

Climatic Perspectives

A WEEKLY REVIEW OF CANADIAN CLIMATE

MONTHLY SUPPLEMENT INCLUDED

Canadian Climate Centre

JULY 20, 1984

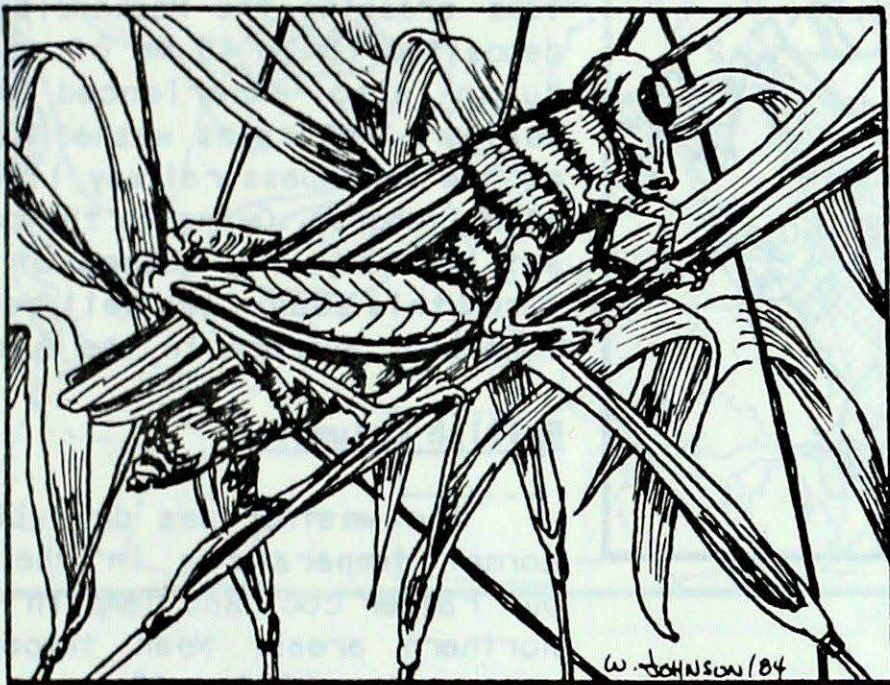
(Aussi disponible en français)

VOL. 6 NO. 28

FOR THE PERIOD JULY 10 TO 16, 1984

● Drought and grasshoppers plague

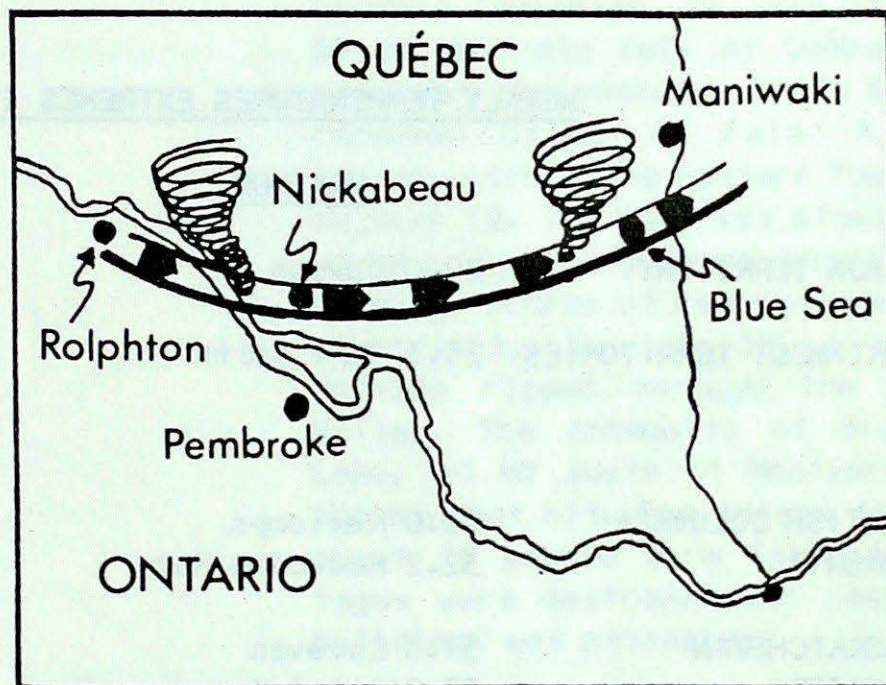
Southern Alberta farms



The lack of summer rains have added to the long term dryness in southern Alberta. Accumulated precipitation since April 1984 has been far below normal and crops are suffering from stunted growth in the Pincher Creek and Cardston areas. Crop growth is poor throughout most of southern Alberta and southern Saskatchewan. Grasshoppers and cutworms have worsened the problem, they continue to threaten crops.

● Devastating tornado strikes the Ottawa Valley

On July 15, tornadoes ripped through communities from Pembroke to Blue Sea Lake. Heavy rains and destructive winds in excess of 100 km/h flattened cottages, damaged buildings and left many localities without electricity. The community of Blue Sea Lake about 100 km north of Ottawa was the hardest hit where a woman died. At least 38 people were injured from flying debris.



