Environment Canada Environnement Canada

Climatic Perspectives

MONTHLY SUPPLEMENT INCLUDED

January 13 to 19, 1992 **A weekly review of Canadian climate and water** *Vol. 14 No. 03*

Eastern Canada returns to winter

The mild conditions, which Canadians experienced for a few weeks came to an abrupt end for residents living in the eastern half of the country. On January 15, the temperature dropped from 4 ℃ to -20 ℃ in St. Leonard, New Brunswick. Only Baffin Island, although surrounded by very cold air masses, remained unseasonably warm.

After a relatively tranquil holiday period, winter returned to Ontario with a vengeance on January 14. A well-forecast storm, which started as a low pressure system over northeastern Texas two days earlier, intensified rapidly as it advanced towards the Great Lakes. After a period of heavy rain and freezing rain, winds gusting over 80 km/h, rapidly falling temperatures and heavy snowfalls combined to create near blizzard conditions across southern and central Ontario. Schools, businesses and highways were closed, and Toronto's Pearson Airport was shut down for several hours during the height of the storm. The storm-force winds caused several commercial airliners to slide off the slick ice-coated taxiways as they tried reach the runways. The heaviest snowfalls, 20 to 25 centimetres, fell in the London-Kitchener areas. Amounts would have been much greater if the precipitation had not started off as rain and freezing rain. Blowing snow caused zero visibilities and made travel extremely treacherous.

Immediately following the passage of this storm, intense lake-effect snow squalls began in the traditional snow belt areas,and continued through the weekend. The heaviest snowfalls were reported between Georgian Bay and Lake Simcoe and east of Lake Huron. The Orillia area received between 75 and 100 centimetres of snow, causing a library roof to collapse. Before this storm there was little if any snow on the ground.

The same storm barreled through Quebec on the 15th and 16th. Winds gusting up to 90 km/h, low temperatures, blowing snow and low visibilities caused road closures and other transportation delays as well as many power outages. In the Matapedia Valley, roads and schools were closed, as blizzard conditions and snowfalls made highway travel very difficult.

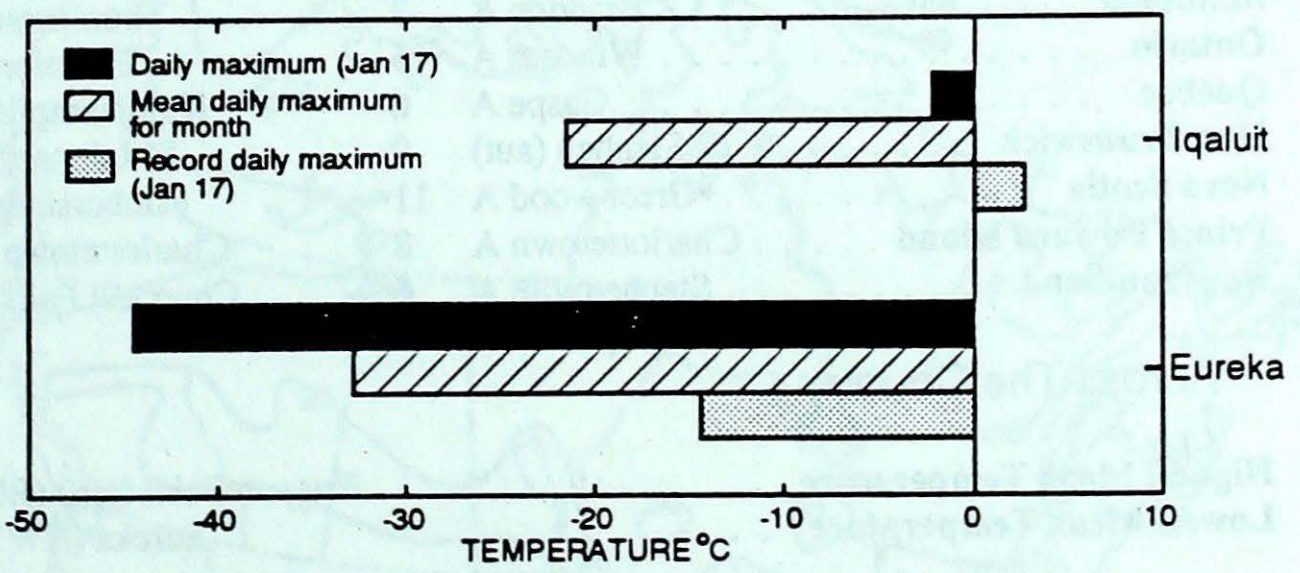
Warmth over Baffin Island

An upper atmospheric low situated over Labrador was responsible for unusually mild weather over the central Baffin Island during the past week. A southeasterly circulation on the east side of the low pressure system made daytime temperatures at Iqaluit climb as high as -4.5° C, -2.2° C and -4.7° C on January 16, 17 and 18, respectively.

In contrast, blizzard conditions and record low temperatures were recorded in the high Arctic. Eureka almost set a new daily low temperature record of -49.1 C on Jan. 19. (It was -50°C on that day in 1951)

