INTEGRATING A GIS AND HEURISTIC MODELING TO ACHIEVE RESOURCE MANAGEMENT GOALS IN THE APPLEGATE RIVER WATERSHED IN SOUTHWESTERN OREGON

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ABSTRACT

Forest simulation models have been limited to non-spatial analysis or spatial analysis at aggregated scales. They have also traditionally neglected stochastic disturbance processes such as wind, insects, and fire events. The Applegate River Watershed Forest Simulation Project is an attempt to achieve resource management goals by developing a model which reveals the outcomes of various management strategies while incorporating the interactions between the forest, fire, insects, wind, and social desires. In addition, the landscape parameters used in the model are maintained at a very fine resolution (25 meters) during the entire process. Heuristic programming techniques are used to reduce the computational time without compromising the detailed spatial analysis.