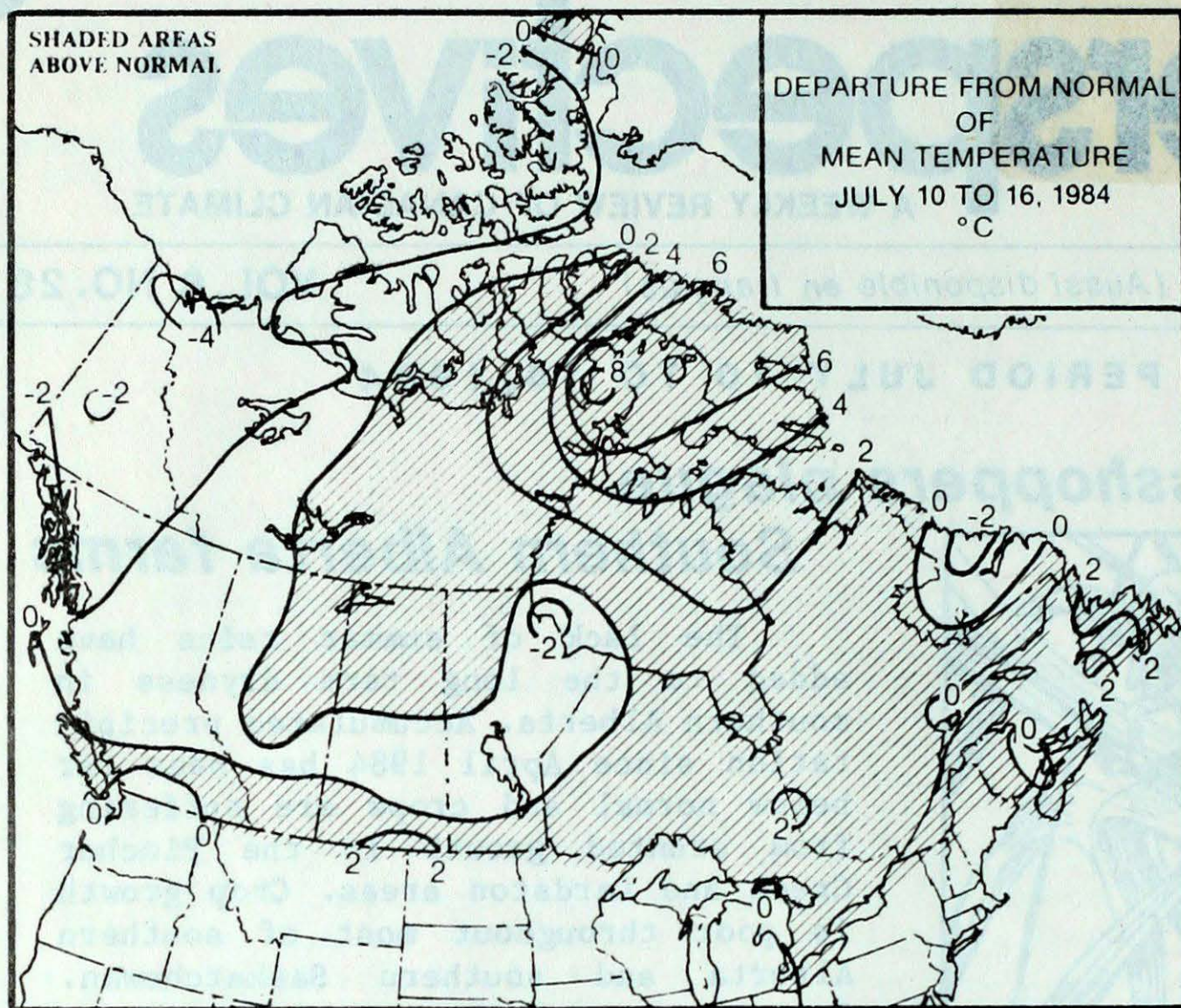
INSIDE THE JUNE MONTHLY SUPPLEMENT...

- Asthma sufferers and weather
- The climatic water cycle

ISSN 0225-5707
UDC: 551.506.1(71)

NOTE: The data shown in this publication are based on unverified reports from approximately 225 Canadian synoptic stations.

Canada



ACROSS THE COUNTRY...

Yukon and Northwest Territories

The unusual warmth of the last two weeks continued over the eastern Arctic. Mean temperatures were 4 to 8 degrees above normal, and at Frobisher Bay the readings climbed to 24°. In contrast, the western half of the North was cool and damp. Despite the mid-twenties daytime readings, average temperatures were about 2° below normal. Weather systems crossing the Mackenzie Valley deposited 15 to 45 mm of rain. The Yukon also experienced showery weather. The rains washed out part of the Whitepass railway line south of Whitehorse. Owing to the cool and wet weather, the number of forest fires this season was well below the long-term average in the Yukon.

