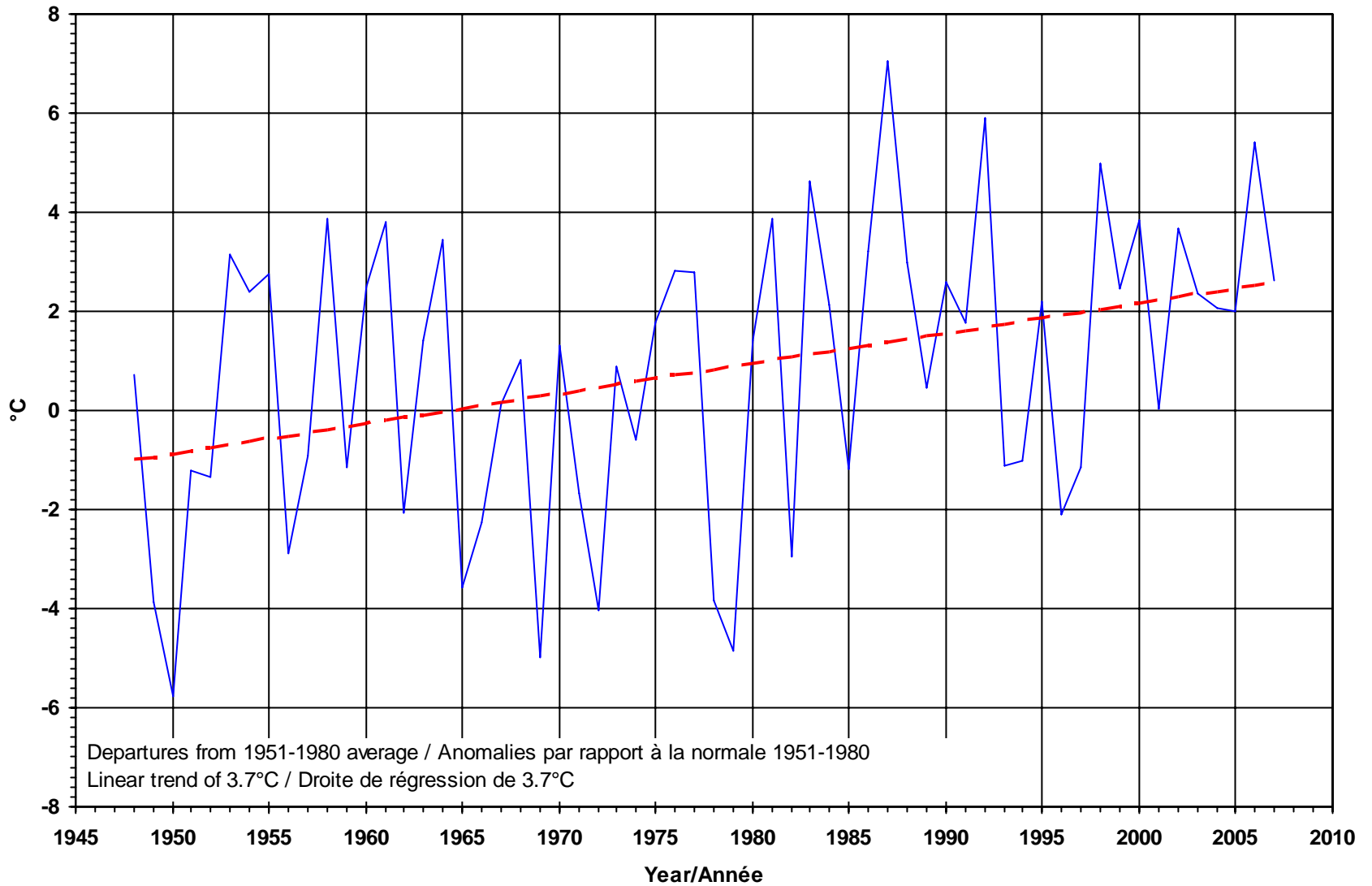


Climate Trends
Bob Cormier MSC
2007

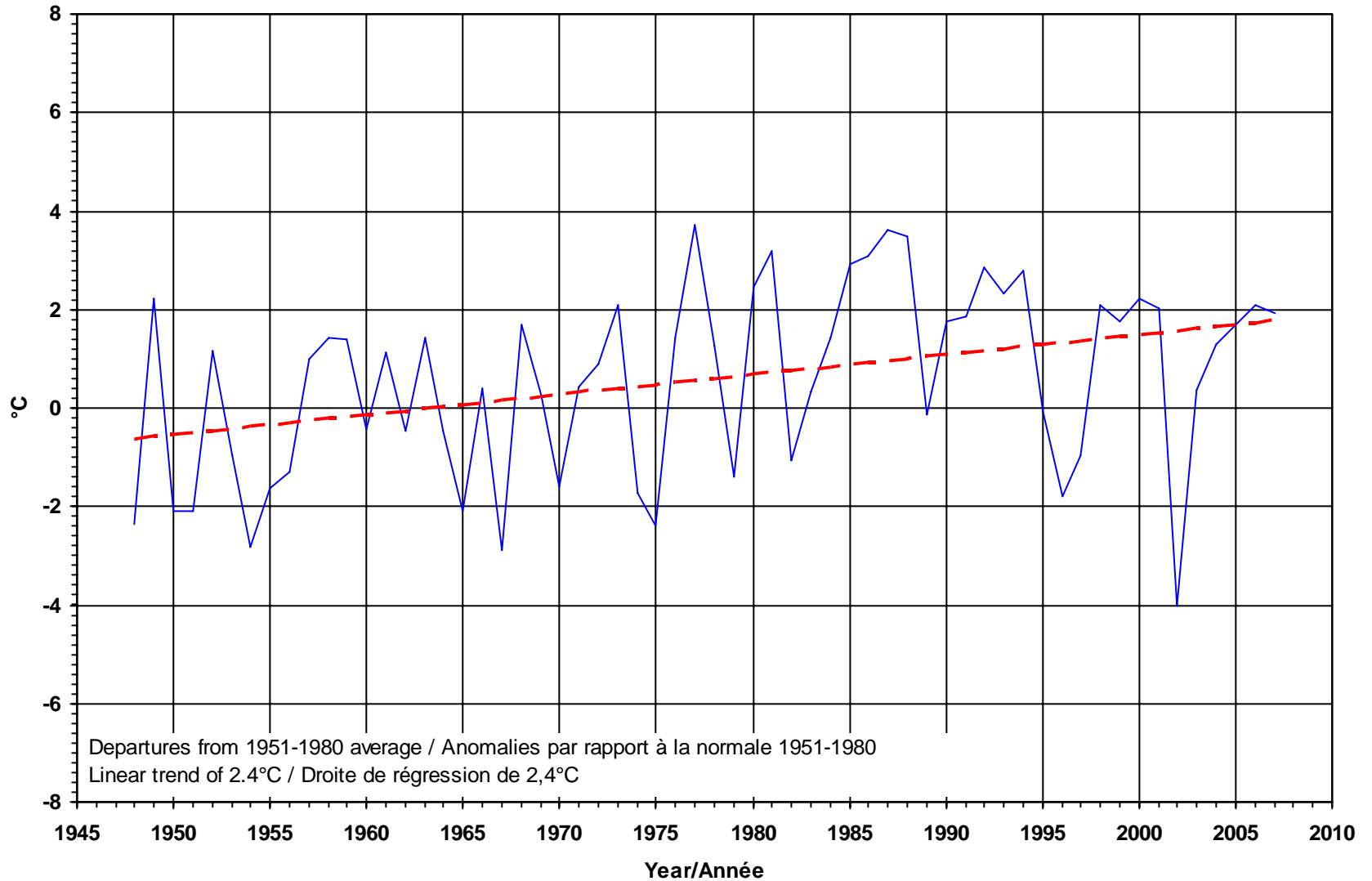
Topics

- Past Seasonal Trends
- A Look At Last Year
- Environment Canada Forecasts
- A Look at La Nina Impacts
- Long range Future Trends

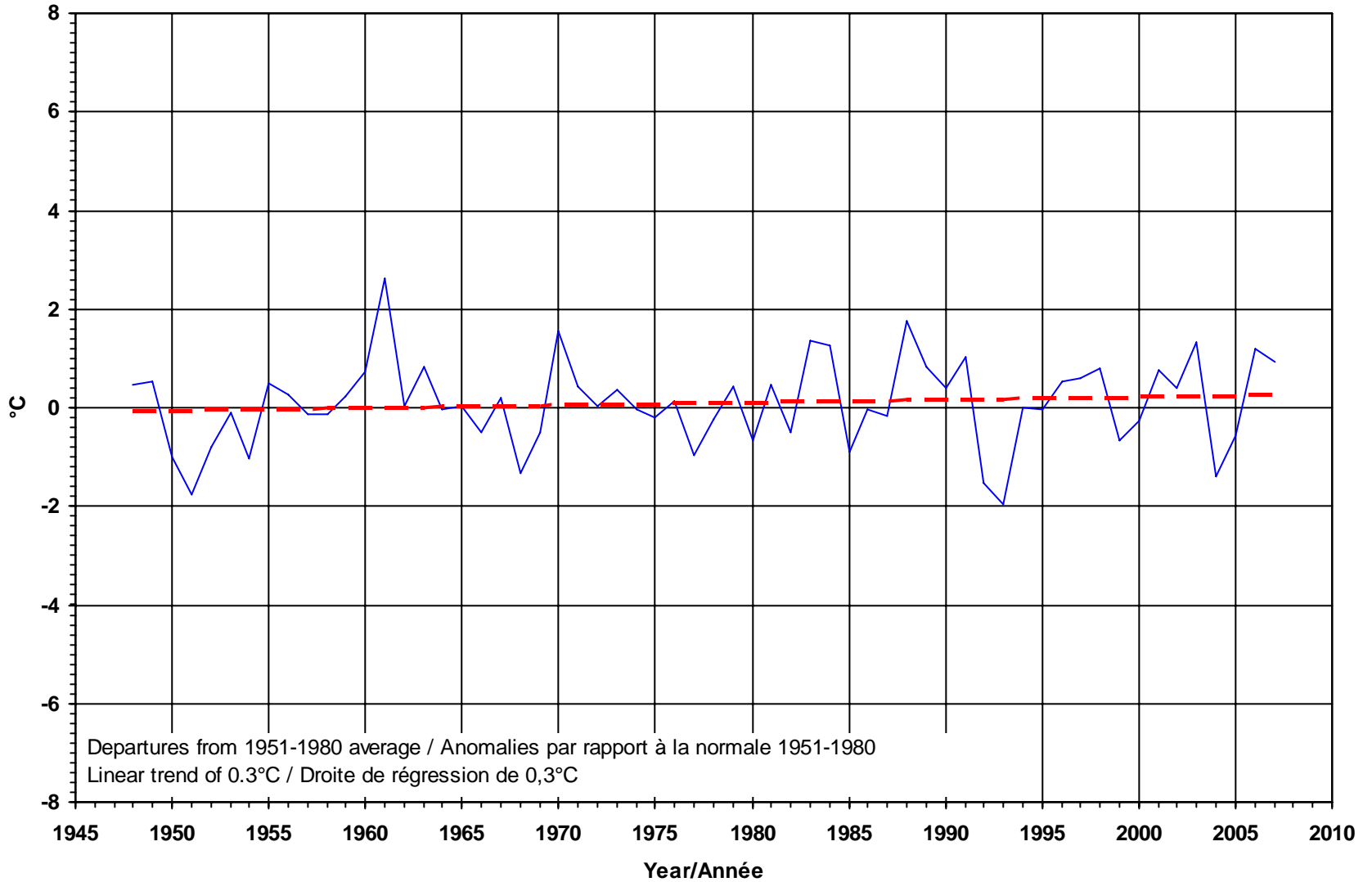
Winter Prairies temperature departures and long-term trend, 1948-2007



