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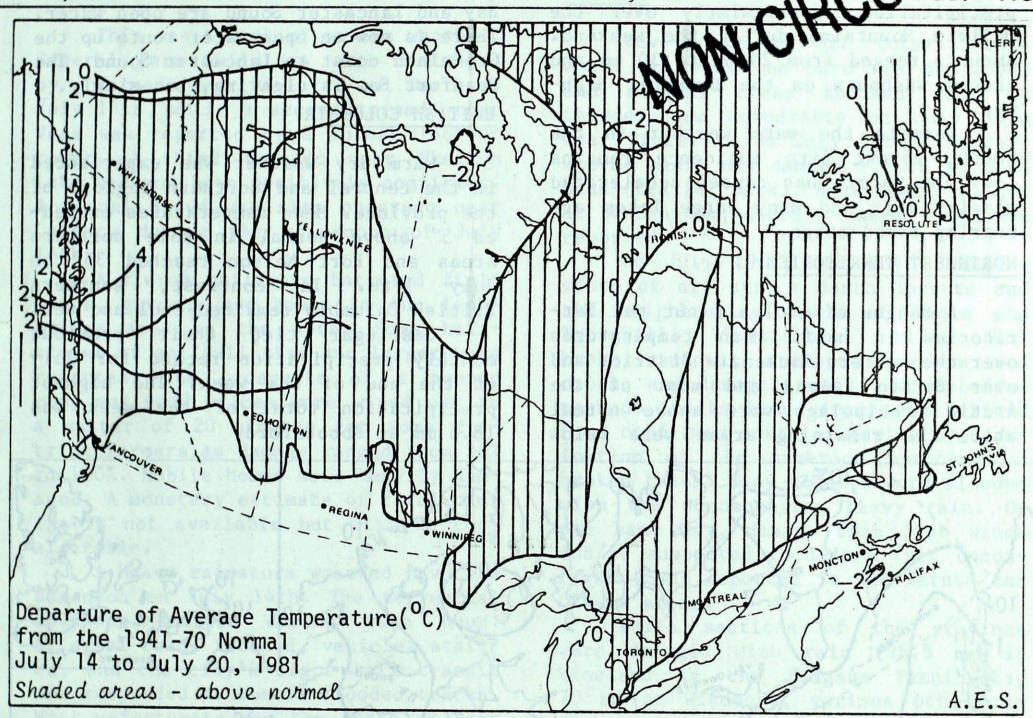
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A WEEKLY REVIEW OF CANADIAN CLIMATE

THE CANADIAN CLIMATE CENTRE, ATMOSPHERIC ENVIRONMENT SERVICE, 4905 DUFFERIN ST., DOWNSVIEW, ONTARIO M3H 5T4

JULY 24, 1981

(Aussi disponible en français)



# WEATHER HIGHLIGHTS FOR THE PERIOD - JULY 14 - 20, 1981

Severe weather strikes Alberta and Ontario

A fierce hailstorm battered field crops, gardens and homes in the Lethbridge area on July 13th. Some district farmers reported from 20% to 100% crop damage and mobile homes were heavily damaged.

Four workmen died when they were caught in an underground tunnel during a heavy rainstorm in Edmonton on the 14th. Precipitation amounts of from 45 mm to 85 mm were measured, much of which fell during a 2 hour period.

A heavy thunderstorm struck north of Toronto on July 19th. Tennis-ball sized hail and high winds caused extensive damage. Two embedded tracks have since been defined by examination of numerous uprooted or broken trees.

Temperatures across the country varied from 35° at Fort Nelson, B.C. to -3° at Sachs Harbour, N.W.T. The highest precipitation total, 86 mm, was recorded at Red Deer, Alta.

NOTE: The data shown in this publication are based on unverified reports from approximately 225 Canadian and 115 northern United States Synoptic stations.

YUKON

This week was the warmest of the year over the southern Yukon. Tuchitua (north of Watson Lake) recorded a high of 31° on July 17th. Northern regions remained cool and Komakuk Beach reached the freezing point on July 15th.

Disturbances moving through the northern Yukon resulted in considerable precipitation, particularly over the Ogilvie Mountains during the weekend. Amounts ranged from 20 mm to 30 mm and caused washouts on the Dempster Highway.