British Columbia

The weather was dry with near normal temperatures in the South, but rather cool and damp in the far northern areas. Mean temperatures averaged within 1° of normal throughout most of South. The second cut of the hay crop was well under way in Kamloops and cherry picking progressed on schedule in the Okanagan Valley. Owing to the dry and warm weather, the forest fire hazard climbed into the moderate to high range in southern British Columbia.

Prairies

Pleasant summery weather covered Saskatchewan and Manitoba but the weather was cool and unsettled in Alberta. On July 12, daytime readings rose to near 35° in southern Saskatchewan. Severe thunderstorms lashed southern Manitoba, north of Winnipeg large size hail damaged some crops. Alberta's weather was cool and at least 2 minimum temperature records were tied during the week. South western Prairies continued to endure very dry conditions. Seasonal accumulations have been less than 50 per cent of normal in southern Alberta and southwestern Saskatchewan.

WEEKLY TEMPERATURES EXTREMES (°C)

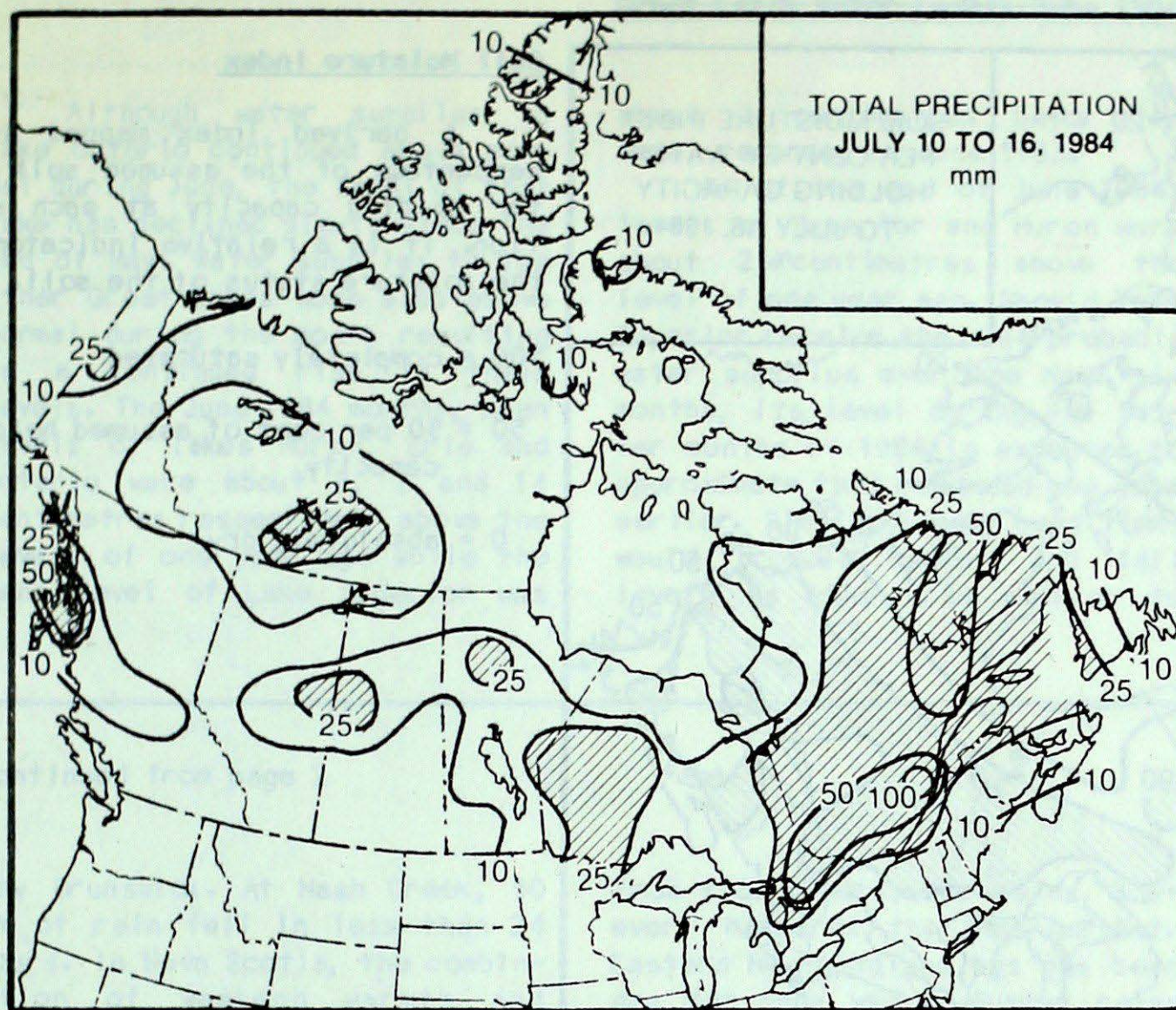
	<u>MAXIMUM</u>	<u>MINIMUM</u>
YUKON TERRITORY	22.0 Dawson	-0.5 Komakuk Beach
NORTHWEST TERRITORIES	25.3 Fort Smith	-1.5 Lady Franklin Point Resolute Sachs Harbour
BRITISH COLUMBIA	36.0 Kamloops	0.8 Dease Lake
ALBERTA	32.2 Medicine Hat	2.3 Banff
SASKATCHEWAN	37.3 Estevan	6.0 Broadview
MANITOBA	33.0 Pilot Mound	3.0 Churchill
ONTARIO	33.0 Windsor	6.1 Nagagami
QUEBEC	29.0 Montréal/Dorval	3.3 Kuujuaq
NEW BRUNSWICK	28.6 Chatham Fredericton	9.2 Saint John
NOVA SCOTIA	31.0 Shelburne	5.7 Shelburne
PRINCE EDWARD ISLAND	28.3 Summerside	11.8 Charlottetown
NEWFOUNDLAND	28.8 Deer Lake	0.5 Badger

