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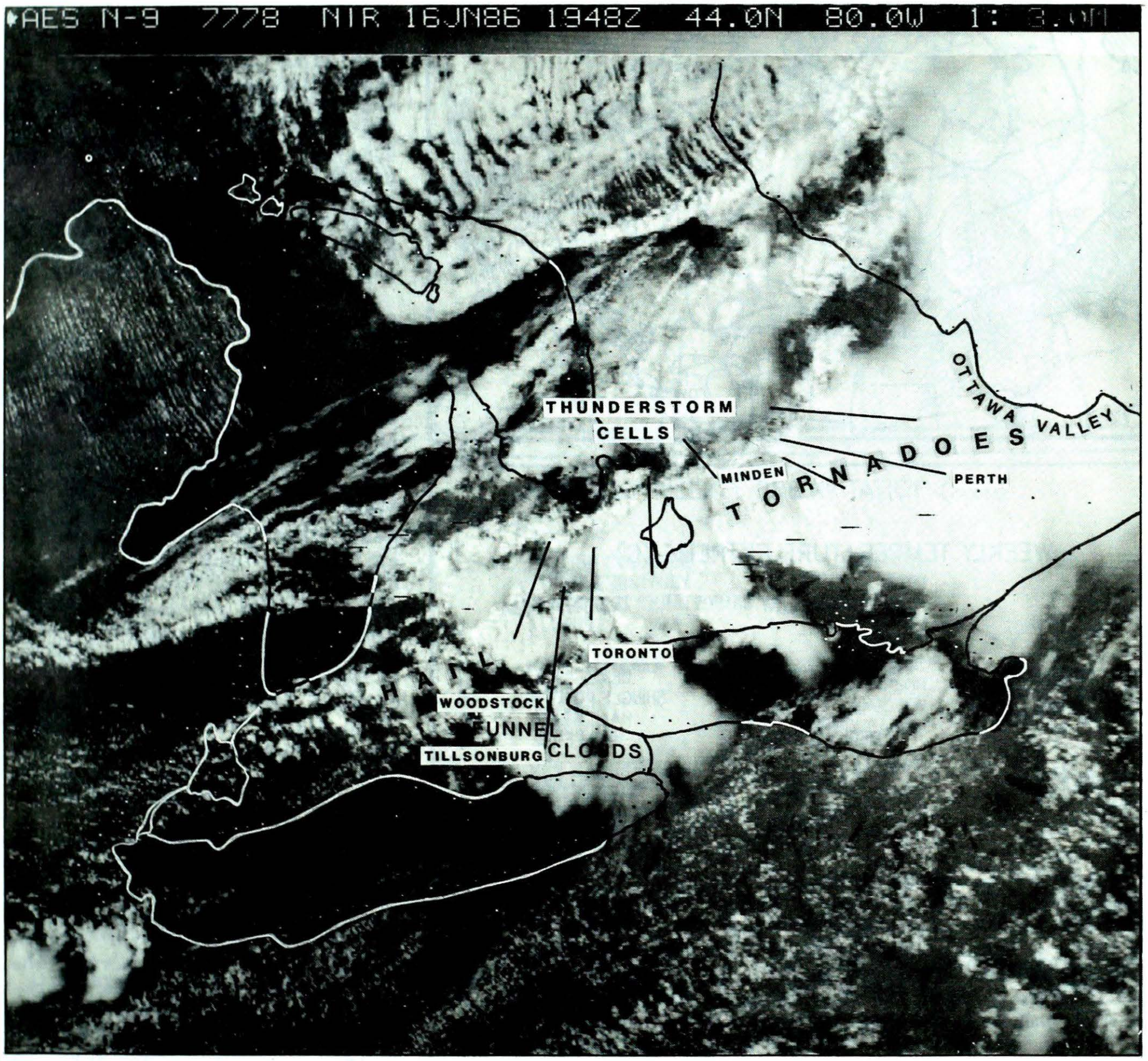
Climatic Perspectives

