

From ▶ CHRIS LANDSEA <CHRIS.LANDSEA@NOAA.GOV>

Date Fri, 05 Nov 2004 17:40:43 -0500

To Susan.Solomon@noaa.gov, Frank.Marks@noaa.gov, Rick.Rosen@noaa.gov, Peter.Ortner@noaa.gov,Thomas.C.Peterson@noaa.gov,Thomas.R.Karl@noaa.gov, Albert.Klein.Tank@knmi.nl,dhko@hko.gov.hk,rahim_f@irimet.net,lindam@ucar.edu, pachauri@teri.res.in,p.jones@uea.ac.uk,killeen@ucar.edu, B.J.Hoskins@reading.ac.uk,bubujallow@hotmail.com

Cc trenbert@cgd.ucar.edu

Subject Hurricanes and Global Warming for IPCC

Dear Drs. R. Pachauri, S. Solomon, P. Jones, A. Klein-Tank, CY Lam, F. Rahimzadeh, B. Hoskins, B. Jallow, T. Karl, T. Peterson, L. Mearns, R. Rosen, T. Killeen, F. Marks, and P. Ortner (with a cc to K. Trenberth),

Recently Dr. Kevin Trenberth participated in a press conference on the topic "Experts to warn global warming likely to continue spurring more outbreaks of intense hurricane activity" along with Drs. Paul Epstein, James McCarthy and Matthias Weber. The result of this media event was widespread coverage like the following from Reuters:

Global Warming Effects Faster Than Feared - Experts

Thu Oct 21, 3:32 PM ET Science - Reuters

By Maggie Fox, Health and Science Correspondent

<http://story.news.yahoo.com/news?>

http://story.news.yahoo.com/news?tmpl=story&cid=585&e=1&u=/nm/20041021/sc_nm/environment_global_dc

WASHINGTON (Reuters) - Recent storms, droughts and heat waves are probably being caused by global warming, which means the effects of climate change are coming faster than anyone had feared, climate experts said on Thursday.

The four hurricanes that bashed Florida and the Caribbean within a five-week period over the summer, intense storms over the western Pacific, heat waves that killed tens of thousands of Europeans last year and a continued drought across the U.S. southwest are only the beginning, the experts said.

Listening to the whole press conference, available at - <http://www.med.harvard.edu/chge/media.html> - the media coverage seems to accurately reflect what actually was said by Dr. Trenberth and the panel at this event. Similar statements by Dr. Trenberth are also on the record in his September 24th, 2004 interview with the Living on Earth media program - <http://www.loe.org/index.htm>. In summary, he is attributing an increase in this year's Atlantic and NW Pacific tropical cyclone activity to anthropogenic warming as a result of enhanced atmospheric greenhouse gases.

My concerns are: Where is the science, the refereed publications, that substantiate these pronouncements? What studies are being alluded to that have shown a connection between observed warming trends on the earth and long-term trends in tropical cyclone

activity? As far as I know there are none.

I have been a Contributing Author for both the IPCC in 1995 and 2000, when I wrote the sections on observed changes in tropical cyclones around the world. I also dutifully have provided reviews for both IPCC editions on the observed variability and projection chapters. I was asked just three weeks ago by Dr. Trenberth as Lead Author of the Observations chapter to again provide a writeup on observed Atlantic hurricane activity for the 2007 IPCC Fourth Assessment Report. I agreed to do so, as I realize that this is an important task and one that I may be able to provide a meaningful contribution toward.

However, these press events greatly concern me. The Lead Author of the Observations chapter seems to have already come to the conclusion that global warming has altered hurricane activity and has publicly stated so. This does not reflect the consensus within the hurricane research community.

I am concerned that it may not be possible for the IPCC process to proceed objectively at this point, with regards to hurricane activity. Thus I would like assurance that what will be included in the IPCC report will reflect the best available information and the consensus within the scientific community most expert on the specific topic.

There are many legitimate scientific reasons to be concerned with global warming, but the evidence just is not there with hurricanes no matter how much it is trumped up for the media and the public. Proceeding with such announcements outside the proper IPCC process taints the credibility of climate change science and will in the longer term diminish our influence over public policy.

The sad thing about this is that it did not have to turn out this way. I did try to caution both Dr. Trenberth and Dr. Linda Mearns before the media event (email included below) and provided a summary of the consensus within the hurricane research community. Dr. Mearns decided not to participate in the panel perhaps as a result of my email correspondence. I sincerely wish Dr. Trenberth had made the same decision. Dr. Trenberth wrote back to me that he hoped that this press conference would not "go out of control". I would suggest that it was out of control the minute that he and his fellow panel members decided to forego the peer review scientific process and abuse science in pursuit of a political agenda.

