

Climatic Perspectives

archives

Ref # 2

January 22 to 28, 1990

A weekly review of Canadian climate

Vol.12 No.4

Arctic air mass poised in the northwest

Bitter cold

A frigid Siberian Arctic air mass drifted eastwards and encompassed the Canadian northwest, bringing with it extremely cold temperatures. By the end of the period, the effect of this strong Arctic high pressure cell was felt in the Yukon and Northwest Territories, and eventually spread southwards into northeastern B.C. and the northern prairie provinces. Minimum temperatures plunged to the mid-minus fifties, and in some cases only managed to climb as high as the mid-minus forties during the warmest part of the day. Not surprisingly, numerous daily temperature records were broken and residents had their fair share of water pipe freeze-ups and automobile breakdowns.

B.C.'s mild winter

A good portion of British Columbia still continues to wallow in spring-like weather as they have been for most of the winter. There was a definite lack of snow at the beginning of the season, and many of the southern valleys are still free of snow.

Skiing in the province got off to a late and dismal start this season, and it is only in the last few weeks, due to substantial snowfalls at higher elevations, that skiing conditions have improved significantly. In southern B.C. there is little ice on the lakes and rivers and ice fishermen have to trek to lakes at higher elevations. To-date the warm weather has had little effect on agriculture, but a hard freeze late in the

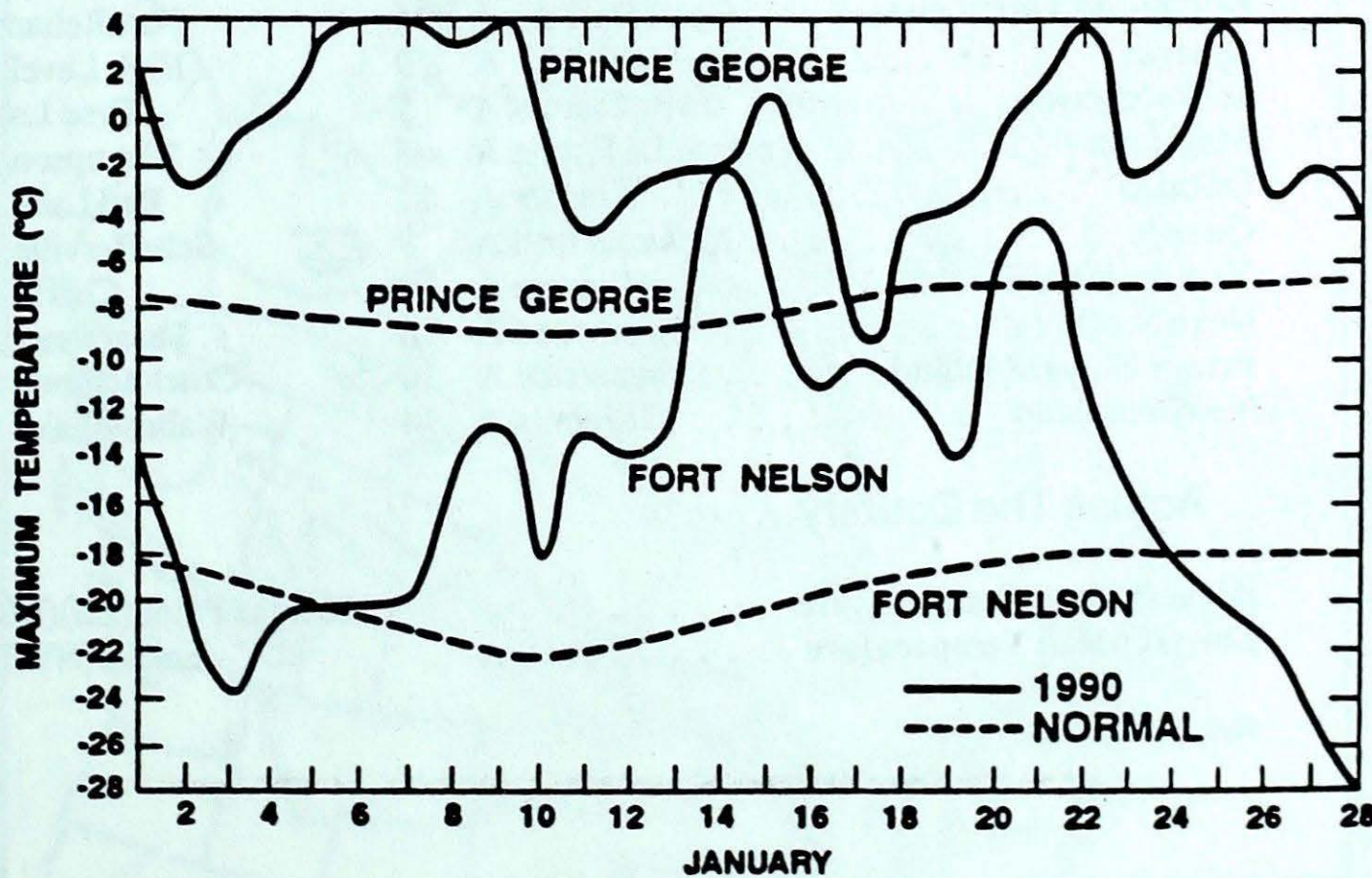
season could damage orchards. In the central portions of the province weekly mean temperatures have been above normal for more than 14 consecutive weeks, and in the case of Prince George, above normal since last summer. Bouts of freezing precipitation were common.

