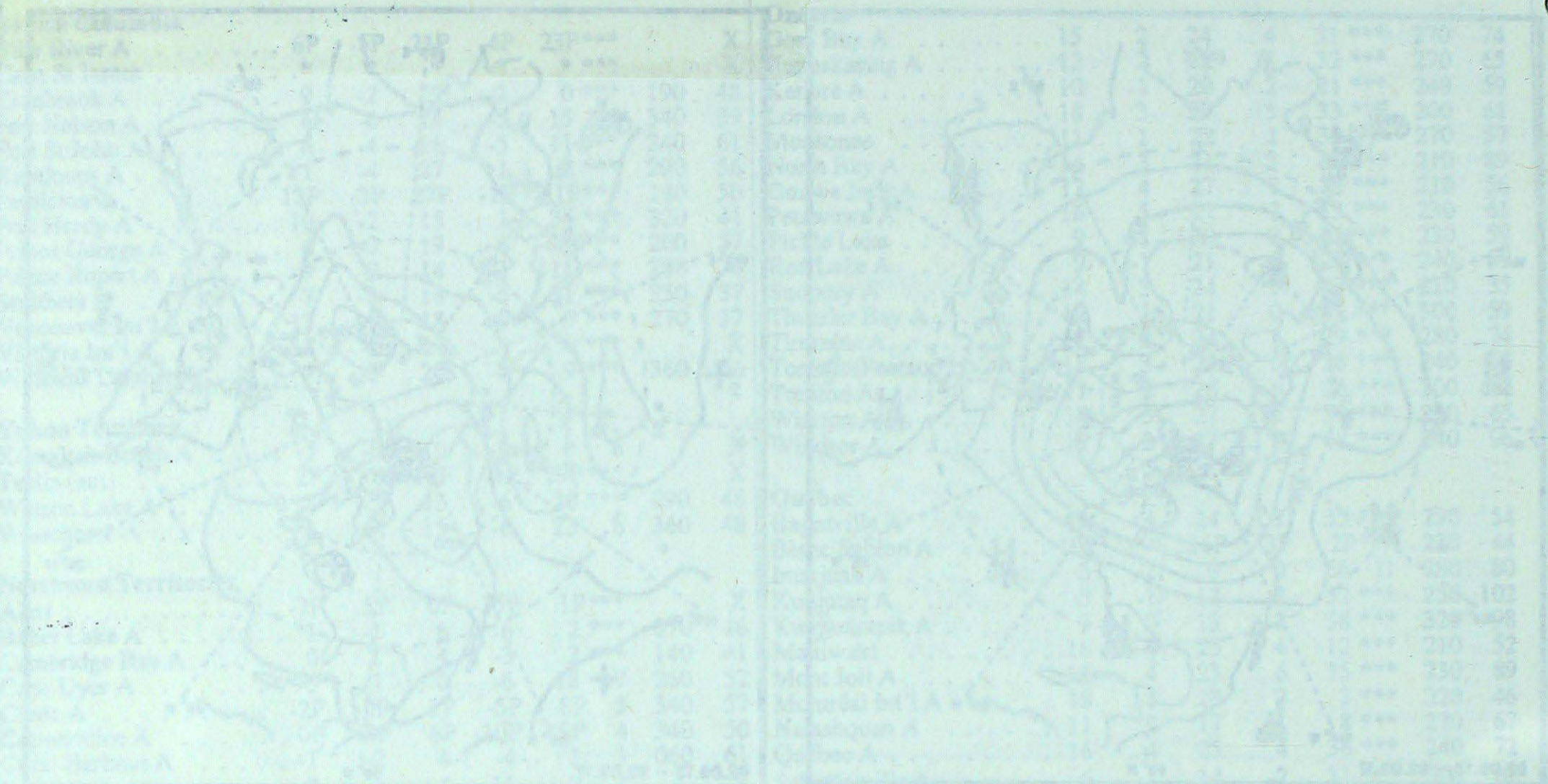
Rain and wind buffets Ontario's cottage country

During the early morning hours of the 12th, heavy rain showers rumbled across the Muskoka/Haliburton cottage

Although Lake Superior's water level is expected to remain above normal, the other lakes are expected to be below normal. The heavy rain was accompanied by strong winds, which caused some damage to property. The rain was particularly heavy in the Ottawa Valley, where it fell in excess of 100 mm. The rain was also accompanied by a cold front, which moved across the region from the west.

Although Lake Superior's water level is expected to remain above normal, the other lakes are expected to be below normal. The heavy rain was accompanied by strong winds, which caused some damage to property. The rain was particularly heavy in the Ottawa Valley, where it fell in excess of 100 mm. The rain was also accompanied by a cold front, which moved across the region from the west.

