## VIEW OF CANADIAN CLIMATE

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PECTIVES

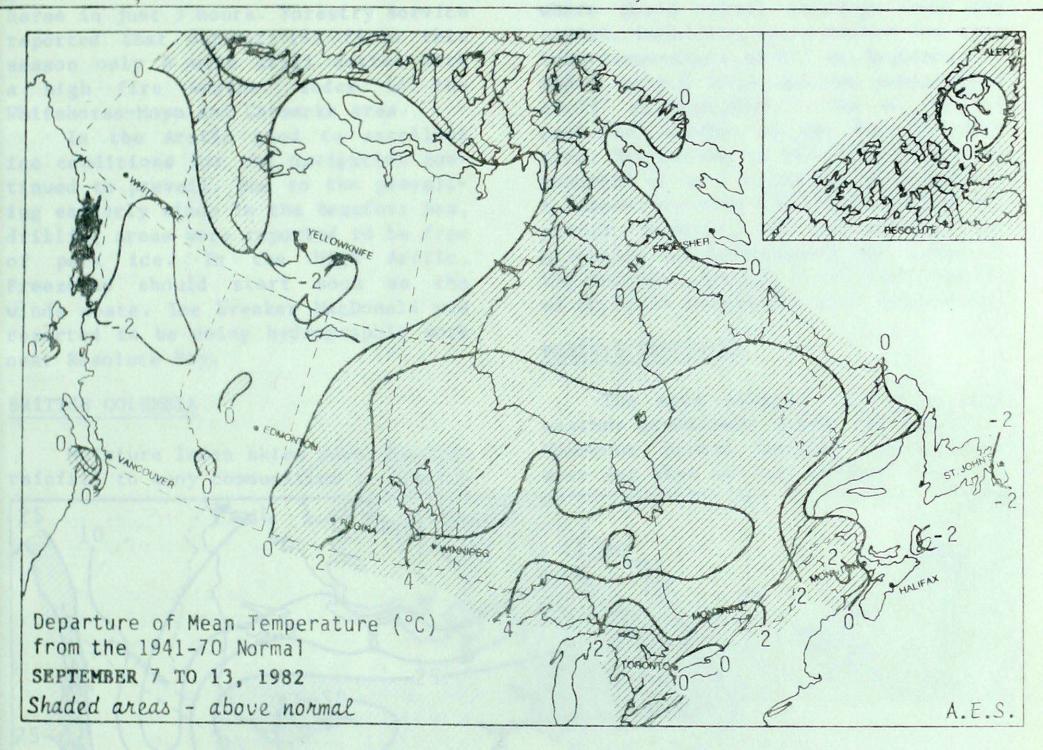
GLIMATIC PERSPECTIVES

ATMOSPHERIC ENVIRONMENT SERVICE, Canada 4905 DUFFERIN ST., DOWNSVIEW, ONTARIO M3H 5T4

EPTEMBER 17, 1982

(Aussi disponible en français)

VOL.4 NO.36



## WEATHER HIGHLIGHTS FOR THE PERIOD - SEPTEMBER 7 TO 13, 1982

Good harvesting weather in agricultural areas

Well above normal temperatures combined with light precipitation east of Alberta provided the best weather conditions for harvesting. There were reports of extensive frost damage to the crops in central and northern Alberta during the weekend as overnight temperatures fell below the freezing mark. Reduction in the yields of later maturing crops was estimated.

Frost was again reported in the Simcoe-Delhi tobacco growing region on September 8. In addition, light frost was evident in the Niagara peninsula when grass minimum temperatures dropped to -1.4°.

Temperatures ranged from 34.5° at Winnipeg, Man. to -18.5° at Alert, N.W.T. Bull Harbour, B.C. received 136.7 mm of rain.

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

In the Yukon, cooler temperatures early in the week gave way to warmer weather towards the end of the week when daytime temperatures climbed into the upper teens. On September 8, heavy rainshowers combined with ice pellets gave 10.8 mm of precipitation to Whitehorse in just 3 hours. Forestry service reported that out of 191 fires this season only 8 were still active with a high fire weather index in the Whitehorse-Mayo and Carmacks area.

In the Arctic good to excellent ice conditions for the navigation continued to prevail. Due to the prevailing easterly winds in the Beaufort Sea, drilling areas were reported to be free of pack ice. In the high Arctic, Freeze-up should start soon as the winds abate. Ice breaker MacDonald was reported to be doing hydrographic work near Resolute Bay.

