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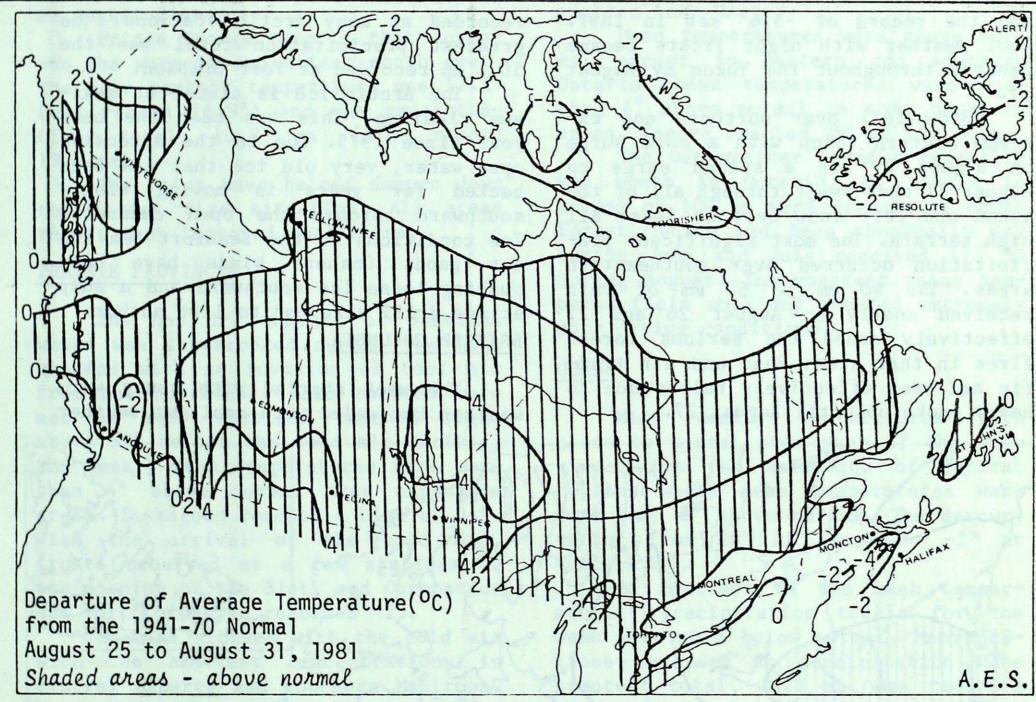
A WEEKLY REVIEW OF CANADIAN

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

SEPTEMBER 4, 1981

(Aussi disponible en français)

VOL.3 NO.35



WEATHER HIGHLIGHTS FOR THE PERIOD - AUGUST 25 - 31, 1981

Arctic air invades western Canada

A surge of cold northern air dry conditions prevalent in the West. Snowfalls general were across Northwest Territories and the Yukon. Some areas of northern British Columbia reported snow on the last day of the week.

The widespread precipitation brought relief to fire crews fighting the numerous forest fires in northern Alberta, northern British Columbia and in the lower Mackenzie District.

Conflicting airmasses produced brought an abrupt end to the warm and cloudy, unsettled and very wet weather over much of Ontario. Heavy rains were common with some areas reporting over 100 mm for the week. The wet weather hampered field work and created very poor drying conditions.

> Temperatures across the country varied from a high of 36° at Cranbrook, British Columbia to a low of -8° at Cape Hooper and Dewar Lakes, Northwest Territories. The greatest weekly precipitation total, 68.6 mm, occurred at Cape Scott, British Columbia.

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

Snow returned to the Arctic as cold air moved in to blanket the Territories by the end of the week. The

NORTHWEST TERRITORIES

mercury reached a maximum of 34° at Fort Smith on August 27, but two days later could only struggle up to 9°. Cape Hooper and Dewar Lakes fell to -8° on the 27th and 29th respectively.

Snowfalls from 4 cm to 16 cm were recorded at many Arctic stations. The greatest precipitation total was the 50.1 mm recorded at Fort Simpson.

