Geoengineering

There have been several proposals in modern times to modify the climate; what is now collectively called geoengineering. In the 1960s and 1970s when cooling was the concern, the Soviet government proposed construction of a dam across the Bering Straits. They theorized a reduction in flow of cold arctic water into the North Pacific would warm that body of water. This would create warmer air in the middle and high latitudes that would circle the globe and warm southern and central regions of the Soviet Union. There were proposals to build large reflectors in space to direct more sunlight to the surface. Other proposals were to direct them specifically on northern cities for added heat and longer daylight.

Major differences between these and current geoengineering proposals are they did not assume the cooling was man-made and no action was taken. The statement in the IPCC Report that most of the global warming since the mid-20th century is very likely (90% certainty) due to human CO2, is driving actions with little thought to the consequences. They create the reaction that we must do something before it is too late.

Four reports illustrate what they are trying to do. Nobel Prize winner Paul Crutzen proposed the idea of adding sulphur to the atmosphere in 2006 in order to create a haze and reduce sunlight reaching the surface. It would be like lowering a screen in a greenhouse.

The objective is to create droplets that will block the sun and create cooling, but the consequences are potentially catastrophic. If nothing else the droplets produced are sulfuric acid and wasn't it just a few years ago we were besieged with concern about acid rain? We also hear about the catastrophe of changing pH (acidity level) of the oceans due to global warming. Another problem is the droplets would filter out the yellow portion of the visible spectrum and we know from the impacts of Pinatubo that this has implications for flora and fauna, including in those the ocean. Sunlight without yellow light is like trying to grow plants under a neon tube.

http://www.washingtonpost.com/wp-dyn/content/article/2006/07/04/AR2006070400772.html

Increasing acid rain over the oceans would clearly exacerbate these problems. Of course, this assumes the changing pH level is a problem. The trend that raised the scare has already reversed as water temperatures declined in recent years.

The second plan proposed by German researchers is to create large-scale reflective sheets to block sunlight and reduce glacier melt. Apart from the problem of scale there appears to be a complete lack of understanding of glacier dynamics. This is reflected in the public debate engendered by Al Gore over

Kilimanjaro. Glaciers are as much if not more about the dynamics of snowfall. In the area covered by the screen the glacier is condemned not to grow. It can decrease in volume under the screen through the process of sublimation. This is the phase change of ice to a gas.

Inability to clear the snow from the screen would result in accumulating snow layers potentially burying it in the glacier. If they clear the snow the screen will prevent snow accumulating and thus doom the glacier anyway. Regardless of the snow accumulation the surface of the glacier is moving. If the screen is sitting on the glacier it will move down slope. If it isn't attached the glacier will move out from under the screen.

http://www.dw-world.de/dw/article/0,2144,1266299,00.html

A third plan was put into action about a year ago and it involved spreading iron filings on the surface of the Pacific Ocean. The objective was to increase the rate of CO2 absorption to offset the increase in atmospheric CO2, which the IPCC reports, is due to human production.

http://www.terradaily.com/reports/Iron_Critical_To_Ocean_Productivity_And_Carbon_Uptake_999.html

As this report indicates the results were less than stellar, which underlines the difference between theory and reality. There are many other problems. For example, they assume differences in the amount of iron are unnatural as are the variations in the number of phytoplankton. This false thinking is driven by the false assumption that change and variability are not natural in nature. They don't appear to consider the impact on the surface water chemistry engendered by adding more iron.

Shell Oil is funding a project to add lime to ocean waters to increase the rate of CO2 absorption. It would increase alkalinity and the oceans ability to absorb CO2. It is as senseless as all the others and doesn't consider the chemical and ecological implications to ocean surface waters. The only comment this deserves is the cynical observation that it would offset the increased acidity created by the sulphur experiment.

The world has cooled since 2000 and many climate scientists expect the cooling to continue at least until 2035. If the sulphur project is successful, how much will it exacerbate the cooling? Will the actions cause the very problem of unnatural climate change they claim to prevent?

Dr. Tim Ball August 2008