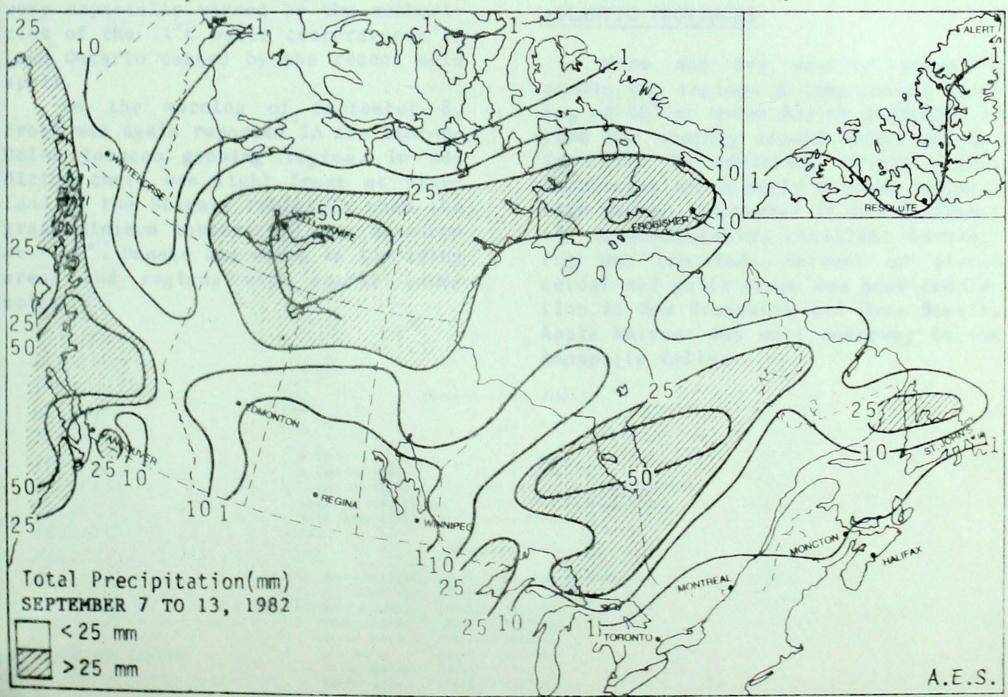
## BRITISH COLUMBIA

Moisture laden skies gave abundant rainfall to many communities in British

Columbia. A few stations reported precipitation in excess of 100 mm. Port Hardy received 135.6 mm of rain during the week with 70.8 mm falling on September 8 alone, 136.2 mm is the normal for the month. Under mainly cloudy skies, below normal temperatures prevailed across the region, the only exception was Kelowna-Penticton area where above normal readings were recorded. Penticton set a record low max-1mum temperature of 17° on September 10 and a record high minimum temperature of 16° on September 7. Due to the recent cool weather in the Fort St. John area, harvesting of the grain crop was reported to be 2 weeks behind schedule. A bumper hay crop near Kamloops was reported, however, the wet weather had prevented the cutting of the crop. In the Okanagan Valley, crops were reported to be in reasonably good conditions.

#### PRAIRIE PROVINCES

The week started with very warm weather conditions across the prairies. Numerous record maximum temperatures were set when mercury climbed into the



30 degree range in Saskatchewan and Manitoba. With the passage of a cold front temperatures dropped some 15° by the weekend. Extensive frost damage to the crop was reported in central and northern Alberta when overnight temperatures fell below the freezing mark on September 13. Agricultural representatives estimated a reduction in the later maturing crop yield and a loss of 1 to 3 grades in the more mature crops. While harvesting was well underway over eastern prairies, wet field conditions impeded the harvesting work near Calgary, Alberta. Uncut crops on wet fields were showing signs of deterioration due to bleaching.

## ONTARIO

A southerly flow of tropical air over the region brought hot and hazy weather conditions in Ontario. Several localities reported daytime temperatures near the 30° mark. Precipitation was mainly confined to the central and northwestern sections of the province.

A large number of people took advantage of the warm weather, boaters were especially warned by the authorities of the ll°C water temperatures in Lake Ontario caused by the recent cold spell.

On the morning of September 8, frost was again reported in the Simcoe-Delhi tobacco growing region. In addition there was light frost at Vineland in the Niagara Peninsula when the grass minimum temperature was measured at -1.4°. Damage was worse in low lying areas and regions with course sandy soils.

## QUÉBEC

A changeable temperature trend was evident in Québec. Cool weather early in the period resulted in the establishment of 11 new record low minimum temperatures, however, by the weekend very warm air moved into the region. Mercury climbed to near the 30 degree mark in several localities. There were 32 daily high maximum and minimum temperatures set between September 9 to September 13. Precipitation was light and sparsely distributed. The only area to receive above normal precipitation was bounded by Poste-de-la-Baleine, Nitchequan and Schefferville, where nearly 50 mm of rain fell.

The warm and dry weather over most of the region was favourable to the second cut of the hay crop. Forestry officials reported no active forest fires in the province this week. Statistically, there were over 1,100 forest fires covering over 7,700 hectares of timber this season. The 5-year average for the province is 975 fires and nearly 7,100 hectares.

#### ATLANTIC PROVINCES

Warm and dry weather prevailed across the region. A temperature reading of 30° at Goose Bay on September 13 tied the monthly record which was set in 1959. In addition, several other localities set a daily maximum temperature between September 11 and September 13. Agriculturally, excellent harvesting was reported. Harvest of winter cereal and grain crops was near completion in New Brunswick and Nova Scotia. Apple harvest was well underway in the Annapolis Valley.