A weekly review of Canadian climate | June 10 to 16, 1986 | Vol.8 No.24

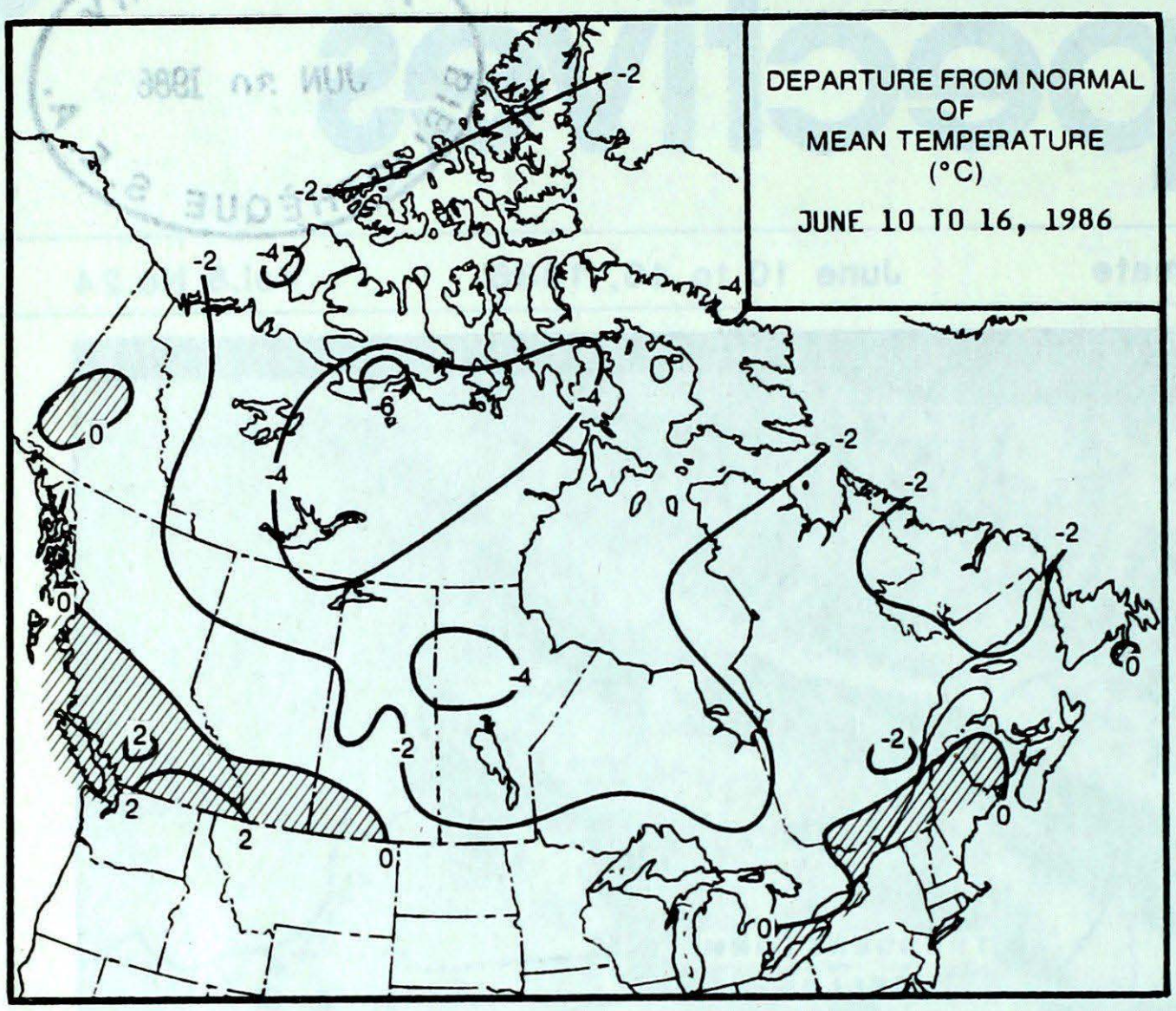


This NOAA 9 photograph taken during the mid-afternoon of June 16, 1986, shows violent thunderstorm cells developing ahead of a fast moving cold front. For more information see page 3.

- ***Tornadoes slash across parts of Ontario and Quebec***
- ***Frost damage in the Maritimes***

Canada

TEMPERATURE



WEEKLY TEMPERATURE EXTREME (C)

	MAXIMUM		MINIMUM	
BRITISH COLUMBIA	LYTTON	35	DEASE LAKE	−2
YUKON TERRITORY	DAWSON	27	SHINGLE POINT A	−4
NORTHWEST TERRITORIES	INUVIK	26	HALL BEACH	−16
ALBERTA	MEDICINE HAT	28	HIGH LEVEL	−2
SASKATCHEWAN	REGINA	32	CREE LAKE	−3
MANITOBA	THE PAS	27	THOMPSON	−3
ONTARIO	WINDSOR	31	MOOSONEE	−3
QUEBEC	MONTREAL INT'L	29	LA GRANDE RIVIERE	−2
NEW BRUNSWICK	FREDERICTON	28	CHARLO MONCTON	0
NOVA SCOTIA	GREENWOOD	27	AMHERST SYDNEY	1
PRINCE EDWARD ISLAND	CHARLOTTETOWN	26	CHARLOTTETOWN	3
NEWFOUNDLAND	COMFORT COVE	22	CARTWRIGHT ST ANTHONY	−2

ACROSS THE NATION

WARMEST MEAN TEMPERATURE	21	WINDSOR	ONT
COOLEST MEAN TEMPERATURE	−6	MACKAR INLET	NWT

ACROSS THE COUNTRY...

Yukon and Northwest Territories

Winter perservered in the Arctic, with below normal temperatures and fresh snowfalls. Except for the Yukon and Mackenzie district, mid-day temperatures only climbed to near freezing. Blizzards occurred in the Keewatin District, with winds gusting to nearly 100 km/h. Elsewhere, temperatures were near record low values, -15°C along the Arctic coastline. In the Yukon, sunshine predominated; however, clear nights gave frost to a few localities in the south. All river ferry systems are now operational, and as of June 10 the Dempster Highway is open to Inuvik.

British Columbia

Pleasant, but cooler weather conditions deteriorated during the week. On June 13, most of the south coast experienced their warmest temperatures of the year. A disturbance which rippled across the province over the weekend triggered heavy shower and thunderstorm activity in many areas. In the central interior, downpours caused local flooding and washed out logging roads. A small community in the Bulkley Valley east of Terrace had to be evacuated; two bridges and a CN Rail line were washed out by flash floods. The Peace River district, which did not receive the heavy rains, reported hail on the 11th. Haying continues in the southern valleys.

Prairie Provinces

Weather conditions were variable and cool, as a number of disturbances moved rapidly across the region. Significant amounts of precipitation were reported in many areas, ranging between 10 and 40 millimetres. Very strong winds on June 10, gusting to 100 km/h, overturned a tanker truck south of Regina. A funnel cloud was sighted near Stoney Mountain, Manitoba, on June 13. The weekend was very cool, with a number of new daily low temperature records set. Minimum temperatures at several locations dropped below freezing. Snow flurries occurred near the Hudson Bay coast.

