National Fire Plan

Preventing Catastrophic Floods After a Wildfire

USDA Forest Service scientists from the Southwest Forest Science Complex (SFSC) in Arizona are providing land managers with post-fire data from predictive models in order to prevent erosion and catastrophic flooding. The scientists, funded by the National Fire Plan, are creating models to help assess post-fire emergency rehabilitation conditions. The models are also used in continuing research on erosion's effects on wildland fire, vegetation treatments, hydrology, and geomorphology.

The SFSC has collaborated with the Joint Fire Sciences Program (JFSP) to link a study done on the effectiveness of contour-felled logs retaining soil in high-severity burned areas to research on post-fire watershed responses. In similar research funded by the NFP, the SFSC:

- Signed agreements to collaborate with other research institutions that will update a model named "Burn," which identifies time trends in watershed response and monitors water yield responses to wildland fire and fuels reduction treatments in the Southwest;
- Tied its research on soil's chemical or physical properties after fire or fuel treatments into a JFSP study on the microbiological effects of fire in Ponderosa pine ecosystems;
- Restored a gauging station at the Workman Creek watersheds in the Sierra Ancha Experimental Forest in order to continue monitoring water and sediment yields resulting from the Coon Creek fire in Arizona;
- In Arizona's Tonto National Forest, researchers re-measured riparian geomorphic and vegetation transects on four streams in and adjacent to the 1991 Dude Fire; and
- Prepared a manuscript for publication in 2002 on the processing of archived hydrologic data in order to assess the effects of wildfire on post-fire snowmelt hydrology.