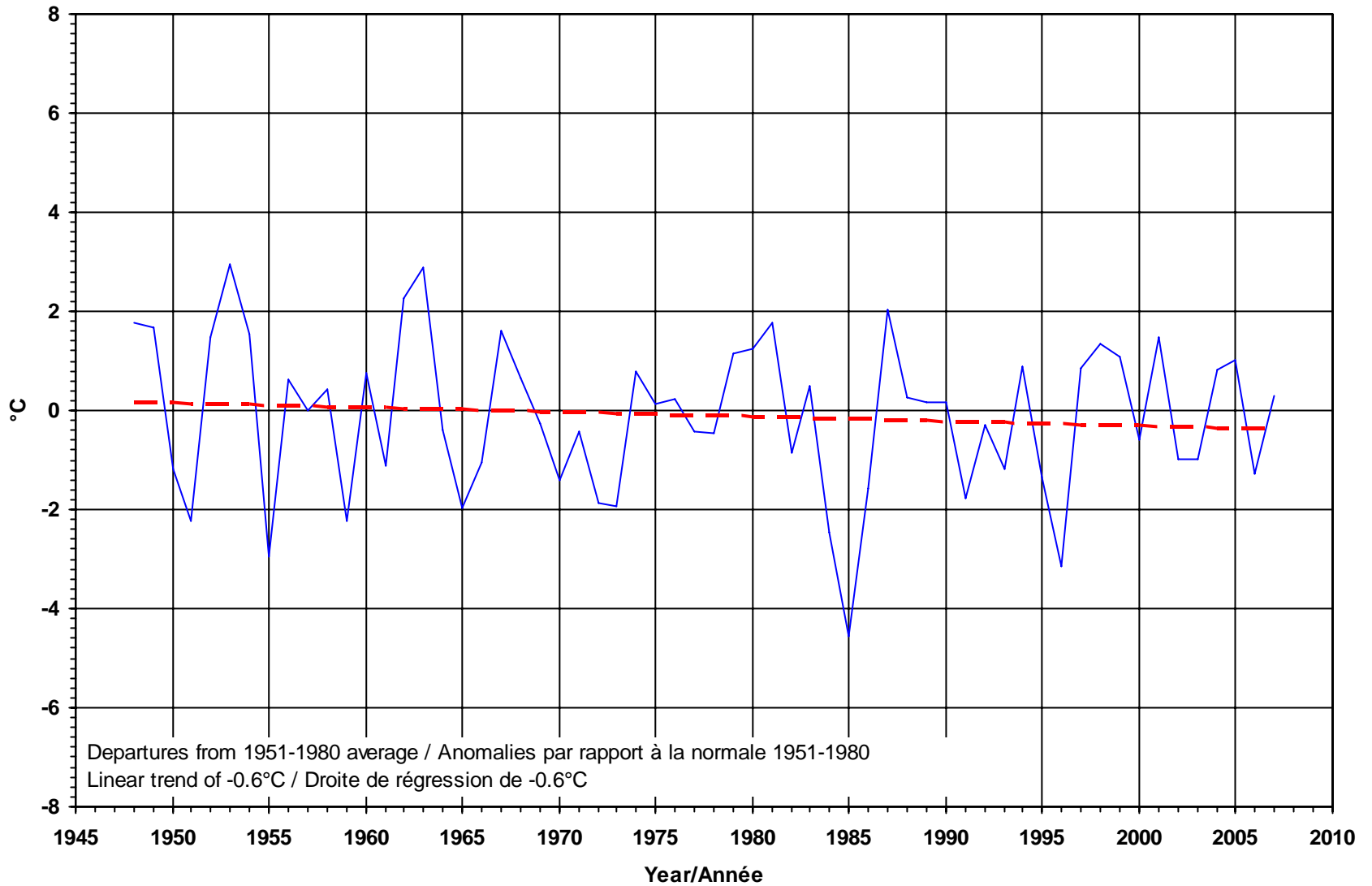
Spring Prairies temperature departures and long-term trend, 1948-2007



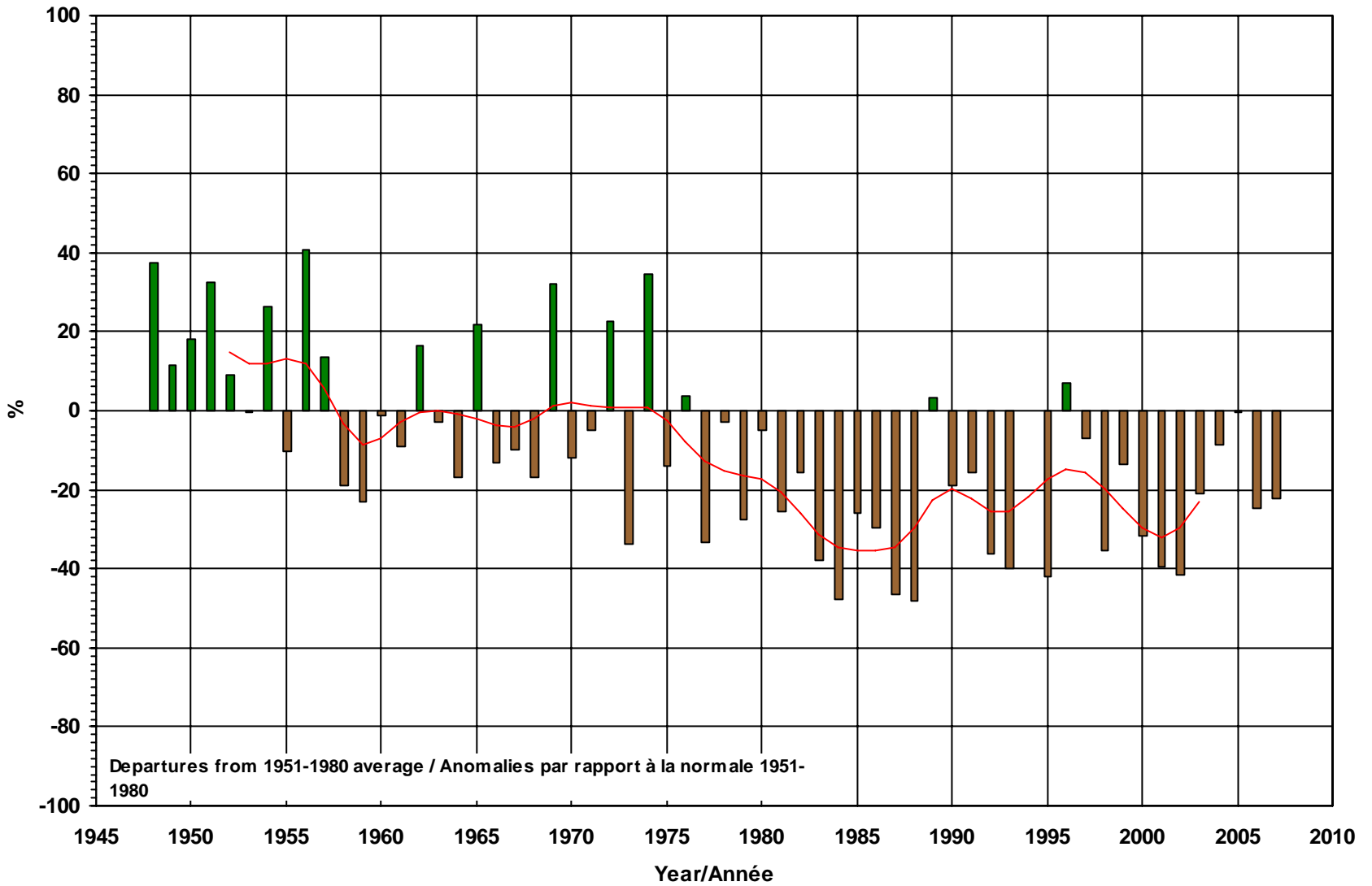
Summer Prairies temperature departures and long-term trend, 1948-2007



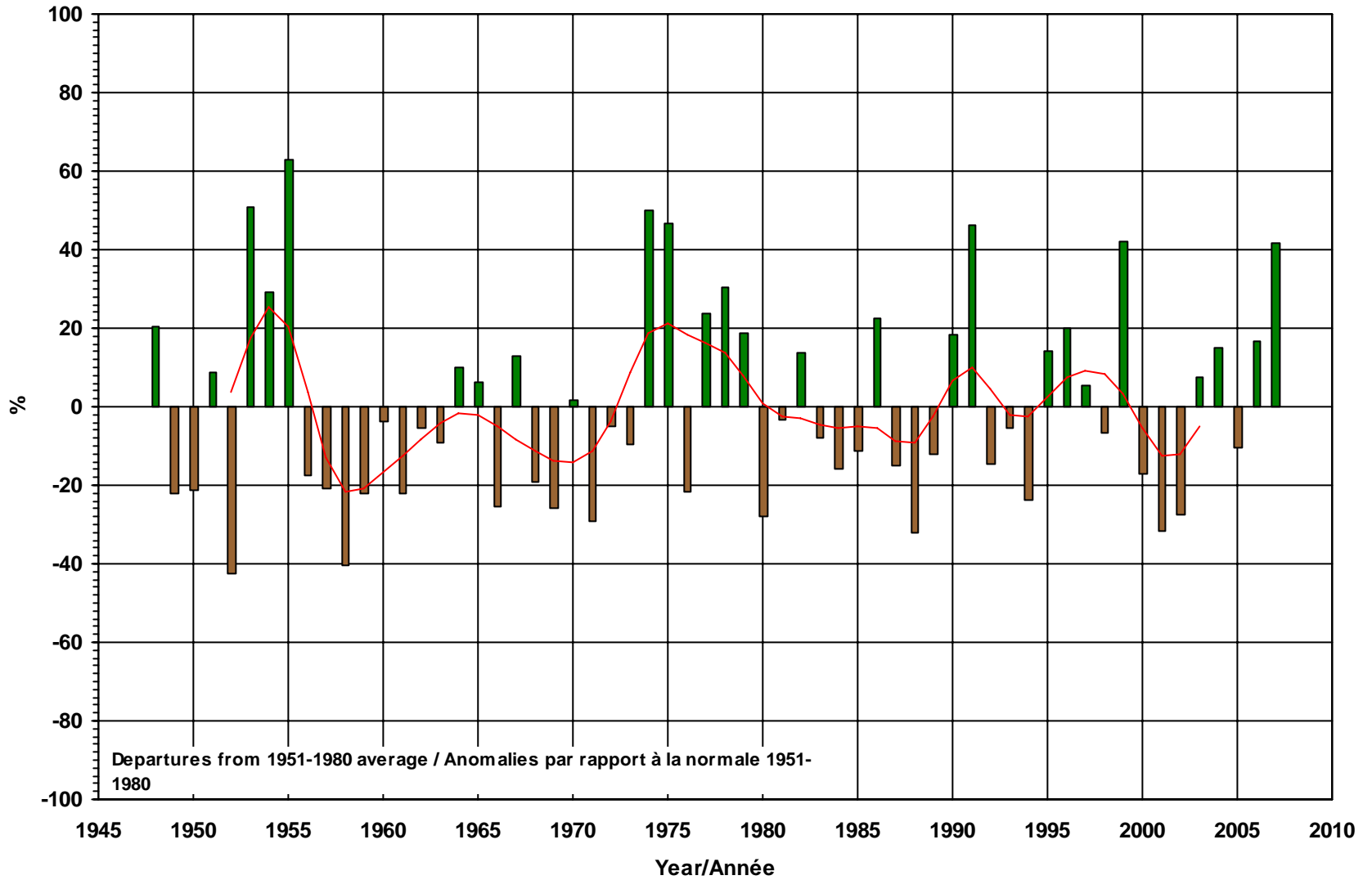
Autumn Prairies temperature departures and long-term trend, 1948-2007



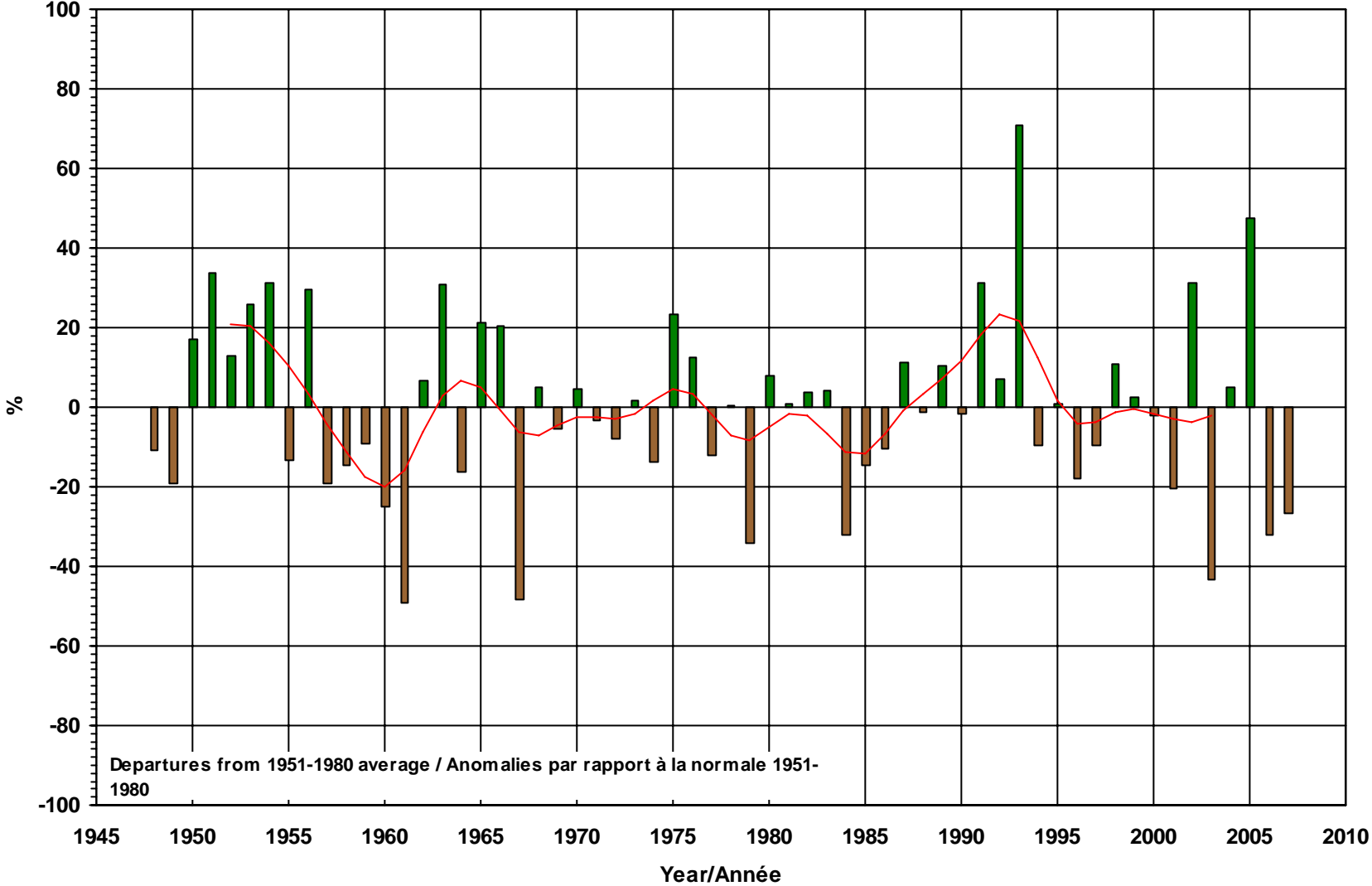
Winter Prairies precipitation departures with weighted running mean, 1948-2007



