Environment Canada Environnement Canada

Climatic Perspectives

MONTHLY SUPPLEMENT INCLUDED

February 12 to 18, 1990 **A weekly review of Canadian climate** *Vol.12 No.7*

Major winter storms hit B.C. Lower Mainland and southern Ontario

Greater Vancouver

In the past 3 weeks four major snowfalls have paralysed parts of Vancouver and the Lower Mainland. The events began to unfold the last week of January, when a cold Arctic outflow covered the whole province, dropping temperatures to near freezing. The first three storms, January 27, 31 and February 6, each left as much as 15 to 30 centimetres of snow on the ground, although accumulations in the Greater Vancouver area did vary widely due to differences in elevation and hence temperature. Vancouver Int'l Airport, situated at sea level, only received a combined total snowfall of 16 cm.

On February 14 and 15, another major snowstorm buried the Lower Mainland, and by the morning of the 15th, 25 to 30 centimetres of snow covered the ground. Rush hour traffic was in chaos. Most schools were closed, and there were numerous flight delays and cancellations at Vancouver Int'l Airport, which received a two-day snowfall total of 32 cm.

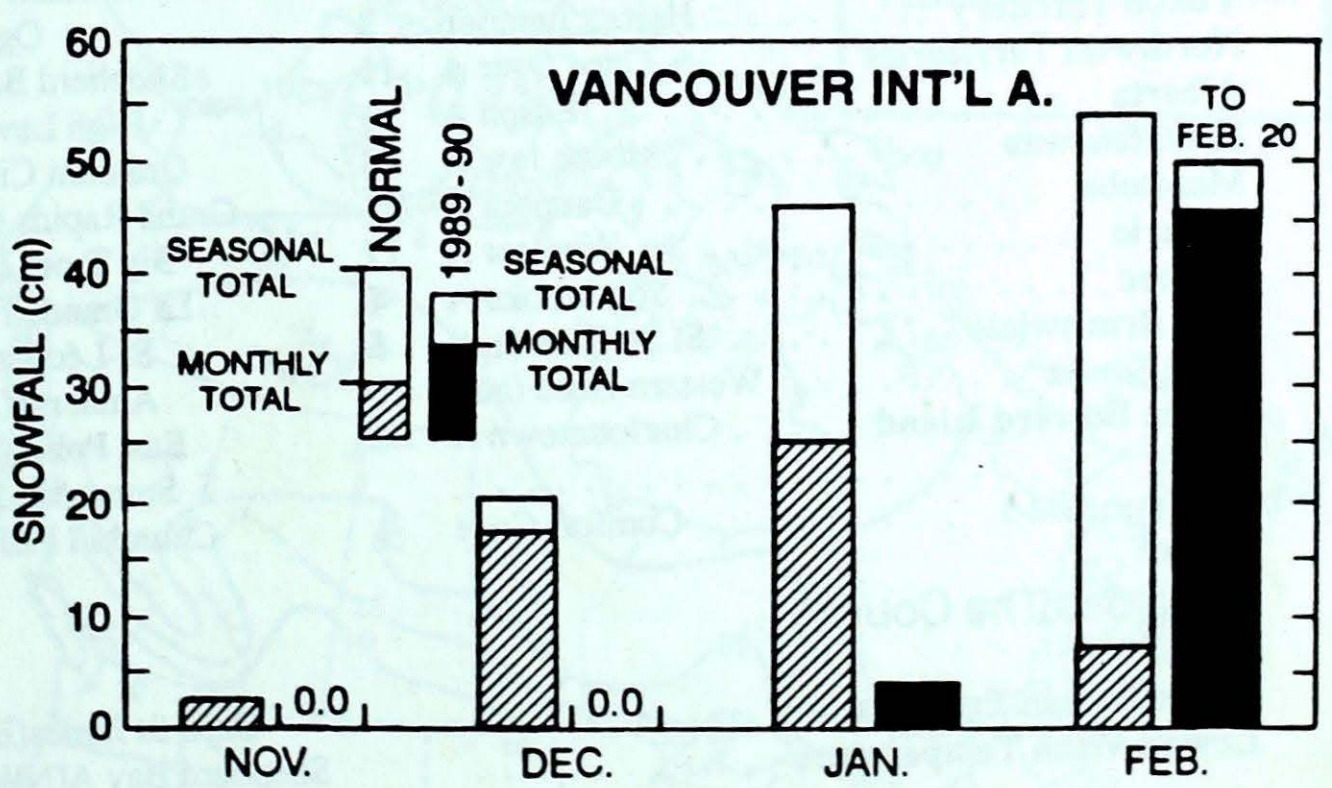
Although snow in Vancouver is not uncommon, this last snow storm was unusual. On February 15, Vancouver Int'l Airport received 28.6 cm, making this the greatest one-day February snowfall ever and the 3rd highest one-day amount for any month. This month, Vancouver Int'l Airport has already received 45.3 cm of snow, making this the second snowiest February on record.

Southern Ontario

A major winter storm, the worst this season, moved across the lower Great Lakes on February 15 and 16, dumping up to 23 cm of snow, followed by ice pellets, freezing rain and thunder. A thick layer of ice coated all of the Niagara Peninsula and southwestern Ontario, knocking out power, in some cases for two days, to thousands of residents. To make matters worse, dense fog insured that most flights at Canada's busiest airport were grounded. The snow was a welcome sight for resort operators, who have been helplessly watching the snow cover dwindle since the beginning of the year.