Sincerely,
Chris Landsea

NOAA/AOML/Hurricane Research Division

Chris Landsea

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http://www.aoml.noaa.gov/hrd/Landsea/landsea_bio.html

21 October 2004 Email to Kevin Trenberth

Subject: Today's news conference?
Date: Thu, 21 Oct 2004 11:33:51 -0400
From: CHRIS LANDSEA <CHRIS.LANDSEA@NOAA.GOV>
To: trenbert@cgd.ucar.edu, lindam@ucar.edu

Dear Linda and Kevin,

I heard that you all are participating in a news conference entitled "EXPERTS TO WARN GLOBAL WARMING LIKELY TO CONTINUE SPURRING MORE OUTBREAKS OF INTENSE HURRICANE ACTIVITY". This is news to me and i am wondering what has led you all to this big conclusion. Are you all announcing a new published paper in the field? (Unless there is a publication that i'm not aware of, i do not believe that i've seen a publication in the field of hurricane climate variability/change from either of you or your fellow panel members on this topic.) If not, i'm wondering how you all are coming to this conclusion and what work you are citing?

If it's helpful, here's my take on hurricanes and global warming (a little synopsis that i helped put together recently). I'd be happy to provide references to support all of this.

Hurricanes and Global Warming

-There are no known scientific studies that show a conclusive physical link between global warming and observed hurricane frequency and intensity. Whatever suggested changes in hurricane activity that might result from global warming in the future are quite small in comparison to the large natural variability of hurricanes, typhoons and tropical cyclones. For example, the latest GFDL global warming study suggested about a 5% increase in the winds of hurricanes 80 years in the future. This contrasts with the more than doubling that occur now in numbers of major hurricanes between active and quiet decades in the Atlantic basin.

-If global warming is influencing hurricane activity, then we should be seeing a global change in the number and strength of these storms. Yet there is no evidence of a global increase in the strength and frequency of hurricanes, typhoons, and tropical cyclones over the past several years.

-Beginning in 1995, there has been an increase in the frequency and intensity of hurricanes in the Atlantic basin. However, this increase is very likely a manifestation of a natural multi-decadal cycle of

Atlantic hurricane activity that has been occurring likely for the last few hundred years. For example, relatively few Atlantic major hurricanes were observed in the 70s, 80s and early 90s, but there was considerable activity during the 40s, 50s and early 60s. Also, the period from 1944 to 1950 was particularly infamous for Florida – with 11 hurricanes hitting the state during those years.

-Total U.S. direct damages from Atlantic hurricanes this year will be on the order of \$30 billion, making it about equal to the most damaging year on record - 1992 with the landfall of Hurricane Andrew. However, such increased destruction from hurricanes is to be expected because of the massive development and population increases along the U.S. coastline and in countries throughout the Caribbean and Central America. There is no need to invoke global warming to understand both the 10 years of active hurricane seasons and the destruction that occurred both in Florida and in Haiti this season. The former is due to natural cycles driven by the Atlantic Ocean and the latter is due to societal changes, not due to global warming.

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I'm all for scientific debate about important issues like how might global warming impact hurricane activity. (I've had some wonderful discussions over the last few years with Tom Knutson about his insightful work.) However, i am concerned that this news conference may stray from science into the realm of hyperbole. Please don't let that happen.

Sincerely,
chris

From "R K Pachauri" <pachauri@teri.res.in>
Date Sat, 20 Nov 2004 17:49:24 +0530
To <Chris.Landsea@noaa.gov>
Subject Re: Hurricanes and Global Warming for IPCC

Dear Dr. Landsea,

I am responding somewhat belatedly to your e mail of November 6 on the above subject.

I was tied up almost round the clock for the 22nd Plenary Session of the IPCC held in New Delhi during the week of November 8, and then immediately thereafter on travel to Korea and Australia.

I fully appreciate your good intent in bringing to my attention as well as that of others the recent news reports that you have referred to. I need hardly mention that the IPCC cannot possibly take a position on this, because individual scientists can do what they wish in their own rights, as long as they are not saying anything on behalf of the IPCC. I may also mention that often the media does exaggerate what scientists may put forward on a balanced and objective basis. I have myself been the victim of such exaggeration on several occasions. I, therefore, agree entirely with Dr. Trenberth's response to your communication, since what he said did not in any way misrepresent the IPCC and apparently his statements accurately reflected IPCC's TAR. I do hope you would continue to remain engaged in the work of the IPCC and provide your knowledge and wisdom for the benefit of science.

