

The Warmest Global Mean Surface Temperature Observed for March to May 2010

The seasonal anomaly of the global mean surface temperature for March to May (boreal spring season) in 2010 (i.e. the global average of near-surface air temperatures over land combined with sea surface temperatures (SSTs)) hit the highest record with $+0.41^{\circ}\text{C}^*$ (on a par with the same months in 1998) since 1891, the earliest year for which JMA estimates global temperature anomalies (See figure 1).

Seasonal temperature anomalies over land were seen above normal across the continents including North Africa, West Asia, South Asia, and the northeastern part of North America. Sea surface temperatures were higher than normal in many regions, not least in all over the tropical zone (See figure 2).

Seen from a longer perspective, the global mean temperatures for March to May have been on a rising trend at a rate of $+0.73^{\circ}\text{C}$ per century.

It can be said that behind the high global temperature seen in March to May 2010 is the global warming trend caused by the buildup of anthropogenic greenhouse gases in the atmosphere. On top of that, the El Niño episode that started last summer, as well as natural climatic fluctuations of various durations ranging from several years to decades, are also to blame partly for the warmer globe.

*This is a preliminary result that was estimated from monthly climate reports received at JMA prior to 15 June 2010, and subject to change until it is fixed early July. Temperature anomalies are against the 1971-2000 normals.

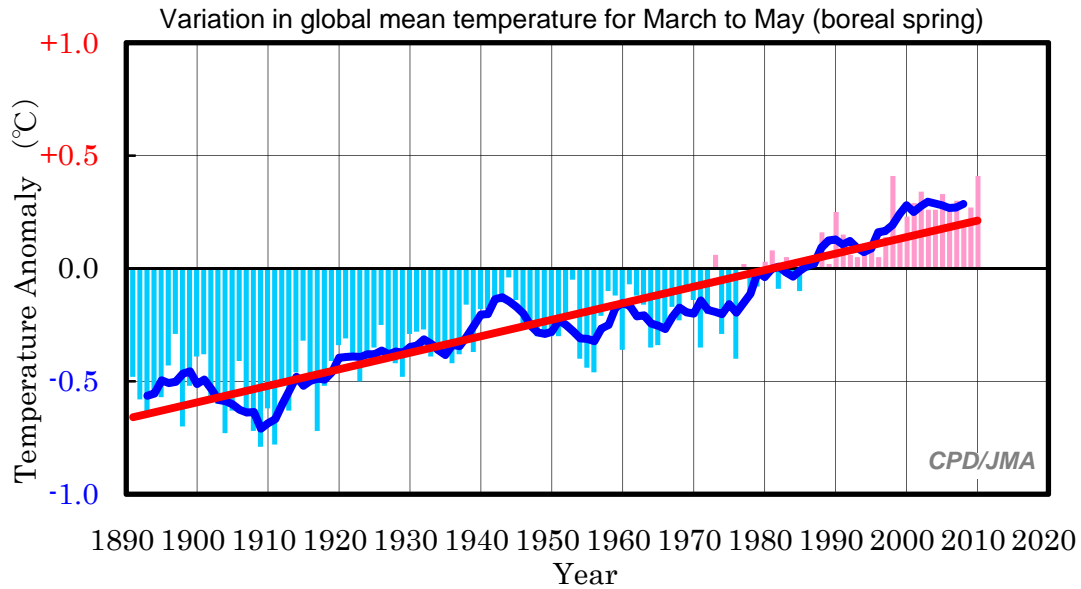


Figure 1. Long-term change in seasonally averaged surface temperature anomalies for March to May over the globe Anomalies are deviations from the normal (1971-2000 average). The bars indicate anomalies of surface temperature in each year. The blue line indicates 5-year running mean, and the red line a long-term linear trend.

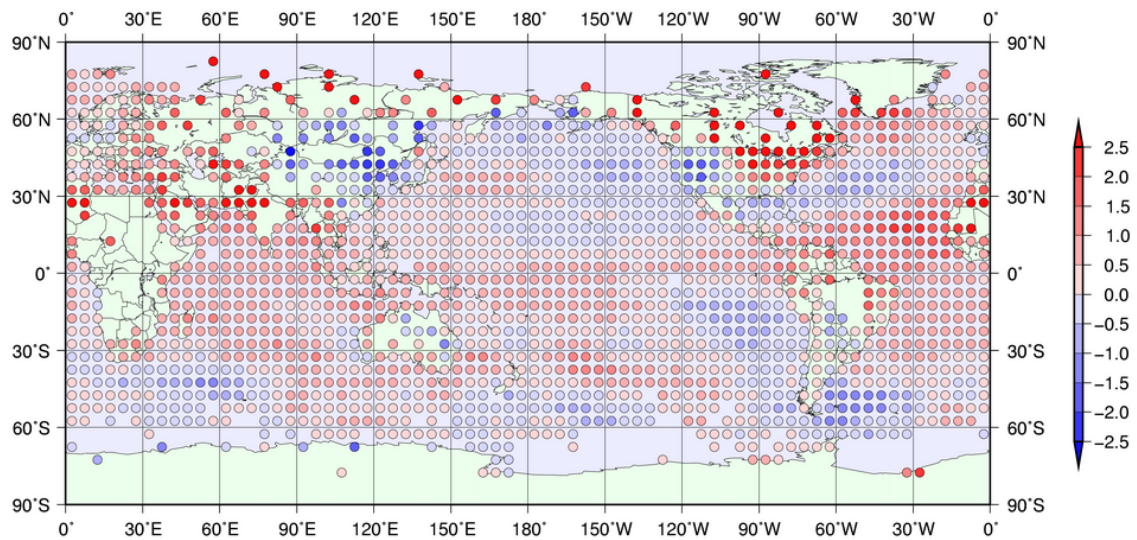


Figure 2. Seasonally averaged temperature anomalies for March to May 2010
The circles indicate temperature anomalies from the climatological normal (i.e., the 1971-2000 average) averaged in 5° x 5° grid boxes.

For figures and numerical data for monthly and annually temperature anomalies since 1891, visit the TCC/JMA website at:

http://ds.data.jma.go.jp/tcc/tcc/products/gwp/temp/map/temp_map.html