Environment Canada Environnement Canada

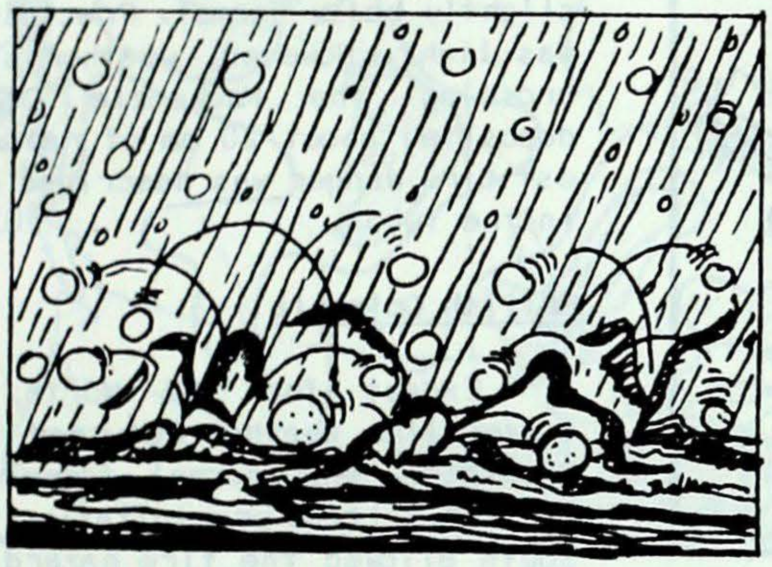
Canadian Climate Centre

Climatic Perspectives

A WEEKLY REVIEW OF CANADIAN CLIMATE

JUNE 22,1984 (Aussi disponible en français) VOL. 6 NO. 24

FOR THE PERIOD JUNE 12 TO 18, 1984

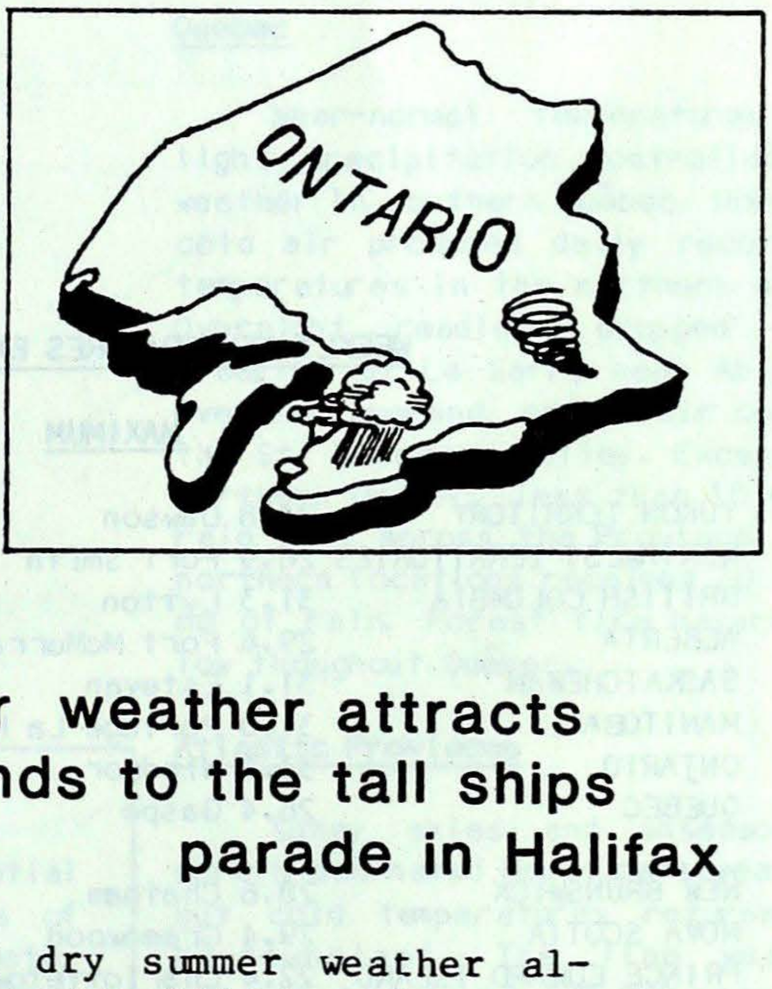


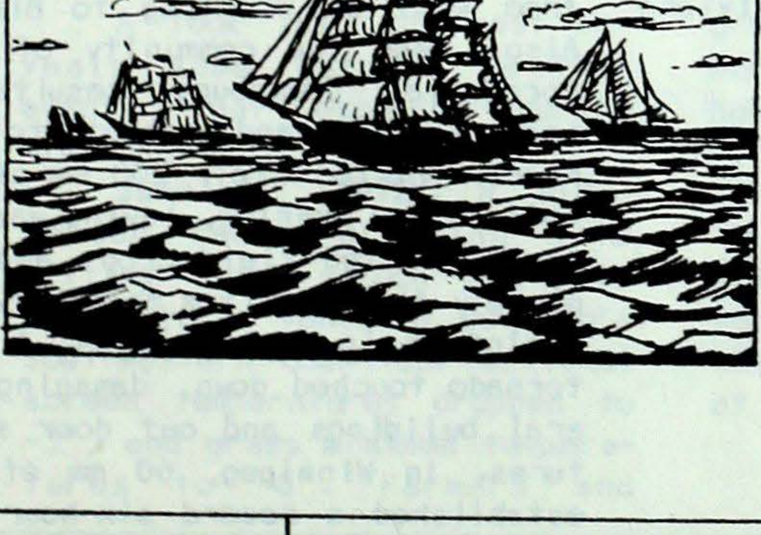
Torrential rain and hail damage crops in Southern Manitoba

Heavy rains of 100 mm and golf-ball size hail caused considerable crop damage in southern Manitoba. Those crops advanced in their growth cycle, such as some wheat, won't recover while emerging crops of barley and canola will most likely return to their normal growth.

Summer severe weather produces flash floods and a twister in Southern Ontario