PRECIPITATION

Ontario

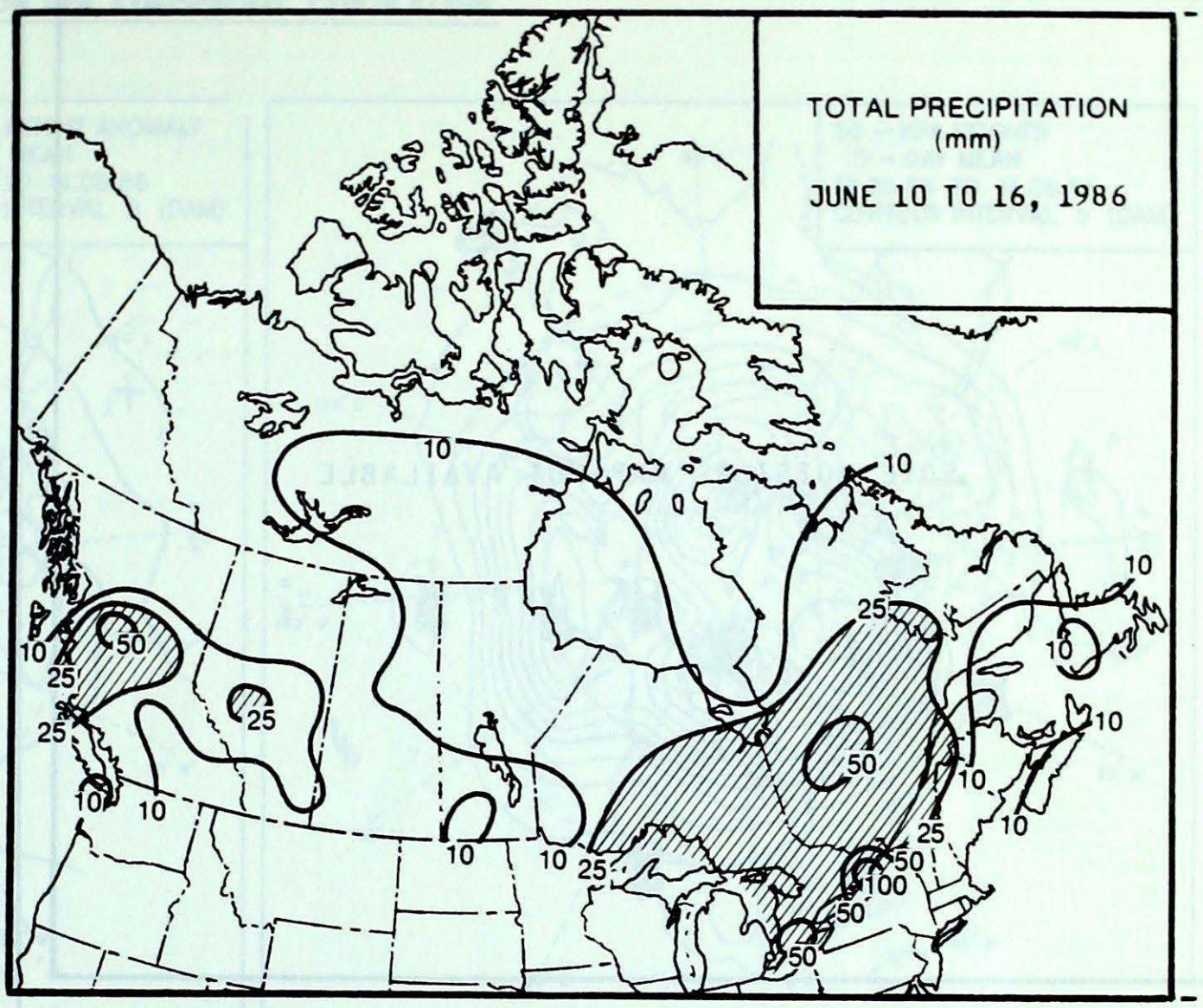
It was a very unsummer-like week, with cool temperatures and changeably cloudy sky conditions. It was a wet period, with passing disturbances giving widespread and significant amounts of rain. Several 24-hour precipitation records were broken. An unstable tropical airmass penetrated the southern portions of the province the final day of the period, causing the humidex to soar to uncomfortable levels. The same day, a fast moving cold front approaching from the northwest, triggered severe thunderstorms during the afternoon and evening hours of June 16. See additional information about tornadoes on this page.

Quebec

The week was generally cool, with a mixture of sun and cloud. Passing disturbances were associated with occasional showers and thundershowers. An area of rain moved across the province over the weekend. A fisherman was killed by lightning southeast of Val d'Or on June 14. On June 16, a rapidly moving cold front produced heavy thunderstorms throughout southwestern Quebec, spawning possible tornadoes near the Ottawa Valley. Downpours produced up to 45 mm of rain at some locations.

Atlantic Provinces

It was mostly sunny, but cool during the middle of the week. Frost occurred in several parts of the Maritimes on June 12. At Montague P.E.I. the frost destroyed fields of tobacco. Elsewhere, strawberry growers were watering down their crops to protect them from freezing. In Newfoundland, it was generally fair, with sunshine more prevalent during the latter part of the period. Scattered showers and thundershowers were reported, as was coastal fog. In Labrador, the week began with periods of rain and snow, with temperatures generally returning to more seasonal values through the week.



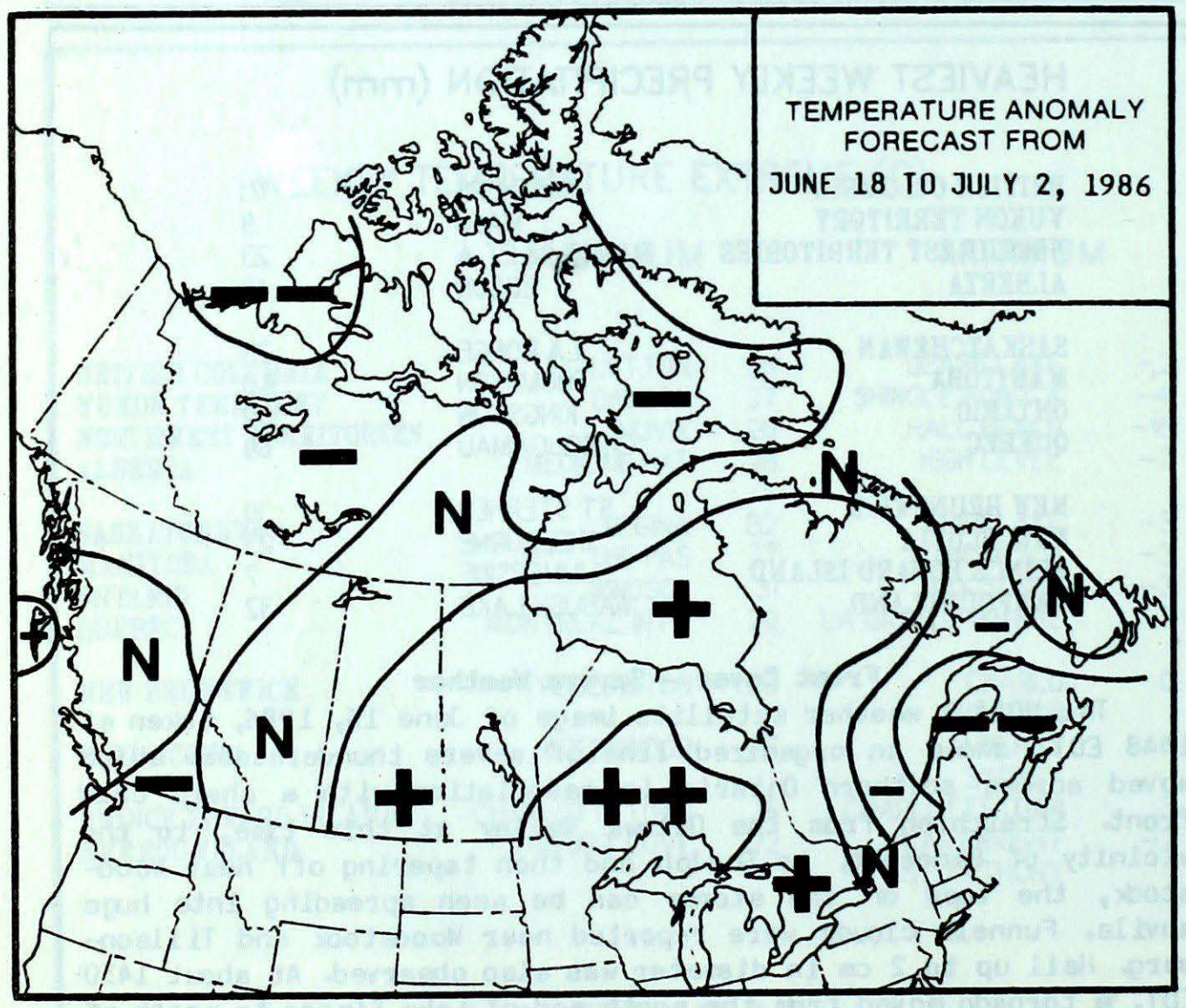
HEAVIEST WEEKLY PRECIPITATION (mm)

