

Climate Change Science Advances While Politics Stalls

University of Hawaii faculty member Dr Richard Zeebe found evidence of the Earth's long term climate "thermostat," the mechanism that regulates atmospheric carbon dioxide (CO₂) resulting in a planet that is neither too hot nor too cold, but just right for human beings to thrive. While such a mechanism had long been assumed, his data published in the May issue of *Nature Geoscience*, provides a final piece of evidence firmly establishing that atmospheric greenhouse gases (GHG) have destroyed the natural climate balance.

Unfortunately, the evidence also puts a speed limit on the Earth's natural thermostat and it is much too slow to deal with the amount of GHG man is dumping into the atmosphere by burning fossil fuels. Dr. Zeebe told *The Garden Island*, "The average man-made increase in atmospheric CO₂ from fossil fuel burning and deforestation over the past 200 years is about 14,000 times faster than the long-term average change over the past 610,000 years. These long term cycles are way too slow to protect us from the effect of (anthropogenic) greenhouse gases. They will not help us with our current CO₂ problem. Right now, we have put the system entirely out of equilibrium."

Unprecedented Call for "Maximum Efforts"

In a rare joint statement on June 10th, the scientific academies of the G8 industrialized nations — Britain, Canada, France, Germany, Italy, Japan, Russia and the United States — joined by the science academies of Brazil, China, India, Mexico and South Africa called on all nations to act. Their report said, "The rate and scale of climate change means there is no time for complacency. Immediate large-scale mitigation action is required." They called on world leaders to make "maximum efforts."

The report noted part of the problem is we don't yet have all the solutions we need to slow climate change, and called for development of technologies for carbon capture, storage and sequestration (CCS), particularly for GHG emissions from coal. The report cited the very long time-lags inherent in global energy systems and said the only way to reach 2050 CO₂ targets was to act now.

Bush Administration Recognizes Danger

After seven years in office, on May 27, the Bush administration did an about-face on climate science and published a 200 page report, *The Effects of Climate Change on Agriculture, Land Resources, Water Resources, and Biodiversity in the United States*, under the signatures of three cabinet secretaries that concluded "There is robust scientific consensus that human-induced climate change is occurring. Even under the most optimistic CO₂ emission scenarios, important changes in sea level, regional and super-regional temperatures, and precipitation patterns will have profound effects. Management of water resources will become more challenging. Increased incidence of disturbances such as forest fires, insect outbreaks, severe storms, and drought will command public attention and place increasing demands on management resources."

The report said the effects of climate change are already occurring today. Recent forest fires, insect outbreaks, and tree mortality in the interior West, the Southwest, and Alaska were attributed to climate change and the report went on to say we should expect these effects to increase at an accelerating rate. It made sobering predictions about Midwest weather, saying “high-precipitation events” have increased and will increase more.

The report was eerily prescient in the wake of last week’s flooding across the US Midwest, in some areas the worst floods ever recorded. Dr David Schimel, Senior Scientist from the National Center for Atmospheric Research and one of the report’s lead authors, told *The Garden Island*, “While we can't attribute any single event to climate change, the extreme weather experienced in the US over the past year (record snowfall in the Rockies, extreme rainfall in the Midwest) is consistent with the weather patterns that may accompany climate change.”

The published report went on to say, “One economic consequence of excessive rainfall is delayed spring planting. Field flooding during the growing season causes crop losses.” Exactly as foretold by the report, five million acres of crops have been completely destroyed in the last few weeks of Midwest flooding and millions more damaged acres will produce reduced yields. Beyond fires and floods, the report said climate change will bring water shortages, species extinction, decreased agricultural productivity, and significant financial costs.

In a companion report *Weather and Climate Extremes in a Changing Climate*, published June 19th, the Bush administration said “It is well established that the global warming of the past 50 years is due primarily to human-induced increases in heat-trapping gases. In the future, with continued global warming, heat waves and heavy downpours are very likely to further increase in frequency and intensity. Substantial areas of North America are likely to have more frequent droughts of greater severity. Hurricane wind speeds, rainfall intensity, and storm surge levels are likely to increase. The strongest cold season storms are likely to become more frequent, with stronger winds and more extreme wave heights.”

No Action in Congress This Year

Although 54 senators supported the Climate Security Act sponsored by Senators Boxer (D-CA), Warner (R-VA), and Lieberman (I-CT), that majority fell six votes short of preventing a filibuster allowing Senate Republicans to end hopes for climate legislation for this congressional session. Before ultimately killing the bill on June 6th, Republican leaders used a variety of tactics to delay discussion, including a highly unusual procedural request that forced a 10 hour delay while clerks read the 491-page bill aloud.

The defeated bill, which required two-thirds GHG emissions cuts by 2050, called for smaller cuts than those mandated by the 1997 Kyoto Protocol, adopted by 178 nations but rejected by the US. The legislation also fell short of the action most climate scientists believe is necessary to prevent the most harmful impacts of climate change.

Supporters of climate legislation hope it will face a more sympathetic political response next year since both presidential candidates favor legislation to cut GHG emissions. Senator Barack Obama, saying “the future of our planet is at stake,” makes slowing climate change one of his important presidential goals. Senator John McCain also favors GHG emissions cuts saying “climate change and energy independence is a national security issue.”

Legislators on both sides of the aisle agree climate change legislation will be on the agenda for next year’s congress. Senator Boxer who led the fight to pass the bill in the Senate told the Washington Post, “In America, change doesn’t happen overnight, it takes time to turn the ship of state.”