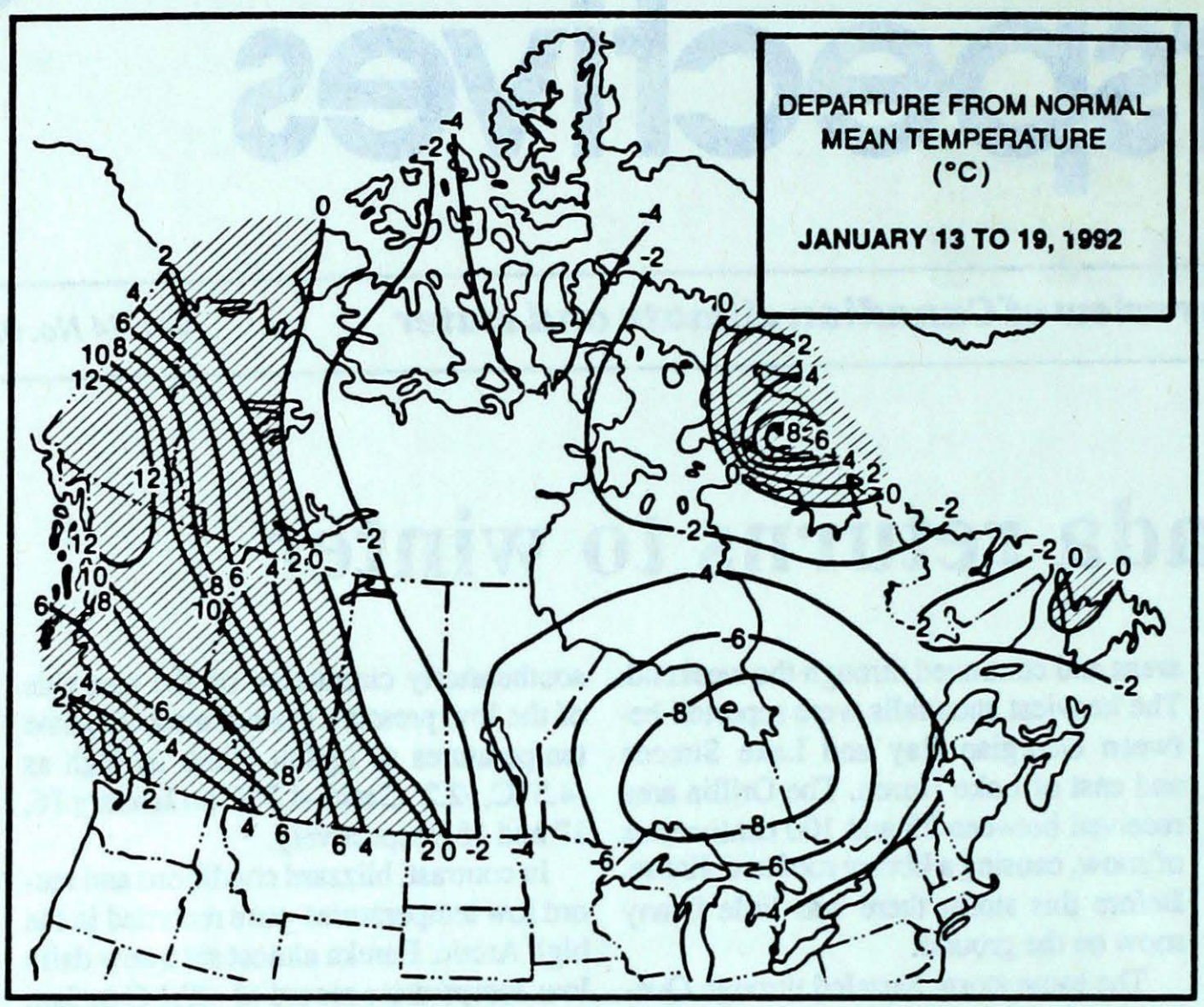
A look ahead ...

The week of Jan. 27, will see the ridge of high pressure along the west coast move eastward, resulting in a change to slightly below normal temperature in the Yukon and B.C. A south-westerly air flow should keep the Prairies and Ontario above the normal seasonal readings. Quebec, the East coast provinces and the Arctic are forecast to endure one more week of below normal temperatures.



An unseasonable mild spell over southern Baffin Island in the eastern Arctic contrasts with near record cold conditions in the High Arctic. A one-day example (January 17) is shown

Canada



Weekly normal temperatures (°C)

	max.	min.
Whitehorse A	-17.2	-25.4
Iqaluit A	-21.3	-29.7
Yellowknife A	-24.7	-33.5
Vancouver Int'l A	5.8	0.7
Victoria Int'l A	6.5	1.0
Calgary Int'l A	-5.0	-16.9
Edmonton Int'l A	-9.8	-21.0
Regina A	-12.1	-22.8
Saskatoon A	-13.4	-24.1
Winnipeg Int'l A	-14.3	-24.4
Ottawa Int'l A	-7.1	-16.3
Toronto (Pearson Int'l A)	-2.8	-11.6
Montréal Int'l A	-6.5	-15.6
Québec A	-7.8	-17.6
Fredericton A	-4.3	-15.6
Saint John A	-2.9	-13.8
Halifax (Shearwater)	-0.2	-8.7
Charlottetown A	-3.2	-12.0
Goose A	-11.6	-20.6
St John's A	-0.9	-7.9

Weekly temperature and precipitation extremes

	Maximum temperature (°C)		Minimum temperature (°C)		Heaviest precipitation (mm)	
British Columbia	Lytton	12	Fort Nelson A	-28	Estevan Point (aut)	76
Yukon Territory	Whitehorse A	3	Komakuk Beach A	-38	Whitehorse A	13
Northwest Territories	Iqaluit A	-2	Eureka	-49	Cape Dyer A	47
Alberta	Calgary Int'l A	14	High Level A	-35	Whitecourt A	7
Saskatchewan	Swift Current A	6	Cree Lake	-42	Yorkton A	6
Manitoba	Brandon A	-3	Thompson A	-41	Dauphin A	7
Ontario	Windsor A	5	Timmins A	-43	London A	55
Québec	Gaspe A	6	Kuujjuarapik A	-41	Ste Agathe Des Monts	54
New Brunswick	St Stephen (aut)	9	St-Léonard A	-28	Moncton A	22
Nova Scotia	Greenwood A	11	Amherst (aut)	-22	Greenwood A	26
Prince Edward Island	Charlottetown A	8	Charlottetown A	-22	Charlottetown A	15
Newfoundland	Stephenville A	6	Churchill Falls A	-36	St Lawrence	41

Across The Country...

