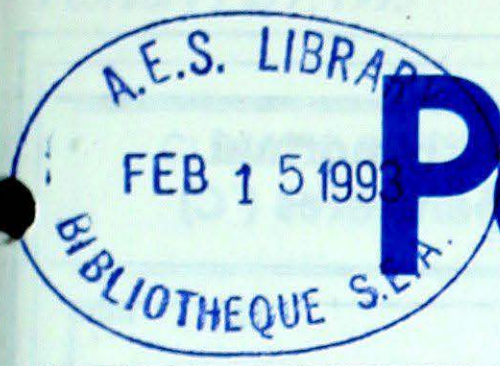




# Climatic Perspectives



February 1 to 7 1993

A weekly review of Canadian climate and water

Vol. 15 No. 06

## Record cold covers eastern Canada

*While western Canada enjoyed unseasonably mild weather, residents of Atlantic Canada endured their second straight week of record cold weather.*

A very cold dome of Arctic air and associated high pressure influenced the weather pattern over the Atlantic provinces this week, producing varying amounts of cloud and sunshine, not to mention the bitter cold. Disturbances tracking eastwards south of Nova Scotia and Newfoundland deposited as much as 10 to 20 centimetres of snow over parts of Nova Scotia and the Avalon Peninsula. Not only were there daily low temperature records broken this week, but during this past weekend, new record low temperatures were established for the month of February in Nova Scotia and Prince Edward Island. On February 6 and 7, new monthly low temperature records were set at Greenwood, Charlottetown, Halifax and Shearwater.

On February 7, the minimum temperature at Greenwood dropped down to a cold -35.5°C, making this the lowest minimum ever recorded at this location since records began in 1943. The same day, Charlo, N.B., only managed to rise to a maximum reading of -21.7°C, making this the lowest maximum temperature ever recorded at this location during the month of February since records began in 1967.

### Labrador Ice pack

Very cold air temperatures during the last two weeks have caused rapid ice growth over eastern Canadian waters. Off the coast of Newfoundland, the extent of the

ice is about three weeks ahead of normal, with a tongue of sea ice reaching as far south as the Avalon Peninsula. In the Gulf of St. Lawrence, ice is about one week ahead of normal, and hampers the approaches to Sydney, N.S., and the Miramichi River. Ice has also entered the approaches to Chedabucto Bay, situated on the south shore of Nova Scotia. This is very unusual for this time of year, and adversely affects both the fishing community and commercial shipping.

### Mountain snowpack

In British Columbia, the first three weeks of January continued the cold and dry weather pattern of the previous month. Total precipitation remains below normal in all parts of the province this week, and as a result, mountain snowpacks have not increased at their normal rate since January. With the exception of some lower elevation sites and the Okanagan basin, which are above normal, all regions off the province reported the snowpack ranging from slightly below to well below normal.

In Alberta, the mountain snowpack is below to much below average, for the most part. Several new record-low mountain snowpacks were measured in the Bow, North Saskatchewan and Athabasca River basin headwaters. Some were even well-below the previous minimums recorded in the past 10 to 20 years.

### Elsewhere...

The eastern Arctic was clear and cold, with ice crystals and temperatures in the

minus forties. Temperatures fluctuated in the Yukon, ranging from 5.2°C at Dawson to -54.0°C at Beaver Creek. Blizzards closed some highways. The Skagway Highway was closed most of the week, due to heavy snow and avalanches. In the Mackenzie District, ice roads leading into the mining areas north of Yellowknife are not yet strong enough to stand up to heavy loads, as graders are still encountering weak ice. Meanwhile, supplies are being stockpiled in Yellowknife for the truck convoys. The Mackenzie River ice crossing is in full service. The ferry was taken out of service around mid-January.

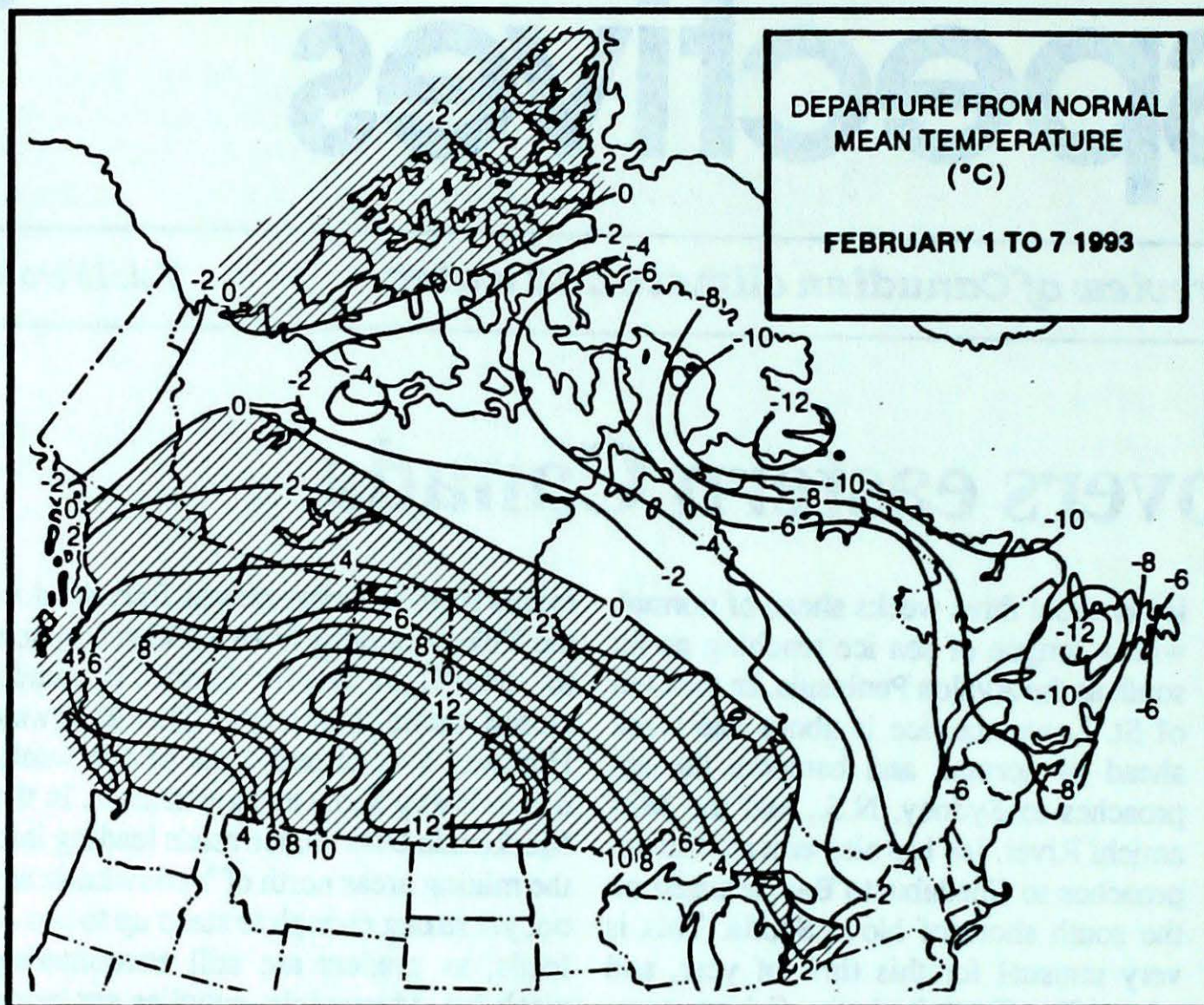
Spring-like weather continued across western Canada, with well-above normal temperatures. After the middle of the period, a colder air mass spilled across the Prairies, accompanied by some light snow in the central and northern districts.