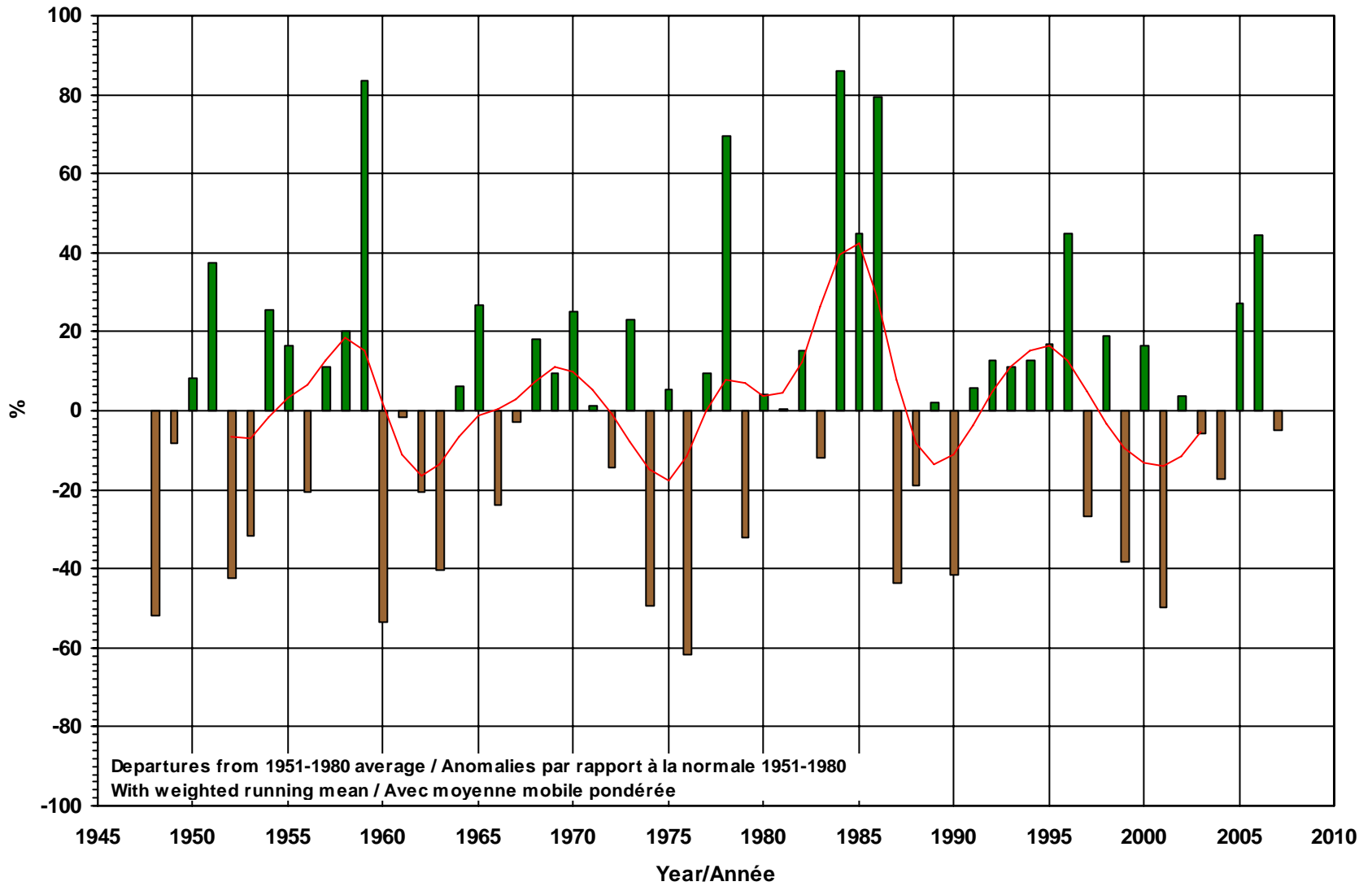
Spring Prairies precipitation departures with weighted running mean, 1948-2000



Summer Prairies precipitation departures with weighted running mean, 1948-2007



Autumn Prairies precipitation departures with weighted running mean, 1948-2007

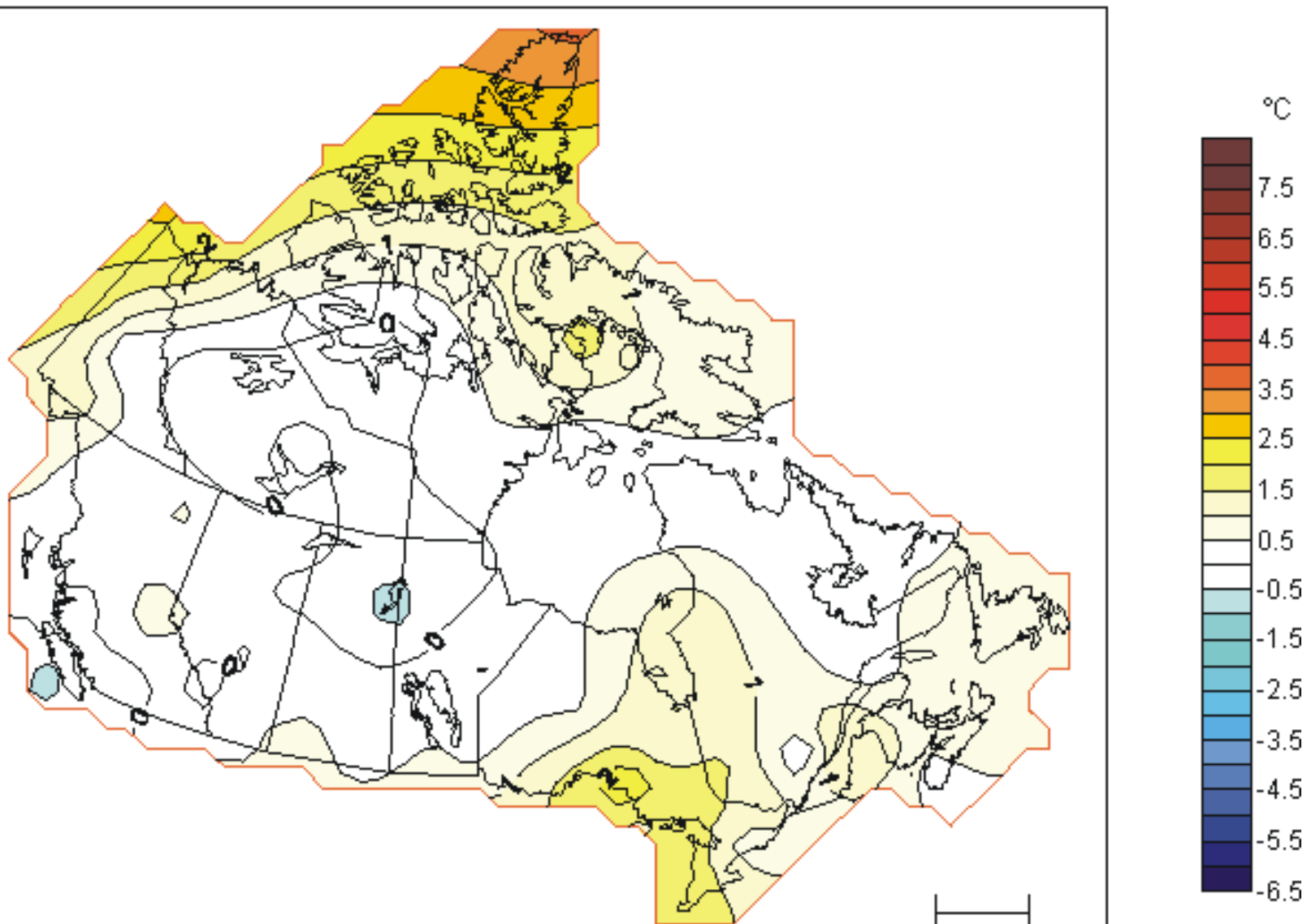


TEMPERATURE DEPARTURES FROM NORMAL

Autumn(Sep, Oct, Nov) 2007

ANOMALIES DE LA TEMPERATURE PAR RAPPORT A LA NORMALE

Automne (Sep, Oct, Nov) 2007



Environnement Canada
Balance and Technology Branch
Climate Research Division

Environnement Canada
Direction générale de la Balance et de la Technologie
Division de la recherche climatique