Highest Mean Temperature	Estevan Point (aut) (BC)	7
Lowest Mean Temperature	Eureka (NWT)	-42

92/01/13-92/01/19

CLIMATIC PERSPECTIVES
VOLUME 14

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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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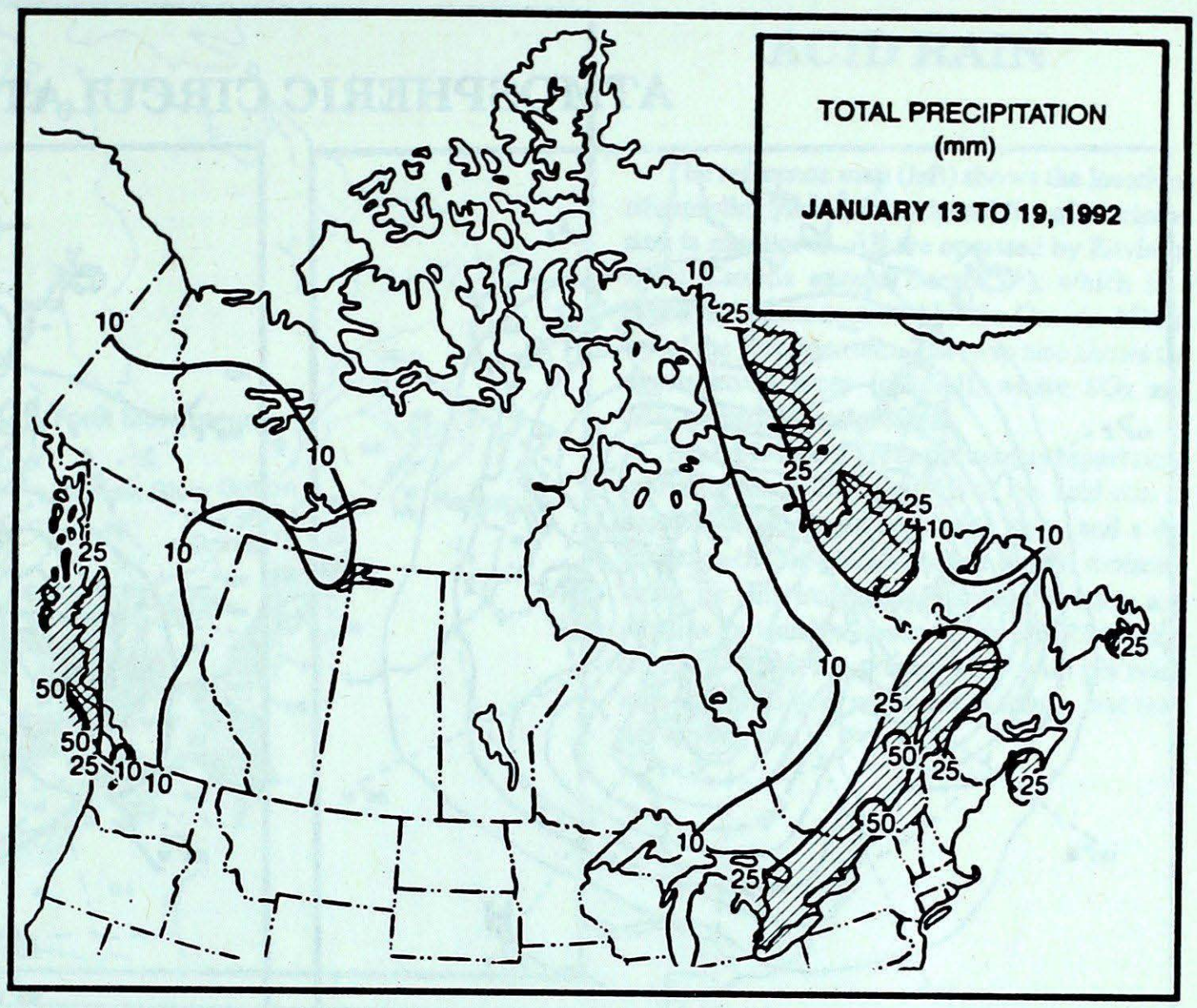
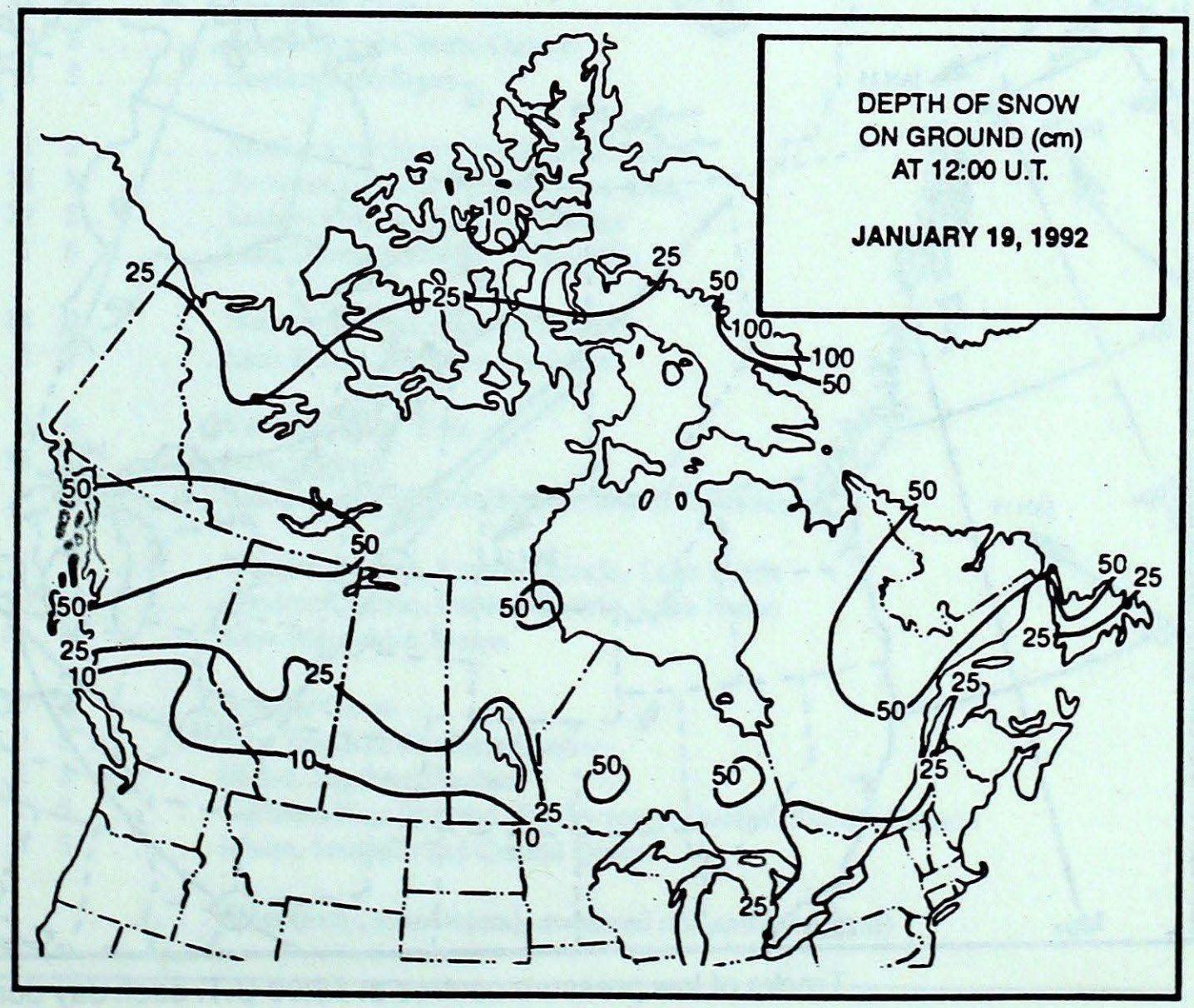
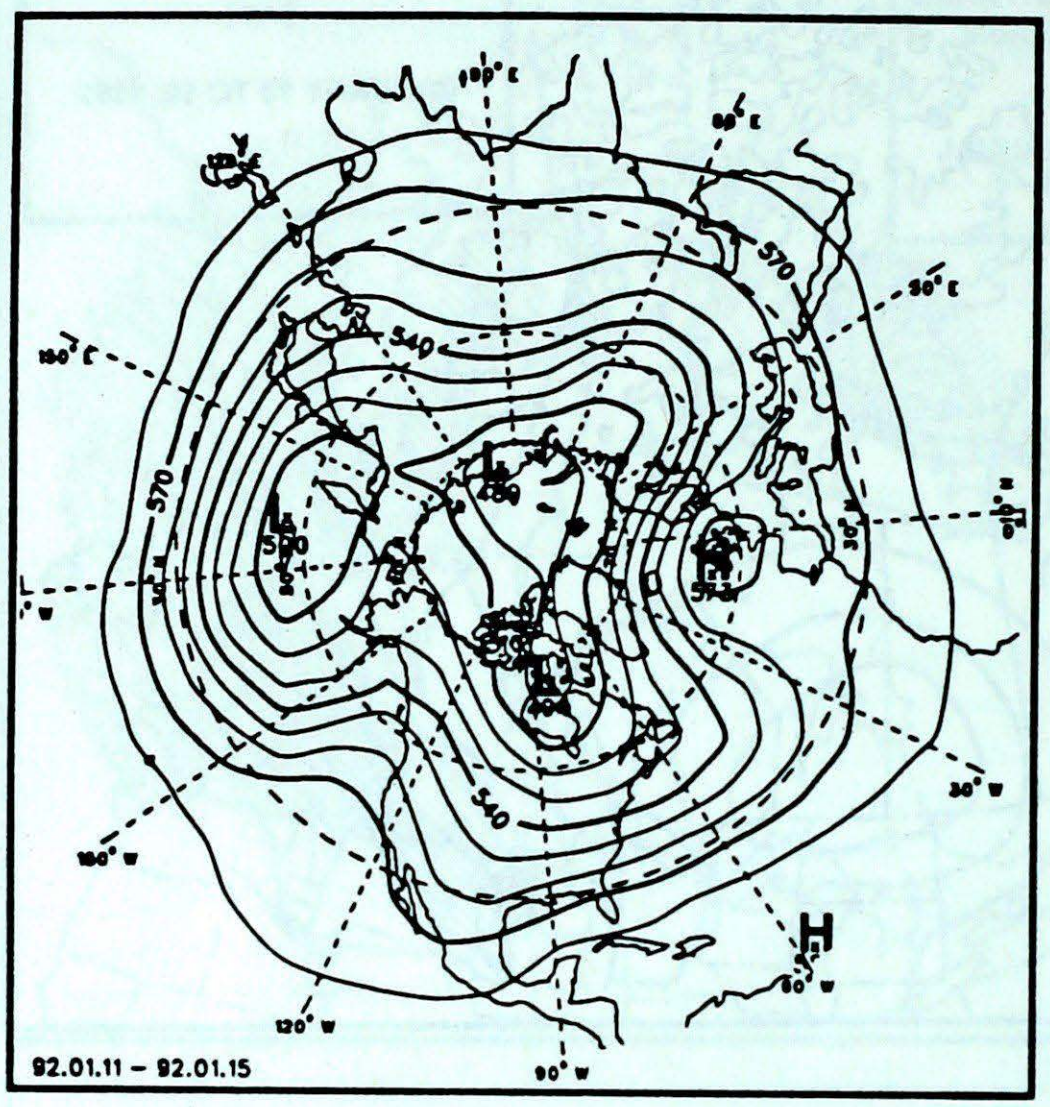
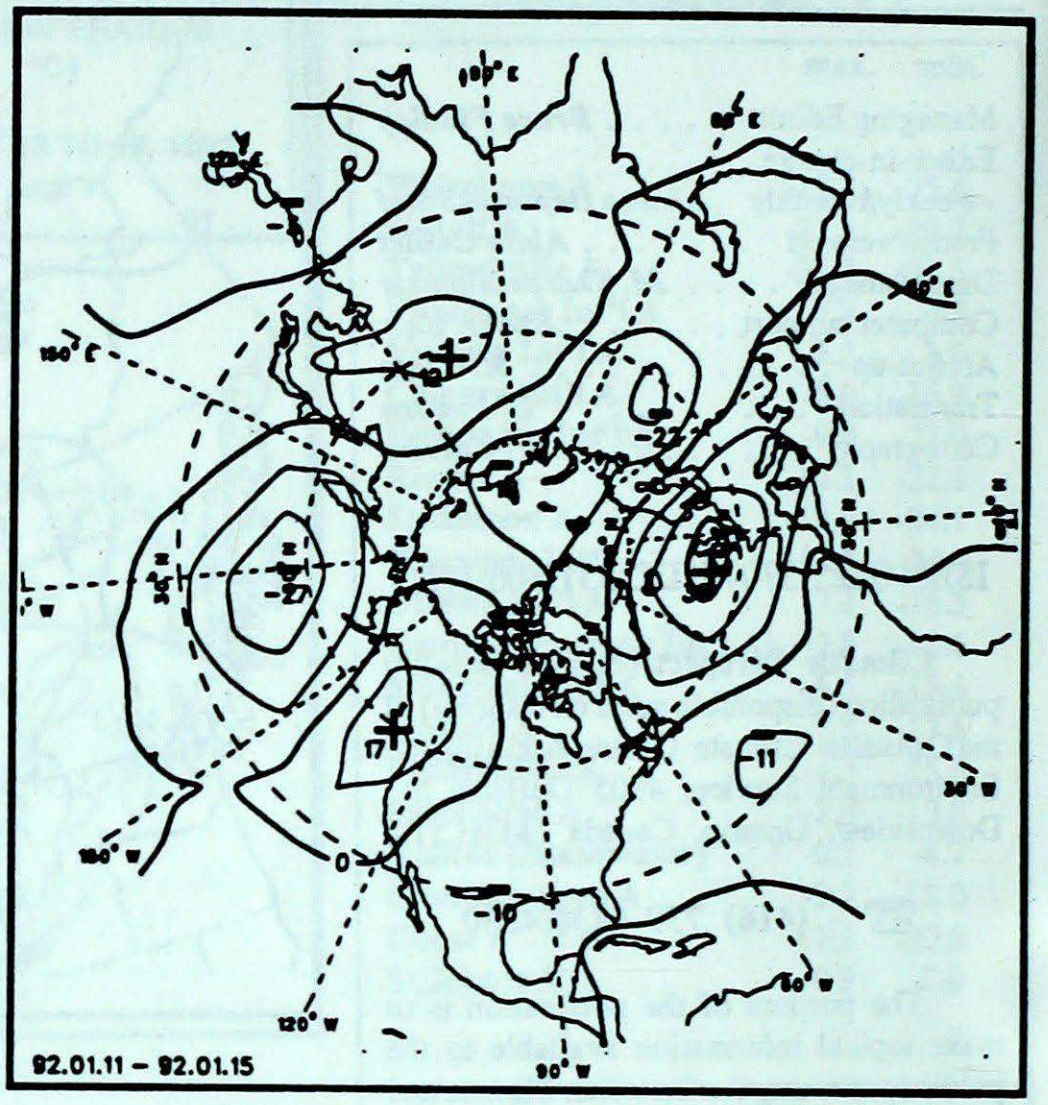