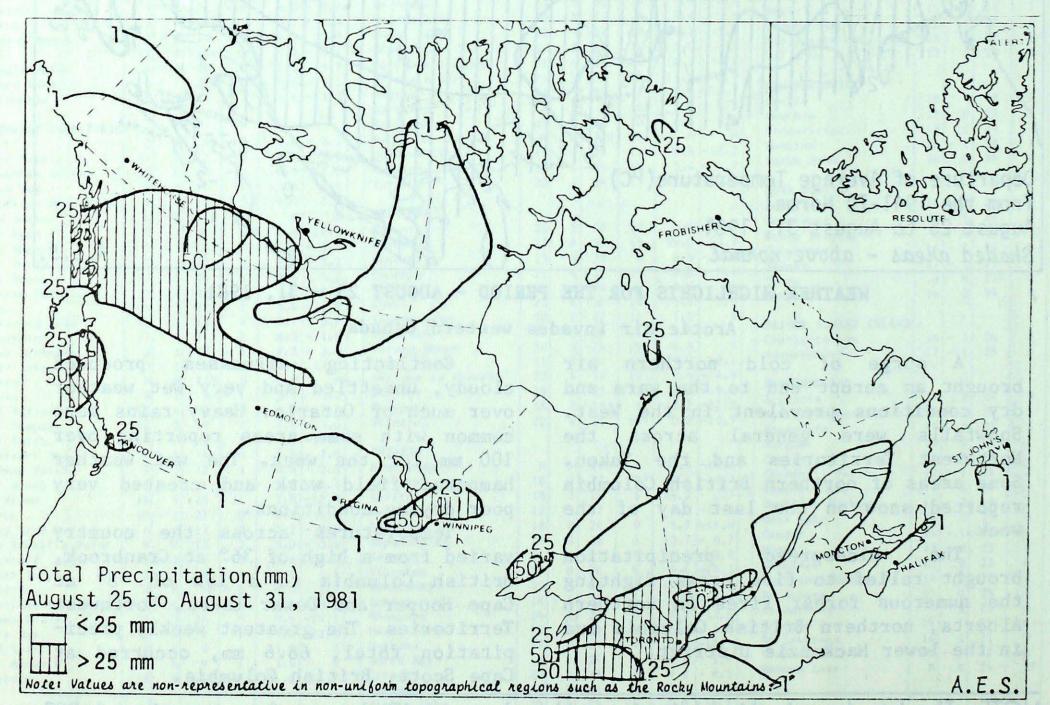
The Arctic ice is almost at maximum clearing. This has been the best year since 1975. Due to the extensive open water, very old ice that has been backed for years is moving slowly southward through the open channels. Ice conditions in the Beaufort Sea are not good. Onshore winds have been pushing loose ice southward and a ship at one drill site had to lift anchor.

BRITISH COLUMBIA

The week started with sunny warm weather but ended with cool wet weather

The last week in August was one of extremes. Warm (and smokey) air moved into Yukon from British Columbia causing record or near record high temperatures. The 27° at Dawson on the 26th exceeded the previous record of 24° set in 1915 and the 28° on the 27th exceeded the 24° set in 1941. By the 29th, Dawson's minimum fell to -5°, approaching the record of -5.6° set in 1897. Cool weather with night frosts became general throughout the Yukon by August 31.

Snow fell over northern and extreme eastern Yukon with a cold surge on August 29 and a second surge on August 31 that swept through all of the Yukon and left snow over at least all high terrain. The most significant precipitation occurred over southeastern areas. The 40 mm to 60 mm of rain received mostly on August 26 and 27 effectively ended the serious forest fires in that area. Road and air traffic had been effectively halted due to heavy smoke up until August 27.



as an Arctic airmass moved over this province. Many northern stations recorded minimum temperatures below 5° (Prince George fell to the freezing point). Early in the week Cranbrook reached 36°.

Precipitation was general and most stations recorded above normal amounts. Cape Scott recorded 68.6 mm for the week. Fort Nelson reported a snowfall on August 31st.

Prince George reports that August was the warmest and driest month ever. The mean monthly temperature was 17.2° (old record 16.9°) and the precipitation total 10.8 mm (old record 19.2 mm).

The rains have helped dampen down the forest fire situation. All areas report much improved conditions.

PRAIRIE PROVINCES

The hot dry weather of previous weeks was interrupted during the past weekend with an invasion of cool air from the northwest. Some records were set as many stations reached highs above 30° before the cold air arrived, and weekly mean temperatures were more than 4° above normal over extensive areas. Saskatoon reached a high of 34°. With the arrival of the cold air, frosts occurred at a few stations on the morning of the 31st, and Coronation and Fort Chipewyan recorded -2°.

Showers arrived with the cold air with the heaviest concentrations in central Alberta and southern Manitoba. Heavy thunderstorms occurred in the Brandon area, and Brandon recorded 55.4 mm of rain. Some areas to the north-east of Brandon reported 50 cm hail.

The return to cooler temperatures, higher humidities and spotty showers brought welcome to weary crews fighting the province's numerous forest fires in Alberta. By mid-week, 1800 men were engaged in fighting 72 forest fires of which 30 were listed as out of control. A total of 405 000 hectares consumed by 1184 fires costing the forest service nearly 20 million dollars had been tabulated by mid-week. This was about 200 000 hectares less than the record amount of burned forest land for the same period last season.

ONTARIO

Cloudy, unsettled and very wet weather dominated the province this week. Heavy rains were common in many regions with the heaviest being reported at Princeton, 13 km west of Brantford, where 140 mm fell in three hours on the morning of August 30th. During this same morning a funnel cloud was sighted near Exeter.

Mean temperatures were above normal except in eastern and southern Ontario. Mean temperatures were more than 4° above normal in some northern areas. Kenora reached 29° on the 30th.

