Environnement

WEEKLY REVIEW OF CANADIAN CLIMATE

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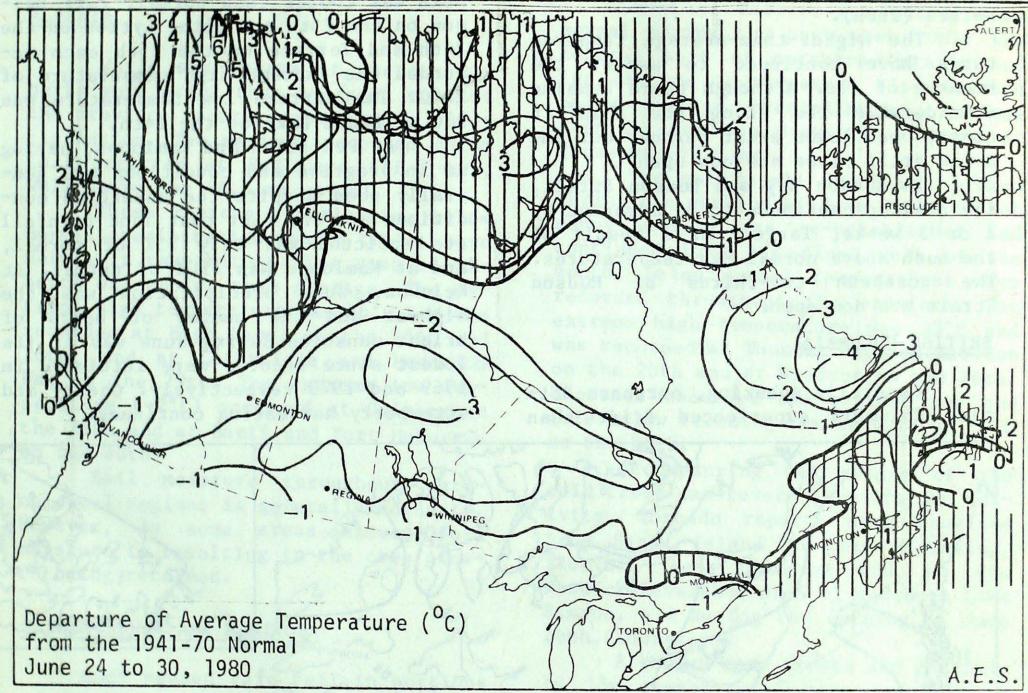
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THE CANADIAN CLIMATE CENTRE, ATMOSPHERIC ENVIRONMENT SERVICE, 4905 DUFFERIN ST., DOWNSVIEW, ONTARIO M3H 5T4

JULY 4, 1980

(Aussi disponible en français)

VOL.2 NO. 26



WEATHER HIGHLIGHTS FOR THE WEEK - JUNE 17 - 23, 1980

Western Drought Relieved - Eastern Cold Spell Re-established

Above normal rainfall was welcom- Frost was recorded at least once in ed in southern Manitoba and parts of southern Saskatchewan this past week, helping to ease drought conditions in the most severely stressed areas. The above average temperatures of the previous week also gave way to much cooler conditions.

The low temperatures spread into eastern Canada and centered in Ontario bringing to a swift conclusion the hot sunny weather of the previous weekend.

Ontario, Quebec and the Atlantic Provinces. Accompanying the return of the cold front were severe thunderstorms, hail and tornadoes.

The extreme highest and lowest temperatures for the week were 35°C at Fredericton, N.B. on June 26th and -4°C at Resolute, N.W.T., also on the 26th. Maximum precipitation was recorded at Bay, Nfld., Goose and measured 143.4 mm.

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

YUKON AND NORTHWEST TERRITORIES

The central portion of northern Canada, north of the mainland was wetter than normal. Hall Beach recorded 12.3 mm of precipitation.

Warmer than average conditions prevailed throughout the region during the week. The extreme high temperature was recorded at Norman Wells on the 27th (30°C). Resolute recorded the extreme low temperature of -4°C the day before (26th).

The higher-than-average temperatures have continued to assist the breakup of ice. Although there remains considerable ice along the Beaufort coast, open leads exist further out and a few drill sites are now open.

In Hudson Bay and Hudson Strait, ice breakup continues to be advanced by 2 or 3 weeks, largely as a result of the much above normal May temperatures. The northern two-thirds of Hudson Strait are now open.