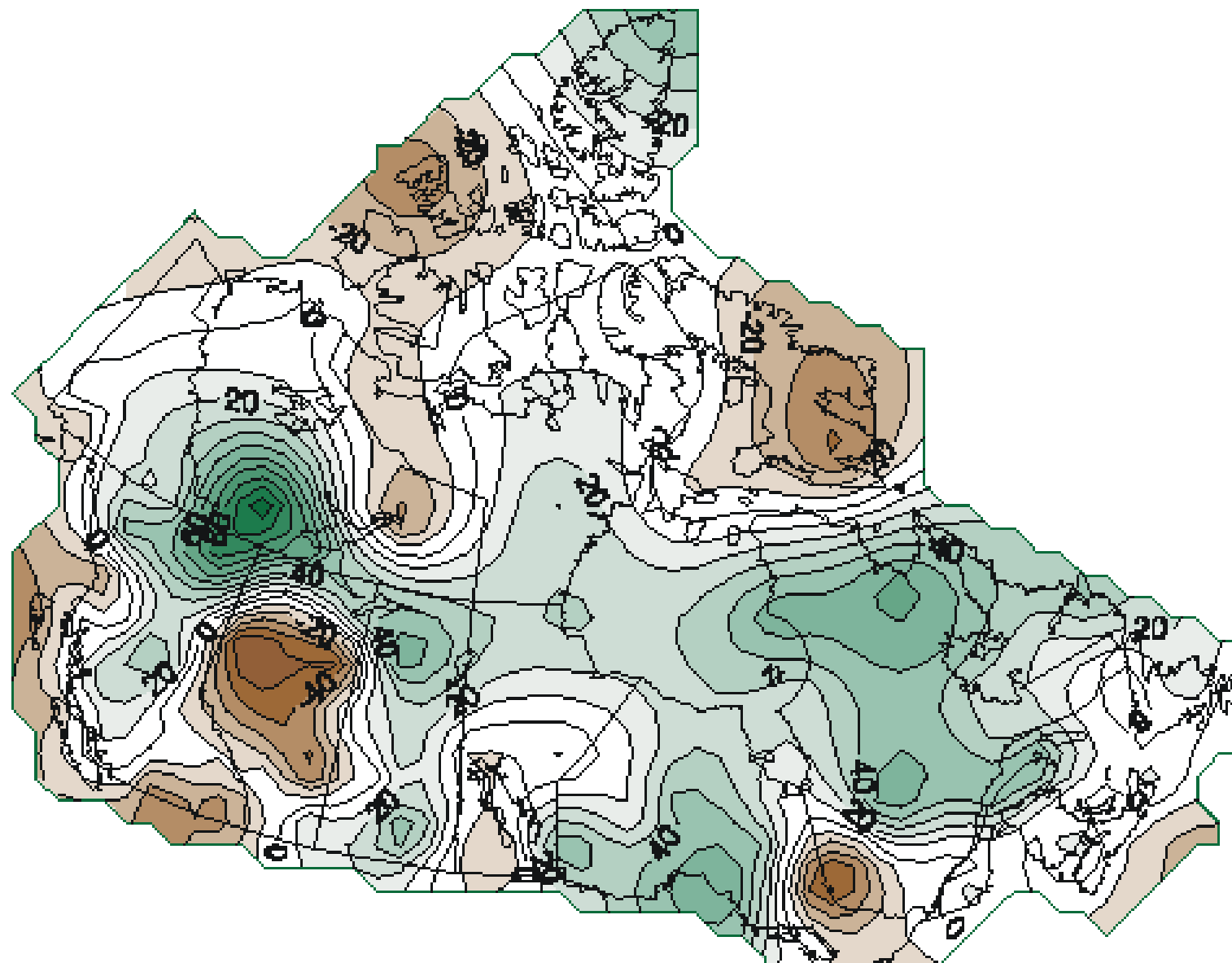
500 km

PRECIPITATION DEPARTURES FROM NORMAL

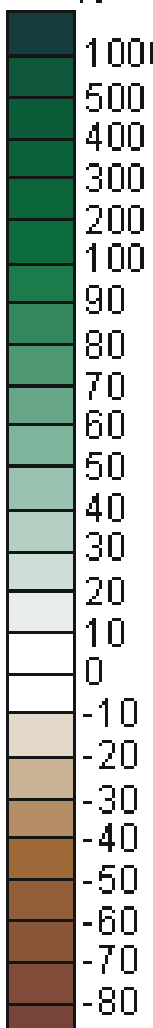
Autumn (Sep, Oct, Nov) 2007

ANOMALIES DES PRECIPITATIONS PAR RAPPORT A LA NORMALE

Automne (Sep, Oct, Nov) 2007



%

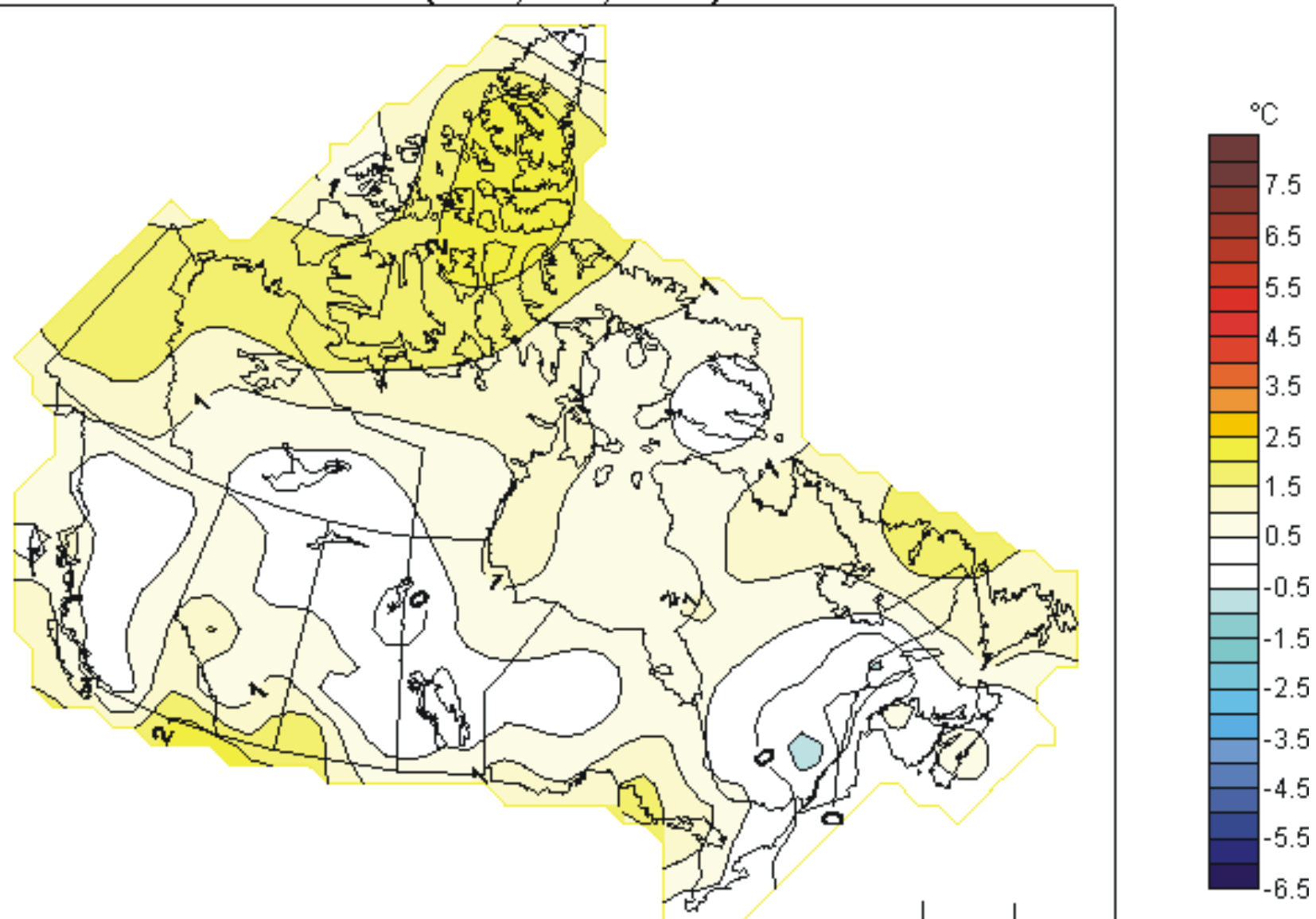


TEMPERATURE DEPARTURES FROM NORMAL

Summer (Jun, Jul, Aug) 2007

ANOMALIES DE LA TEMPERATURE PAR RAPPORT A LA NORMALE

Été (Juin, Juil, Août) 2007



Environnement Canada
Balance and Technology Branch
Climate Research Division

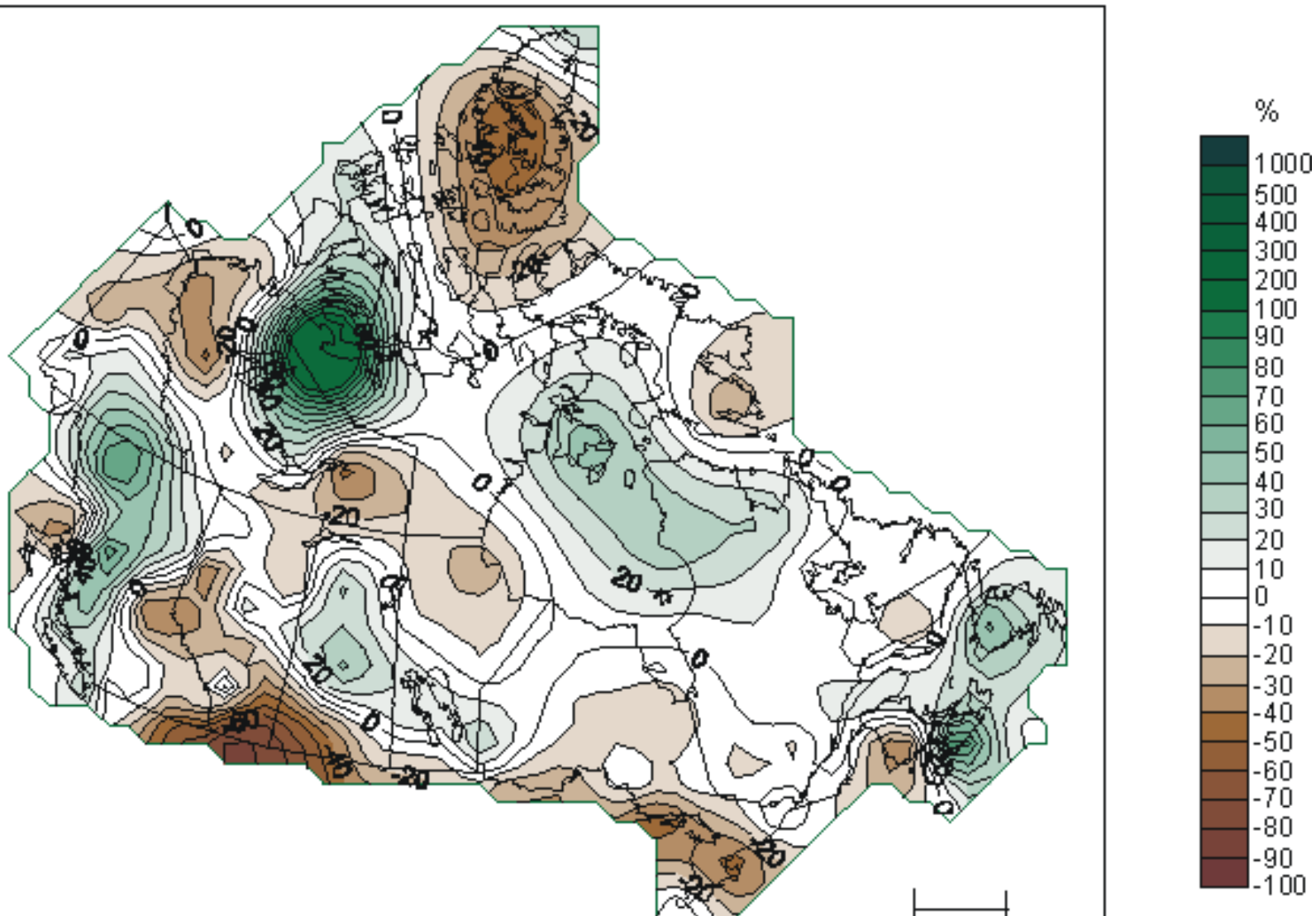
Environnement Canada
Direction générale de la Balance et de la technologie
Division de la recherche climatique

PRECIPITATION DEPARTURES FROM NORMAL

Summer (Jun, Jul, Aug) 2007

ANOMALIES DES PRECIPITATIONS PAR RAPPORT A LA NORMALE

Été (Juin, Juil, Août) 2007



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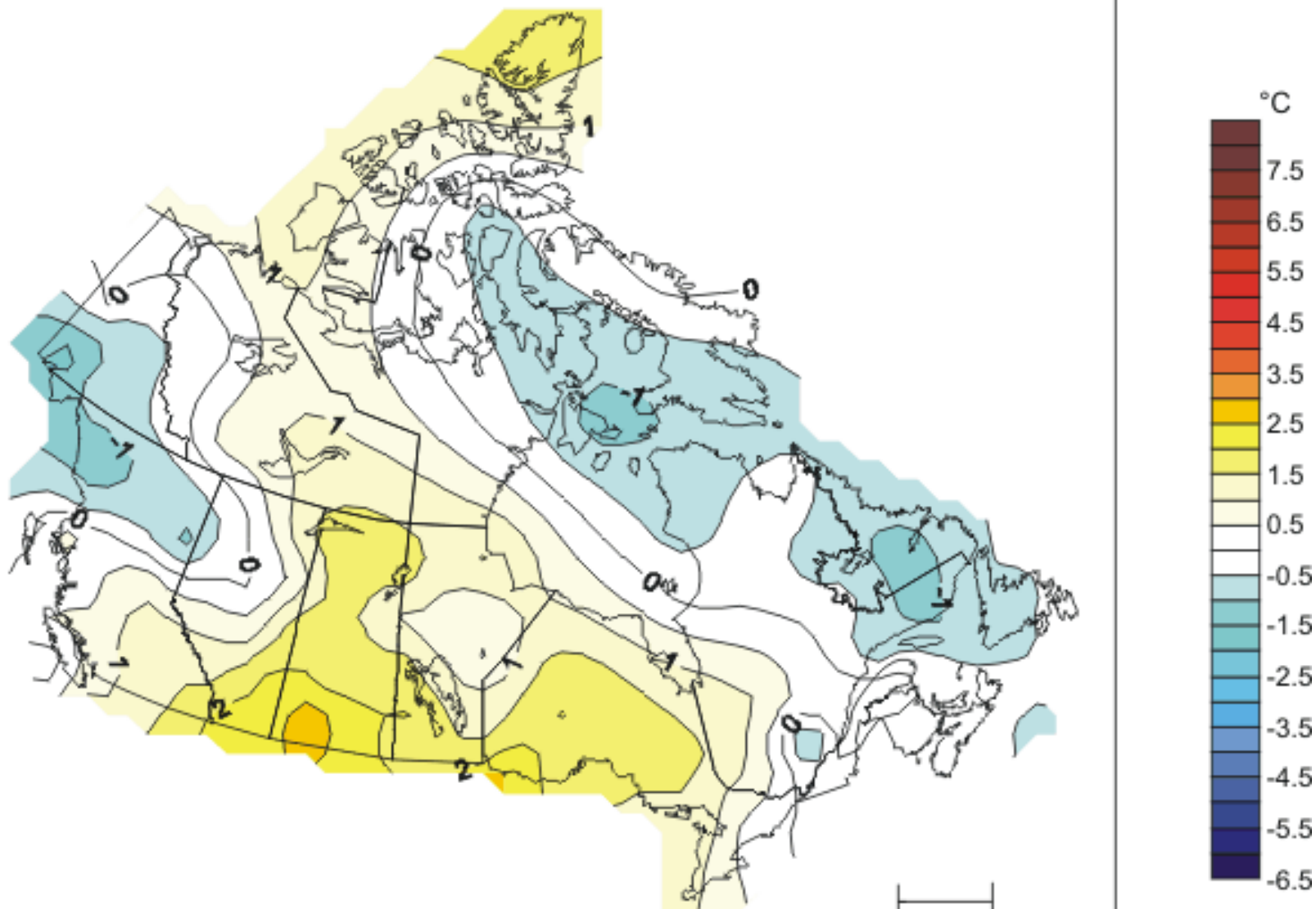
500 km