Severe thunderstorms dumped 50 to 150 mm of rain along the lower Great Lakes. The rains caused mud slides in Hamilton and a twister levelled a few houses at Smith Falls. Trees were uprooted and cottages were demolished.





Fine summer weather attracts thousands to the tall ships parade in Halifax

Warm and dry summer weather allowed at least 300,000 people to attend the tall ships parade at the Halifax Harbour. The ships sailed towards Québec over the weekend.

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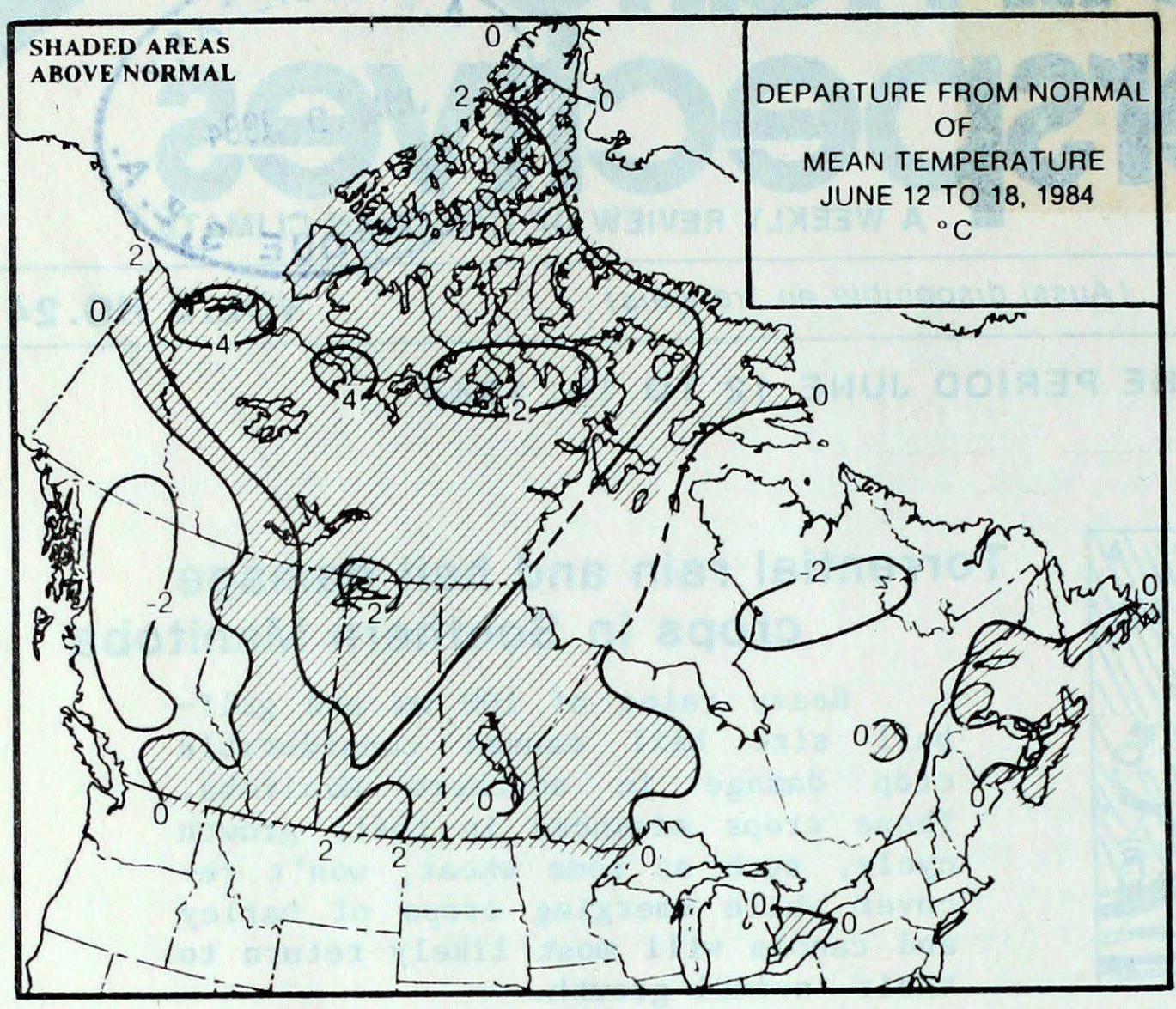
NOTE: The data shown in this publication are based on unverified reports from approximately 225 Canadian synoptic stations.