BRITISH COLUMBIA

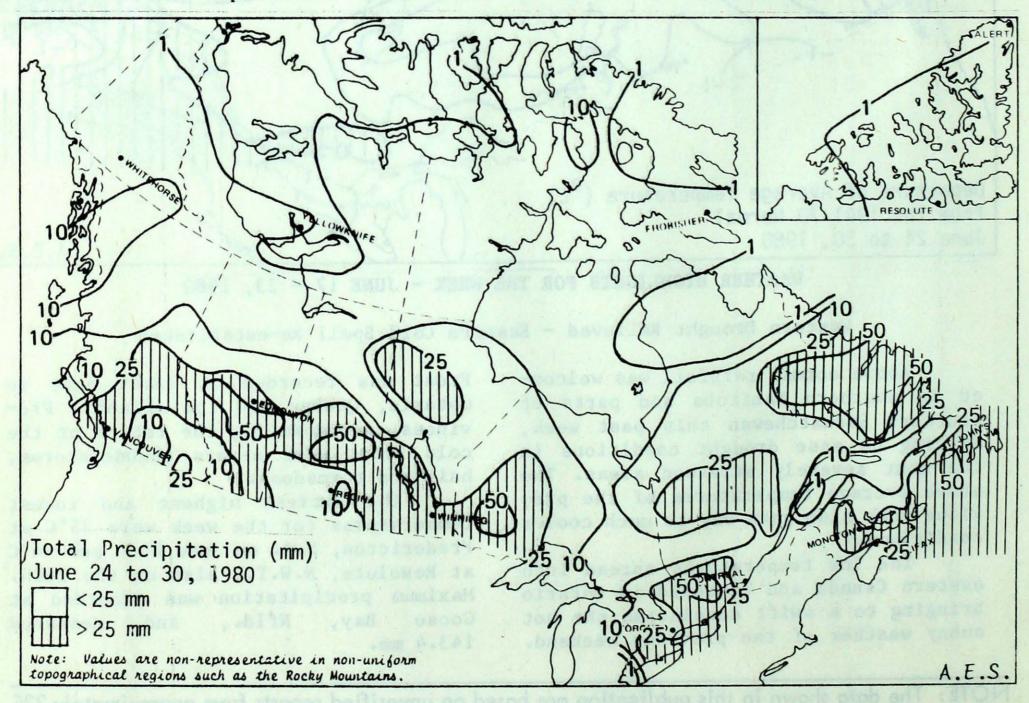
Generally speaking, northern British Columbia experienced drier than

average conditions while southern British Columbia recorded above normal precipitation. The pattern was more mixed in the south. The maximum recorded prcipitation occurred at Comox, 40.0 mm, well above the 16.4 mm normal. Much of this rain fell on the 27th (Friday).

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The dry conditions in the north were accompanied by above normal temperatures, while southern British Columbia was cooler than normal. Fort Nelson on the 25th and 26th, Lytton on the 24th and Terrace on the 25th each recorded the extreme high temperature of 28°C. The extreme low temperature was 2°C at Dease Lake on the 24th.

At Penticton and Kamloops, haying is in progress and conditions are generally good despite the unsettled conditions and the fact that June rainfall at Penticton was only 75% of normal, and at Kamloops was 190% of normal. At Kelowna, June precipitation was the highest and the number of hours of bright sunshine during June was at its lowest since records were initiated in 1969 and 1973 respectively. Cherry and strawberry harvesting continues.



An excellent hay crop is also reported at Prince George where June precipitation was 84.4 mm, well above the 58.2 mm normal.

June precipitation (80.8 mm) was also above normal (64.0 mm). Grasshopper problems are resulting in further problems at the airport where many birds have been attracted and are interferring with air travel.

ALBERTA

While some parts of western Alberta were drier than average, most of the province recorded above normal precipitation. The maximum recorded rainfall occurred at Red Deer (71.7 mm), well above the 46.5 mm normal.

Those regions experiencing below normal precipitation tended to be above normal in temperature. The rest of Alberta was cooler than average. The extreme high temperature was 26°C and was recorded at High Level on the 25th and 26th, and at Lethbridge and Medicine Hat on the 29th. The extreme low temperature (-2°C) occurred at Calgary on the 29th and at Banff and Fort McMurra on the 30th.

Soil moisture throughout agricultural regions is generally adequate. However, in some areas excess soil moisture is resulting in the crop growth being retarded.

SASKATCHEWAN AND MANITOBA

Much needed rain fell in portions of south-central Saskatchewan and throughout southern Manitoba. Above average quantities centred around Prince Albert, which received 64.6 mm (45.6 mm above normal), and Lynn Lake which recorded 49.2 mm (32.3 mm above normal). Northern Saskatchewan and Manitoba, and parts of southwestern Saskatchewan remained drier than normal.