CLIMATIC PERSPECTIVES

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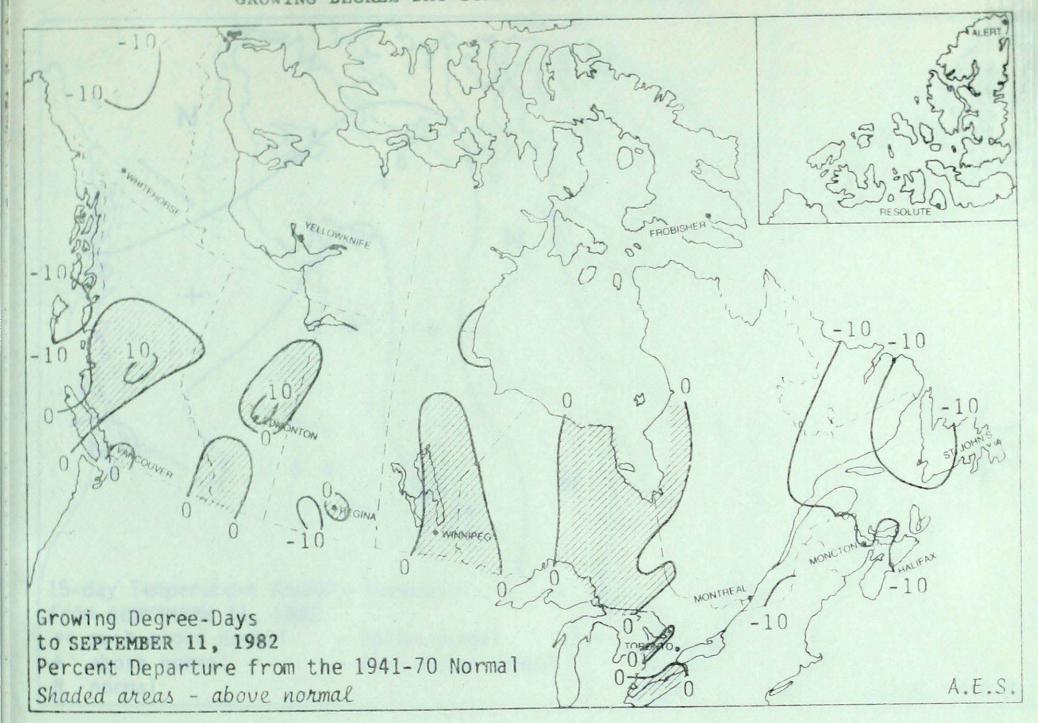
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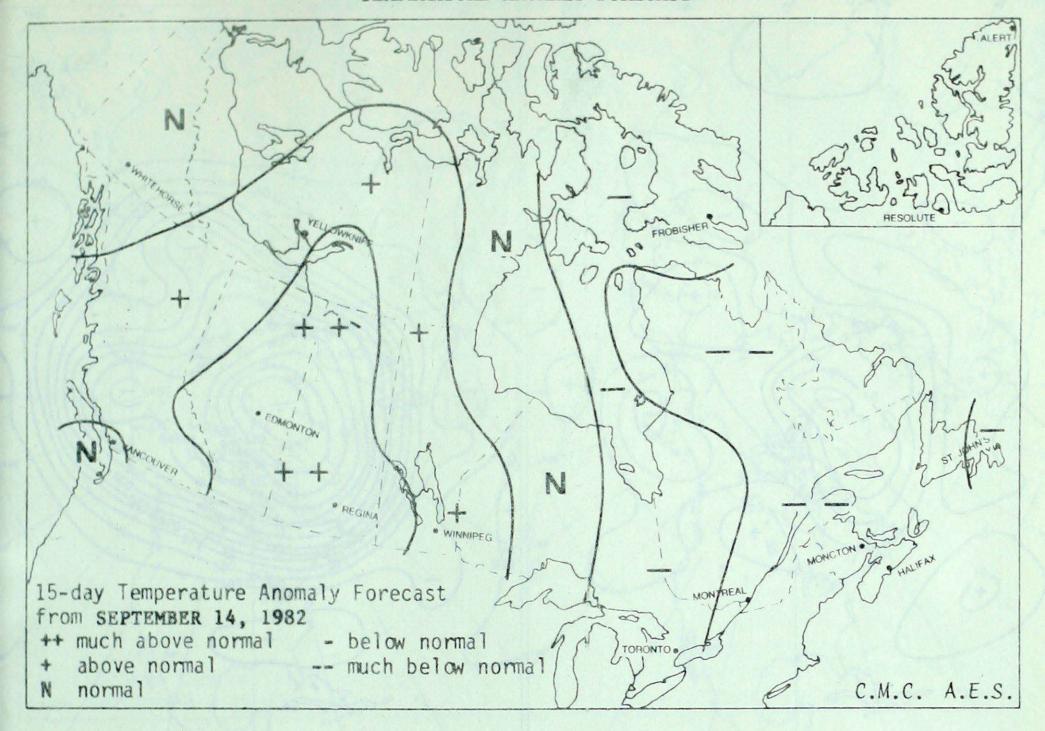
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# GROWING DEGREE-DAY SUMMARY TO SEPTEMBER 11, 1982

