

# ENVIRONMENTAL ENGINEERING NEWSLETTER

10 JUNE 2013

Please be aware any Newsletter URL ending in **020701.pdf** is available for downloading only during the six days following the date of the edition. If you need previous Newsletter entries contact George at [ghh@att.net](mailto:ghh@att.net).

Please Note: This newsletter contains articles that offer differing points of view regarding climate change, energy and other environmental issues. Any opinions expressed in this publication are the responses of the readers alone and do not represent the positions of the Environmental Engineering Division or the ASME.

**George Holliday**

*This week's edition includes:*

## **1) ENVIRONMENT – A. MESSAGE FROM THE EED CHAIRMAN**

I want to express my great appreciation for all of you who completed the survey regarding EED that was emailed to Division members recently. The information you provided is of exceptional value as we continue to work to improve EED and make it more relevant and useful to our members.

While we are continuing to evaluate the survey's results, I want to share with you my perspectives on the results. First, the number of members who responded to the survey was good. As with all surveys, we did not expect a large fraction of the members to respond, given the pressures on everyone's time. But enough of you (237) did provide information for the results to be of value.

I am very encouraged by the number of people who expressed an interest in participating in the various technical and administrative committees listed in the survey. At least 99 people said they would be interested in participating on EED committees and activities – it may have been more if the same 99 people did not answer “yes” to all the available options.

The Technical Committees that showed the highest level of interest were Air Pollution Control, Pollution Prevention, Regulations and Standards, Environmental Communication, and Water Pollution Control. These each had at least 30 people who expressed an interest in participating.

Your suggestions for workshop topics reflect the environmental issues of concern more broadly. I have grouped the suggestions into categories, which indicate the following topics (with number of times suggested in parentheses): Water Quality and Treatment (28); Alternative and Renewable Energy (28); Climate and GHG Mitigation (26); Waste Management (22); Air Quality (21); Environment and Society (17); Life Cycle Analysis (12); and Regulation (12).

There were other topics with fewer suggestions, including Policies and Politics (11) and Engineering Fundamentals (10).

You also had numerous suggestions about how to make EED more relevant, both to you and to ASME. Again, I grouped the suggestions into categories: Provide more and more relevant information (13 suggestions): Develop activities for members (9); Increase visibility through publications (such as ME magazine) (7); Increase efforts to educate members and the public (7); and Increase involvement in, and information on, codes, standards, and regulations (7). There were also 14 comments specifically about the EED Newsletter, with 9 expressing concern and 5 expressing support.

In general, what I learned from your input is that there is a strong interest in seeing EED be a source of solid engineering information on environmental issues. The desire is to see information that we, as engineers, can use in our professional activities and in our personal lives. There is interest in seeing engineering analyses applied to the development of policies and regulations. And there is interest in seeing good technical evaluations - or at least considerations - included in information provided to the public on environmental issues.

In the coming weeks, the EED Executive Committee will review the survey results more thoroughly and will begin to develop plans for the coming year that will respond to this interest. But we need your help to do this effectively. With the debut of the new ASME website, we will have new tools we can use to communicate with you - and these tools will give us the ability to have two-way communication, not just information from us to you. The extensive experience of our members is a tremendous asset that can be shared across the Division and ASME to achieve what you have identified as the most pressing need - objective engineering information. We will be turning to you again as we work to develop ways to share the experience we have in EED.

Again, thank you for participating in the survey. I am looking forward to the coming months as we work to put your ideas into practices. As always, please don't hesitate to contact me at [andymiller@asme.org](mailto:andymiller@asme.org) if you have ideas, questions, or comments.

**Andy Miller**  
[andymiller@asme.org](mailto:andymiller@asme.org)

## **B. THE EPA'S PROJECT VETO**

A court ruling gives the agency vast new permitting power

The Environmental Protection Agency isn't known for restraint, and now it has a new reason to let it all hang out. A federal court says it can be judge and jury for every development project in the U.S.

<http://www.eandp-environment.net/Environment/Env020701.pdf>

## **2) HEALTH. A. INFLUENZA (33): WHO GLOBAL UPDATE**

A ProMED-mail post

<<http://www.promedmail.org>>

ProMED-mail is a program of the

International Society for Infectious Diseases <<http://www.isid.org>>

Date: Fri 24 May 2013

Source: WHO Surveillance and Monitoring, Influenza updates [edited]  
Influenza update no 186  
<http://www.eandp-environment.net/Health/Health020701.pdf>

### **3) SAFETY. A. INTERIOR CREATES INSTITUTE TO STRENGTHEN OFFSHORE-DRILLING SAFETY**

The Department of the Interior will establish a new institute centered on enhancing offshore oil and natural gas drilling safety. Dubbed the Ocean Energy Safety Institute, the initiative will help regulators monitor activity as it moves "into deeper water and deeper geologic plays that require technological innovation to bring projects into production," said James Watson, director of the Bureau of Safety and Environmental Enforcement.

