

NZCLIMATE & ENVIRO TRUTH NO 165
18 FEBRUARY 2008

WATER VAPOUR

The IPCC was supposed to find evidence that humans were warming the earth. In order to do this they faced three impossible tasks.

1. To show the earth is warming. This is impossible because there is no way the average temperature of the earth's surface can be measured, or to what extent it is changing.
2. To show that the concentration of greenhouse gases in the atmosphere has caused a temperature increase. This is impossible because their concentration is highly variable and impossible to measure.
3. It is impossible to predict the weather/climate more than a week or two in advance, so future climate cannot be predicted.

Although they have failed in all of these tasks they have succeeded in persuading many people that they have completed them.

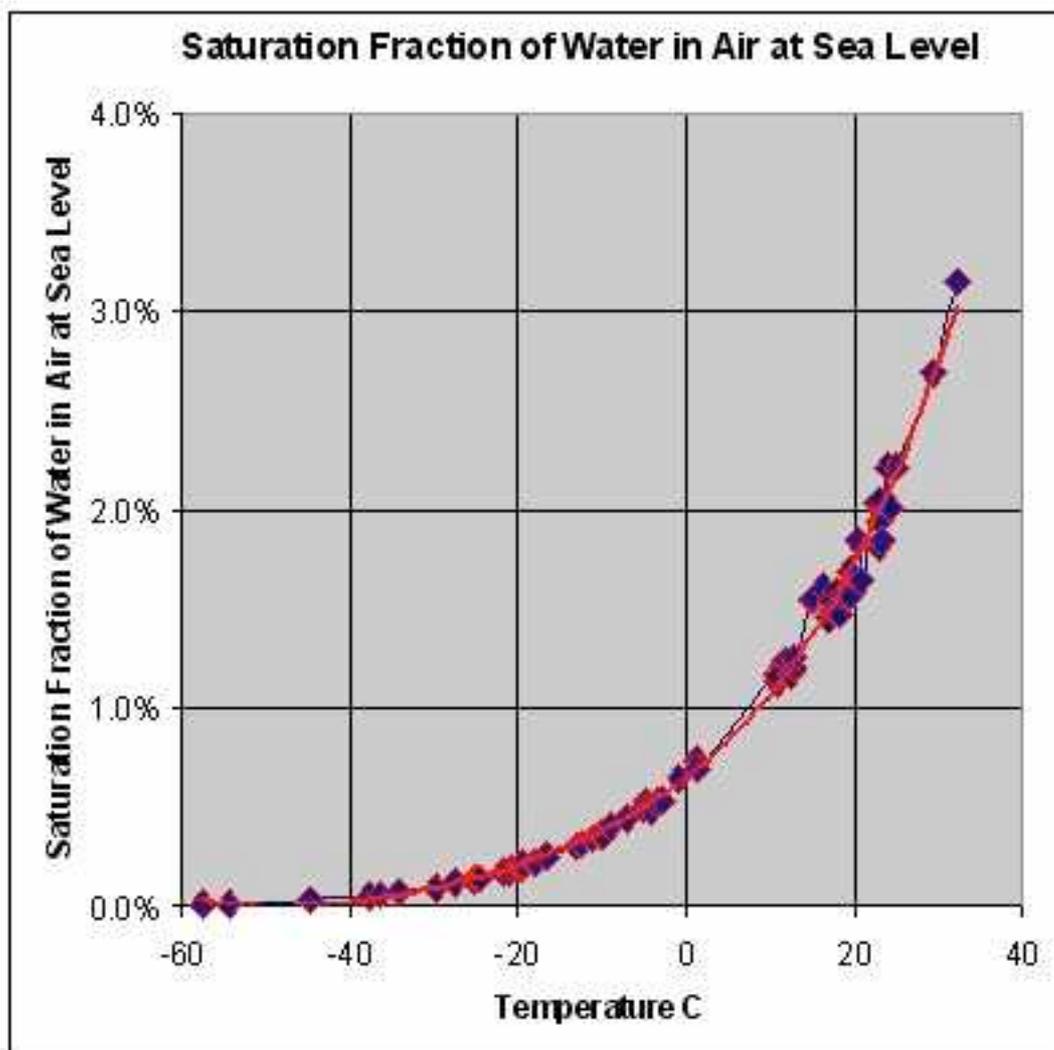
Newsletter No 157 has shown their failure to carry out task No 1 (measure global temperature), No 162 showed that they have failed in task No 3. (Predict the Future).

