

ABSTRACT

A coupled hydrologic and biogeochemical model for assessing watershed responses to climate and land use

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This seminar for Oregon State University's Water Resources Graduate Program will describe the use of a spatially-distributed ecohydrological model, VELMA, for quantifying how alternative land use and climate scenarios affect tradeoffs among important ecosystem services. Specifically, VELMA applications for the EPA's Sustainable and Healthy Communities Pacific Northwest Demonstration Project will be used to illustrate how the model is being used to assess long-term effects of alternative forest management plans on timber production, water quality and quantity, greenhouse gases, carbon sequestration, sinks and sources of reactive nitrogen, and fish and wildlife habitat. The intent is to provide students with a perspective on how models are being developed and applied by the EPA Western Ecology Division to assist land managers, community planners and other decision makers concerned with providing a socially desirable and ecologically sustainable balance of ecosystem services.