ACROSS THE NATION

Warmest mean temperature	24.4	Windsor, ONT
Coollest mean temperature	1.6	Mould Bay, NWT

Ontario

Warm temperatures highlighted



Ontario's weather. After many weeks of unseasonably cold weather, daytime temperatures climbed into the mid-twenties. On several occasions, the mercury rose to 31° at Windsor. Precipitation was quite variable. While the dry weather continued at some southern locations, heavy rains in the 50 to 70 mm range fell farther north; for example, 74 mm at Atikokan. Owing to the dry weather, crop growth was stunted in southwestern Ontario, especially in areas of heavy soils where no rain has fallen for the past several weeks. On July 15, tornadoes struck eastern Ontario. The twisters carved paths of destruction from Rolphton to Deep River along the Ottawa Valley. The brunt of the violent storm was felt on the Québec side of the Ottawa River at Blue Sea Lake where at least 1 person died.

Québec

The temperatures were near normal across Québec but showers and otherwise general rain fell on almost everyday in the southern areas. The wet weather saturated fields and delayed the hay harvest in the Eastern Townships. On July 15, over 55 mm of rain fell at Québec City and over the weekend, Trois Rivières received 83 mm of rain. A small tornado struck the Eastern Townships on July 12. The roof was blown out a house and utility lines were broken, leaving scores of residents without electricity. On July 15, a violent tornado ripped through the Ottawa Valley. The community of Blue Sea Lake, 20 km south of Maniwaki, was the hardest hit. One person died and about 38 people were injured. Cottages were destroyed and damage to buildings was extensive.

Atlantic Provinces

A warm and humid air mass covering the Provinces produced record-high temperatures at several locations. The temperatures were particularly warm in Newfoundland, registering 2 to 4 degrees above normal. The Labrador, however, was cool; at Hopedale, 4° on July 13 was the lowest daytime temperature on record. Showers and thunderstorms deposited 20 to 50 mm of rain on the already saturated fields of ...continued on page 5

HEAVIEST WEEKLY PRECIPITATION (mm)

YUKON	34.5	Dawson
NORTHWEST TERRITORIES	53.4	Hay River
BRITISH COLUMBIA	67.9	Prince Rupert
ALBERTA	29.8	Red Deer
SASKATCHEWAN	35.0	Meadow Lake
MANITOBA	27.0	Thompson
ONTARIO	77.4	Atikokan
QUEBEC	102.6	Québec
NEW BRUNSWICK	64.8	Charlo
NOVA SCOTIA	31.8	Sydney
PRINCE EDWARD ISLAND	26.2	Summerside
NEWFOUNDLAND	65.0	Hopedale

