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REPORT



Pacific & Yukon Region

British Columbia Winter Temperature Trends

Keith Perry
Atmospheric Issues & Services Branch
Atmospheric Environment Service
Pacific & Yukon Region

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BRITISH COLUMBIA: WINTER TEMPERATURE TRENDS

Keith Perry
Atmospheric Issues and Services Branch
Atmospheric Environment Service
Pacific Region

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An examination of climate trends is essential to our understanding of climate change and variability. This paper provides information on mean winter (December/January/February) temperatures throughout British Columbia from 1895 - 1993 and shows that winters have warmed since 1895.

For ease of analysis, the province was divided into 4 regions: Northwestern Forest, Southern BC Mountains, Pacific and the Yukon/Northern BC Mountains. These regions are those defined by the Canadian Climate Centre in the SOE report No. 92-2, "The State of Canada's Climate: Temperature Change in Canada 1895-1991." Figure 1 shows the boundaries of these regions. Winter mean temperature departures from the long-term mean for DJF for each of the 4 regions are graphed and presented in the following section.

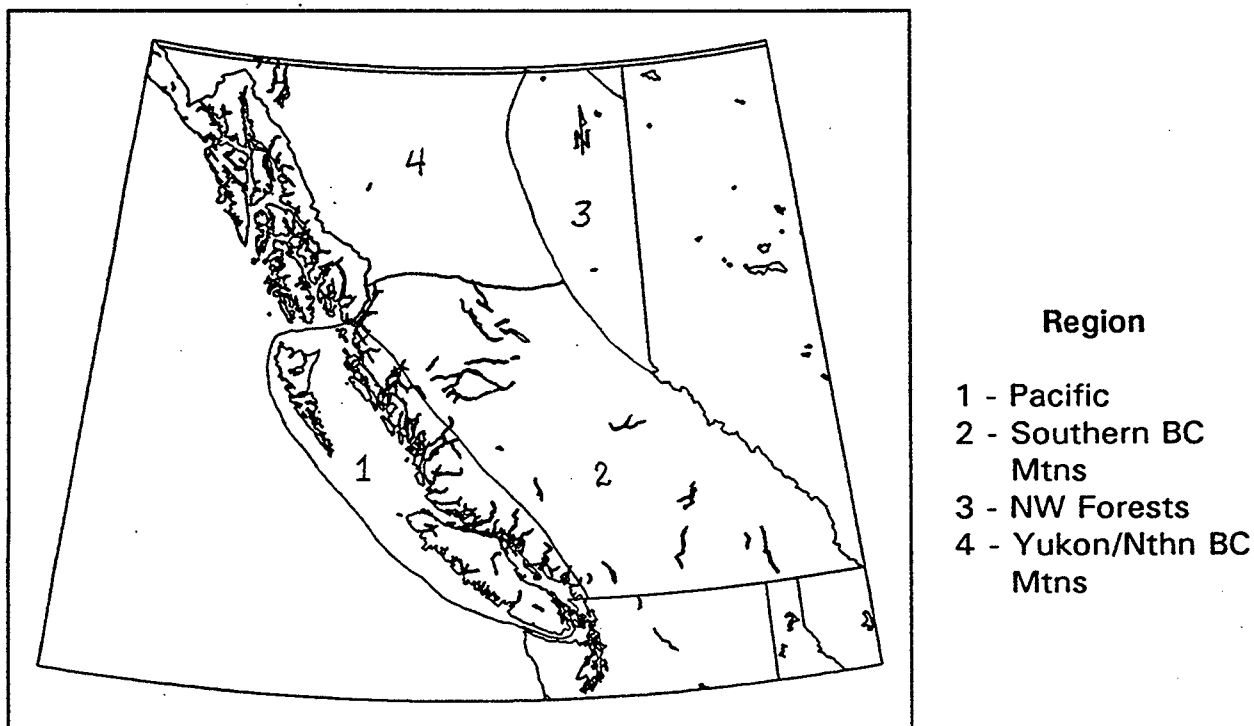


Figure 1 - Regional boundaries.