Canada



WEEKLY TEMPERATURES EXTREMES (°C)

	MAXIMUM		MINIMUM	
YUKON TERRITORY	24.8	Dawson	- 3.0	Burwash
NORTHWEST TERRITORIES	26.9	Fort Smith	- 5.5	Broughton Island
BRITISH COLUMBIA	31.3	Lytton	- 1.4	Dease Lake
ALBERTA	29.6	Fort McMurray	- 2.3	Banff
SASKATCHEWAN	31.1	Estevan	- 0.5	Collins Bay
MANITOBA	31.0	Portage La Prairie	- 1.0	Thompson
ONTARIO	33.1	Windsor	- 1.5	Moosonee
QUEBEC	26.4	Gaspé	- 2.5	Kuujjuarapik
				La Grande Rivière
NEW BRUNSWICK	28.6	Chatham	3.0	Charlo
NOVA SCOTIA	29.4	Greenwood	0.6	Eddy Point
PRINCE EDWARD ISLAND	22.4	Charlottetown	4.2	Charlottetown
NEWFOUNDLAND	25.4	Goose	- 3.8	Badger

ACROSS THE NATION

Warmest mean temperature	21.4	Windsor, Ont
Coolest mean temperature	- 1.6	Alert, NWT

ACROSS THE COUNTRY...

Yukon and Northwest Territories

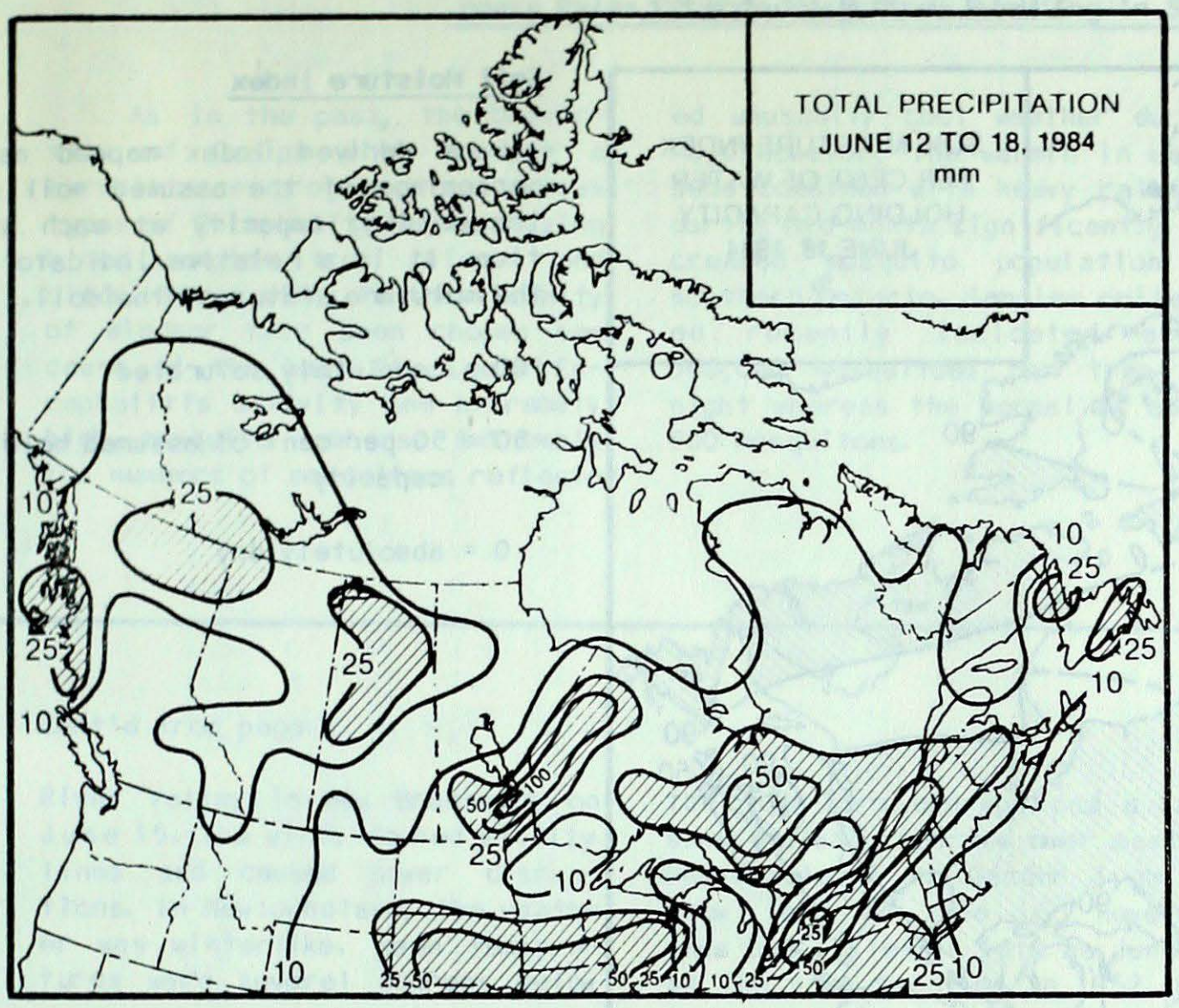
Warm air covered almost all of the Northwest Territories. Mean temperatures were 2 to 7 degrees above normal; and in the vicinity of the Great Slave Lake, daytime readings reached near 27°. Owing to the warm weather, depth of snow on the ground dropped from 80 to 40 centimetres at Clyde in one week. In the Yukon, weekly temperatures were slightly below normal. Precipitation was light. However, weather systems crossing the Mackenzie District deposited about 20 mm of rain. Forest fire danger was described as low in the Yukon.