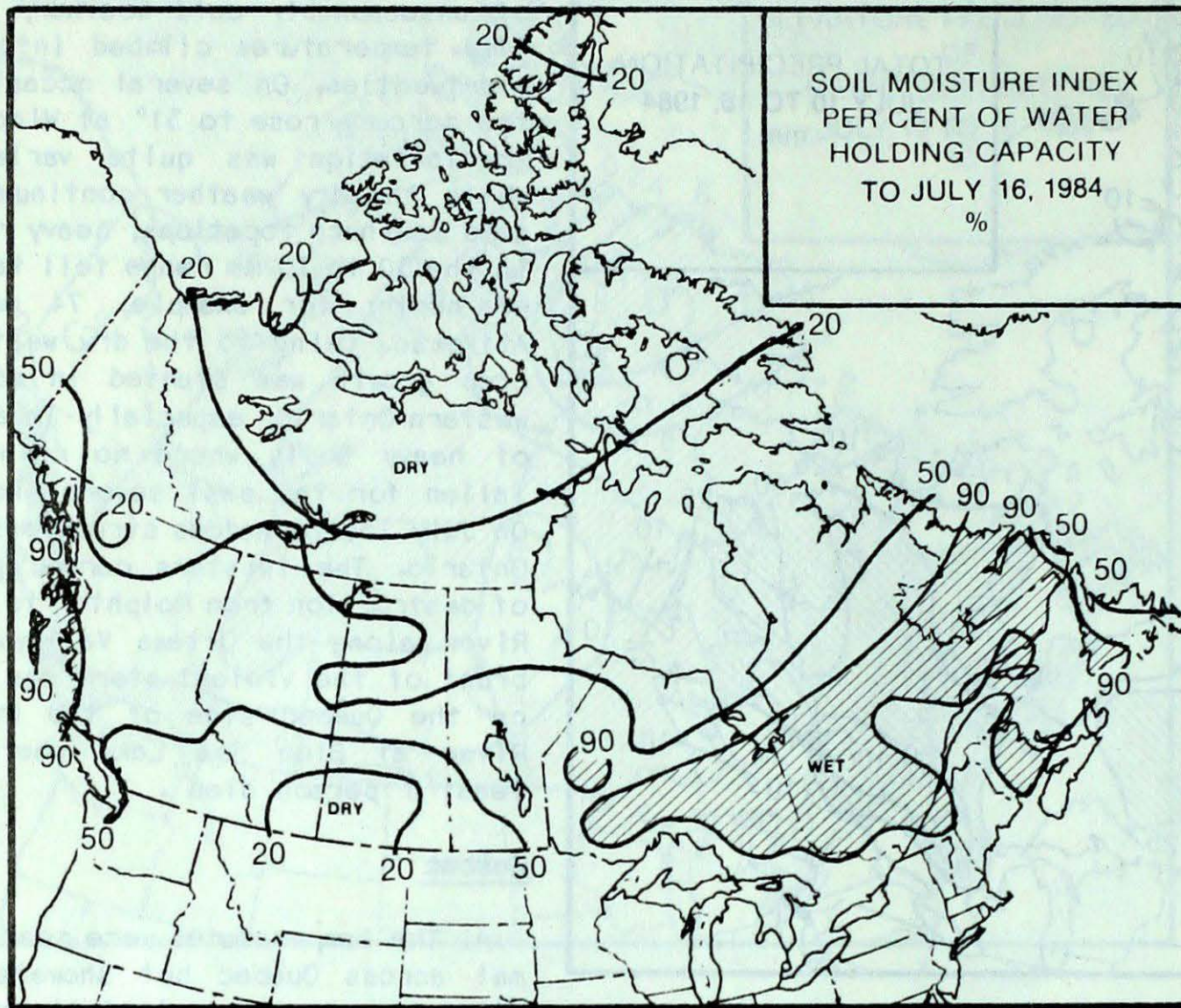
Southern Alberta Drought

Once again, the southern portion of Alberta has become very dry. Precipitation records at selected stations indicate that the amount of rainfall in the southern and south central regions has been far below normal. In the Pincher Creek, Claresholm and Cardston area, crops have started to show moisture stress. In general crop

growth is poor. Spring seeded crops have tillered and barely 30 per cent of the grain crops are at the heading stage. A good general rain is needed. In addition, Grasshoppers and cutworms continue to threaten crops in the South. Some fields have been sprayed several times already this summer.