The warm conditions of the previous week disappeared after Tuesday as both provinces experienced below normal temperatures. Extreme high temperatures were recorded at Moose Jaw and Regina on the 29th (28°C), and at Portage la Prairie and Winnipeg on the 24th (31°C). Regina also experienced the

extreme low temperature in Saskatchewan on the 29th (3°C), as did Churchill, Manitoba, on three successive nights (24th, 25th and 26th) and Thompson on the 26th when 0.0°C was recorded.

Although the rainfall did help to alleviate dry conditions, insect problems continue to plague farmers.

ONTARIO

Most of Ontario was wetter than normal during the past week. Only the central part of northern Ontario and the extreme southwestern tip recorded below average precipitation. Maximum rainfall for the province occurred at Petawawa (57.8 mm).

The cold spell which was broken during the weekend of June 21-22 by hot sunny weather was re-established and continued into the final week of the month. Below normal temperatures were recorded throughout the province. The extreme high temperature was 33°C and was recorded at Thunder Bay and Earlton on the 25th and at Windsor on the 26th. Moosonee recorded the extreme low and sole below freezing temperature of -2°C on the 28th.

Accompanying the return of the cold front was severe thunderstorm activity. Tornado reports were received from Sandy Island in Lake Nipissing, Bluevale near Wingham and in the Keswick-Ravenshoe area of southern Lake Simcoe, all during the evening of June 26th (Thursday).

Although late frosts and generally low temperatures have resulted in very slow growing conditions, agricultural officials are hopeful than a sunny, warm July will overcome the early set backs.

In northwestern Ontario, forest fire #46 has been labelled the worst since 1974. Despite recent rainfall in the area, more than 120,000 hectares are currently involved. Three hundred and fifty people were evacuated from Gull Bay, 200 kilometres northwest of Thunder Bay.

QUÉBEC

The below normal precipitation of the previous week continued throughout

most of Quebec. Natashquan proved to be one of the exceptions, recording 82.6 mm, 56.9 mm above normal.

Also maintained were generally cool conditions. The warm spell at the beginning of the week quickly gave way to much lower temperatures. The extreme high temperature (32°C) was recorded at Roberval on the 25th while Fort Chimo recorded a -2°C, the extreme low temperature for the province, on the 26th. At several stations, June as a whole was cooler than normal by approximately 2 degrees.

The below normal precipitation has resulted in several water systems shortages being experienced in the Quebec City area. Also, crop growth is between 7 and 9 days behind the 1979 schedule in the Lac St. Jean area.

Severe thunderstorms were recorded June 25th with 2 cm diameter hail being reported at Amos, Noranda and Remigny. Associated wind gusts caused severe roof damage in some cases.

ATLANTIC PROVINCES

Precipitation was above normal over much of the area. Those areas which were drier than average included parts of eastern New Brunswick, western Nova Scotia, western Labrador and eastern sites on the Island of Newfoundland. A phenomenal 143.4 mm of precipitation were recorded at Goose Bay, Nfld., where the normal for the week is 25.4 mm. Much of this rain fell on Friday and Saturday.

On average much of the Maritimes was warmer than normal. Several locations established new records for the daily maximum temperature on June 25 and 26. Only southern Newfoundland and Labrador recorded below average temperatures, the latter of a more extreme nature. The extreme high temperature was 35°C at Fredricton on the 26th (Thursday). The extreme low temperature for the week was -1°C, at Churchill Falls on the 28th and Deer Lake on the 30th.

