

## Forestry and Fires

In response to Colin Buss's comments on fires and professional forestry in the January/February issue of **BC Forest Professional**:

I agree with Colin that protection is an integral part of the profession, since the planning end of fires seems to be more of an afterthought when it should be identified up front as fire mitigation planning through fireguard planning, viewscape planning, interaction with towns and cities and other land tenures, and GIS/mapping.

The planning for fire control and fire area reductions should be part of fire training at universities and part of the province's plans. Fire planning uses a whole set of different skills than fire suppression and fire planning is hard to do when a fire is moving at 10km/hr or more! Fire planning involves the front-end harvest planning (select, partial, patch or designed harvest), and post harvest/burn tree planting and silviculture.

RPFs and RFTs should be involved in planning on a quicker schedule (emergency wood) with a quicker review and comment timeframe rather than five-year plans. Reduced harvesting around towns, cities and roads should be reviewed as all viewsapes are burnable. We should also be protecting high-quality forests from fire outbreaks (MPB wood). Forest fire planning should incorporate firebreaks along roads, opening up beautiful BC viewsapes and high fire hazard areas close to towns and cities. The priority planning areas should be the hottest areas of BC, such as the Fraser Valley, Okanagan and MPB affected areas since, with the climate warming, BC forests are getting drier.

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## Users of US Crown Fire Modelling Software Beware!

I enjoyed reading the articles on "Fire in BC" in the March/April issue of **BC Forest Professional**. In this regard, I'd like to issue a cautionary note to your readership.

First, a little history. In his 1972 publication "A Mathematical Model for Predicting Fire Spread in Wildland Fuels" (USDA Forest Service Research Paper INT-115), Richard Rothermel acknowledged that his model was not applicable to predicting the spread rate of crown fires in conifer forests. The 1988 Yellowstone fires really highlighted the need for developing a method of predicting crown fire behaviour. The result was the publication of "Predicting Behavior and Size of Crown Fires in Northern Rocky Mountains" (USDA Forest Service Research Paper INT-438), by Rothermel in 1991. In this paper, he emphasized that the method was a "first approximation."

In recent years, various US fire modelling systems like BehavePlus, NEXUS, FFE-FVS, FARSITE, FMAPlus®, and FlamMap have coupled Rothermel's surface and crown fire rate of spread models with crown fire initiation and propagation models developed by the Canadian Forest Service. These systems are now the basis for operational prediction of crown fire behavior, judging the effectiveness of fuel treatments and in simulations associated with other fire research studies in the US. They are also increasingly being used in BC.

A paper will soon be published in the **International Journal of Wildland Fire** entitled "Assessing Crown Fire Potential in Coniferous Forests of Western North America: A Critique of Current Approaches and Recent Simulation Studies." In this review article, Dr. Miguel Cruz (CSIRO Bushfire Dynamics and Applications, Australia) and I emphatically show that these modelling systems are underpredicting onset of crowning and the spread rate of active crown fires by factors of 2.5 to 3. The implications for wildland firefighter safety and community wildfire protection for example should be obvious.

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