50-FP ATMOSPHERIC CIRCULATION



Station	Value	Station	Value
St. John's A	100	St. John's A	100
Miramichi A	105	Miramichi A	105
St. John's A	110	St. John's A	110
Miramichi A	115	Miramichi A	115
St. John's A	120	St. John's A	120
Miramichi A	125	Miramichi A	125
St. John's A	130	St. John's A	130
Miramichi A	135	Miramichi A	135
St. John's A	140	St. John's A	140
Miramichi A	145	Miramichi A	145
St. John's A	150	St. John's A	150
Miramichi A	155	Miramichi A	155
St. John's A	160	St. John's A	160
Miramichi A	165	Miramichi A	165
St. John's A	170	St. John's A	170
Miramichi A	175	Miramichi A	175
St. John's A	180	St. John's A	180
Miramichi A	185	Miramichi A	185
St. John's A	190	St. John's A	190
Miramichi A	195	Miramichi A	195
St. John's A	200	St. John's A	200
Miramichi A	205	Miramichi A	205
St. John's A	210	St. John's A	210
Miramichi A	215	Miramichi A	215
St. John's A	220	St. John's A	220
Miramichi A	225	Miramichi A	225
St. John's A	230	St. John's A	230
Miramichi A	235	Miramichi A	235
St. John's A	240	St. John's A	240
Miramichi A	245	Miramichi A	245
St. John's A	250	St. John's A	250
Miramichi A	255	Miramichi A	255
St. John's A	260	St. John's A	260
Miramichi A	265	Miramichi A	265
St. John's A	270	St. John's A	270
Miramichi A	275	Miramichi A	275
St. John's A	280	St. John's A	280
Miramichi A	285	Miramichi A	285
St. John's A	290	St. John's A	290
Miramichi A	295	Miramichi A	295
St. John's A	300	St. John's A	300
Miramichi A	305	Miramichi A	305
St. John's A	310	St. John's A	310
Miramichi A	315	Miramichi A	315
St. John's A	320	St. John's A	320
Miramichi A	325	Miramichi A	325
St. John's A	330	St. John's A	330
Miramichi A	335	Miramichi A	335
St. John's A	340	St. John's A	340
Miramichi A	345	Miramichi A	345
St. John's A	350	St. John's A	350
Miramichi A	355	Miramichi A	355
St. John's A	360	St. John's A	360
Miramichi A	365	Miramichi A	365
St. John's A	370	St. John's A	370
Miramichi A	375	Miramichi A	375
St. John's A	380	St. John's A	380
Miramichi A	385	Miramichi A	385
St. John's A	390	St. John's A	390
Miramichi A	395	Miramichi A	395
St. John's A	400	St. John's A	400
Miramichi A	405	Miramichi A	405
St. John's A	410	St. John's A	410
Miramichi A	415	Miramichi A	415
St. John's A	420	St. John's A	420
Miramichi A	425	Miramichi A	425
St. John's A	430	St. John's A	430
Miramichi A	435	Miramichi A	435
St. John's A	440	St. John's A	440
Miramichi A	445	Miramichi A	445
St. John's A	450	St. John's A	450
Miramichi A	455	Miramichi A	455
St. John's A	460	St. John's A	460
Miramichi A	465	Miramichi A	465
St. John's A	470	St. John's A	470
Miramichi A	475	Miramichi A	475
St. John's A	480	St. John's A	480
Miramichi A	485	Miramichi A	485
St. John's A	490	St. John's A	490
Miramichi A	495	Miramichi A	495
St. John's A	500	St. John's A	500
Miramichi A	505	Miramichi A	505