British Columbia

Except for the North, fine summer-like weather returned to the Province. Near normal temperatures and very little precipitation in the South allowed the fire hazard index to climb to moderate. The hay harvest was in full swing across the South with good drying conditions. The snow pack continues to be above normal at higher elevations.

Prairies

The west was sunny and pleasant during the first half of the week, while in the east severe weather conditions developed and moved into southern Manitoba during the early part of the weekend. On June 15, golf ball size hail completely devastated some crops in many parts of southwestern Manitoba, especially near Brandon, where hail in some areas accumulated to a depth of 15 cm on the ground. On the evening of June 16, severe thunderstorms redeveloped across southern Manitoba from west of Winnipeg to Bissett. Also, near the community of Elie, torrential downpours resulted in heavy flooding and washouts to rural roads. Approximately 200 mm of rain fell in one evening, laying waste to newly planted field crops and completely flooding farm machinery left behind in low lying areas. A small tornado touched down, damaging several buildings and out door structures. In Winnipeg, 60 mm of rain established a record six-hour fall



HEAVIEST WEEKLY PRECIPITATION (mm)

YUKON	14.0	Teslin
NORTHWEST TERRITORIES	22.2	Norman Wells
BRITISH COLUMBIA	33.6	Prince Rupert
ALBERTA	23.4	High Level
SASKATCHEWAN	48.2	Cree Lake
MANITOBA	102.2	Bissett
ONTARIO	81.0	London
QUEBEC	70.8	Québec
NEW BRUNSWICK	31.0	Chatham
NOVA SCOTIA	25.2	Greenwood
PRINCE EDWARD ISLAND	22.9	Summerside
NEWFOUNDLAND	39.6	Daniels Harbour

Historically this week...

A look into the past reveals some extreme weather events that occurred during mid-June.

June 11, 1972: a widespread record-breaking late killing frost struck the rich agricultural lands of Ontario's southwestern Counties. Official screen temperatures dropped to -3°, and grass minimum temperatures to -8°. Farmers and growers suffered substantial economic losses as hundreds of hectares of tobacco, tomato, potato and cash crop vegetables were killed overnight.

June 14, 1969: the highest temperatures on record in the Yukon Territory occurred on this date 36° at Mayo, and 35° at White horse Riverdale.

for June.

Ontario

Severe weather struck southern Ontario. On June 13, thunderstorms roared across the southwestern areas. Lightning strike killed a 15-year boy in St. Catherines, While in Hamilton 75 mm of rain in less than 6 hours resulted in mud slides and in the closing of several roads. Northeast of Toronto, hail and strong winds knocked down power lines leaving residents without electricity. Torrential downpours in the 50 to 70 mm range inundated farms near London. Later in the week more heavy rain fell in the South, most notably at Hamilton, 87 mm; Sarnia, 77 m and Kitchner, 66 mm. The temperatures were unseasonably cold thoughout the Province, mean values were nearly 3° below normal near the shores of the lower Great Lakes. Earlier in June, dry weather allowed farmers to progress rapidly on their first cutting of hay, but heavy rains last week slowed down field work a few days.

