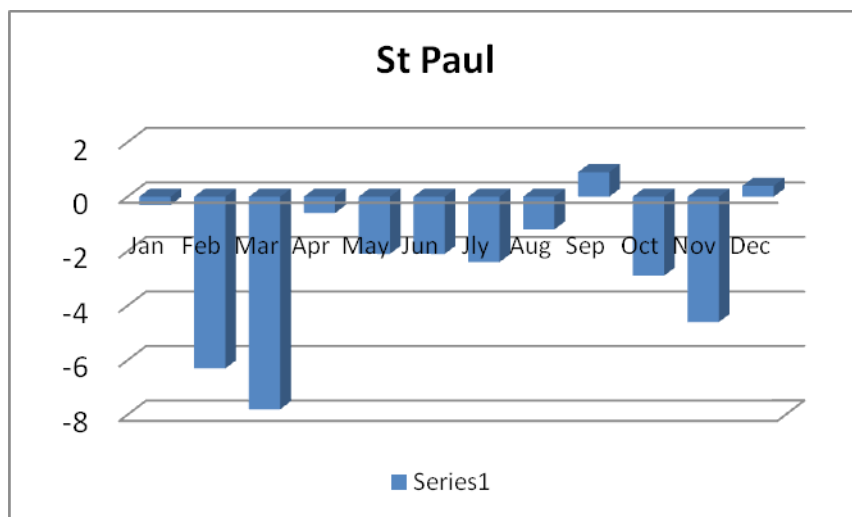
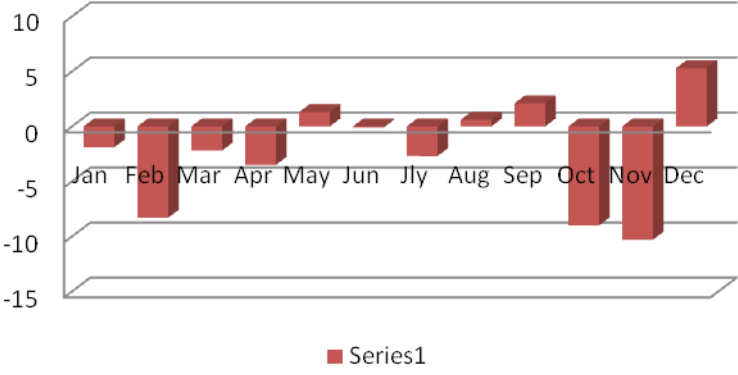


## **2008 Air Temperature Summary: Anchorage Forecast Office**

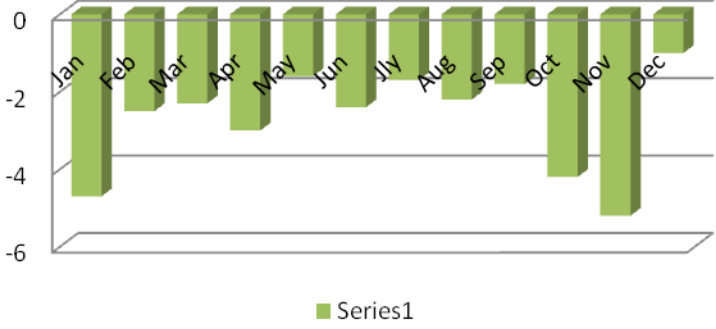
This past year can be summarized as being cooler than normal as seen in the following plots of temperature anomalies (observed monthly mean temperature minus the 30 year average) for select stations. The Bering Sea, Western Alaska and across to the western Gulf of Alaska was significantly cooler than normal, while most of Southcentral was cool but not as extreme as to the west. These plots show the temperature ( $^{\circ}\text{F}$ ) difference from the 30 year normal (1971-2000) and 2008 monthly mean temperatures, note that the temperature scales vary from plot to plot.