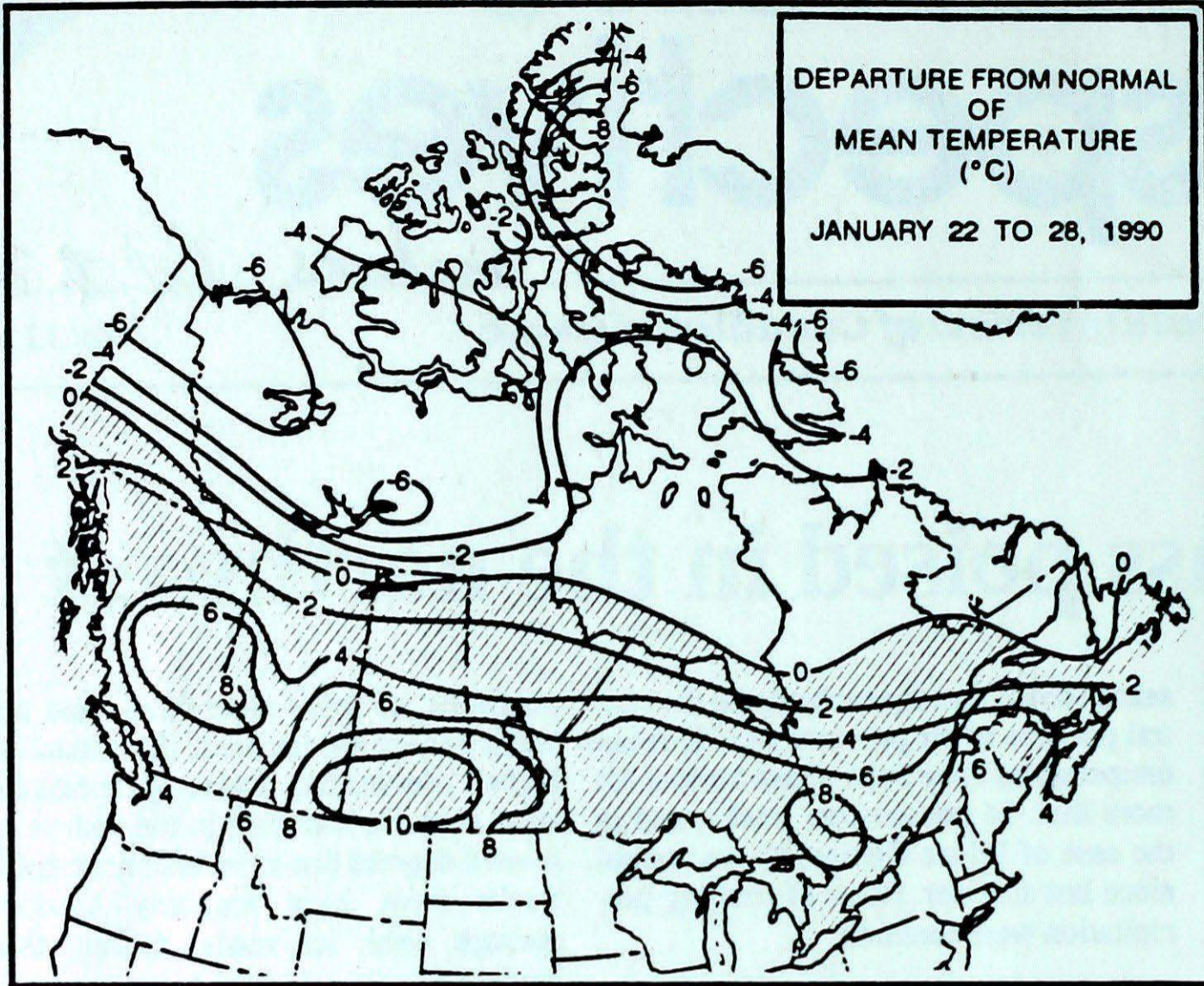
This unusually mild trend has had a profound effect on the oil and logging industries of central and northern B.C., which rely heavily on the cold during the winter months; this is the only time heavy machinery, forestry products and construction supplies can be transported across normally soft terrain and muskeg on ice-strengthened roads. The mild weather, up until last week, has impeded seismic testing and the construction of drilling

platforms, as there were delays and setbacks getting the ice roads completed. At higher elevations, where temperatures were even warmer than in the valleys by several degrees due to inversions, logging trucks have been regularly breaking through weak ice roads, spilling their loads.

Below-normal temperatures for most of the country...

For the week of February 5, above-normal temperatures are expected only for Ontario and southwestern Quebec. For the rest of the country, temperatures will average below normal. The Yukon and Newfoundland can expect the greatest below-normal departures.





Weekly normal temperatures (°C)

	max.	min.
Whitehorse A	-16.0	-25.0
Iqaluit A	-21.7	-30.3
Yellowknife A	-25.3	-33.4
Vancouver Int'l A	5.1	-0.4
Victoria Int'l A	5.9	-0.3
Calgary Int'l A	-6.6	-18.0
Edmonton Int'l A	-10.4	-21.7
Regina A	-13.8	-23.9
Saskatoon A	-15.3	-25.3
Winnipeg Int'l A	-14.7	-24.8
Ottawa Int'l A	-5.2	-14.0
Toronto Int'l A	-2.1	-10.3
Montréal Int'l A	-4.4	-13.1
Québec A	-6.4	-15.2
Fredericton A	-2.0	-12.8
Saint John A	-1.0	-11.3
Halifax (Shearwater)	0.8	-6.9
Charlottetown A	-2.0	-10.1
Goose A	-11.2	-20.6
St John's A	-0.2	-7.1

