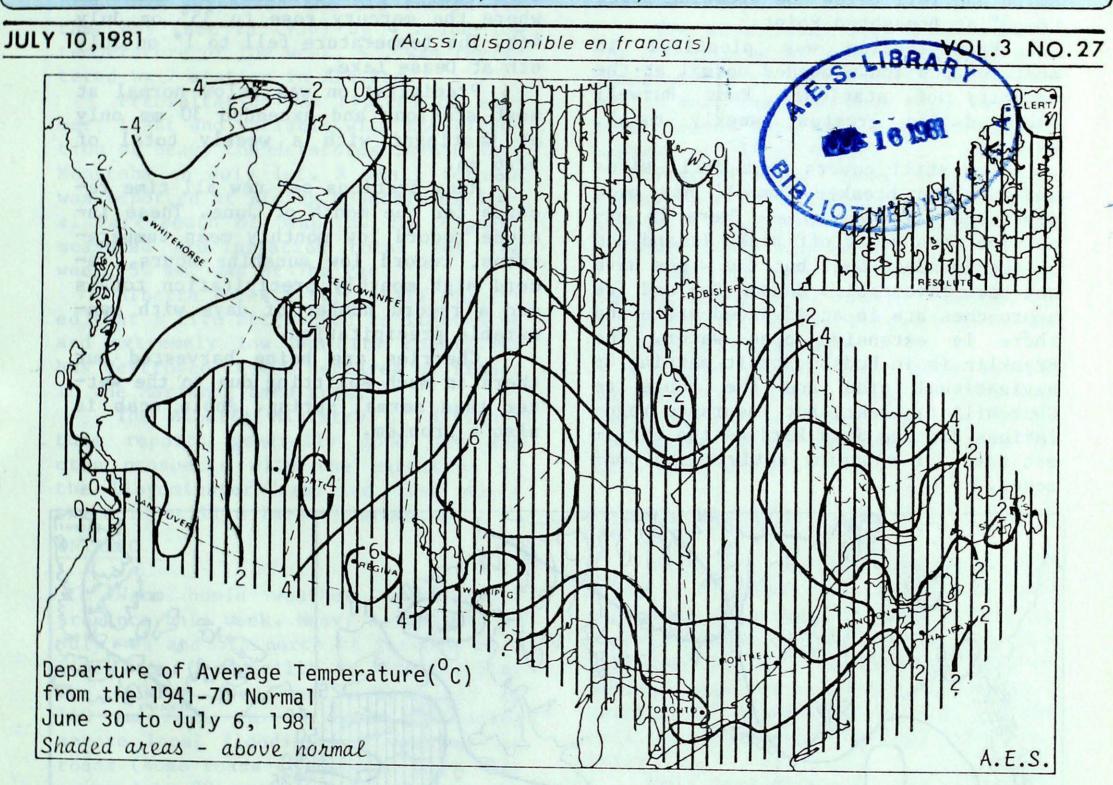
Environme Canada

Environment Environnement Canada Canada

Atmospheric Environnement Environment atmosphérique A WEEKLY REVIEW OF CANADIAN CLIMATE

# CLIMATIC PERSPECTIVES

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



# WEATHER HIGHLIGHTS FOR THE PERIOD - JUNE 30 TO JULY 6, 1981

Area north of Toronto deluged by heavy rains

Heavy rains fell on an area north of Toronto on July 4th and 5th. The Caledon area was hardest hit as 160 mm fell in 24 hours. Some roads in Caledon East were reported to be under 30 cm of water at the peak of the storm.

Heavy thunderstorms occurred in southern Manitoba on July 1st and a small tornado was reported south of Dauphin.

Cherries are being harvested in British Columbia but there is much splitting due to the wetter than normal spring. Apple scab is also a problem.

Estevan, Saskatchewan recorded the highest temperature in the country, 41°. The lowest was -3° at Broughton Point, N.W.T. The highest weekly precipitation total was 160 mm in Caledon East northeast of Toronto.

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

Cool weather dominated the Yukon and Mackenzie District while the rest of the Territories enjoyed warm weather and higher than normal mean temperatures. The mercury rose to 29° at Fort Smith and fell below the freezing point to -3° at Broughton Point.

Precipitation was plentiful in most regions and exceeded normal at the majority of stations. Port Burwell received the greatest weekly total, 81.5 mm.

Ice still covers most drill sites and the ice breaker Camsell has been dipatched from Victoria. There is extensive open water off Banks Island and in the Amundsen Gulf but the winds have not been favourable. Hudson Bay and its approaches are in an advanced state and there is extensive open water. The Franklin is in Hudson Strait setting up navigational aids and the route to Churchill is clear, but insurance regulations dictate July 23rd as the earliest date for shipping activity to commence.