The winter mean temperatures are those provided by the Canadian Climate Center and are arrived at by calculating the departure from the long term mean for each station in the region for December, January and February, then calculating the average of these departures giving a winter departure. The average of these station winter departure values is then calculated giving a mean departure for the region.

The 4 regions are comprised of from 7 to 16 stations and are listed in appendix 1. It is important to note that in the Northwestern Forest region only 2 of the 16 stations are actually in British Columbia. Likewise, in the Yukon/Northern BC Mountains region, only 1 (Dease Lake) of the 7 stations is in BC.

Figures 2-5 show the winter temperature departures for the 4 British Columbia regions. December, January and February means, 10 year average and the long-term trend are shown.

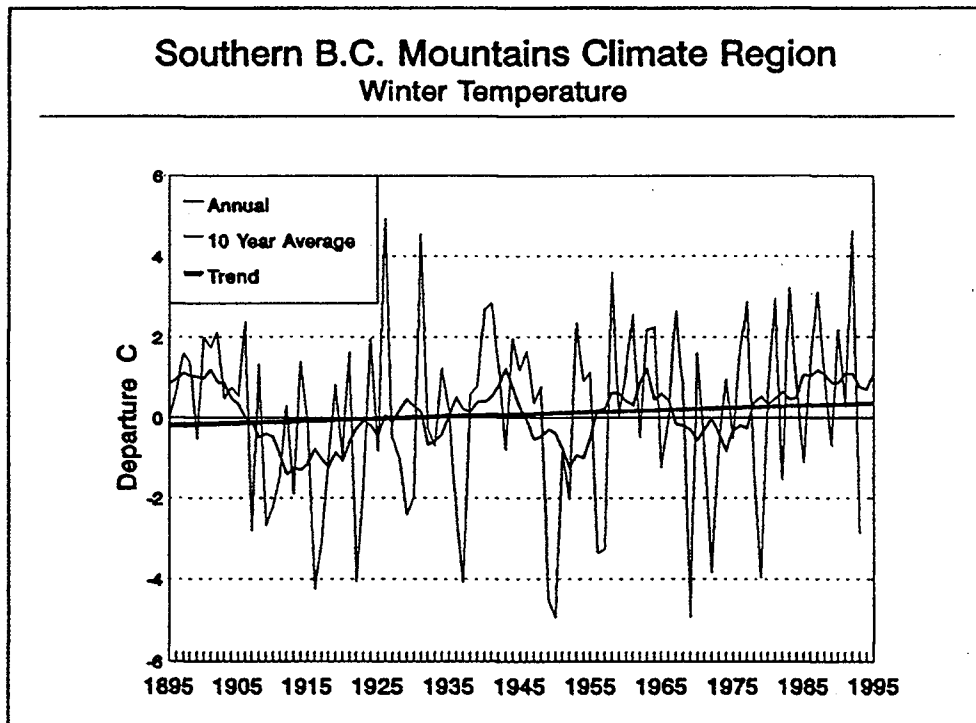


Figure 2 - Mean winter temperature departures for the Southern BC Mountains region.