Weekly temperature and precipitation extremes

	Maximum temperature (°C)	Minimum temperature (°C)	Heaviest precipitation (mm)
British Columbia	Victoria Int'l A 9	Fort Nelson A -34	Hope A 168
Yukon Territory	Teslin (aut) -3	Shingle Point A -47	Watson Lake A 2
Northwest Territories	Coral Harbour A -15	Fort Reliance -54	Coral Harbour A 4
Alberta	Lethbridge A 9	High Level A -40	Grande Prairie A 17
Saskatchewan	Swift Current A 5	Cree Lake -43	Cree Lake 16
Manitoba	Portage La Prairie A 5	Thompson A -43	Lynn Lake A 17
Ontario	Windsor A 11	Red Lake A -37	Timmins A 34
Quebec	Montréal Int'l A 8	Schefferville A -42	Natashquan A 43
New Brunswick	Moncton A 14	Charlo A -29	Saint John A 64
Nova Scotia	Greenwood A 18	Shearwater A -15	Shearwater A 43
Prince Edward Island	Summerside A 10	Charlottetown A -18	Summerside A 36
Newfoundland	St John's A 14	Wabush Lake A -41	Daniels Harbour 62

Across The Country...

Highest Mean Temperature	Estevan Point (aut)(BC) 5
Lowest Mean Temperature	Eureka(NWT) -46

90/01/22-90/01/28

CLIMATIC PERSPECTIVES
VOLUME 12

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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.