The wet weather ended a generally wet month in Ontario, as totals in excess of 100 mm were prevalent. Mount Forest, which had been abnormally dry during June and July received 173 mm during August. The constant rains hampered field work and created extremely poor drying conditions.

QUÉBEC

Mean weekly temperatures were close to normal over much of the province with the exception of central regions where mean temperatures were more than 3° above normal. The mercury varied from 28° at Gaspé to -2° at Koartak.

In contrast to the mean temperatures, precipitation totals for the week were much below normal. Many stations recorded no precipitation. The greatest total, 26.8 mm, was recorded at St. Agathe-des-Monts.

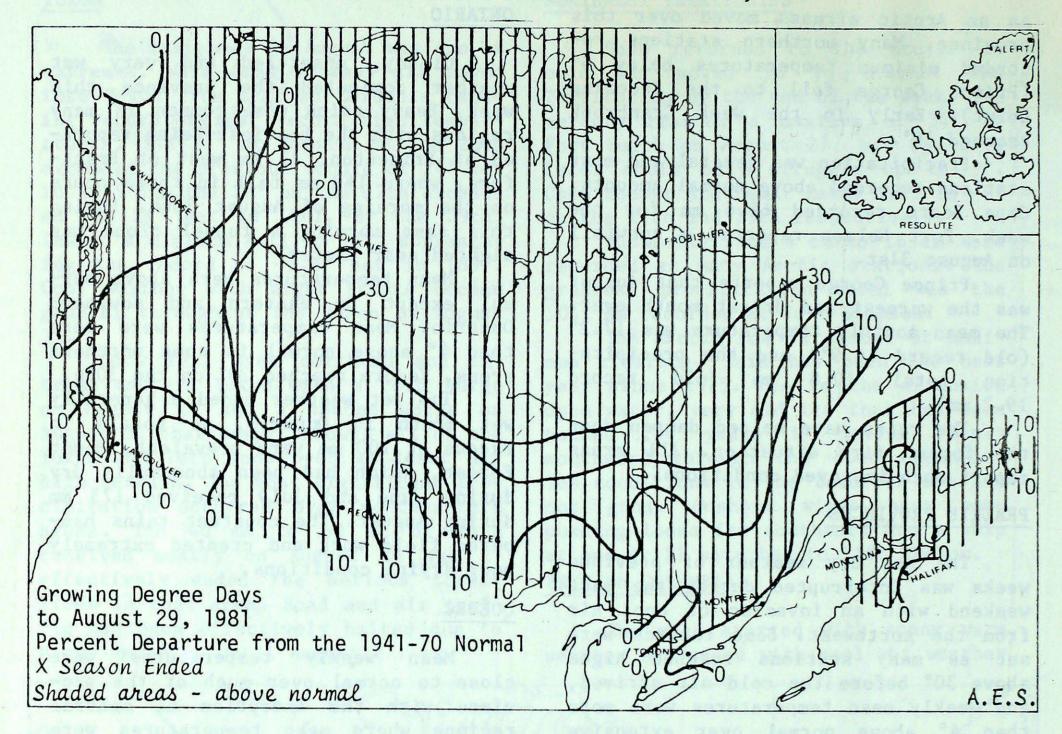
There were 29 forest firest still active as of the 31st of August. There have been 1000 forest fires burning over 2374 hectares this year compared to the normal for the past 5 years of 932 fires burning over 18069 hectares.

ATLANTIC PROVINCES

Cool, but dry weather prevailed throughout most regions with the exception of Labrador. Many low temperature records were set or equaled in the Maritimes and Newfoundland. Sydney tied the old record of 5° set in 1884. In contrast, many high temperature records were established in Labrador on August

