

	Future Forest Ecosystems Scientific Council Seminar Series 2012
--	--

Beyond Average - Variability and Extremes in a Changing Climate

October 23, 2012

	Dave Spittlehouse Climatologist, Competitiveness & Innovation Branch, MFNRO, Victoria, BC Ministry of Forests, Lands and Natural Resource Operations dave.spittlehouse@gov.bc.ca
---	--

Abstract

Climate change impact and vulnerability assessments are usually based on forecasts of future average conditions. However, inter-annual variability in the weather including extreme events can have a large impact on plant survival and growth. Similarly, hydrologic concerns often focus on weather conditions well away from the mean. Research under the FFESC Project on *High resolution spatial climate data for climate change research in BC* was conducted to assess the feasibility and reliability of estimates of the future climate variability at the local scale. Examples will be presented of downscaling monthly weather data from global climate model predictions. Five approaches for downscaling daily data were calibrated and tested with historic data by researchers at the Pacific Climate Impacts Consortium, University of Victoria. The calibrated equations were then used to predict a set of future climate indices (Climdex) and return periods for 20 locations in BC. Six global climate models and 3 emission scenarios were used.

As expected in a warmer climate, extreme cold events become less frequent and extreme warm events become more frequent. For example, what is currently a 25 year daily maximum temperature event becomes a 5 to 10 year event. There was also an increase in frequency precipitation extremes, e.g., currently a 25 year daily event becoming a 10 to 15 year event. There was considerable variation as a function of scenario, global climate model, downscaling method and location. Temperature metrics were more reliably estimated than precipitation.

Biography

Dave Spittlehouse is research climatologist with the Competitiveness & Innovation Branch of the BC Ministry of Forest, Lands and Natural Resource Operations. He has over 30 years experience in forest climatology, forest hydrology and climate change and is involved in a various research projects in these areas. He was the lead for the [FFESC project](#) on *High resolution spatial climate data for climate change research in BC*.



**Future Forest Ecosystems Scientific Council
Seminar Series 2012**