Ontario residents encountered abrupt swings in day to day temperature extremes, with cold spells, for the most part, being short-lived. Snow squall activity affected the Niagara Peninsula during the weekend, tying up traffic.

Sunny but very cold weather heralded the start of the Quebec Winter Carnival, which runs from February 6 to the 14.

### A Look Ahead...

For the week of February 15, below-normal temperatures are expected east of Saskatchewan, while above-normal temperatures will persist across the western half of the country.



**Weekly normal  
temperatures (°C)**

	max.	min.
Whitehorse A	-10.5	-20.1
Iqaluit A	-21.7	-30.5
Yellowknife A	-21.8	-30.4
Vancouver Int'l A	7.3	1.2
Victoria Int'l A	7.7	1.3
Calgary Int'l A	-1.0	-13.3
Edmonton Int'l A	-7.0	-18.9
Regina A	-9.3	-20.5
Saskatoon A	-9.9	-21.0
Winnipeg Int'l A	-12.2	-22.7
Ottawa Int'l A	-6.5	-16.2
Toronto (Pearson Int'l A)	-3.0	-12.1
Montréal Int'l A	-6.0	-15.4
Québec A	-7.4	-17.2
Fredericton A	-3.8	-15.5
Saint John A	-3.3	-13.8
Halifax (Shearwater)	-1.3	-9.5
Charlottetown A	-4.1	-12.7
Goose A	-9.9	-20.5
St John's A	-1.2	-8.6

**Weekly temperature and precipitation extremes**

	Maximum temperature (°C)	Minimum temperature (°C)	Heaviest precipitation (mm)
British Columbia	Abbotsford A 16	Fort Nelson A -27	Prince Rupert A 161
Yukon Territory	Watson Lake A 6	Beaver Creek -54	Haines Junction 31
Northwest Territories	Fort Smith A 9	Shepherd Bay A -45	Fort Smith A 15
Alberta	Lethbridge A 15	High Level A -27	High Level A 15
Saskatchewan	La Ronge A 12	Collins Bay -29	Cree Lake 13
Manitoba	Dauphin A 12	Churchill A -36	Lynn Lake A 12
Ontario	Windsor A 10	Nagagami (aut) -41	Timmins A 12
Quebec	Maniwaki 3	La Grande IV A -43	Sherbrooke A 17
New Brunswick	St Stephen (aut) -2	St-Léonard A -32	St-Léonard A 6
Nova Scotia	Yarmouth A 2	Greenwood A -35	Greenwood A 10
Prince Edward Island	Charlottetown A -6	Charlottetown A -30	Charlottetown A 6
Newfoundland	St John's A 1	Wabush Lake A -40	Bonavista 17

**Across The Country...**

Highest Mean Temperature	Estevan Point (aut) (B.C.)	10
Lowest Mean Temperature	Shepherd Bay A (N.W.T.)	-39