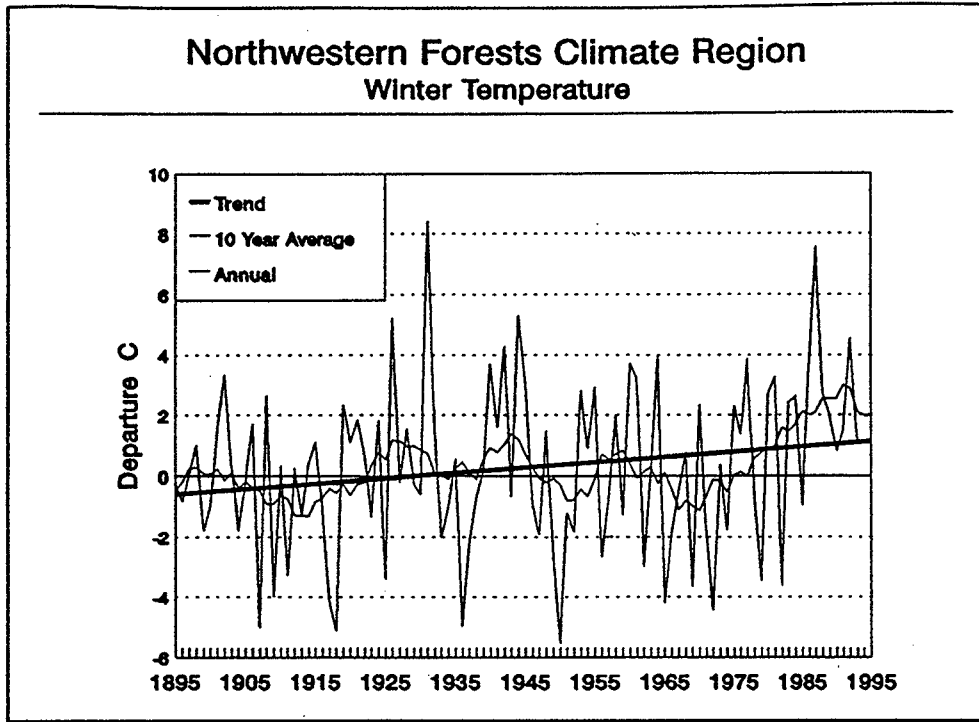


Figure 3 - Mean winter temperature departures for the Northwestern Forests Climate Region.

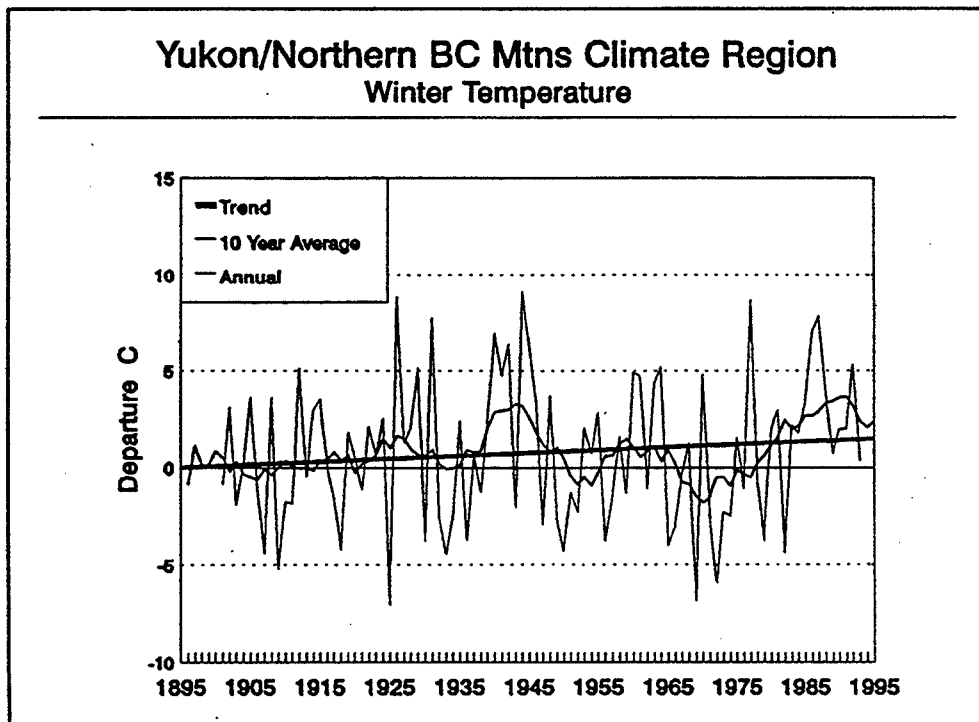


Figure 4 - Mean winter temperature departures for the Yukon/Northern BC Mountains region.