TEMPERATURE DEPARTURES FROM NORMAL

Spring (Mar, Apr, May) 2007

ANOMALIES DE LA TEMPERATURE PAR RAPPORT A LA NORMALE

Printemps (mar, avr, mai) 2007



Environment Canada
Science and Technology Branch
Climate Research Division

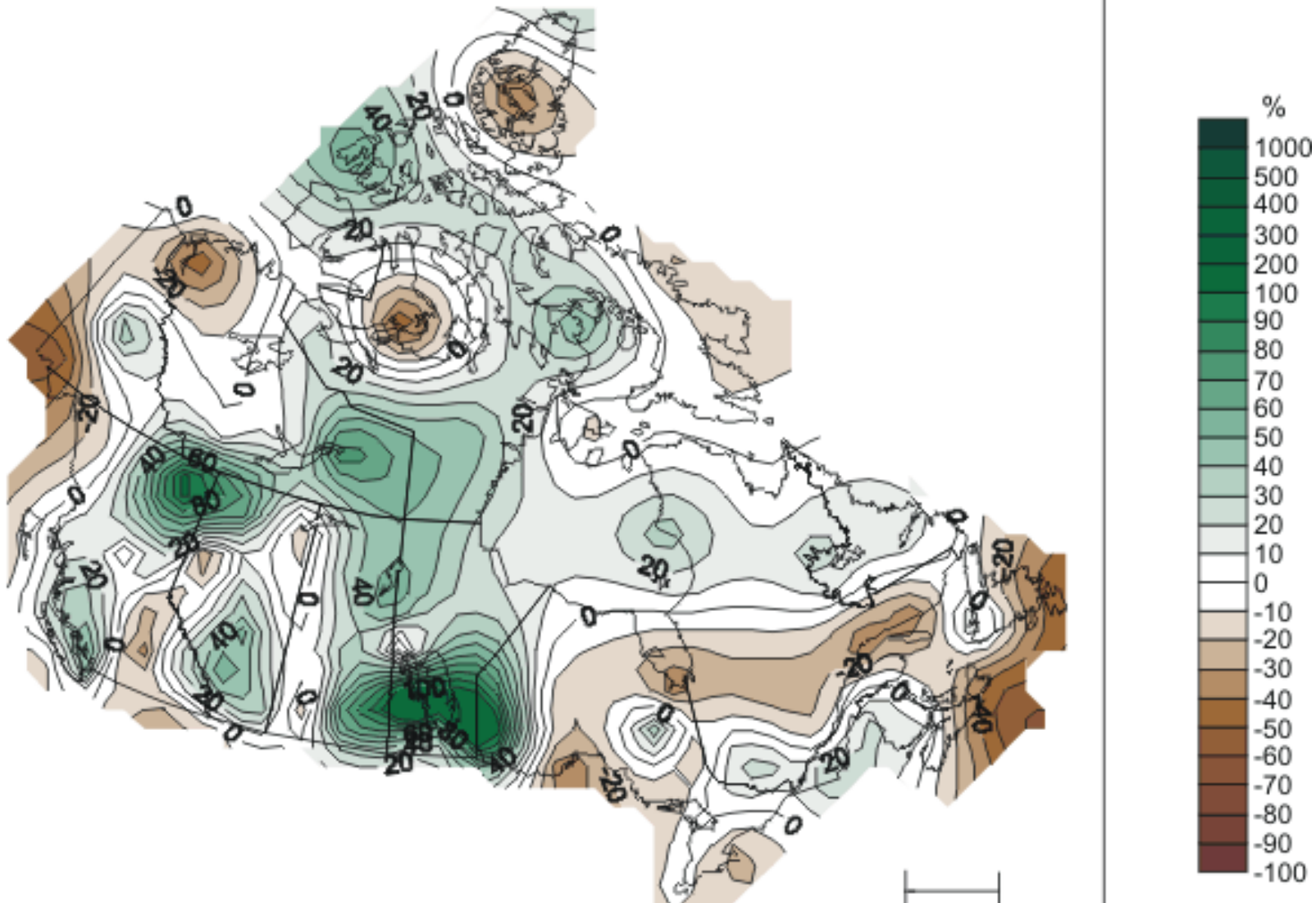
Environnement Canada
Direction générale de la Science et de la technologie
Division de la recherche climatique

PRECIPITATION DEPARTURES FROM NORMAL

Spring (Mar, Apr, May) 2007

ANOMALIES DES PRECIPITATIONS PAR RAPPORT A LA NORMALE

Printemps (mar, avr, mai) 2007



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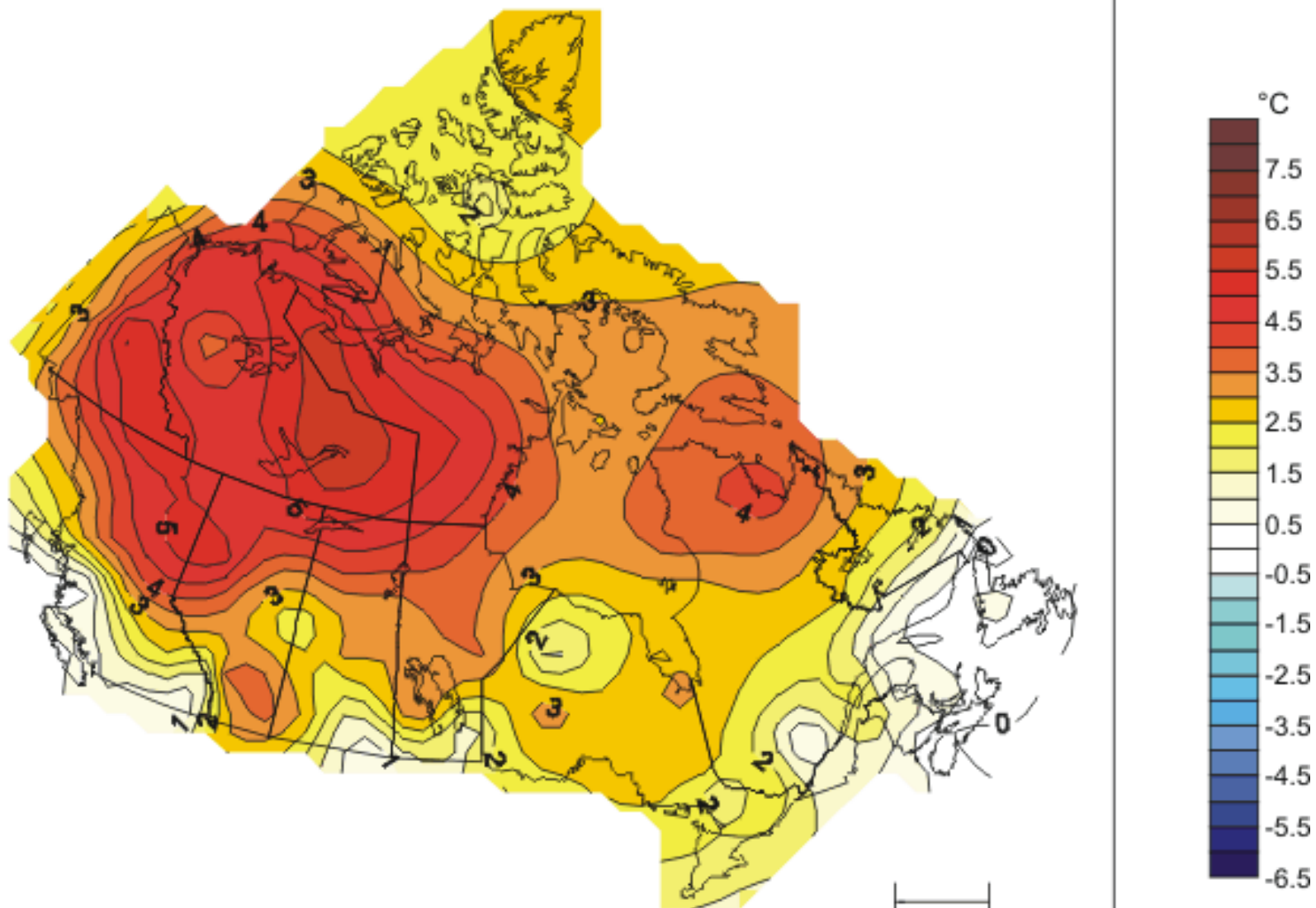
500 km

TEMPERATURE DEPARTURES FROM NORMAL

Winter (Dec, Jan, Feb) 2006/2007

ANOMALIES DE LA TEMPERATURE PAR RAPPORT A LA NORMALE

Hiver (dec, jan, fev) 2006/2007



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Division de la recherche climatique