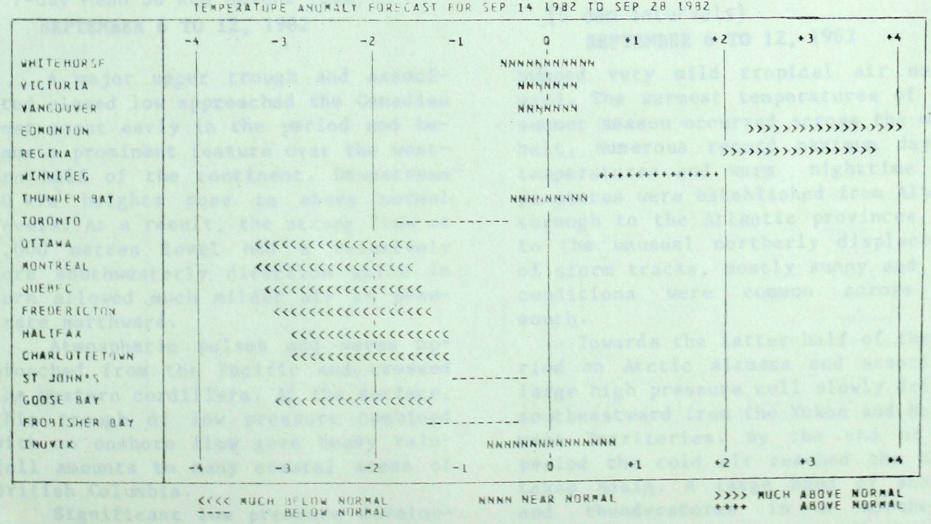


STATION	MONTHLY CUMULATIVE TOTAL	MONTHLY DIFF. FROM 1941-70 NORMAL		SEASONAL DIFF. FROM 1941-70 NORMAL	SEASONAL PERCENT OF NORMAL
Whitehorse* Penticton Vancouver Edmonton Calgary Regina Saskatoon Winnipeg Thunder Bay Windsor Toronto Ottawa Montréal Quebéc Fredericton Halifax Charlottetown	31.5 140.0 126.0 106.5 108.0 124.0 113.0 129.0 99.5 146.5 115.0 111.5 113.5 98.5 108.5 109.0 101.0	-16.5 15.0 10.0 35.5 22.0 25.0 14.0 19.0 6.5 -13.5 -24.0 -17.5 -28.5 -16.5 -0.5 -9.0 -21.0	820.5 1756.0 1533.0 1346.0 1185.0 1470.5 1331.0 1555.5 1180.5 2051.0 1646.0 1714.0 1710.5 1394.5 1428.5 1199.0 1218.5 835.0	-21.5 -38.0 -40.0 152.0 25.0 33.5 -89.0 21.5 -42.5 3.0 -134.0 -13.0 -77.5 -83.5 -45.5 -135.0 -89.5 -93.0	97 98 97 113 102 102 94 101 97 100 92 99 96 94 97 90 93

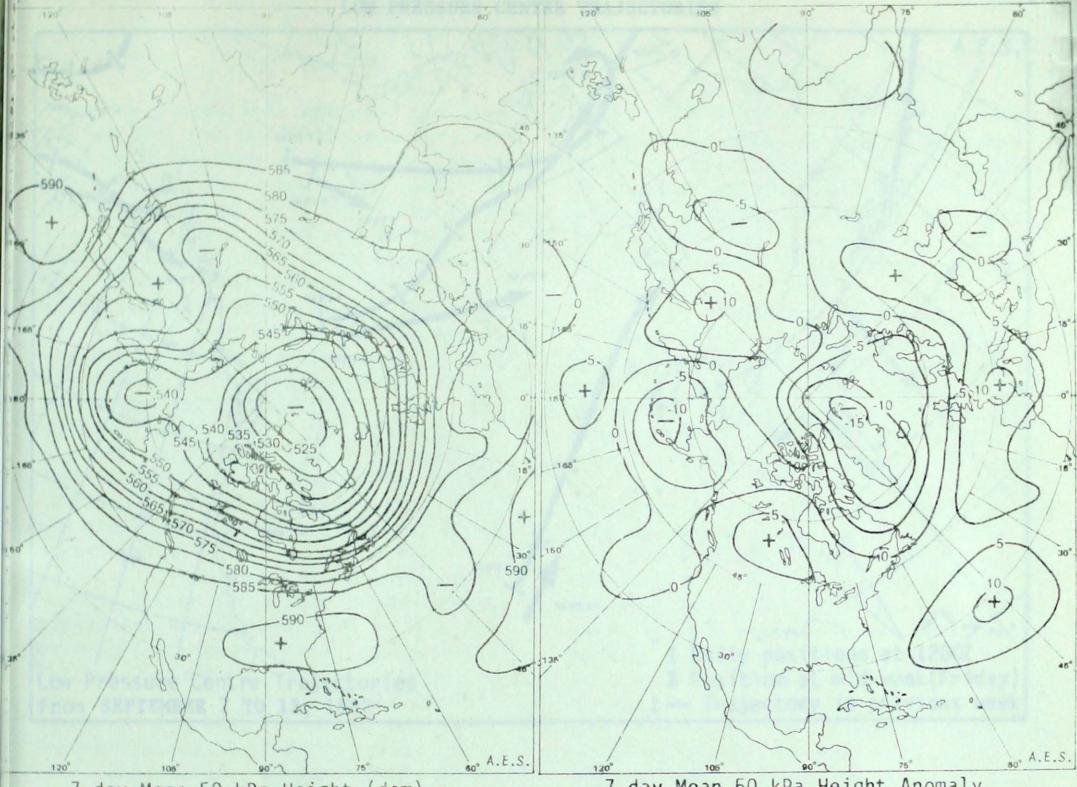
#### TEMPERATURE ANOMALY FORECAST



TEMPERATUPE ANUMALY FORECAST FOR SEP 14 1982 TO SEP 28 1982



#### ATMOSPHERIC CIRCULATION



7-day Mean 50 kPa Height (dam) SEPTEMBER 6 TO 12, 1982

A major upper trough and associated closed low approached the Canadian west coast early in the period and became a prominent feature over the western half of the continent. Downstream 50 kPa heights rose to above normal levels. As a result, the strong flow at 5,000 metres level had a relatively more southwesterly direction which in turn allowed much milder air to penetrate northward.

Atmospheric pulses and waves approached from the Pacific and crossed the western cordillera. At the surface, this trough of low pressure combined with an onshore flow gave heavy rainfall amounts to many coastal areas of British Columbia.