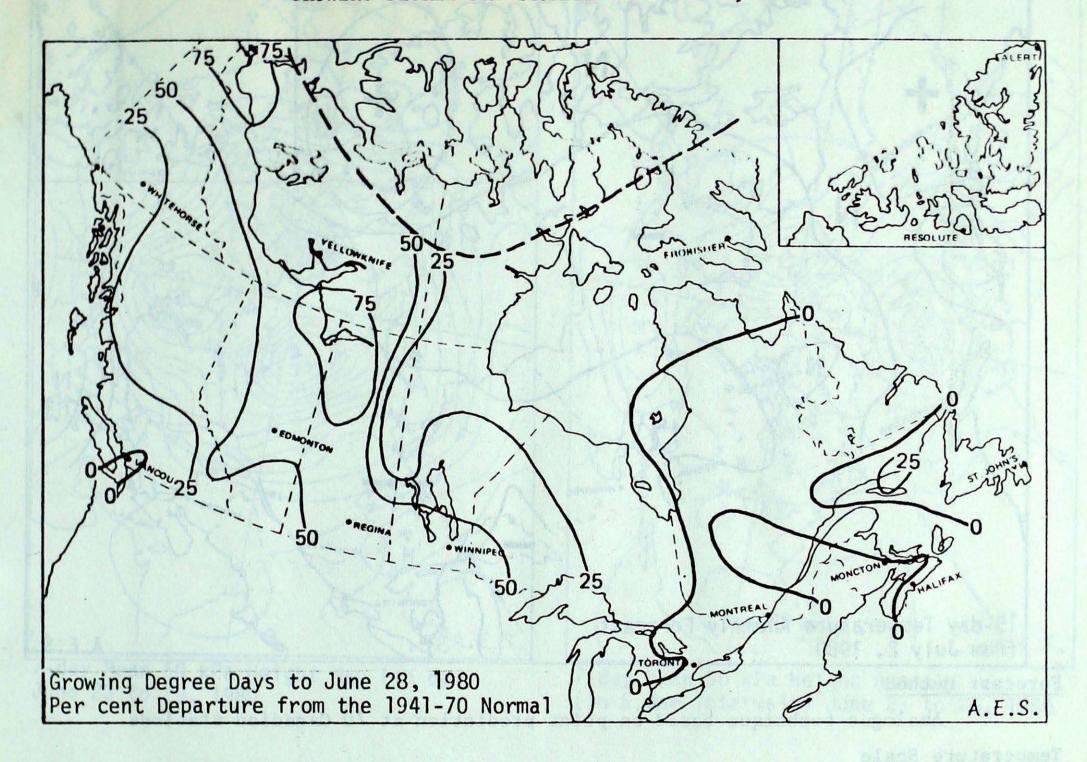
Scattered thunderstorms resulted in several power blackouts between Halifax and Truro.

To date, grass and hay crops in the Truro area are excellent. In the Annapolis Valley, disease and insects have resulted in a somewhat depressed yield for apples but the quality remains high. Apple development is only slightly behind schedule.

Ice conditions along the Labrador coast have generally been reduced to a few strips and patches.