1. Mean geopotential height anomaly (50 hPa level) (10 degree intervals) A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z, AA, AB, AC, AD, AE, AF, AG, AH, AI, AJ, AK, AL, AM, AN, AO, AP, AQ, AR, AS, AT, AU, AV, AW, AX, AY, AZ, BA, BB, BC, BD, BE, BF, BG, BH, BI, BJ, BK, BL, BM, BN, BO, BP, BQ, BR, BS, BT, BU, BV, BW, BX, BY, BZ, CA, CB, CC, CD, CE, CF, CG, CH, CI, CJ, CK, CL, CM, CN, CO, CP, CQ, CR, CS, CT, CU, CV, CW, CX, CY, CZ, DA, DB, DC, DD, DE, DF, DG, DH, DI, DJ, DK, DL, DM, DN, DO, DP, DQ, DR, DS, DT, DU, DV, DW, DX, DY, DZ, EA, EB, EC, ED, EE, EF, EG, EH, EI, EJ, EK, EL, EM, EN, EO, EP, EQ, ER, ES, ET, EU, EV, EW, EX, EY, EZ, FA, FB, FC, FD, FE, FF, FG, FH, FI, FJ, FK, FL, FM, FN, FO, FP, FQ, FR, FS, FT, FU, FV, FW, FX, FY, FZ, GA, GB, GC, GD, GE, GF, GG, GH, GI, GJ, GK, GL, GM, GN, GO, GP, GQ, GR, GS, GT, GU, GV, GW, GX, GY, GZ, HA, HB, HC, HD, HE, HF, HG, HH, HI, HJ, HK, HL, HM, HN, HO, HP, HQ, HR, HS, HT, HU, HV, HW, HX, HY, HZ, IA, IB, IC, ID, IE, IF, IG, IH, II, IJ, IK, IL, IM, IN, IO, IP, IQ, IR, IS, IT, IU, IV, IW, IX, IY, IZ, JA, JB, JC, JD, JE, JF, JG, JH, JI, JJ, JK, JL, JM, JN, JO, JP, JQ, JR, JS, JT, JU, JV, JW, JX, JY, JZ, KA, KB, KC, KD, KE, KF, KG, KH, KI, KJ, KK, KL, KM, KN, KO, KP, KQ, KR, KS, KT, KU, KV, KW, KX, KY, KZ, LA, LB, LC, LD, LE, LF, LG, LH, LI, LJ, LK, LL, LM, LN, LO, LP, LQ, LR, LS, LT, LU, LV, LW, LX, LY, LZ, MA, MB, MC, MD, ME, MF, MG, MH, MI, MJ, MK, ML, MM, MN, MO, MP, MQ, MR, MS, MT, MU, MV, MW, MX, MY, MZ, NA, NB, NC, ND, NE, NF, NG, NH, NI, NJ, NK, NL, NM, NN, NO, NP, NQ, NR, NS, NT, NU, NV, NW, NX, NY, NZ, OA, OB, OC, OD, OE, OF, OG, OH, OI, OJ, OK, OL, OM, ON, OO, OP, OQ, OR, OS, OT, OU, OV, OW, OX, OY, OZ, PA, PB, PC, PD, PE, PF, PG, PH, PI, PJ, PK, PL, PM, PN, PO, PP, PQ, PR, PS, PT, PU, PV, PW, PX, PY, PZ, QA, QB, QC, QD, QE, QF, QG, QH, QI, QJ, QK, QL, QM, QN, QO, QP, QQ, QR, QS, QT, QU, QV, QW, QX, QY, QZ, RA, RB, RC, RD, RE, RF, RG, RH, RI, RJ, RK, RL, RM, RN, RO, RP, RQ, RR, RS, RT, RU, RV, RW, RX, RY, RZ, SA, SB, SC, SD, SE, SF, SG, SH, SI, SJ, SK, SL, SM, SN, SO, SP, SQ, SR, SS, ST, SU, SV, SW, SX, SY, SZ, TA, TB, TC, TD, TE, TF, TG, TH, TI, TJ, TK, TL, TM, TN, TO, TP, TQ, TR, TS, TT, TU, TV, TW, TX, TY, TZ, UA, UB, UC, UD, UE, UF, UG, UH, UI, UJ, UK, UL, UM, UN, UO, UP, UQ, UR, US, UT, UY, UZ, VA, VB, VC, VD, VE, VF, VG, VH, VI, VJ, VK, VL, VM, VN, VO, VP, VQ, VR, VS, VT, VU, VV, VW, VX, VY, VZ, WA, WB, WC, WD, WE, WF, WG, WH, WI, WJ, WK, WL, WM, WN, WO, WP, WQ, WR, WS, WT, WU, WV, WW, WX, WY, WZ, XA, XB, XC, XD, XE, XF, XG, XH, XI, XJ, XK, XL, XM, XN, XO, XP, XQ, XR, XS, XT, XU, XV, XW, XX, XY, XZ, YA, YB, YC, YD, YE, YF, YG, YH, YI, YJ, YK, YL, YM, YN, YO, YP, YQ, YR, YS, YT, YU, YV, YW, YX, YY, YZ, ZA, ZB, ZC, ZD, ZE, ZF, ZG, ZH, ZI, ZJ, ZK, ZL, ZM, ZN, ZO, ZP, ZQ, ZR, ZS, ZT, ZU, ZV, ZW, ZX, ZY, ZZ.