<http://fuelfix.com/blog/2013/05/29/feds-launch-new-offshore-safety-institute/>

### **4) TRANSPORTATION. A KINDER MORGAN TO SPEND \$107M FOR TEXAS PIPELINE EXTENSION**

Partners plans to extend its Kinder Morgan Crude and Condensate Pipeline in the Eagle Ford Shale formation in Texas to speed up the movement of oil products in the area. The line will be connected to a ConocoPhillips oil gathering hub in Karnes County, Texas. The expansion is expected to cost about \$107 million.

<http://fuelfix.com/blog/2013/06/03/kinder-morgan-to-extend-eagle-ford-pipeline/>

## **A. THE WEEK THAT WAS: 2013-06-01 (JUN 1, 2013)**

*By Ken Haapala, Executive Vice President, Science and Environmental Policy Project (SEPP)*

**Making the Best of Otto:** The paper by 17 Climate Establishment scientists, "Energy budget constraints on climate response" in *Nature Geoscience*, continues to disturb others in the Climate Establishment, particularly those who predict drastic global warming and drastic sea level rise (from global warming). By adding surface temperature data from 2000 to 2009 to the data from starting in 1970, the study stated the most probable temperature increase from a doubling of CO<sub>2</sub> will be 2.0 °C, with a 5 to 95% confidence interval of 1.2 to 3.9 °C. These temperature increase estimates are significantly lower than those in the 2007 Fourth Assessment Report (AR4) by the UN Intergovernmental Panel on Climate Change (IPCC) and lower than those included by the latest round of models (CMIP5) of 2.2–4.7 °C, as reported in the draft of the upcoming IPCC Fifth Assessment Report (AR5),

A number of those who advocate strong government measures for controlling CO<sub>2</sub> emissions in a hope to stop global warming/climate change are trying to put a positive twist on these findings. They are claiming that this lower estimate of the influence of CO<sub>2</sub> on climate gives humanity a second chance before certain doom. The comments by Myles Allen, a participant in the study, as presented by Judith Curry, are more thought provoking than most. However, another view is that the danger of human (anthropogenic) emissions of carbon dioxide (CO<sub>2</sub>) causing significant global warming (carbon-based AGW) is vastly overrated.

The issues concerning the above probability calculations aside, the restatement of highest likelihood demonstrates that the 90 to 99% certainty in the results of the models given in AR4

was misplaced. There is no reason to have high certainty in the latest calculations, despite the probability statements. The researchers may have adjusted the models for the latest data, but the statistical calculations remain a circular argument. The models are not sufficiently tested against past climate change. The time-frame of 1970 to 2009 is insufficient given historical changes in climate.

If nature continues to refuse to cooperate with the climate models, then another restatement would be needed in the future. Perhaps, one day, the Climate Establishment will be forced to admit that CO<sub>2</sub> is not the “control knob” of climate and that natural influences are far more significant than man. Please see links under Problems in the Orthodoxy, <http://www.nature.com/ngeo/journal/vaop/ncurrent/full/ngeo1836.html> and <http://judithcurry.com/2013/05/19/mainstreaming-ecs-2-c/#more-11727>

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**CFC Not CO<sub>2</sub>?:** A new paper in *International Journal of Modern Physics B*, by Qing-Bin Lu, a professor of physics and astronomy, biology and chemistry in the Faculty of Science at the University of Waterloo (Canada) shows a far tighter correlation between chlorofluorocarbons (CFCs), along with cosmic rays, and temperatures from 1950 to 2002 than the correlation between CO<sub>2</sub> and temperatures. Of course, correlation is not causation and it may be just coincidence. Nevertheless, the paper is interesting and so has been the response from the Climate Establishment – silence.

Luboš Motl has an interesting take on this silence: “The apparent observation that no one can really safely show that the paper is wrong and why the paper is wrong highlights the immense degree of uncertainty about the truly dominant climate drivers on the decadal and centennial timescales.” Please see links under Challenging the Orthodoxy. [SEPP Comment: Handle with care!]

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**Going Green:** A new paper published in the *Geophysical Research Letters* further strengthens the extensive work done by Sherwood, Craig and Keith Idso on the environmental benefits of adding CO<sub>2</sub> to the atmosphere. The authors of the paper state they had predicted that a 14% increase in CO<sub>2</sub> would result in a 5 – 10% increase in green foliage in warm, arid environments. Satellite observations reveal an 11% increase, after adjusting for rainfall. The paper contradicts claims in the IPCC AR4 that the deserts are advancing.

Of course, the environmental benefits of enhanced atmospheric CO<sub>2</sub>, and subsequent environmental enrichment cannot go uncontested. The EPA is funding research on human health impacts of increased pollen. Please see links under Challenging the Orthodoxy and Below the Bottom Line.