This Newsletter shows that greenhouse gases have been wrongly treated as well-mixed when they are not, casting doubts on calculations of their possible influence.

It is generally accepted that the main greenhouse gas in the atmosphere is water vapour. Yet the IPCC Reports do not have a Chapter, or even a paragraph devoted to its measurement, distribution, or even influence. All information on the subject has been suppressed and replaced with the proposition that water vapour is a "feedback" to the radiative effects of atmospheric carbon dioxide. This enables them to pretend that its concentration is not only known, but that it is "well-mixed" and uniform throughout the earth's atmosphere.

The opposite is true. Water vapour is extremely variable and can vary in concentration from zero to 4% of the atmosphere in different places at different times.

Its concentration is usually not even measured. Instead, measurements are made of the "relative humidity" by means of a wet and dry bulb thermometer, or other hygrometer. The concentration can then be deduced from the relationship between the concentration in air when saturated and temperature (attached graph). It will be seen that below -40°C the concentration, even in saturated air, is negligible. At 0°C saturated air has up to 0.7%, at 10°C, up to 1.2%, 20° up to 1.7%, and 30°C, up to 3%. This means that there is hardly any water vapour in the atmosphere over the poles and that the Tropics have about twice as much as temperate areas.

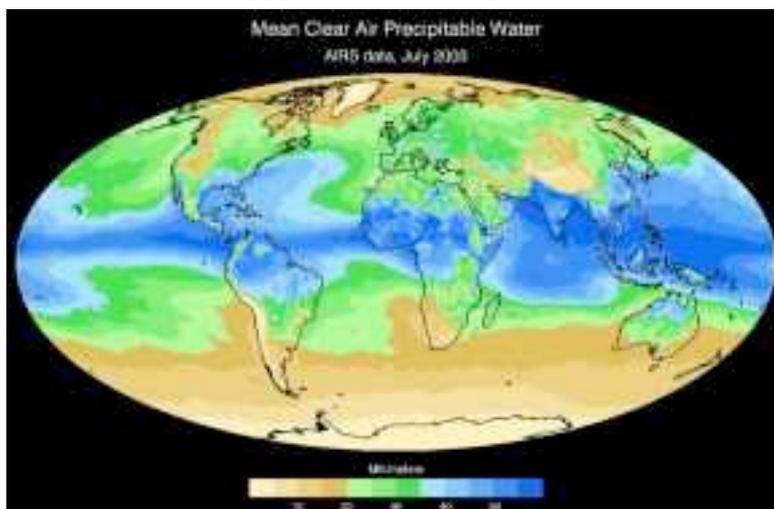
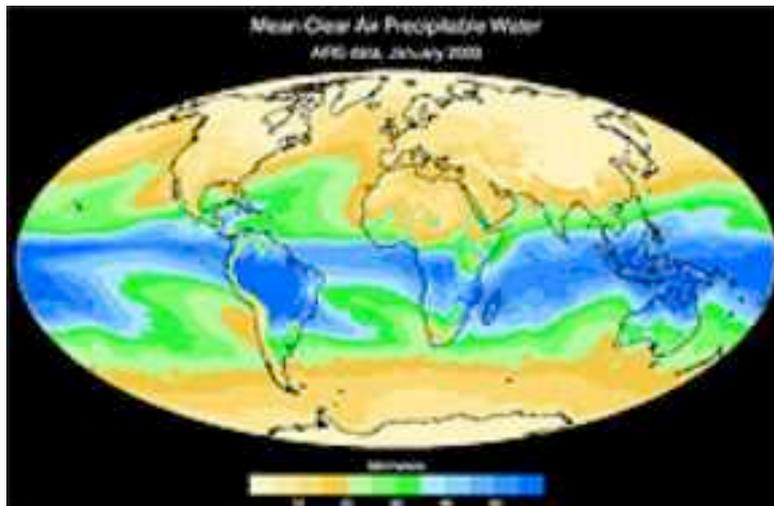