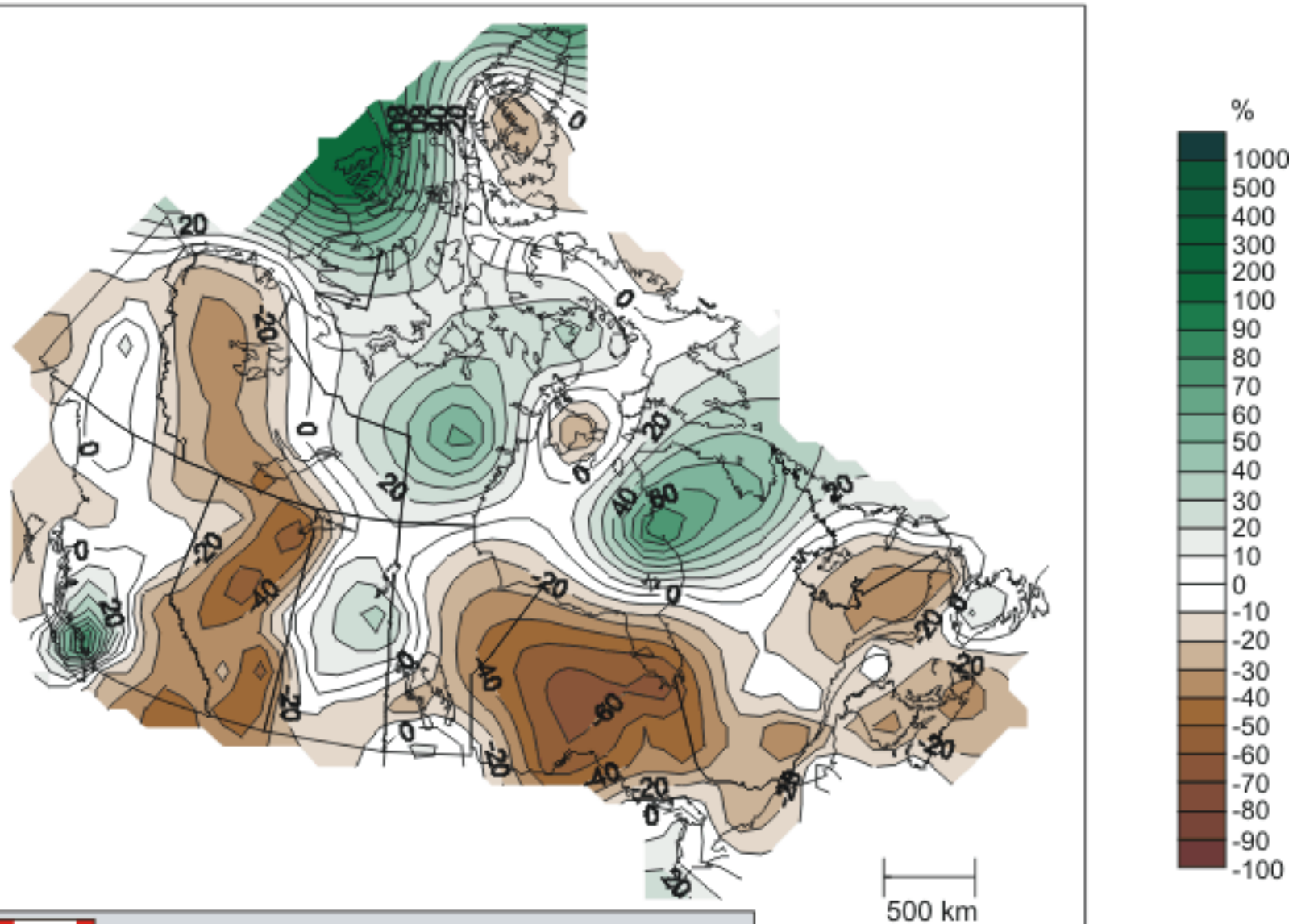
500 km

PRECIPITATION DEPARTURES FROM NORMAL

Winter (Dec, Jan, Feb) 2006/2007

ANOMALIES DES PRECIPITATIONS PAR RAPPORT A LA NORMALE

Hiver (dec, jan, fev) 2006/2007



Environment Canada
Science and Technology Branch
Climate Research Division

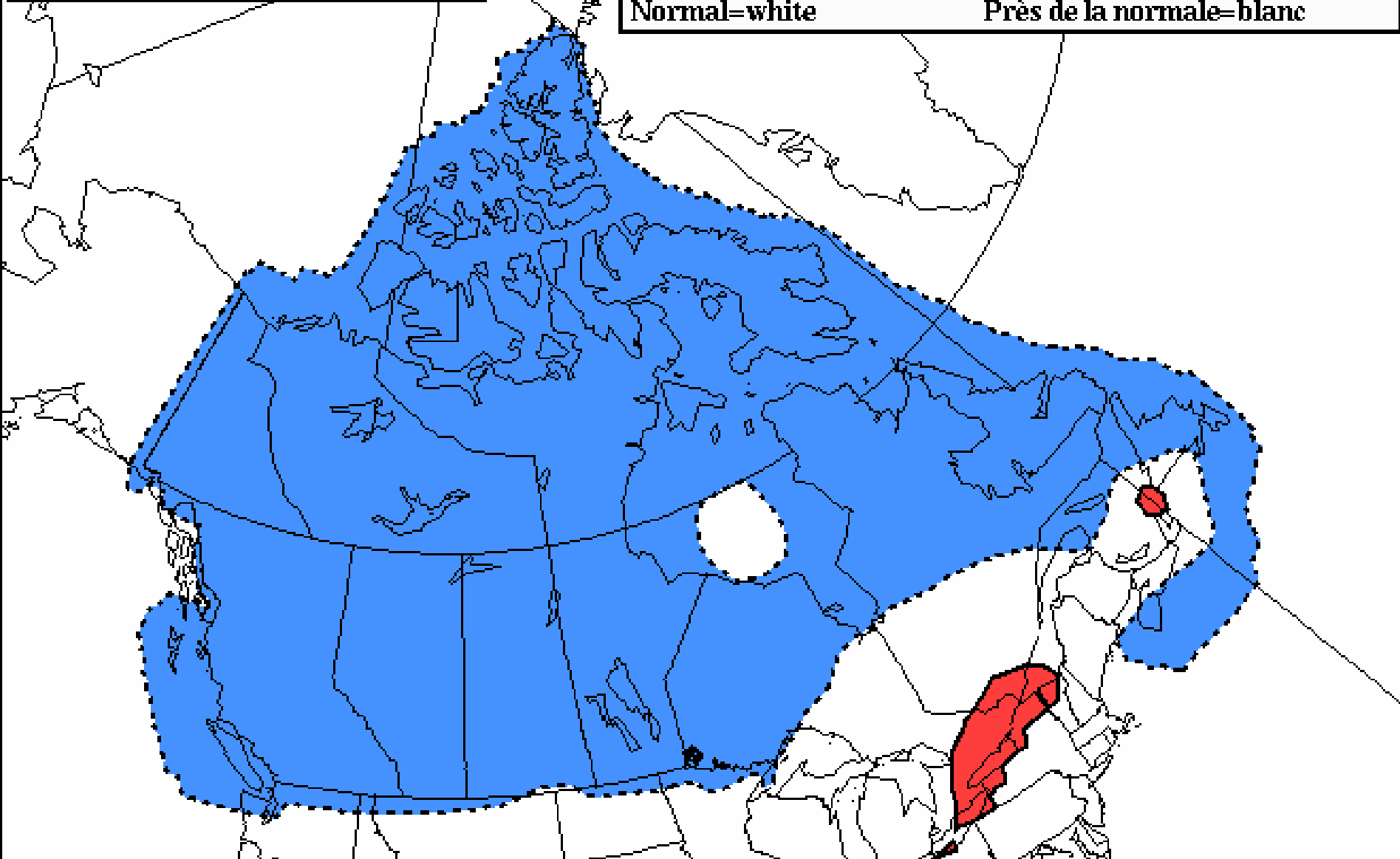
Environnement Canada
Direction générale de la Science et de la technologie
Division de la recherche climatique

500 km

EC Jan-Mar Temp Forecast



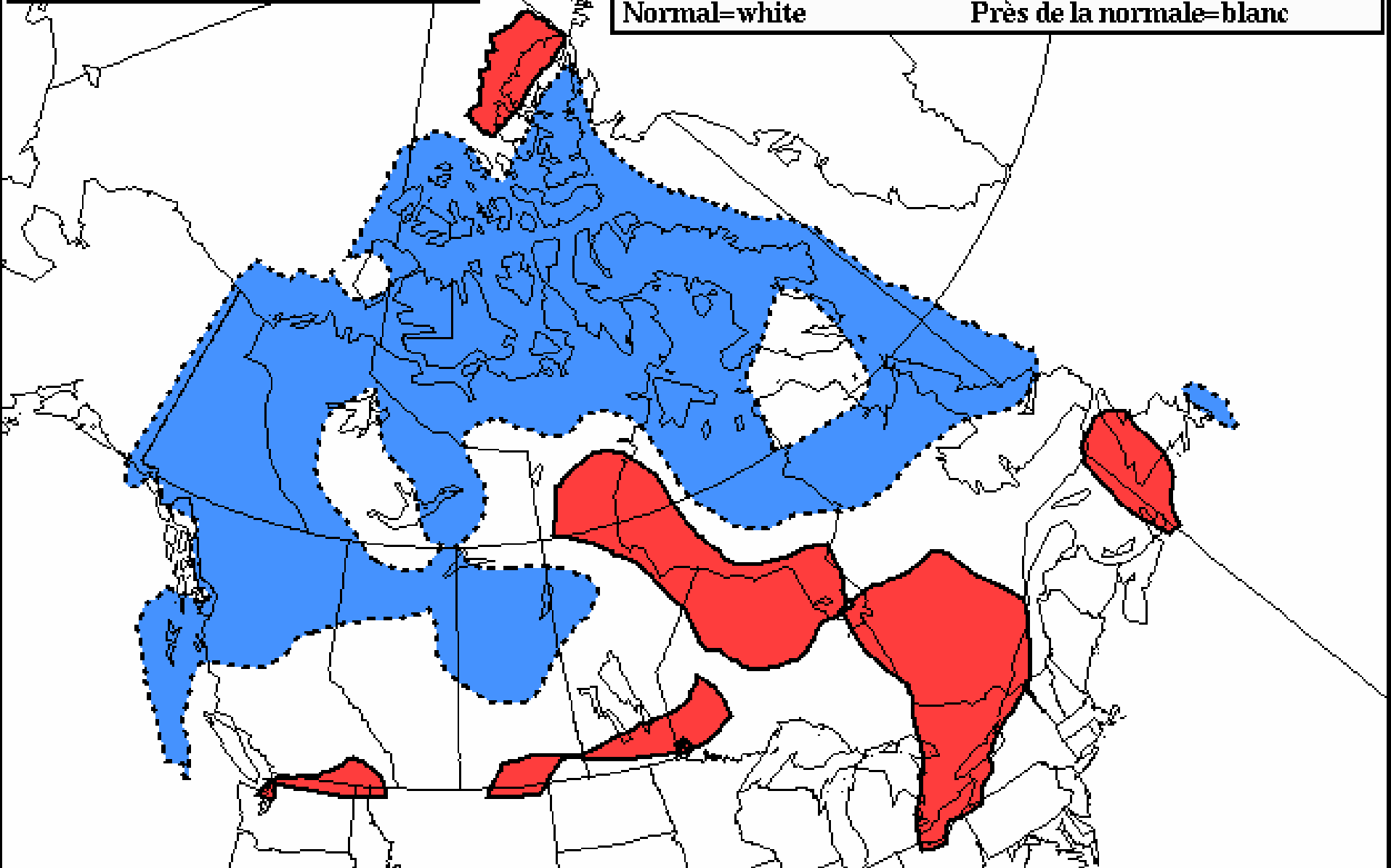
Below Normal=blue-dash **Sous la normale=bleu-tirets**
Above Normal=red **Au-dessus de la normale=rouge**
Normal=white **Près de la normale=blanc**



EC Jan-Mar Pcpn Forecast



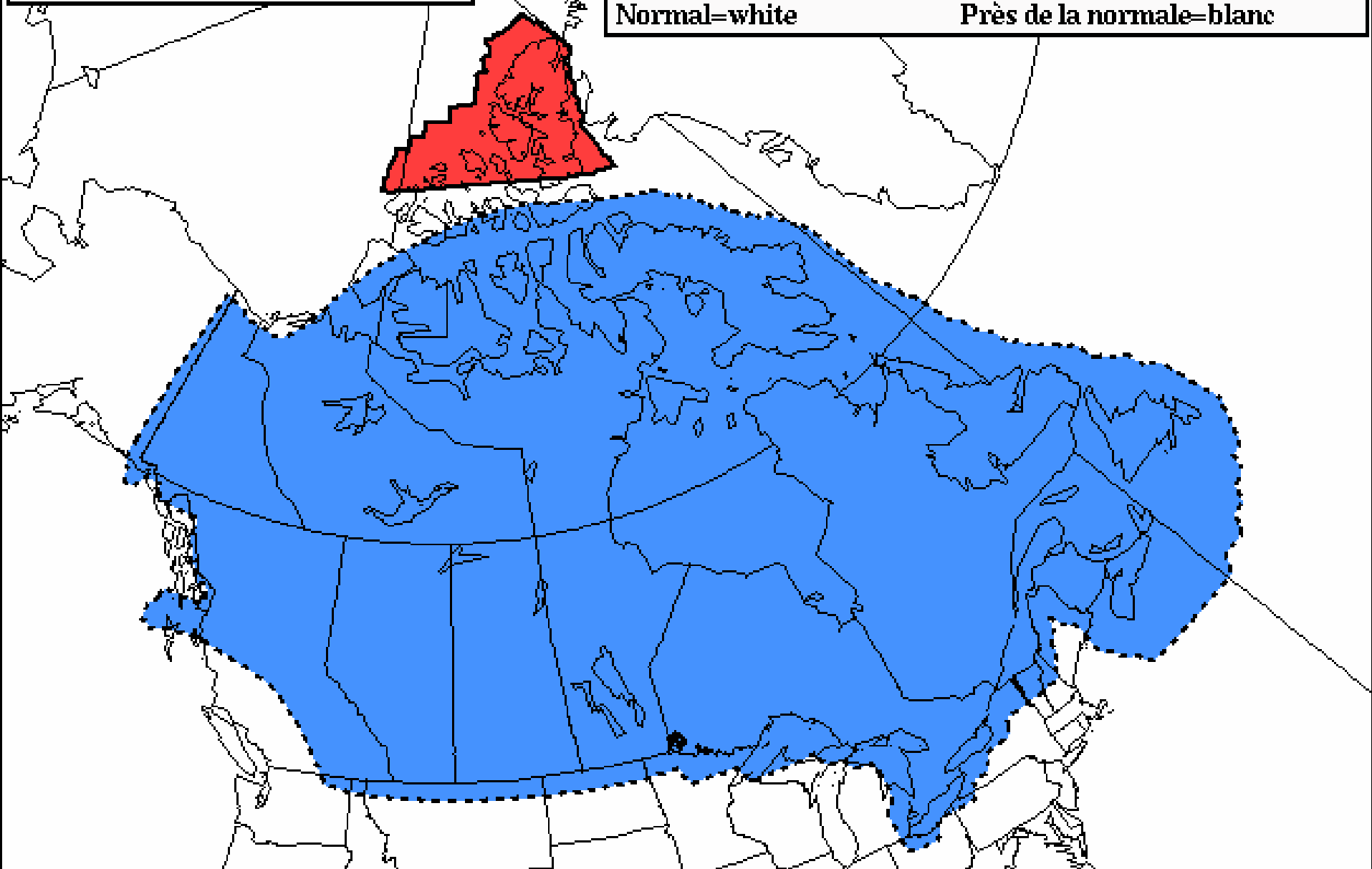
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EC March-May Temp Forecast

 Environment Canada
Environnement Canada

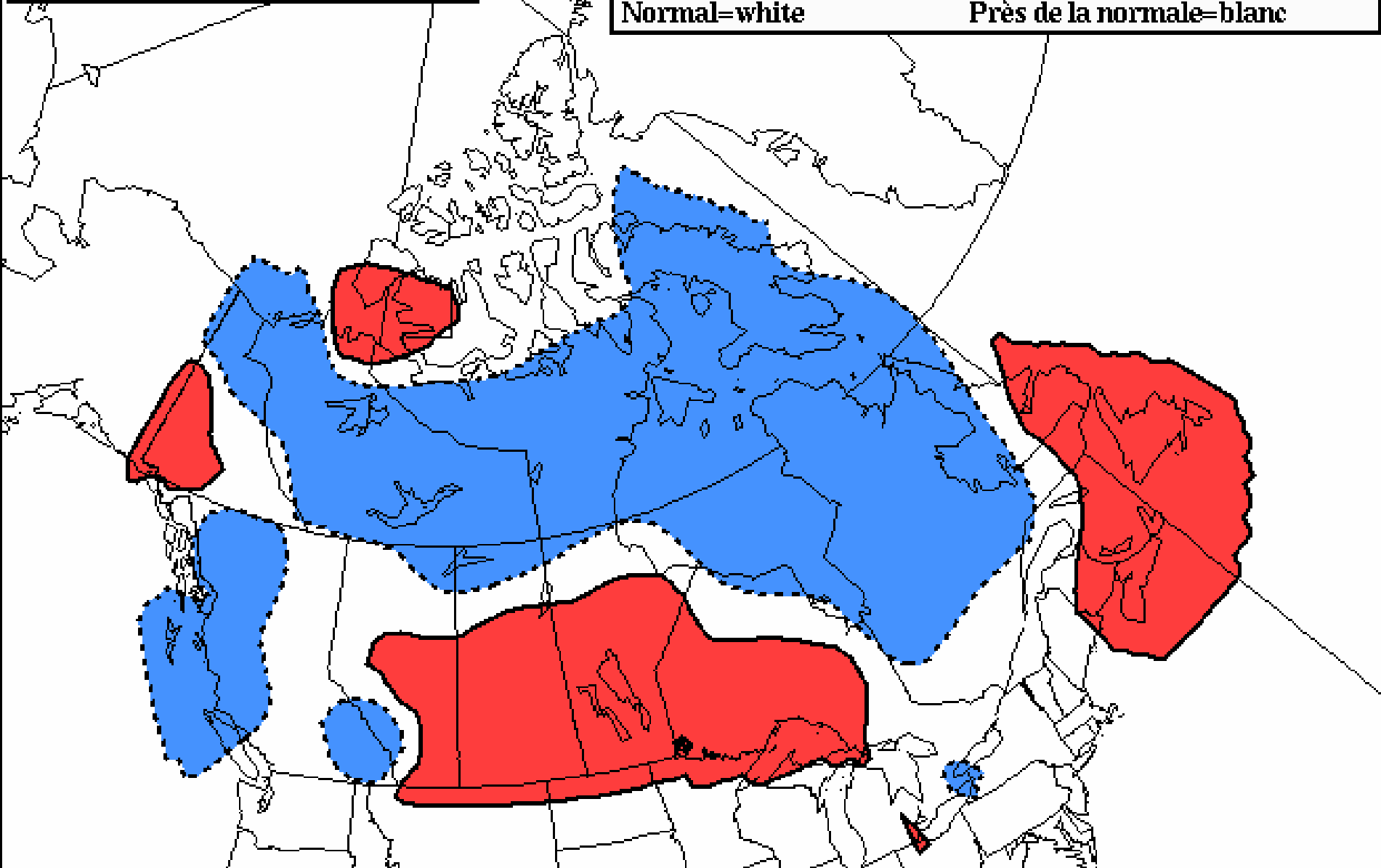
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EC March-May Pcpn Forecast