Despite the warm weather in the south, forest fire incidence remains low. The warmth has caused accelerated glacier melt and many large lakes are nearing flood stage.

#### NORTHWEST TERRITORIES

A tongue of cool air cut the Territories in half. Mean temperatures over the western Mackenzie District and over Baffin Island and most of the Arctic Archipelago were above normal while the remaining areas were below

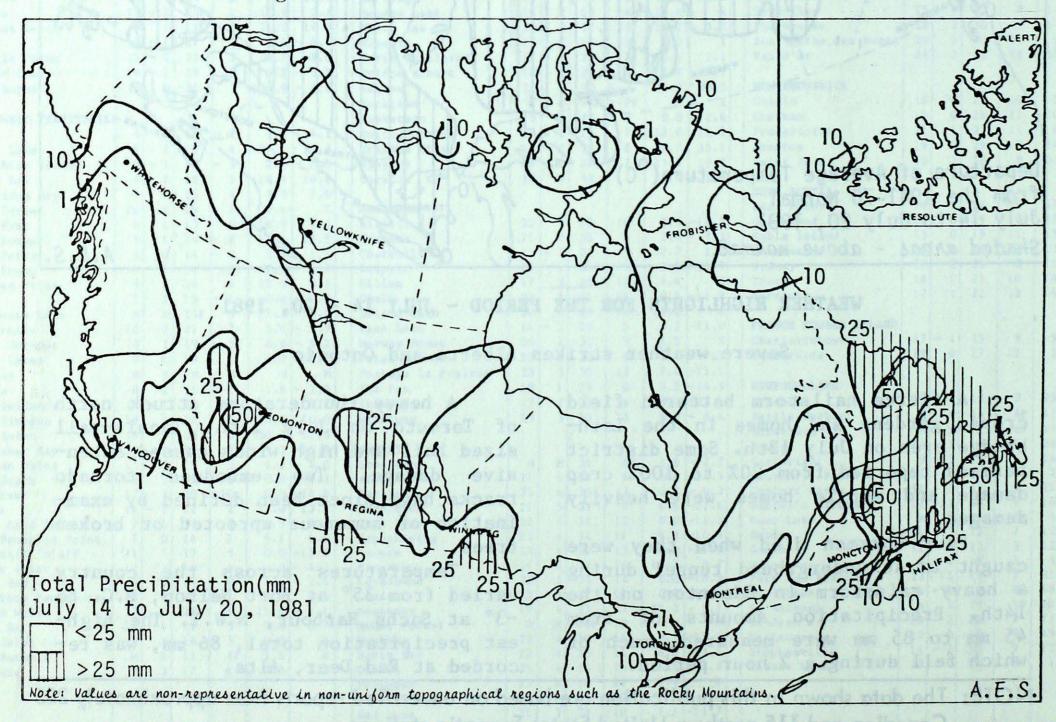
normal. The mercury reached 33° at Fort Simpson on July 16th. It fell below freezing at only 8 stations, the lowest being -3° at Sachs Harbour.

Most precipitation was confined to the Mackenzie Valley and southern Baffin Island. Fort Reliance recorded 23.8 mm.

Ice is disintegrating rapidly in Hudson Bay and Hudson Strait. Ungava Bay and Lancaster Sound are open water. There is now an open water route up the Greenland coast to Lancaster Sound. The Beaufort Sea is clearing, but slowly. BRITISH COLUMBIA

Warm dry weather was experienced in the central and northern regions of the province. Mean temperatures exceeded 5° above normal in some northern areas and Fort Nelson reached 35° on July 17th. In contrast, southern British Columbia remained cool and wet.

Castlegar tied their previous monthly precipitation record for July at the end of the week. The highest precipitation total of the week was 18.6 mm at Abbotsford.



In contrast to the hay producing areas of the south, those in central British Columbia were doing very well and most hay was up by week's end. Forest fires have developed in north-western areas, although only one was reported out of control. The fire hazard in the south is low to very low.

#### ALBERTA

This was a week of severe weather. Several farm buildings were destroyed by a tornado near Rivierre qui Barre on July 14th, while a second tornado near Vega was reported by a forest lookout tower. A third tornado near Skelton Lake had not been positively confirmed. A funnel cloud was also observed near Calgary during the afternoon of July 16th.