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**Litigation Issues:** As expressed earlier, SEPP is an Additional Petitioner in a request that the Supreme Court review the decision by the US Court of Appeals for the District of Columbia supporting the EPA finding that Greenhouse Gas (GHG) emissions, primarily CO<sub>2</sub>, endanger human health and welfare (Petition for Writ of Certiorari). The writ was filed by the Southeastern Legal Foundation. A number of other requests for Supreme Court review have also been filed, but the one by Southeastern Legal Foundation addresses scientific issues as well as procedural issues.

The EPA has been granted a 30 day extension to file its response to these requests. Thus it is unlikely that the Court will grant, or refuse, the request prior to its summer recess.

A group of eleven scientists have filed an Amicus Brief (a friend in court) supporting the petition by the Southeastern Legal Foundation. The amicus brief addresses the three lines of evidence the EPA claimed supports its endangerment finding. These are: one, the distinct human fingerprint (hot spot of atmospheric warming over the tropics); two, the surface warming over the past several decades has been unusual and dangerous; and, three, the computer climate models simulate the likely response of the climate system to increasing CO2.

Until the EPA files its response, TWTW is not commenting on the filings. Please see links under Litigation Issues.

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**Two Issues:** On her web site, Climate Etc., Judith Curry has several interesting posts. One discusses the op-ed by US Representative Lamar Smith published in the Washington Post (linked last week), “Overheated rhetoric on climate change doesn’t make for good policies,” and the responses to it. Curry finds that, from a scientific perspective, Rep. Smith comes off far better than his critics.

The second post questions the concept of sustainability, the definition of which is elusive – it can mean virtually whatever the person who invokes it wants. [One could argue that from the concept of entropy, nothing is sustainable.] Curry suggests that a better concept may be resilience – being able to adjust to change and extreme events. This concept may be more politically practical given the great uncertainty of what nature may deliver, or mankind may develop. Please see links under Seeking a Common Ground.

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**Absolutist Administration?** President Obama declared that there can be no debate about the cause of global warming/climate change – it’s human. He stated: “We also know that the climate is warming faster than anybody anticipated five or 10 years ago.” Apparently, the global warming pause has not reached the White House.

According to reports, the new Secretary of Energy, Ernest Moniz, echoed the White House in addressing the White House Leadership Summit on Women, Climate and Energy “I’m not here to debate what’s not debatable.” ... “The threat from climate change is real and urgent.” One wonders what Moniz would say about the findings by Otto, et al. Please see links under Defending the Orthodoxy.

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**Argument by Accusation:** As some may realize, those skeptical of carbon-based AGW are often accused of receiving major funding from fossil fuel industries, as if the source of funding is the final scientific argument. For three years Russell Cook has independently sought the source of multiple reports that many, if not most, skeptics are heavily backed by the fossil fuel industry. According to Cook, the source of most of these claims appears to be the environmental journalist Ross Gelbspan. In his honor, Cook has established a web site that will “focus on an accusation that is being used unjustly to stop debate and marginalize skeptical climate scientists in an important public policy debate.” Please see link under: Accusation Issues.

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**Number of the Week:** \$6.40/mcf. (about \$6.40/mmbtu) According to Thomas Tunstall, research director of the University of Texas at San Antonio Institute for Economic Development, it will cost approximately \$6.40 per thousand cubic feet (mcf) to deliver natural gas from the US to Japan. This is the cost to liquefy, transport and re-gasify the natural gas at the delivery point. Thus at this time, the estimated cost of transportation from the US to Japan alone is more than

50% above the cost of the gas at the US Henry Hub (about \$4.00/mcf). At the delivery point the cost of the gas would be about \$10.40/mcf., 2.5 times the cost of the gas at the Henry Hub.

**The transportation costs from the US to Japan undermine many of the arguments used by those who oppose the US export of liquefied natural gas (LNG). An industry that is a large user of natural gas, say the fertilizer industry, will locate where the gas is less expensive and ship the finished product elsewhere. Thus, the US exporting LNG will not deprive these industries of the advantages in locating where the cost natural gas is comparatively low. [The actual transportation costs may be somewhat lower or higher, but the concept applies.] Please see Article #1.**

<http://www.sepp.org/twtwfiles/2013/TWTW%206-1-13.pdf>

### **C. SEN. HOEVEN BACKS DISCLOSURE BILL FOR REFINERY MAINTENANCE SCHEDULES**

A bill unveiled by Sens. Al Franken, D-Minn., and Amy Klobuchar, D-Minn., that would require refineries to disclose their maintenance schedules to federal regulators earned the support of Sen. John Hoeven, R-N.D. Such reporting could help shield consumers from fuel price increases, Hoeven said. "Let's see some transparency. Let's see some more competition," Hoeven said.