93/02/01-93/02/07

CLIMATIC PERSPECTIVES  
VOLUME 15

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Editor-in-charge . . . *Andrew Radomski*  
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Data manager . . . . . *M. Skarpathiotakis*  
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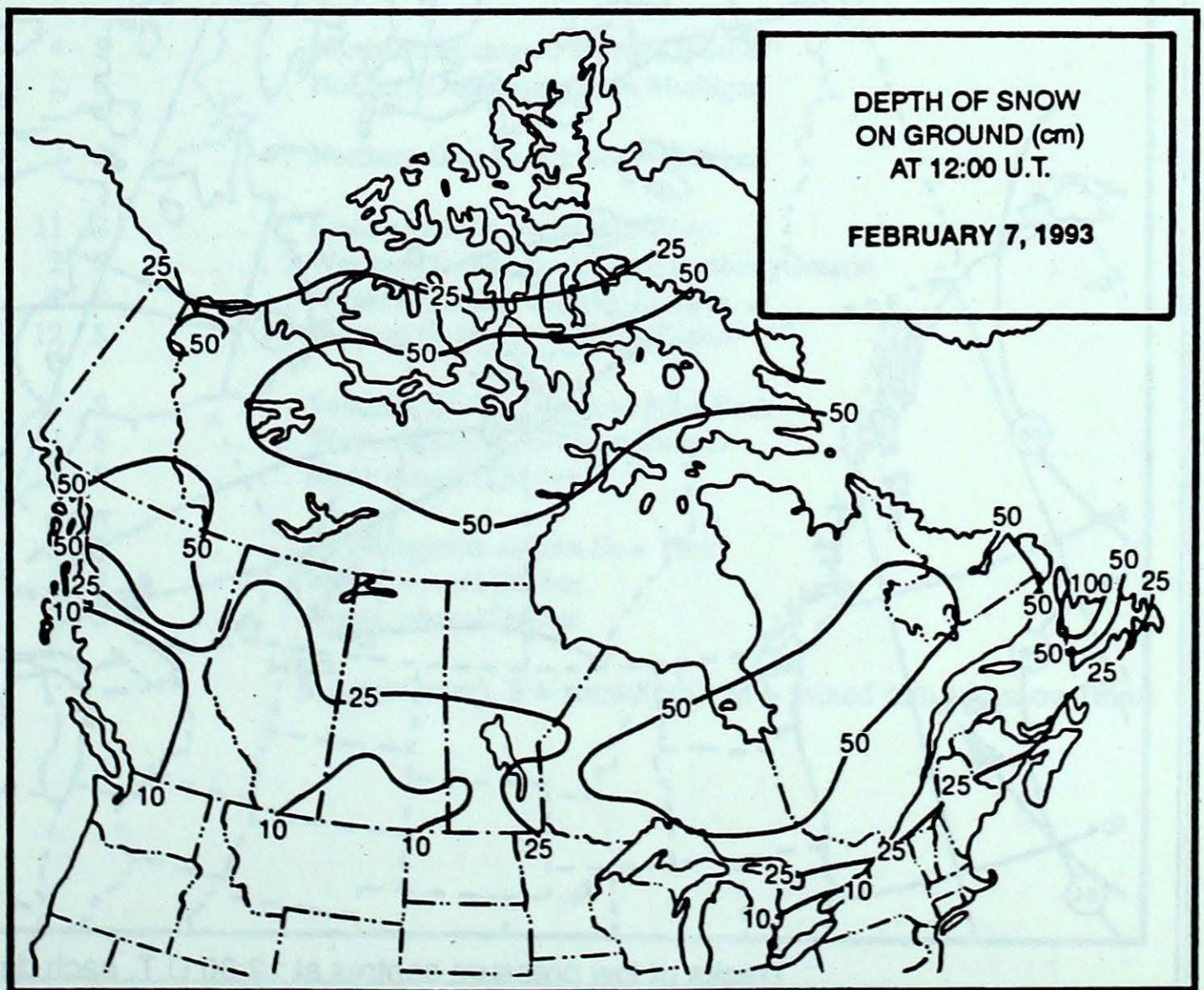
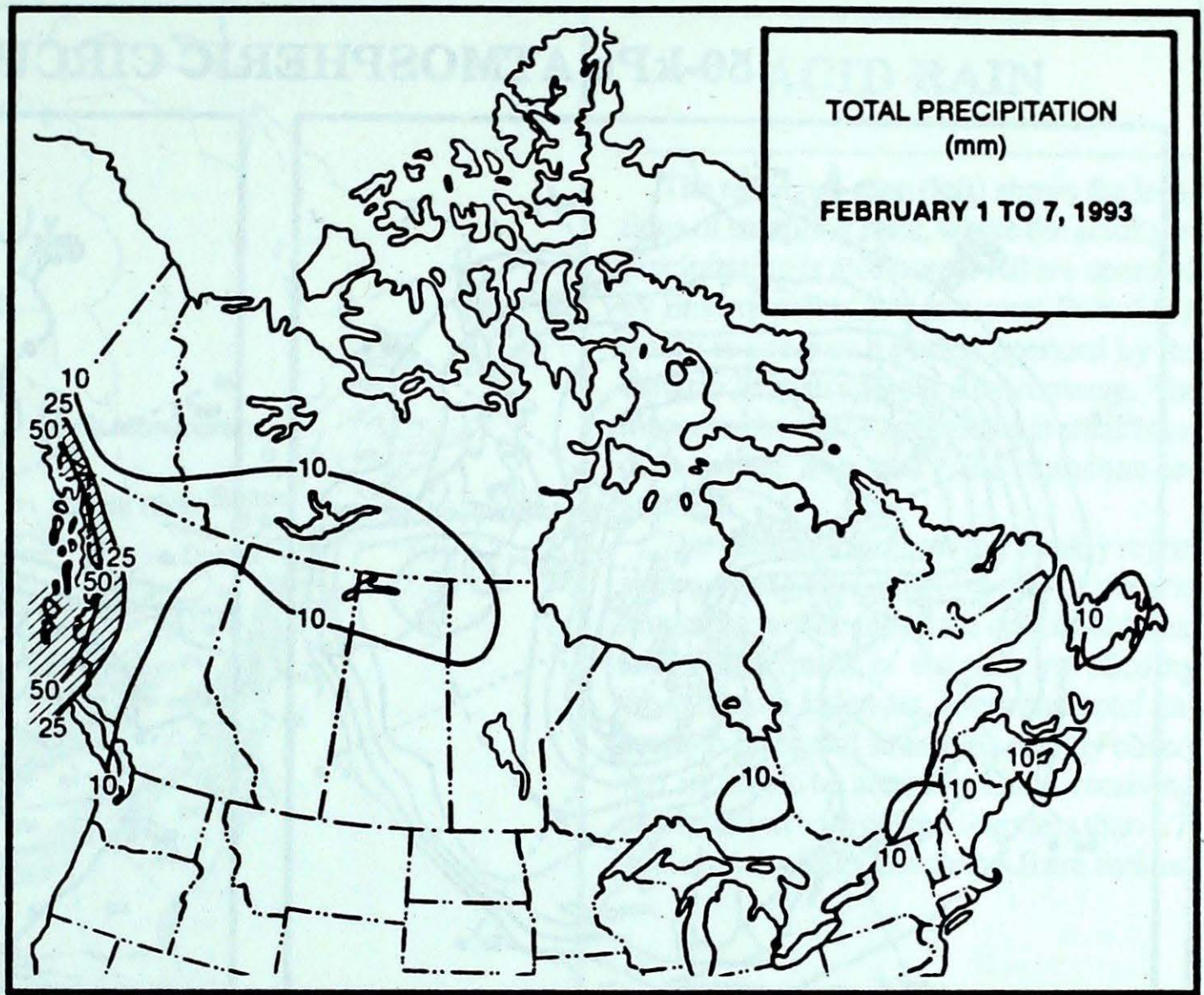
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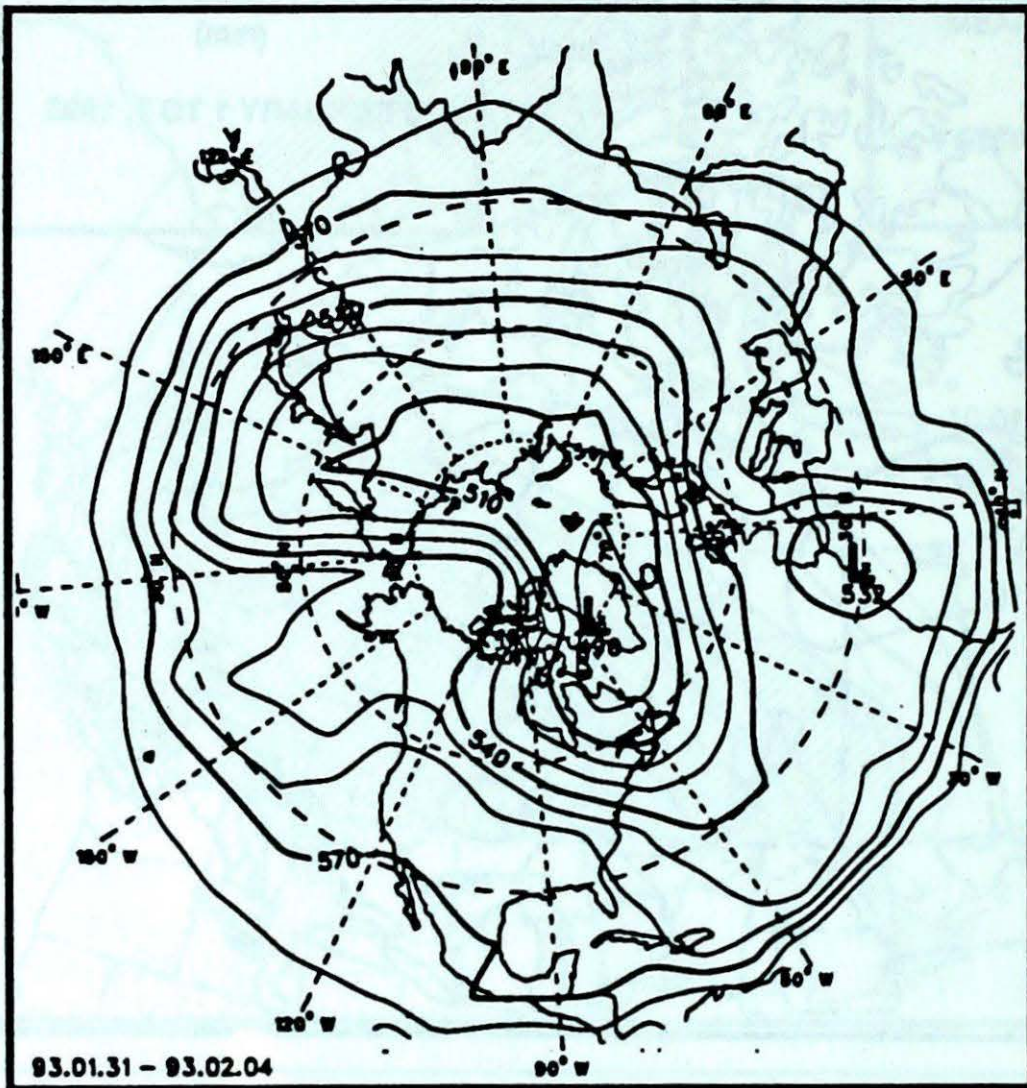
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The purpose of the publication is to make topical information available to the public concerning the Canadian Climate and its socio-economic impact.