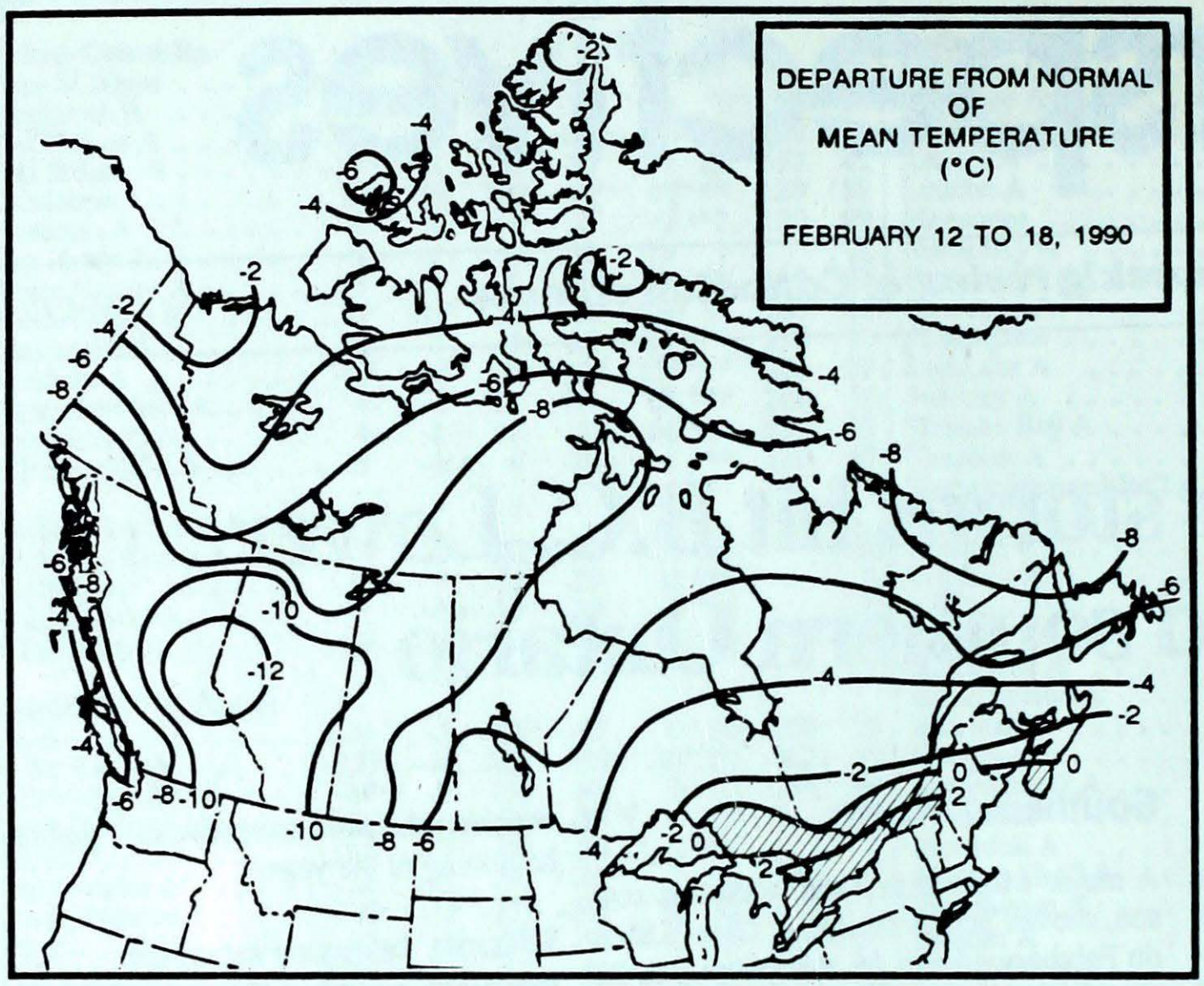
Warm temperatures return to the West...

For the week of February 26, above-normal temperatures are expected for the southern portions of the Northwest Territories, British Columbia and the Prairies. The warmest parts of the country will be the southern Prairies. For the remainder of the country, below-normal temperatures are forecast. Northern Quebec and Labrador will likely be about 5°C below normal.



After a late start to winter, total accumulated snowfall at Vancouver International Airport approaches its seasonal normal.

Canada



Weekly normal temperatures (°C)

	max.	min.
Whitehorse A	-9.5	-19.5
Iqaluit A	-21.9	-30.5
Yellowknife A	-21.9	-31.3
Vancouver Int'l A	7.8	1.6
Victoria Int'l A	8.1	1.3
Calgary Int'l A	-3.2	-14.0
Edmonton Int'l A	-7.3	-17.9
Regina A	-9.0	-20.0
Saskatoon A	-10.2	-21.3
Winnipeg Int'l A	-10.4	-21.3
Ottawa Int'l A	-5.4	-15.0
Toronto Int'l A	-2.0	-10.7
Montreal Int'l A	-5.0	-14.1
Quebec A	-6.5	-16.4
Fredericton A	-3.0	-14.6
Saint John A	-2.6	-13.5
Halifax (Shearwater)	-0.7	-9.2
Charlottetown A	-3.5	-12.2
Goose A	-9.2	-19.5
St John's A	-1.0	-7.8

Weekly temperature and precipitation extremes

	Maximum temperature (°C)		Minimum temperature (°C)		Heaviest precipitation (mm)	
British Columbia	Victoria Int'l A	6	Puntzi Mountain (aut)	-43	Prince Rupert A	26
Yukon Territory	Haines Junction	3	Ogilvie	-51	Swift River	13
Northwest Territories	Cape Dyer A	-11	Shepherd Bay A	-53	Clyde A	2
Alberta	Edson A	1	High Level A	-45	Edmonton Municipal A	9
Saskatchewan	Moose Jaw A	3	Uranium City A	-46	Nipawin A	5
Manitoba	Dauphin A	1	Grand Rapids (aut)	-44	Island Lake	10
Ontario	Windsor A	17	Big Trout Lake	-44	London A	40
Quebec	Sherbrooke A	4	La Grande IV A	-49	Montréal Int'l A	37
New Brunswick	St Stephen (aut)	5	St-Léonard A	-27	Charlo A	21
Nova Scotia	Western Head (aut)	10	Amherst (aut)	-20	Yarmouth A	25
Prince Edward Island	Charlottetown A	1	East Point (aut)	-19	Charlottetown A	16
			Summerside A	-19		
Newfoundland	Comfort Cove	1	Churchill Falls A	-39	St John's A	24

Across The Country...

Highest Mean Temperature	Cape St James(BC)	2
Lowest Mean Temperature	Shepherd Bay A(NWT)	-46