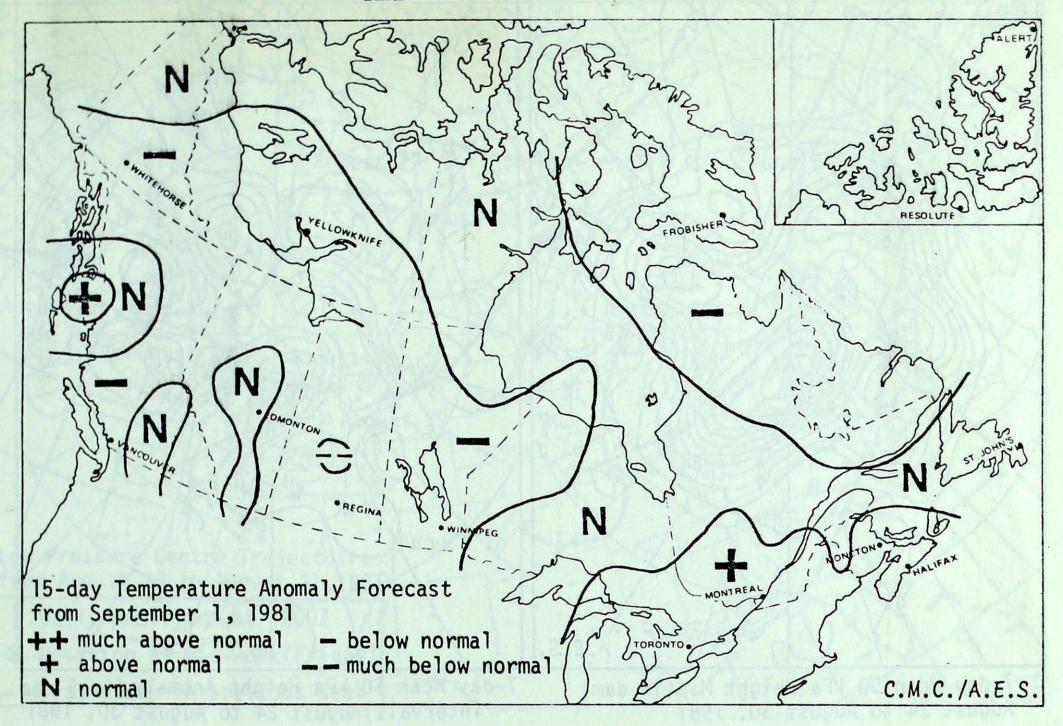
(continued on page 7)

GROWING DEGREE-DAY SUMMARY TO AUGUST 29, 1981

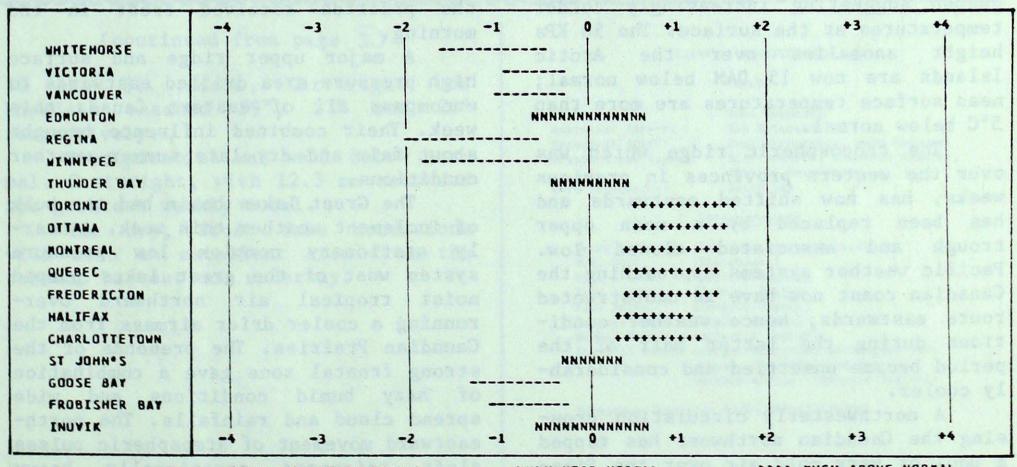


CITY	MONTHLY CUMULATIVE TOTAL	MONTHLY DIFF. FROM 1941-70 NORMAL	SEASONAL TOTAL	SEASONAL DIFF. FROM 1941-70 NORMAL	SEASONAL PERCENT OF NORMAL
Whitehorse	237.5	21.5	828.0	46.0	106
Penticton	505.0	89.0	1636.5	-6.5	100
Vancouver	406.0	54.0	1525.0	90.0	106
Edmonton	461.0	157.0	1454.0	347.0	131
Calgary	380.0	79.0	1140.0	82.0	108
Regina	456.0	77.0	1528.0	212.0	116
Saskatoon	469.5	104.5	1501.5	201.5	116
Winnipeg	439.5	40.5	1476.0	76.0	105
Thunder Bay	372.0	37.0	1179.0	71.0	106
Windsor	476.5	1.5	1934.0	78.0	104
Toronto	411.0	-26.0	1497.5	-115.5	93
Ottawa	414.5	-3.5	1573.0	1.0	100
Montreal	407.0	-27.0	1570.0	-48.0	97
Quebec	354.5	-17.5	1335.0	-4.0	100
Fredericton	389.0	9.0	1406.0	65.0	105
Halifax	357.0	-19.0	1182.0	-10.0	99
Charlottetown	362.0	-13.0	1255.0	93.0	108
St John's	292.0	-14.0	913.5	95.5	112

