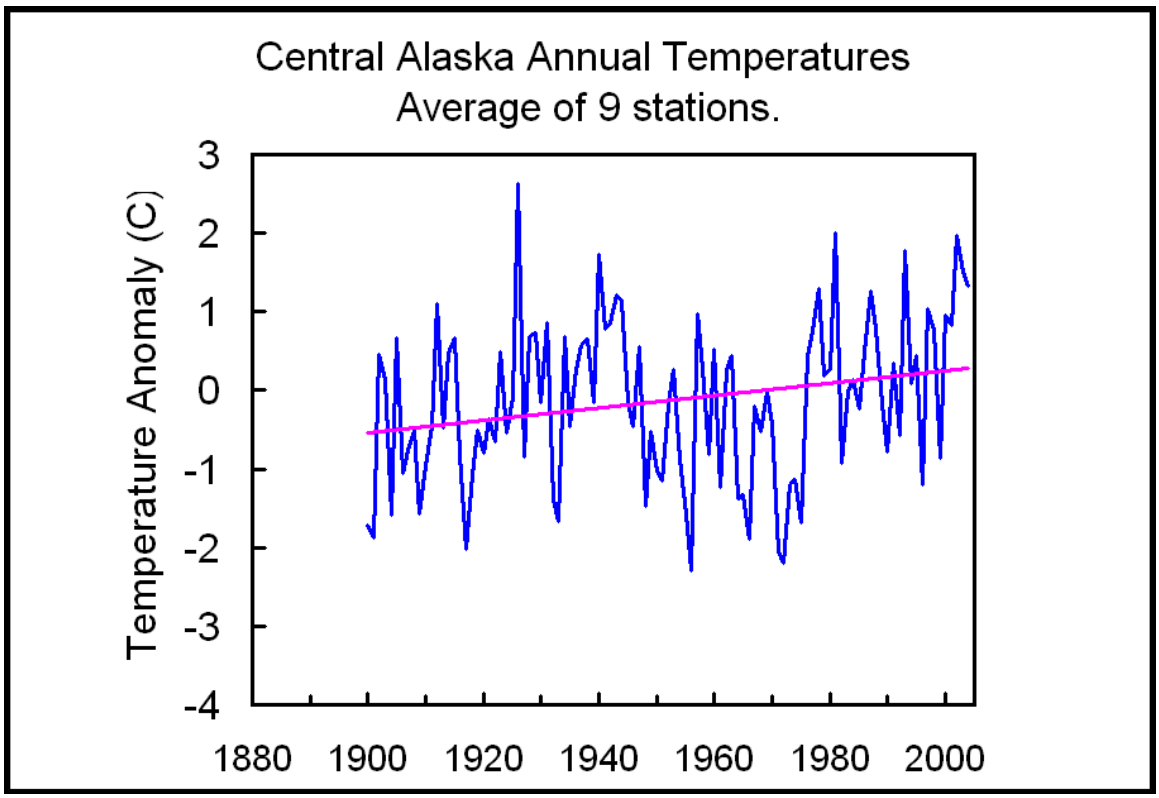
Alaska Climate – Station Data vs Adjusted GHCN/IPCC

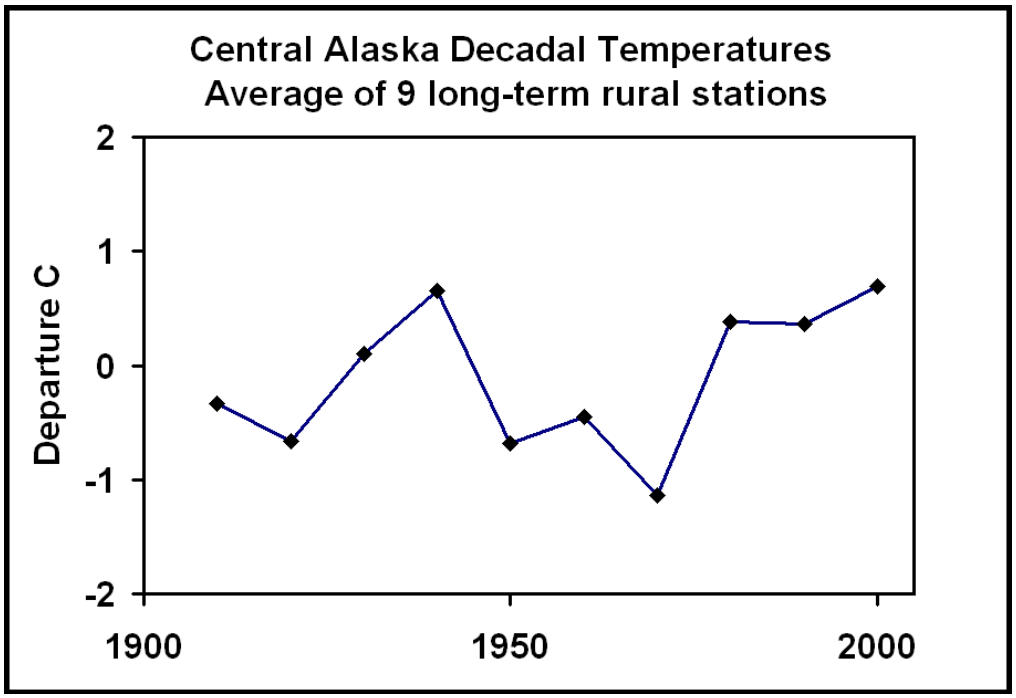
By Dr. Richard Keen, University of Colorado