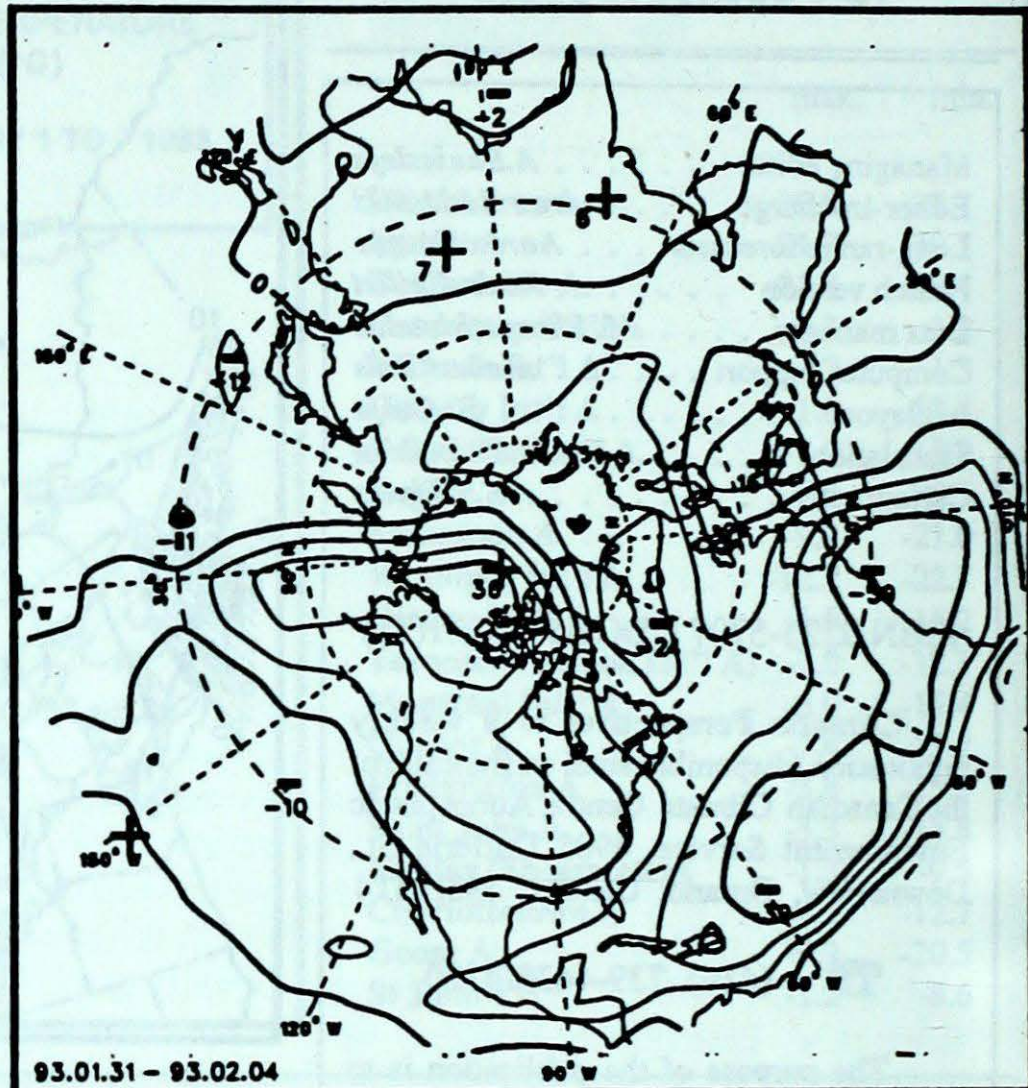
The data in this publication are based on unverified reports from approximately 225 Canadian synoptic weather stations. Information concerning climatic impacts is gathered from AES contacts with the public and from the media. Articles do not necessarily reflect the views of the Atmospheric Environment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