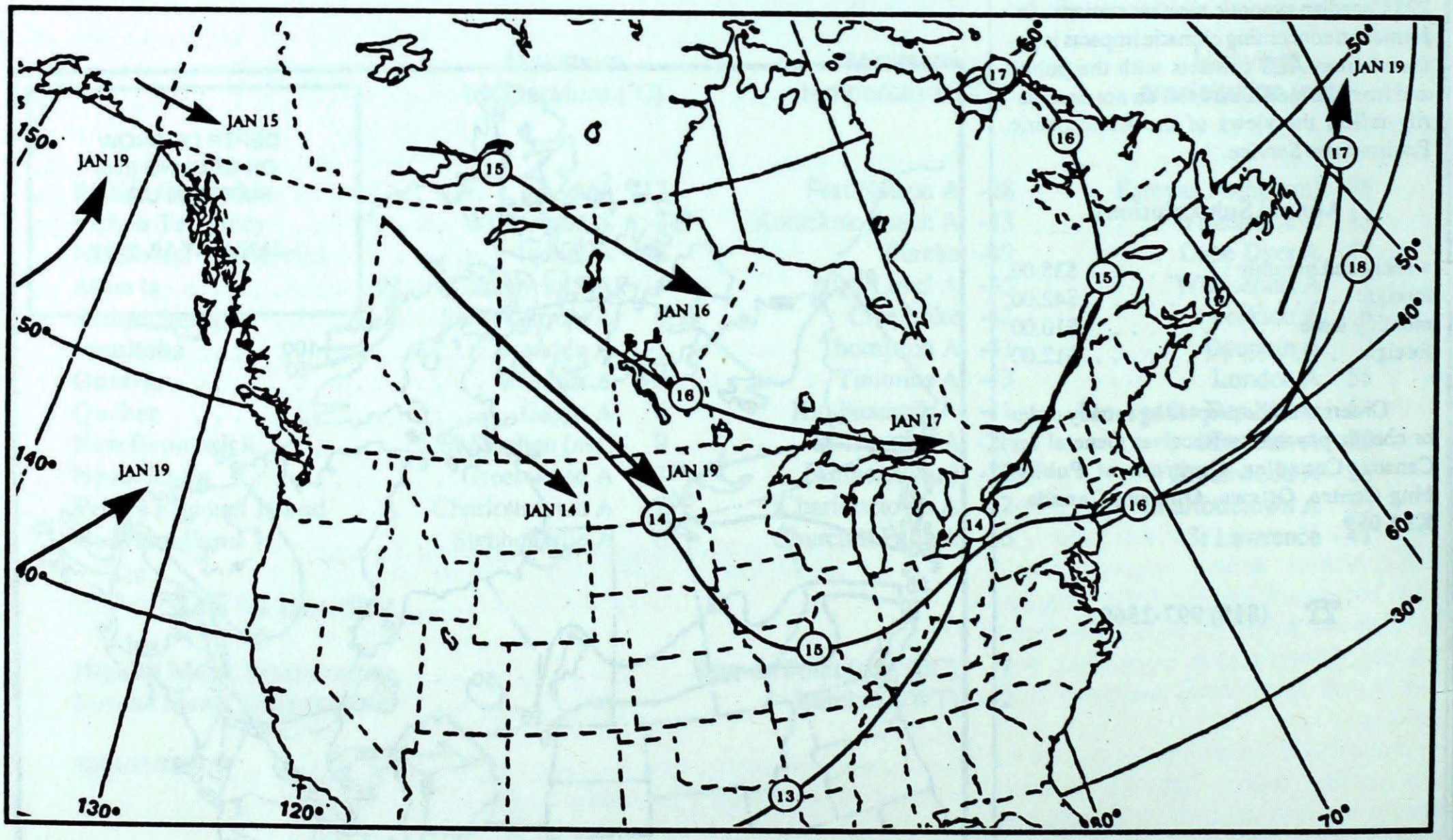
ATMOSPHERIC CIRCULATION



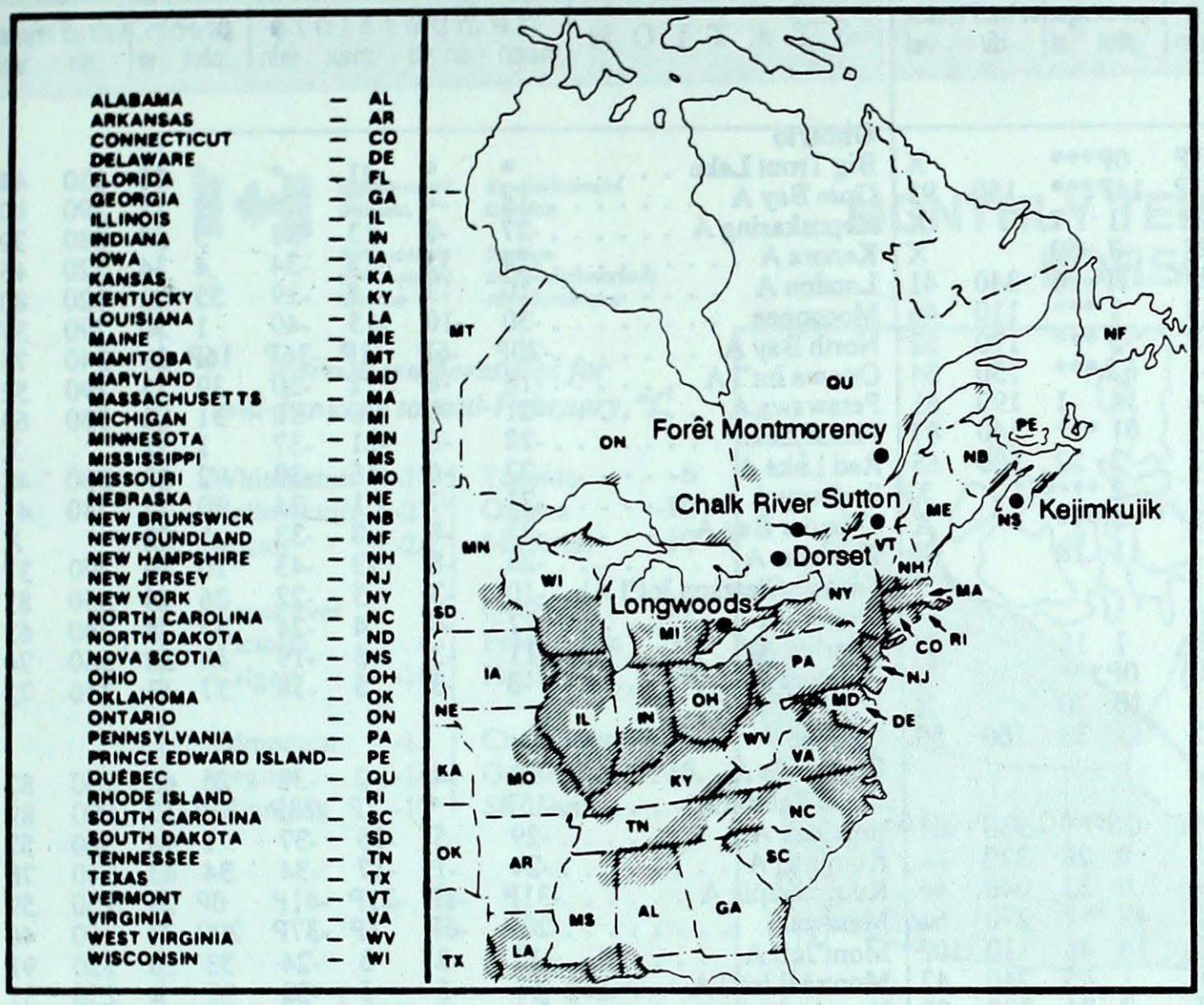
Mean geopotential height
50-kPa level (10-decametre intervals)



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
					January 12 to 18, 1992
Longwoods	13	4.7	38	M	Lake Erie, Ohio
	14	4.2	7	S	Southern and Central Ontario
	15	3.9	3	S	Southern Michigan
Dorset*	12	4.1	1	S	Southern Michigan, Indiana, Illinois
	13	4.5	14	M	Southern Ontario, Western New York
	14	4.9	19	S	Eastern Ontario, Western Quebec
	16	4.2	1	S	Lake Huron, Michigan, Wisconsin
Chalk River	14	4.9	18	S	Western Quebec, Eastern Ontario
	17	4.4	1	S	Lake Huron, Northern Michigan
Sutton	13	4.1	3	R	Vermont, New York
	14	4.5	18	M	New England
	17	4.2	4	S	Eastern and Southern Ontario, Southern Michigan
Montmorency	12	3.9	1	S	Western Quebec, Eastern Ontario, Lake Huron
	13	4.3	3	M	Western Quebec, Eastern Ontario, Lake Huron
	14	5.1	43	M	New Hampshire, Maine
Kejimkujik	14	4.7	25	R	Atlantic Ocean
	15	4.4	3	S	New England, Southern Quebec
	16	4.6	2	S	Maine, Southern Quebec
	17	4.1	1	S	Northern New England, Southwestern Quebec, Eastern Ontario
	18	4.4	3	S	Maine, Southern and Central Quebec