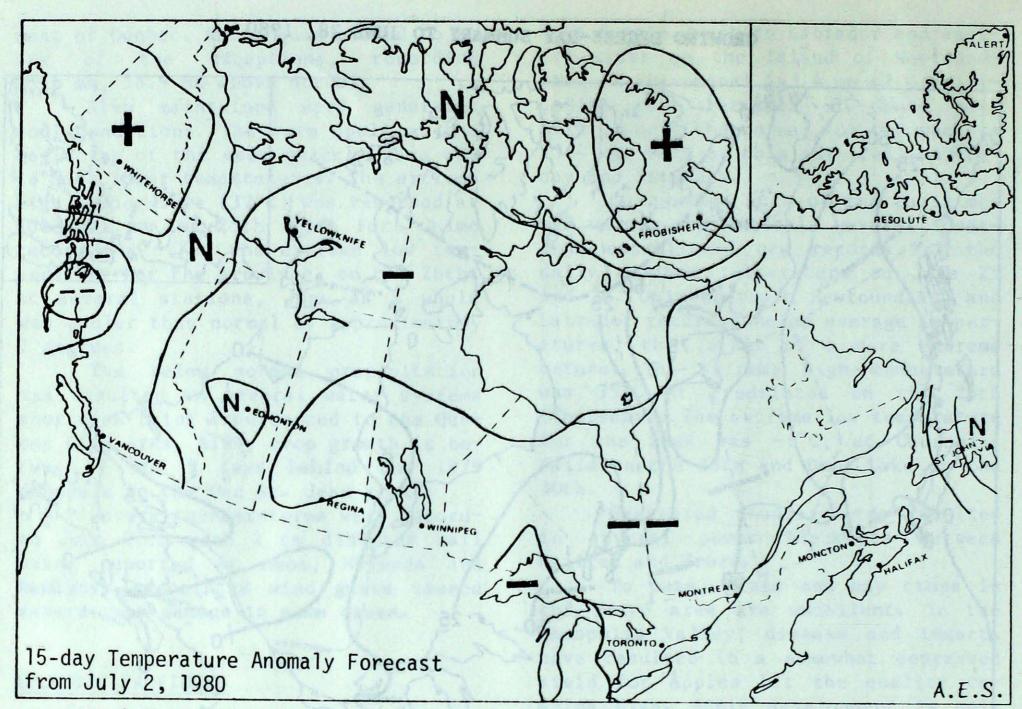


GROWING DEGREE-DAY SUMMARY TO JUNE 28, 1980



CITY	MONTHLY CUMULATIVE TOTAL	MONTHLY DIFF. FROM 1941-70 NORMAL	SEASONAL TOTAL	SEASONAL DIFF. FROM 1941-70 NORMAL	SEASONAL PERCENT OF NORMAL
Whitehorse	240.0	34.0	323.0	54.0	120
Penticton	324.0	-16.0	841.5	109.5	115
Vancouver	259.0	-26.0	655.0	-19.0	97
Edmonton	312.5	55.5	126.0	295.0	168
Calgary	242.0	15.0	567.0	186.0	149
Regina	325.0	38.0	778.5	294.5	161
Saskatoon	315.0	29.0	780.5	296.5	161
Winnipeg	332.0	14.0	795.5	279.5	154
Thunder Bay	236.0	-8.0	492.5	128.5	135
Windsor	354.5	-57.5	751.0	-59.0	93
Toronto	283.5	-79.5	599.5	-55.5	92
Ottawa	301.0	-62.0	638.5	1.5	100
Montréal	304.5	-69.5	637.0	-13.0	98
Québec	276.0	-35.0	507.5	8.5	102
Fredericton	290.5	-13.5	509.0	16.0	103
Halifax	227.5	-31.5	376.0	-14.0	96
Charlottetown	246.5	-3.5	334.0	-12.0	97
St John's	191.0	42.0	214.5	38.5	122

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Forecast Method

Analogue technique based on point prediction at 70 Canadian stations.

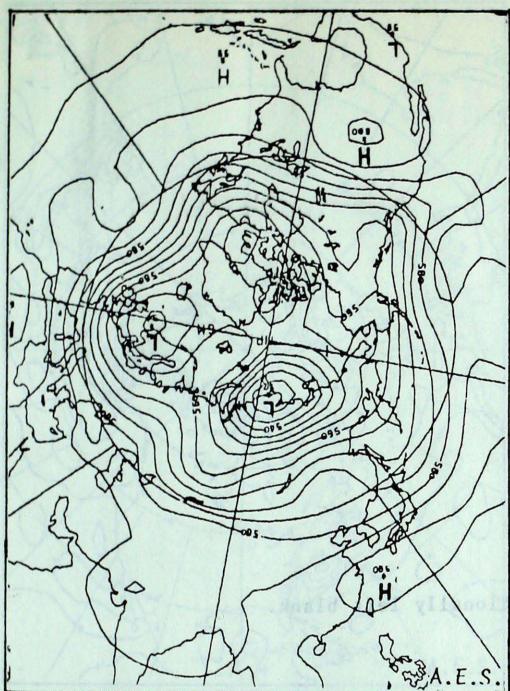
Temperature Scale

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

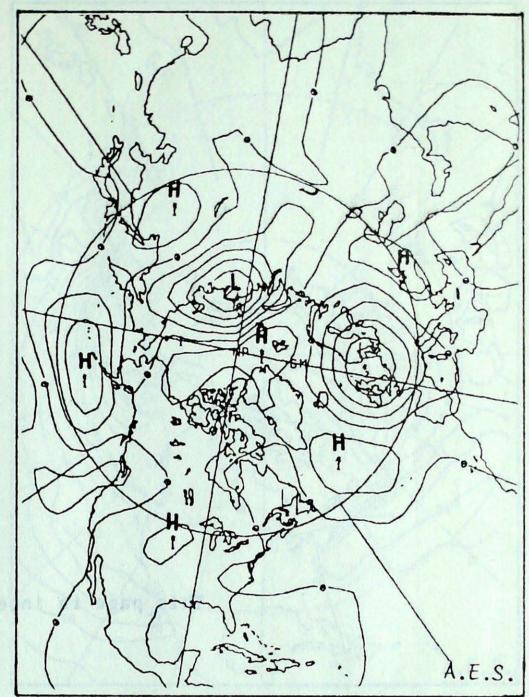
Station	<u>Current</u>	Temperature Anomaly Forecast
Whitehorse	Above Normal	From 0.4° to 1.5° above Normal
Victoria	Near Normal	Within 0.3° of Normal
Vancouver	Near Normal	Within 0.3° of Normal
Edmonton	Near Normal	Within 0.4° of Normal
Regina	Below Normal	From 0.4° to 1.4° below Normal
Winnipeg	Much Below Normal	More than 1.5° below Normal
Thunder Bay	Below Normal	From 0.4° to 1.2° below Normal
Toronto	Much Below Normal	More than 1.4° below Normal
Ot tawa	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	Much Below Normal	More than 1.3° below Normal
Halifax	Much Below Normal	More than 1.0° below Normal
Charlottetown	Much Below Normal	More than 1.3° below Normal
St. John's	Near Normal	Within 0.5° of Normal
Goose Bay	Much Below Normal	More than 1.6° below Normal
Frobisher Bay	Above Normal	From 0.4° to 1.2° above Normal
Inuvik	Near Normal	Within 0.5° of Normal

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

Atmospheric Circulation



7-day Mean 50 kPa Height Map (in dam) June 23 to 29, 1980



7-day Mean 50 kPa Height Anomaly (in 5 dam intervals) June 23 to 29, 1980

The ridge in the upper level of the troposphere has subsided over Canada. It nevertheless did keep some strength over the American plains as well as over the northwest part of the continent. The two guardian troughs generally remained anchored over the Pacific and Atlantic coasts respectively.