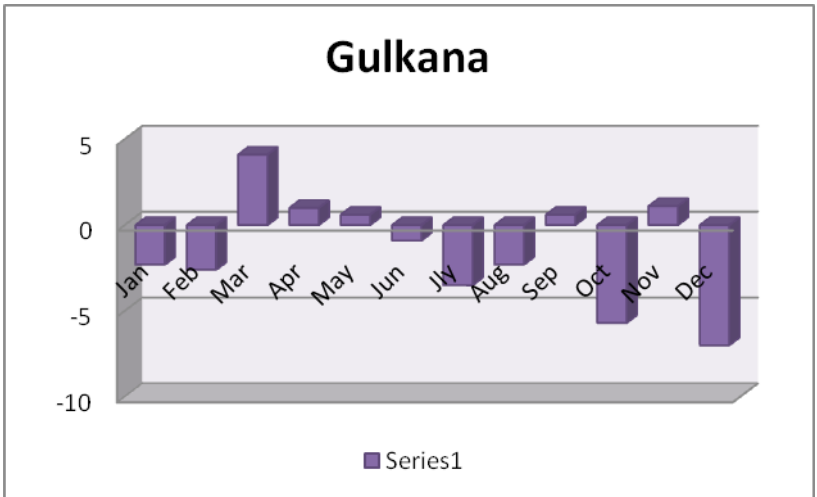


# Bethel



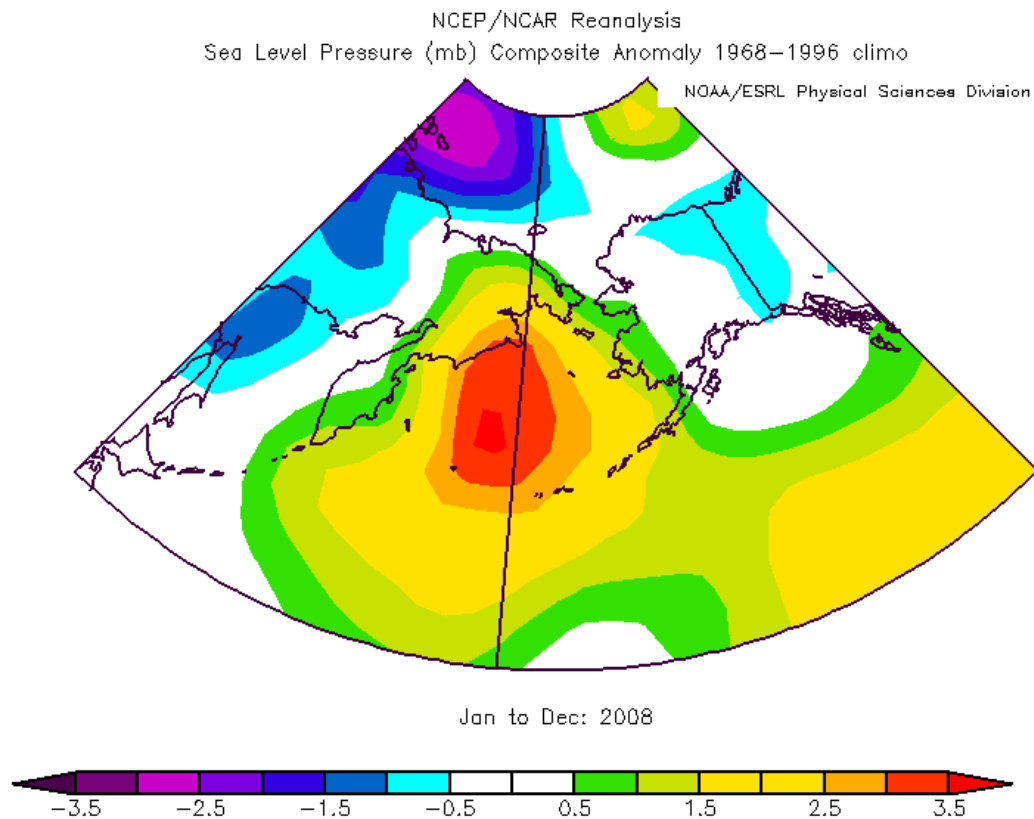
# Kodiak





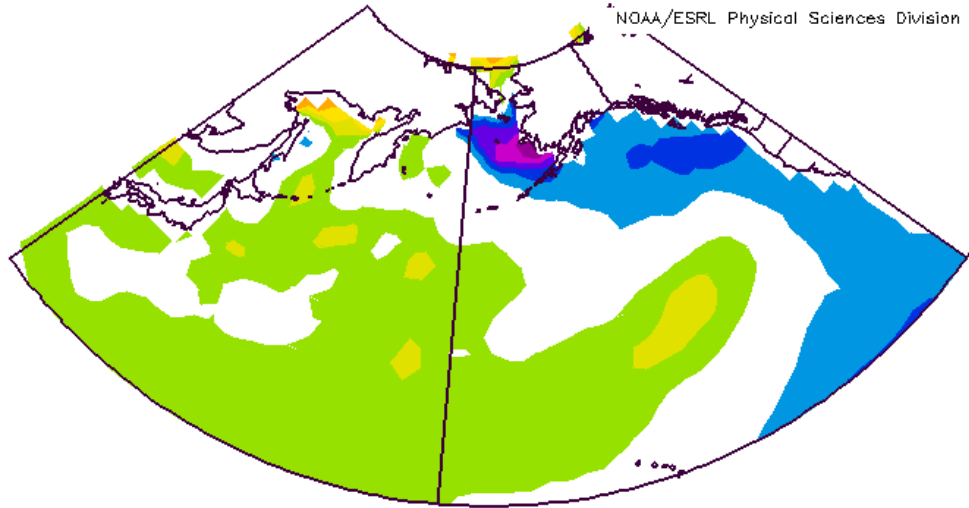
In Anchorage the average annual temperature at Ted Stevens International Airport was 34.7° compared to 36.4° for the 30 year average. This was the coolest calendar year since 1999.

