Publication reviews hydrologic models for forest management and climate change applications

The primary objective of this review is to provide decision support for resource managers and professionals who are identifying which hydrologic models are most appropriate for addressing their forest management questions.

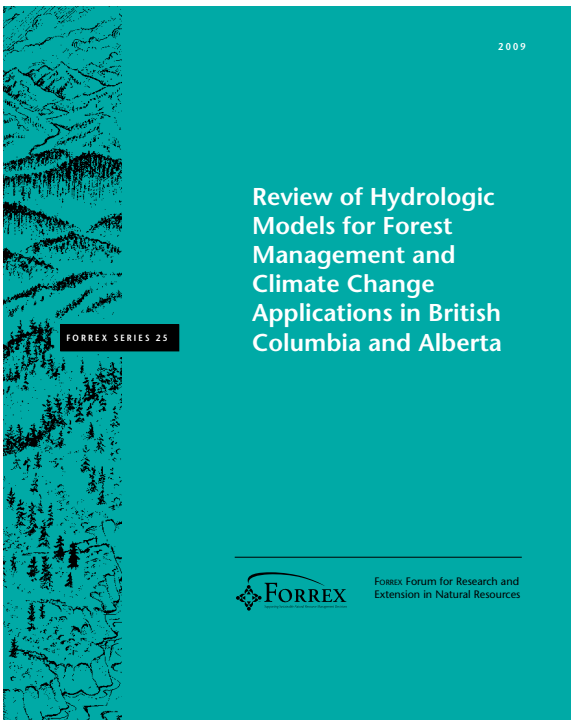
by Todd Redding, Watershed Management Extension Specialist

A new report about selecting hydrologic models for forest management and climate change applications in British Columbia and Alberta has been published by FORREX. The primary objective of this review is to provide decision support for resource managers and professionals who are identifying which hydrologic models are most appropriate for addressing their forest management questions. The review synthesizes information from user manuals, technical documentation, and publications that describe model applications, with an emphasis on results from the Pacific Northwest and from physical and climatic settings similar to those encountered in BC and Alberta.

One of the main findings of this report is that, currently, there is no "best" model for all situations. As such, the authors instead identify trade-offs between model complexity (data/time/cost required to apply the model) and model functionality (what the model is able to do) for addressing forest management questions. In doing so, nine models are identified that could potentially be used for addressing forest management and climate change questions in BC and Alberta. Each of these nine models is characterized by advantages and disadvantages for operational use, and is only applicable to particular physiographic or climatic settings. The review also makes recommendations for advancing the routine and consistent use of watershed models.

Climate change and the suitability of models for exploring its potential effects on future watershed processes are also reviewed. The barriers and challenges to using hydrologic models for answering climate change questions are discussed, and areas for model improvement are identified.

The key results of the full synthesis report have also been summarized in *Streamline*.



FORREX Series 26

Beckers, J., B. Smerdon, and M. Wilson. 2009. Review of hydrologic models for forest management and climate change applications in British Columbia and Alberta. FORREX, Kamloops, BC. FORREX Series 26. ***www.forrex.org/publications/forrexseries/fs26.pdf***

Streamline Articles

Beckers, J., B. Smerdon, T. Redding, A. Anderson, R. Pike, and A. Werner, A. 2009. Hydrologic models for forest management applications: Part 1 – Model selection. Streamline Watershed Management Bulletin 13(1): 35–44. ***www.forrex.org/publications/streamline/streamline.asp***

Beckers, J., R. Pike, A. Werner, T. Redding, B. Smerdon, and A. Anderson. 2009. Hydrologic models for forest management applications: Part 2 – Incorporating the effects of climate change. Streamline Watershed Management Bulletin 13(1): 45–54. ***www.forrex.org/publications/streamline/streamline.asp***