BRITISH COLUMBIA	SMITHERS	71
YUKON TERRITORY	MAYO	8
NORTHWEST TERRITORIES	RANKIN INLET A	23
ALBERTA	EDSON	42
SASKATCHEWAN	LA RONGE	23
MANITOBA	THOMPSON	40
ONTARIO	KINGSTON	100
QUEBEC	CHIBOUGAMAU	69
NEW BRUNSWICK	ST STEPHEN	10
NOVA SCOTIA	SHELBURNE	23
PRINCE EDWARD ISLAND	SUMMERSIDE	7
NEWFOUNDLAND	WABUSH LAKE	32

Front Cover - Severe Weather

The NOAA 9 weather satellite image of June 16, 1986, taken at 1548 EDT, shows an organized line of severe thunderstorms which moved across southern Ontario in association with a sharp cold front. Stretching from the Ottawa Valley at this time, to the vicinity of Bancroft, to Guelph and then tapering off near Woodstock, the tops of the storms can be seen spreading into huge anvils. Funnels clouds were reported near Woodstock and Tillsonburg. Hail up to 2 cm in diameter was also observed. At about 1430 EDT, a tornado moved from the north end of Lake Simcoe to north of Minden and then to Eagle Lake. Hundreds of cottages were damaged or demolished, tracts of trees were broken and uprooted and one person was injured. Another severe storm, possibly a tornado, was reported in the vicinity of Perth. Yet a third tornado occurred near Gracefield, Quebec during the early evening, flattening houses, overturning cars, but fortunately causing no personal injuries or deaths.

SOIL MOISTURE MAP NOT AVAILABLE



Temperature Anomaly Forecast

This forecast is prepared by searching historical weather maps to find cases similar to the present. The historical outcome during the 15 days subsequent to the chosen analogues is assumed to be a forecast for the next 15 days from now.

++	much above normal
+	above normal
N	normal
−	below normal
−−	much below normal

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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.

Unsolicited articles are welcome but should be at maximum about 1500 words in length. They will be subject to editorial change without notice due to publishing time constraints. The contents may be reprinted freely with proper credit.

The data shown 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.

