

From: Kiran Magiawala
Sent: Friday, November 11, 2011 6:04 AM
To: Lucile Jones; dschoell@usgs.gov; Mueller-Solger, Anke@DeltaCouncil
Subject: Climate Change, Atmospheric Rivers, and Floods in California

11 November, 2011

Greetings Dr. Jones, Dr. Schoellhamer and Dr. Mueller-Solger.

Pray you saw this publication and the news item.

How would such affect/impact our Bay Delta area/study? Because I do not have the access to this paper, I could not learn about it. Interest permitting, might be worth learning about it from the author, and integrating the findings into on-going assessment as appropriate.

Regards.

Kiran.

<http://onlinelibrary.wiley.com/doi/10.1111/j.1752-1688.2011.00546.x/abstract;jsessionid=14A31F95174E4587BA678AB3769ECABF.d04t02> (paid access)

Recent studies have documented the important role that “atmospheric rivers” (ARs) of concentrated near-surface water vapor above the Pacific Ocean play in the storms and floods in California, Oregon, and Washington. By delivering large masses of warm, moist air (sometimes directly from the Tropics), ARs establish conditions for the kinds of high snowlines and copious orographic rainfall that have caused the largest historical storms. In many California rivers, essentially all major historical floods have been associated with AR storms. As an example of the kinds of storm changes that may influence future flood frequencies, the occurrence of such storms in historical observations and in a 7-model ensemble of historical-climate and projected future climate simulations is evaluated. Under an A2 greenhouse-gas emissions scenario (with emissions accelerating throughout the 21st Century), average AR statistics do not change much in most climate models; however, extremes change notably. Years with many AR episodes increase, ARs with higher-than-historical water-vapor transport rates increase, and AR storm-temperatures increase. Furthermore, the peak season within which most ARs occur is commonly projected to lengthen, extending the flood-hazard season. All of these tendencies could increase opportunities for both more frequent and more severe floods in California under projected climate changes.

<http://www.newscientist.com/article/mg21228384.300-atmospheric-rivers-caused-the-uks-worst-floods.html> (news item)

Kiran R. Magiawala PhD
Retired Engineer, Citizen Scientist and Volunteer
Tele: 310-978-1434
Email: kiran_magiawala@yahoo.com

 Please think about our environment and do not print this e-mail unless you really have a pressing need to. Thank you.