

# Golden Gate Climate Update Transcript

Interview with Dr. Anthony Westerling

Professor, UC Merced

Interviewed on July 6, 2010

James Osborne interviewer

## Part 1

*Music begins and fades slightly*

*James* - Hi, I'm Ranger James Osborne, and welcome to Golden Gate Climate Update, your source for information on climate change and sustainability. Join us as we hear from people helping your National Parks understand and adapt to climate change.

Today we are talking with Dr. Anthony Westerling, Professor of Engineering, Natural Sciences, and Geography at UC Merced. So Tony, can you tell us a little about your research?

*Tony* - My research is primarily on climate and applications to wildfire.

*James* - So tell me, do you do mostly computer modeling of climate change and its relationship to forests?

*Tony* - Modeling is a big part of what I do and what my students do. A lot of what we do is simple analysis, looking at the data and seeing what they tell us and then using the relationships that we find to try and extrapolate what fire could look like in the future, just to the next season, or climate change scenarios a hundred years from now.

*James* - I see. You've said that one of the reasons climate change can increase forest fires is that warmer temperatures will make snow melt earlier, and that would make forests drier for longer periods during the summer. Do you expect wildland fires to increase in coastal areas of California as well, where snow is not involved?

*Tony* - That's an interesting question. If you're talking about southern California, I wouldn't think that an increase in temperature would have a really dramatic effect in the short run on fires in terms of the frequency or severity. You're talking about a place that already has a long, hot, dry summer, and making it drier and hotter isn't going to change fundamentally how the ecosystem works in the short run. In the longer run, in some climate scenarios that we look at when we're modeling how fire would respond, we actually see a decrease in some scenarios of fire activity, and

that's simply because the ecosystems are becoming drier with less fuel to burn. As you come farther north, you have more moisture available currently to grow fuels and to keep them from becoming so flammable, and so as you dry things out more, you get an incremental increase in the probability of a large fire.

*James* - I see, so really it's the latitude that's a huge factor in your modeling and your predictions. Does elevation play a role as well?

*Tony* - The western U.S. is pretty dry, an arid region, and there's more moisture available to grow fuels or to keep them wet at higher elevations and higher latitudes, so the higher up you go, the more fuel you have and the more impact warmer temperatures are going to have on how flammable that fuel is.

*James* - I see. And so have you got a percentage increase that you're predicting for the increase in the frequency or severity of the forest fires?

*Tony* - For the state of California we've done a bunch of projections about what the future would look like. This is part of the governor's climate action team and climate initiative. And so we've looked at scenarios including different projections for how much climate change is going to be in the future based on differences in the sensitivities across different climate change models – these are the big models used to project what climate will look like in the future given a certain level of greenhouse gas emissions over time. What we see is across a fairly broad range of scenarios for California, under most cases there are very substantial increases in the frequency of large fires and the area burned in them. And in many scenarios, the increases are anywhere from doubling to tripling or more in a large part of those forests. You know, it's increasing now and probably due to climate change, so we don't use the present as our base of reference, we use a 30 year period ending in 1990 as sort of our reference point.

*James* - Before we move on to our next question, it's time for the climate update challenge. In 2009, what started more forest fires – humans or lightning strikes? Hear the answer, and the second half of this interview, in part two. This is James Osborne, thanks for listening.

*Music fades in and then out*

*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