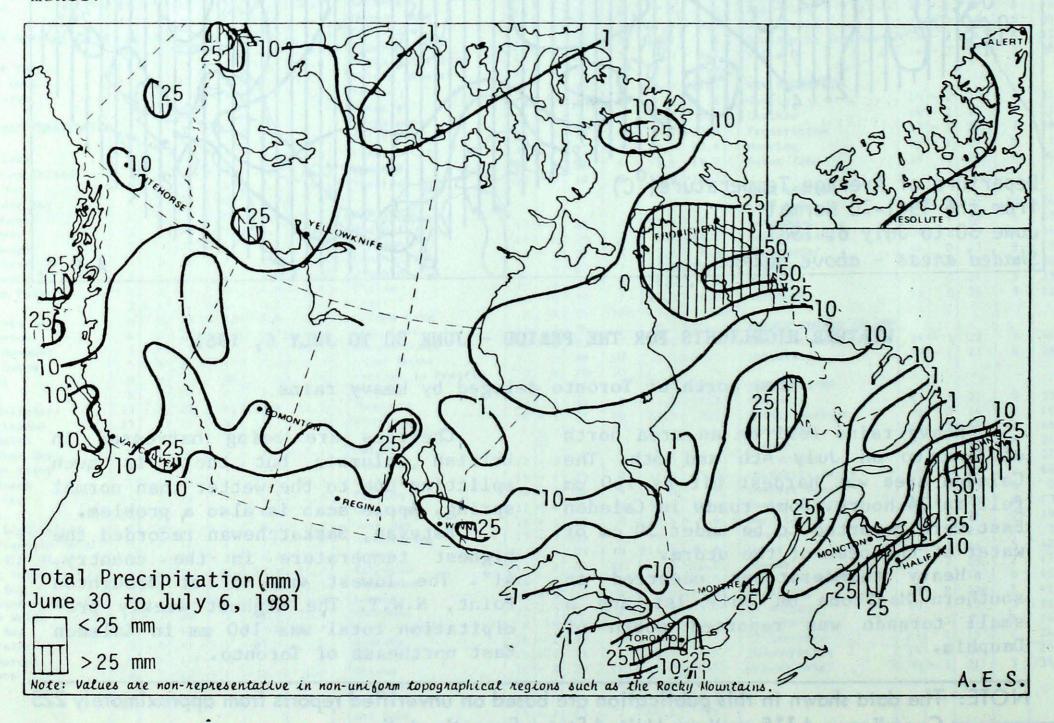
#### BRITISH COLUMBIA

Warm weather was enjoyed in extreme southwestern areas while the rest of the province remained cool. Mean temperatures varied from more than 2° below normal in some central areas to more than 2° above normal at Kamloops where the mercury rose to 35° on July 4th. The temperature fell to 1° on July 6th at Dease Lake.

Precipitation was below normal at most stations and exceeded 30 mm only at Castlegar with a weekly total of 52.6 mm.

Many stations set new all time records for the month of June. These include record low monthly mean temperatures, record low sunshine hours, record high monthly precipitation totals and a record number of days with measurable precipitation.

Cherries are being harvested but there is much splitting due to the wetter than normal spring. Apple scab is also a problem.



#### PRAIRIE PROVINCES

Sun bathing weather prevailed over most of the Prairies this week. Maximum temperature records were set or tied at many stations. The hot spot was Estevan where the mercury reached 41° on July 6th. This surpassed the old record for that day (set in 1936) by 4°. The low temperature of the week, 4°, was registered by 7 station in Alberta.

Precipitation was typical of summer; light and variable with the exception of heavy thunderstorms in southern Manitoba on July 1st. A small tornado was reported at Riding Mountain National Park south of Dauphin. The highest measured precipitation total for the week, 30 mm, was at The Pas.

Alberta Forestry officials reported that a fire attributed to lightening and extremely low humidity conditions has destroyed 24 000 hectares of timber in the Marianna Lake area.

The Alberta Ministry of Agriculture reports generally good hay and crop prospects with the exception of the Lloydminster-Vermilion area where there is still a lack of moisture.

#### ONTARIO

Warm humid weather covered the province this week. Heavy rains fell on July 4th and 5th north of Toronto on a line from Orangeville to Stouffville. The Caledon area was hardest hit as 160 mm fell in 24 hours producing severe local flooding and washing out roads (some roads in Caledon East were covered by 30 cm of water). During the same period, rain, hail and funnel clouds were reported along the north shore of Lake Erie in the St. Williams area. In other regions the weekly precipitation was less than normal.

The warm air pushed weekly mean temperatures to above normal values throughout the province. The mercury reached 34° at Sioux Lookout.

The warm weather was beneifical to crops in southern Ontario, although the

continuing unsettled conditions did interfere with some field work. The Ministry of National Resources reported 7 forest fires; fire conditions are rated as low to moderate.

## QUÉBEC

The warm humid air which covered the province after July 2nd pushed mean temperatures to more than 4° above normal in most regions. Many high temperature records were set, among others the maximum of 32° at Gaspé.

Precipitation came from local showers and as a result amounts varied widely. Schefferville received the highest total, 40.4 mm.

The corn crop has been held back due to, among other things, the washout of fertilizer by the frequent rains and by poor soil drainage.

Eleven forest fires were burning on July 7th, with a total of 1900 hectares burned to date. This is 10% of the normal of the previous 5 years for this same period.

#### ATLANTIC PROVINCES

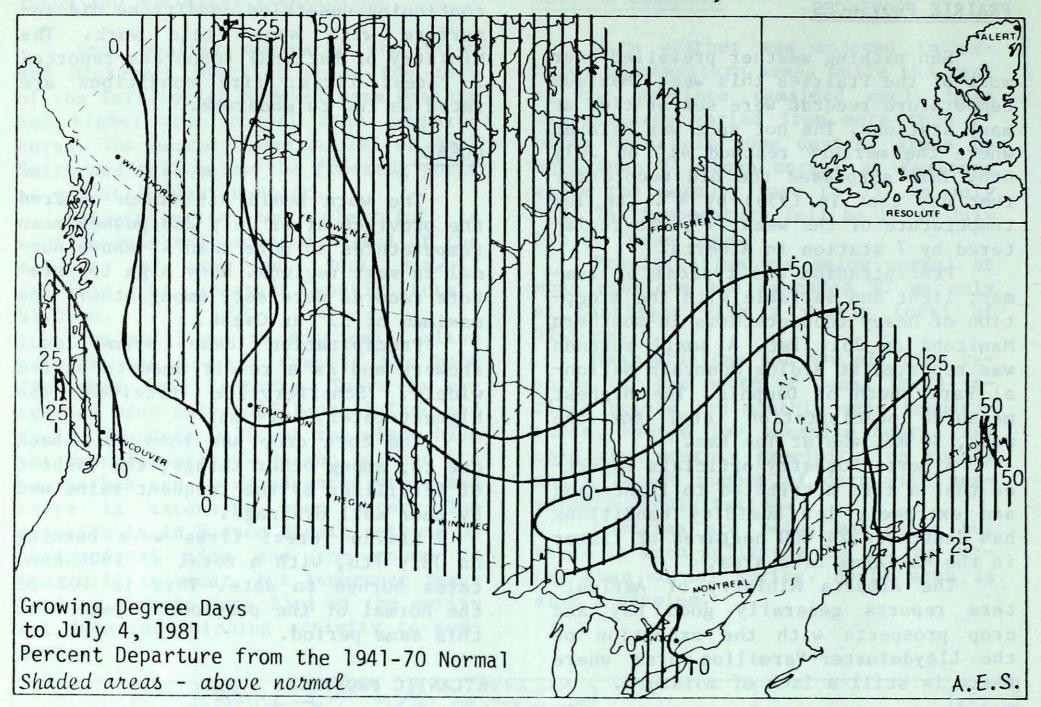
Warm dry weather dominated the Atlantic Provinces this week. Mean temperatures exceeded 4° above normal in several areas of New Brunswick and Labrador and several high temperature records were established. The mercury reached 35° at Chatham on July 3rd and fell to 2° at St. Anthony two days later.