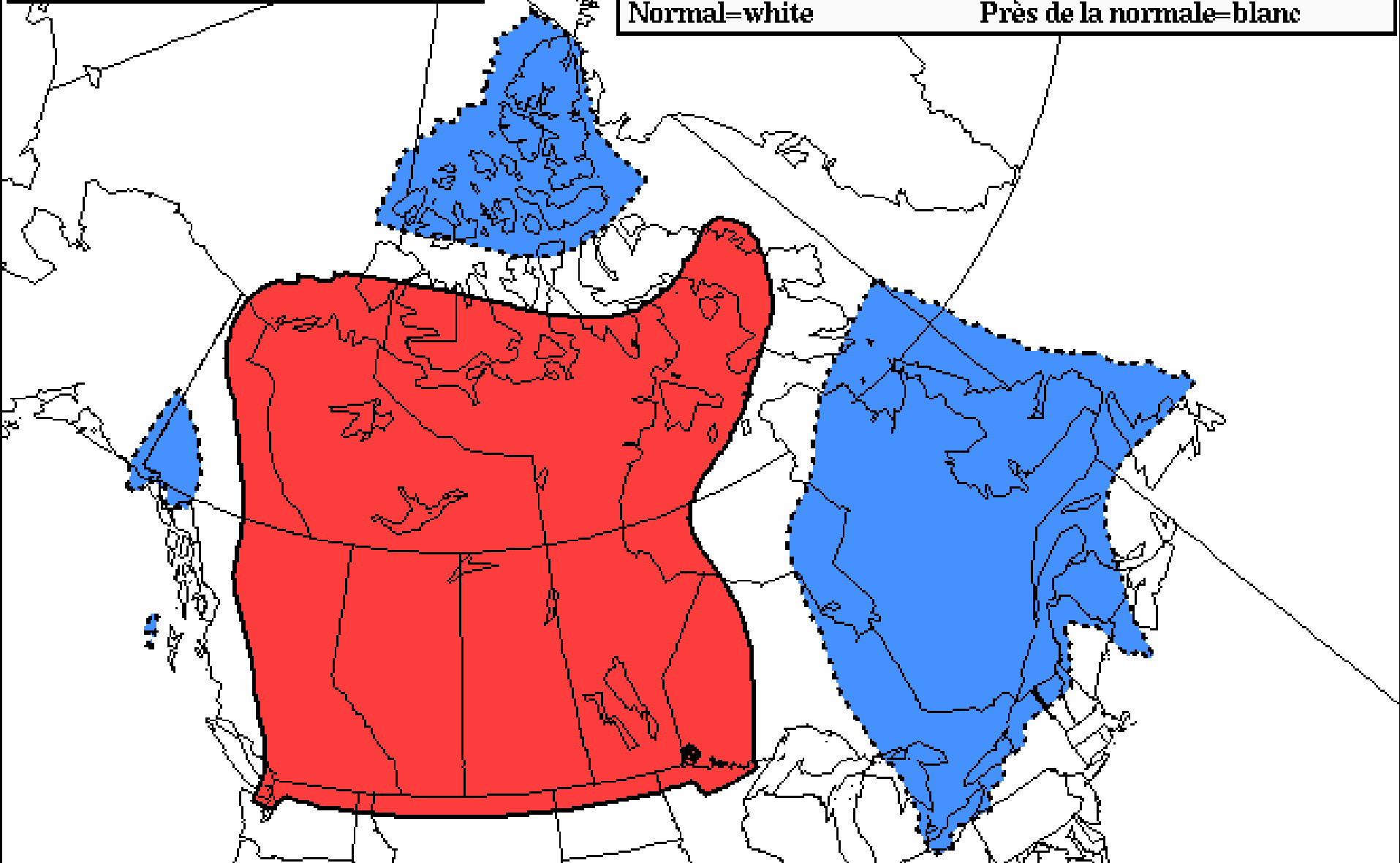
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EC June-Aug Temp Forecast

 Environment Canada
Environnement Canada

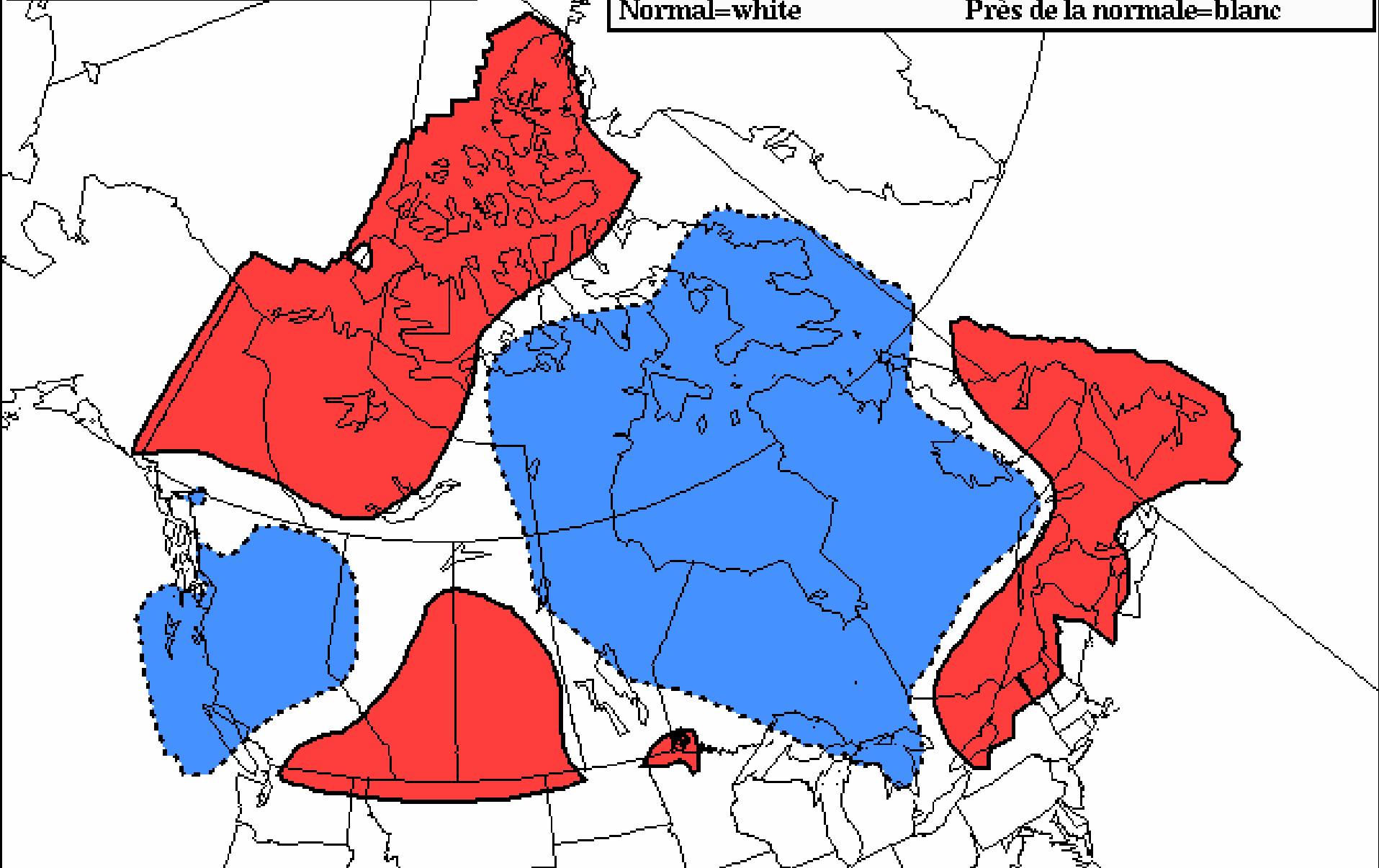
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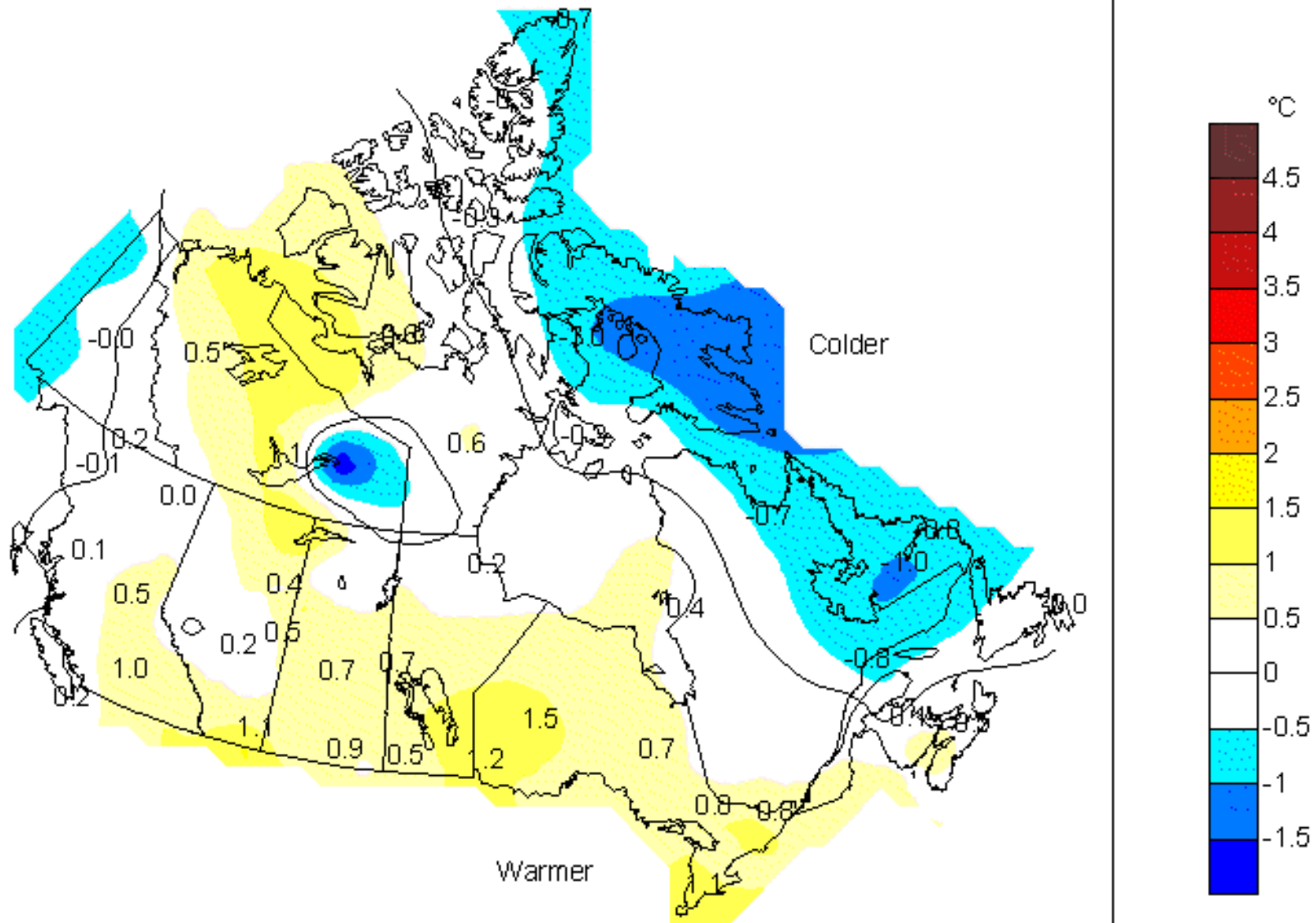
EC June-Aug Pcpn Forecast

 Environment Canada
Environnement Canada

Below Normal=blue-dash **Sous la normale=bleu-tirets**
Above Normal=red **Au-dessus de la normale=rouge**
Normal=white **Près de la normale=blanc**



