What is FFE-FVS?

FFE-FVS is a model linking stand development, fuel dynamics, fire behavior and fire effects. It allows comparison of mid- to long-term effects of management alternatives including harvest, mechanical fuel treatment, prescribed fire, salvage, and no action. Geographical variants use locally calibrated growth algorithms, decay parameters, fire effects relationships, and fuel modeling logic.

FFE-FVS allows users to design and simulate management alternatives at any point in the simulation. A wide range of treatments can be modeled, including precommercial and commercial thinning, salvage logging, jackpot, pile and broadcast burning, and mechanical fuel treatments.

FFE-FVS predicts fuel loads, stand structure, measures of fuel hazard including torching and crowning index, potential flame length, canopy fuel characteristics, canopy closure, mineral soil exposure, coarse woody debris, and snags over time. It produces output that can be used with the Stand Visualization System (SVS) to visualize stands.

Intended Users

- Fuel managers, silviculturists, planners

Intended Uses

- Prescription development—design integrated fire and silvicultural prescriptions.
- Design prescriptions to reduce the risk of stand replacement wildfire.
- Environmental assessment—compare alternatives for NEPA documentation.
- Planning—site specific and strategic.
- Hazard assessment—assess fire hazard and effectiveness of treatments on hazard mitigation.

Required Inputs

At a minimum, FFE-FVS requires a list of trees as input to describe a stand. Initial fuel loads can also be entered. Many stands can be modeled simultaneously.
What the Model Does
FFE-FVS provides site-specific predictions of snags, surface fuel loads, stand structure and composition, potential fire behavior, and indicators of fuel hazard over time. If a prescribed fire or wildfire is modeled, FFE-FVS predicts fire behavior, fuel consumption, tree mortality, and smoke production. FFE-FVS has been used to conduct broadscale hazard assessments, reconstruct historic forest structures, develop silvicultural and fuel treatment prescriptions, create FARSITE data layers, and support NEPA analysis.

How to Obtain the Model
FFE-FVS is available to download from the Forest Management Service Center, which also offers training for FFE-FVS: http://www.fs.fed.us/fmsc/fvs/index.php

For More Information