I have an old textbook ("Physics of the Air" by W J Humphreys 1940) which gives the following figures for water vapour in the atmosphere: Equator 2.03%; 50° N. 0.92%; 70° N. 0.22%

The degree of saturation varies. It hardly matters at the poles, but over the oceans and lakes it will be close to saturation, and over deserts, well below. At night saturation is often exceeded by a drop in temperature, with the formation of dew or frost.

I attach two maps of satellite measurements of column water vapour over the earth, one for January and one for July. The measurement is in millimeters, the actual total liquid water over that part of the whole atmosphere. These maps are from

http://www-air.s.jpl.nasa.gov/graphics/features/airs_totwv2_full.jpg



The colour progression is from beige to green to blue.

It will be seen that the Tropics have a fairly steady value of over 50 mm which extends to the Pacific in July. The oceans are fairly uniform, with Northern oceans going from 15 to 30 in summer. The Southern ocean is always low (around 10mm). There is not all that much difference winter/summer for the Southern lands (around 30mm), However, the Northern lands move from about 15 to 30mm, winter to summer.

It is immediately obvious that the treatment of water vapour as a "feedback", a constant well-mixed gas with uniform radiative forcing properties is a gross distortion of reality.

I have not found a formula relating forcing to concentration of water vapour in the literature, but it would certainly have a logarithmic relationship with concentration. The high concentration over the tropics suggests that it may have reached saturation there, and therefore impervious to changes. As water vapour has infrared absorption bands which overlap with those of carbon dioxide, this also means that increases in carbon dioxide would have less effect than elsewhere.

On the other hand, there is negligible water vapour over the poles, so they could not be influenced by the water vapour feedback, positive (as is believed) or negative, so carbon dioxide, with its reduced influence, is the only one .

Lands in the South are less influenced by winter/summer changes than those in the North. Both have less than average amounts of water vapour in their atmosphere.

A genuine evaluation of the effects of water vapour would evidently lead to lower calculated effects from computer models than the current belief in a uniform "feedback" because of the very uneven distribution, the logarithmic relationship between radiative forcing and concentration, and the variable relationship with carbon dioxide.

CARBON DIOXIDE

Water vapour is so intractable that they had to conceal this by making it a "feedback". Having done this they promoted the second most important greenhouse gas, carbon dioxide, as if it were the main one. Many lists of greenhouse gases do not even mention water vapour.

Carbon dioxide in the atmosphere is also highly variable, as has been shown by Beck in his paper (Energy and Environment 2007, 18, 259-281) who has documented, and placed on the web, scientific papers containing 40,000 measurements of atmospheric carbon dioxide before 1958 which have been suppressed by the IPCC. .

In New Zealand, a scientific station was established at Makara near Wellington to measure carbon dioxide in the atmosphere. It was abandoned because there was too much "noise" (i.e., variability) and moved to Baring Head where, if the air comes from the sea it sometimes has a constant CO₂ value for six hours. This figure is taken to be the correct one, and all other measurements discarded. We simply do not know the carbon dioxide concentrations over land areas, though some work indicates that it is higher over the cities where the gas is emitted and lower over pastures and forests where the plants absorb it.

The restricted procedure enables the IPCC to claim that carbon dioxide is "well-mixed" in the atmosphere, and they can use their logarithmic equation on the supposedly constant figure to give the "radiative forcing" when taking account of the variability would give a lower figure.

The other greenhouse gases are also treated as if they were "well-mixed" when they are not. Methane is very obviously not so, as it is emitted by wetlands and leaky pipelines, and even by plants. It might be claimed that there is excessive methane over New Zealand. It ought not to matter, as methane concentration in the atmosphere (as measured exclusively over oceans) is falling.

The desperate efforts to try to argue that greenhouse gases are "well-mixed" when they are not is just another reason why nobody should believe the models.