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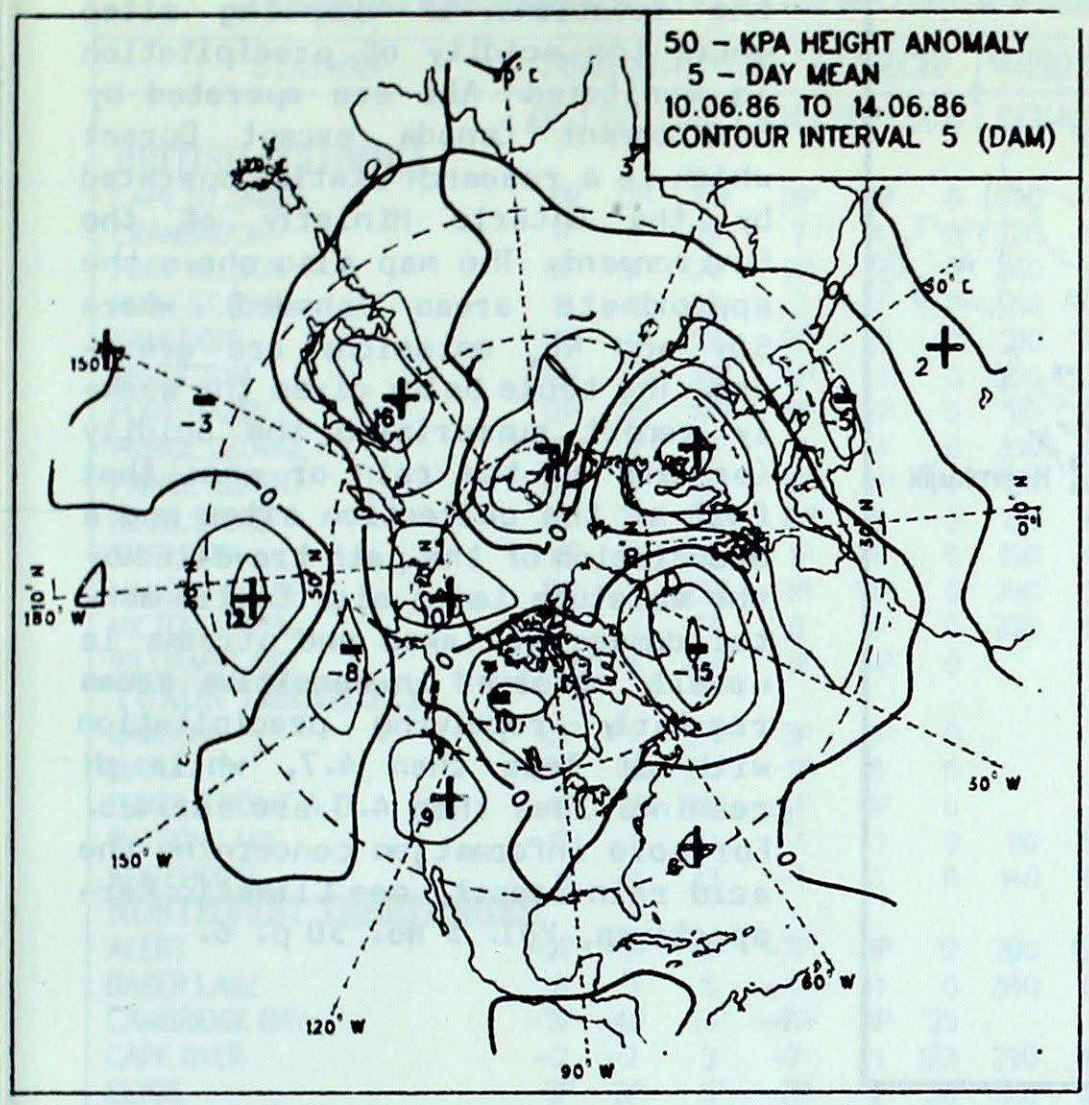
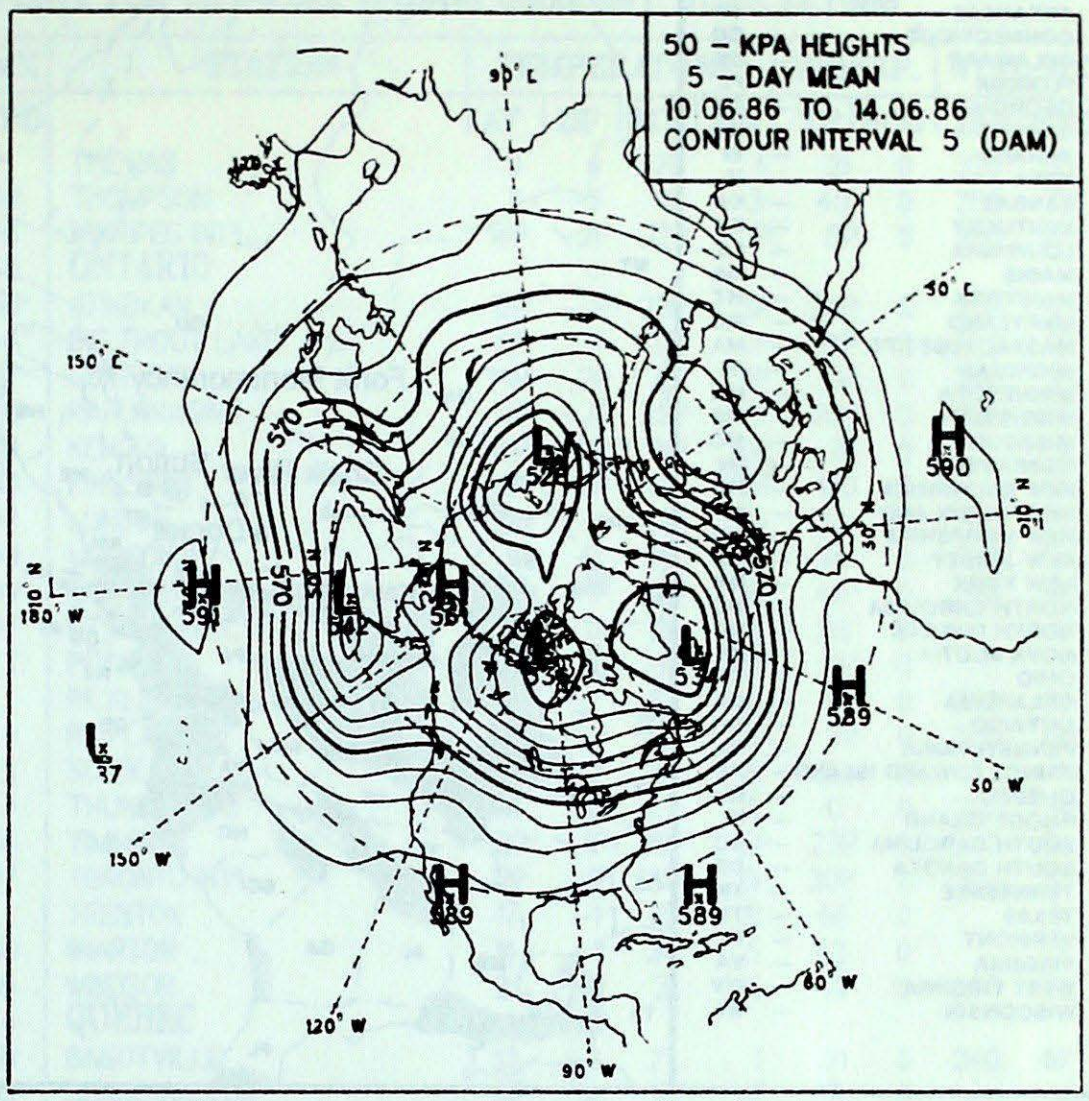
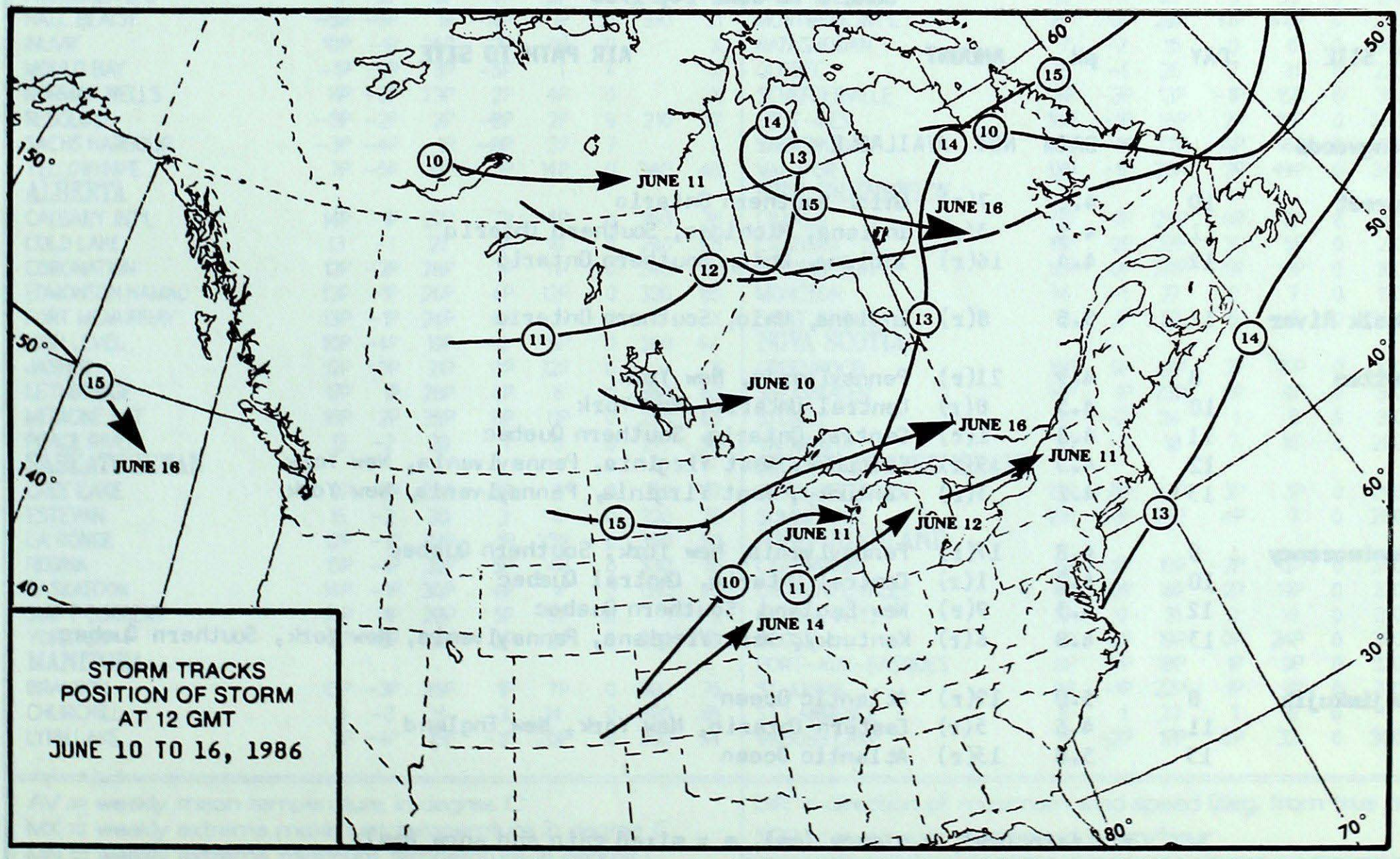
50 KPa ATMOSPHERIC CIRCULATION