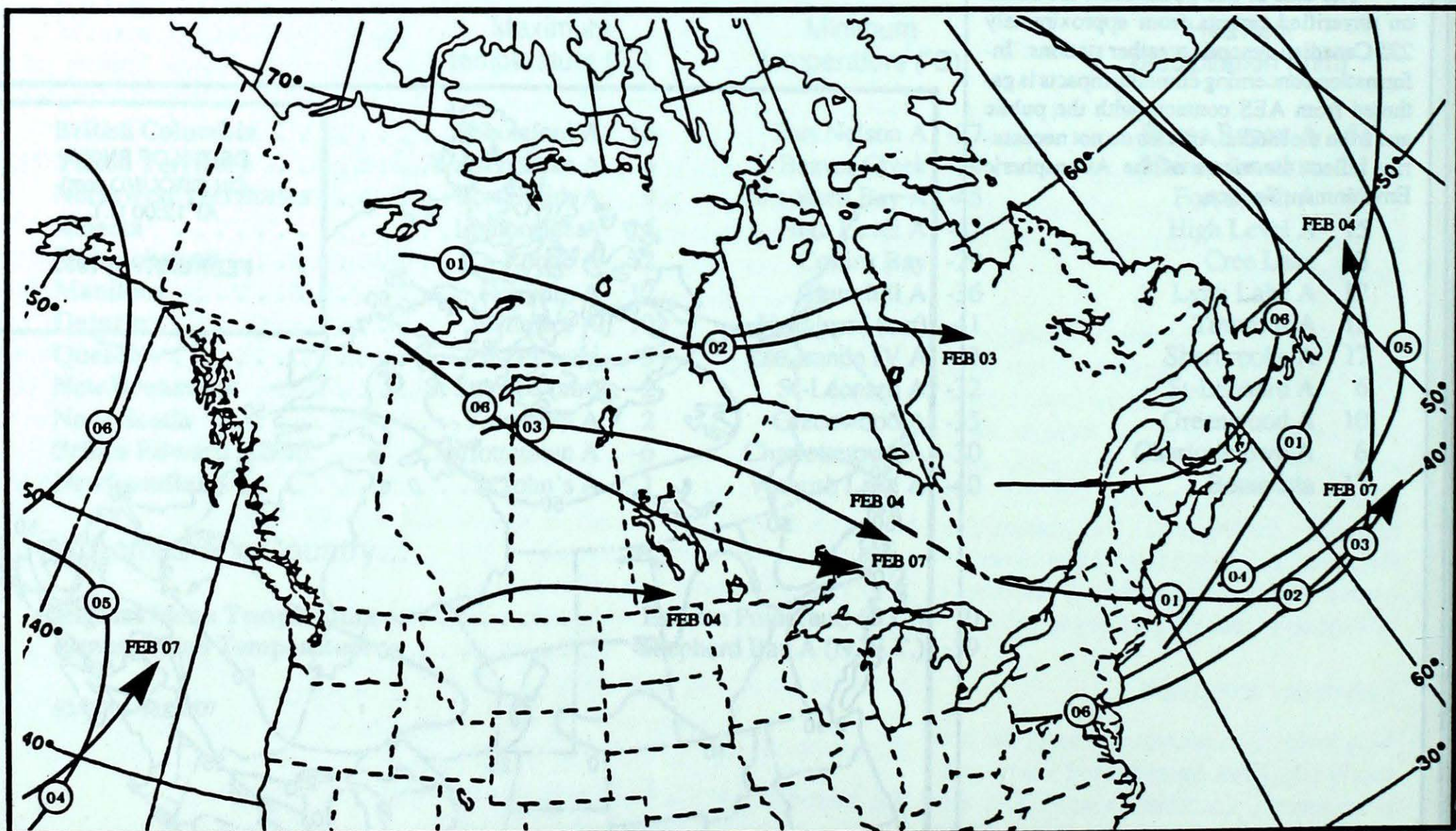
### 50-kPa ATMOSPHERIC CIRCULATION



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



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

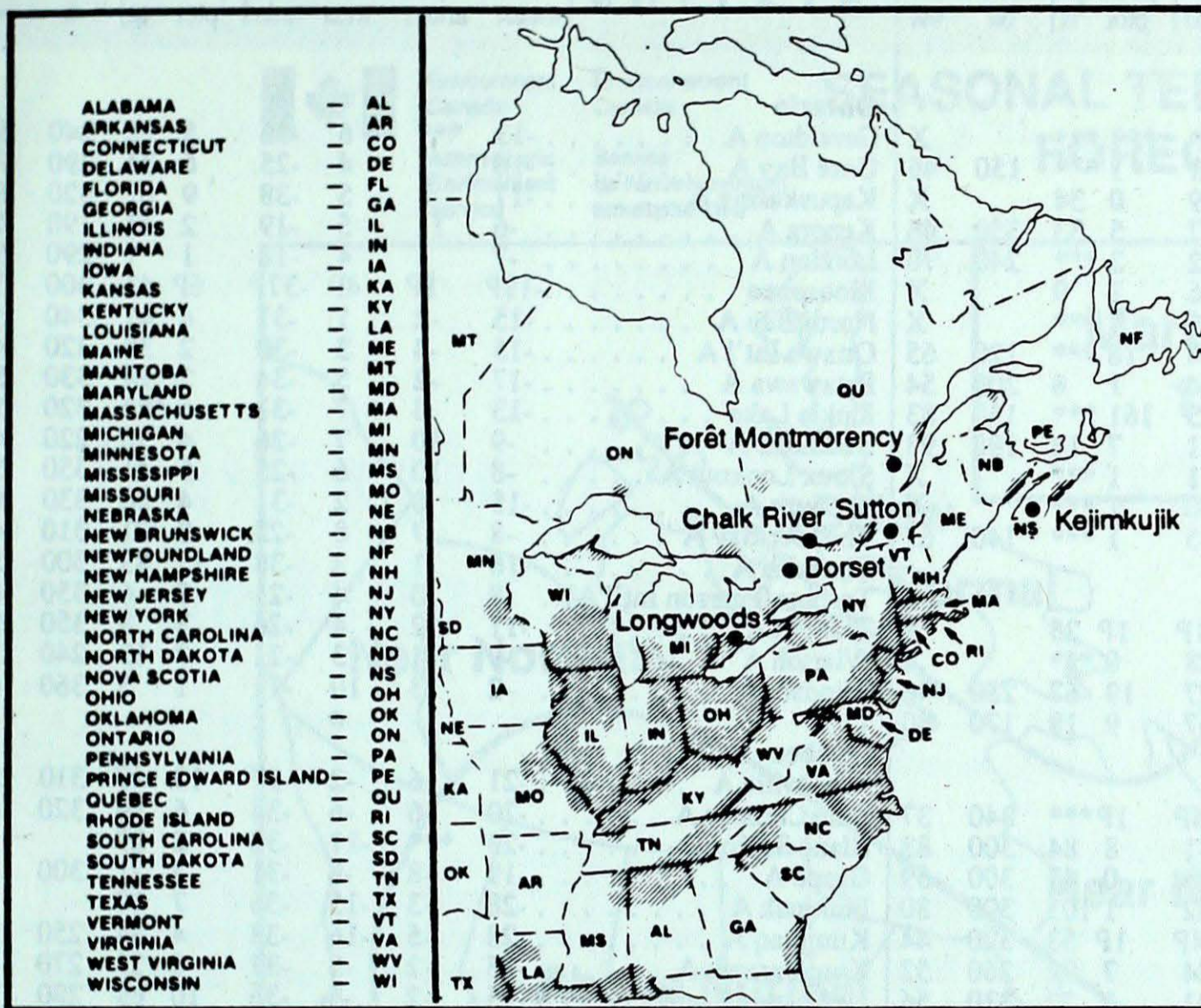


Tracks of low pressure centres at 12:00 U.T. each day during the period.

## 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 SO<sub>2</sub> and NO<sub>x</sub> 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 31 to February 6, 1993

Longwoods				NO PRECIPITATION THIS WEEK
Dorset *	31	4.6	4 S	Northern Michigan, Western Quebec
	03	4.4	2 S	Northern Ontario, northern Michigan
Chalk River	31	4.5	2 S	Northern Ontario, northern Michigan
Sutton	31	4.7	11 S	Eastern Ontario, western Quebec
	03	4.2	2 S	Western Quebec, eastern and northern Ontario
	04	4.7	2 S	Western Quebec, northern Ontario
	05	4.7	12 S	Western Quebec, northern Ontario
Montmorency	31	4.7	5 S	Southern Quebec, northern New York
	03	4.6	2 S	Western Quebec, northern Ontario
	04	4.5	1 S	North western Quebec
Kejimkujik	31	4.2	3 S	New England, eastern New York
	03	4.1	1 S	Maine, central Quebec
	05	4.5	4 S	Maine, central Quebec

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			
<b>British Columbia</b>										<b>Ontario</b>										
Blue River A	***	***	***	***	***	***			X	Geraldton A	-13	***	6	-36	5	52	340	57		
Comox A	7	3	11	1	1	***	150	46		Gore Bay A	-10	1	4	-25	6	33	290	74		
Cranbrook A	-3	4	1	-9	0	34		X		Kapusking A	-17	1	5	-38	9	67	320	69		
Fort Nelson A	-16	3	9	-27	5	33	350	46		Kenora A	-6	11	5	-19	2	43	190	41		
Fort St John A	-6	6	10	-22	2	***	240	70		London A	-7	1	4	-16	1	7	290	52		
Kamloops A	1	3	6	-6	1	9		X		Moosonee	-19P	1P	4P	-37P	6P	43	300	56		
Penticton A	1	2	6	-5	1	***		X		North Bay A	-15	-2	1	-31	4	41	340	59		
Port Hardy A	10	6	13	4	16	***	120	65		Ottawa Int'l A	-15	-4	3	-30	2	38	320	44		
Prince George A	2	9	9	-4	1	6	200	54		Petawawa A	-17	-2	5	-34	2	24	330	54		
Prince Rupert A	9	7	13	5	161	***	150	83		Pickle Lake	-13	8	7	-31	6	***	320	50		
Smithers A	4	10	11	-1	7	14	190	93		Red Lake A	-9	10	7	-26	4	50	220	46		
Vancouver Int'l A	7	3	15	1	1	***		X		Sioux Lookout A	-8	10	6	-25	5	41	350	37		
Victoria Int'l A	6	2	13	0	1	***		X		Sudbury A	-15	0	2	-31	4	50	330	61		
Williams Lake A	2	7	8	-5	1	***	140	61		Thunder Bay A	-8	7	8	-23	2	21	310	41		
<b>Yukon Territory</b>										<b>Québec</b>										
Komakuk Beach A	-28P	1P	-13P	-41P	1P	25		X		Bagotville A	-21	-6	-2	-37	13	40	310	52		
Teslin (aut)	-14	***	4	-28	0	***		X		Baie Comeau A	-20	-6	-6	-34	6	39	320	61		
Watson Lake A	-18	4	6	-27	19	67	280	46		Blanc Sablon A	-23	***	-11	-32	2	29		X		
Whitehorse A	-17	-2	4	-37	9	18	170	80		Gaspé A	-19	-8	-8	-31	3	21	300	46		
<b>Northwest Territories</b>										<b>New Brunswick</b>										