Only four stations recorded above normal weekly precipitation totals and the clear leader was Burgeo with 62 mm.

The hay crop appears to be excellent in all three Maritime Provinces. The strawberry crop is advanced and producing good yields. The forest fire index is beginning to reach extreme values occasionally.

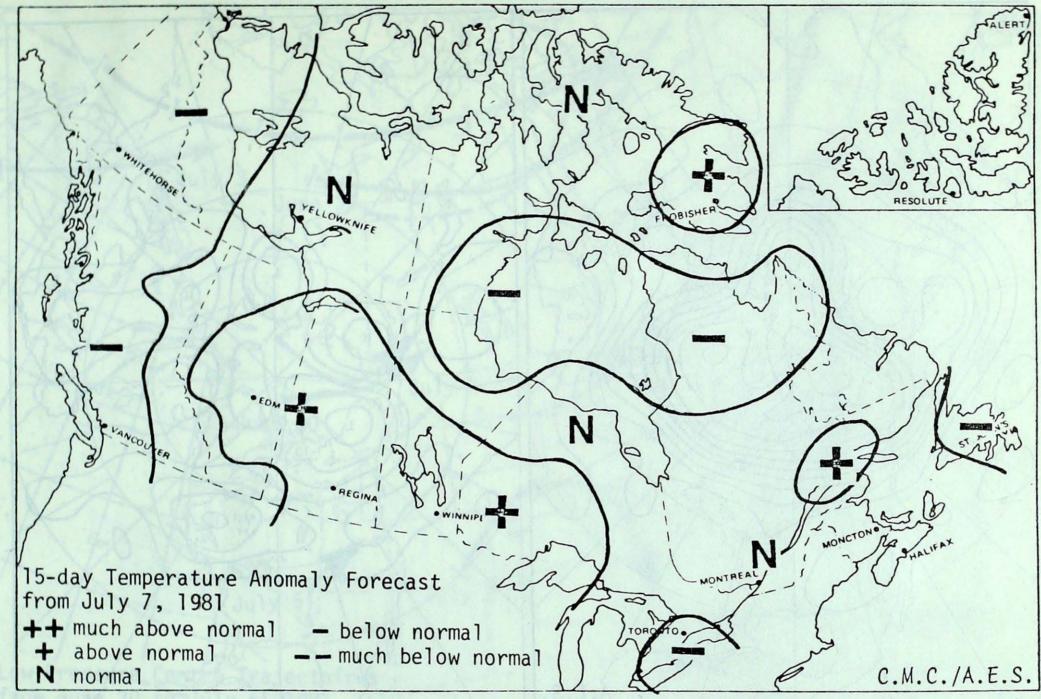
The Labrador coast is clear of ice. This is about two weeks ahead of normal.

GROWING DEGREE-DAY SUMMARY TO JULY 4, 1981



CITY	MONTHLY CUMULATIVE TOTAL	MONTHLY DIFF. FROM 1941-70 NORMAL	SEASONAL TOTAL	SEASONAL DIFF. FROM 1941-70 NORMAL	SEASONAL PERCENT OF NORMAL
Whitehorse	20.5	-13.5	317.0	-2.0	99
Penticton	63.5	11.5	749.5	-59.5	93
Vancouver	49.5	1.5	794.5	48.5	107
Edmonton	58.5	17.5	657.5	165.5	134
Calgary	51.5	15.5	495.5	60.5	114
Regina	69.5	20.5	674.5	119.5	122
Saskatoon	64.0	16.0	660.5	105.5	119
Winnipeg	66.0	13.0	627.0	30.0	105
Thunder Bay	39.5	-6.5	441.0	9.0	102
Windsor	70.5	2.5	981.0	67.0	107
Toronto	66.0	4.0	665.5	-83.5	89
Ottawa	65.0	1.0	727.0	-6.0	99
Montreal	68.5	4.5	737.5	-8.5	99
Quebec	64.5	9.5	598.5	17.5	103
Fredericton	73.5	21.5	640.0	67.0	112
Halifax	60.0	9.0	488.5	23.5	105
Charlottetown	59.5	8.5	544.5	123.5	129
St John's	45.0	8.0	368.0	138.0	160

#### 15 DAY TEMPERATURE ANOMALY FORECAST



Forecast Method

Analogue technique based on point prediction at 70 Canadian stations.