I recently completed a study of central Alaska's climate. For this study I computed the average annual temperature for nine long-term Alaskan stations (and station combinations), which are: Eagle/Dawson, Ft. Yukon/Central, Fairbanks University, McKinley Park, Talkeetna, Gulkana/Kennecott/Chitina/McCarthy, Yakutat, Cordova, and Valdez.

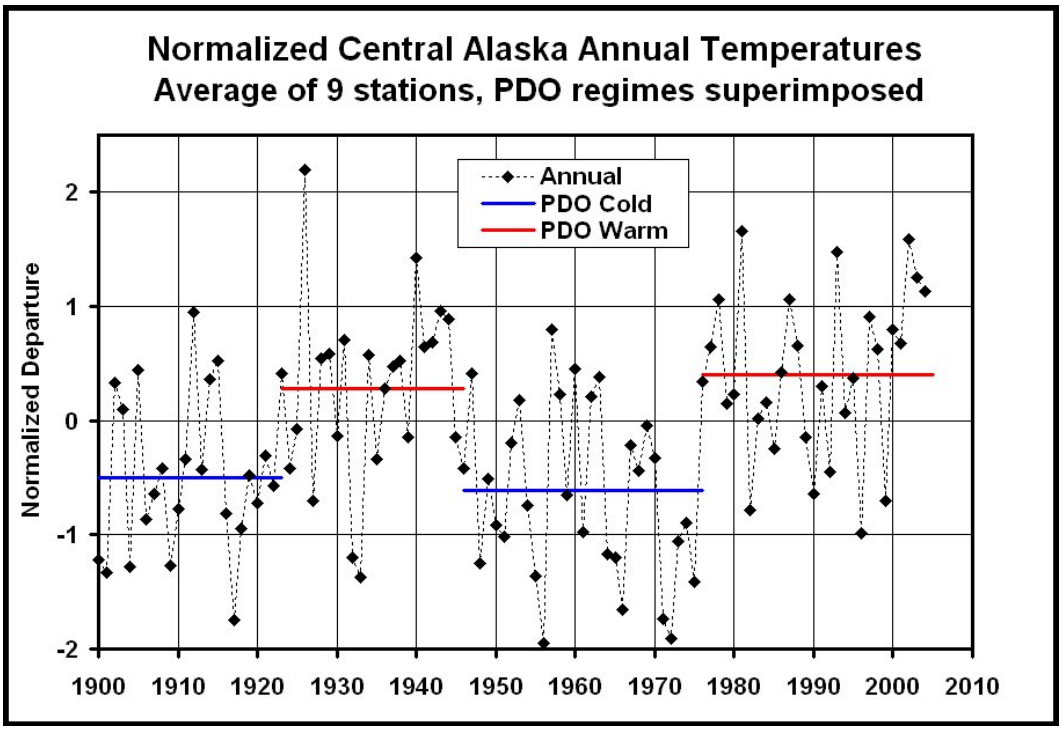
Then I averaged the nine stations for a regional mean. The data source was NCDC. The annual values on the next plot clearly show the dominance of the PDO in Alaskan climate.



For comparison with the IPCC thumbnail for Alaska (I hope you can find an enlarged version of this), I replotted the regional temperatures as ten-year averages. My averages show that the past three decades have shown no warming (since the PDO shift in 1977), and are in fact no warmer than the 1935-1944 decade. This is very different from the IPCC which shows a substantial warming over the past three decades.

