FAST MOVING FRONTS - 2009

January 2009

PDF

Nathan P. Gillett talks with *ScienceWatch.com* and answers a few questions about this month's Fast Moving Front in the field of Geosciences.

Article: Detecting the effect of climate change on Canadian forest fires
Authors: Gillett, NP;Weaver, AJ;Zwiers, FW;Flannigan, MD
Journal: GEOPHYS RES LETT, 31 (18): art. no.-L18211 SEP 29 2004
Addresses: Univ Victoria, Sch Earth & Ocean Sci, POB 3055, Victoria, BC V8W 3P6, Canada.
Univ Victoria, Sch Earth & Ocean Sci, Victoria, BC V8W 3P6, Canada.
Canadian Forest Serv, Sault Ste Marie, ON P6A 2E5, Canada.
Univ Victoria, Canadian Ctr Climate Modelling & Anal, Victoria, BC V8W 2Y2, Canada.

SW: Why do you think your paper is highly cited?

The effects of increases in greenhouse gas and other human climate influences have now been detected in many climate variables, but this was the first formal attribution study to identify the effect of human-induced climate change on a climate impact variable—the area burnt by forest fires in Canada. I think this has led to considerable interest among the climate impacts community. The article is also cited in many forestry papers since it demonstrates a direct impact of climate change on forests.

SW: Does it describe a new discovery, methodology, or synthesis of knowledge?

We synthesized forest fire and climate observations, along with output from a climate model, in order to demonstrate a statistically significant increase in area burnt, consistent with that expected due to climate change.

"The research shows that climate change is already having significant impacts on our environment."

SW: Would you summarize the significance of your paper in layman's terms?

Our study showed that the increase in the area burnt by forest fires in Canada is due to human-induced climate change. It was the first study to formally identify a significant impact of human-induced climate change.

SW: How did you become involved in this research and were any particular problems encountered along the way?

In 2003, I was working in Victoria, British Columbia, along with Andrew Weaver and Francis Zwiers, on the detection of human influence on climate. That year saw many large fires in southern BC, including one which burnt close to my wife's aunt's house in Kelowna, BC. This prompted us to investigate whether there was a link between forest fire changes and climate change. We found that it was important to use actual temperature observations, rather than relying on model-based

reanalyses of surface temperature, which proved to be unreliable over Canada.

SW: Where do you see your research leading in the future?

Forest fires are now included explicitly in several climate models, including the one here at the Canadian Centre for Climate Modelling and Analysis, where I now work. It should soon be possible to repeat the study using simulated area burnt directly from the model, rather than using a statistical model to predict area burnt changes from temperature. The methods applied in the paper could also be used in studies of other climate change impacts.

SW: Do you foresee any social or political implications for your research?

The research shows that climate change is already having significant impacts on our environment.

Dr. Nathan P. Gillett
Canadian Centre for Climate Modelling and Analysis
Environment Canada
Victoria, BC, Canada

Keywords: greenhouse gas, human climate influences, climate variables, forest fires in canada, human-induced climate change, the canadian centre for climate modelling and analysis.

PDF

back to top

2009 : January 2009 - Fast Moving Fronts : Nathan P. Gillett

Scientific Home | About Scientific | Site Search | Site Map