

NZCLIMATE & ENVIRO TRUTH NO 159

22 NOVEMBER, 2007

THE PACIFIC DECADAL OSCILLATION

In my last newsletter (No 158) I sent my report on the Unsound Science of the IPCC which included the proposition that world temperatures have followed an oscillation similar to that proposed by Schlesinger and Ramankutty in 1994, with a period of about 65-70 years. The last peak was around 1940, and we are now passing through the next peak along, and heading down

I also quoted a recent paper by Tsonis et al which claimed to explain this oscillation from a combination of the various ocean oscillations.

I have now found that the Pacific Decadal Oscillation gives by far the most convincing explanation for the observed oscillation with all the available temperature records. This oscillation has a period of about thirty years which fits nicely into the 65 years, and does show a little blip in the middle.

The Pacific Decadal Oscillation (or Interdecadal Pacific Oscillation) is the leading principal component of the North Pacific monthly sea surface temperature variability (see Nate Mantua <http://jisao.washington.edu/pdo/>)

The term was coined by S Hare and R Francis in 1996 when researching the relationship between Alaskan salmon production cycles and sea surface temperature.

Much of the important work on the subject has been carried out by New Zealand scientists.

References include

Trenberth, K E and J W Hurrell, 1994 Decadal atmosphere-ocean variations in the Pacific. *Clim. Dyn.*9, 303-319

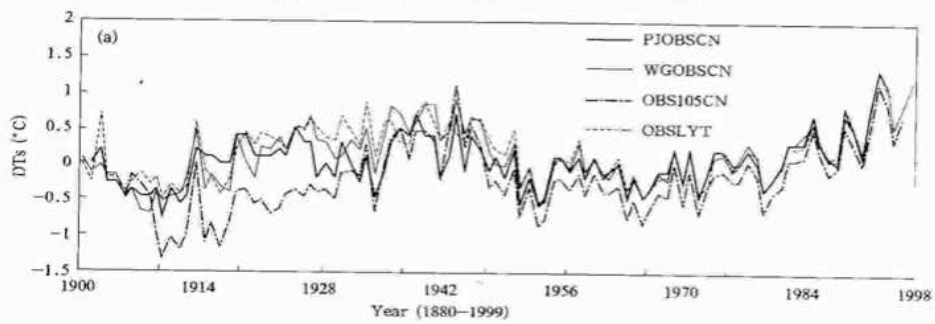
Folland, C.K., J. A. Renwick, M.J. Salinger and A.B. Mullan. 2002. Relative influence of the Interdecadal Pacific Oscillation and ENSO on the South Pacific Convergence Zone. *Geophys. Res. Letters*. 29, 10.1029/2001GL014201 (pages 21-1 to 21-4.

The New Zealand workers have confined most of their work to the Pacific, but as the attached graphs shows the Pacific Decadal Index correlates extremely well with the two long term graphs I show, that for the Mean Annual Surface Temperature Anomaly, from the Hadley Centre and also for the Chinese record (Zhao et al), both of which I quoted in the previous newsletter

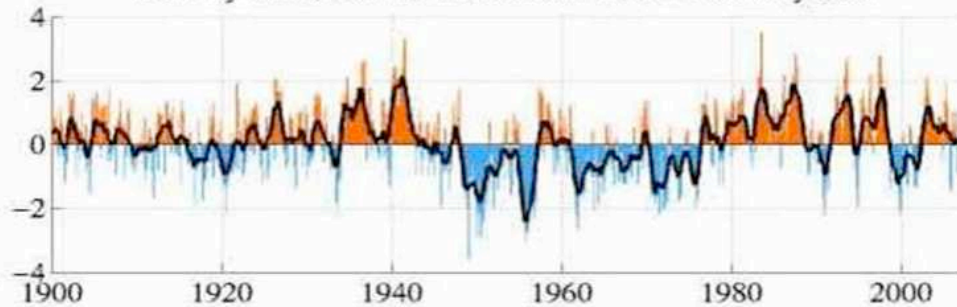
When the PDO is taken away from the surface record, there are only the lower temperatures before 1930 and the higher temperatures after 1998 to explain. The first may be due to the very poor sample. In Africa, for example, the stations were on the coast, and the opening of stations in the interior put up the average. The rise in 1998 was due to the additional the intervention of the very large El Niño oscillation in 1998.

There is no need for a greenhouse effect to explain the temperature records.

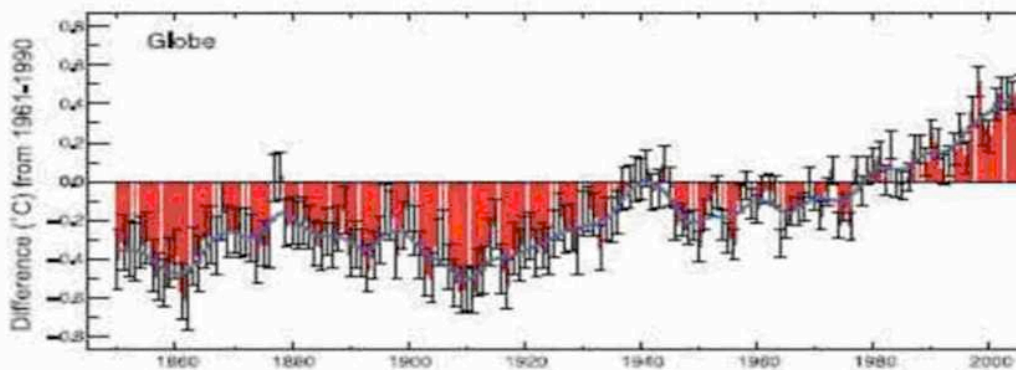
COMPARISON BETWEEN TEMPERATURE ANOMALIES FOR CHINA AND THE PACIFIC DECADAL OSCILLATION INDEX



monthly values for the PDO index: 1900 – February 2007



COMPARISON BETWEEN SURFACE TEMPERATURE RECORD AND THE PACIFIC OSCILLATION ONDEX



monthly values for the PDO index: 1900 – February 2007