A fierce hailstorm battered field crops, gardens and homes in the Lethbridge area on the 13th. Some hailstones of golfball size and larger were reported. The prospects of a bumper crop and good prices were wiped out in a matter of 20 minutes for some district farmers as damage ranged from 20% to 100%. Mobile homes were heavily damaged. A monetary estimate of total damage is not available but will be considerable.

A heavy rainstorm wreaked havoc in Edmonton on July 14th. The torrential downpour started during rush hour. Arterial roads flooded, vehicles stalled, and the city's light rail transit was suspended as runoff flooded tracks. Most unfortunate was the death of four workmen caught in an underground tunnel as the pressure of floodwater broke through an earth-retaining wall. Amounts of 45 mm to 85 mm were recorded, much of which fell in a 2 hour period.

As if to compensate for the vagaries of nature, annual Klondike Days activities during the past weekend were ideally hosted under bright sunny skies and very warm temperatures.

## SASKATCHEWAN AND MANITOBA

Unsettled, showery conditions dominated this week's weather. Mean temperatures were within 1.5° of normal in most areas. Kindersley reached 32° on the 19th and Norway House approached the freezing point with 2° on the 20th.

Severe weather accompanied by golfball sized hail struck Swift Current on the 14th and a funnel cloud was sighted at Regina on the same day. Many areas received substantial amounts of precipitation with Wynyard recording the greatest amount, 57 mm.

### ONTARIO

Severe storms hit Ontario this week. At least one barn was destroyed and several trees knocked down by thunderstorm downdrafts on July 14th near Kingston. On July 18th, thunderstorms again did damage - both at Bond Head (trailer park), near Bradford, and at Burlington, where a funnel cloud was reported.

On July 19th, the most damaging storm of all struck north Toronto and the neighbouring towns of Maple and Thornhill. "Tennis-ball" sized hail broke windows, stripped gardens and crops, and damaged roofs. Two embedded tornado tracks have since been defined (one confirmed south of Maple) by examination of the numerous uprooted or broken trees. Many streets were flooded with the accompanying heavy rain. On the same day, damage from high winds and/or suspected tornadoes (yet unconfirmed) was reported in the Sarnia and Ottawa areas.

While sections of the province were deluged with rain (98.5 mm at Vineland in the Niagara Penninsula, 70 mm at Windsor), various other regions remained unseasonally dry. Mount Forest has received only 3.6 mm of a precipitation this July and has not received a significant fall since June 22nd.

