



## Background

LANDFIRE is a 5-year, multi-partner wildland fire, ecosystem, and fuel mapping project. This project will generate consistent, comprehensive, landscape-scale maps and data describing vegetation, fire, and fuel characteristics across the United States. These maps are produced at scales fine enough to assist in prioritizing and planning specific hazardous fuel reduction and ecosystem restoration projects. The consistency of LANDFIRE methods ensures that data will be nationally relevant, while the 30-meter grid resolution assures that data can be locally applicable. LANDFIRE meets agency and partner needs for data to support landscape fire management planning, prioritization of fuel treatments, collaboration, community and firefighter protection, and effective resource allocation.

The LANDFIRE technical team has just completed the development and refinement of methods and models through the prototype effort and is currently embarking on national implementation of the prototype methodology (see details below).

## Prototype

The LANDFIRE Prototype was a three-year effort, funded by the U.S. Department of Agriculture Forest Service (USFS) and Department of Interior (DOI), to develop the methods, tools, and protocols for producing comprehensive digital maps of current vegetation composition and condition, wildland fuel, historical fire regimes, and fire regime condition class (FRCC) for the entire United States at a 30-m resolution. These methods were tested on a large study area in Utah, revised based on lessons learned, and these revised methods were then implemented on another large study area in Idaho and Montana. These methods are currently being used to map vegetation, wildland fuel, and fire regimes for the entire U.S. in the National LANDFIRE Project.



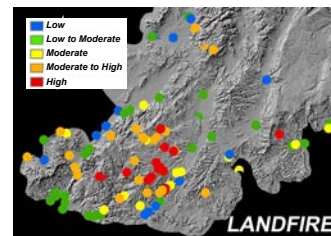
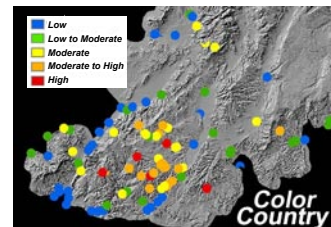
LANDFIRE Prototype map zones

Various databases, computer models, and GIS layers were developed for the LANDFIRE Prototype Project to demonstrate that the methods and protocols can be applied nationwide. The 24 core LANDFIRE spatial data layers developed for each study area comprise a comprehensive set of products that can be applied for broad-scale prioritization of land and wildland fire management projects or in project-level planning. Prototype deliverables are available via the National Map ([www.landfire.gov/Products.html](http://www.landfire.gov/Products.html)), and a report is in press describing all the complex tasks performed to create the various LANDFIRE products.

## Prototype Testing

LANDFIRE is a data and mapping project which crosses administrative boundaries and, as such, is viewed as a tool which may augment large-scale fuel planning. Among other applications,

LANDFIRE products can be used in conjunction with local data and knowledge to highlight areas of concern. In a demonstration conducted in southwest Utah, we applied LANDFIRE prototype data layers in a hazard assessment of “urban landscapes” in the Color Country fire management area during March of 2005. We discovered that LANDFIRE data can be used in conjunction with local planning to validate or help inform decisions made at finer scales. The LANDFIRE data layers revealed a robust ability to rank communities-at-risk when compared with local planning efforts. Specifically, there was a 73% mean similarity between the LANDFIRE and Color Country Fuels Committee rankings.



Hazard assessment comparison

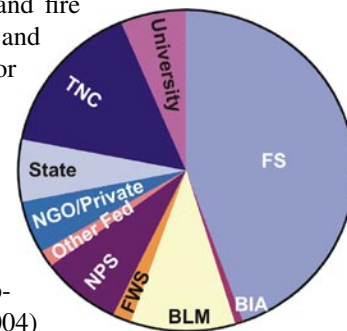
The findings from this study highlight some of the ways LANDFIRE may benefit agency efforts. First, economies of scale are possible when assessments are conducted over large areas; the total cost of the LANDFIRE Color Country analysis was less than \$3,000. Next, the application of consistent data enables comparisons and prioritization among multiple ownerships. Finally, in geographic areas where local data are lacking, LANDFIRE may serve as the key foundation for fuel and resource planning.

## National Rapid Assessment

The Rapid Assessment is a major milestone within LANDFIRE that will develop maps of potential natural vegetation groups (PNVGs), historical fire regimes, and fire regime condition class (FRCC), and successional models of PNVGs for the conterminous U.S. The map products, which are heavily based on expert opinion, serve as interim products until LANDFIRE products become available.

The Rapid Assessment has recently completed the modeling and mapping workshops (12 since June of 2004) for the conterminous U.S. The Nature Conservancy (TNC) and USDA Forest Service Missoula Fire Science Laboratory LANDFIRE teams conducted these workshops to create Vegetation Dynamics Development Tool succession models and mapping rules for all PNVGs across the conterminous U.S.

This effort, led by TNC, has engaged over 280 land managers and scientists from federal, state, private, and university organizations from over 40 states. Over 250 successional models have been completed to date and are currently undergoing a review process that engages additional land managers and scientists.



Workshop participants



*(National Rapid Assessment Continued)* Further, TNC developed a database called Model Tracker, which documents all assumptions, descriptions, literature citations, and other pertinent information that assists in the successful development and implementation of these models in the LANDFIRE process.