<http://www.jamestownsun.com/event/article/id/187537/>

### **D. SUBMITTED WRITTEN TESTIMONY OF CLIMATE DEPOT'S MARC MORANO AT CONGRESSIONAL HEARING ON CLIMATE CHANGE: 'THE ORIGINS AND RESPONSE TO CLIMATE CHANGE'**

The scientific reality is that on virtually every claim — from A-Z — the claims of the promoters of man-made climate fears are failing, and in many instances the claims are moving in the opposite direction. The global warming movement is suffering the scientific death of a thousand cuts.

<http://www.climatedepot.com/2013/05/31/submitted-written-testimony-of-climate-depots-marc-morano-at-congressional-hearing-on-climate-change-the-origins-and-response-to-climate-change/>

### **E. ALARMISTS CAUGHT DOCTORING '97 PERCENT CONSENSUS' CLAIMS**

Global warming alarmists and their media allies have been caught doctoring the results of a widely cited paper asserting there is a 97 percent scientific consensus regarding human-caused global warming.

After taking a closer look at the paper, investigative journalists report the authors' claims of a 97 percent consensus relied on the authors misclassifying the papers of some of the world's most prominent global warming skeptics. At the same time, the authors deliberately presented a meaningless survey question so they could twist the responses to fit their own preconceived global warming alarmism.

Global warming alarmist John Cook, founder of the misleadingly named blog site Skeptical Science, published a paper (<http://iopscience.iop.org/1748-9326/8/2/024024/article>) with several other global warming alarmists claiming they reviewed nearly 12,000 abstracts of studies

published in the peer-reviewed climate literature. Cook reported he and his colleagues found 97 percent of the papers that expressed a position on human-caused global warming “endorsed the consensus position that humans are causing global warming.”

As is the case with other “surveys” alleging an overwhelming scientific consensus on global warming, the question asked in the survey had nothing to do with the issues of contention between global warming alarmists and global warming skeptics. The question Cook and his alarmist colleagues asked was simply whether humans have caused some global warming. The question is meaningless regarding the global warming debate because most skeptics as well as most alarmists believe humans have caused *some* global warming. The issue of contention dividing alarmists and skeptics is whether humans are causing global warming so severe and so harmful as to constitute a crisis demanding concerted action.

Investigative journalists at *Popular Technology* (<http://www.populartechnology.net/2013/05/97-study-falsely-classifies-scientists.html#Update2>) looked into precisely which papers were classified as part of Cook’s asserted 97 percent. The journalists found Cook and his colleagues classified papers by such prominent, vigorous skeptics as Willie Soon, Craig Idso, Nicola Scafetta, Nir Shaviv, Nils-Axel Morner, and Alan Carlin as supporting the 97 percent consensus. Viewing the Cook paper in the best possible light, Cook and colleagues can perhaps claim a small amount of wiggle room in their classifications because the explicit wording of the question they analyzed is simply whether humans have caused some global warming. By restricting the question to such a minimalist, largely irrelevant question in the global warming debate and then demanding an explicit, unsolicited refutation of the assertion in order to classify a paper as a “consensus” contrarian, Cook and colleagues misleadingly induce people to believe 97 percent of publishing scientists believe in a global warming crisis when that is simply not the case. Misleading the public about consensus opinion regarding global warming, of course, is precisely what the Cook paper sought to accomplish. This is a tried and true ruse perfected by global warming alarmists. Global warming alarmists use their own biased, subjective judgment to misclassify published papers according to criteria that are largely irrelevant to the central issues in the global warming debate. Then, by carefully parsing the language of their survey questions and their published results, the alarmists encourage the media and fellow global warming alarmists to cite these biased, subjective, totally irrelevant surveys as conclusive evidence for the lie that nearly all scientists believe humans are creating a global warming crisis. <http://www.forbes.com/sites/jamestaylor/2013/05/30/global-warming-alarmists-caught-doctoring-97-percent-consensus-claims/>

## F. RADIATION

Attached is an interesting article that popped up on Friday. It is a story about the movie Pandora’s Promise. I know some of you will not agree with the premise of the movie because of its stand relative to climate change. It does show that the right presentation of truth about radiation can change the minds so some very anti-nuclear type persons. The question of us is how do you get people to really understand the hard facts about radiation.

The article can be viewed on line here:

<http://qz.com/89336/everything-you-thought-you-knew-about-the-risks-of-nuclear-energy-is-wrong/#89336%2Feverything-you-thought-you-knew-about-the-risks-of-nuclear-energy-is-wrong%2F>

Ken Kok

## **G. EUROPE'S GREEN-FUEL SEARCH TURNS TO AMERICA'S FORESTS**

The U.S. logging industry is seeing a rejuvenation, thanks in part of Europe's efforts to seek out green fuel and move away from coal. Ianthe Dugan explains. Photo: Getty Images.

Behind the move: an environmental push.

