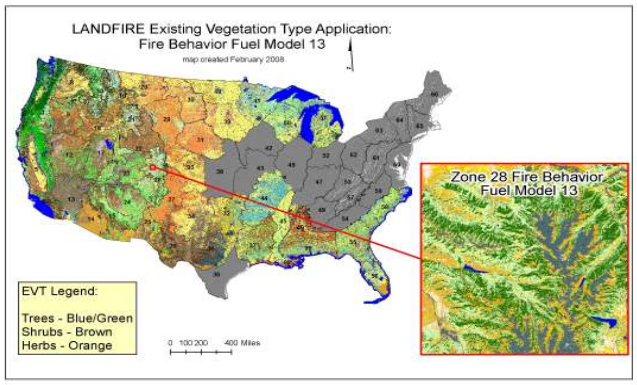
# LANDFIRE-Fuels and Vegetation

**FY 2009 President's Budget**

## ISSUES

The Landscape Fire and Resource Management Planning Project (LANDFIRE) is creating the first nationally consistent description of wildland fuels and vegetation. Managers use this data to predict the impacts of vegetation management on fire behavior, to support tactical and strategic fire planning, and to support resource management. To remain viable this data needs to be updated periodically to reflect major disturbances such as wildfires, insect epidemics, and hurricanes, and to apply evolving science and technology.




*LANDFIRE Project completion as of February 2008. The Eastern U.S. will be completed in September 2008. Alaska and Hawaii will be completed in September 2009.*

## IMPORTANCE

LANDFIRE produces over 100 fuel, vegetation, and site productivity layers of geospatial data for all fifty states. These data are inputs to a suite of fire behavior and effects models managers use to evaluate fire suppression and restoration activities. In 2007, this data was used to support tactical and strategic analyses of fire behavior and risks on over 150 large wildfires resulting in significant suppression cost reductions. LANDFIRE data is used to design ecologically sound fuel treatment and restoration projects. The data is also being used to support a variety of resource analyses (e.g., bighorn sheep and grizzly bear habitat evaluations).

## FUTURE PLANS

The LANDFIRE Research &Development team has identified scientific gaps in our ability to accurately predict fire-critical vegetation properties. Improved methods are needed to close these gaps. Also, it is critical to update this data to keep it current. New methods need to be developed to incorporate emerging science and technology. New models need to be developed to extend application of LANDFIRE data to other resource issues, such as post-fire erosion, hydrology, and climate change.

RMRS proposes to assign scientists in Montana to conduct coordinated research to improve applications, develop economical and accurate methods for updating LANDFIRE; integrate LANDFIRE into land and resource management planning; and support climate change science. Specifically, scientists will collaborate with agency, university, and NGO scientists on remote sensing of wildland fuels, climate-vegetation-fire interactions, and landscape change detection and decision science.

## EXPECTED OUTCOMES

This research will result in new methods that use satellite and airborne sensors to define critical vegetation characteristics affecting fire behavior, and how these are affected by natural and human-caused disturbances (e.g., storms, wildfires, fragmentation, etc.). The research will provide improved methods for updating and maintaining LANDFIRE data and will improve their utility by coupling vegetation dynamics and fire behavior to smoke production, erosion, hydrology, and exotic-invasive decision support tools.

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