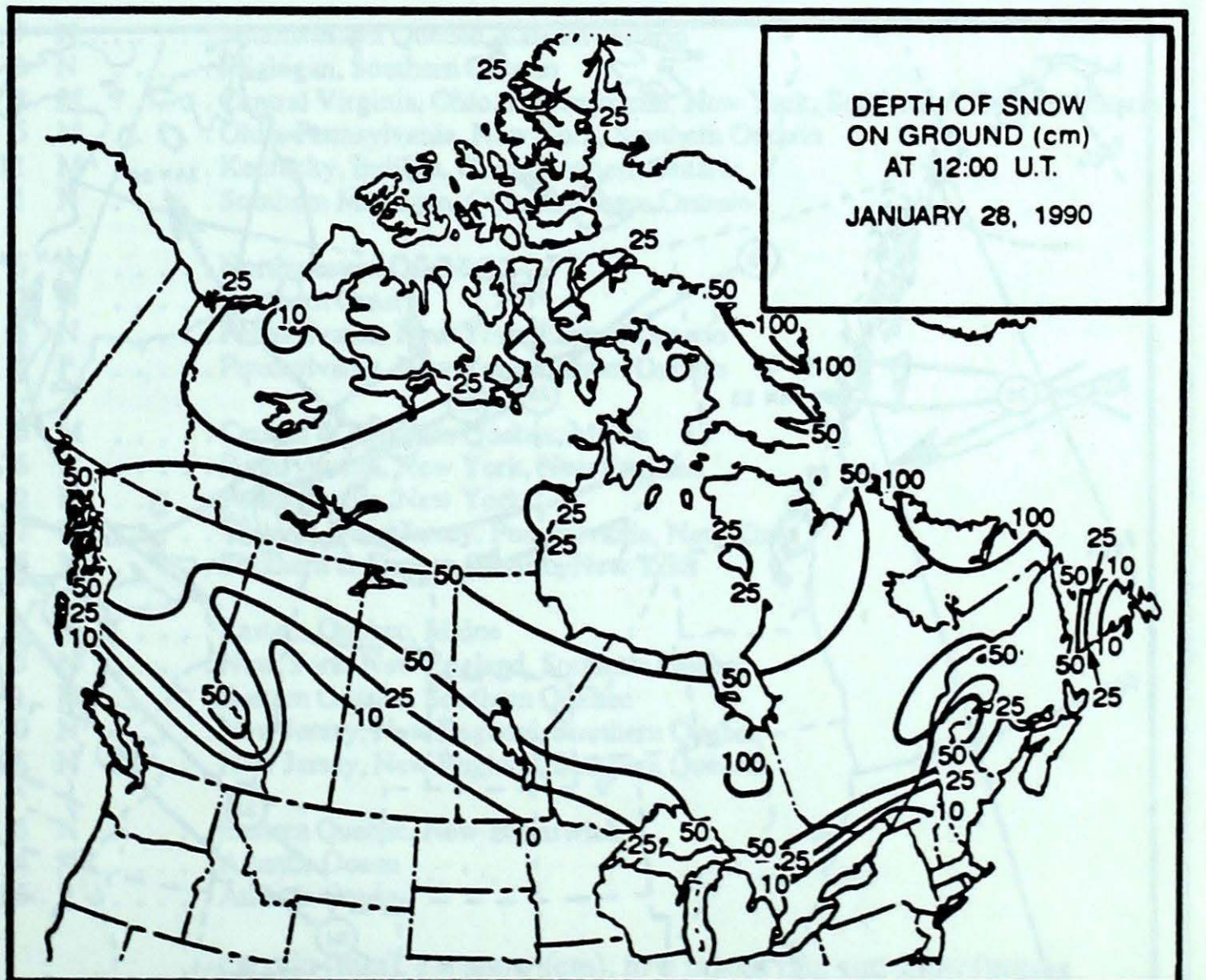
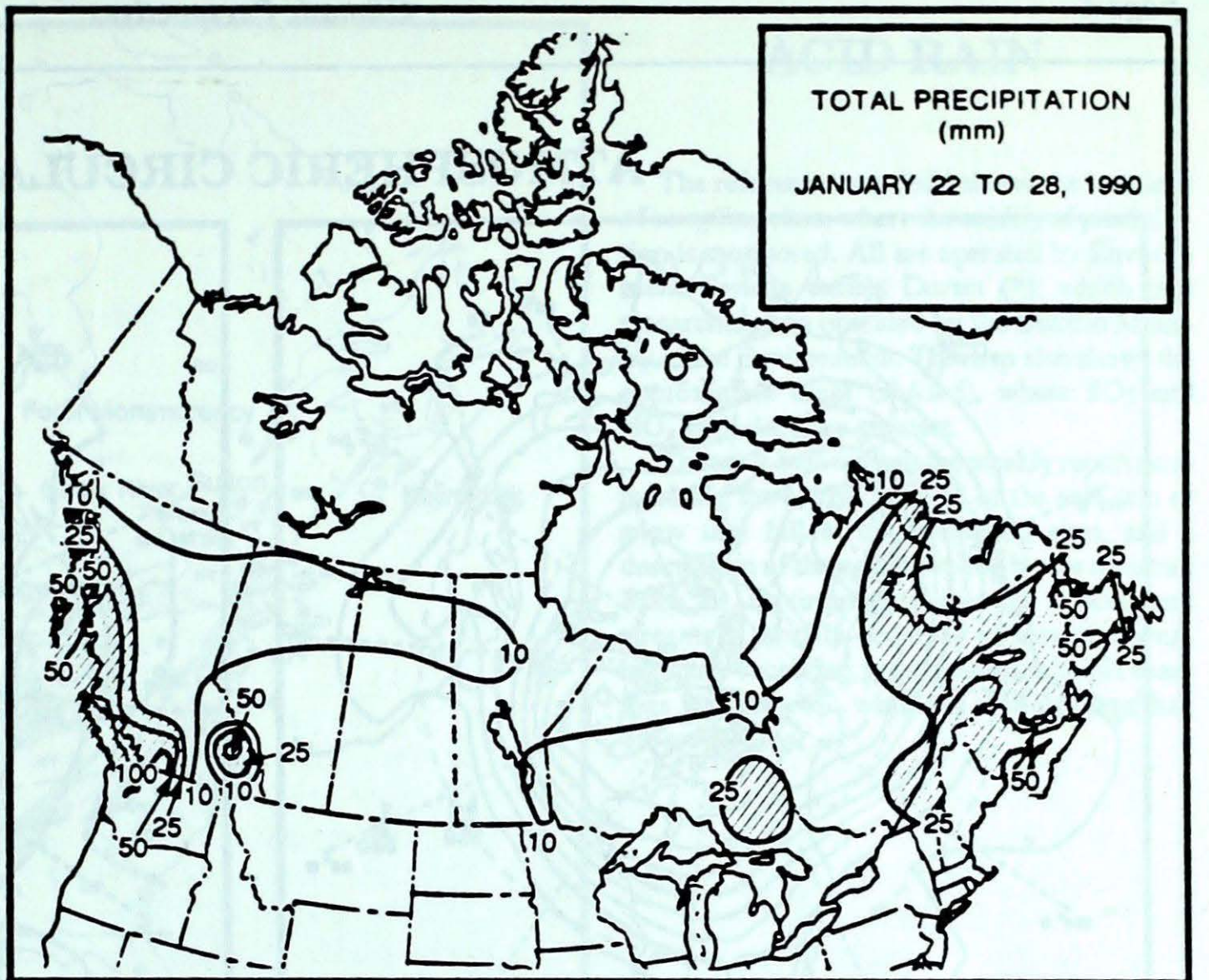
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