## Executive Oversight Committee

The LANDFIRE Executive Oversight Committee (EOC) has been formed. It is comprised of executive level managers that represent the agencies and entities that will benefit from the products developed by the LANDFIRE Project team. EOC members communicate with their agency directors and the Wildland Fire Leadership Council, which is the LANDFIRE Project's sponsor. The EOC assists in high-level decision-making, reviews and approves project plans, and supports coordination and collaboration within and between the sponsoring agencies. The full range of the committee's activities is specified in the LANDFIRE Executive Charter.

The EOC has met twice. In the first meeting, overviews of the project background, deliverables, and business management practices were presented to help EOC members develop a common level of understanding. Members also determined the committee's role, how future meetings would be conducted, and reporting requirements. In the second meeting, the EOC reviewed and discussed preliminary proposals for the transition from LANDFIRE as a project to a program with on-going operations and maintenance. Overall, the committee is engaged in fulfilling its role, and the project team looks forward to having the benefit of their counsel.

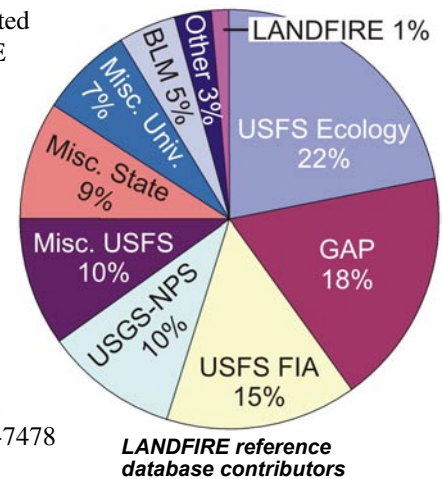
## Reference Database

The LANDFIRE reference database is a "clearinghouse" of field-collected vegetation and fuel information that is used to develop and evaluate the project's ecosystem and fuel maps. The LANDFIRE reference database currently includes over 230,000 geo-referenced, plot- or transect-based, ground-truth records that fall within the 24 priority mapping zones of the western U.S. The sources of these data include the USFS Forest Inventory and Analysis (FIA) and Ecology Programs, the USGS/BRD/GAP Analysis Program, the USGS-NPS Vegetation Mapping Program, state natural heritage programs, university research programs, fuel and vegetation inventories on BLM and BIA lands, and the U.S. Army's Integrated Training Area Management Program. Additional data were collected specifically for LANDFIRE by field crews from University of Utah and the Student Conservation Association.

Data acquisition for mapping zones 16, 23, 12, 17, 24 and 28 is now complete, and we're currently obtaining data for the Columbia Plateau, Northern Rocky Mountains, and the Southwestern deserts. By the end of calendar year 2005, we will have acquired all data necessary to populate the reference database for the western U.S.

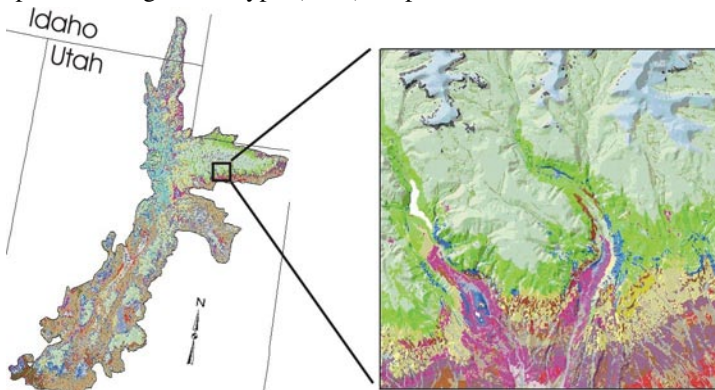
The quest for field-collected data to support LANDFIRE continues. Examples of data that meet our needs are listed in the LANDFIRE Activities section of [www.landfire.gov](http://www.landfire.gov).

If you can contribute or connect us to existing data that suit our needs, please contact Karen Short, the national LANDFIRE reference-data administrator, at (406) 549-7478 or [kshort@landfire.org](mailto:kshort@landfire.org).



## Biophysical Settings Map

A biophysical settings (BpS) map was recently created for Mapping Zone 16, making it the first product to be completed for LANDFIRE's national implementation. This map replaces the potential vegetation type (PVT) map created in the LANDFIRE



Biophysical settings map for Mapping Zone 16

Prototype. It is used in conjunction with satellite imagery to map existing vegetation types (EVTs) and will also be used with slight modifications for fuel mapping and departure calculations such as fire regime condition class (FRCC). The BpS map is also used in the simulation of historical fire regimes using LANDSUM to link the ecological process of succession and disturbance to the landscape. The BpS map was created using data from over 6,000 field plots, biophysical gradient layers developed through the WX-BGC model, and classification trees created with See5 data mining software. Map units fit within NatureServe's Ecological Systems classification – a nationally consistent set of mid-scale ecological units.

## More Information

Please visit the various sections of [www.landfire.gov](http://www.landfire.gov) for project details and LANDFIRE products (via the National Map) or communicate with the LANDFIRE team through the "Contact Us" link on the website's homepage.