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

STATION	temperature mean	anom	max	min	precip. ptot	st	wind dir	max vel
British Columbia								
Blue River A	-4P	6P	1P	-11P	0P	***		X
Cape St James	6P	2P	9P	3P	14P	***	150	91
Cranbrook A	-5	3	3	-12	1	7		X
Fort Nelson A	-19	6	-10	-28	7	50		X
Fort St John A	-11P	7P	7P	-18P	1P	26	340	41
Kamloops A	1	6	5	-4	1	***	110	46
Penticton A	1	2	3	-2	3	***	170	52
Port Hardy A	5	3	9	-1	62	***	130	54
Prince George A	-1	11	3	-6	14	1	190	61
Prince Rupert A	6	5	11	-1	61	***	140	87
Smithers A	-3	8	7	-12	2	22	300	65
Vancouver Int'l A	5	1	11	-2	2	***		X
Victoria Int'l A	5	1	10	-2	4	***		X
Williams Lake A	-3	5	2	-11	11	18		X
Yukon Territory								
Komakuk Beach A	-26	1	-16	-38	1	18		X
Teslin (aut)	-7P	*	1P	-19P	0P	***		X
Watson Lake A	-16	12	2	-27	10	70		X
Whitehorse A	-5	17	3	-15	13	33	160	50
Northwest Territories								
Alert	-36P	-5P	-28P	-43P	0P	***	330	61
Baker Lake A	-36	-3	-29	-40	0	28	320	74
Cambridge Bay A	-37	-3	-34	-39	0	33	040	46
Cape Dyer A	-20	1	-9	-30	47	***	270	61
Clyde A	-27	-1	-22	-36	14	45	310	102
Coppermine A	-34	-5	-24	-41	1	45	240	43
Coral Harbour A	-30	-1	-20	-39	2	36	330	82
Eureka	-42	-6	-29	-49	0	18		X
Fort Smith A	-27	0	-13	-42	11	50	310	30
Hall Beach A	-31	0	-21	-39	1	28	340	67
Inuvik A	-26	5	-19	-40	4	34		X
Iqaluit A	-16	9	-2	-35	20	26	120	69
Mould Bay A	-35	-1	-28	-40	0	13		X
Norman Wells A	-24	6	-19	-31	16	15	130	76
Resolute A	-35	-3	-27	-43	0	8	350	87
Yellowknife A	-30	-1	-17	-43	12	42		X
Alberta								
Calgary Int'l A	-2	9	14	-16	1	***	010	67
Cold Lake A	-16	3	7	-29	3	22		X
Edmonton Namao A	-8	6	7	-24	3	19	340	59
Fort McMurray A	-18	4	2	-34	4	27		X
High Level A	-21	3	-12	-35	5	40	360	39
Jasper	-3	10	6	-11	1	12		X
Lethbridge A	-3	7	11	-23	6	1	250	98
Medicine Hat A	-6	6	9	-23	0	1	230	44
Peace River A	-11	9	6	-26	4	***	250	46
Saskatchewan								
Cree Lake	-28	-1	-9	-42	5	38	210	43
Estevan A	-14	2	3	-31	2	4	310	80
La Ronge A	-24	-1	-7	-38	6	47	310	65
Regina A	-15	3	1	-32	3	11	340	69
Saskatoon A	-16	3	2	-32	5	17	320	63
Swift Current A	-11	3	6	-30	5	6	330	61
Yorkton A	-19	1	0	-35	6	39	310	59
Manitoba								
Brandon A	-20	0	-3	-35	5	21	300	67
Churchill A	-31	-3	-21	-37	4	58	310	57
Lynn Lake A	-30	-3	-15	-39	2	34		X
The Pas A	-25	-2	-11	-36	3	31	310	63
Thompson A	-30	-5	-18	-41	1	41	310	54
Winnipeg Int'l A	-21	-1	-10	-31	3	8	170	56