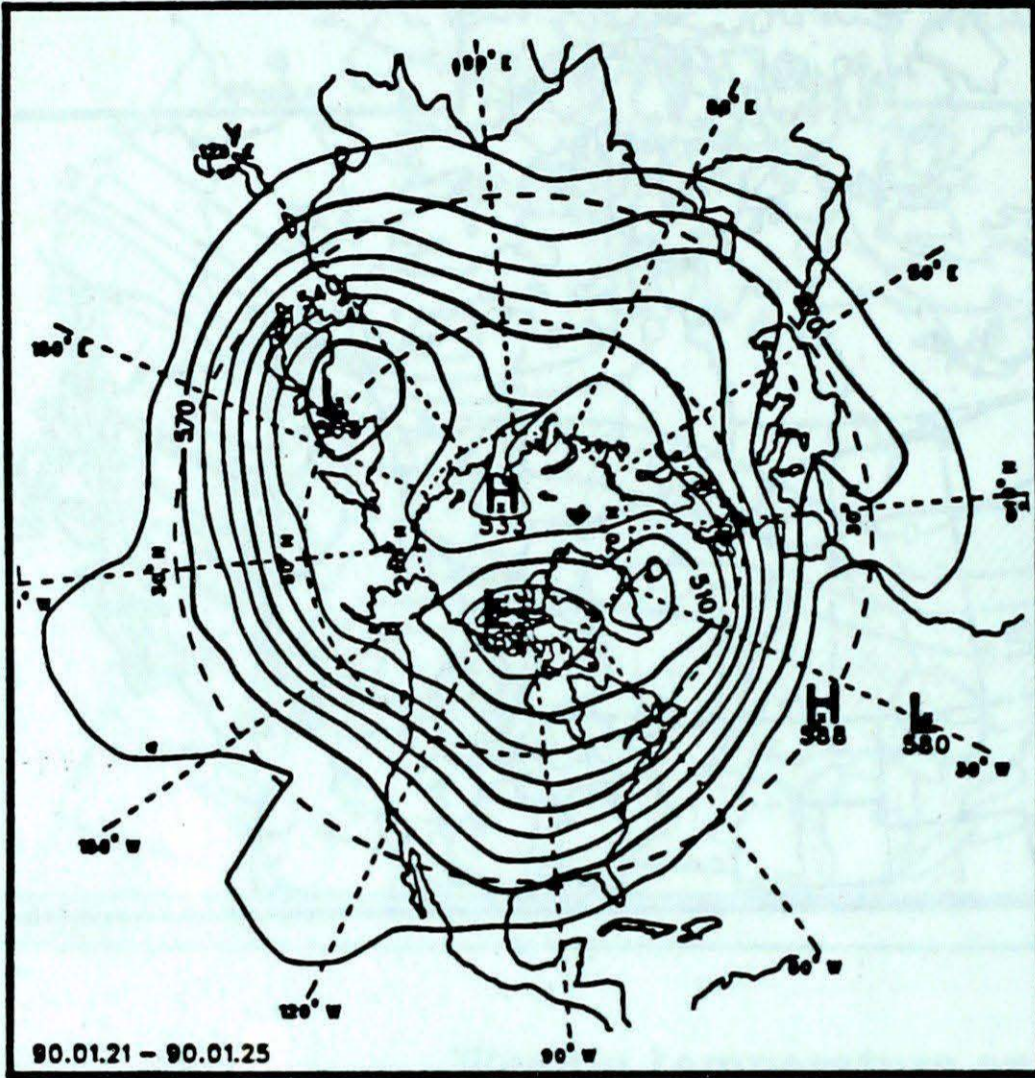
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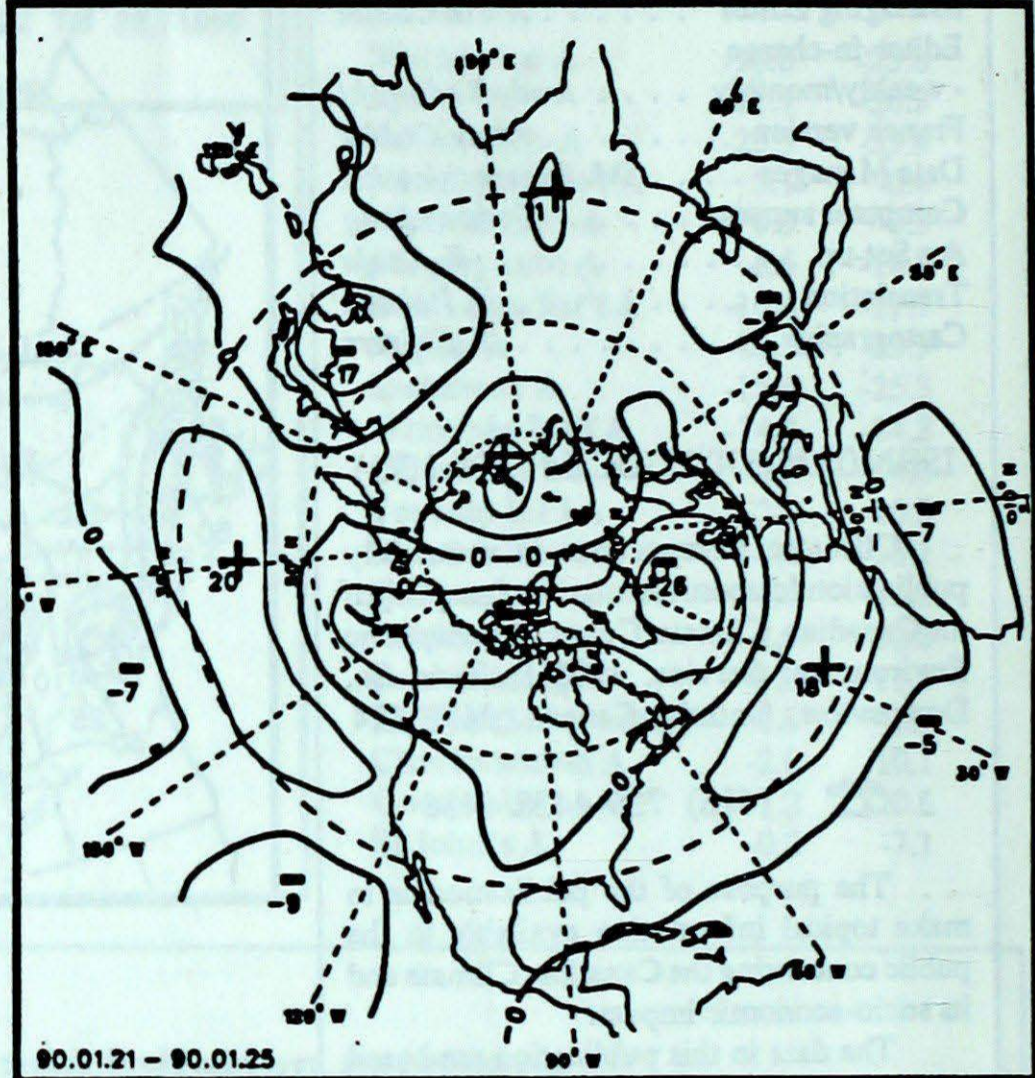