Alert	-27P	5P	-18P	-34P	1P	***	340	37		Fredericton A	-16	-6	-4	-31	2	10	330	59		
Baker Lake A	-34	-1	-23	-41	8	84	300	83		Miscou Island (aut)	-16	-6	-7	-25	0	***				
Cambridge Bay A	-37	-2	-26	-44	0	47	300	59		Moncton A	-17	-8	-4	-31	4	24	040	46		
Cape Dyer A	-34	-11	-22	-42	1	103	300	80		Saint John A	-15	-6	-3	-26	4	19	320	61		
Clyde A	-33P	-5P	-21P	-44P	1P	53	320	44		St Leonard A	-19	***	-6	-32	6	32	320	57		
Coppermine A	-34	-7	-22	-44	7	92	260	52		<b>Nova Scotia</b>										
Coral Harbour A	-34	-4	-29	-41	1	22	330	56		Greenwood A	-15	-9	-1	-35	10	31	070	50		
Eureka	-30	7	-15	-42	0	18		X		Shearwater A	-12	-6	1	-26	6	22	360	56		
Fort Smith A	-18	5	9	-30	15	42	280	44		Sydney A	-13	-7	-4	-25	9	20	020	50		
Hall Beach A	-39	-8	-33	-43	1	52	300	39		Yarmouth A	-10	-6	2	-23	8	15	360	59		
Inuvik A	-31	0	-17	-43	12	75	300	59		<b>Prince Edward Island</b>										
Iqaluit A	-38	-12	-34	-42	0	25	340	52		Charlottetown A	-17	-9	-6	-30	6	33	330	63		
Mould Bay A	-34	1	-21	-42	0	16		X		East Point (auto)	-16P	***P	-8P	-25P	0P	***				
Norman Wells A	-27	1	-15	-43	6	35	320	74		<b>Newfoundland</b>										
Resolute A	-32	0	-22	-39	0	19	030	83		Cartwright	-23	-10	-11	-30	4	73	210	44		
Yellowknife A	-24	3	-3	-37	13	29	300	67		Churchill Falls A	-27P	-7P	-11P	-38P	6P	84	310	48		
<b>Alberta</b>										<b>93/02/01-93/02/07</b>										
Calgary Int'l A	3	10	13	-8	1	***	240	44		Gander Int'l A	-17	-10	-8	-25	6	30	320	48		
Cold Lake A	-5	10	8	-14	1	27		X		Goose A	-24	-8	-12	-31	3	22	270	43		
Edmonton Namao A	-2	10	8	-14	1	8		X		Stephenville A	-18	-12	-8	-29	9	89	270	52		
Fort McMurray A	-7	10	10	-22	1	***	270	63		St John's A	-10	-6	1	-20	16	17	190	59		
Grande Prairie A	-7	6	6	-18	1	23	250	63		St Lawrence	-11	-6	0	-19	10	25		X		
High Level A	-15	6	10	-27	15	21	340	65		Wabush Lake A	-26	-6	-12	-40	14	62	280	46		
Lethbridge A	4	10	15	-7	1	***	250	54		<b>Annotations</b>										
Medicine Hat A	3	11	10	-7	1	***	200	44		X	= no observation									
Peace River A	-7	8	8	-22	1	16	280	59		P	= less than 7 days of data									
<b>Saskatchewan</b>										* = missing data when going to printing.										
Cree Lake	-11	12	9	-24	13	32	290	50												
Estevan A	-5	9	3	-13	1	10	220	39												
La Ronge A	-7	13	12	-18	1	17	140	35												
Regina A	-5	10	5	-15	1	11	130	32												
Saskatoon A	-7	9	2	-14	0	9	040	33												
Swift Current A	0	11	8	-8	1	5	200	54												
Yorkton A	-5	11	6	-13	1	10	190	32												
<b>Manitoba</b>																				
Brandon A	-7	10	3	-15	1	16	030	35												
Churchill A	-25	1	-2	-36	1	18	300	102												
Lynn Lake A	-17	8	6	-33	12	27	280	65												
The Pas A	-8	11	6	-21	7	12	300	35												
Thompson A	-17	9	4	-32	11	29	280	65												
Winnipeg Int'l A	-7	11	3	-19	1	24	190	44												