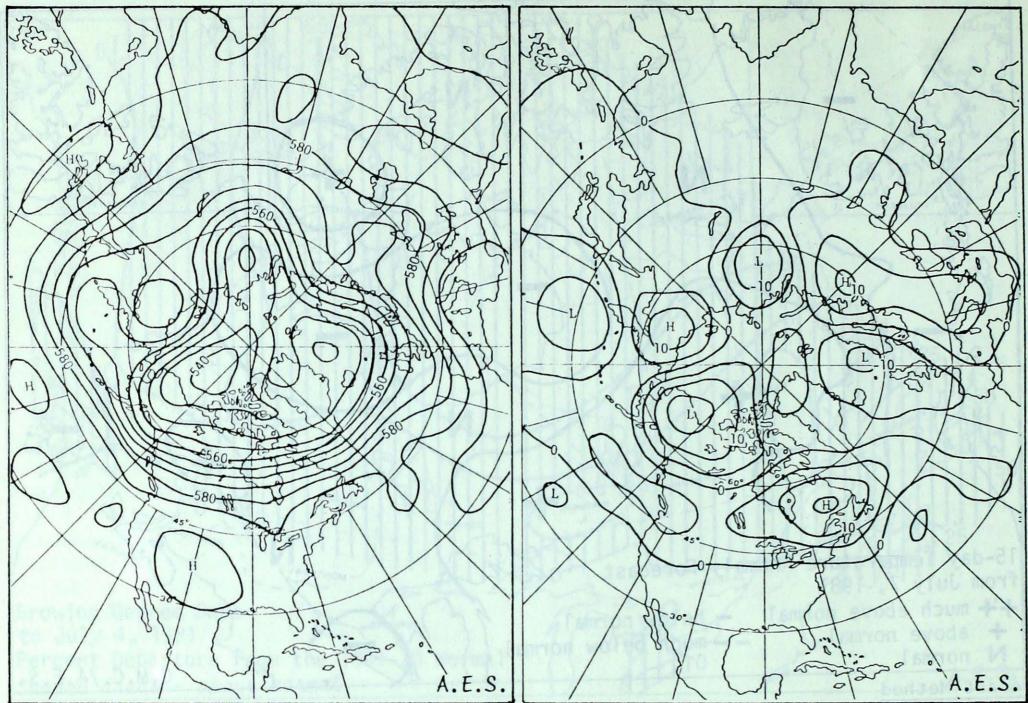
### Temperature Scale

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 Temperat	ure Anomaly Forecast
Whitehorse	Below Normal	From 0.4° to 1.5° below Normal
Victoria To Tolor	Below Normal	From 0.3° to 1.0° below Normal
Vancouver	Below Normal	From 0.3° to 1.1° below Normal
Edmonton	Above Normal	From 0.4° to 1.4° above Normal
Regina	Above Normal	From 0.4° to 1.4° above Normal
Winnipeg	Above Normal	From 0.4° to 1.5° above Normal
Thunder Bay	Above Normal	From 0.4° to 1.2° above Normal
Toronto	Below Normal	From 0.4° to 1.4° above Normal
Ottawa	Near Normal	Within 0.4° of Normal
Montreal	Near Normal	Within 0.4° of Normal
Quebec	Near Normal	Within 0.4° of Normal
Fredericton	Near Normal	Within 0.4° of Normal
Halifax	Near Normal	Within 0.3° of Normal
Charlottetown	Near Normal	Within 0.4° of Normal
St. John's	Below Normal	From 0.5° to 1.6° below Normal
Goose Bay	Near Normal	Within 0.5° of Normal
Frobisher Bay	Above Normal	From 0.4° to 1.2° above Normal
Inuvik	Below Normal	From 0.5° to 1.8° below Normal

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

#### Atmospheric Circulation



7-day Mean 50 kPa Height Map(in dam) June 29 to July 5, 1981

7-day Mean 50 kPa Height Anomaly (in 5 dam intervals)June 29 to July 5, 1981

The strong tropospheric high pressure area continued to be the dominant feature across North America. Very warm air pushed northward into Canada, displacing the main upper flow and surface storm track well to the north of the 49th parallel. Heights and mean temperatures across all of southern Canada were above normal.

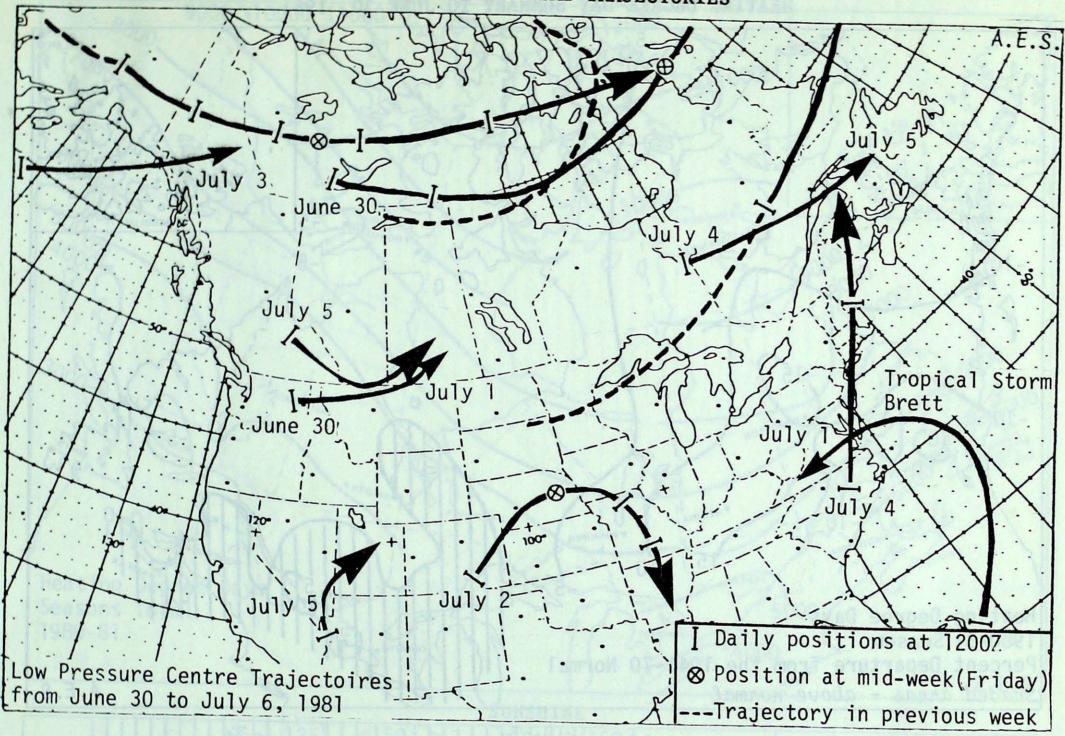
The most significant change was in eastern Canada. A strong major upper ridge and associated broad surface high pressure area predominated. As a result, very warm and fair conditions prevailed throughout most of the period; a marked improvement from previous weeks.

Thunderstorm activity is becoming more prevalent. This is due to increasing summer heat and humidy. All that is generally needed is a triggering mechanism such as frontal zones or approaching troughs of lower pressure either at the surface or aloft. In some instances very strong solar heating of the ground will trigger isolated convective activity.

Severe thunderstorms with hail and 100 Kph winds were reported in south-eastern Manitoba. There was an unconfirmed sighting of a small tornado.

A cluster of heavy thunderstorms
just north of Toronto deposited more
than 156 mm of rain in a 24 hour period
over the weekend. Toronto, less than 25
Km to the south, received 11 mm.