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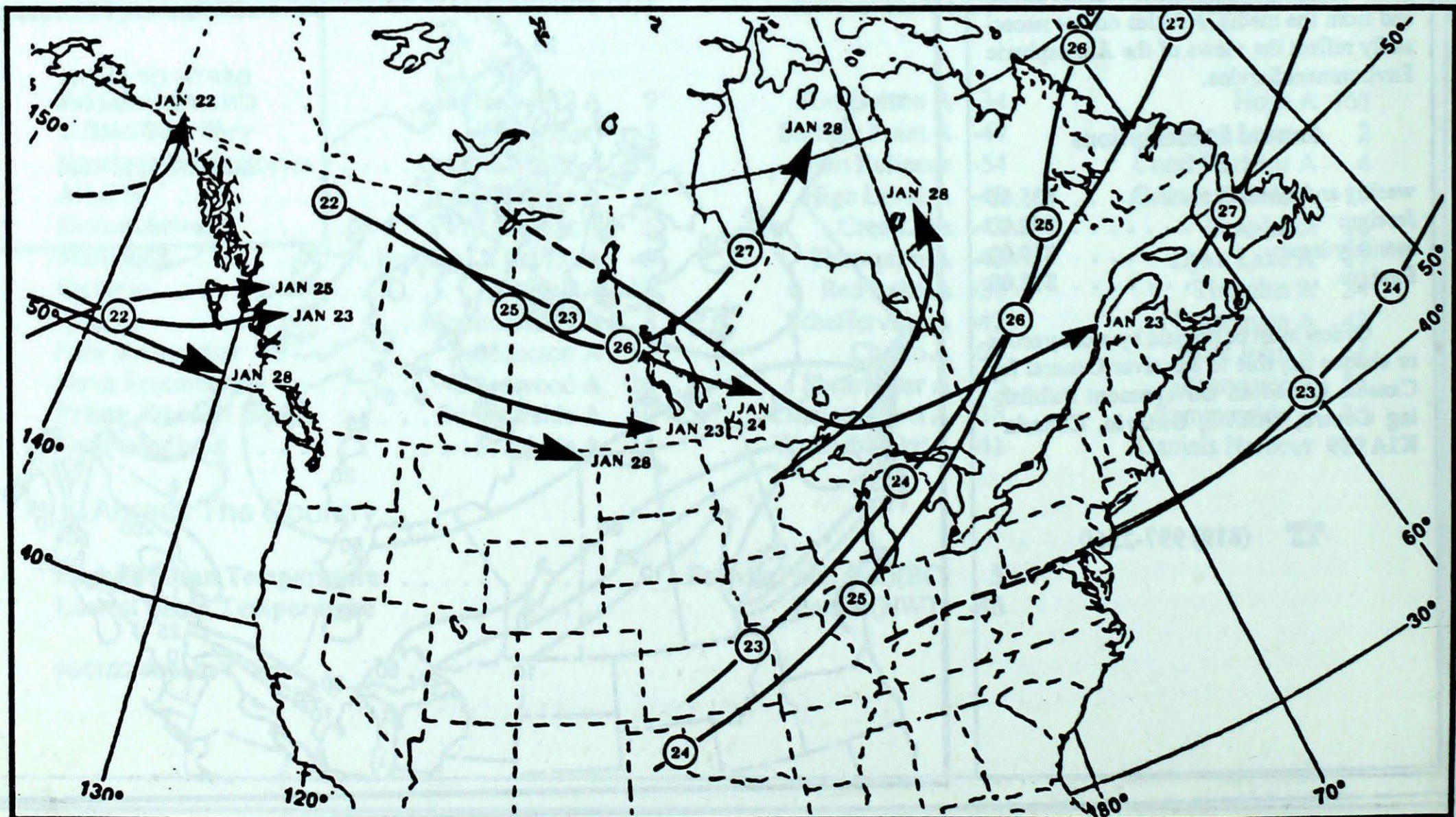
ATMOSPHERIC CIRCULATION



