

From: [Grizzle, Betty](#)
To: [Guinotte, John](#)
Subject: Re: avalanches and climate change
Date: Wednesday, April 5, 2017 1:57:37 PM

Thanks John. Sounds like there is no real consensus on this (yet).

On Wed, Apr 5, 2017 at 12:39 PM, Guinotte, John <john_guinotte@fws.gov> wrote:

Hi Betty, I'm talking to Art Mears this week re avalanches. I was looking at his website and stumbled on this re climate change and avalanche risk.

http://www.mearsandwilbur.com/more_topics.html#climate_change

Climate Change

[The Intergovernmental Panel on Climate Change](#) (IPCC) has concluded that temperatures are rising worldwide. The rates and implications of warming are uncertain, but this trend deserves recognition for avalanche risk analyses.

Warming vs. Precipitation

General warming would suggest that the avalanche season will become shorter, and thus the overall hazard might become less. If precipitation patterns do not change, this reasoning might have some validity. However, most major avalanche periods of importance in land-use planning and engineering result from periods of prolonged heavy precipitation often accompanied by high winds. Thus, it is possible that climate change could result in an increase in avalanche hazards if storms become longer and/or more intense. The probability of these changes is unknown.

Forest Conditions

Large areas of forests in North America are experiencing high mortality rates due to drought and insect infestations. This phenomenon might be expected to continue if warming persists. When forest mortality occurs on steep slopes additional avalanche terrain could be created. Similarly, burned areas can become new or expanded avalanche terrain due to loss of vegetation in potential starting zones.

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