# LOW PRESSURE CENTRE TRAJECTORIES



#### CLIMATIC PERSPECTIVES

#### Staff

Editor: Yves Durocher
Assistant Editor: Bob Paterson
Technical Staff: Fred Richardso
Graphics and Layout: Bill Johnson,
Word Processing: Una Ellis

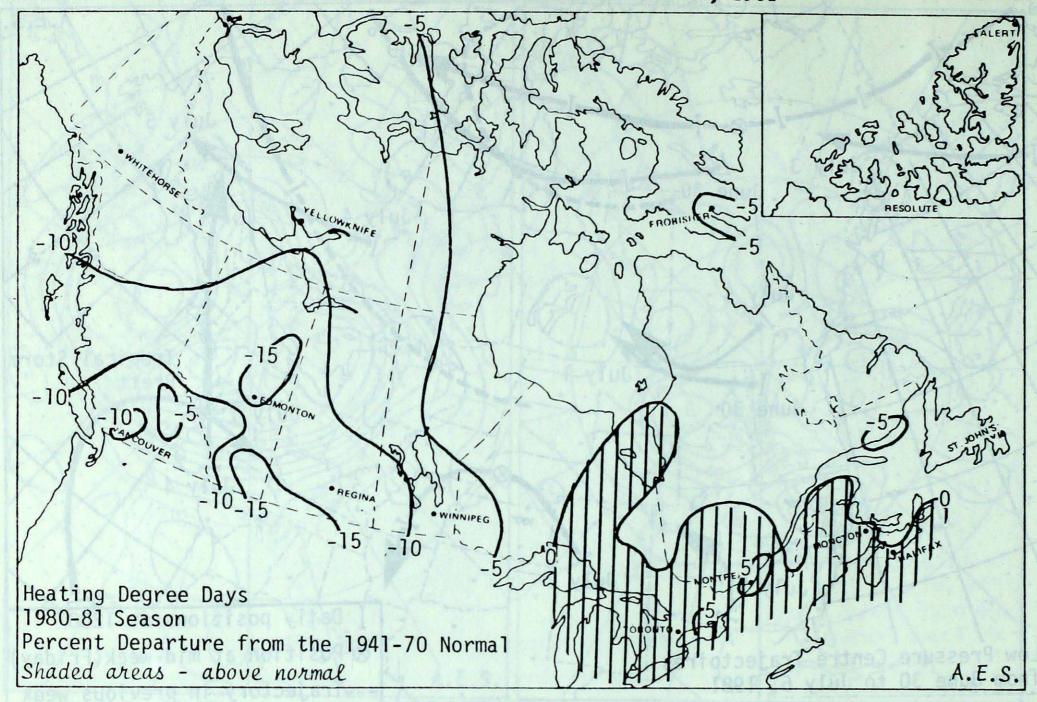
Yves Durocher
Bob Paterson
Fred Richardson, Andy Radomski
Bill Johnson, Debbie Allsopp

#### Correspondents

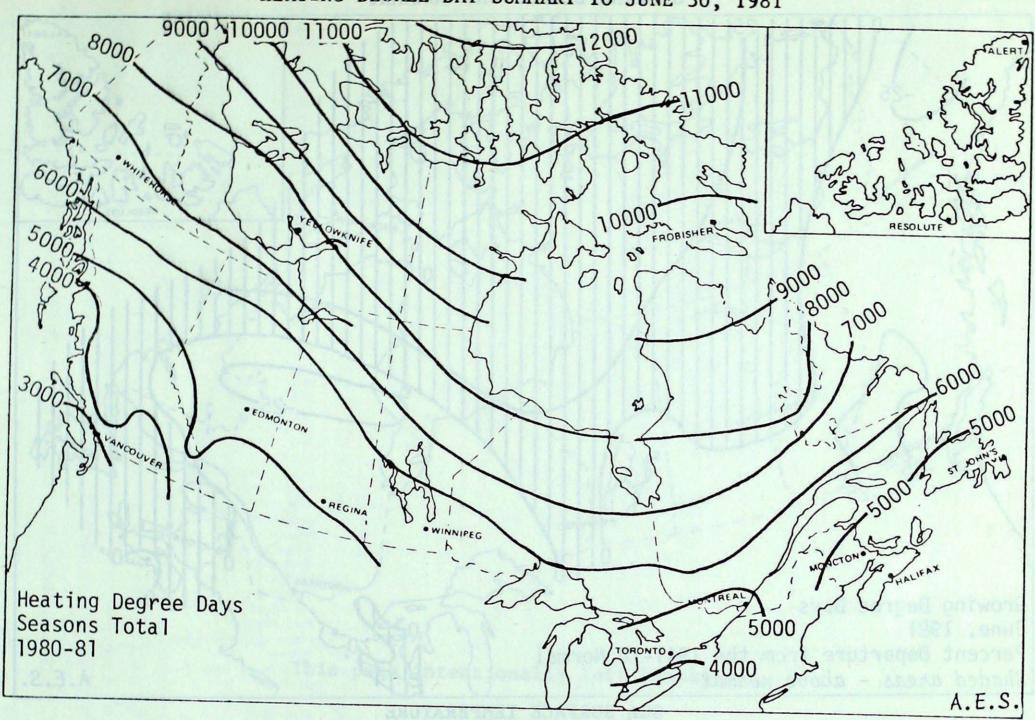
Terry Mullane, (Ice Forecasting Central)
H.E. Wahl, (Wnitehorse)
Bill Prusak, (Western Region)
Fred Luciow, (Central Region)
Brian Smith (Contario Region)
Jacques Miron, (Quebec Region)
J.F. Amirault, (Atlantic Region)
Staff of Prince George, Kamloops, Castlegar, Fort
Nelson, Penticton and Kelowna
weather office (Pacific Region)