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



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

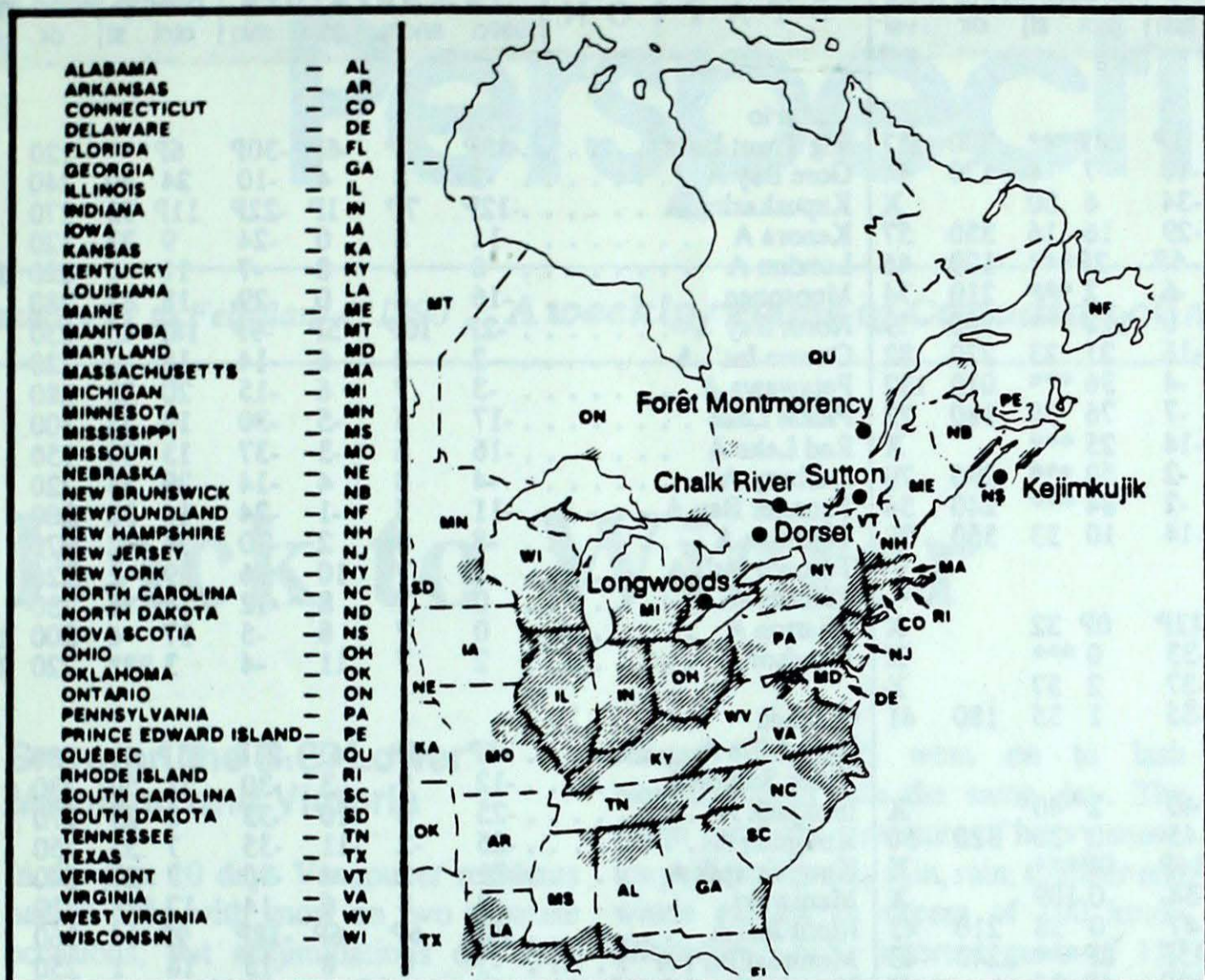


Tracks of low pressure centres at 12:00 U.T. each day during the period.

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 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.



Site day pH amount air path to site

From January 21 to 27, 1990

Site	day	pH	amount	air path to site
Longwoods	21	3.7	5 N	Indiana, Michigan, Southern Ontario
	25	4.1	4 M	Kentucky, Indiana, Ohio
Dorset *	21	4.3	7 N	Southwestern Quebec, Eastern Ontario
	22	4.4	3 N	Michigan, Southern Ontario
	23	4.3	8 M	Central Virginia, Ohio, Pennsylvania, New York, Southern & Eastern Ontario
	24	4.2	5 M	Ohio, Pennsylvania, New York, Southern Ontario
	25	4.3	11 M	Kentucky, Indiana, Ohio, Southern Ontario
	27	4.7	1 N	Southern Michigan, Ohio, Southern Ontario
Chalk River	21	4.4	5 N	Northwestern Quebec
	22	4.2	2 N	Southern Ontario
	23	4.1	8 N	Pennsylvania, New York, Eastern Ontario
	25	4.1	6 P	Pennsylvania, New York, Eastern Ontario
Sutton	21	3.9	6 M	Central & Southern Quebec, Maine
	22	4.1	6 N	Pennsylvania, New York, New England
	23	4.0	2 N	Pennsylvania, New York
	25	4.3	17 P	Virginia, New Jersey, Pennsylvania, New York
	26	4.4	5 N	Southern & Eastern Ontario, New York
Montmorency	21	4.3	2 N	Eastern Quebec, Maine
	22	4.4	5 N	New York, New England, Southern Quebec
	23	4.5	1 N	Eastern Ontario, Southern Quebec
	24	4.3	20 N	New Jersey, New England, Southern Quebec
	25	4.4	26 N	New Jersey, New England, Southern Quebec
Kejimikujik	21	5.0	6 N	Eastern Quebec, New Brunswick
	22	4.4	4 N	Atlantic Ocean
	25	4.8	16 P	Atlantic Ocean