The push isn't in North Carolina but in Europe, where governments are trying to reduce fossil-fuel use and carbon-dioxide emissions. Under pressure, some of the Continent's coal-burning power plants are switching to wood.

But Europe doesn't have enough forests to chop for fuel, and in those it does have, many restrictions apply. So Europe's power plants are devouring wood from the U.S., where forests are bigger and restrictions fewer.

<http://www.eandp-environment.net/Transportation/Transportation020610.pdf>

## **H. I AM HIRING FOR THE FOLLOWING POSITIONS:**

Safety Technician – Downtown Houston office

Very experienced Safety Professional – Downtown Houston office

Very experienced Environmental Professional – Downtown Houston office

Field EHS Coordinator – Pecos, TX/Midland, TX area

Please submit your resume and cover letter via our internet careers site at

<http://www.rosettaresources.com/careers/listings.html> or email [careers@rosettaresources.com](mailto:careers@rosettaresources.com) (I'm told that everything has to go through HR to keep the EEOC people happy).

Please forward to anyone who you know to be qualified and possibly interested in a change.

Mike McKenna, CSP

EH&S Manager

## **I. THE CLIMATE CONSENSUS**

### **Scientific Controversies**

It is a hallmark of good science that it can withstand critique. In fact, science generally advances by facing the critical appraisal of peers and the contrasting of competing theories. The scientific consensus of the day on a specific issue may well be correct if a theory has survived rigorous testing over an extended time period, but even so there is always a rest of uncertainty attached to any theory. New facts may emerge at a later stage and require a reassessment – such as e.g. Newtonian mechanics, which has been superseded by Einstein's relativity theory.

<http://www.acting-man.com/?p=23668#more-23668>

Ron Kelm,

## **J. RISING SEA LEVEL TIED TO FASTER MELT**

Accelerated melting of polar ice sheets and mountain glaciers was the driving factor behind a rise in the global sea level of 16.8 millimeters, or about two-thirds of an inch, between 2005 and 2011, according to a study published Sunday in Nature Geoscience.

The findings are consistent with observed longer-term trends, but the study encompasses only a few years of observations, limiting its conclusions, scientists said. The study, funded by the National Science Foundation and the National Aeronautics and Space Administration, does resolve long-standing discrepancies that arose from different methods of measuring sea levels. Scientists want to establish how much of the sea-level change relates to increased melt water, and how much relates to the water expanding as it warms up. Previous calculations indicated that melting might contribute about half of the increase. The latest study concludes that for the period 2005-2011 the contribution was closer to 75%.

"There was an increase in the melting rate in Greenland starting in 2005 and that is probably the underlying story why" a larger quantity of melt water has poured into the oceans in recent years, said Clark R. Wilson, geophysicist at the University of Texas at Austin and co-author of the study.

Data from the past two decades suggest a sea level increase of about 3.1 millimeters per year. Shorter-term snapshots—such as the annual sea level rise of 2.4 millimeters reported in the latest study—can fall slightly below or above that average.

Scientists estimate the overall change in sea level by using satellite-mounted radar that measures the height of the sea surface. Alternatively, they can add up two separately calculated components—the increased mass of water from melting and other sources, and the increased thermal expansion of the ocean.

To measure the thermal expansion of the oceans, data are collected from the Argo Project, which consists of about 3,500 torpedo-like devices that zoom around in the ocean measuring temperature and salinity.

Meanwhile, NASA's satellite-based GRACE mission measures the gravity field—the varying distribution of mass—across the surface of the earth. Water and air move around from month to month, altering the distribution of mass. By measuring these changes, GRACE can get a fix on how much water mass is being added to the oceans each year.

However, overall sea-level-rise findings from the satellite radars failed to agree with the data from Argo and GRACE. The discrepancy was significant.

That was because GRACE data obtained near the boundary of ocean and land wasn't clearly understood, said Dr. Wilson. The ocean signals get "contaminated" by the much stronger signals on land, whether from snow or groundwater or other factors.

Dr. Wilson and his colleagues have now reassessed the GRACE data to reduce "the bleeding of terrestrial signals into the ocean data." They conclude that melting ice was responsible for raising the sea level by about 1.8 millimeters per year, for a total sea level rise of 2.4 millimeters annually—bringing the two measurements in line.

"Previous estimates of water mass from GRACE were about half of what we got" after making the necessary adjustments, said Dr. Wilson.

"This mismatch has been a bit of an enigma," said Jonathan Bamber, a glaciologist at the University of Bristol in England, who wasn't involved in the study. The findings "give us confidence in all the kinds of data" that are used to assess sea-level change.

## **K. COLDEST SPRING IN ENGLAND SINCE 1891 DESPITE GLOBAL WARMING PREDICTION**

First look at the UK MET's official forecast in 2004, then look at 2013 Spring actual weather. "And people, let us not forget the Met Office's Vicky Pope back in 2004. Oh this is classic..."