Quebec

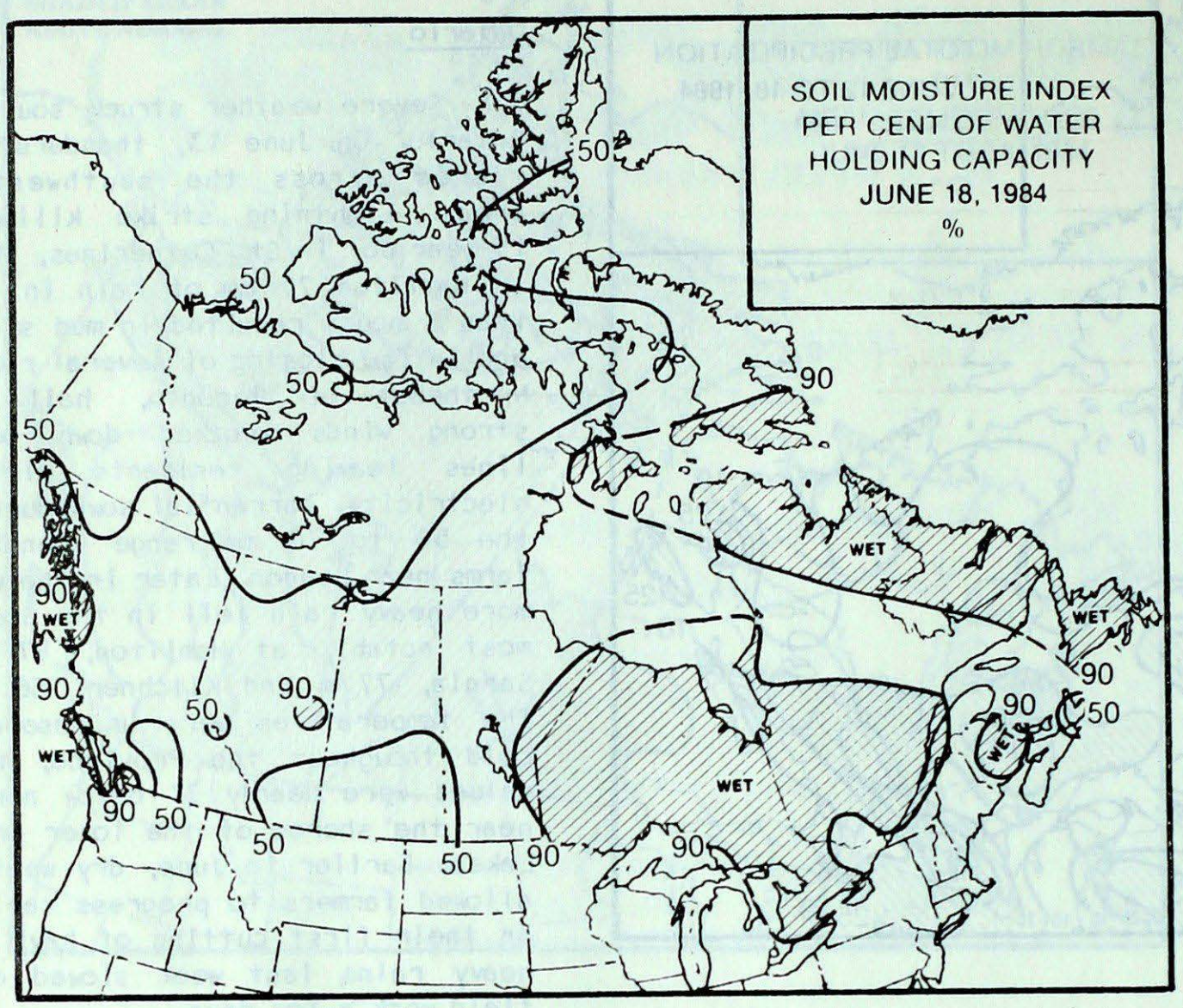
Near-normal temperatures and light precipitation controlled the weather in southern Québec. However, cold air produced daily record-low temperatures in the northern areas. Overnight readings dropped below freezing at La Sarre near Abitibi. Over the weekend, colder air covered the St. Lawrence Valley. Except for northern Québec, less than 10 mm of rain fell across the Province. Some northern locations received 20 to 30 mm of rain. Forest fire hazard was low thoughout Québec.

Atlantic Provinces

Sunny skies and unseasonable warmth dominated Maritime's weather, but cold temperatures returned to Newfoundland. The fine weather attracted at least 300,000 people to the tall ships parade at the Halifax Harbour. Owing to the warm weather, abundant strawberry crop was expected ahead of schedule in the Martimes, also the first cut of the hay crop was described as excellent. Damaging winds struck the Saint John