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									
Cape St James	5P	1P	8P	1P	34P***		300	137	Big Trout Lake	-18P	7P	-6P	-30P	6P***	120	52	
Cranbrook A	-3	6	4	-10	7	4	170	44	Gore Bay A	-2	8	4	-10	24	60	240	83
Fort Nelson A	-23	0	-11	-34	6	50		X	Kapuskasing A	-12P	7P	1P	-22P	11P	93	270	74
Fort St John A	-14	4	2	-29	16	16	350	57	Kenora A	-11	8	0	-24	9	33	320	59
Kamloops A	-1P	6P	8P	-6P	2P***		120	46	London A	0	6	8	-7	11	1	220	100
Penticton A	2	5	8	-6	2	***	210	74	Moosonee	-16	4	0	-29	18	81	280	78
Port Hardy A	4	2	8	0	118	***	340	59	North Bay A	-2P	10P	5P	-9P	18P	83	230	80
Prince George A	-4	8	4	-16	21	23	270	82	Ottawa Int'l A	-2	8	6	-14	18	2	220	82
Prince Rupert A	2	3	8	-4	36	***	010	132	Petawawa A	-3	7	6	-15	20	28	280	76
Revelstoke A	-1	4	5	-7	76	58	180	72	Pickle Lake	-17	5	-5	-30	10	55	300	39
Smithers A	-5	6	3	-14	25	***		X	Red Lake A	-16	6	-3	-37	13	90	150	48
Vancouver Int'l A	4	2	9	-2	59	***	290	70	Sudbury A	-4	8	4	-14	29	58	220	83
Victoria Int'l A	5	2	9	-2	84	***	240	54	Thunder Bay A	-11	5	-1	-24	14	38	300	70
Williams Lake A	-4	7	4	-14	10	33	350	70	Timmings A	-8	8	2	-20	34	122	270	56
Yukon Territory								Quebec									
Komakuk Beach A	-26P	-2P	-23P	-43P	0P	32		X	Bagotville A	-8P	6P	6P	-21P	11P	41	280	65
Teslin (aut)	-20	*	-3	-33	0	***		X	Blanc Sablon A	-12	*	3	-30	21	50	330	82
Watson Lake A	-22	5	-4	-37	2	57		X	Inukjuak A	-25	0	-10	-33	8	23	270	74
Whitehorse A	-19	1	-3	-35	1	35	180	41	Kuujuuaq A	-25	-2	-11	-35	7	35	250	83
Northwest Territories								New Brunswick									
Alert	-32	0	-24	-40	2	40		X	Charlo A	-7	2	5	-29	21	56	290	59
Baker Lake A	-40	-6	-28	-45	0	30	320	50	Chatham A	-4	5	9	-17	38	32	290	78
Cambridge Bay A	-39P	-5P	-33P	-46P	0P***			X	Fredericton A	-3	5	10	-19	41	20	270	61
Cape Dyer A	-28	-6	-20	-34	0	109		X	Moncton A	-2	5	14	-16	35	3	280	89
Clyde A	-34	-8	-19	-47	0	38	210	43	Saint John A	-2	4	10	-17	64	1	200	82
Coppermine A	-38P	-11P	-26P	-45P	2P***		240	43	Nova Scotia								
Coral Harbour A	-30P	1P	-15P	-42P	4P	35		X	Greenwood A	0	4	18	-15	27	1	270	82
Eureka	-46	-9	-41	-51	0	19		X	Shearwater A	0	3	10	-15	43	***	270	80
Fort Smith A	-29	-1	-17	-44	1	63		X	Sydney A	-2	3	12	-13	34	1	290	65
Hall Beach A	-30	1	-20	-42	4	37	080	48	Yarmouth A	1	3	10	-13	39	***	280	74
Inuvik A	-40	-12	-27	-49	0	41	320	37	Prince Edward Island								
Iqaluit A	-31	-5	-19	-37	0	13	310	33	Charlottetown A	-3	4	9	-18	33	4	290	80
Mould Bay A	-36P	-2P	-32P	-41P	0P***		340	33	Summerside A	-2	4	10	-15	36	16	280	87
Norman Wells A	-36	-8	-23	-49	2	15	320	37	Newfoundland								
Resolute A	-32	0	-27	-38	0	22	090	32	Cartwright	-17P	-4P	1P	-29P	10P	211	310	96
Yellowknife A	-35	-5	-19	-48	2	42		X	Churchill Falls A	-19	-1	-2	-37	17	71	270	70
Alberta								Prince Edward Island									
Calgary Int'l A	-4	8	7	-17	2	2	350	78	Gander Int'l A	-5	1	11	-18	27	7	280	119
Cold Lake A	-13	6	-2	-30	5	23	320	46	Goose A	-18	-2	-3	-28	18	100	270	70
Edmonton Namao A	-8	8	6	-25	4	1	300	52	Port Aux Basques	-4	0	6	-15	49	64	280	130
Fort McMurray A	-20	3	-7	-37	11	46	330	41	St John's A	-3	1	14	-11	13	1	260	115
High Level A	*		-8	-40	14	52	350	46	St Lawrence	-2	1	7	-14	20	2		X
Jasper	-4	8	3	-16	2	21		X	Wabush Lake A	-19	1	-1	-41	29	70	270	63
Lethbridge A	-1	10	9	-11	5	4	260	87	Environment Canada Environnement								
Medicine Hat A	-2P	12P	7P	-13P	1P	1	240	56	CLIMATIC PERSPECTIVES								
Peace River A	-15P	6P	2P	-29P	7P	16		X	Vol: 12 No: 4 Date: 900128								
Saskatchewan								1005959D									
Cree Lake	-22	2	-8	-43	16	47	360	37	REF 2								
Estevan A	-7	10	3	-20	2	1	300	70	OTM								
La Ronge A	-18P	4P	-4P	-37P	7P	45	290	50	ARCHIVES								
Regina A	-10	9	2	-26	3	5	300	70									
Saskatoon A	-10P	11P	2P	-24P	1P	10	310	65									
Swift Current A	-5	11	5	-17	5	2	240	70									
Yorkton A	-12	9	1	-26	8	27	300	59									
Manitoba																	
Brandon A	-11	9	2	-21	5	19	300	67									
Churchill A	-27	2	-14	-39	3	30	340	70									
Lynn Lake A	-22	5	-10	-39	17	60	330	50									
The Pas A	-17	6	-5	-39	9	25	310	52									
Thompson A	-24P	3P	-10P	-43P	6P	59	300	43									
Winnipeg Int'l A	-10	9	3	-26	8	14	170	65									

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

ptot = weekly precipitatic
 st = snow thickness or
 dir = direction of max wi
 vel = wind speed in km

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Vol: 12 No: 4 Date: 900128

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