Significant low pressure development took place to the lee of the Rocky Mountains. These systems tracked eastward across central Canada towards Québec. A strong southerly circulation

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7-day Mean 50 kPa Height Anomaly (5 dam intervals)

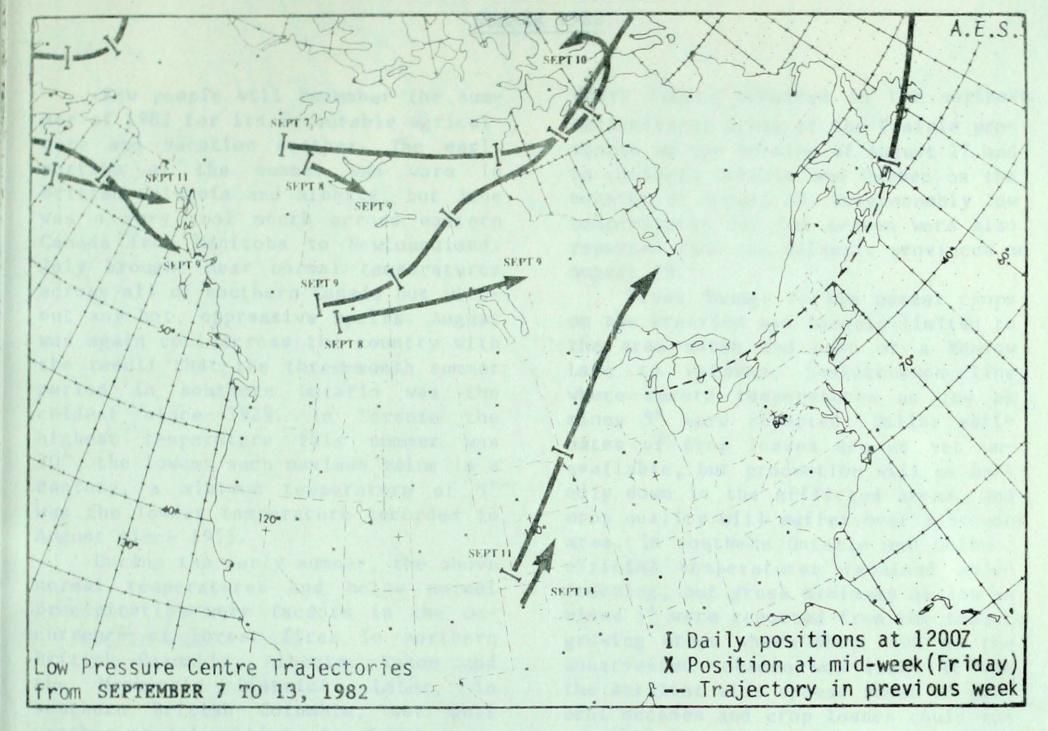
## SEPTEMBER 6 TO 12, 1982

pumped very mild tropical air northward. The warmest temperatures of this summer season occurred across the wheat belt. Numerous record maximum daytime temperatures and warm nighttime temperatures were established from Alberta through to the Atlantic provinces. Due to the unusual northerly displacement of storm tracks, mostly sunny and warm conditions were common across the south.

Towards the latter half of the period an Arctic airmass and associated large high pressure cell slowly drifted southeastward from the Yukon and Northwest Territories. By the end of the period the cold air reached the Great Lakes Basin. A large band of showers and thunderstorms in a northeast-southwest orientation crossed northern Ontario while east of this frontal zone a warm moist tropical airmass remained.

Andy Radomski

## LOW PRESSURE CENTRE TRAJECTORIES



#### EXTREMES FOR THE WEEK

	TEMPERATUR	E LOCATION	MINI MUM TEMPERATUR	E LOCATION	GREATEST PRECIPITATIO	N LOCATION
YUKON TERRITORY	17.8	WHITEHORSE	-7.3	BURNASH	11.0	WHITEHORSE
NORTHNEST TERRITORIES	20.3	FORT SMITH	-18.5	ALERT	62.5	FORT RELIANCE
BRITISH CELUMBIA	27.9	KAHLCOPS	-1.8	DEASE LAKE	13€.7	BULL HARBOUR
ALBERTA	30.5	MEDICINE HAT	-5.2	EDMONTON EDSON	23.5	FORT HCHURRAY
SASKATCHENAN	33.2	BROACVIEW	-2.0	MEAGON LAKE	41.5	URANIUM CITY
MANITCHA	34.5	MINNIPEG	-1.5	LYNN LAKE	21.4	THOMPSON
ONTARIO	31.2	WINCSOR	-2.7	TENHINS	63.8	LANSOCHNE HOUSE
QUEREC	29.0	ROBERVAL	-2.0	NA TA SHQUAN	69.4	LA GRANCE RIVIE
NEH BRUNSNICK	29.9	CHATHAM	.7	CHARLO	4.2	CHATHAM
NOVA SCOTIA	27.4	SHELBERKE	1.2	SHEE HHOOD SHEE BURNE	2.0	SABLE ISLAND
PRINCE FCHAPC ISLAND	26.0	CHAFLOTTETOWN	6.0	CHARLOTTETCHN	1.0	CHARLOTTETOWN
MENEGUNCLAND	30.0	COOSE	-1.0	DEER LATE	33.6	DANIELS HARBOUR