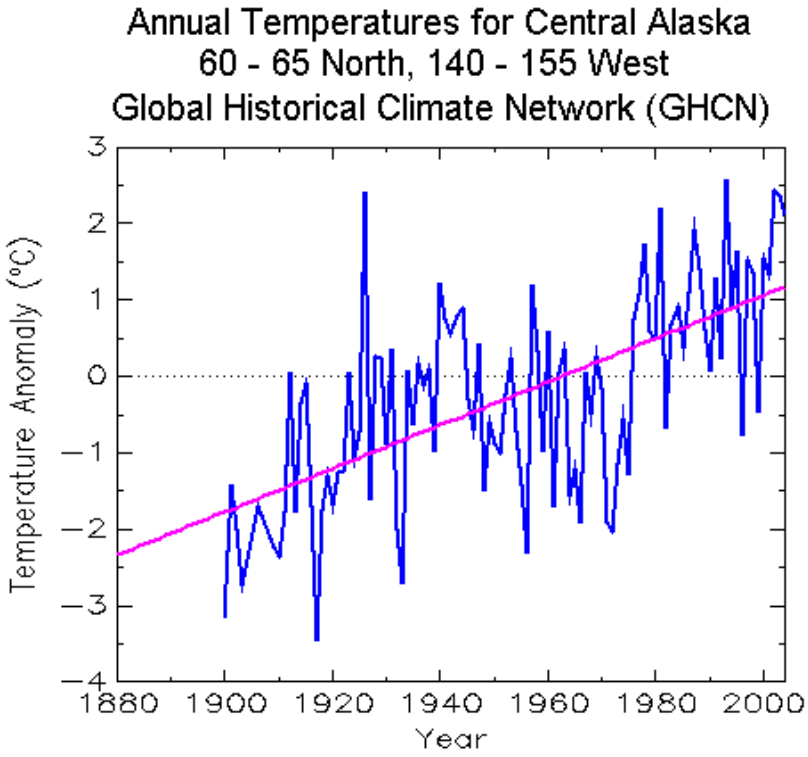


See the plot of annual versus the PDO stages.

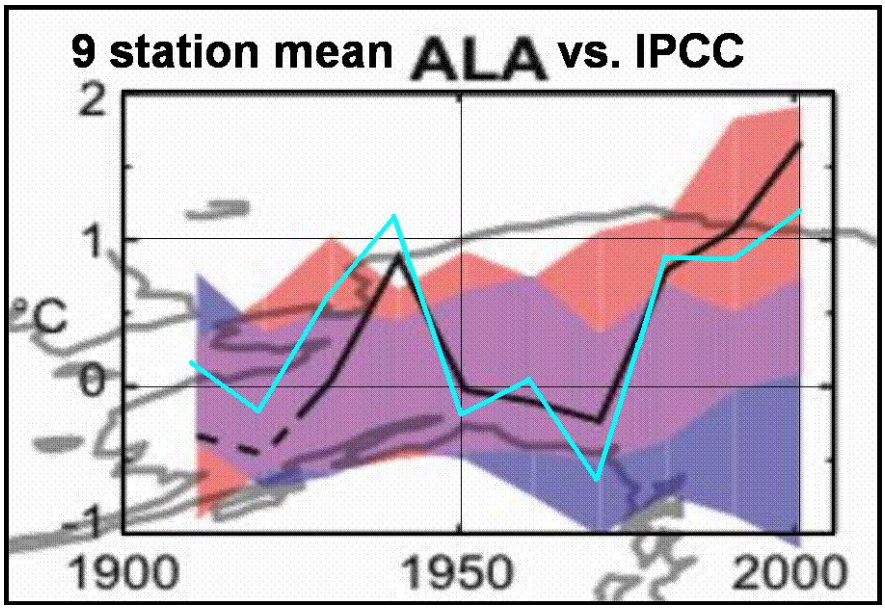


Here is the GHCN annual temperatures for the same region. The GHCN data is dominated by an upward trend. My analysis gives an upward linear trend of 0.69 C/century (due to starting during a cold PDO and ending during a warm PDO), while the

GHCN trend is 2.83 C/century - over 2 degrees larger!



My study and the GHCN use the same stations, because there are no other long-term stations in the regions. I applied no "corrections" beyond offsets used when combining two or more stations with overlapping records (no other adjustments were warranted). Here is a blow up of the IPCC graph for Alaska.



One can only guess what "corrections" were applied to the GHCN and IPCC data sets, but I can easily guess their magnitude - about 1 degree. Curiously, the magnitude of the adjustments is about the same as the "global warming" signal of the past century.

I'd be interested if other readers can provide similar comparisons with other parts of the world.