The plot on the next page shows the Jan-Dec surface pressure anomaly for the Aleutian Low; notice the 3 to 4 millibar area of higher than normal pressure (yellows and reds) along the dateline. The higher than normal pressure near the dateline produced two affects: it tended to limit the number of storm systems that moved into the central and eastern Bering Sea- this in turned reduced the mixing of warmer air from the south with cooler air over the Southwest and Bering Sea- the net result was cooler air temperatures. Secondly, the enhanced storm track over Gulf of Alaska produced cooler temperatures to the west of the center as cool arctic air was drawn from the northwest but warm air was moved into the eastern gulf. The cool summer in Southcentral was in large part due to a higher frequency of storms that moved into the in the Gulf of Alaska- these storms generated well above normal cloud cover which limited the ability of the sun to heat the air.

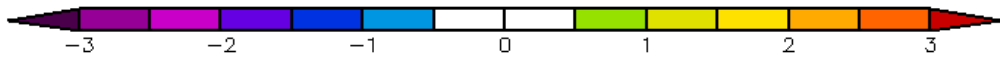


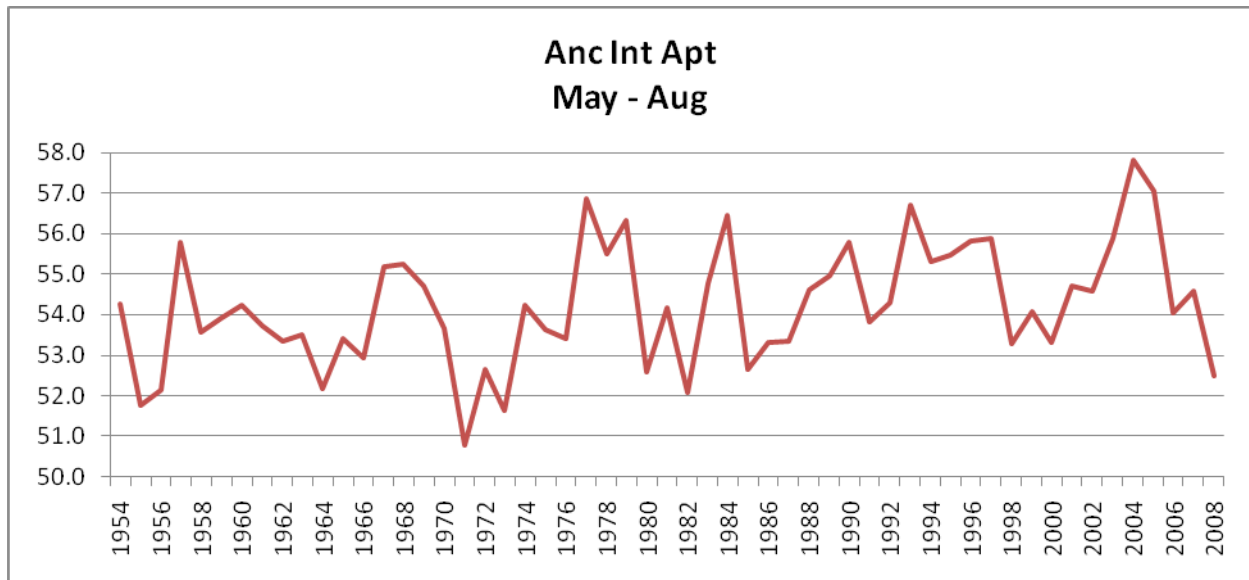
The noted storm track and temperature anomalies can be attributed to persistent North Pacific temperature anomalies- warmer across most of the central and western North Pacific simultaneous with below normal water temperatures in the Gulf of Alaska and much of the extreme eastern Pacific, as seen on the plot on the next page. This pattern has been associated with La Nina events and if it persists with the negative mode of the Pacific Decadal Oscillation. A higher frequency of mid-Pacific riding is common during La Nina's- giving the appearance of a split Aleutian Low. What ultimately produces these anomalies in Pacific Ocean water temperatures is under investigation- it does however clearly show the linkage between the responses of the atmosphere to the properties of the underlying surface, whether that surface consists of water, land or ice.

NCEP/NCAR Reanalysis  
Surface Skin Temperature(SST) (C) Composite Anomaly 1968-1996 clima  
NOAA/ESRL Physical Sciences Division



Jan to Dec: 2008





This plot shows the May through August temperatures at the airport since the temperature sensor was moved to the airport from Merrill Field. 2008 was the coolest summer (52.5°) since 1982. The coolest summer for this period of record was 50.8° in 1971.

See the following articles for more information on Alaska and North Pacific weather and climate.

<http://pafc.arh.noaa.gov/papers.php> A Fresh Look at mid-Pacific Ridging.

<http://pafc.arh.noaa.gov/climate.php> Understanding Alaska's Climate Variation.