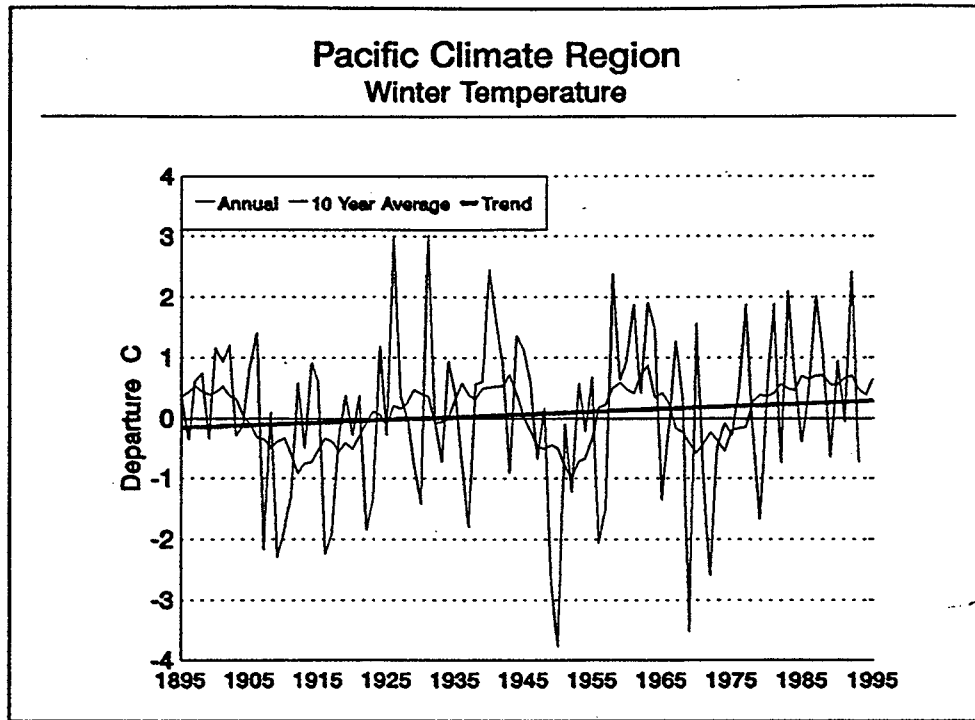


Figure 5 - Mean winter temperature departures for the Pacific Climate region.

Winters appear to be getting warmer in British Columbia. The average BC winter temperature increase from 1895 - 1993 for the 4 regions is summarized in Table 1. The average winter temperature increase over British Columbia during this period is approximately 1°C. This warming may be due to natural climate variation but could be a result of enhanced greenhouse warming or increased cloudiness caused by increasing particulate emissions.

Table 1 - Temperature Increase 1895 - 1993.

REGION	TEMPERATURE INCREASE
Pacific	0.4°C
Southern BC Mountains	0.5°C
Northwestern Forests	1.9°C
Yukon/Northern BC Mountains	1.6°C

REFERENCES

Canadian Climate Center - SOE Report No. 92-2, *The State of Canada's Climate: Temperature Change in Canada 1895-1991.*

APPENDIX 1 - A Listing of Stations in Each Region

PACIFIC CLIMATE REGION

Victoria International A
Comox A
Port Hardy A
Amphitrite Point
Cape St. James
Sandspit A
Bella Coola A
Prince Rupert A
Stewart A
Vancouver International A

SOUTHERN BC MOUNTAINS

Smithers A
Barkerville
Fort St. James
Prince George A
Agassiz CDA
Princeton A
Castlegar A
Cranbrook A
Kamloops A
Revelstoke A
Banff

YUKON/NORTHERN BC MOUNTAINS

Dease Lake
Burwash A
Dawson A
Haines Junction YTG
Mayo A
Watson Lake A
Whitehorse A

NORTHWESTERN FOREST

Fort St. John A
Fort Nelson A
Edson A
Fort McMurray A
Slave Lake A
Fort Chipewyan A
High Level A
Peace River A
Cold Lake A
Prince Albert A
Cree Lake
Island Falls
The Pas A
Lynn Lake A
Thompson A