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

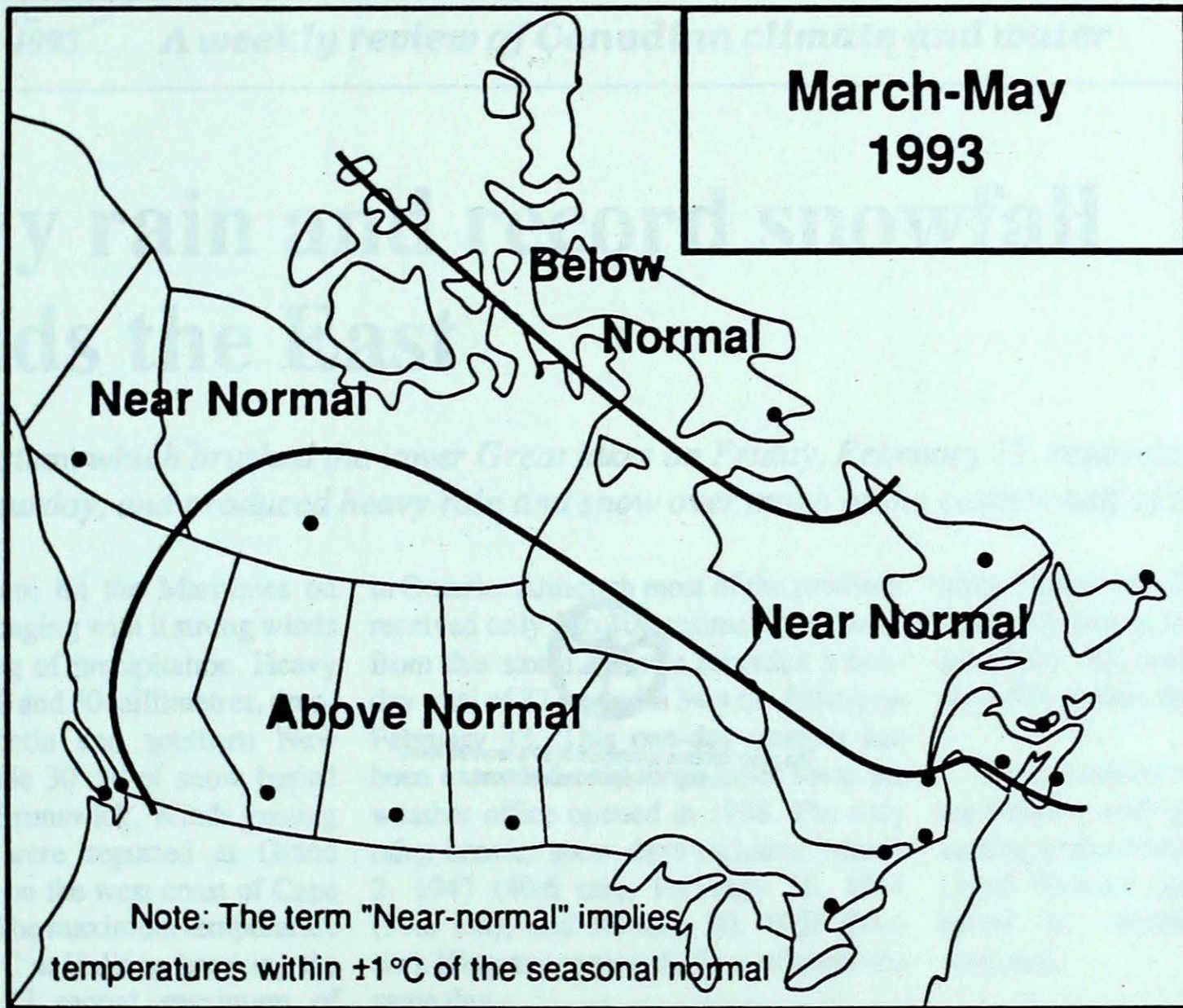
ptot = weekly precipitation total in mm  
 st = snow thickness on the ground in cm  
 dir = direction of max wind, deg. from north.  
 vel = wind speed in km/h