- Alberta Agriculture

SOIL MOISTURE

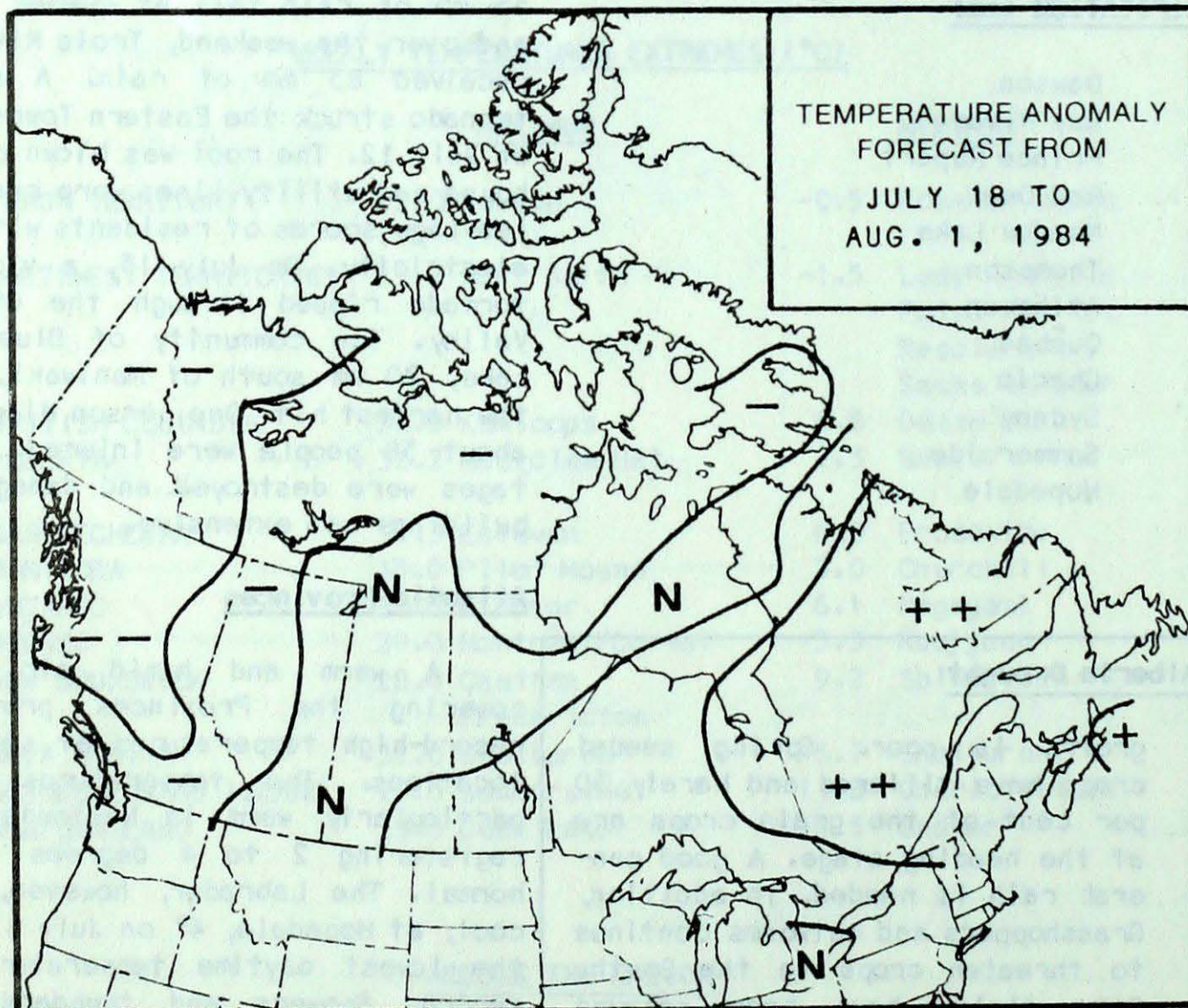


Soil Moisture Index

A derived index mapped as a percentage of the assumed soil water holding capacity at each station. It is a relative indicator of the moisture status of the soil.

- 100 = completely saturated
- 50 = 50 per cent of assumed holding capacity
- 0 = absolutely dry

TEMPERATURE ANOMALY FORECAST



Temperature Anomaly Forecast

The temperature anomaly forecast, for each of the 70 Canadian stations, is prepared by searching historical weather maps to find cases similar to the present one. The principle used is that a prediction for the next 15 days may be based on what is known to have actually happened during the 15-day anomaly periods. After the five best sets are selected, the surface temperature anomalies are calculated. This results in five separate forecasts, which are averaged to provide the consensus forecast depicted.

- ++ much above normal
- + above normal
- N normal
- below normal
- much below normal

Great Lakes Water Levels-June 1984

Although water supplies to Lake Ontario continued above normal during June, the level of that lake has declined slowly since the end of May. Water supplies to the other Great Lakes were also above normal during the month resulting in a continued rise in their levels. The June 1984 monthly mean levels of lakes Huron, Erie and Ontario were about 2, 2 and 14 centimetres respectively above the levels of one year ago while the mean level of Lake Superior was

about 2 centimetres below the level recorded in June 1983.

As of the end of June 1984, levels of Superior and Huron were about 2 centimetres above the level of one year ago. Should Lake Superior receive the most probable water supplies over the next six months, its level during the latter months of 1984 is expected to approximate that recorded one year earlier. Similar supply conditions would produce summer and fall levels on Lake Erie similar to

those of the previous year with levels on Lake Huron remaining slightly higher than those of last year.

Assuming the most probable water supplies over the next six months, the level of Lake Ontario is expected to remain above normal and above the levels of last year until November 1984 when the level should be slightly below that of the previous year.