This fundamental change in the atmospheric circulation over the Prairies finally brought the long-awaited rain to southern Manitoba and Saskatchewan. Temperatures fell as the ridge collapsed.

In the eastern part of the country, the atmospheric current kept a northern component strong enough to allow arctic air to penetrate all regions. The passage of multiple disturbances resulted in unsettled weather. The cold air penetration triggered severe thunderstorms producing hail and even tornadoes in southern Ontario.

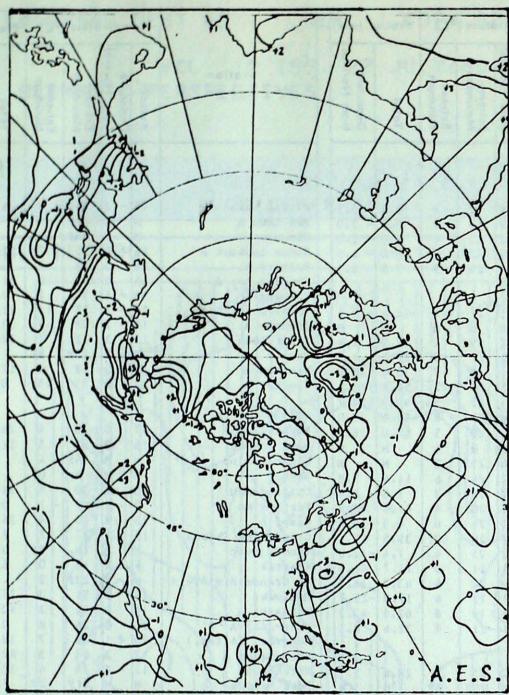
In western Canada the trough brought generous precipitation to southern British Columbia while northern B.C. enjoyed sunny weather. This cold low weakened during the latter days of the week as another storm approached from the west.

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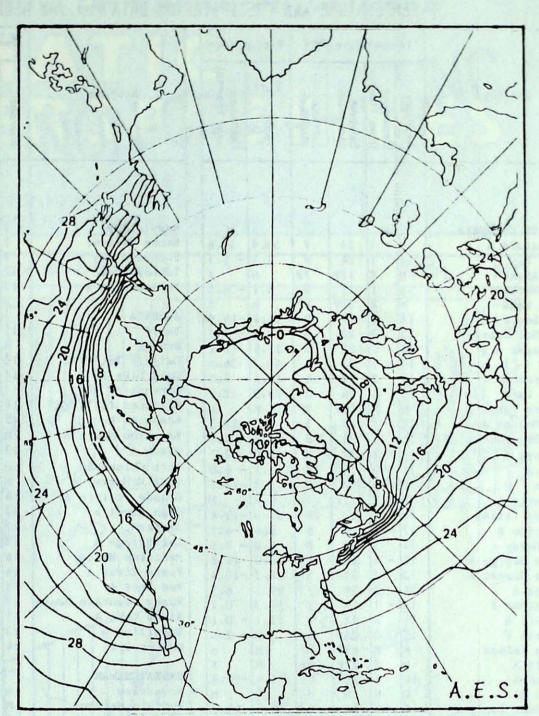
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Monthly Mean Sea Temperature June, 1980