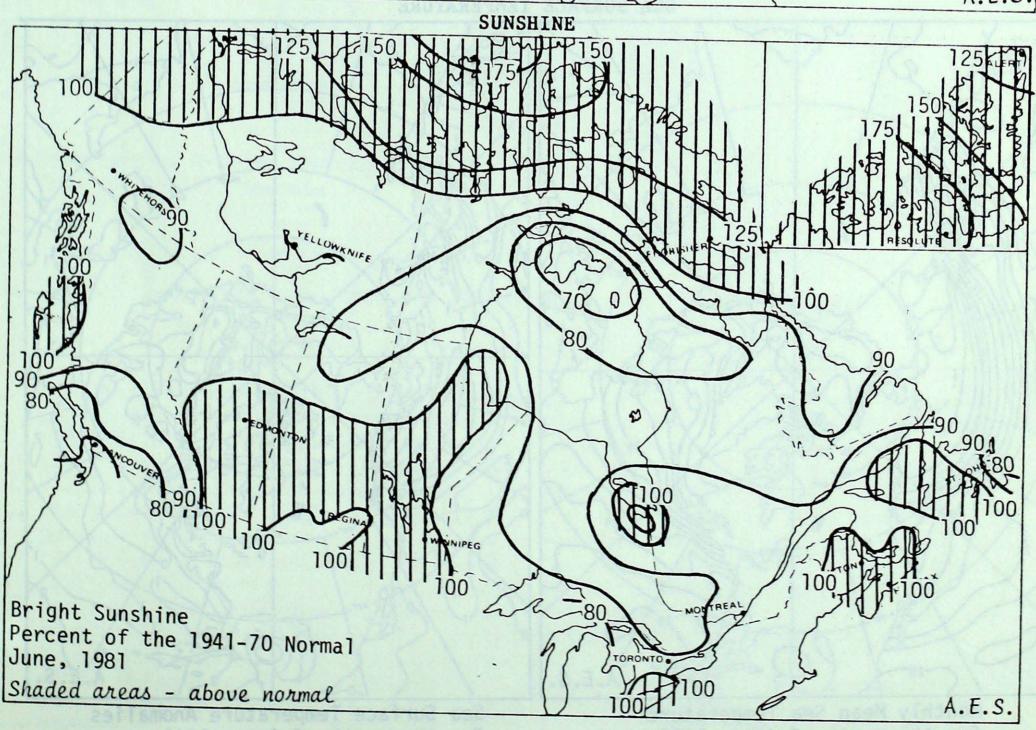
Telephone Inquiries (416) 667-4711/4906

HEATING DEGREE-DAY SUMMARY TO JUNE 30, 1981

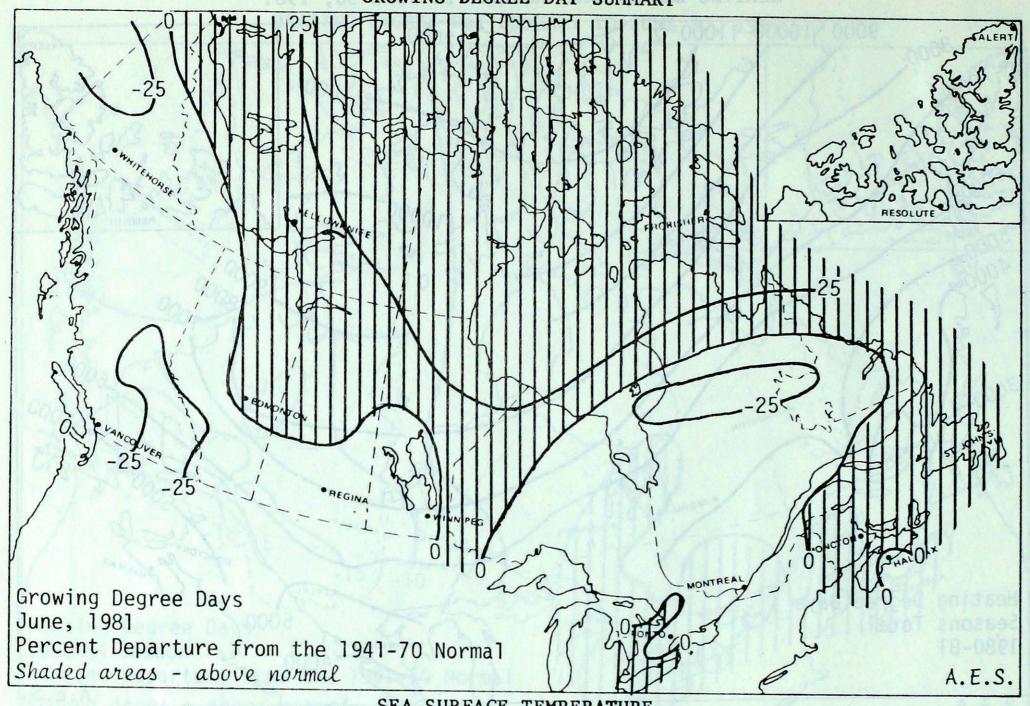


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	SEASONAL TOTAL	SEASONAL DIFF. FROM	SEASONAL PERCENT
STATION		1941-70 NORMAL	OF NORMAL
Resolute	12075.0	-474.0	96
Inuvik	9316.0	-858.0	92
Whitehorse	6420.0	-459.0	93
Vancouver	2830.0	-177.0	94
Edmonton Mun	4709.0	-880.0	84
Calgary	4562.0	-783.0	85
Regina	5081.0	-839.0	86
Winnipeg	5399.0	-490.0	92
Thunder Bay	5558.0	-188.0	97
Windsor	3666.5	76.5	102
Toronto	4244.5	162.5	104
Ottawa	4741.0	68.0	101
Montreal	4721.5	250.5	106
Quebec	5302.0	222.0	104
Saint John, N.B.		74.5	102
Halifax	4272.5	149.5	104
Charlottetown	4599.5	-23.5	99
St. John's, Nfl	1. 4/24.0	-80.0	98