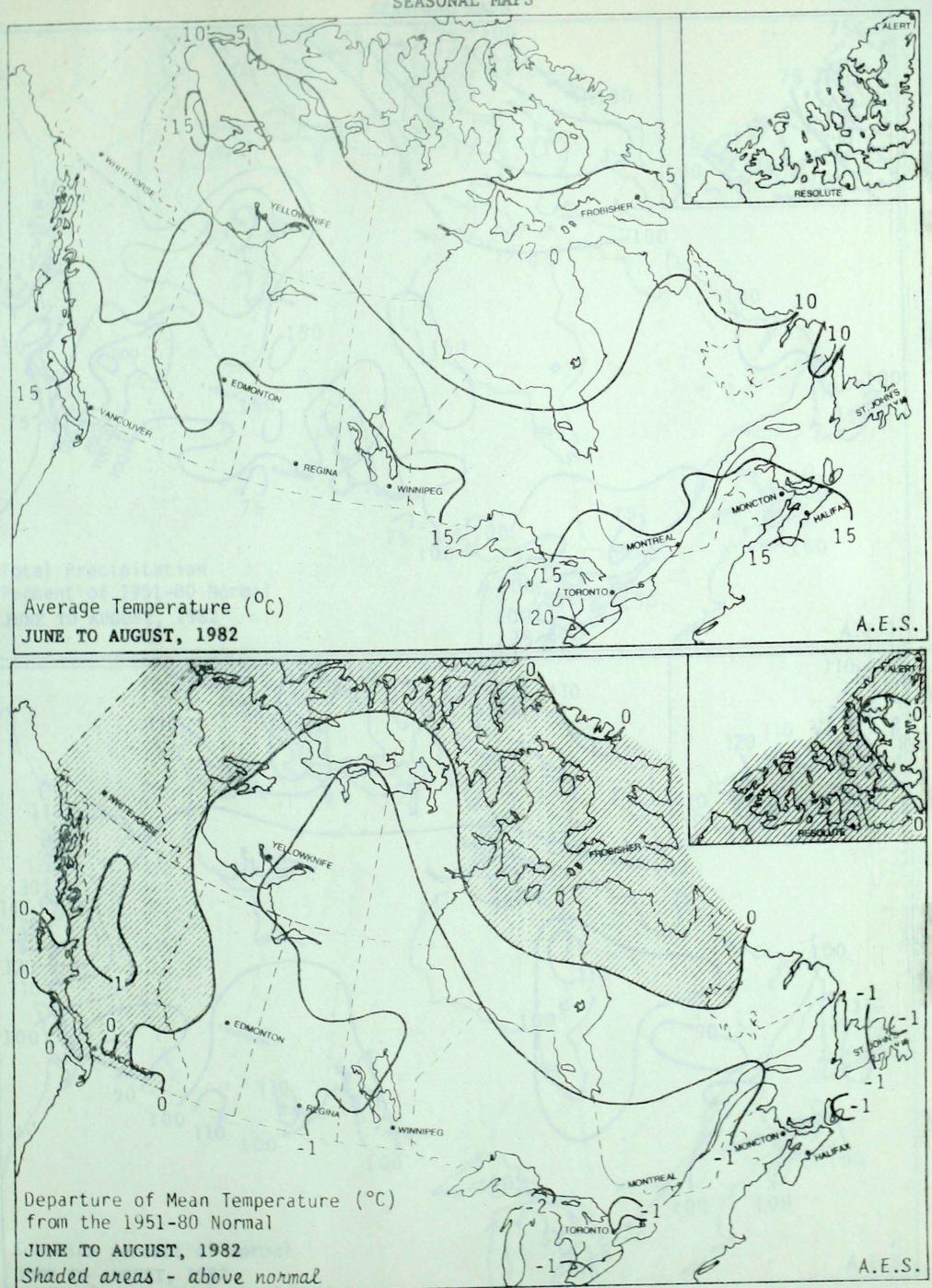
## SUMMER 1982

Few people will remember the summer of 1982 for its favourable agriculture and vacation weather. The early portion of the summer was warm in British Columbia and Alberta, but June was a very cool month across eastern Canada from Manitoba to Newfoundland. July brought near normal temperatures across all of southern Canada but without any hot, oppressive spells. August was again cool across the country with the result that the three-month summer period in southern Ontario was the coldest since 1929. In Toronto highest temperature this summer was 30°, the lowest such maximum value in a century, a minimum temperature of 5° was the lowest temperature recorded in August since 1915.