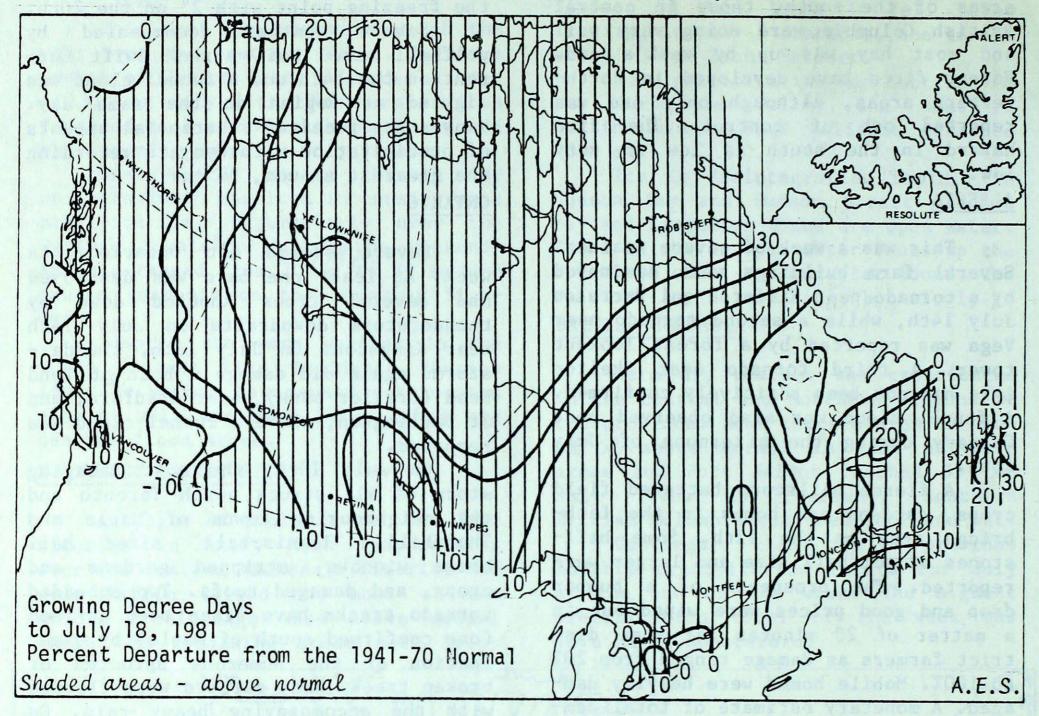
# QUÉBEC

Sunny skies and near normal mean temperatures were enjoyed by all regions this week. The mercury reached the 30° mark at Bagotville and at Matagami on the 19th, and fell to 1° at Inoucdjouac on the same day.

The week ended the same way it started; with showers and thunder-showers. Precipitation totaled 77.2 mm at Gaspé, 49.8 mm of which fell on the 14th.

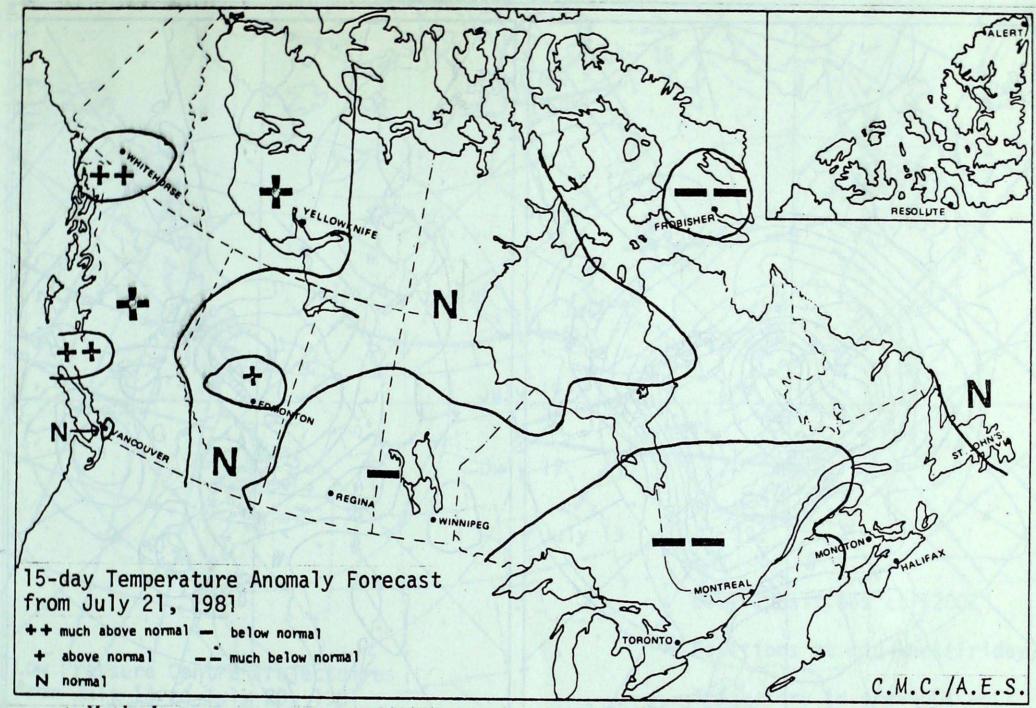
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# GROWING DEGREE-DAY SUMMARY TO JULY 18, 1981



CITY	MONTHLY CUMULATIVE TOTAL	MONTHLY DIFF. FROM 1941-70 NORMAL	SEASONAL TOTAL	SEASONAL DIFF. FROM 1941-70 NORMAL	SEASONAL PERCENT OF NORMAL		
Whitehorse	158.0	-4.0	454.5	7.5	102		
Penticton	237.5	-24.5	923.5	-95.5	91		
Vancouver	201.5	-15.5	946.5	31.5	103		
Edmonton	231.5	28.5	830.5	176.5	127		
Calgary	181.0	-21.0	625.0	24.0	104		
Regina	288.0	43.0	893.0	142.0	119		
Saskatoon	262.0	19.0	858.5	108.5	114		
Winnipeg	304.5	45.5	865.5	62.5	108		
Thunder Bay	254.0	36.0	655.5	51.5	109		
Windsor	345.5	39.5	1256.0	104.0	109		
Toronto	310.5	34.5	910.0	-53.0	94		
Ottawa	318.0	40.0	980.0	33.0	103		
Montreal	311.5	24.5	980.5	11.5	101		
Quebec	275.5	26.5	809.5	34.5	104		
Fredericton	282.5	36.5	849.0	82.0	111		
Halifax	237.0	9.0	665.5	23.5	104		
Charlottetown	240.5	1.5	725.5	116.5	119		
St John's	165.0	-14.0	488.0	116.0	131		