May I say I do greatly appreciate your desire to see that scientific statements are objective and balanced, and that we should all respect this requirement.

With kind regards,

Yours sincerely,

R. K. Pachauri

*****:*****

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From ▶ CHRIS LANDSEA <CHRIS.LANDSEA@NOAA.GOV>

Date Wednesday, December 8, 2004 4:21 pm

To Susan.Solomon@noaa.gov, Frank.Marks@noaa.gov, Rick.Rosen@noaa.gov, Peter.Ortner@noaa.gov, Thomas.C.Peterson@noaa.gov, Thomas.R.Karl@noaa.gov, Albert.Klein.Tank@knmi.nl, dhko@hko.gov.hk, rahim_f@irimet.net, lindam@ucar.edu, pachauri@teri.res.in, p.jones@uea.ac.uk, killeen@ucar.edu, B.J.Hoskins@reading.ac.uk, bubujallow@hotmail.com

Subject Re: Hurricanes and Global Warming for IPCC

Dear Dr. Pachauri and IPCC/NOAA colleagues,

R K Pachauri wrote:

- > Dear Dr. Landsea,
- >
- > I am responding somewhat belatedly to your e mail of November 6 on
- > the above subject.
- >
- > I was tied up almost round the clock for the 22nd Plenary Session of
- > the IPCC held in New Delhi during the week of November 8, and then
- > immediately thereafter on travel to Korea and Australia.

Thank you for your response. With this note, I would like to explain to you why I am no longer willing to serve as a contributor to the IPCC unless changes are made.

- > I fully appreciate your good intent in bringing to my attention as
- > well as that of others the recent news reports that you have referred
- > to. I need hardly mention that the IPCC cannot possibly take a
- > position on this, because individual scientists can do what they wish
- > in their own rights, as long as they are not saying anything on
- > behalf of the IPCC. I may also mention that often the media does
- > exaggerate what scientists may put forward on a balanced and
- > objective basis. I have myself been the victim of such exaggeration
- > on several occasions. I, therefore, agree entirely with Dr.Trenberth's
- > response to your communication, since what he said did not in any
- > way misrepresent the IPCC and apparently his statements accurately
- > reflected IPCC's TAR.

Thank you for presenting these points for consideration. Unfortunately, all of these issues that you bring up (i.e., individual scientists' statements, media exaggeration, and accurately reflecting the TAR) are not valid in the case of Dr. Trenberth and his advocacy that 2004's hurricanes and typhoons were in part caused by anthropogenic global warming.

In the first point about "not saying anything on behalf of the IPCC", Dr. Trenberth certainly did so. At the press conference (again, audio for the entire event is available at - <http://www.med.harvard.edu/chge/media.html>),

Dr. Trenberth was presented as "a convening lead author of the 2007 IPCC Report". There was no disclaimer by the press conference conveners, nor by Dr. Trenberth himself, that he was speaking only his opinions. Media representatives at this press conferences would rightfully conclude that Dr. Trenberth was officially representing the IPCC.

Secondly, this is not a case of media exaggerating or misrepresenting a scientist's words. I have had numerous interactions with the media and have also occasionally experienced this by not-quite-competent or (worse) biased reporters. This is simply the media (in this case accurately) reporting Dr. Trenberth's actual words. Again, one can confirm this by listening to the above on-line audio, reading the transcript of his interview on the Living with the Earth media program -

<http://www.loe.org/ETS/organizations.php3?action=printContentItem&orgid=33&typeID=18&itemID>

- and by reading the recent NCAR Staff Notes writeup -

<http://www.ucar.edu/communications/staffnotes/0410/hurricane.html> .

Much of the media concluding that the 2004's tropical cyclones were partially due to global warming is an accurate representation of Dr. Trenberth's own views and words.

Finally, it is not true that "his statements accurately reflected IPCC's TAR." I know this to be the case, since I helped write the section on observations of hurricane activity for both the Second and Third Assessment Reports. From the TAR Summary for Policymakers:

"Some important aspects of climate appear not to have changed... Changes globally in tropical and extratropical storm intensity and frequency are dominated by inter-decadal to multi-decadal variations, with no significant trends evident over the 20th Century."

