

**To:** [Committee, EC \(SEN\)](#)  
**Subject:** Submission related to extreme weather events Inquiry  
**Date:** Friday, 18 January 2013 12:16:14 PM  
**Attachments:** TF\_RHW\_JGR\_2012JD018020.pdf  
T\_Framing\_ClimCh12.pdf

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Committee Secretary  
Senate Standing Committees on Environment and Communications  
Parliament House  
Canberra ACT 2600

I am writing to make a submission to the Environment and Communications References Committee Inquiry into "Recent trends in and preparedness for extreme weather events."

Please find attached 2 papers, and a link to a commentary, that form my submission to this Inquiry. These papers address issues of relevance to items (a) and (b) from the terms of reference:

(a) recent trends on the frequency of extreme weather events, including but not limited to drought, bushfires, heatwaves, floods and storm surges;  
(b) based on global warming scenarios outlined by the Intergovernmental Panel on Climate Change and the Commonwealth Scientific and Industrial Research Organisation of 1 to 5 degrees by 2070:  
(i) projections on the frequency of extreme weather events, including but not limited to drought, bushfires, heatwaves, floods and storm surges,  
(ii) the costs of extreme weather events and impacts on natural ecosystems, social and economic infrastructure and human health, and  
(iii) the availability and affordability of private insurance, impacts on availability and affordability under different global warming scenarios, and regional social and economic impacts.

The first article attached is focused on the Russian heat wave and wildfires in 2010 but includes diagnostic studies into other extremes that occurred around the world in 2010 into 2011, including the flooding in Australia and especially Queensland. It also includes an assessment of causes which include the role of human-induced global warming.

The second article deals with how to think about and appropriately discuss causes of climate change, including those documented in the first article.

A particular illustration of this is the commentary at the link below on the causes of super storm Sandy in the United States last year, which did well over US\$60 billion in damage.

<http://www.the-scientist.com/?articles.view/articleNo/33084/title/Opinion--Super-Storm-Sandy/>

I would be happy to provide further information or evidence to the Inquiry and can be contacted at the below email.

Yours sincerely  
Kevin E Trenberth

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<http://www.cgd.ucar.edu/cas/trenbert.html>