- Inland Waters

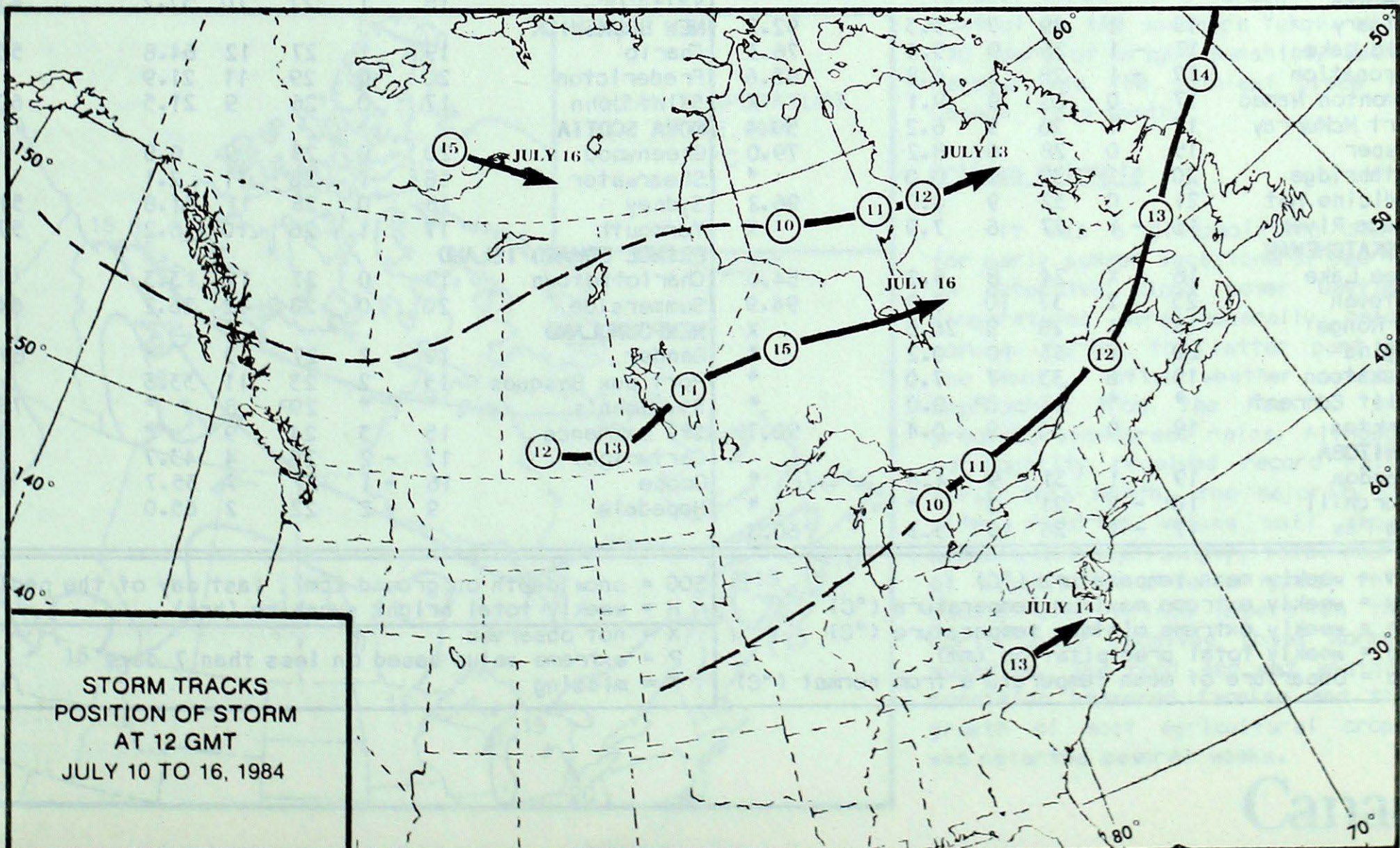
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New Brunswick. At Nash Creek, 50 mm of rain fell in less than 24 hours. In Nova Scotia, the combination of weekend warmth and earlier rain proved beneficial to the corn crop previously suffering

from slow growth; the rains, however, hampered the hay harvest. Eastern Newfoundland has now been dry for many weeks. Summer rainfalls have been sparse and vegetable crops have experienced slow

growth in those areas. If adequate rain doesn't fall within the next week or so, some crops may be permanently damaged.