One can also read over section 2.7.3.1 Tropical Cyclones in TAR (which I was a primary author) to learn more of the details of how the numbers and intensity of tropical cyclones globally have seen large low-frequency variations, which dominate the time series. While it is possible that tropical cyclones will develop slightly stronger winds and more rain in the somewhat distant future (5% increase in about 80 years, according to the newest thorough study by the folks at GFDL), it is a dramatic change in conclusions to say that storminess might become a few percent worse in several decades to now saying that 2004's tropical cyclones were in part caused by global warming. As I mentioned earlier, the refereed literature in my field and the consensus by the folks active in tropical cyclone climate variability conclude the opposite to what Dr. Trenberth is advocating publicly.

> I do hope you would continue to remain engaged in the work of
> the IPCC and provide your knowledge and wisdom for the benefit

- > of science.
- >
- > May I say I do greatly appreciate your desire to see that scientific
- > statements are objective and balanced, and that we should all respect
- > this requirement.
- >
- > With kind regards,
- > Yours sincerely,
- > R. K. Pachauri

Dr. Pachauri, you mentioned earlier that "individual scientists can do what they wish in their own rights", which is certainly true. Differing conclusions and robust debates are crucial to progress in climate science. However, what we have here is not in this case an honest scientific discussion. Instead, Dr. Trenberth in representing the IPCC has successfully promulgated into the media his own opinion that the 2004 hurricane season was caused by global warming, which is in direct opposition to research written in the field and is counter to conclusions in the TAR. Yet, I have been asked to provide the writeup about observed hurricane activity variations for the FAR with, ironically, Dr. Trenberth as Lead Author. Because of Dr. Trenberth's pronouncements, the IPCC process on our assessment of these crucial extreme events in our climate system is compromised and its objectivity lost. While no one can "tell" scientists what to say or not say (nor am I suggesting that), the IPCC did select Dr. Trenberth as a Lead Author and entrusted to him to carry out this duty in a non-biased, objective point of view. To this, he has failed. I personally cannot in good faith continue to contribute to a process that I view as not being scientifically sound. As long as this structure remains, I will no longer participate in the IPCC FAR.

Sincerely,
Chris Landsea

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"When that cloud begins to move apace, you may expect the Wind presently. It comes on fierce, and blows very violently at N.E. 12 hours more or less...When the wind begins to abate i dyes away suddenly, and falling flat calm, it continues for an hour, more or less: then the wind comes about to the S.W. and it blows and rains as fierce from thence, as it did before at N.E. and as long."
- From the log of William Dampier on 4 July 1687, in the South China Sea, the first such record of a tropical cyclone.

From ▶ Susan Solomon <Susan.Solomon@noaa.gov>

Date Thursday, December 9, 2004 1:56 pm

To "Christopher Landsea" <Chris.Landsea@noaa.gov>, Frank.Marks@noaa.gov, Rick.Rosen@noaa.gov, Peter.Ortner@noaa.gov, Thomas.C.Peterson@noaa.gov, Thomas.R.Karl@noaa.gov, Albert.Klein.Tank@knmi.nl, dhko@hko.gov.hk, rahim_f@irimet.net, lindam@ucar.edu, pachauri@teri.res.in, p.jones@uea.ac.uk, killeen@ucar.edu, B.J.Hoskins@reading.ac.uk, bubujallow@hotmail.com, trenbert@ucar.edu, Martin Manning <Martin.Manning@noaa.gov>, IPCCWG1 <ipcc-wg1@al.noaa.gov>

Subject Re: Hurricanes and Global Warming for IPCC

Dear Chris,

I am writing as co-chair of WG1 of IPCC in response to your messages.

You may wish to recall that when you or I are introduced as NOAA scientists, it is well understood that we are not speaking for NOAA much less the US government. That is standard practice in scientific work in all institutions and organizations. Further, as you know, the publication date of the fourth assessment report will be 2007. I would like to suggest that it is quite clear that no person can speak on behalf of that assessment's scientific conclusions until it is available.

While different scientists involved in climate studies have different views, the assessment will represent, as in the TAR, a careful consensus based upon consideration of published scientific literature. It will, as in TAR, include consideration of observed frequency and intensity changes as well as available modelling studies. The authors of chapter 3 will weigh all relevant papers and come to a consensus as a group, with important input from an extensive review process. I am confident that the process will be a diligent one.

The appropriate means now for you to ensure your concerns are considered would be to send any reprints or preprints that you think relevant to us at ipcc-wg1@al.noaa.gov. We will also ask you if you wish to review the chapter during the expert review phase of the first order draft that will begin in the mid-2005, but of course it will be your decision whether or not you wish to do so at that time so please inform us then.

best regards,
Susan

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Please note my new email address for your records:

Susan.Solomon@noaa.gov