90/02/12-90/02/18

CLIMATIC PERSPECTIVES
VOLUME 12

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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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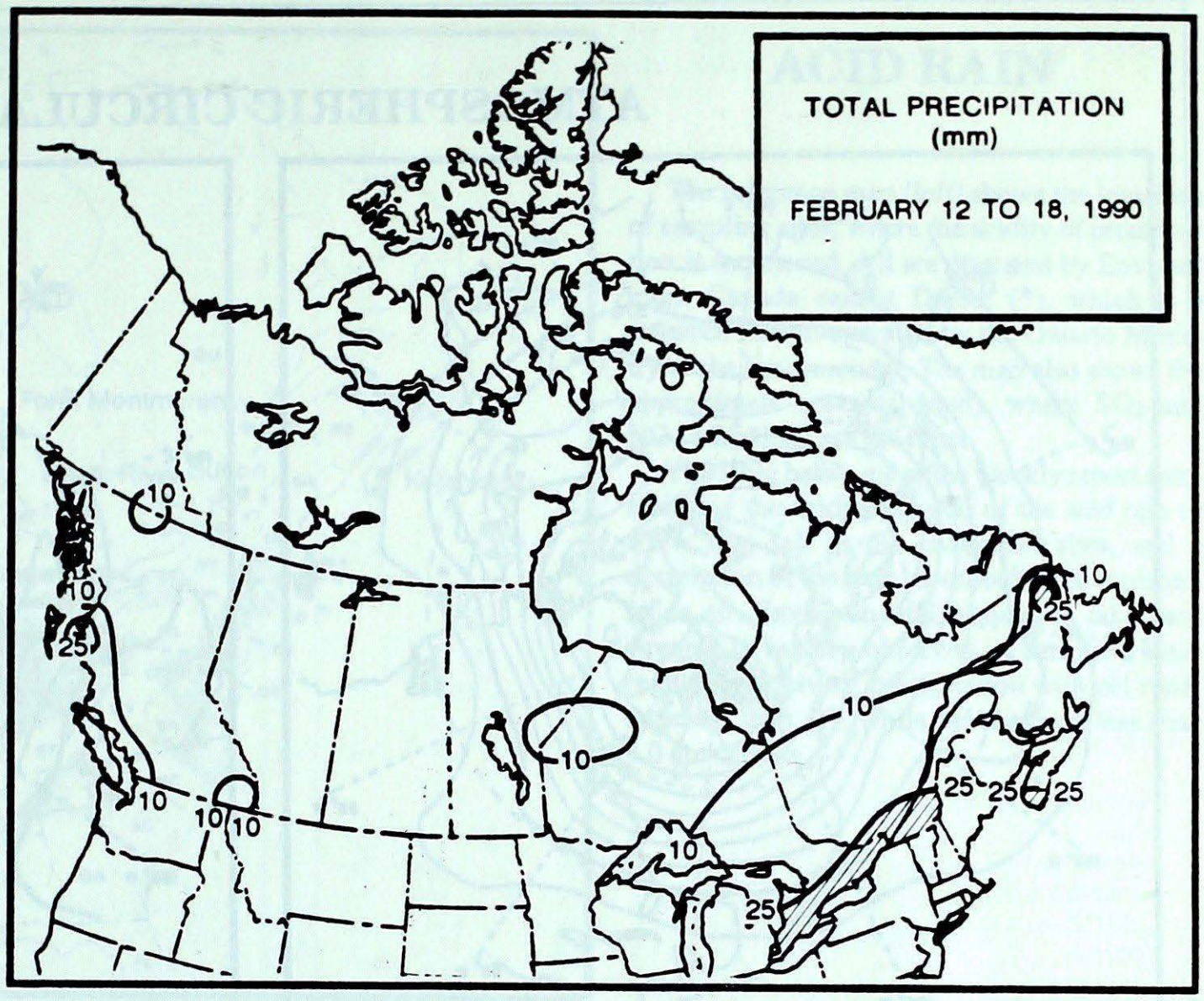