## 15 DAY TEMPERATURE ANOMALY FORECAST



## Forecast Method

Analogue technique based on point prediction at 70 Canadian stations.

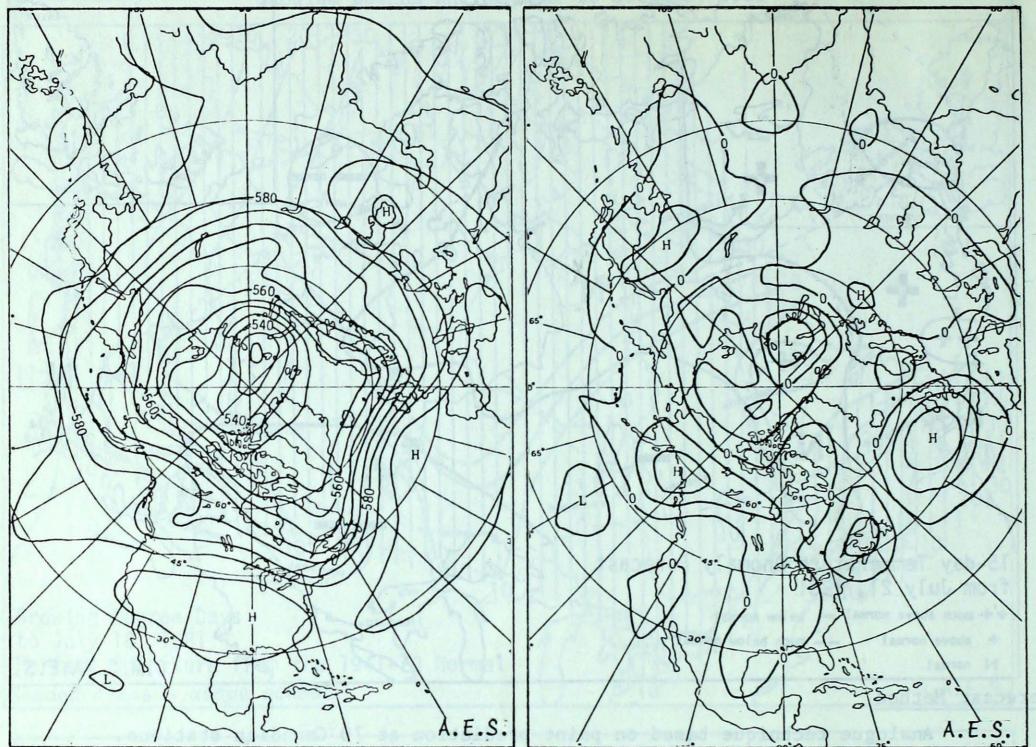
## Temperature Scale

Each temperature class is designed to contain 20% of the historically observed 15 day means pertinent to specific location and time of year:

Station	Current Te	emperature Anomaly Forecast
Whitehorse	Much Above Normal	More than 1.4° above Normal
Victoria	Above Normal	From 0.3° to 1.0° above Normal
Vancouver	Near Normal	Within 0.3° of Normal
Edmonton	Above Normal	From 0.4° to 1.4° above Normal
Regina	Below Normal	From 0.4° to 1.5° below Normal
Winnipeg	Below Normal	From 0.5° to 1.5° below Normal
Thunder Bay	Much Below Normal	More than 1.3° below Normal
Toronto	Much Below Normal	More than 1.5° below Normal
Ottawa	Much Below Normal	More than 1.4° below Normal
Montreal	Much Below Normal	More than 1.3° below Normal
Quebec	Much Below Normal	More than 1.3° below Normal
Fredericton	Below Normal	From 0.4° to 1.3° below Normal
Halifax	Below Normal	From 0.3° to 1.0° below Normal
Charlottetown	Below Normal	From 0.3° to 1.1° below Normal
St. John's	Near Normal	Within 0.5° of Normal
Goose Bay	Below Normal	From 0.4° to 1.5° below Normal
Frobisher Bay	Much Below Normal	More than 1.1° below Normal
Inuvik	Above Normal	From 0.6° to 2.0° above Normal

Note: Anomaly denotes departure from the 1949-73 mean.