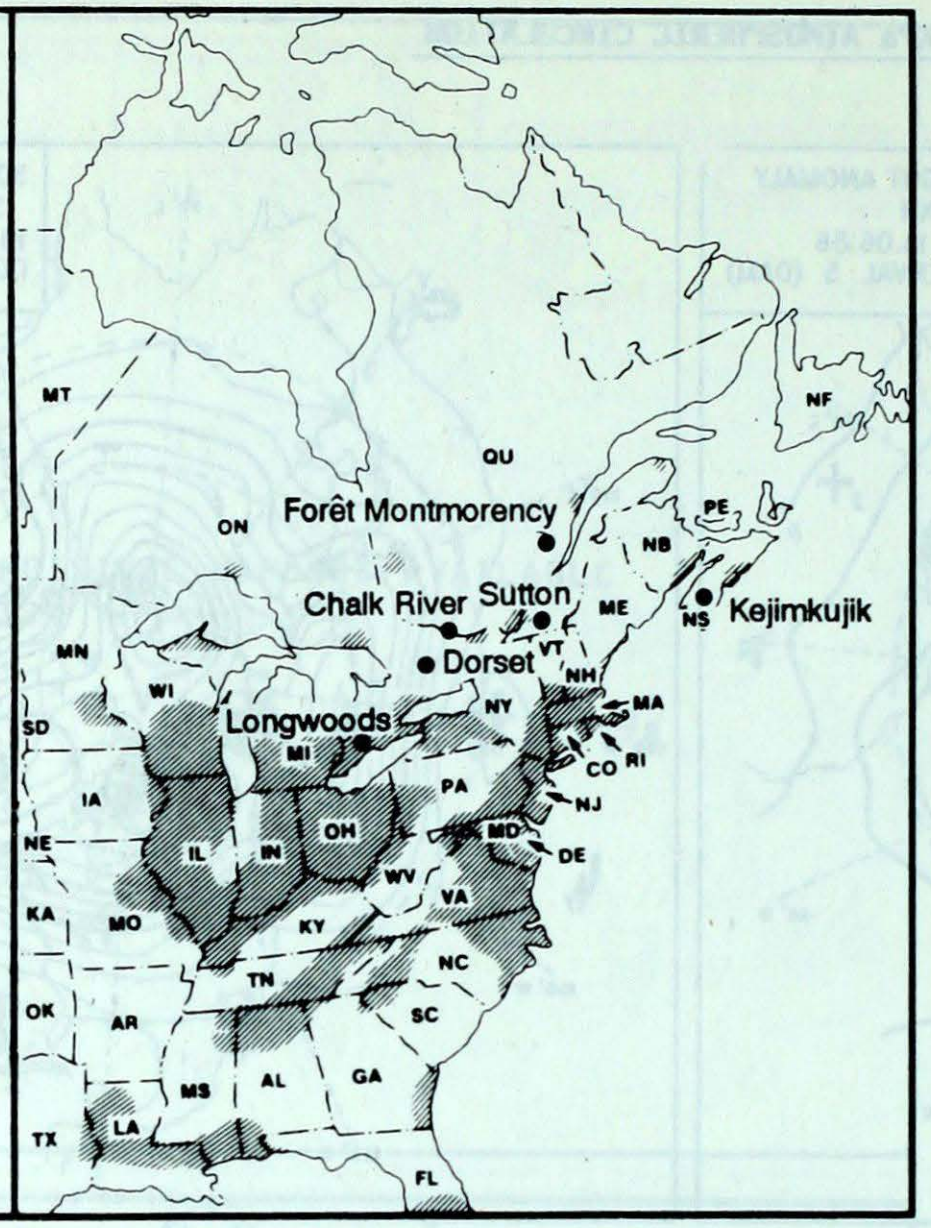
MEAN 50 KPa HEIGHT ANOMALY (dam)
June 10 to June 14, 1986