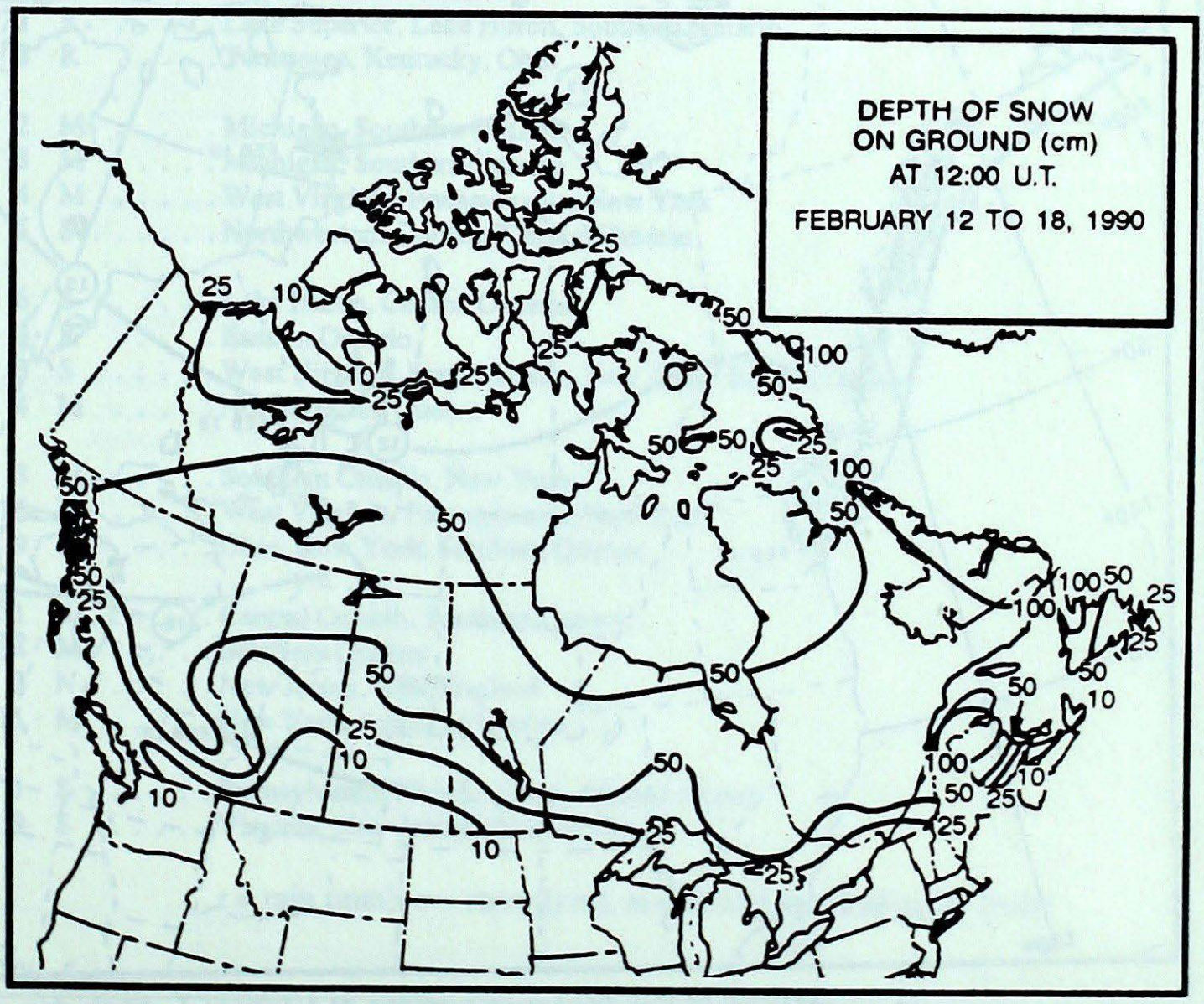

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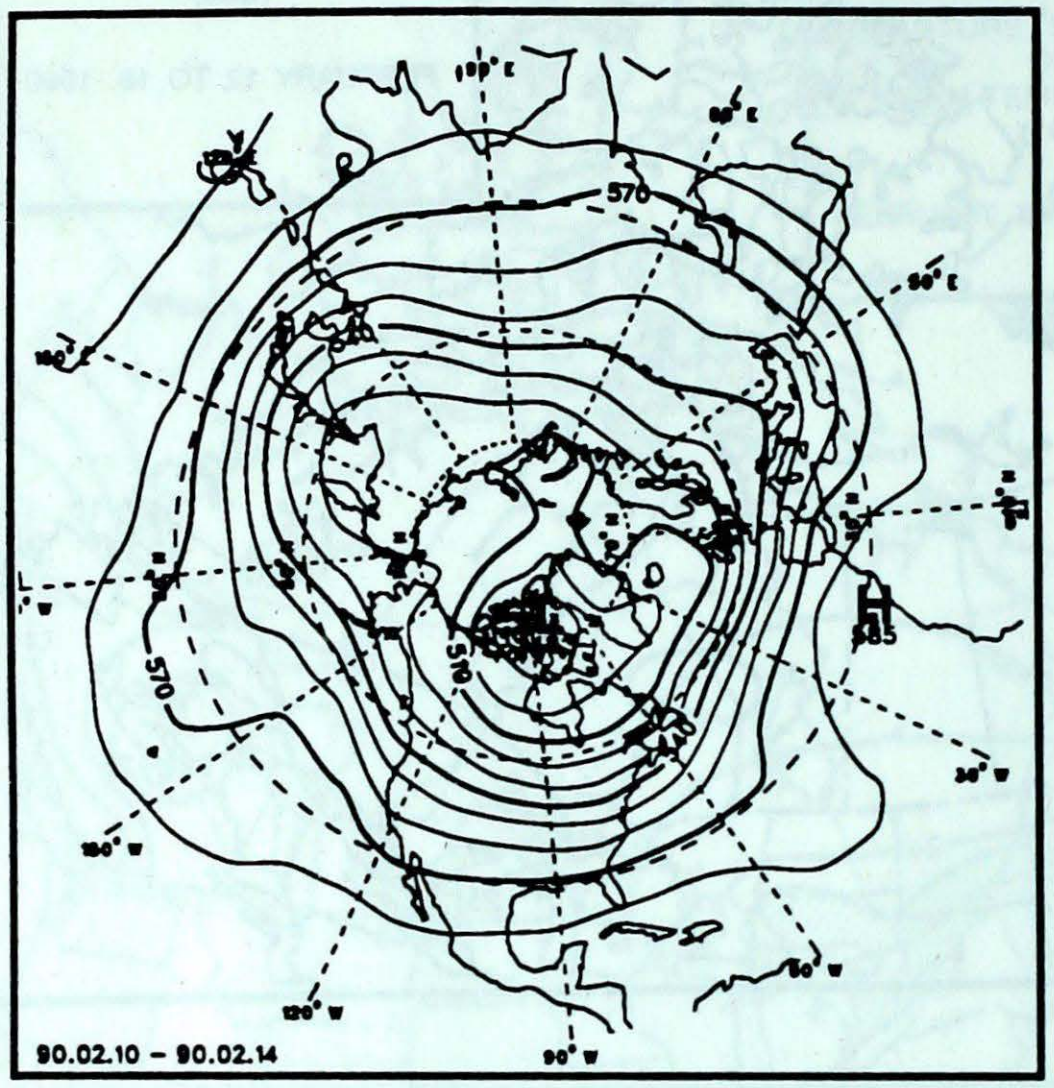
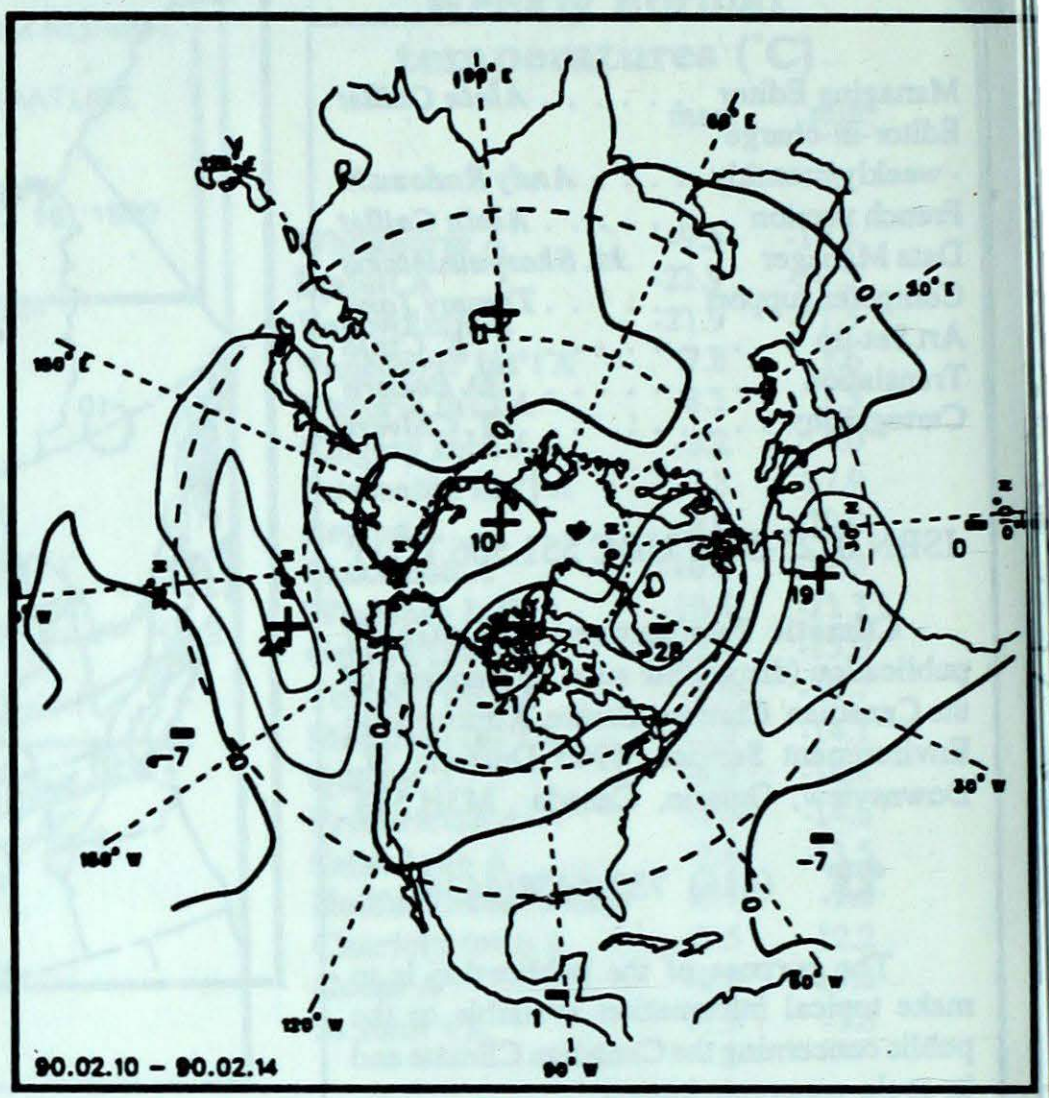
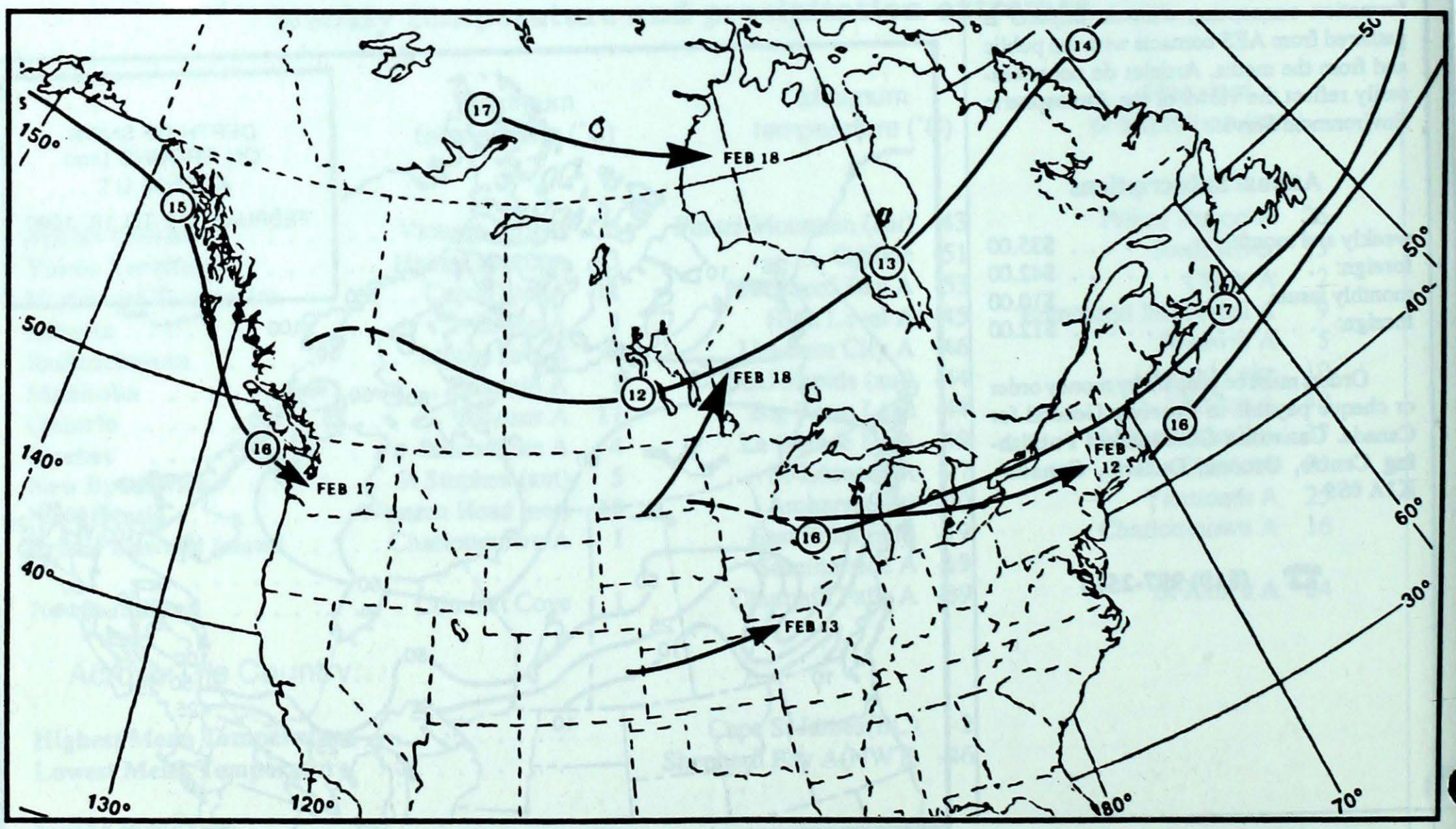