TEMPERATURE ANOMALLY FORECAST



TEMPERATURE ANOMALY FORECAST FOR SEP 1 1981 TO SEP 15 1981

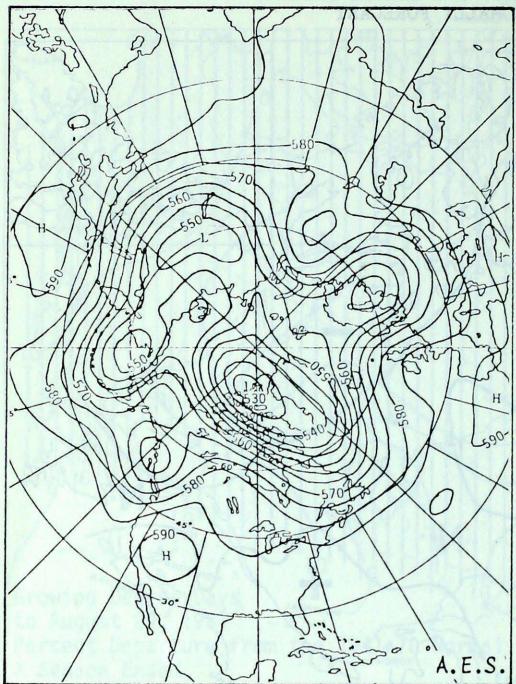


CCC MUCH BELOW NORMAL BELOW NORMAL

NNNN NEAR NORMAL

>>>> MUCH ABOVE NORMAL ABOVE NORMAL

Atmospheric Circulation

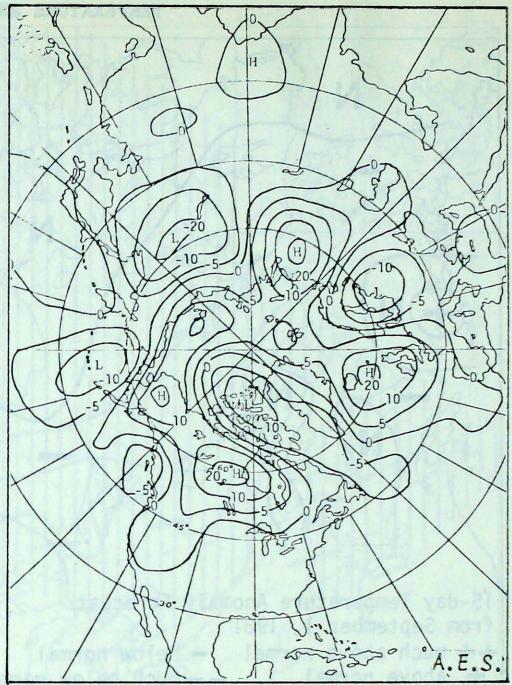


7-day Mean 50 kPa Height Map(in dam) August 24 to August 30, 1981

The Arctic vortex continued to deepen suggesting increasingly colder temperatures at the surface. The 50 KPa height anomalies over the Arctic Islands are now 15 DAM below normal; mean surface temperatures are more than 5°C below normal.

The tropospheric ridge which was over the western provinces in previous weeks, has now shifted eastwards and has been replaced by a mean upper trough and associated closed low. Pacific weather systems approaching the Canadian coast now have an unobstructed route eastwards; hence weather conditions during the latter half of the period became unsettled and considerably cooler.

A northwesterly circulation crossing the Canadian northwest has tapped a pool of very cold air over the Siberian Arctic. Surges of this Arctic airmass penetrated southeastwards across the Yukon and Northwest Territories. A general snow cover has been reported in



7-day Mean 50 kPa Height Anomaly (in 5 dam intervals) August 24 to August 30, 1981

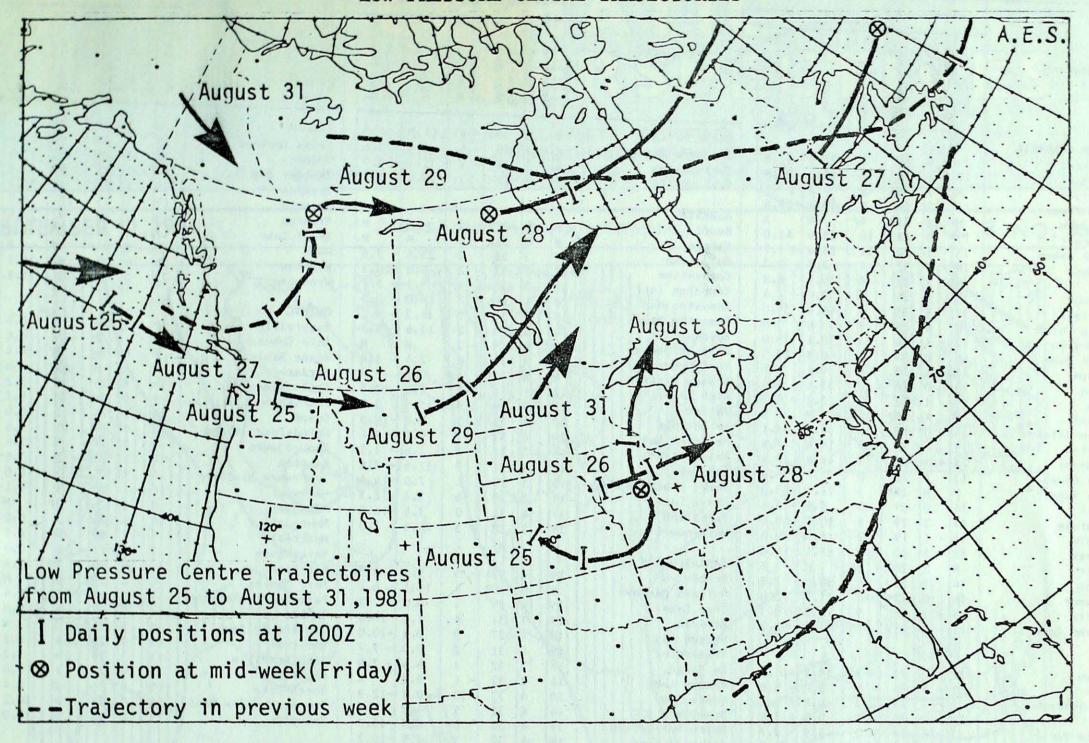
many communities. The northern parts of the prairies received frost in the morning.

