

Background

LANDFIRE is an interagency cooperative project designed to produce a comprehensive suite of standardized, scientifically credible spatial data layers and software needed to support implementation of the National Fire Plan, Cohesive Strategy, and the Healthy Forest Restoration Act across the United States. LANDFIRE builds on the 1999 coarse-resolution fire regime condition class (Fig. 1, FRCC) by the Forest Service Missoula Fire Sciences Laboratory and develops landscape-scale vegetation, fuels, and FRCC data for application in fire resource allocation, treatment prioritization, evaluation of success of wildfire management activities, specific restoration or hazard reduction projects, and strategic wildfire management planning. Models and methods are currently being developed and refined in two large prototype areas in the western United States: central Utah and the northern Rocky Mountains (Fig. 2).

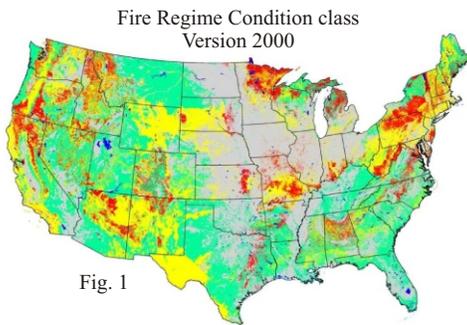


Fig. 1

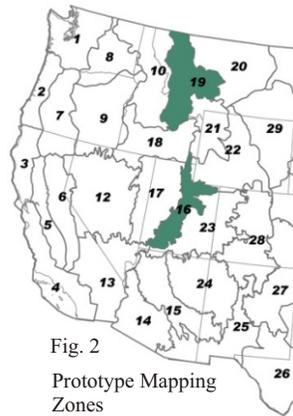


Fig. 2

Prototype Mapping Zones

Prototype Status

Mapping zone 16 has been completed on schedule for reference data compilation, image processing, biophysical mapping, and modeling of potential vegetation types (PVT), existing cover types (CT), and existing structure stage (SS). The technical team is currently refining LANDSUM, a model to generate FRCC based on a set of ecological rules (Fig. 3). The remaining deliverables for Zone 16 will be completed by June 2004.

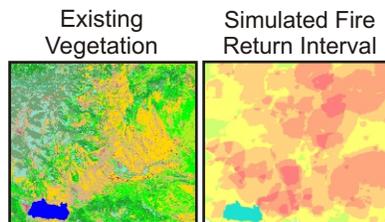


Fig. 3

Field data compilation, biophysical mapping, and modeling of potential vegetation types (PVT), existing cover types (Fig. 4, CT), and structure stage (SS) are complete for the Northern Rockies Mapping Zone. In 2003 the LANDFIRE team was able to use LANDFIRE methods to create Fuels Maps in support of the severe fire season (Fig. 5).

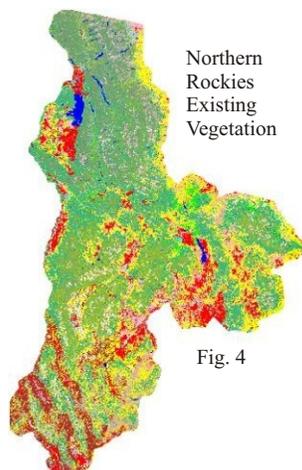


Fig. 4

National Implementation

In April the Wildland Fire Leadership Council (WFLC) endorsed national implementation of LANDFIRE and allocated funding for National Implementation. The team has developed a charter and project plan. A national project manager and USFS and DOI business leads are in place. The LANDFIRE team has an agreement with the Student Conservation Association for collecting supplemental field reference data, currently focused on rangeland vegetation in the Western U.S. For forest field data needs, the LANDFIRE team is cooperating with the U.S. Forest Service Forest Inventory and Analysis Program.



Fire Behavior Fuel Models, Roberts Fire – Glacier National Park
Fig. 5

The Interagency Fuels Group in Boise, ID, has been consulted to prioritize scheduling of mapping zones for the national implementation (Fig. 6), based on regional fire management needs and availability of satellite imagery and land cover information.



Fig. 6

Publications and Technical Presentations

A special technical session was conducted at the 2nd International Wildland Fire Ecology and Management Congress in Orlando, FL, November 16-20, 2003; seven conference papers were presented:

- Rollins *et al.* LANDFIRE: A nationally consistent and locally relevant interagency fire, fuels, and risk assessment.
- Keane *et al.* Developing the spatial programs and models needed for implementation of the LANDFIRE project.
- Holsinger *et al.* Biophysical settings – linking landscape patterns to ecophysiological processes.
- Zhu *et al.* A repeatable consistent national vegetation mapping strategy
- Huang *et al.* Preliminary LANDFIRE vegetation products in the Utah prototype
- Parsons *et al.* Predictive mapping of fire regimes
- Long *et al.* Potential management applications of the LANDFIRE products

Other LANDFIRE publications:

- Rollins, *et al.* 2004. Mapping Fuels and Fire Regimes Using Remote Sensing, Ecosystem Simulation, and Gradient Modeling. *Ecological Applications* 14(1):75-95.
- Keane, *et al.* 2002a. Predictive landscape modeling using gradient-based sampling, remote sensing, and ecosystem simulation. USDA Forest Service General Technical Report RMRS-GTR-92. Rocky Mountain Research Station, Fort Collins, Colorado, USA.

More Information

LANDFIRE deliverables and research results are distributed via Landfire.gov. Further information about the project may be obtained by contacting Dr. Matthew Rollins (mrollins@fs.fed.us) or Dr. Zhiliang Zhu (zhu@usgs.gov).