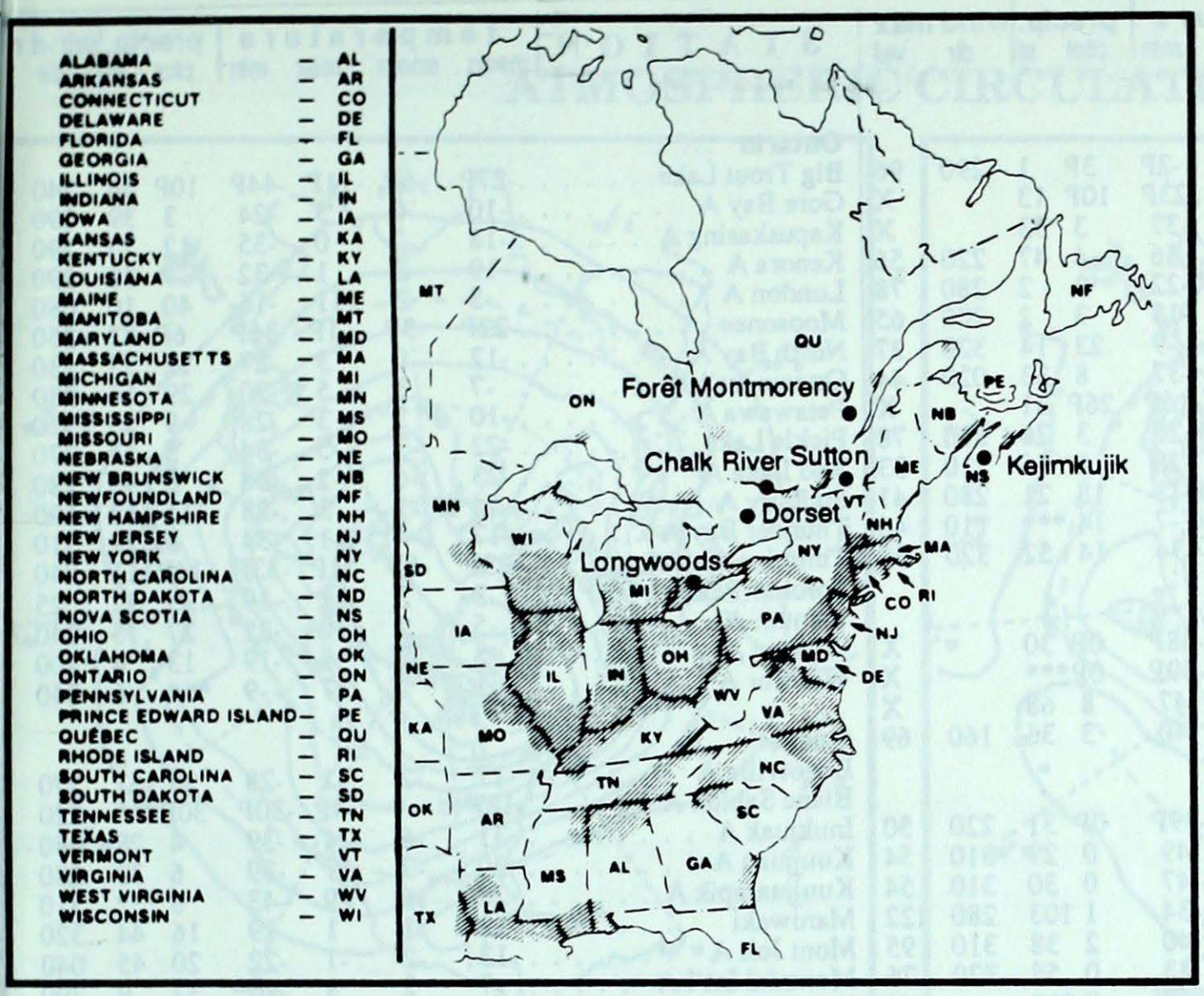
Mean geopotential height
50-kPa level (10-decametre intervals)