...continued on page 5

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

Forecast chart not available

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

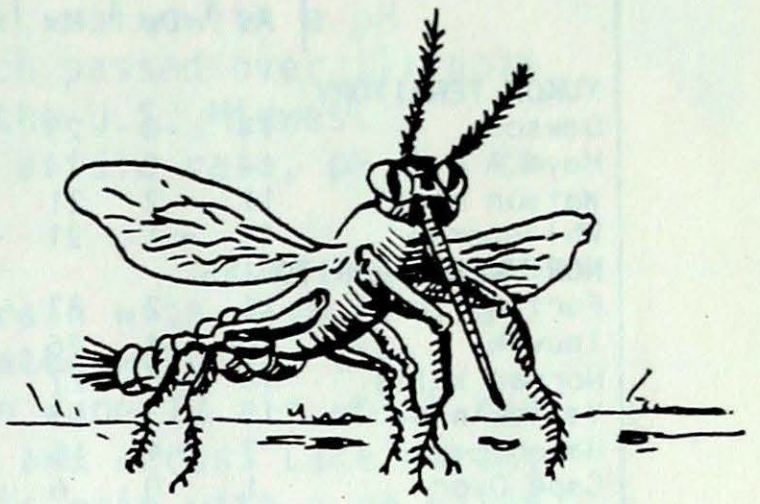
+ above normal

N normal

- below normal

-- much below normal

Heavy Rains Promote Mosquitoes Breeding in Southern Ontario

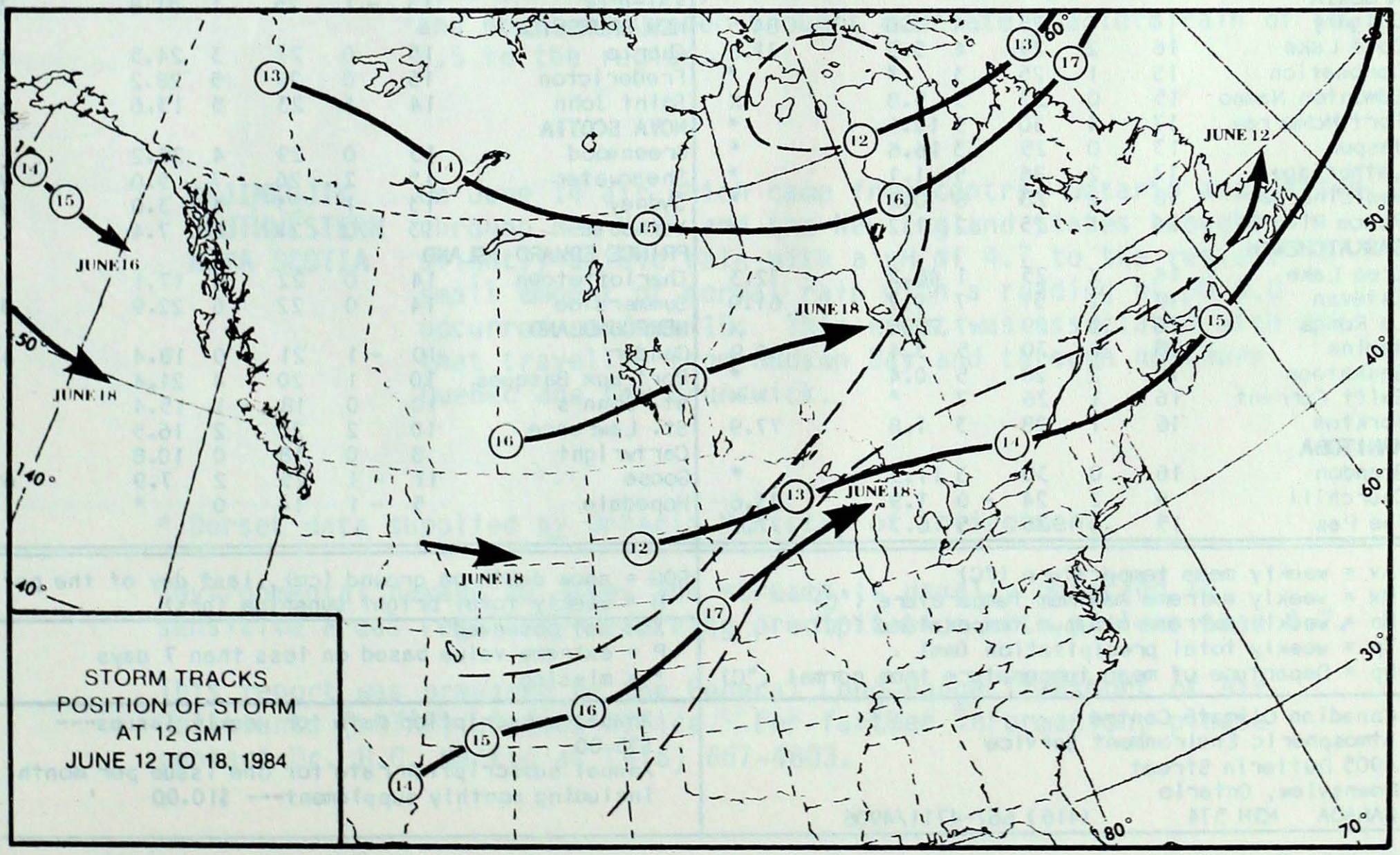


As in the past, the University of Guelph will conduct a surveillance program for various types of Encephalitis by analyzing blood samples from chicken and birds. Three sites in the vicinity of Windsor have been chosen because of the past St. Louis Encephalitis activity and extremely high mosquito numbers. Extremely low numbers of mosquitoes reflected unusually cool weather during May. However, the warmth in early June combined with heavy rainfall during mid-month significantly increased mosquito population in southern Ontario. Samples collected recently indicated about 300,000 mosquitoes per trap per night whereas the normal is about 500 mosquitoes.