Sea Surface Temperature Anomalies for June, 1980

CLIMATIC PERSPECTIVES

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	Temperature (°C) Precip. (m					o. (mm)	
Station	Average	Departure from Normal	Extreme	Extreme Minimum	Total	Departure from Normal	
BRITISH COLUMBIA Abbotsford A Alert Bay Blue River Bull Harbour Burns Lake Cape Scott Cape St. James Castlegar A Comox A Cranbrooke Dease Lake Estevan Point Fort Nelson A Fort St. John A Kamloops A Langara Lytton Mackenzie A McInnes Island Penticton A Port Hardy A Prince George A Prince Rupert A Quesnel A Revelstoke A Sandspit A Smithers A Spring Island Stewart A Terrace A Tofino A Vancouver Int'l A Victoria Int'l A	14 14 14 13 13 16 15 17 11 16 M 14 15 14 15 M 16 M 16 M 16 M 16 M 17 14 15 M 16 M 17 14 15 M 16 M 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18	- 1 1 X 1 X 1 2 - 1 1 2 1 M 3 1 - 1 0 - 1 X 1 - 1 1 0 1 2 2 M X 2 M - 1	24 17P 21 23P 17 20 25 22 26 16P 28 24 27 15 28 23P 20 26 22 22 21 24 24 27 28 28 29 20 20 20 20 20 20 20 20 20 20 20 20 20	7 9 7 9 9 9 9 9 9 6 2 9 9 5 8 8 10 7 7 9 10 8 5 7 7 9 5 10 10 10 10 10 10 10 10 10 10 10 10 10	30.9 7.3 M 8.1 15.7 8.2 27.6 48.0 18.1 24.8 M 4.0 16.0 19.0 13.2 2.8 M 17.6 8.0 33.0 18.2 29.3 17.3 13.1 7.8 M M M M M M M M M M M M M	17.6 - 5.3	Resconsider of the second seco
YUKON Burwash A Dawson A Komakuk Beach A Mayo A Shingle Point A Watson Lake A Whitehorse A	13 17 9 17 14 17	2 2 4 3 6 3	24 27 17 27 27 27 25 25	3 5 1 5 4 5 5	4.0 0.0 5.8 0.0	-14.1 - 7.4 - 6.4 - 3.5 - 6.3 - 1.5 - 6.1	Hudi Kind La I Mead Moor Nipa Nort Prin Regi
NORTHWEST TERRITORIE: Alert Baker Lake Broughton Island Byron Bay Cambridge Bay A Cape Dorset Cape Dorset Cape Parry A Cape Hooper Cape Young A Chesterfield Inlet Clinton Point Clyde Contwoyto Lake Coppermine Coral Harbour Dewar Lakes Ennadai Eureka Fort Reliance Fort Simpson Fort Smith A Frobisher Bay A Gladman Point A Hall Beach A Hay River A Inuvik A Jenny Lind Island Laiy Franklin Point Longstaff Bluff Mackar Inlet Mould Bay Nicholson Peninsula Norman Wells A Pelly Bay Pond Inlet Port Burwell	S M 9 2 8 6 7 4 4 4 4 7 6 4 M 10 5 4 M 3 11 18 16 10 6 3 14 18 6 5 6 5 4 7 21 6 6 M	2 2 2 2 1 1 1 1 1 1 1 1 1 1 1 2 1 1 2 1 1 2 1 1 2 2 3 3 3 3	12 13 18P 20 18 10 M 8 20 28 27 17 13 9 25 27 14 11 11 11 11 11 11 11 11 11	- 1 0 - 3 2 2 1 - 1 - 3 0 0 0 1 1 - 1 1 P 1 0 - 2 3 P - 1 6 5 7 2 0 - 1 7 8 0 1 1 0 0 0 11 0 0 M	2.8 0.0 0.2 2.6 2.0 0.0 0.5 0.0 3.5 0.0 0.0 M 1.1 5.7 2.0 M 9.2	- 0.2 x -10.3 - 5.8 - 4.8 - 3.8 - 3.4 - 6.1 - 2.2 M - 2.6 - 0.3 - 2.1 M 8.5 - 4.6 - 1.8 - 3.0 - 4.9 1.3 9.0 - 6.9 - 5.8 1.9 - 1.1 - 2.6 5.3 - 0.4 - 3.2 - 9.2 5.1 x	Swift Uran Wyny York MAN Biss Bran Chui Daug Gil Gim Isla Lynn Nore Pilo Por The Thor Winn ONT Arms Atil Ear Gora Gora Kapa Kan Kin Lan Lon Moo