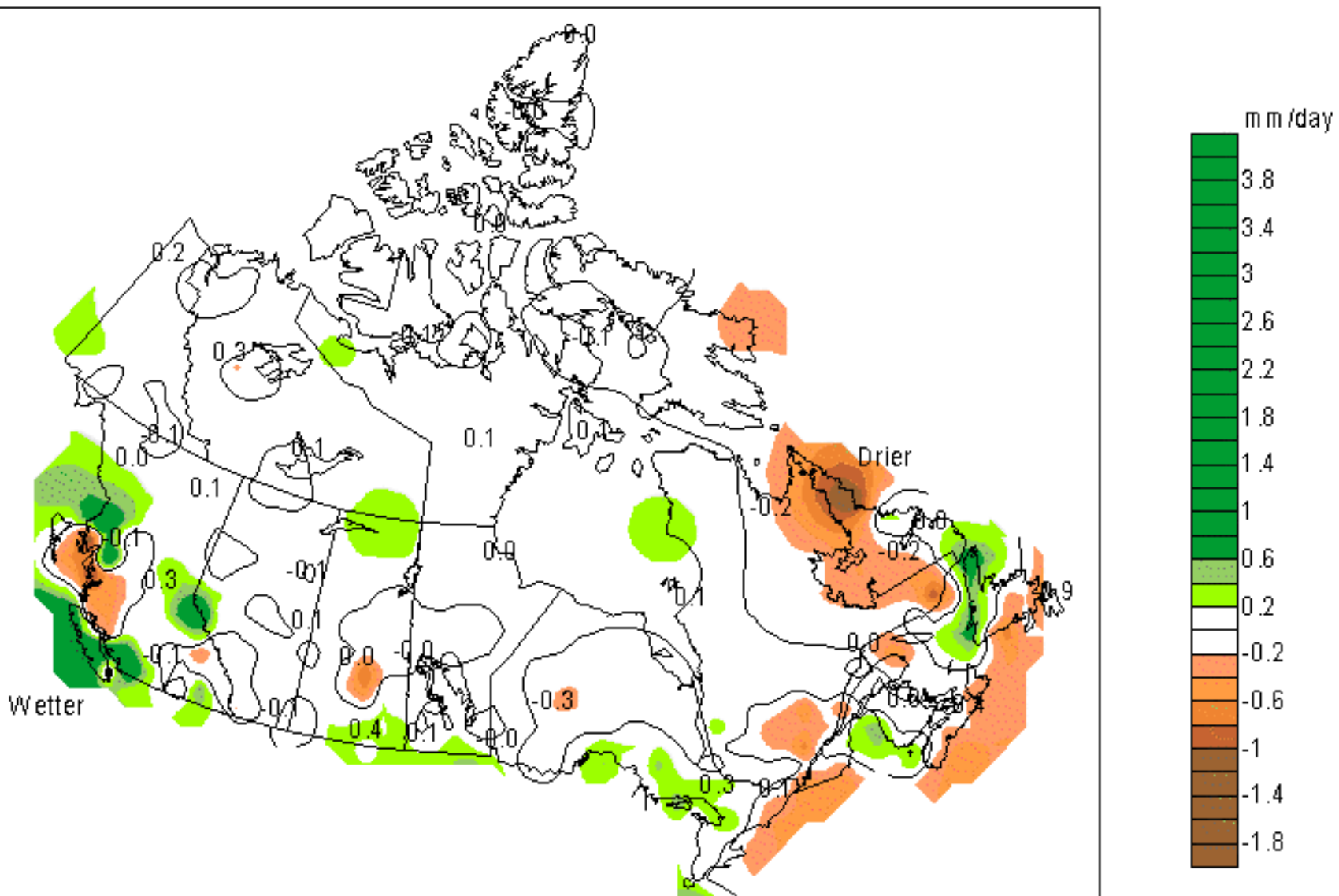
Temperature Departure from Normal Impact of La Niña with Trend Winter (Dec-Jan-Feb)



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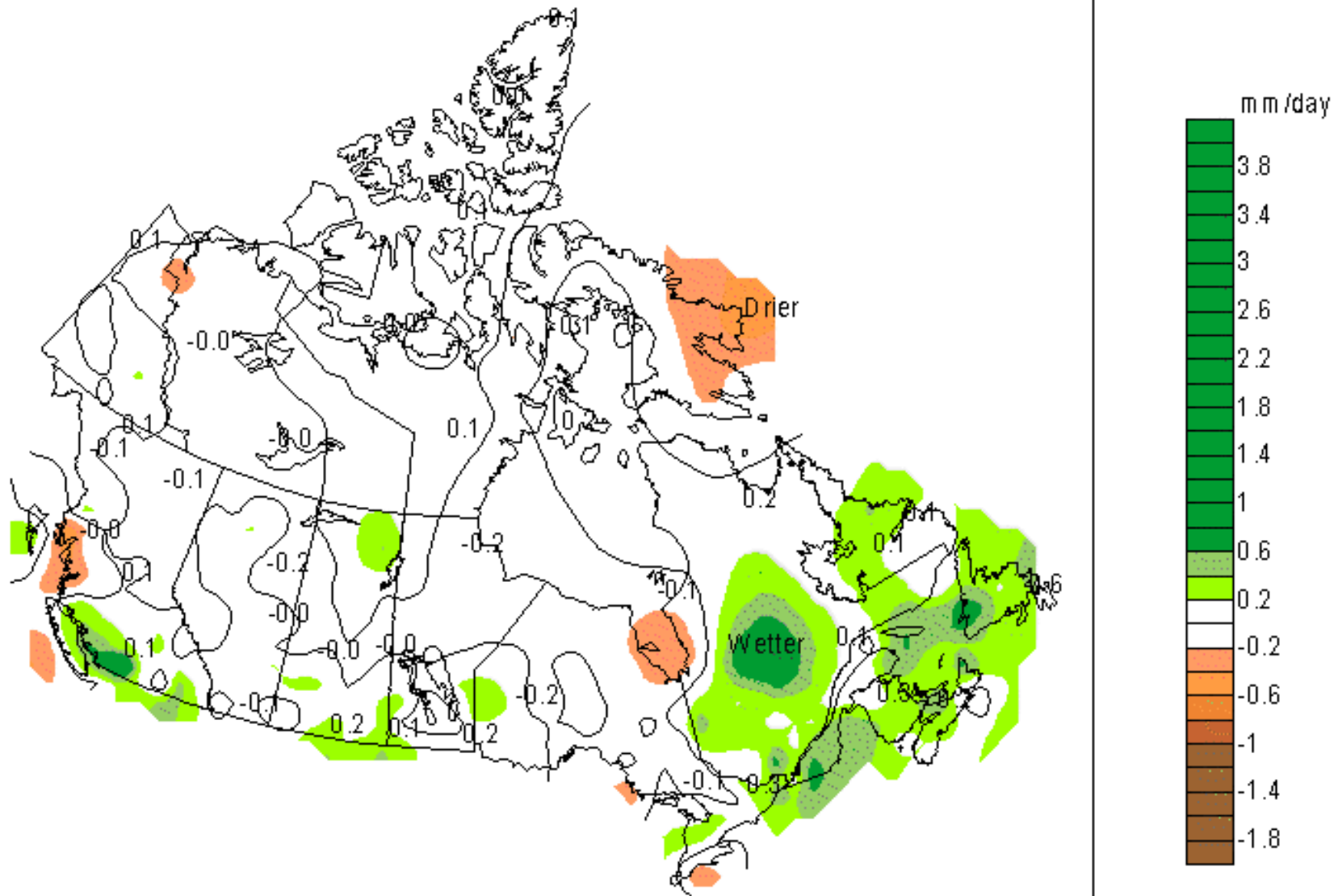
Precipitation Departure from Normal Impact of La Niña with Trend Winter (Dec-Jan-Feb)



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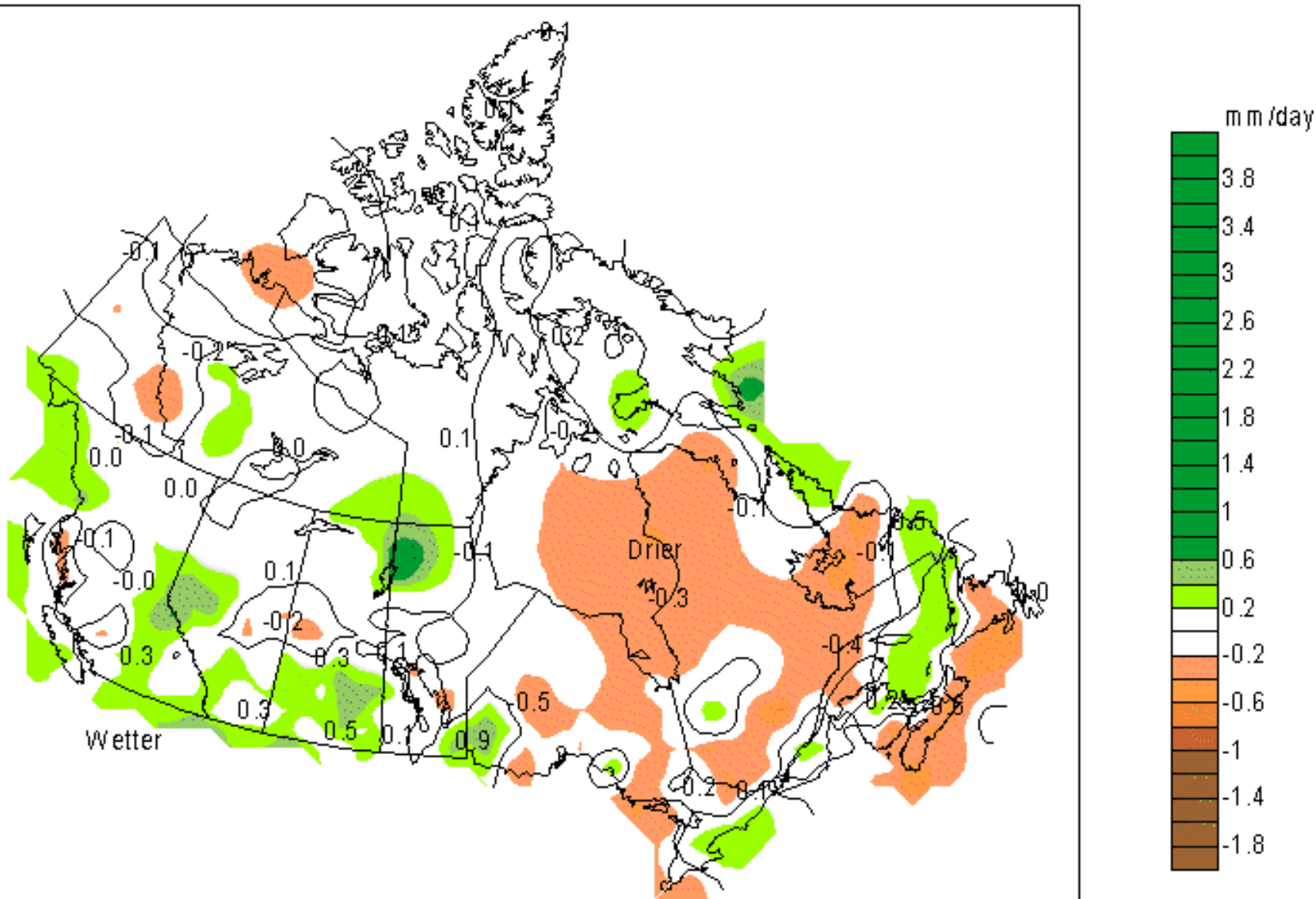
Precipitation Departure from Normal Impact of La Niña with Trend Spring (Mar-Apr-May)



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Precipitation (Departure from Normal) Impact of La Niña with Trend Summer (Jun-Jul-Aug)



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Year	Winter T Departure	Spring T Departure	Summ T Departure
50-51 M	-1.22 C	-2.09 C	-1.75 C
55-56 M	-2.89 C	-1.28 C	-0.38 C
64-65 W	-3.57 C	-2.11 C	+0.02 C
70-71 M	-1.67 C	+0.44 C	+0.42 C
73-74 S	-0.59 C	-1.73 C	-0.04 C
75-76 M	+2.81 C	+1.43 C	+0.15 C
88-89 S	+0.47 C	-0.13 C	+0.84 C
95-96 W	-2.09 C	-1.78 C	+0.52 C
98-99 M	+2.50 C	+1.80 C	-0.60 C
99-00 S	+3.80 C	+2.30 C	-0.20 C

Year	Winter P Departure	Spring P Departure	Summ P Departure
50-51 M	+32.5 %	+8.9 %	+33.6 %
55-56 M	+40.6 %	-17.7 %	+29.5 %
64-65 W	+21.8 %	+6.2 %	+21.4 %
70-71 M	-5.1 %	-29.1 %	-3.42 %
73-74 S	+34.5 %	+50.1 %	-13.6 %
75-76 M	+3.6 %	-21.8 %	+12.6 %
88-89 S	+3.8 %	-11.0 %	+10.4 %
95-96 W	+6.4 %	+14.9 %	-18.3 %
98-99 M	-13.8 %	+56.6 %	+2.6 %
99-00 S	-25.1 %	+27.5 %	-2.0 %

What We Know

- **Temperature Changes** - increasing more over Prairies and the Arctic than the rest of Canada
- **Precipitation Changes** - increasing in Canada but little yearly change over the Prairies (less winter-more fall)
- **Summer Severe Weather** – no significant increasing or decreasing trend
- **Winter Weather** – fewer blizzards and cold spells

What We Might Know

- **Temperature Changes** - current winter and spring trends will continue, and we may see hotter summer weather
- **Precipitation Changes** – current trends will continue in the short term
- **Winter Weather** – we might see more precipitation events
- **El Nino/La Nina** – maybe more frequent

What We Don't Know

- **Summer Severe Weather** – far too complex to make reasonable predictions
- **Other Seasonal Storms** – some thought that there might be an increase in heavy precipitation events, but maybe more in coastal areas than over the prairies
- **Seasonal Distribution of Precipitation Events** – even though yearly precipitation may not change, seasonal trends are difficult to forecast