

## Smoke Screening Procedures: Computer Models

There are many software programs available for use in the smoke management planning process, with additional models in active development. There are models which predict emissions production, smoke dispersion, and impacts to areas sensitive to smoke. GIS-based tools are currently the focus of considerable effort.

No one model will be appropriate for all situations, or even all burns in a specific region or fuel type. It is important to research available models and determine which is best suited for your needs. Each program has advantages and limitations. *Be sure to thoroughly understand the assumptions, limitations and accuracy of any computer model before using it as a basis for fire management decisions.* Knowledge of the assumptions and limitations may allow you to adapt the prediction system to better suit your needs, or at least put the predictions in proper perspective when making your plans.

The smoke modeling field is changing so rapidly that it is difficult to give a meaningful summary here. The best place to find current models is on the Internet at federal agency fire research sites. One good place to research available models and download many of the programs is [Fire Management Tools Online](#). This site is maintained by the USDA Forest Service Rocky Mountain Research Station, Fire Sciences Lab. A good review of models available in mid-1998 is "[User Assessment of Smoke Dispersion Models for Biomass Burning](#)" by Steve Breyfogle and Sue Ferguson.

The US Environmental Protection Agency may soon be adopting a "mega-model" which will be used to predict emissions from fuel loads. This model may eventually be used for smoke-management decisions nationwide.