Cont'd from page 3

River Valley in New Brunswick on June 15. The winds downed utility lines and caused power disruptions. In Newfoundland, the weather was winterlike. Mean temperatures were severel degrees below the long-term average and a rear snowfall was reported over eastern Newfoundland. At Gander 1 cm of snow fell on June 16; however, snow has fallen as late as June 29 at the same location in 1952. Record-cold temperature was established at St. John's as the mercury dropped to a chilly -1° on June 17.

STORM TRACKS



TEMPERATURE, PRECIPITATION AND BRIGHT SUNSHINE DATA FOR THE WEEK ENDING 0600 GMT JUNE 19, 1984

STATION	TEMP				PRECIP		SUN
	Av	Dp	Mx	Mn	Tp	SOG	H
YUKON TERRITORY							
Dawson	14	0	25	3	3.3		X
Mayo A	14	0	24	1	13.0		X
Watson Lake	11	- 2	21	1	6.9		64.0
Whitehorse	11	- 1	21	- 1	0.4		65.9
NORTHWEST TERRITORIES							
Fort Smith	16	2	27	2	12.3		78.0
Inuvik	16	4	26	5	7.4		114.3
Norman Wells	18	3	27	10	22.2		42.8
Yellowknife	15	3	23	8	19.4		100.6
Baker Lake	7	4	16	0	0.0	0.0	*
Cape Dyer	1	0	6	- 5	0.2	25.0	X
Clyde	2	1	7	- 2	4.6	33.0	111.7
Frobisher Bay	3	0	7	0	3.0	2.0	16.8
Alert	- 2	2	3	- 4	1.0	15.0	21.6
Eureka	6	3	15	1	0.5		*
Hall Beach	3	3	9	- 2	0.0	6.0	X
Resolute	3	3	10	- 3	0.0		*
Cambridge Bay	4	3	11	- 2	0.0		156.1
Mould Bay	3	3	9	- 2	0.0	0.0	*
Sachs Harbour	10	8	16	5	0.0		156.9
BRITISH COLUMBIA							
Cape St. James	10	0	15	8	12.5		50.3
Cranbrook	16	1	25	5	14.8		*
Fort Nelson	14	- 1	25	5	31.2		*
Fort St. John	14	0	23	4	0.0		X
Kamloops	19	1	30	9	1.8		*
Penticton	14	- 3	25	8	0.0		74.0
Port Hardy	11	- 1	16	5	7.7		52.9
Prince George	13	- 1	26	4	1.7		77.6
Prince Rupert	11	- 1	15	7	33.6		19.8
Revelstoke	18	3	30	9	1.0		63.0
Smithers	10	- 3	23	2	0.4		76.9
Vancouver	15	- 1	20	8	2.2		67.2
Victoria	14	0	20	7	0.0		83.8
Williams Lake	13	- 2	24	3	21.1		62.6
ALBERTA							
Calgary	14	1	25	4	0.6		84.5
Cold Lake	16	2	29	4	5.5		71.6
Coronation	15	1	25	3	*		*
Edmonton Namao	15	0	27	3	5.8		X
Fort McMurray	17	4	30	5	12.1		*
Jasper	13	0	25	3	16.6		*
Lethbridge	17	2	26	5	1.1		*
Medicine Hat	18	2	28	6	0.2		*
Peace River	14	1	25	2	1.2		X
SASKATCHEWAN							
Cree Lake	14	X	25	1	48.2		72.3
Estevan	18	2	31	7	9.7		61.9
La Ronge	16	3	29	7	28.6		X
Regina	18	2	30	5	3.4		66.9
Saskatoon	18	2	28	5	0.4		*
Swift Current	16	1	26	7	*		*
Yorkton	16	1	28	3	1.8		77.9
MANITOBA							
Brandon	16	0	30	3	17.3		*
Churchill	8	2	24	- 0	1.9		73.6
The Pas	15	1	26	5	6.7		77.7
Thompson	12	1	28	- 1	9.8		53.5
Winnipeg	16	0	27	5	*		57.9
ONTARIO							
Big Trout Lake	11	0	26	2	53.0		X
Earlton	15	0	25	4	*		X
Kapuskasing	13	- 1	26	3	25.8		*
Kenora	17	2	25	10	10.0		X
London	18	1	31	8	81.0		53.6
Moosonee	10	- 1	25	- 2	44.4		48.5
Muskoka	15	- 1	26	3	*		X
North Bay	14	- 2	24	3	31.8		*
Ottawa	18	0	27	7	18.4		70.0
Pickle Lake	14	2	25	4	15.0		X
Red Lake	15	1	28	2	52.5		40.2
Sudbury	15	- 1	24	4	54.4		34.3
Thunder Bay	13	0	27	2	16.4		37.5
Timmins	13	- 2	26	0	57.0		X
Toronto	17	- 1	29	7	26.7		X
Trenton	17	- 1	30	6	80.8		X
Wiarton	15	- 1	28	4	20.8		44.4
Windsor	21	2	33	11	36.2		X
QUEBEC							
Bagotville	14	- 2	25	2	33.3		X
Blanc-Sablon	6	- 1	13	- 2	22.2		*
Inukjuak	3	- 1	10	- 1	10.2		29.3
Kuujjuaq	5	- 2	13	0	15.6		20.5
Kuujjuarapik	3	- 3	17	- 3	5.7		*
Maniwaki	15	- 1	26	2	18.0		51.5
Mont-Joli	14	- 0	25	3	17.2		55.6
Montréal	17	- 1	26	6	54.6		62.7
Natashquan	10	0	15	3	2.2		*
Nitchequon	8	- 2	19	1	15.4		30.4
Québec	15	- 1	26	5	70.8		50.4
Schefferville	5	- 4	14	- 1	8.8		39.3
Sept-Iles	11	- 0	21	4	6.2		50.6
Sherbrooke	14	- 1	26	- 1	25.1		59.4
Val-d'Or	13	- 1	25	1	51.8		32.3
NEW BRUNSWICK							
Charlo	15	0	27	3	24.5		50.5
Fredericton	16	0	29	5	28.2		*
Saint John	14	1	23	5	13.6		65.3
NOVA SCOTIA							
Greenwood	15	0	29	4	25.2		X
Shearwater	15	2	26	7	5.0		77.2
Sydney	13	1	23	4	3.0		58.6
Yarmouth	13	0	21	6	7.4		*
PRINCE EDWARD ISLAND							
Charlottetown	14	0	22	4	17.1		*
Summerside	14	0	22	6	22.9		55.1
NEWFOUNDLAND							
Gander	10	- 1	21	0	18.4		47.2
Port aux Basques	10	1	20	4	21.4		*
St. John's	10	0	18	- 1	15.4		*
St. Lawrence	10	2	20	2	16.5		X
Cartwright	8	0	18	0	10.8		X
Goose	11	- 1	25	2	7.9		65.2
Hopedale	5	- 1	14	0	*		X