ION DATA FOR THE	· /					ecip. (mm)	
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Yellowknife A ALBERTA Banff Brooks Calgary Int'l A Cold Lake A Coronation A Edmonton Int'l. A Edmonton Mun. A Edmonton Namao A Edwon A Fort Chipewyan Fort McMurray A Grande Prairie A High Level A Jasper Lethbridge A Medicine Hat A Peace River A Red Deer A Rocky Mountain House	15 11 M 12 14 13 14 15 M 16 17 12 15 16 16 16 16 13	- 1 M - 2 - 2 - 1 - 1 M O M M 2 2 - 1 - 1 - 1 2 - 1 O	25 17 M 19 21 18 21 22 21P 20 M 25P 24 26 20 26 26 25 21 20 20 20 20 20 20 20 20 20 20	9 2 M 2 8 7 7 9 8 5 4 2 6 3 4 6 10 4 5 6	3.8 12.4 M 32.3 21.5 35.8 54.4 40.9 46.1 66.0 M 11.4 1.6 41.4 6.3 35.5 7.4 71.7 43.2	- 0.8 - 5.4 M 1.4 1.5 18.9 24.6 21.7 20.0 28.1 M - 9.8 - 8.9 26.8 -19.4 15.1 -12.0 46.5 18.2 -25.7	
Slave Lake A Vermilion A Whitecourt SASKATCHEWAN Broadview Buffalo Narrows Cree Lake Estevan A Hudson Bay Kindersley La Ronge A Meadow Lake A Moose Jaw A Nipawin A North Battleford A Prince Albert Regina A Saskatoon A Swift Current A Uranium City Wynyard Yorkton A	15 13 14 14 13 13 14 13 13 16 14 15 14 15 14	- 1 1 - 2 M X M M - 2 - 2 X - 2 X - 2 X - 2 M O - 3	25 20P 22 27P 23P 24 21 19 28 22 22 22 28 26 26P 23	4 6 5 9 8 7 8 7 8 7 8 3 6	28.2 M 7.0 24.8 M 24.9 26.1 42.6 17.1 57.4 30.1 64.6 5.8 18.7 M 5.8	43.7 8.3 5.7 M X 7.6 M - 1.2 - 7.5 X - 0.9 X 8.9 45.6 -19.0 - 2.1 M - 4.6 - 7.5	
MANITOBA Bissett Brandon A Churchill A Dauphin A Gillam A Gimli Island Lake Lynn Lake Norway House Pilot Mound Portage la Prairie The Pas A Thompson A Winnipeg Int'l A	10 17 M 12 13	- 1 - 2 - 2 X - 1 X - 4 X - 2 - 1 - 2 - 4	28 21 28 21 29 29P 23 24 29 31 23	7 7 7 0 4 3 9 4 2 3 8 10 7 0 9	22.0 42.0 14.6 44.0 M 47.4 M 49.2 17.6 43.4 43.6 8.1 40.5 34.4	18.4 5.5 18.0 X 18.9 X 32.3 X 17.0 16.7 -15.1	
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	Station		Departure		Extreme	Extreme	Total .	Departure from Normal
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	QUEBEC Bagotville A Baie Comeau Blanc Sablon Border Chibougamau Fort Chimo A Gaspé A Grindstone Island Inoucdjouac Koartak La Grande Rivière A Maniwaki Matagami A Mont-Joli A Montréal (A int.) Natashquan A Nitchequon Port Menier Poste-de-la-Baleine Québec A Rivière du Loup Roberval A Schefferville A Sept-Iles Sherbrooke A Ste-Agathe des Monts Val d'Or A	13 11 8 18 18 17 8 14 17		00MMX2X1MXX0X0122M01N030000	31 26 31 24 19 21 P 22 30 20 P 32 17 20 30 29	1 7	12.6 82.6 13.8 7.4 4.9 19.1 M 7.7 67.6 11.4	M M X -12.8 X - 5.3 - 9.2 X X 5.8 X -16.0 - 7.6 56.9 -10.6 - 7.5 - 7.7 - 7.3 M -11.9 47.1 - 6.9 -14.3 -18.8
	NEW BRUNSWICK Charlo A Chatham A Fredericton A Moncton A Saint John A	16 18 19 17		0 0 1 0 1	34 35	6 6 4 6 7	15.4 30.0 27.2 29.0 17.2	8.7
	NOVA SCOTIA Eddy Point Greenwood A Sable Island Shearwater A Sydney A Truro Yarmouth A	16 19 13 17 17 M		X 0 1 1 1 M	32 16 26 32	8 8 7 9 7 7 7 6	26.2 25.8 33.6 M	- 3.6 5.1 14.2 17.0
	PRINCE EDWARD ISLAND Charlottetown Summerside	18		0		7 9	28.2	The state of the s
	NEWPOUNDLAND Argentia VTMS Battle Harbour Bonavista Burgeo Cartwright Churchill Falls A Comfort Cove Daniel's Harbour Deer Lake Cander Int'l A Goose A Hopedale Port aux Basques St. Albans St. Anthony St. John's A St. Lawrence Stephenville A Wabush Lake	10		X M 3 1 3 5 2 1 2 2 4 3 1 M X 2 0 1 2	15P 27 18 15 18 28 22 28 27 18 12 17 27P 20 25 22 25	6 4 1 - 1 6 5 - 1 6 0 1 4	41.6 M 18.8 52.5 95.6 62.4 11.6 33.8 5.0 15.5 143.4 35.7 38.7 28.9 22.1 22.6	M 6.6 17.7 77.4 38.6 - 8.2 10.0 -12.1 - 0.3 118.0 14.1 6.3 M X 7.4 0.1