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
					From February 11 to 17, 1990
Longwoods	13	4.8	2	M	. . . . . Ohio, Southern Ontario
	14	3.6	21	R	. . . . . Lake Superior, Lake Huron, Southern Ontario
	15	3.6	8	R	. . . . . Tennessee, Kentucky, Ohio
Dorset *	12	5.7	2	M	. . . . . Michigan, Southern Ontario
	13	4.8	3	M	. . . . . Michigan, Southern Ontario
	15	4.5	4	M	. . . . . West Virginia, Pennsylvania, New York
	16	4.5	5	S	. . . . . Northwestern Quebec, Central Ontario
Chalk River	12	4.5	6	S	. . . . . Lake Huron, Central Ontario
	13	4.3	1	R	. . . . . Eastern Ontario
	15	4.5	3	S	. . . . . West Virginia, Pennsylvania, New York, Eastern Ontario
	16	4.4	4	M	. . . . . Northwestern Quebec
Sutton	13	3.6	3	M	. . . . . Southern Ontario, New York
	15	4.4	16	M	. . . . . West Virginia, Pennsylvania, New York
	16	3.7	9	M	. . . . . Ohio, New York, Southern Quebec
Montmorency	12	4.8	1	S	. . . . . Central Ontario, Southern Quebec
	13	4.5	14	M	. . . . . Southern Quebec
	15	4.3	3	N	. . . . . New Jersey, New England
	16	4.1	11	M	. . . . . New York, Southern Quebec
Kejimkujik	13	4.0	1	S	. . . . . Pennsylvania, New England, Atlantic Ocean
	15	5.1	9	S	. . . . . Virginia, New Jersey, 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	2P	-3P	5P	-2P	3P	1	290	96
Cranbrook A	-14P	-12P	-6P	-23P	10P	13		X
Fort Nelson A	-24	-5	-11	-37	3	53		X
Fort St John A	-24	-10	-4	-36	4	47	220	56
Kamloops A	-10	-9	-1	-22	3	2	280	78
Penticton A	-7	-8	2	-15	3	2	200	65
Port Hardy A	-2	-6	4	-9	23	14	320	37
Prince George A	-20	-14	-7	-37	8	33	020	44
Prince Rupert A	-6P	-8P	3P	-16P	26P	31		X
Revelstoke A	-10	-8	-1	-20	3	76	320	78
Smithers A	-15	-9	-4	-28	1	56	210	33
Vancouver Int'l A	-2	-7	3	-11	18	21	280	41
Victoria Int'l A	-1	-6	6	-7	14	***	110	46
Williams Lake A	-17	-13	-3	-34	14	52	320	50
Yukon Territory								
Komakuk Beach A	-30P	-2P	-19P	-38P	0P	30		X
Teslin (aut)	-25P	*	-1P	-39P	0P	***		X
Watson Lake A	-28	-8	-5	-47	8	68		X
Whitehorse A	-23	-8	-1	-40	3	36	160	69
Northwest Territories								
Alert	-35P	-1P	-25P	-39P	0P	31	220	50
Baker Lake A	-42	-9	-37	-49	0	29	310	54
Cambridge Bay A	-40	-6	-35	-47	0	30	310	54
Cape Dyer A	-26	-4	-11	-34	1	103	280	122
Clyde A	-30	-2	-18	-40	2	38	310	95
Coppermine A	-35	-13	-26	-43	0	58	320	76
Coral Harbour A	-42	-11	-32	-51	0	***		X
Eureka	-40	-2	-30	-49	0	16	290	39
Fort Smith A	-30	-6	-17	-43	0	80		X
Hall Beach A	-38	-5	-32	-47	0	38	300	48
Inuvik A	-33	-2	-14	-47	0	38	310	50
Iqaluit A	-33P	-6P	-21P	-43P	1P	14	320	50
Mould Bay A	-42	-7	-36	-47	1	24	310	50
Norman Wells A	-32	-4	-15	-41	2	15	310	46
Resolute A	-37	-4	-28	-46	1	23	060	52
Yellowknife A	-33	-7	-19	-43	0	***	320	43
Alberta								
Calgary Int'l A	-19	-11	-3	-32	3	5	020	61
Cold Lake A	-26	-10	-12	-34	1	31	330	39
Edmonton Namao A	-22	-10	-6	-32	7	9	350	52
Fort McMurray A	-27	-9	-10	-39	0	44	360	33
High Level A	-30	-11	-15	-45	0	56		X
Jasper	-20	-13	-3	-35	0	40		X
Lethbridge A	-18	-11	-3	-30	7	9	030	50
Medicine Hat A	-17	-9	-2	-28	3	1	230	46
Peace River A	-25	-10	-10	-35	3	23	040	41
Saskatchewan								
Cree Lake	-31	-9	-18	-45	0	44	210	41
Estevan A	-18	-5	3	-27	1	1	310	83
La Ronge A	-28P	-9P	-13P	-43P	0P	53	030	46
Regina A	-20	-6	1	-30	1	14	280	80
Saskatoon A	-24	-8	-9	-34	2	11	330	63
Swift Current A	-19	-8	-3	-28	3	9	300	65
Yorkton A	-23	-7	1	-34	2	30	290	91
Manitoba								
Brandon A	-21	-5	-1	-30	3	26	300	83
Churchill A	-33	-7	-21	-40	0	19	300	59
Lynn Lake A	-31	-9	-20	-40	0	65	290	46
The Pas A	-26P	-7P	-14P	-40P	0P	37	340	61
Thompson A	-28P	-6P	-15P	-42P	4P	57	340	48
Winnipeg Int'l A	-20	-4	-1	-30	4	22	280	70