### Atmospheric Circulation



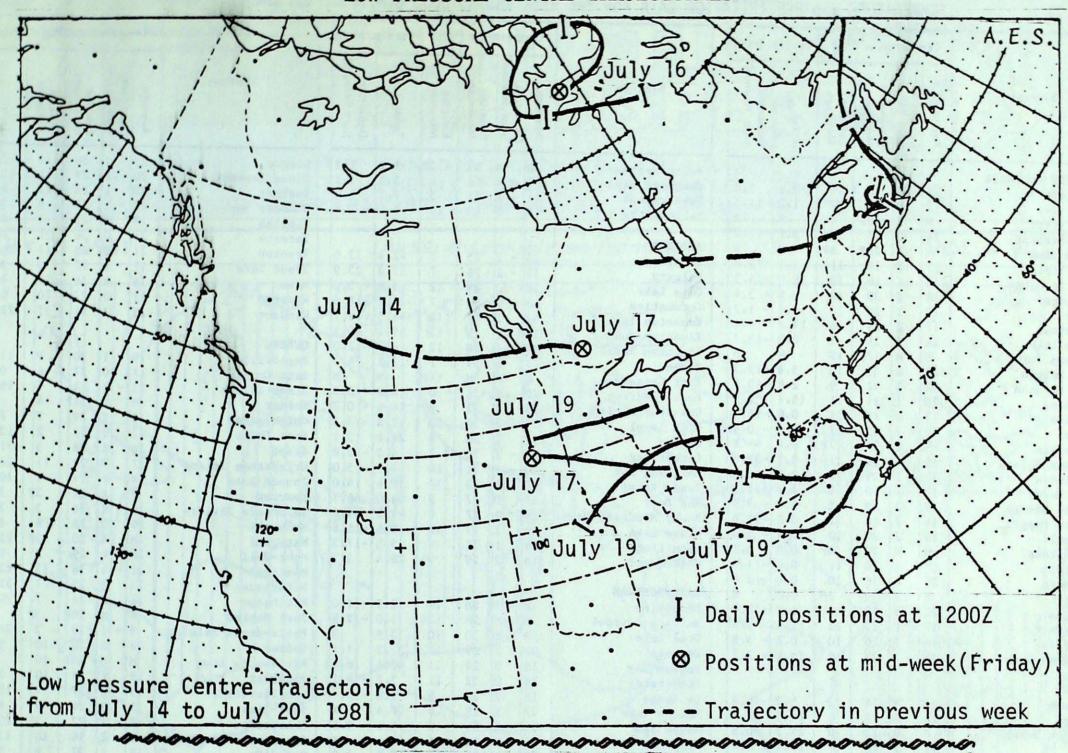
7-day Mean 50 kPa Height Map(in dam) July 13 to July 19, 1981

7-day Mean 50 kPa Height Anomaly (in 5 dam intervals)July 13 to July 19, 1981

The Arctic tropospheric current intensified this week at the expense of the southern current. A major North American ridge on the southern current weakened somewhat but maintained its position and wavelength. A trough anchored over the Maritime Provinces intensified feeding on the fusion of the currents. In contrast, a trough to the west of the ridge, aligned with Vancouver Island, maintained its amplitude, but the circulation around it is very weak.

The northern current brought in cold air which confronted the warm moist air occupying southern Canada. This generated many showers and thunderstorms, some of which produced hail and tornados in the Prairies and Ontario.

A moist inflow of air from the Pacific produced above normal precipitation in the southern Yukon and southern British Columbia, while a small ridge provided warm and sunny weather to northern British Columbia.



(continued from page 3)

#### ATLANTIC PROVINCES

Mean temperatures over most of the Maritimes were close to 2° below normal while Newfoundland enjoyed near normal temperatures. Goose Bay saw the mercury reached 32° on the 20th and Churchill came within 3° of the freezing point on the 17th.