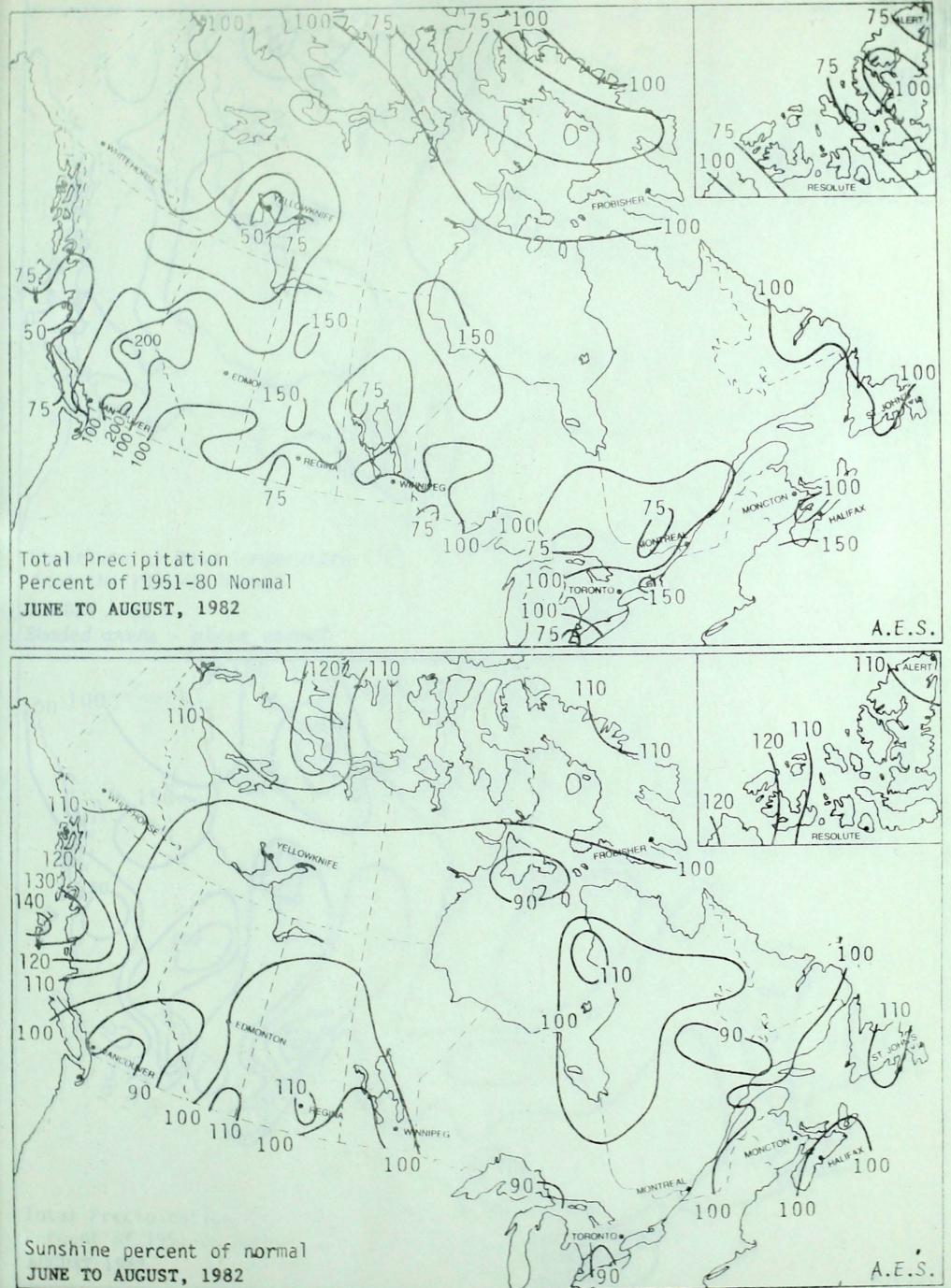
During the early summer, the above normal temperatures and below normal precipitation were factors in the occurrence of forest fires in northern British Columbia, Alberta, Yukon and the Mackenzie District. Later, in southern British Columbia, wet dull weather caused problems for fruit growers and farmers. Across the Prairies there was an unusually high incidence of severe weather with heavy rains, hail, and tornadoes in July and August.

Heavy frosts occurred in the northern agricultural areas of the Prairie provinces on the morning of August 27 and in southern Ontario and Québec on the morning of August 29. Unseasonably low temperatures for the season were also reported from the Atlantic provinces on August 29.