STATION	temperature mean	anom	max	min	precip. ptot	st	wind max dir	vel
Ontario								
Big Trout Lake	-27P	-5P	-11P	-44P	10P	66	340	76
Gore Bay A	-10	0	3	-24	3	39	190	63
Kapuskasing A	-18	-2	0	-35	12	75	290	76
Kenora A	-19	-5	1	-32	7	38	290	59
London A	-3	3	11	-16	40	10	080	67
Moosonee	-22P	-3P	-1P	-36P	6P	82	250	76
North Bay A	-12	0	3	-27	12	75	230	44
Ottawa Int'l A	-7	3	5	-20	29	14	280	57
Petawawa A	-10	3	3	-28	9	25	310	46
Pickle Lake	-22	-3	-5	-34	5	54	270	50
Red Lake A	-23	-6	-2	-36	5	90	280	63
Sudbury A	-14	-1	3	-28	11	62	190	57
Thunder Bay A	-17	-4	-1	-34	8	29	310	70
Timmins A	-23P	-8P	1P	-33P	14P	111	040	50
Toronto(Pearson Int'l A)	-3	3	12	-19	33	12	25	61
Trenton A	-5	2	10	-21	27	13	240	69
Wiarton A	-5	3	8	-19	13	4	200	76
Windsor A	-1	3	17	-9	***	6	040	56
Quebec								
Bagotville A	-17	-2	-1	-28	25	67	270	44
Blanc Sablon A	-18P	*	-4P	-30P	30P	***	220	70
Inukjuak A	-31	-6	-24	-39	4	28	280	59
Kuujjuaq A	-30	-7	-17	-39	6	33	280	85
Kuujjuarapik A	-28	-6	-9	-43	6	***	310	63
Maniwaki	-12	1	1	-29	16	44	320	41
Mont Joli A	-13	-2	-1	-22	20	45	040	74
Montréal Int'l A	-7	2	3	-20	37	9	290	48
Natashquan A	-18	-7	-4	-29	8	80	280	61
Québec A	-14P	-2P	0P	-26P	20P	95	250	43
Schefferville A	-29	-7	-11	-41	7	64	260	95
Sept-Îles A	-19	-6	-8	-28	7	40	290	54
Sherbrooke A	-10	2	4	-28	30	40	280	56
Val-d'Or A	-18	-2	2	-30	23	58	320	50
New Brunswick								
Charlo A	-15	-2	-3	-24	21	103	300	56
Chatham A	-13	-4	0	-22	10	59	340	52
Fredericton A	-10P	-1P	2P	-20P	15P	22	310	59
Moncton A	-10P	-2P	2P	-21P	6P	13	300	61
Saint John A	0	8	4	-19	17	10	200	56
Nova Scotia								
Greenwood A	-6	0	5	-15	19	7	280	69
Shearwater A	-6	-1	6	-16	18	8	280	69
Sydney A	-10	-4	2	-19	20	10	300	39
Yarmouth A	-4	0	6	-11	25	6	310	63
Prince Edward Island								
Charlottetown A	-10	-2	1	-19	16	13	010	48
Summerside A	-10	-2	1	-19	14	44	010	48
Newfoundland								
Cartwright	-21	-9	-6	-34	5	229	290	67
Churchill Falls A	-27	-7	-11	-39	1	77	300	67
Gander Int'l A	-15	-8	0	-30	12	25	300	78
Goose A	-22	-8	-7	-34	2	119	270	63
Port Aux Basques	-10P	-5P	-1P	-22P	17P	91	300	89
St John's A	-11	-6	0	-24	24	29	290	83
St Lawrence	-9P	-4P	0P	-20P	19P	20		X
Wabush Lake A	-26	-5	-10	-36	4	61	290	65