A major upper ridge and surface high pressure area drifted eastwards to encompass all of eastern Canada this week. Their combined influence brought about fair and dry late summer weather conditions.

The Great Lakes basin had the bulk of inclement weather this week. A nearly stationary complex low pressure system west of the great lakes pumped moist tropical air northward overmuning a cooler drier airmass from the Canadian Prairies. The presence of the strong frontal zone gave a combination of hazy humid conditions and wide spread cloud and rainfalls. The northeastward movement of atmospheric pulses aloft triggered occasionally heavy thunderstorm activity. Many southern Georgian Bay communities received well in excess of a 100 mm of rain.

Andy Radomski

LOW PRESSURE CENTRE TRAJECTORIES



(continued from page 3,)

30 and 31. Goose, Cartwright and Hopedale reached 29°, 27° and 26° respectively.

Precipitation was well below normal. Cartwright, with 12.3 mm recorded the greatest weekly total.

The dry, frost free conditions will mean an excellent crop from the tobacco harvest now underway.

CLIMATIC PERSPECTIVES

Staff

Editor:
Assistant Editor:
Technical Staff:
Graphics and Layout:

Yves Durocher
Bob Paterson
Fred Richardson, Andy Radomski
Bill Johnson, Theresia Winkler,
Phillip Borenstein

weather office (Pacific Region)

Word Processing:

Betty Lee

Correspondents

Terry Mullane, (Ice Forecasting Central)
H.E. Wahl, (Whitehorse)
Bill Prusak, (Western Region)
Fred Luciow, (Central Region)
T.J. Moyer, (Ontario Region)
Jacques Miron, (Quebec Region)
Michel Howe, (Atlantic Region)
Staff of Prince George, Kamloops, Castlegar, Fort Nelson, Penticton and Kelowna