Most precipitation fell in the first two days of the week, but most

weekly totals were above normal. Burgeo recorded 51.8 mm.

Blight has affected some varieties of potatoes in New Brunswick and Prince Edward Island. An early infestation of army worms is the result of the cool and wet weather in Nova Scotia, but the blueberry crop looks good. The weather has been excellent for hay in Newfoundland and no diseases or insects have been reported yet.

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# TEMPERATURE AND PRECIPITATION DATA FOR THE WEEK ENDING 0600 G.M.T. JULY 21, 1981

	Temperature (°C) Precip. (r								Precip. (mm)			Temperature (°C)			(°C)	Precip. (mm)				
		Departure from Normal		Extreme		Departure from Normal	Station	Average	Departure from Normal	Extreme Maximum	Extreme Minimum	Total	Departure from Normal	Station	Average	Departure from Normal	Extreme	Extreme	Total	Departure from Normal
BRITISH COLUMBIA Abbotsford Alert Bay Blue River Bull Harbour Burns Lake Cape Scott Cape St James Castlegar Comox Cranbrook Dease Lake Estevan Point Fort Nelson Fort St John Kamloops Langara Lytton Mackenzie McInnes Island Penticton Port Hardy Prince George Prince Rupert Quesnel Revelstoke Sandspit Smithers Stewart Terrace Vancouver Victoria Williams Lake  YUKON Burwash Dawson Komakuk Beach Mayo Shingle Point Watson Lake Whitehorse  NORTHWEST TERRITORIE: Alert Baker Lake Broughton Island Byron Bay Cambridge Bay Cape Dorset Cape Dyer Cape Hooper Cape Parry Cape Young Clinton Point Clyde Contwoyto Lake Coppermine Coral Harbour Dewar Lakes Ennadai Eureka Fort Reliance Fort Simpson Fort Smith Frobisher Bay Gladman Point Uall Beach Hay River Inuvik Jenyk Ind Island Lady Franklin Point Longstaff Bluff Mckar Inlet Mouch Bay Normand Island Lady Franklin Point Longstaff Bluff Mckar Inlet Mouch Bay Normand Island Lady Franklin Point Longstaff Bluff Mckar Inlet Mouch Bay Pond Inlet Port Burwell Resolute	17 15 M 14 M 13 14 18 19 17 16 M 22 20 20 13 20 M 15 20 20 15 19 14 19 M 17 20 M 22 17 16 16 8 18 12 19 17 16 6 6 17 14 6 8 11 6 9 8 7 6 5 5 10 9 5 M 12 10 8 M 6 17 14 6 8 11 6 3 9 19 6 9 M 5 5	00 X 0 X 0 1 2 1 2 3 M 4 3 1 0 2 X 1 1 1 3 2 2 M 3 6 X 6 1 1 1 3 0 0 3 0 4 3 1 1 2 1 3 M 0 1 3 2 0 2 0 1 4 0 0 0 0 2 1 X X 1 1 1 3 M 0 1 3 2 0 2 0 1 4 0 0 0 0 2 1 X X 1	28 19 30P 17 28P 18 19 30 28 29 28 17P 35 32 31 15 33 32 19 29 30 24 32 30 33 23 26 26 30 27 22 28 26 30 27 12 22 14 17 15 17 16 18 17 23 23 15 17P 25 20 17 M 13 28 33 32 15 15 15 15 15 15 15 15 15 15 15 15 15	10 10 8 11 8P 11 10 10 12 8 5 10 10 9 11 11 11 7P 11 12 9 8 12 10 10P 11 10 9P 13 12 10 8 2 6 0 9 4 9 5 7 6 0 12 0 2 2P 1	M 3.1 M 1.1 0.0 0.6 6.1 17.0 0.0 M 5.8 2.8 15.1 0.0 2.2 0.4 0.2 4.8 1.2 6.7 0.0 11.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 12.4 0.2 14.4 5.2 24.5 25.2 11.3 7.3 2.0 0.0 7.3 4.2 18.7 8.2 8.2 11.8 10.7 17.9 11.2 1.4 12.7 5.6 5.2 2.6 4.5 5.2 1.3 7.3 2.0 0.0 13.6 19.4 12.7 0.0 13.6 19.4 12.7 0.0 13.6 19.4 8.2 9.1	8.8 -11.3 X -11.2 X -19.0 -15.3 - 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