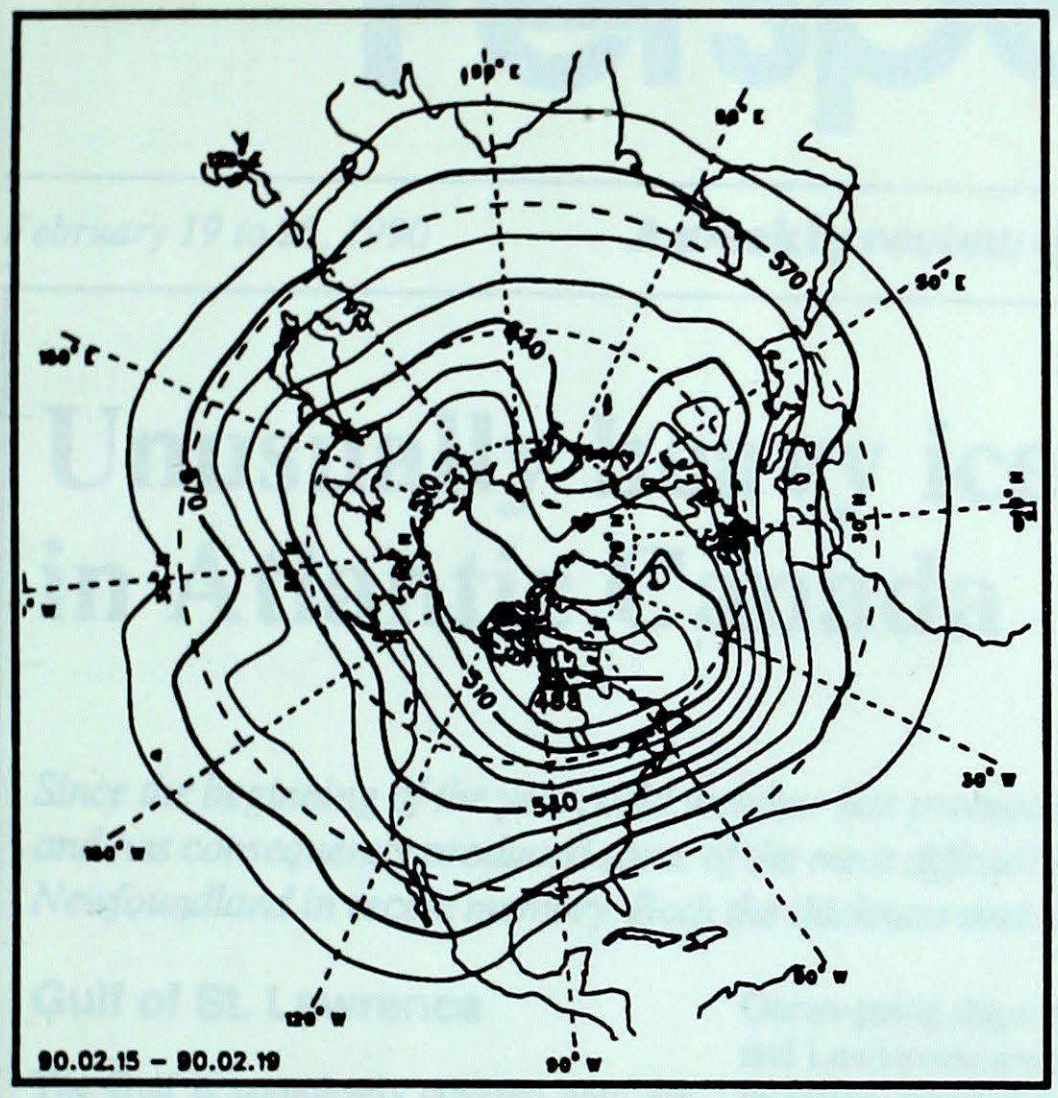
90/02/12-90/02/18

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

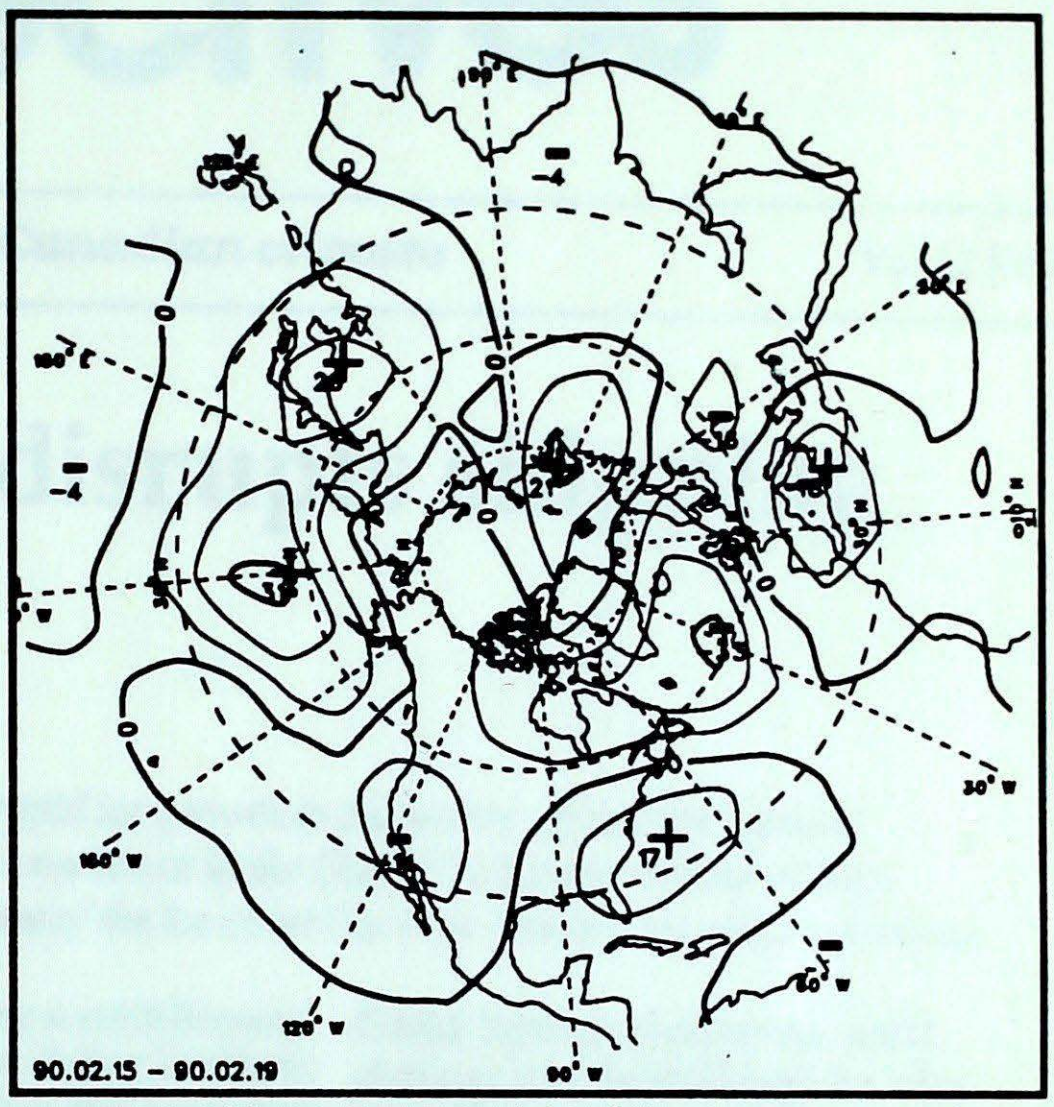
ptot = weekly precipitation total in mm
st = snow thickness on the ground in cm
dir = direction of max wind, deg. from north.
vel = wind speed in km/h

— 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)



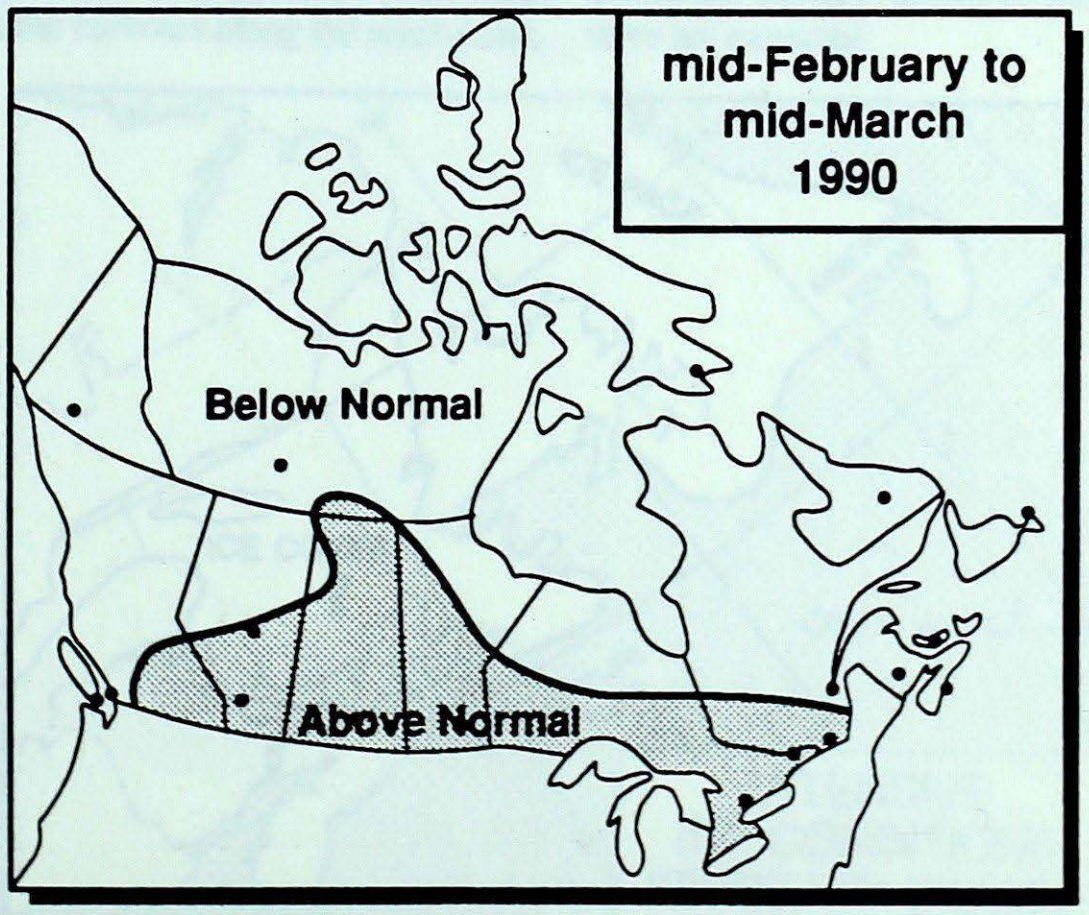
Mean geopotential height anomaly
50-kPa level (10-decametre intervals)

Environment Canada / Environnement Canada
Atmospheric Environment Service / Service de l'environnement atmosphérique

MONTHLY TEMPERATURE FORECAST

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

Whitehorse	-11	Toronto	-4
Yellowknife	-22	Ottawa	-6
Iqaluit	-24	Montréal	-6
Vancouver	5	Québec	-8
Victoria	5	Fredericton	-5
Calgary	-6	Halifax	-3
Edmonton	-8	Charlottetown	-5
Regina	-11	Goose Bay	-12
Winnipeg	-12	St. John's	-3



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