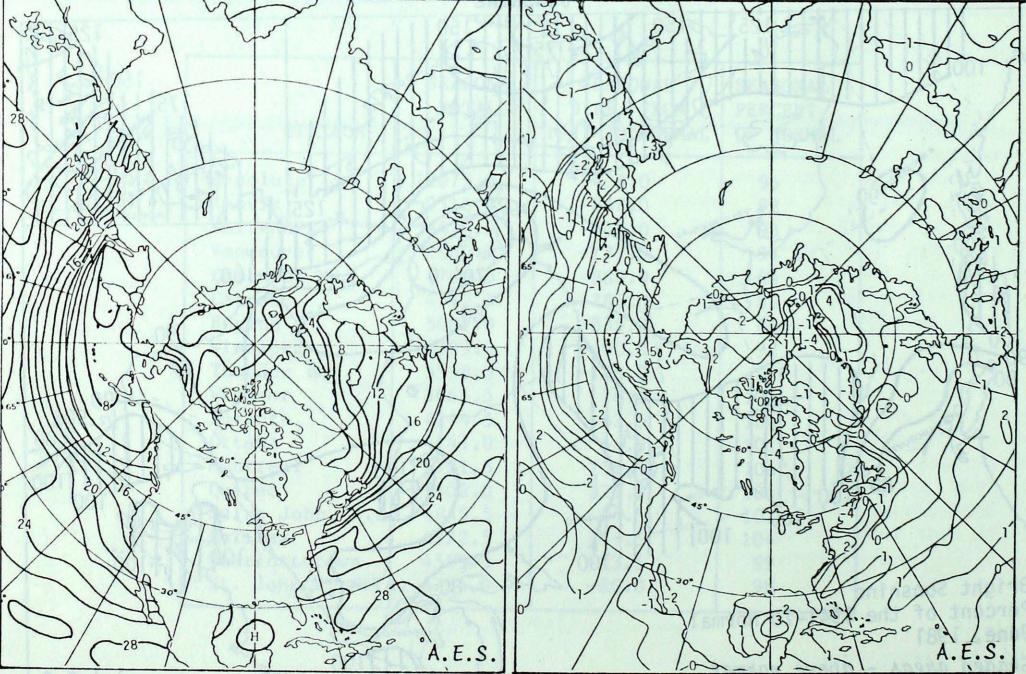




# GROWING DEGREE-DAY SUMMARY



# SEA SURFACE TEMPERATURE



Monthly Mean Sea Temperature for the month of June, 1981

Sea Surface Temperature Anomalies for the month of June, 1981

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# TEMPERATURE AND PRECIPITATION DATA FOR THE WEEK ENDING 0600 G.M.T. JULY 10,1981

	TEN	1PER	ATUR	E ANI	D PRE	CIPIT	ATION DATA FOR THE W	t -
	Te	mper	ature (	°C)	Precip	. (mm)		1
Station	Average	Departure from Normal	Extreme	Extreme Minimum	Total	Departure from Normal	Station	Average
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	17 13 M 12 M 12 18 17 18 9 M 16 16 22 11 21 M 13 20 13 14 16 17 12 13 M 16 16 17 18 17 18 18 18 18 18 18 18 18 18 18 18 18 18	- 1 X O X O O O O O O O O O O O O O O O O	27 18 26P 18 22P 16 16 33 25 32 17 16P 27 25 35 15 33 24P 16 34 17 24 16 27 32 17 22 17 22 17 24 16 27 27 27 27 27 27 27 27 27 27 27 27 27	9 7 5 7 4P 8 9 8 10 7 11 8 11 6P 8 8 7 3 4 5 7 1 1 1 1 9 7 1 1 1 1 1 1 1 1 1 1 1 1 1	6.2 11.4 M 6.4 3.0 3.8 34.8 52.6 1.1 7.8 25.3 M 0.2 0.0 2.6 30.2 2.5 M 19.0 14.2 8.1 10.6 20.0 5.6 M 10.7 2.2	- 2.7 1.3 X - 4.5 X -10.8 20.8 39.3 - 5.1 1.5 8.8 M -17.0 -10.5 8.2 - 1.8 X 5.3 6.0 - 1.1 1.0 - 6.0 M 1.6 - 6.7 X - 2.4 - 0.5 6.7 - 3.9	Jasper Lethbridge Medicine Hat Peace River Red Deer Rocky Mountain House Slave Lake Vermilion Whitecourt  SASKATCHEWAN Broadview Buffalo Narrows Gree Lake Estevan Hudson Bay	
YUKON Burwash Dawson Komakuk Beach Mayo Shingle Point Watson Lake Whitehorse  NORTHWEST TERRITORIE Alert	5 10 6 11 10 8	- 4 - 4 - 3 - 3	18 21 16 19 19 19	1 2 0 2 2 2 2 4	0.6		Meadow Lake Moose Jaw Nipawin North Battleford Prince Albert Regina Rockglen Saskatoon Swift Current	
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 Wort Reliance Fort Simpson Fort Smith Frobisher Bay Gladman Point Hall Beach Hay River Inuvik Jemny Lind Island Lady Franklin Point Longstaff Bluff Mackar Inlet Mould Bay Nicholson Peninsula Norman Wells Peily Bay Pond Inlet Port Burwell Resolute	12 3 9 5 4 4 3 6 7 3 8 4 4 8 5 17 7 8 5 17 7 6 6 6 5 6 6 7 7 7 7 7 7 7 7 7 7 7 7	0 1 1 X 0 1 1 - 1 1 1 1 1 2 0 2 2 - 6 1	10 17 14 12 9 11 10 18 20 9 19P 18 17 12 M 13 25 27 29 16 16 14 28 18	- 4 - 3 4 3 1 - 1 - 2 0 1 2 - 1 2 2 1 - 2 0 7 7 6 2 1 0 5 1 1 - 1 0 5 1 1 0 1 1 0 1 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	16.4 7.0 25.1 M 3.6 6.4 26.1 4.7 28.7 2.1 9.4 12.9 27.4 2.4 0.0 33.5 3.3 3.2	- 1.9 6.9 - 1.7 - 3.1 X 14.2 5.7 8.7 18.5 9.6 6.2 - 3.1 10.8 - 2.2 16.7 M 2.1 1.2 12.5 - 9.2 20.4 - 2.2 4.8 1.9 21.5 0.9 - 4.1 30.2 - 2.2 0.9 - 0.3 4.6 0.4 X X - 6.3	Wynyard Yorkton  MANITOBA Bissett Brandon Churchill Dauphin Gillam Gimli Island Lake Lynn Lake Norway House Pilot Mound Portage la Prairie The Pas Thompson Winnipeg  ONTARIO Armstrong Atikokan Earlton Geraldton Gore Bay Kapuskasing Kenora Kingston	222222222222222222222222222222222222222