[http://www.youtube.com/watch?v=WyDmdcPw7Uw&feature=player\\_embedded](http://www.youtube.com/watch?v=WyDmdcPw7Uw&feature=player_embedded)

Putting her false predictions in context: there has been no global warming for circa 15 years!!

How much longer can "they" keep up this nonsense?

Now the 2013 spring in England. Agree, Local weather should not normally be used to make claims on Global warming/cooling,

However this is an extraordinary cold spell in England and cannot be ignored especially in light of the 2004 forecast.

Imagine the press coverage if this were such an extraordinary warming event.

## **Coldest Spring In England Since 1891**

Posted on [June 2, 2013](#) by [Paul Homewood](#)

**By Paul Homewood**

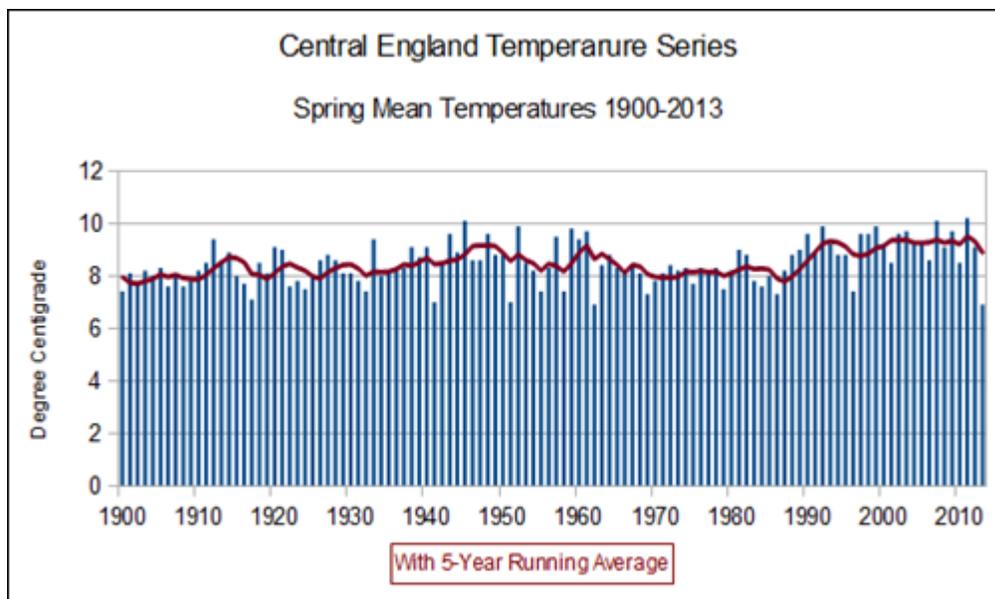
Originally, it was thought to be the coldest spring since 1962.



**WINTER? TEESDALE IN COUNTY DURHAM BLANKETED IN SNOW ON MAY 23 IN WHAT IS LIKELY TO BE BRITAIN'S COLDEST SPRING SINCE 1962**

<http://www.dailymail.co.uk/news/article-2333312/UK-weather-Spring-coldest-50-years-average-temperature-just-6C.html>

According to the Central England Temperature Series, England has just experienced its coldest Spring since 1891. The average mean temperature of 6.87C ranks the 31st coldest on records starting in 1659, and is 2 degrees lower than the 1981-2010 average of 8.9C.

