

National Fire Plan

Modeling Fuel Buildup Using Forest Vegetation and Fire Behavior



At the USDA Forest Service research unit in Moscow, Idaho, scientists, funded by the National Fire Plan, are studying the impact of post-wildfire fuel management treatments on fire behavior and forest vegetation development. The results of their work will become part of computer systems that model fire, which land managers rely on to monitor fuel buildup in forests.

The scientists want to learn what happens during a fire when fuel buildup, vegetation growth, and the general health of the forest interact, and whether this affects fire behavior. One area of focus is whether the structure of a forest's vegetation affects fire severity and, later, post-fire vegetation succession. If the structure of certain stands of trees results in less fire damage, then managers can create those stand structures using fuel management treatments,

The researchers sampled 299 stands of trees in Montana's Bitterroot and Lolo National Forests to observe how a fire's severity can affect the structure of a stand of trees. They also sampled stands to observe how vegetation recovers after a wildland fire, research that will continue during the 2001 field season.

In related areas of NFP research:

- The research unit is developing a component of a new fire modeling system, "Fire and Fuels Extension to the Forest Vegetation Simulator (FFE-FVS)." This model will represent a wide range of processes (fire behavior, fire effects, mortality, decomposition, erosion, re-vegetation, tree regeneration, and forest growth) and the dynamic links between them.
- The interagency Joint Fire Sciences Program (JFSP), and Forest Service Forest Inventory and Analysis (FIA) are conducting studies of erosion rates following wildland fires as erosion often occurs after a wildland fire. The study results will be linked to other fire-related topics, such as vegetation succession, hydrologic recovery, and forest health.

For additional information on the National Fire Plan, visit www.fireplan.gov