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



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## SEASONAL TEMPERATURE FORECAST

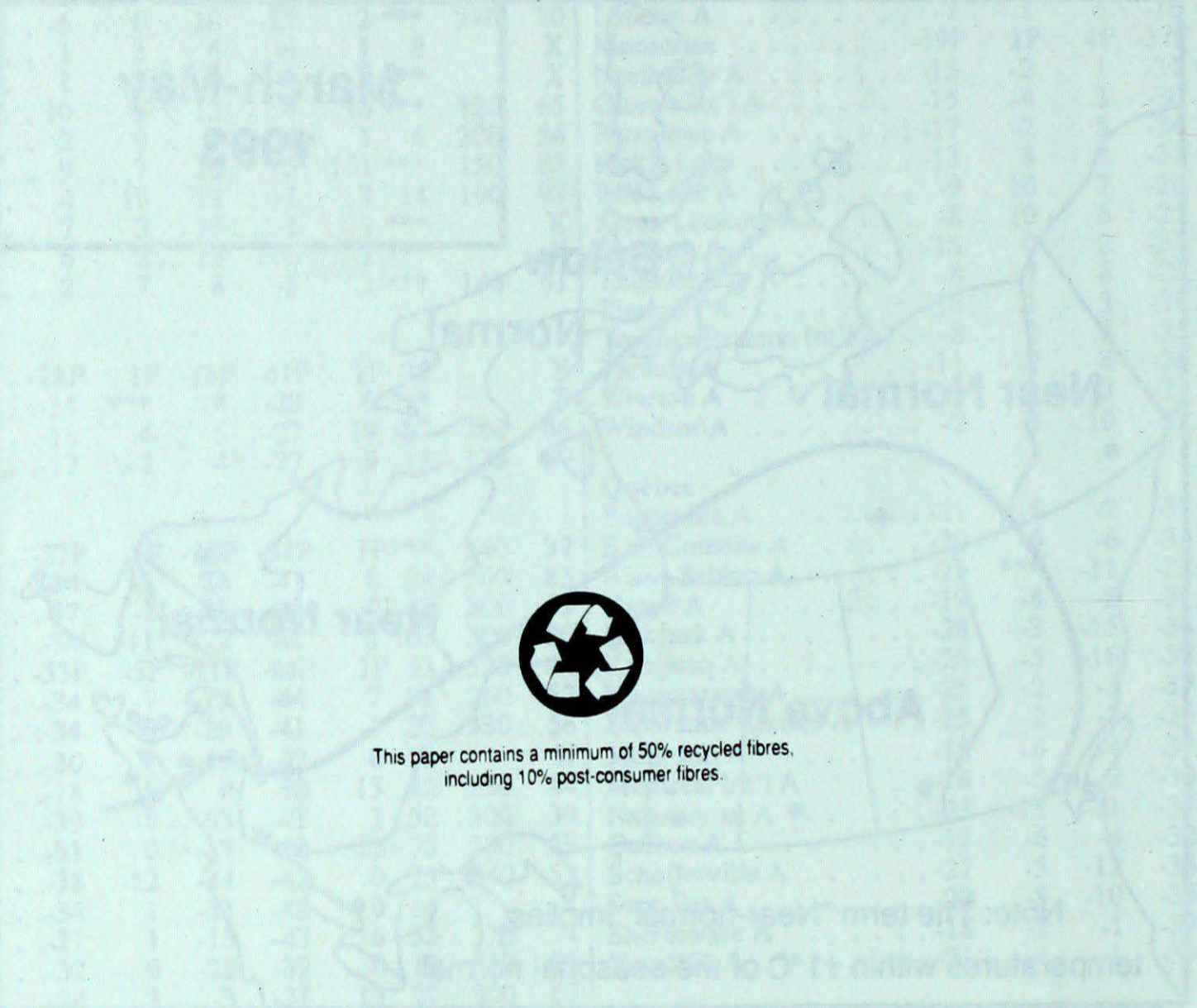


*Normal temperatures for March to May, °C*

	<i>March</i>	<i>April</i>	<i>May</i>	<i>Average</i>
Whitehorse	-8.2	0.3	6.7	-0.4
Yellowknife	-18.9	-6.9	5.0	-6.9
Iqaluit	-22.7	-14.3	-3.2	-13.4
Vancouver	5.8	8.8	12.2	8.9
Victoria	5.7	8.4	11.6	8.6
Calgary	-4.0	3.3	9.4	2.9
Edmonton	-6.7	3.2	10.1	2.2
Regina	-7.8	3.3	11.1	2.2
Winnipeg	-8.2	3.4	11.3	2.2
Toronto	-1.0	6.2	12.3	5.8
Ottawa	-3.0	5.6	12.8	5.1
Montréal	-2.5	5.7	13.0	5.4
Québec	-4.5	3.3	10.8	3.2
Fredericton	-1.6	3.3	9.2	3.6
Halifax	-2.4	4.1	10.8	4.2
Charlottetown	-3.1	2.3	8.5	2.6
Goose Bay	-8.6	-1.7	5.0	-1.8
St. John's	-2.3	1.2	5.4	1.4

# SEASONAL TEMPERATURE FORECAST

March-April 1993



STATION

Atlantic Canada	10	15	20	25
Quebec	10	15	20	25
Ontario	10	15	20	25
Manitoba	10	15	20	25
Saskatchewan	10	15	20	25
Alberta	10	15	20	25
British Columbia	10	15	20	25
Northwest Territories	10	15	20	25
Yukon Territory	10	15	20	25
Northwest Territories	10	15	20	25
Yukon Territory	10	15	20	25

STATION

Atlantic Canada	10	15	20	25
Quebec	10	15	20	25
Ontario	10	15	20	25
Manitoba	10	15	20	25
Saskatchewan	10	15	20	25
Alberta	10	15	20	25
British Columbia	10	15	20	25
Northwest Territories	10	15	20	25
Yukon Territory	10	15	20	25
Northwest Territories	10	15	20	25
Yukon Territory	10	15	20	25

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