Telephone Inquiries (416) 667-4711/4906

TEMPERATURE AND PRECIPITATION DATA FOR THE WEEK ENDING 0600 G.M.T. SEPTEMBER 1, 1981

	TEMPERATURE AND PRECIPITA			Temperature (°C)				Precip	(mm)		Temperature (°C)			Precip. (mm)			
	Tempera	ture (oc)	Precip	(mm)				1901	Frecip							3
	- - -				io -	Station	a d	from Normal Extreme Maximum	E		Departure from Normal	Station	North North	ne Tum	E S		8 3 L
Station	No.	1 5	ale nun		Non	Signion -	Average	from Norr Extreme Maximum	Extreme	<u></u>	Z Z		2 2 8		Extrer Minim	Total	Depar from
	0 6	Maxin	Extreme Minimum	Total	Pepa		Ave	Fron May	M. T.	Total	Per		4 9 5	ω Σ	ا≥ش		
	Dep from	.0.≥						M 81		м	М	Stacoe	20 1	27	12		11.1
BRITISH COLUMBIA				27.3	12.8	Shepherd Bay	M 2 -	- 3 10	- 4	4.4	- 2.6	Sloux Lookout	19 1	28	10	27.4	10.5
Abbotsford Alert Bay	$\begin{vmatrix} 16 & 0 \\ 12 & -1 \end{vmatrix}$	18	8 7	48.2	29.8	Tuktoyaktuk	12	- 3 17 0 24	- 1 3	1.4	7.5	Sudbury Thunder Bay	16 1	25	5	59.9	35.5
Blue River	M X	22P 18	8 9	53.1	28.6	Yellowknife						Timmins Toronto	15 1	26	12	39.0	17.0
Bull Hurhour Burns Lake	13 0 M X	21P	4P	м	X	ALBERTA Banff	M	M 27	2	м	м	Trenton	19 -	26 27	9		- 3.8 - 5.0
Cape Scott	13 0	18	10	68.6	41.0	Calgary	M	M 31	2	25.4	3.8	Trout Lake Wawa	M 3	24P	4P	M	X
Cape St James Castlegar	18 0	32	6	7.7	- 3.7 8.8	Cold Lake Coronation	17	3 33	- 2	0.8	-10.3	Wiarton	18 0		8	34.1 55.8	10.0
Comox Cranbrook	15 - 1	36	8	3.0	- 7.4	Edmonton Intl Edmonton Mun	16	3 30 4 32	1 4	14.0	- 9.2 - 0.3	Windsor					
Dease Lake	12 2 M M	25 16P	4 9	46.8 M	34.0 M	Edmonton Namao	17	3 31	5	14.3	- 0.2	QUEBEC Bagotville	16	27	3		-16.5
Estevan Point Fort Nelson	12 - 1	24	3	50.1	35.0	Edson Fort Chipewyan	14 M	3 29 M M	- 2	M	M	Baie Comeau	13 -	22	3 0P		-18.9
Fort St John Kamloops	13 0	30	8	40.8	29.5	Fort McMurray	16	3 33 M 32	P 4	2.4 M	1	Blanc Sablen Border	M	M	3P	М	M .
Langara	13 0	16	10	33.6	4.6	Grande Prairie	13	1 31	- 1	1.0	-12.5	Chibougamau Fort Chimo	16	26	2	3.2 8.7	- 5.9
Lytton Mickenzie	19 - 1 M X	28 26P	4P	· M	X	Jasper	15	3 29		15.8	3.77	Caspé	15	x 28	2	0.0 3.6	-15.6
McInnes Island	14 0	30	10	14.4	7.9	Medicine Hat	20	4 33	-1	7.6	- 9.6 - 1.5	Grindstone Island Inoucdjouac	15	0 14	10	25.6	10.2
Penticton Port Hardy	12 - 1	17	7	44.6	22.1	Peace River Red Deer	15	2 31	3	11.6	- 3.8	Koartak	15	x 13 x 25	- 2	13.9	X
Prince George Prince Rupert	13 I	22 18P	5	7.6	-20.0	Rocky Mountain House	15	3 29		7.0		La Grande Rivière Maniwaki	16 -	1 24	3	8.1	-10.0
Quesnel	14 0	24	3 8	9.8	- 3.1 - 8.6	Slave Lake Vermilion	15	4 31	0	2.5	-16.0	Matagami, Mont-Joll	16	X 26P 0 25	3P	0.0	-19.2
Revelatoke Sandapit	17 2	19	7	16.7	0.8	Whitecourt	15	3 28	5	26.5	7.0	Montréal .	18 -	1 26	9	6.8	-17.4
Smithers	12 - 1 M X	22 20P	9P	25.1 M	14.0 X	SASKATCHEWAN			HOUR	5.2	- 9.3	Natashquan Nitchecun	14	1 21 3 23	4		
Stewart Terrace	14 1	23	8	30.0	7.8	Broadview Buffalo Narrows	19 M	4 32 M 30		16.5	6.1	Port Menler	M 14	M 19P 3 27	0P	0.4	-18.4
Vancouver Victoria	16 0	22	10	6.2	- 0.3	Cree Lake	15	X 29		0.0		Poste-de-la-Baleine Québec	17	0 27	6	0.0	-22.6
Williams Lake	11 - 2	21	2	12.3	2.2	Estevan Hudson Bay	18	4 27	9	0.1	-20.0	Rivière du Loup Roberval	M 16	M 24P	3 4		-19.0
YUKON	15.19					Kindersley	19	4 31		6.6		Schefferville	13	3 23	4	A STATE OF THE STA	-14.9
Burwash	12 3	27 28	- 3	16.2	11.5	La Ronge Meadow Lake	16	X 32	- 1	9.2	-12.9	Sept-Iles Sherbrooke	13	0 21	2	0.4	-19.1
