

Collaborative Technology Development and Transfer: Keynote at the Second Forest Vegetation Simulator Conference

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Good morning!

I am delighted to have this opportunity to be with you at this conference. And thank you for asking me to speak to a topic that is of special interest to me, so special that my career in the Forest Service began in this arena and continued for 9 years. In addition, the opportunity to visit with former colleagues and friends is just as strong as my interest in this subject. I worked side by side with many of you at this conference to develop and incorporate insect and disease models into the Prognosis Model, the original Forest Vegetation Simulator (FVS). It's good to see you all again.

Why FVS?

Today, more than ever, I am convinced that simulation modeling is one of the most effective means of supporting science-based decisions. Here are some of the compelling reasons for FVS and other simulation models.

1. Simulation models *inform decisionmakers*. Decisions are only as good as the quality of the predicted effects of carrying out the decisions. If the consequences of decisions are not known at all, then any decision is as good as any other. The best tool to predict the consequences of land management decisions is a simulation model such as FVS. While models such as FVS cannot predict the effects of decisions with certainty, they do provide good indications of what to expect when decisions are carried out. With recent advances in the realistic display of model outputs, effects of decisions can be displayed in a way that decisionmakers and everyone interested in the decisions can appreciate and understand. This is of great value to the Forest Service and other land management agencies as community participation in decisionmaking is a rule in our society.

2. Models and decision support tools can be used to *document the scientific basis for land management decisions*. More and more, decisions made with respect to policies affecting livelihoods and communities across the country are being challenged and questioned on the grounds that they are not science based. A well-documented simulation

model gives decision makers the confidence that their decisions are grounded in peer-reviewed scientific principles and findings.

3. Simulation models are an excellent way to *synthesize knowledge* relevant to decisionmaking process in a form that is integrated with other analytical tools used by land managers. There is no single tool in the scientific world that carries more potential than FVS in helping natural resource managers take a peek into the future. FVS, with its extensions, allows us to synthesize what is known about the development of forest vegetation through time and its response to management actions and natural disturbances. Because of the exponential increase in the amount of information that resource analysts and decisionmakers must consider in formulating their decisions, no single person or even team could do the synthesis in their own heads. Tools such as simulation models and decision support systems must be developed as analytical aids to analysts and decisionmakers.

4. During model development, scientists have an opportunity to *discover knowledge gaps* about how forest ecosystems work, which then leads to pathways for research.

The fact that the Forest Service and other land management organizations use FVS to develop forest and project plans in all regions of the country and some parts of Canada is a strong validation of its usefulness. The successful use of FVS and other decision support tools that many of you in this room participated in were clearly demonstrated in resource management decisions at the large area plans such as the Columbia River Basin Assessment and to many Forest plans and numerous project level Environmental Impact Statements.

These are four important reasons for continuing and sustaining your work in FVS. When dollars are getting scarce for R&D, it is incumbent upon us to find new ways of getting the job done. I am convinced more than ever before that FVS is one of the most important ways to bring science to bear on informed decisionmaking.

Collaborative Research, Technology Development, and Transfer

Working on models is a great way to promote collaboration among researchers, academics, students, and practitioners as demonstrated by the kind of people present at this gathering.

In: Crookston, Nicholas L.; Havis, Robert N., comps. 2002. Second Forest Vegetation Simulator Conference; 2002 February 12–14; Fort Collins, CO. Proc. RMRS-P-25. Ogden, UT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station.

Collaboration works best when all participants have something to gain. The researchers want to see their research results put into practice and perhaps get a few additional publications; academicians are interested in having a good teaching tool and having funds to support graduate students; the students need a problem to write their theses on and a set of data that are either readily available or a sponsor ready to pay for its collection; and the practitioners want the best available knowledge and information to use as a basis for sound decisions.

Collaboration promotes ownership and pride in the product. In 1987, I presented to the Director of Forest Health Protection what I thought was a compelling case why Forest Health Protection should invest in the development and care and feeding of insect and disease models along with a plan to accomplish the tasks. I was given the go-ahead and strong encouragement to proceed with the plan. The catch is that I was not given the requested dollars to get it done. I remember thinking to myself, "Thanks for nothing, Mr. Director.

Now what?" Looking back, it's probably just as well that it happened that way because what it forced me to do was to build partnerships and coalitions with researchers, Regional Offices, and Forest staffs to go after the dollars and jointly managed resources. If the Director gave me all the required resources, the models developed would have been Methods Application Group models, with inputs from others. They would not have had the ownership from National Forests, Regions, and Research and Development that they enjoyed. And their acceptance all throughout the Forest Service may not have been as strong.

I believe the collaborative spirit displayed by all of you in this room is an outstanding example of "what can be accomplished if we do not worry about who is getting the credit," to quote one of our former presidents.

I wish you a successful conference. And I thank you for providing me with this opportunity to be with you and for your attention.

Session 1. Tools