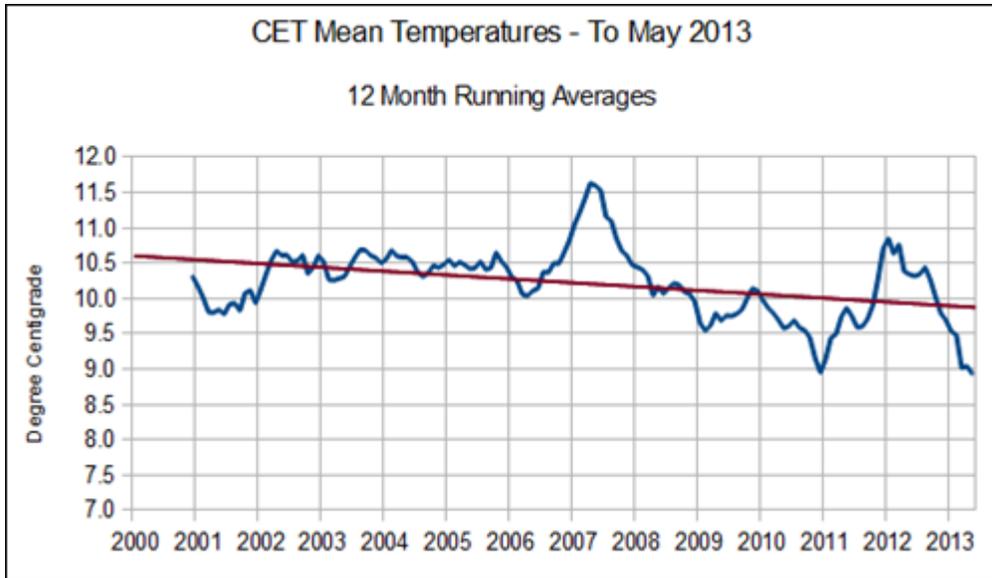


The 5-Year average has dropped to 8.9C, a level commonly seen in the 1940's and 50's. Although the cold Spring has been due in large part to the exceptionally cold weather in March, which was the coldest since 1892, both April and May have also been much colder than normal.

	<b>CET</b>	<b>Warmer/(Colder) v 1981-2010</b>
March 2013	2.7	(3.9)
April 2013	7.5	(1.0)
May 2013	10.4	(1.3)

<http://www.metoffice.gov.uk/hadobs/hadcet/data/download.html>

The 12-Month running average continues to drop, and at 8.9C is well below the levels seen for the last decade, and 1.0C lower than the 1981-2010 annual average.



Don Shaw

## **L. REPORT: LOOMING FEDERAL POLICIES CONCERN ENERGY COMPANIES**

Upcoming federal regulations covering hydraulic fracturing, pipeline building and other sectors within the energy industry are the main concern of oil and natural gas companies this year, a BDO USA study showed. "The industry is butting up against some uncomfortable obstacles, including the delayed approval of the Keystone XL pipeline, opposition to fracking and a strained refining capacity," said Charles Dewhurst, leader of BDO's Natural Resources practice <http://fuelfix.com/blog/2013/06/03/energy-companies-say-regulatory-regulations-their-greatest-threat/>

## **M. WATER USE MAY LEAVE GOALS FOR BIOFUELS HIGH AND DRY**

**A hotter planet could reduce corn yields and increase the need for irrigation, study says**

A new study suggests demands for water will make it more difficult for the United States to meet current biofuel goals if the climate continues to evolve as predicted by the Intergovernmental Panel on Climate Change.

The study by researchers at Rice University and the University of California at Davis found that a hotter planet would cut the yield of corn grown for ethanol in the United States by 7 percent, while increasing the amount of irrigation needed by 9 percent within 40 years.

The study was published online recently in the American Chemical Society journal Environmental Science and Technology.

The biofuel mandate, set by the Energy Independence and Security Act of 2007, calls for the nation to derive 15 billion gallons per year of ethanol from corn by 2022, to be blended with conventional motor fuels.

The *federal* mandate is intended to lower emissions from fossil fuels and reduce the nation's dependence on imported oil.

But it has become increasingly controversial, drawing opposition from a variety of forces. At the same time, domestic oil production has soared as new technology allows for oil to be drawn from shale rock formations.

Pedro Alvarez, chairman of Rice University's civil and environmental engineering department, said the realities of an evolving climate may limit compliance with the biofuel mandate.

"Biofuels offer a means to use more renewable energy while decreasing reliance on imported oil, (but) it is important to recognize the trade-offs," he said. "One important unintended consequence may be the aggravation of water scarcity by increased irrigation in some regions."

### **Critics from both sides**

The American Petroleum Institute, *an industry trade group*, has been a longtime critic of the mandate, arguing that it increases costs for fuel makers and ultimately for consumers.

Environmentalists aren't sold on corn-based ethanol, either, because of concerns that using corn to produce ethanol raises food prices, as well as increasing fertilizer runoff.

But the impact of a changing climate has received less attention. The current paper by the researchers is one of several they have written questioning the mandate.

### **Producing ethanol**

In 2009, Alvarez and Rice alumna Rosa Dominguez-Faus, now a postdoctoral researcher at the University of California at Davis, calculated it would take 50 gallons of water to grow enough Nebraska corn to produce the ethanol needed to drive one mile. In that paper, they suggested the potential consequences to the water supply needed more study.