STATION	temperature mean	anom	max	min	precip. ptot	st	wind dir	max vel
Ontario								
Big Trout Lake	*	*	-21	*	*	26	310	44
Gore Bay A	-14	-4	2	-26	14	27	290	80
Kapuskasing A	-27	-8	-13	-38	5	58	280	39
Kenora A	-24	-5	-15	-34	4	34	320	46
London A	-10	-3	4	-19	55	22	320	80
Moosonee	-30	-10	-15	-40	1	30	290	37
North Bay A	-20P	-6P	1P	-36P	16P	21	340	76
Ottawa Int'l A	-18	-6	2	-30	39	15	290	52
Petawawa A	-21	-6	0	-38	31	22	330	63
Pickle Lake	-28	-6	-21	-37	1	32		X
Red Lake A	-27	-6	-16	-38	2	29	300	48
Sudbury A	-21	-7	1	-34	10	22	280	41
Thunder Bay A	-23	-8	-8	-33	1	22		X
Timmins A	-26	-8	-3	-43	10	39	290	37
Toronto(Pearson Int'l A)	-10	-3	5	-22	26	15	350	83
Trenton A	-12	-4	4	-24	34	8	280	63
Wiarton A	-11	-3	3	-19	40	32	360	74
Windsor A	-8	-3	5	-18	37	13	340	72
Québec								
Bagotville A	-21	-4	-2	-32	25	45	260	82
Blanc Sablon A	-15P	*	-1P	-28P	10P	12	090	89
Inukjuak A	-29	-5	-25	-37	1	16	310	57
Kuujjuaq A	-24	-1	-17	-34	34	43	240	78
Kuujjuarapik A	-31P	-8P	-21P	-41P	0P	25	250	59
Maniwaki	-20P	-6P	1P	-37P	29P	27	350	46
Mont Joli A	-15	-3	3	-24	33	26	220	91
Montréal Int'l A	-16	-5	5	-28	37	4	250	37
Natashquan A	-15	-3	1	-25	29	16	110	69
Québec A	-18	-5	2	-31	31	46	230	63
Schefferville A	-26	-3	-14	-34	36	68	310	65
Sept-Îles A	-18	-4	0	-27	36	40	090	96
Sherbrooke A	-16	-2	5	-31	19	17	270	72
Val-d'Or A	-26	-8	-5	-39	16	35	330	69
New Brunswick								
Chatham A	*	*	*	*	*	***		X
Fredericton A	-12	-2	8	-24	15	2	270	67
Miscou Island (aut)	-13P	-4P	2P	-21P	0P	***		
Moncton A	-12	-3	9	-24	22	4	270	78
Saint John A	-13	-5	9	-23	19	***	110	69
Nova Scotia								
Greenwood A	-8	-2	11	-19	26	23	290	89
Shearwater A	-7	-3	7	-18	21	1	250	78
Sydney A	-8	-3	6	-17	17	2	260	80
Yarmouth A	-6	-3	10	-15	23	6	280	78
Prince Edward Island								
Charlottetown A	-11	-3	8	-22	15	1	250	70
East Point (auto)	-5P	*	4P	-15P	0P	***		
Newfoundland								
Cartwright	-15	-2	-1	-29	9	85	190	63
Churchill Falls A	-22	1	-3	-36	19	93	210	57
Gander Int'l A	-9	-2	1	-17	11	12	121	65
Goose A	-20	-4	-1	-29	8	48	250	56
Port Aux Basques	*	*	3	*	*	19	250	100
St John's A	-7	-2	1	-15	11	27	290	76
St Lawrence	-6	-1	0	-11	41	12		X
Wabush Lake A	-24	-1	-1	-34	12	82	280	56

92/01/13-92/01/19

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.

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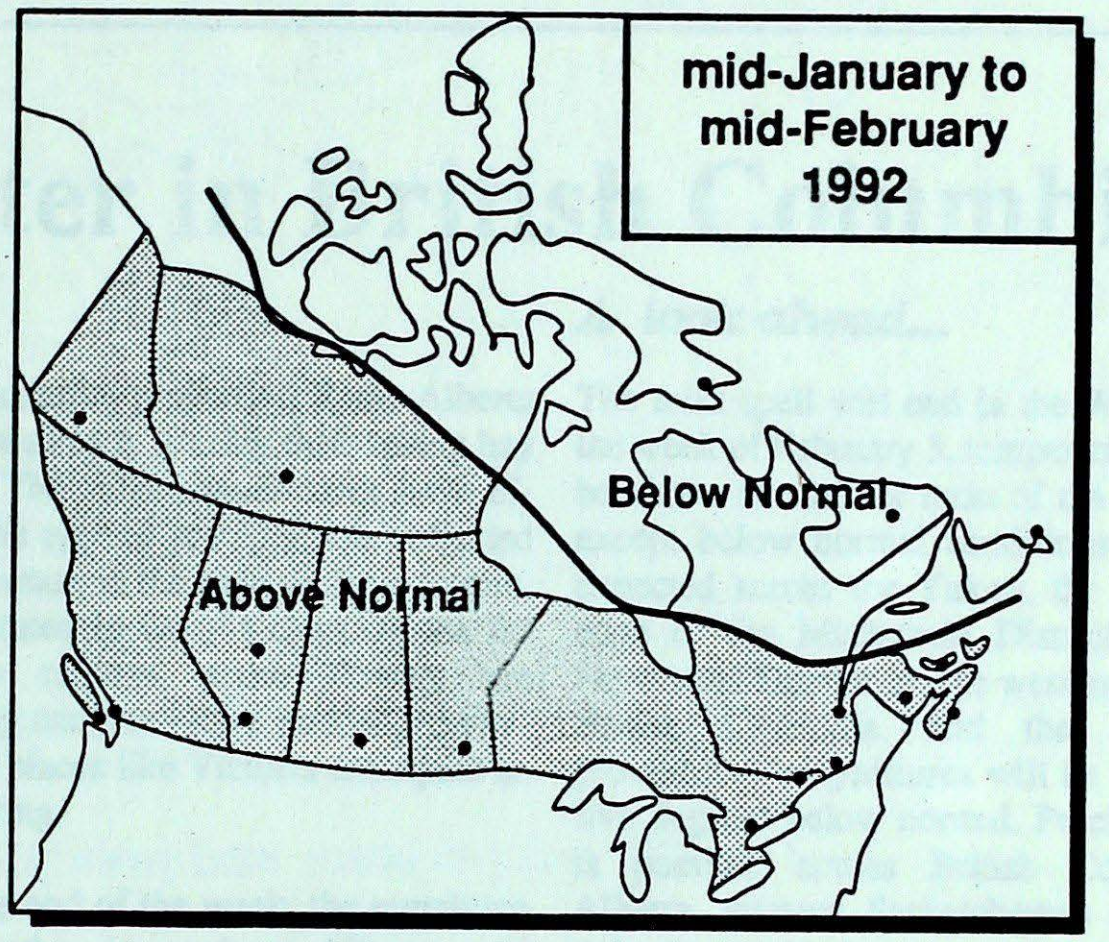
MONTHLY TEMPERATURE FORECAST

Normal temperatures for mid-January to mid-February, °C

Whitehorse	-17	Toronto	-6
Yellowknife	-27	Ottawa	-10
Iqaluit	-26	Montréal	-10
Vancouver	4	Québec	-11
Victoria	4	Fredericton	-9
Calgary	-10	Halifax	-4
Edmonton	-13	Charlottetown	-7
Regina	-16	Goose Bay	-15
Winnipeg	-17	St. John's	-4



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