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

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ACID RAIN REPORT ISSUED BY ENVIRONMENT CANADA FOR JUNE 10 - 16, 1984

LONGWOODS
NEAR LONDON
ONTARIO

On June 10 air which came from the U.S. Midwest brought moderately acidic rain of pH 4.5 to Longwoods. On June 13 a small amount of strongly acidic rain with a pH reading of 4.0 occurred in air which passed over Illinois and Michigan. Air originating in the U.S. Midwest brought a large amount of strongly acidic rain, pH 3.8 to the region on June 16.

DORSET*
MUSKOKA
ONTARIO

Dorset received moderately acidic rain with a pH of 4.6 on June 10. This event was associated with air that originated in the U.S. Midwest. On June 12 air which had passed through Wisconsin, Michigan and across Lake Huron, Georgian Bay brought strongly acidic rain with a pH value of 3.9 to the region. Data supplied by Ontario Ministry of Environment.

CHALK RIVER
OTTAWA
ONTARIO

Air that came from the U.S. Midwest brought moderately acidic rain of pH 4.4 to Chalk River on June 10. On June 12 moderately acidic rain with a pH reading of 4.4 was associated with air that had passed through Wisconsin, Michigan and the Sudbury basin.

MONTMORENCY
QUEBEC CITY
QUEBEC

Montmorency received moderately acidic rain with pH readings of 4.6 on both June 11 and 12 and normal rain of pH 5.1 on June 13. These events were associated with air that came from northern Ontario and northern Quebec. On June 14 air that passed over Hudson Bay, northern Ontario and northern Quebec brought moderately acidic rain of pH 4.5 to the region.

KEJIMKUJIK
SOUTHWESTERN
NOVA SCOTIA

On June 14 air which came from central Ontario and passed through New York and the New England States brought slightly acidic rain with a pH of 4.7 to the region. A small amount of normal rain with a reading of pH 6.0 occurred on June 15. This event was associated with air that travelled from Hudson Bay and through northern Quebec and New Brunswick.

* Dorset data supplied by Ontario Ministry of Environment.

Environmental damage to lakes and streams is usually observed in sensitive areas regularly receiving precipitation with pH less than 4.7.

This report was prepared by the Federal Long-Range Transport of Air Pollutants (LRTAP) Liaison Office. For further information, please contact Dr. H.C. Martin at (416) 667-4803.