MEAN 50 KPa HEIGHTS (dam)
June 10 to June 14, 1986



ALABAMA	—	AL
ARKANSAS	—	AR
CONNECTICUT	—	CO
DELAWARE	—	DE
FLORIDA	—	FL
GEORGIA	—	GA
ILLINOIS	—	IL
INDIANA	—	IN
IOWA	—	IA
KANSAS	—	KA
KENTUCKY	—	KY
LOUISIANA	—	LA
MAINE	—	ME
MANITOBA	—	MT
MARYLAND	—	MD
MASSACHUSETTS	—	MA
MICHIGAN	—	MI
MINNESOTA	—	MN
MISSISSIPPI	—	MS
MISSOURI	—	MO
NEBRASKA	—	NE
NEW BRUNSWICK	—	NB
NEWFOUNDLAND	—	NF
NEW HAMPSHIRE	—	NH
NEW JERSEY	—	NJ
NEW YORK	—	NY
NORTH CAROLINA	—	NC
NORTH DAKOTA	—	ND
NOVA SCOTIA	—	NS
OHIO	—	OH
OKLAHOMA	—	OK
ONTARIO	—	ON
PENNSYLVANIA	—	PA
PRINCE EDWARD ISLAND	—	PE
QUÉBEC	—	QU
RHODE ISLAND	—	RI
SOUTH CAROLINA	—	SC
SOUTH DAKOTA	—	SD
TENNESSEE	—	TN
TEXAS	—	TX
VERMONT	—	VT
VIRGINIA	—	VA
WEST VIRGINIA	—	WV
WISCONSIN	—	WI



ACID RAIN REPORT

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_2 and NO_x emissions are greatest. The table below gives the weekly report summarizing the acidity (or pH) of the 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 less than 4.7, while pH readings less than 4.0 are serious. For more information concerning the acid rain report, see Climatic Perspectives, Vol. 5 No. 50 p. 6.

JUNE 8 TO JUNE 14, 1986

SITE	DAY	pH	AMOUNT	AIR PATH TO SITE
Longwoods		DATA NOT AVAILABLE		
Dorset	10	4.2	7(r)	Ohio, Southern Ontario
	11	4.2	3(r)	Indiana, Michigan, Southern Ontario
	12	4.4	16(r)	Indiana, Ohio, Southern Ontario
Chalk River	12	5.5	8(r)	Indiana, Ohio, Southern Ontario
Sutton	8	4.9	21(r)	Pennsylvania, New York
	10	4.5	8(r)	Central Ontario, New York
	11	4.2	1(r)	Central Ontario, Southern Quebec
	12	4.3	9(r)	Kentucky, West Virginia, Pennsylvania, New York
	13	4.2	3(r)	Kentucky, West Virginia, Pennsylvania, New York
Montmorency	8	4.8	17(r)	Pennsylvania, New York, Southern Quebec
	10	4.2	1(r)	Central Ontario, Central Quebec
	12	5.3	9(r)	New England, Southern Quebec
	13	4.8	6(r)	Kentucky, West Virgiana, Pennsylvania, New York, Southern Quebec
Kejimkujik	8	5.0	19(r)	Atlantic Ocean
	11	4.6	5(r)	Eastern Ontario, New York, New England
	13	5.0	13(r)	Atlantic Ocean

r = rain (mm), s = snow (cm), m = mixed rain and snow (mm).

TEMPERATURE, PRECIPITATION AND MAXIMUM WIND DATA FOR THE WEEK ENDING 0600 GMT JUNE 17,1986

STATION	TEMPERATURE				PRECIP.		WIND MX	
	AV	DP	MX	MN	TP	SOG	DIR	SPD
BRITISH COLUMBIA								
CAPE ST.JAMES	11P	0P	15P	8P	12P	0	090	98
CRANBROOK	17	4	29	7	4	0	220	65
FORT NELSON	12P	-3P	21P	2P	4P	0	280	46
FORT ST.JOHN	12	-2	20	2	7	0	210	59
KAMLOOPS	19P	1P	30P	8P	0P	0	210	44
PENTICTON	19P	2P	31P	6P	1	0	250	37
PORT HARDY	12P	0P	19P	5P	26P	0	110	56
PRINCE GEORGE	12	*	26	1	41	0	350	48
PRINCE RUPERT	12P	1P	18P	5P	4P	0	150	43
REVELSTOKE	17P	2P	29P	6P	6	0	150	67
SMITHERS	11P	-1P	25P	1P	71P	0	190	48
VANCOUVER INT'L	15P	1P	23P	9P	19P	0	290	59
VICTORIA INT'L	15	1	27	8	6	0	230	57
WILLIAMS LAKE	13P	*	24P	1P	4P	0		X
YUKON TERRITORY								
DAWSON	13P	*	27P	3P	0P	0		*
MAYO	14P	0P	25P	1P	8	0		X
SHINGLE POINT A	4P	-1P	18P	-4P	0P	0		*
WATSON LAKE	12	-1	22	-1	1	0	110	54
WHITEHORSE	11	-1	23	-1	0	0	140	67
NORTHWEST TERRITORIES								
ALERT	-2P	-1P	4P	-7P	1P	12	280	100
BAKER LAKE	0	-3	5	-4	11	0	340	65
CAMBRIDGE BAY	-3P	-4P	5P	-7P	1P	25		*
CAPE DYER	-2	-2	3	-7	1	123	290	48
CLYDE	-3P	-3P	1P	-7P	1P	36	310	35
COPPERMINE	0P	*	12P	-7P	1P	8	230	33
CORAL HARBOUR	-1	-3	3	-8	6	18		X
EUREKA	-1P	-2P	3P	-6P	1	7	140	41
FORT SMITH	9	-5	20	-3	4	0		X
FROBISHER BAY	1P	-2P	6P	-4P	3P	1	150	44
HALL BEACH	-5P	-5P	1P	-16P	1P	31	310	31
INUVIK	10P	-1P	26P	-2P	0P	0		X
MOULD BAY	-1P	0P	3P	-5P	1	*		X
NORMAN WELLS	11P	-3P	23P	2P	4P	0		X
RESOLUTE	-3P	-2P	2P	-8P	2P	9	210	67
SACHS HARBOUR	-3P	-4P	1P	-8P	3P	7		X
YELLOWKNIFE	7P	-5P	15P	1P	14P	0	340	48
ALBERTA								
CALGARY INT'L	14P	1P	27P	7P	4P	0	350	78
COLD LAKE	13	-1	27	2	10	0	290	63
CORONATION	12P	-2P	28P	1P	11P	0	340	81
EDMONTON NAMAO	13P	-1P	26P	4P	12P	0	320	85
FORT MCMURRAY	13P	-1P	24P	0P	1P	0		X
HIGH LEVEL	10P	-4P	19P	-2	8P	0	360	44
JASPER	12P	0P	21P	0P	12P	0		X
LETHBRIDGE	17P	1P	28P	6P	6	0	360	63
MEDICINE HAT	18P	2P	28P	8P	11P	0	250	63
PEACE RIVER	12	-2	20	1	3	0	270	50
SASKATCHEWAN								
CREE LAKE	9P	-4P	23P	-3P	3	0	250	67
ESTEVAN	15	-2	30	3	6	0	320	78
LA RONGE	12P	-1P	27P	-1P	23P	0	360	50
REGINA	15P	-1P	32P	5P	4P	0	330	78
SASKATOON	14P	-1P	30P	4P	*	0	310	76
SWIFT CURRENT	16P	1P	29P	5P	8P	0		X
YORKTON	12P	-3P	29P	2P	2P	0	300	69
MANITOBA								
BRANDON	13P	-3P	26P	1P	7P	0	300	76
CHURCHILL	3	-3	14	-3	24	0	320	65
LYNN LAKE	7P	-4P	15P	-1P	20P	0	300	54