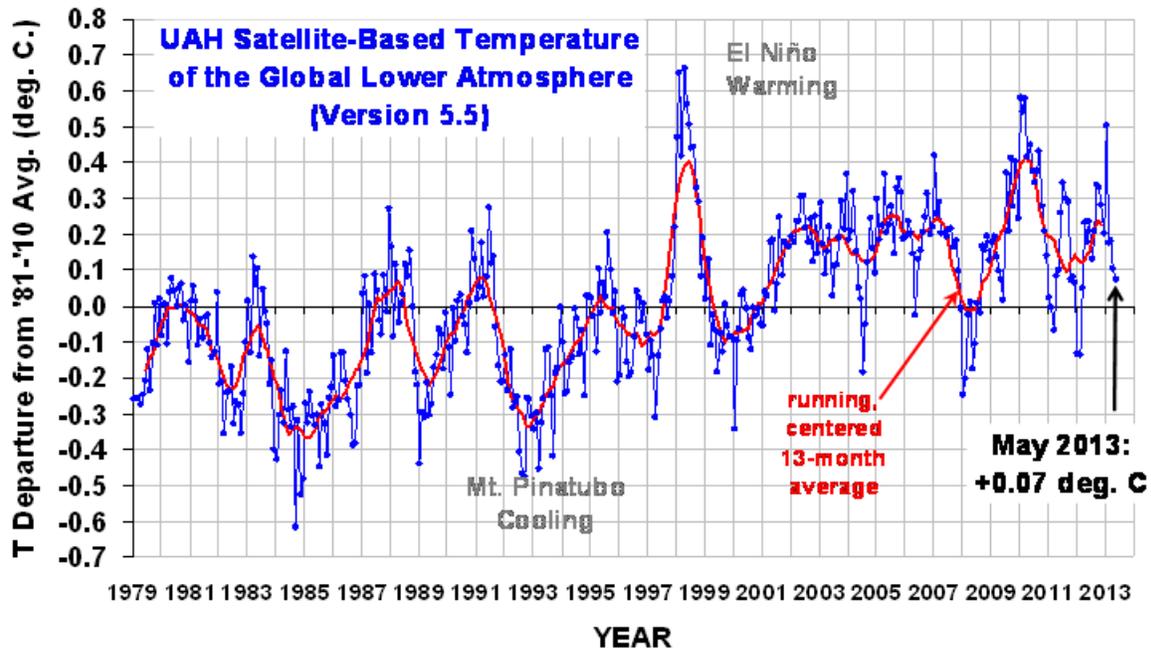
*In the new research, they built computer simulations based on crop data from the nation's top 10 corn-producing states*, along with estimates of carbon dioxide and other emissions from the Intergovernmental Panel on Climate Change, an international group established by the United Nations and the World Meteorological Organization to assess the most current scientific research on climate science.

They found that states in the corn belt - Iowa, Illinois, Indiana, Ohio and Missouri - along with Minnesota and Wisconsin, where corn growth is primarily fed by rainfall, would be subject to more intense but less frequent precipitation, especially during the summer. Crops would require as much as 25 percent more irrigation.

Irrigation already is used in South Dakota, Nebraska and Kansas, but the researchers said crop yields would decline even if irrigation continued.

"The projected increases in water intensity due to climate change highlight the need to re-evaluate the corn ethanol elements of the Renewable Fuel Standard," Dominguez-Faus said in a statement.

## N. LATEST GLOBAL TEMPS



### Latest Global Average Tropospheric Temperatures

Since 1979, NOAA satellites have been carrying instruments which measure the natural microwave thermal emissions from oxygen in the atmosphere. The intensity of the signals these microwave radiometers measure at different microwave frequencies is directly proportional to the temperature of different, deep layers of the atmosphere. Every month, John Christy and I update global temperature datasets (see [here](#) and [here](#)) that represent the piecing together of the temperature data from a total of eleven instruments flying on eleven different satellites over the years. As of September 2012, the Advanced Microwave Sounding Unit (AMSU-A) flying on NASA's Aqua satellite has been removed from the processing due to spurious warming and replaced by the average of the NOAA-15 and NOAA-18 AMSUs. The graph above represents the latest update; updates are usually made within the first week of every month. Contrary to some reports, the satellite measurements are not calibrated in any way with the global surface-based thermometer records of temperature. They instead use their own on-board precision redundant platinum resistance thermometers calibrated to a laboratory reference standard before launch.

Roy Spencer

## O. DR. VINCENT GRAY ON HISTORICAL CARBON DIOXIDE LEVELS

Posted on [June 4, 2013](#) by [Anthony Watts](#)

NZCLIMATE TRUTH NEWSLETTER NO 312 JUNE 4th 2013

CARBON DIOXIDE

There are two gases in the earth's atmosphere without which living organisms could not exist. Oxygen is the most abundant, 21% by volume, but without carbon dioxide, which is currently only about 0.04 percent (400ppm) by volume, both the oxygen itself, and most living organisms on earth could not exist at all.

This happened when the more complex of the two living cells (called "eukaryote") evolved a process called a "chloroplast" some 3 billion years ago, which utilized a chemical called chlorophyll to capture energy from the sun and convert carbon dioxide and nitrogen into a range of chemical compounds and structural polymers by photosynthesis. These substances provide all the food required by the organisms not endowed with a chloroplast organelle in their cells.

This process also produced all of the oxygen in the atmosphere

The relative proportions of carbon dioxide and oxygen have varied very widely over the geological ages.

<http://wattsupwiththat.com/2013/06/04/dr-vincent-gray-on-historical-carbon-dioxide-levels/>

**Regards**

**George**