



Fire and Fuels Research *Ecological and Environmental Fire Science*

The Forest Service investigates the interactions of fire with different components of ecosystems to help improve land management.

Background

Fire plays an essential role in many ecosystems. Forest Service scientists study interactions between fire and other ecosystem components and the impacts that fire has on each of these. Forest Service research on ecological and environmental fire science includes work on soil, water, vegetation, insects, disease, fish and wildlife species and habitat, air quality, climate variability and change, and invasive species. This knowledge informs land managers on how to better manage wildland fire and the ecosystems in which it occurs.



Researchers consult on a field experiment.
Credit: Travis Freed

Research Focus Areas:

- Effects of fire on watersheds, including erosion and fish habitat
- Use of fire to restore ecosystems
- Effects of invasive species on fire regimes
- Studies of wildland fire history and fire regimes - the historic and present patterns of fire frequency, severity, and scale
- The interrelated ecology of mountain pine beetle, lodgepole pine, and fire
- Fire's effects on carbon stored in landscapes and carbon emitted by fire
- Changing vegetation in fire-adapted ecosystems
- Fire effects on air quality, including smoke transport, regional haze, and atmospheric chemistry



The 2013 Gold Pan Fire in Montana.
Credit: USDA Forest Service