STATION	TEMPERATURE				PRECIP.		WIND MX	
	AV	DP	MX	MN	TP	SOG	DIR	SPD
THE PAS	11	*	27	1	21	0	320	70
THOMPSON	7	-5	18	-3	40	0	280	72
WINNIPEG INT'L	14P	-2P	22P	3P	8P	0	280	63
ONTARIO								
ATIKOKAN	12P	-2P	23P	3P	34P	0	330	65
BIG TROUT LAKE	8P	*	17P	0P	19P	0	320	65
GORE BAY	14P	-2P	21P	6P	31P	0	290	56
KAPUSKASING	11P	-2P	26P	1P	28P	0	320	63
KENORA	14P	-2P	21P	6P	7P	0		*
KINGSTON	16P	0P	21P	10P	100	0		X
LONDON	19	1	29	9	53	0	240	83
MOOSONEE	9	-2	24	-3	34	0	290	57
NORTH BAY	14P	-1P	23P	5P	41P	0	350	56
OTTAWA INT'L	18	0	27	10	38	0		X
PETAWAWA	17P	1P	29P	5P	21P	0		X
PICKLE LAKE	10	-2	23	0	17	0	250	69
RED LAKE	12P	-2P	20P	3P	7P	0	300	69
SUDBURY	14	-2	24	5	28	0		X
THUNDER BAY	13	0	23	5	42	0	290	59
TIMMINS	13P	-1P	28P	2P	23P	0	340	74
TORONTO INT'L	17P	-1P	28P	6P	30P	0	300	57
TRENTON	17	-1	25	8	46	0		X
WIARTON	14	-1	24	5	43	0		X
WINDSOR	21	1	31	11	49	0	290	70
QUEBEC								
BAGOTVILLE	13	-2	27	1	31	0	240	67
BLANC SABLON	6P	*	12P	1P	17P	0		X
INUKJUAK	3P	-1P	15P	-1P	8P	0	350	59
KUUJJUAQ	4P	-1P	15P	-1P	13P	0	260	67
KUUJJUARAPIK	4P	-2P	20P	-2P	31P	0	170	43
MANIWAKI	16P	0P	26P	5P	36P	0	280	69
MONT JOLI	13	-1	25	3	33	0	270	83
MONTREAL INT'L	18P	0P	29P	10P	44P	0	220	63
NATASHQUAN	7	-2	16	0	6	0	360	61
QUEBEC	15	-1	26	7	31	0	220	76
SCHEFFERVILLE	4P	-3P	13P	-1P	15P	0	310	59
SEPT-ILES	10P	-1P	18P	2P	19P	0	080	57
SHERBROOKE	16P	1P	27P	4P	16P	0	270	78
VAL D'OR	13P	-1P	26P	2P	49P	0	340	72
NEW BRUNSWICK								
CHARLO	13P	-1P	26P	0P	2P	0	260	44
CHATHAM	15P	0P	27P	3P	5P	0	210	59
FREDERICTON	16P	0P	28P	5P	3P	0	180	48
MONCTON	14	-1	27	0	7	0	190	81
SAINT JOHN	13	0	23	5	5	0	200	52
NOVA SCOTIA								
GREENWOOD	15P	0P	27P	2P	15P	0	220	74
SHEARWATER	14P	1P	23P	5P	9P	0	310	48
SYDNEY	11	-2	24	1	8	0	310	70
YARMOUTH	12	-1	18	7	18	0	200	57
PRINCE EDWARD ISLAND								
CHARLOTTETOWN	13P	0P	26P	3P	3P	0	290	46
SUMMERSIDE	13P	-1P	24P	4P	7	0	280	63
NEWFOUNDLAND								
CARTWRIGHT	5P	-3P	19P	-2P	12P	0	360	65
CHURCHILL FALLS	6P	-2P	16P	-2P	19P	0	310	57
GANDER INT'L	10	0	21	2	10	0	310	63
GOOSE	8P	-2P	19P	0P	24P	0	360	52
PORT-AUX-BASQUES	8P	0P	18P	1P	9P	0	320	104
ST JOHN'S	9P	-1P	22P	1P	9P	0	270	87
ST LAWRENCE	8	1	20	1	6	0		X
WABUSH LAKE	7P	-2P	17P	0P	32	0	300	59

AV = weekly mean temperature in degree C
MX = weekly extreme maximum temperature in degree C
MN = weekly extreme minimum temperature in degree C
TP = weekly total precipitation in mm
DP = departure of mean temperature from normal in degree C
SOG = snow depth on ground in cm, last day of the period

DIR = direction of maximum wind speed (deg. from true north)
SPD = maximum wind speed in km/hour

X = not observed
P = value based on less than 7 days
* = missing