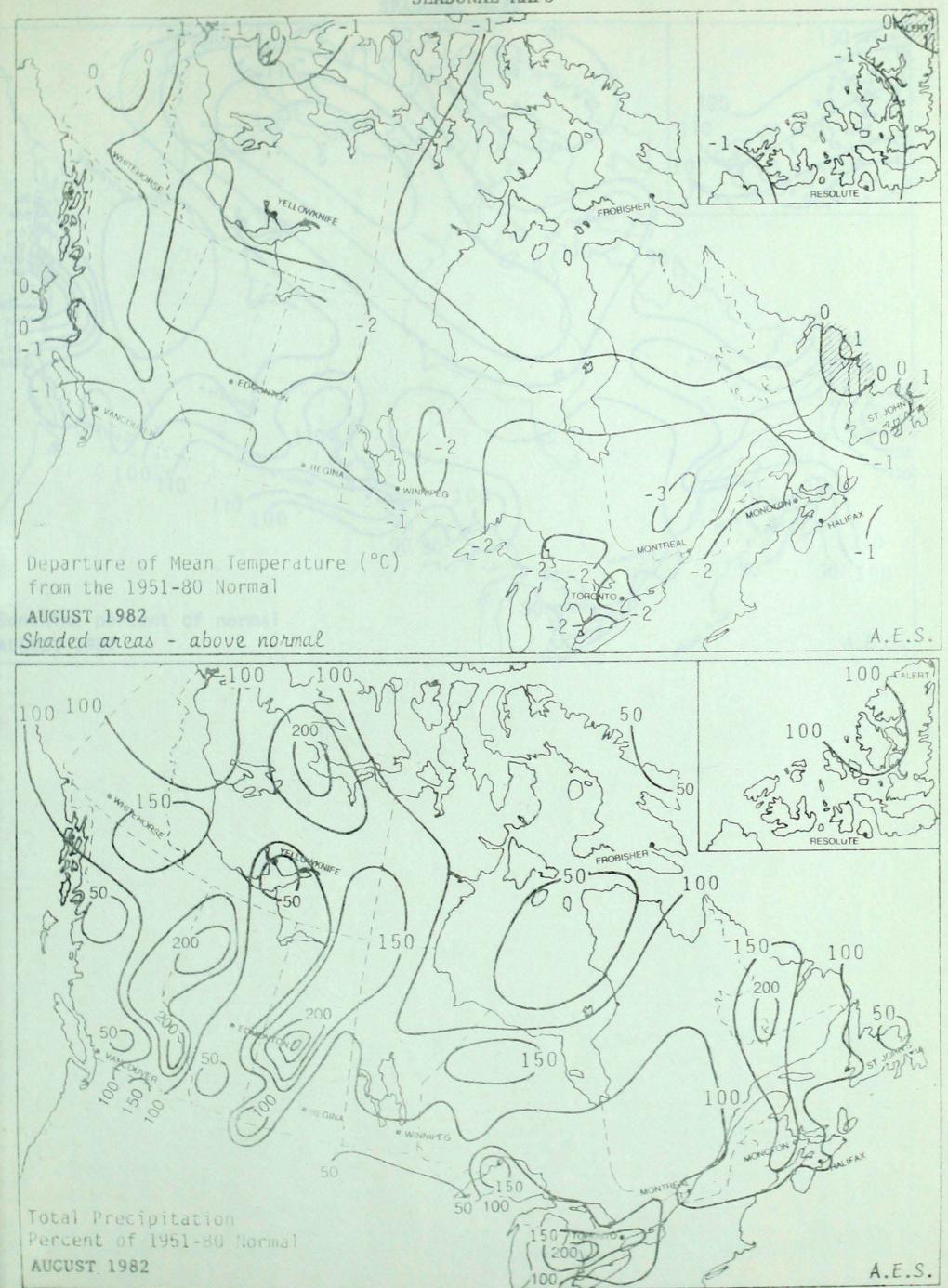
Frost damage to the cereal crops on the Prairies was largely limited to the area north and east of a Meadow Lake to Estavan, Saskatchewan line where record temperatures as low as minus 5° were reported. Dollar estimates of crop losses are as yet unavailable, but production will be markedly down in the afflicted areas, and crop quality will suffer over a broader area. In southern Ontario and Québec, official temperatures remained above freezing, but grass minimums as low as minus 5° were reported from the tobacco growing areas where about 40% of the unharvested tobacco was lost. It was the earliest wide spread frost in several decades and crop losses could run to \$200,000,000 in the Delhi-Simcoe tobacco area. Frost damage to the tobacco crop near Trois-Rivières, Québec, was estimated at \$400,000.



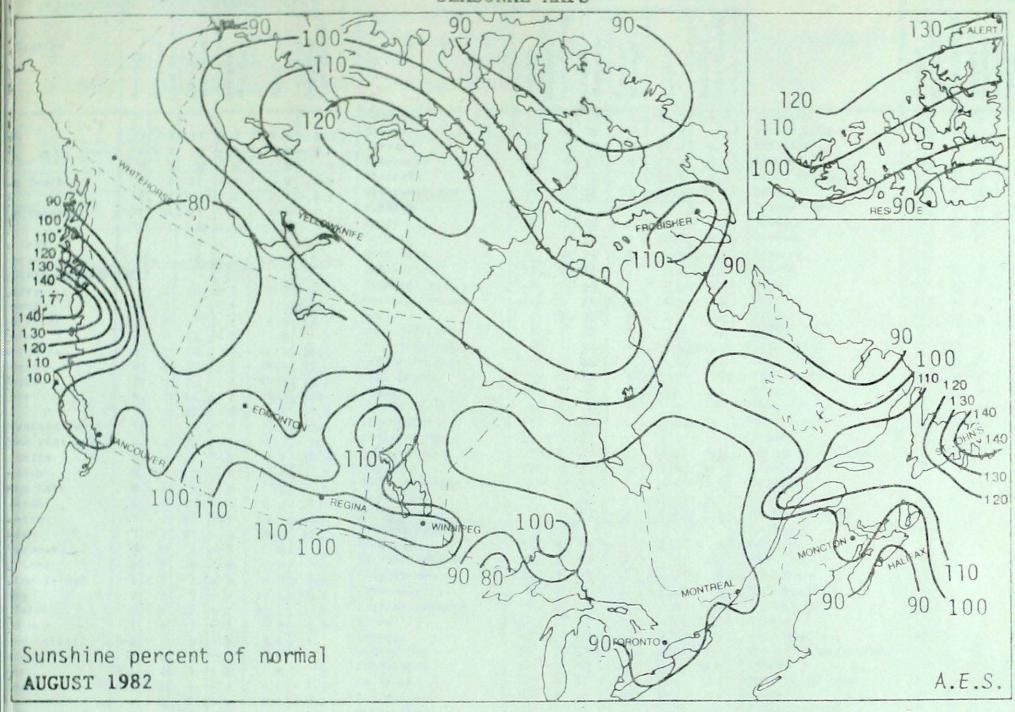
## SEASONAL MAPS



## SEASONAL MAPS



## SEASONAL MAPS



# TEMPERATURE AND PRECIPITATION DATA FOR THE WEEK ENDING 0500 G.M.T. SEPTEMBER 14, 1982

	Temper	ature (f	cili	Precip (m	41	Temperature (°C)			Precip	(mm)		Temperature (°C)				Precip. (mm			
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le Point	1-7 4	11	3	5.4 1.	. 2	ALBERTA Banff	11		22		м	н	Thunder Bay Timmins	1	Section 1	5 30	- 3	16.0	21.1
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