ION DATA FOR THE	WEEK	( EN	DING	060	0 G.M	.T. Jl	JL
	Ter	nperc	iture (	°C)	Precip. (mm)		
Station	Average	Departure from Normal	Extreme	Extreme Minimum	Total	Departure from Normal	
Sachs Harbour Shepherd Bay Tuktoyaktuk Yellowknife	M 8 5 16	M 2 - 4 0	11P 15 18 24	- 1 1 0 9	2.0 1.8 2.4 11.9	- 1.2 - 3.1 - 1.8 4.4	
ALBERTA Banff Calgary Cold Lake Coronation Edmonton Intl Edmonton Mun Edmonton Namao Edson Fort Chipewyan Fort McMurray Grande Prairie High Level Jasper Lethbridge Medicine Hat Peace River Red Deer Rocky Mountain House Slave Lake Vermilion Whitecourt	M 18 19 M 17 19 18 16 M 18 16 21 21 16 17 16 16	3 M 3 1 0 2 3 2 1 1 2 1 5	27P 30 31 31P 30 31 30 29 M 31 26 26 27 32 34 26 29 30 25 33 28	4P 9 7 6 7 10 8 4 9 7 4 4 7 8 8 8 4 4 5 4 4 11 7	14.4 13.4 8.5 1.2 17.9 7.2 9.8 3.6 M 1.7 0.2 1.4 12.8 1.4 5.4 2.4 16.6 2.6 7.4 9.4	-12.7 -15.6 3.7 -14.2 - 4.4 - 9.0 - 6.2 -20.6 -20.7	
SASKATCHEWAN Broadview Buffalo Narrows Cree Lake Estevan Hudson Bay Kindersley La Ronge Meadow Lake Moose Jaw Nipawin North Battleford Prince Albert Regina Rockglen Saskatoon Swift Current Uranium City Wynyard Yorkton	23 M 18 24 22 21 20 18 24 21 20 20 24 M 21 21 17 22 22	M X 6 5 4 4 4 4 6 X 4 4 4 1 6	39 30P 29 41 32 32 31 31 38 31 33 37 35P 32 34 27 33 35	9 12 11 10 11 9 11 11 11 9 11 14P 12 9 10 12	1.4 4.0 2.4 0.0 12.6 17.8 2.5 8.2 0.0 7.4 14.9 7.3 0.2 M 17.8 2.0 9.5 3.6 12.0	- 4.8 4.0 -27.9 X - 9.0 X - 3.6 - 6.3 -13.8 X 4.7 - 9.2 0.8 -14.5	
MANITOBA Bissett Brandon Churchill Dauphin Gillam Gillam Gimli Island Lake Lynn Lake Norway House Pilot Mound Portage la Prairie The Pas Thompson Winnipeg	22 M 18 23 21 22 23 19 21 M 23 22 21 22	7 5 X 4 X 3 X	35 37P 30 36 32 35 32 30 31 34 37 32 33 34	12 10P 5 12 11 14 15 9 14 11P 13 13 9 13	3.8 5.6 19.5 2.9 3.6 10.6 0.4 5.0 1.8 1.0 1.7 30.0 0.2 9.4	-12.5 10.7 -12.5 X	
ONTARIO Armstrong Atikokan Earlton Geraldton Gore Bay Kapuskasing Kenora Kingston Lansdowne London Moosonee Mount Forest Muskoka North Bay Ottawa Petawawa Pickle Lake Red Lake	17 19 20 17 20 22 22 22 29 M 21 20 22 21 20	1 2 3 1 3 4 5 3 5 2 5 M 4 3 2 X	31 32 31 29 29 30 33 27 30 29 31 26P 27 29 32 32 30 33	2 5 6 1 13 7 13 17 11 16 5 13P 14 12 15 12 10 9	12.6 12.4 4.0 5.0 0.4 15.1 25.5 17.4 9.7 12.0 14.4 M 30.2 3.0 21.3 9.0 19.6 7.2	- 6.7 -14.8 -13.5 -16.5 -12.5 - 5.3 - 6.7 7.5 - 9.7 -10.6 - 4.7 M 9.5 -21.3 1.1 X - 0.5 - 8.4	

	Temperature (°C)				Precip. (mm)		
Station	Average	Departure from Normal	Extreme Moximum	Extreme Minimum	Total	Departure from Normal	
Simcoe Sioux Lookout Sudbury Thunder Bay Timmins Toronto Trenton Trout Lake Wawa Wiarton Windsor	22 22 20 17 20 22 21 16 19 23	0	28 34 30 33 31 30 30 30 27 26 30	16 12 11 5 7 15 16 13 5 12 18	M M 20.5 3.2 9.8 26.0 15.1 1.8 0.6 18.1 3.6	M M - 0.3 -12.1 -10.9 13.5 - 5.6 -18.5 X 3.5 -13.1	
QUEBEC Bagotville Baie Comeau Blanc Sablon Border Chibougamau Fort Chimo Gaspé Grindstone Island Inoucdjouac Koartak La Grande Rivière Maniwaki Matagami Mont-Joli Montréal Natashquan Nitchecun Port Menier Poste-de-la-Baleine Québec Rivière du Loup Roberval Schefferville Sept-Iles Sherbrooke Ste Agathe des Monts Val d'Or	211 155 111 M 199 144 188 177 47 77 177 177 M M 188 233 155 155 M 144 211 M 200 144 166 222 220 220	X 5 X 2 - 4 X X M X 2 2 3 3 M 5 3 M 4 3 2 5 3	26 32 25 9 13 29 29P 29P 30 30 24 26 18P 31 29 27P 30 27 25 31 28	9 6 6 3 5 10 - 2 1 6 12 3 8 15 9 6 12 1 14 10 7 3 7 12 12 7	40.4	12.2 8.9 -21.2 8.4 M - 9.1 - 3.8 M -19.6 21.1 -12.9 -18.0 - 1.9	
NEW BRUNSWICK Charlo Chatham Fredericton Moncton Saint John	20 22 22 20 18	4 4 2	33 35 32 30 28	11 8 8 8	11.4 5.6 11.3	-21.5 - 6.2 -15.7 - 5.9 - 0.7	
NOVA SCOTIA Eddy Point Greenwood Sable Island Shearwater Sydney Truro Yarmouth	20 21 15 19 20 M 17	2	30 29 20 29 31 26P 25	12 10 11 13 10 13 10		X 8.3 -12.1 - 3.8 8.1 M 20.4	
PRINCE EDWARD ISLAND Charlottetown Summerside	20 20	3 2	28 29	10		- 7.7 -14.2	
NEWFOUNDLAND Argentia Battle Harbour Bonavista Burgeo Cartwright Churchill Falls Comfort Cove Daniel's Harbour Deer Lake Gander Goose Hopedale Port aux Basques St Albans St Anthony St John's St Lawrence Stephenville Wabush Lake	M 12 14 14 16 15 17 14 16 17 18 14 16 12 16 M	X 4 1 2 5 2 1 1 0 1 4 5 2 2 X 2 1 1 N	17P 30 26 19 30 28 31 21 29 30 33 30 19 30 28 28 17 24 28	8 5 5 8 5 7 2 5 7 4 8 7 2 6 6 8 6 P	4.6 62.0 15.4 12.4 5.4 2.6 2.3 2.4 11.8 3.0 28.1 35.3 0.0 25.7 41.1 18.4	X -18.5 -18.8 36.4 - 5.7 - 2.2 -10.4 -18.6 -17.4 -15.7 -12.7 -19.9 - 4.4 17.2 X 7.3 21.9 - 3.5 -16.7	