STORM TRACKS



TEMPERATURE, PRECIPITATION AND BRIGHT SUNSHINE DATA FOR THE WEEK ENDING 0600 GMT JULY 16, 1984

STATION	TEMP				PRECIP		SUN	STATION	TEMP				PRECIP		SUN
	Av	Dp	Mx	Mn	Tp	SOG	H		Av	Dp	Mx	Mn	Tp	SOG	H
YUKON TERRITORY								Thompson	15	0	25	6	27.0		*
Dawson	13	-3	22	1	34.5		X	Winnipeg	20	0	30	13	*		*
Mayo A	14	-2	20	5	8.1		X	ONTARIO							
Watson Lake	13	-2	21	4	14.2		55.7	Big Trout Lake	15	-1	24	10	35.1		X
Whitehorse	11	-3	19	2	7.6		*	Earlton	20	2	28	13	*		X
NORTHWEST TERRITORIES								Kapuskasing	18	1	28	9	23.4		*
Fort Smith	17	1	25	8	23.5		*	Kenora	21	2	29	13	23.5		X
Inuvik	10	-4	22	3	6.4		*	London	22	2	30	15	11.4		*
Norman Wells	14	-2	22	8	23.2		21.8	Moosonee	16	1	27	8	56.2		49.7
Yellowknife	17	1	24	11	21.4		67.4	Muskoka	20	2	28	12	*		X
Baker Lake	14	3	24	6	7.1		87.1	North Bay	19	1	25	15	51.8		46.3
Cape Dyer	13	8	19	5	0.0		X	Ottawa	22	1	30	13	16.8		*
Clyde	9	5	18	2	0.5	0.0	98.4	Pickle Lake	18	1	27	9	26.6		X
Frobisher Bay	12	4	24	4	0.0		*	Red Lake	18	-1	28	9	42.0		63.4
Alert	4	0	11	0	11.2		*	Sudbury	20	1	27	14	18.6		53.6
Eureka	3	-2	5	2	*		*	Thunder Bay	18	1	30	10	23.1		58.8
Hall Beach	12	6	21	4	3.2		X	Timmins	18	1	30	7	18.8		X
Resolute	2	-3	9	-2	8.6		*	Toronto	22	1	31	15	3.9		X
Cambridge Bay	8	0	16	1	9.0		*	Trenton	21	1	30	12	9.8		X
Mould Bay	2	-2	6	-1	*	0.0	*	Warton	19	0	29	13	67.9		50.1
Sachs Harbour	4	-3	15	-2	1.6	0.0	27.8	Windsor	24	2	33	17	2.8		X
BRITISH COLUMBIA								QUEBEC							
Cape St. James	13	0	17	10	6.7		31.5	Bagotville	19	0	27	11	36.3		X
Cranbrook	20	2	32	9	0.0		95.0	Blanc-Sablon	13	2	20	6	28.6		*
Fort Nelson	16	-1	23	8	7.4		69.0	Inukjuak	12	4	23	6	20.6		44.3
Fort St. John	16	0	24	8	3.9		X	Kuujuuaq	12	1	23	3	*		51.9
Kamloops	22	0	36	12	1.3		88.3	Kuujuarapik	12	1	24	5	5.1		31.7
Penticton	20	0	34	9	0.0		83.8	Maniwaki	19	1	27	11	74.4		46.4
Port Hardy	14	0	20	7	3.6		45.1	Mont-Joli	18	0	26	9	34.0		59.8
Prince George	15	-1	25	5	6.8		78.4	Montréal	22	1	29	14	38.6		58.4
Prince Rupert	12	0	19	7	67.9		*	Natashquan	15	1	23	7	21.6		47.1
Revelstoke	20	2	31	9	0.8		116.3	Nitchequon	16	2	23	9	30.2		*
Smithers	14	-1	24	4	2.1		54.4	Québec	20	1	27	13	102.6		*
Vancouver	17	0	25	10	0.0		85.0	Schefferville	14	0	23	7	34.9		33.1
Victoria	17	0	27	8	0.0		93.2	Sept-Îles	15	0	22	12	49.4		*
Williams Lake	15	0	28	6	15.3		*	Sherbrooke	20	2	27	10	46.2		*
ALBERTA								Val-d'Or	18	1	27	10	37.2		47.6
Calgary	18	1	29	7	5.3		92.2	NEW BRUNSWICK							
Cold Lake	17	-1	26	9	15.4		76.3	Charlo	19	1	27	12	64.8		53.3
Coronation	17	-1	28	6	6.8		86.6	Fredericton	20	0	29	11	21.9		*
Edmonton Namao	17	0	26	9	9.1		X	Saint John	17	0	26	9	21.5		60.1
Fort McMurray	17	1	26	9	6.2		59.4	NOVA SCOTIA							
Jasper	15	0	28	6	8.2		79.0	Greenwood	20	0	29	9	6.8		X
Lethbridge	20	1	32	9	0.0		*	Shearwater	18	1	28	11	2.1		*
Medicine Hat	21	0	32	9	0.0		96.2	Sydney	18	0	28	11	31.8		51.9
Peace River	16	-1	27	6	7.9		X	Yarmouth	17	1	26	10	6.2		57.4
SASKATCHEWAN								PRINCE EDWARD ISLAND							
Oree Lake	16	X	24	8	5.2		54.0	Charlottetown	19	0	27	12	13.3		*
Estevan	23	2	37	10	0.2		94.9	Summerside	20	0	28	12	26.2		64.3
La Ronge	18	1	26	9	26.5		X	NEWFOUNDLAND							
Regina	20	1	33	10	0.2		*	Gander	19	2	27	9	*		67.8
Saskatoon	19	0	33	7	7.0		*	Port aux Basques	15	2	23	11	33.6		*
Swift Current	*	*	32	8P	0.0		*	St. John's	*	*	29P	8	*		76.3
Yorkton	19	0	30	9	0.4		90.7	St. Lawrence	15	3	24	9	*		X
MANITOBA								Cartwright	12	-2	25	4	43.7		X
Brandon	19	1	31	9	4.8		*	Goose	16	-1	27	7	35.7		*
Churchill	10	-2	21	3	*		*	Hopedale	9	-2	22	2	65.0		X
The Pas	17	-1	26	10	5.3		60.3								

Av = weekly mean temperature (°C)
Mx = weekly extreme maximum temperature (°C)
Mn = weekly extreme minimum temperature (°C)
Tp = weekly total precipitation (mm)
Dp = Departure of mean temperature from normal (°C)

SOG = snow depth on ground (cm), last day of the period
H = weekly total bright sunshine (hrs)
X = not observed
P = extreme value based on less than 7 days
* = missing