Dawson Komakuk Beach	1 - 3	13	- 3	4.8	- 0.2 - 7.8	Moose Jaw Nipawin	20	4 33 X 33		4.6	X	Ste Agathe des Mont	s 15	0 24	2	26.2	8.3
Mayo Shingle Point	12 2	29	- 3 - 5	6.9	- 2.7	North Battleford	19	4 32		1	-13.0	Val d'Or					
Watnon Lake	11 0 M M	22 1 25P	3	42.6	31.7	Prince Albert Regina	20	4 3	8	2.0	-15.6	NEW BRUNSWICK Charlo	15	1 26	3		-20.3
Whitehorse		230				Rockglen Saskatoon	M 20	X 1			-10.1	Chatham	16 -	2 26	5		-15.4
NORTHWEST TERRITORI	ES N N	5 P	- 6	2.0		Swift Current	M	M 3:	and the same of th	16.5		Fredericton		2 25	5	1.8	-18.5
Baker Lake	8 - 1	22	- 2 - 5	6.0	- 4.6 1.7	Uranium City Wynyard	15	3 29	7	0.4	-12.7	Saint John	14 -	1 24	6	0.0	-20.7
Broughton Island Byron Bay	0 - 2		- 3	2.3	- 4.7	Yorkton	19	3 2	3 7	23.8	4.8	NOVA SCOTIA		2/	,	0.0	x
Cambridge Bay Cape Dorset	4 - 2 3 x	11 10	- 2 - 2	0.9		MANITOBA				49.8	28.6	Eddy Point Greenwood	16	X 24	3	0.9	-21.0
Cape Dyer	1 - 1	6	- 4	5.2	The second secon	Bissett Brandon	19	3 3		55.4	38.3	Sable Island	16 -	1 22 25	9 7	The state of the s	-23.7 -20.0
Cape Hooper Cape Parry	- 1 - 2 3 - 2	2 13	- 8 - 2	8.4	0.0	Churchill Churchill	13	3 3			No. of the Control of	Shearwater Sydney	15 -	2 27	5	2.6	-22.8
Cape Young Clinton Point	5 0	21 22	0	9.7	The second secon	Dauphin Gillam	15	X 2	5	18.2	x	Truro Yarmouth	M 14 -	M 21F	3	0.0	-18.2
Clyde	2 - 1	6	- 2	5.8 M	- 0.5	Gimli Island Lake	20 M	3 2 X 2	3 10 7P 9	9.0) X						
Contwoyto Lake Coppermine	M N	201	- 1	4.2	- 4.1	Lynn Lake Norway House	16	4 30 X 2				PRINCE EDWARD ISLAN Charlottetown	10 -	1 25	8		-19.5 -17.1
Coral Harbour Dewar Lakes	- 1 - 4	2 13	- 2 - 8	8.2 25.2		Pilot Mound	М	M 3	1P 7	7.2	- 5.8	Summerside	17 -	1 25	9	3.8	-1/-1
Ennadai	M	1 M	11	P P	M	Portage la Prairie The Pas	18	4 3	100	10.2	- 5.5	NEWFOUNDLAND	12	x 18	7	2.8	x
Eureka Fort Rellance	12 0	2 3	- 5 2	18.0	8.4	Thompson	16	4 3	The second second		-11.1	Argentia Battle Harbour	13 M	M 26F	No. of the last of	М	11
Fort Simpson	12 - 1	28 2 34	- 1 - 2	50.1	42.3	Winnipeg	20	3 3				Bonavista	M	M 24F	E. C.	8.2	THE PROPERTY AND ADDRESS OF THE PARTY AND ADDR
Fort Smith Frobisher Bay	4 - 2	2 9	- 2	17.1	4.9	ONTARIO	15	1 2	3 1	3.0	-18.6	Burgeo Cartwright	10 -	1 27	2	12.3	- 2.7
Gladman Point Nail Beach	2 - 2	2 10	- 3 - 5	3.0		Armstrong Atikokan	17	2 2	7 5	4.6	-14.9	Churchill Falls Comfort Cove	13	3 25 1 27	5	3.0	-11.5
llay River	12 (26	1	30.2	20.7	Earlton Geraldton	M		4P 3	0.0	-12.7	Daniel's Harbour	13	0 20	1	2.6 M	-15-1 M
Inuvik Jenny Lind Island	6 - 3		- 4	0.0	- 3.9	Gore Bay	19	1 2 2			14.7	Deer Lake Gander	15	M 26P	6	3.8	-21.0
Lady Franklin Point Longstaff Bluff	5 - 1	1 14	- 1 - 5	5.0		Kapuskasing Kenora	20	3 2	9 10	14.8	- 8.6	Goose Hopedale	15	2 29	6	0.3	-13.3 -15.1
Micker Inlet	- 2 - 0	6	- 7	7.6	1.2	Kingston Lansdowne	18	- 1 2: 5 2		6.2	2 -11.8	Port aux Basques	14	0 19	7		-31.7
Mould Bay Nicholнon Peninsula	1 - 3 - 2	1	- 6 - 2	9.3	- 8.9	London	19	0 2 M 2	10	34.5	21.0 1 M	St Albans St Anthony	M	M 23P X 23P	38	M	X
Norman Wells Pelly Bay	10 - 1	28	- 4	5.7		Moosonee Mount Forest	18	1 2	10	44.2	29.5	St John's St Lawrence	13	M 22P	5		-16.3 -28.2
Pond Inlet	1 2	X 7	- 4	7.8	X	Muskoka North Bay	18	M 2 2 2		67.6	45.0	Stephenville	14 -	1 22	3 4	5.6	-18.4 -20.1
Port Burwell Resolute	- 2 - 3		- 5			Ottawa	18	0 2 x 2	5 10	12.8		Wabush Lake	1 14	3 24	1 4	7.0	20.
						Petawawa Pickle Lake	19	5 21	8	14.0	- 9.6				1		
						Red Lake	18	2 28	6	27.9	7.9					-	