

Golden Gate Climate Update Transcript

Interview with Dr. Robert Cahalan

NASA Climate and Radiation Branch, Goddard Space Flight Center

Interviewed on August 13, 2009

James Osborne interviewer

Part 2

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James - Hi, I'm Ranger James Osborne, and welcome to Golden Gate Climate Update, your source for information on climate change and sustainability.

This episode is a continuation of our discussion with Dr. Robert Cahalan, head of NASA's Climate and Radiation Branch, at Goddard Space Flight Center. But before we get back to Bob, it's time for the answer to our climate update challenge. The 'Maunder Minimum' was a period of 70 years between 1645 to 1715 when the sun was unusually inactive, and Europe had a "Little Ice Age." The period began 36 years after Galileo first observed sunspots. This minimum was identified and named by the eminent scientist John Eddy, who died in June 2009. There is now a petition circulating to name the current solar minimum, which has so far lasted a year longer than expected, after Jack Eddy.

Now back to Dr. Cahalan. So Bob, what do you consider to be the biggest threats of global warming to the whole planet and humanity in the next 50 years?

Bob - Well, if we look out fifty years, first of all, our climate models cannot predict what will happen in detail. If we look at different models and we look say at something like soil moisture over the United States, which is something our plants and agriculture depend on. Different models give different answers over the United States. But, the droughts we've seen in the west could easily extend over a broader area and impact our crops and that is shown in many of the models and so that certainly will be an issue for food supply, and we should keep in mind when we are thinking of our Canadian friends, that it could be that they have a climate more conducive to agriculture in 2050 than we do. But, lets think about say twenty different climate models and this is what we tend to do, is we'll take twenty different models from different groups around the world and we'll try to forecast what happens in 2060 and we get some differences between those models over scales like the whole United States. But, all of the models are predicting warming, so there is a general agreement on a larger scales. The bigger uncertainty is the uncertainty of what to assume people are going to

do, what will our population be and most of the models assume that our population will level out at something under ten billion. We're already at almost 6.7 billion people. What's harder to know is what will people decide to do about their life styles and their use of energy. The United States right now is the largest per-capita emitter of carbon dioxide which is a major greenhouse forming gas. There's talk of going in the US and in other places to more reliance on so called renewable energy, solar, wind, geothermal, others. If you look at scenarios where we rely more on our energy from those other sources and less on for example coal, then we don't get as extreme a warming. So, that uncertainty between whether we get all of our new energy from coal or get much of our new energy from renewable sources of all kinds is a bigger uncertainty than the uncertainty between the different models.

James - So, it sounds like regardless of how well the models agree, it's what we do as individuals and governments that really matters in how extreme climate change will be. Given that, do you have any suggestions for what our listening audience can do to slow global warming?

Bob - Well, first of all we do need to pay attention to government policies, state by state. You know if you have a national park in your state the park is playing a key role in preserving threatened species. I recommend people pick a species that's threatened and adopt it. I have my own I like, which is the bog turtle which used to be very common in the Chesapeake water shed, but bogs are drying up so they're threatened. So, these kind of impacts are different in different places. But, they are things that are happening commonly globally, and we can only find solutions by changing government policy and by cooperative work with other people. It may seem that we are helpless in some way, but we just need to remind ourselves we got into this problem of global warming by a lot of small decisions and small steps and I think we get out of it the same way. We make a lot of small decisions in the right direction and we be patient and over the next few decades we're going to move away from this problem.

James - Well with that encouragement I hope you are all inspired to get involved and do your part in doing the right thing. Thanks for joining us Bob.

Bob - Thank you.

James - Please join our next podcast, when we will be interviewing Dr. Emily Limm, who studies how the ferns, shrubs, and trees of the redwood forest may be affected by climate change. Until our next podcast this is James Osborne. Thanks for listening.

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Male voice - Golden Gate Climate Update is produced by Will Elder and is a product of the Earth to Sky Program, an innovative partnership between the National Park Service and NASA.

Music from *A Walk in the Desert* by Electronic Symphonic