

## LANDFIRE Data Product Applications

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### Topic & Title of Project **Use of LANDFIRE Data Products on Fire Incidents in 2007**

#### Background

Simulation and analysis models provide information for wildland fire incident commanders and area managers to use in decision making. These models require data. While data exist for many fire incidents, data formats vary by locale, they often require substantive processing, and there has not been an extensive mapped coverage of all land ownerships, especially outside of federal or state lands. The LANDFIRE Project, which is mapping all lands across the United States, is providing the necessary data as inputs to wildland fire models.

During the 2007 fire season, LANDFIRE data products were used on over 150 fires to assist managers using the Wildland Fire Decision Support System (WFDSS). The data are inputs to the Fire Spread Probability (FSPro) models. The fire probability outputs are then analyzed along with the Rapid Assessment of Values-at-Risk (RAVAR) models' data on structures, infrastructure, and identified natural resource management priorities. The information generated from these models allows fire incident managers to make more informed decisions. LANDFIRE data are unique and valuable because they are consistent across administrative boundaries and land ownerships. In many cases, LANDFIRE data were supplemented with more locally relevant data and modified to reflect current conditions due to changes on the landscape such as drought, previous fires, or vegetation treatments. However, having the consistent coverage for all land areas allowed fire behavior analysts to make adjustments more rapidly than would have been possible without the LANDFIRE geospatial products. Details on how the data were used on a few incidents are provided below.

#### Use on Wildland Fire Incidents

On the Tin Cup Fire near Darby Montana in western Montana, LANDFIRE data were used in FSPro to provide fire spread probabilities and were integrated with RAVAR data to identify resource values that could be affected given the likelihood of fire spread. This information helped FS Region 1 Area Command evaluate values at risk and prioritize efforts, especially with the Black Cat fire adjacent to the city of Missoula and Jocko Lakes fire adjacent to the town of Seely Lake. This information improved public communication and was used to provide a briefing to the Governor of Montana.

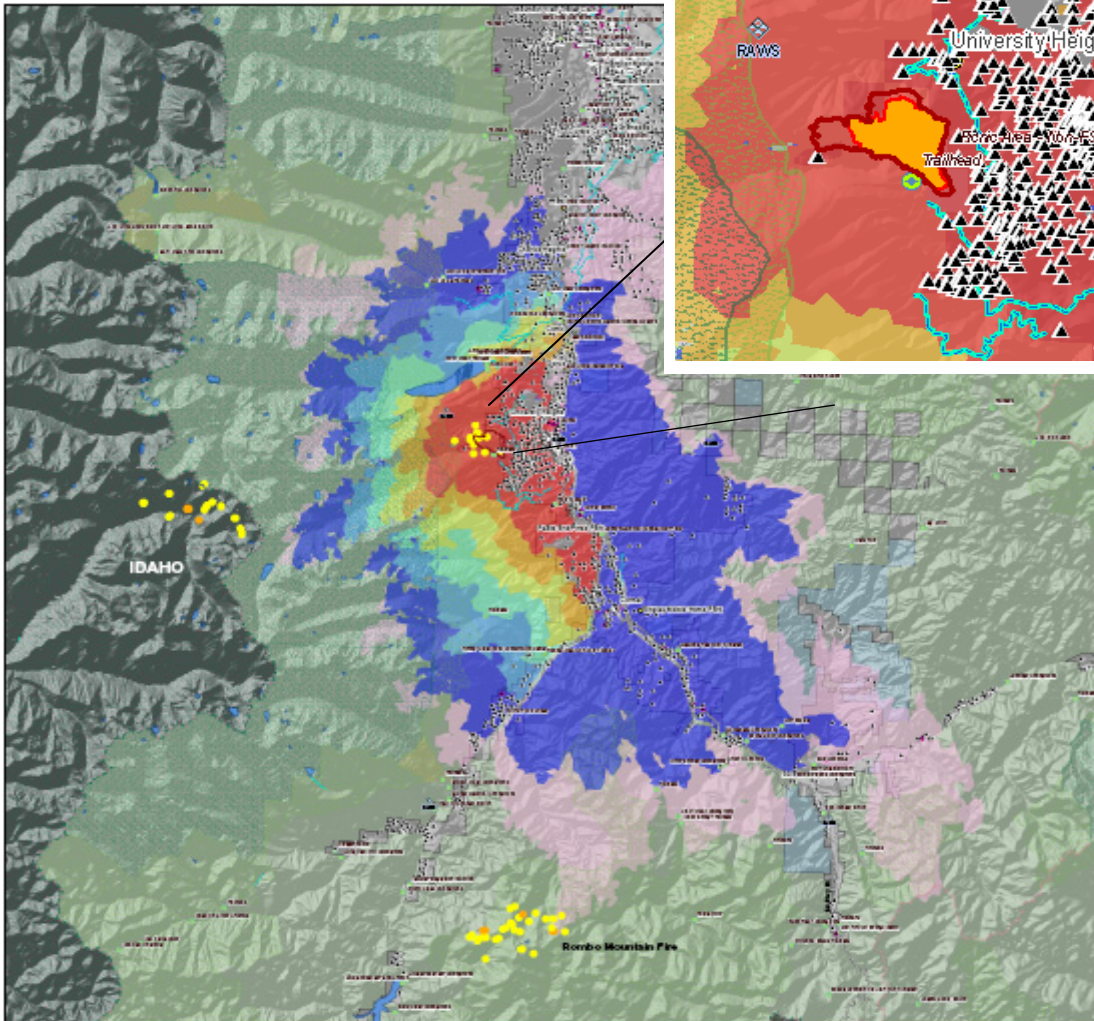
Based on LANDFIRE data from central Idaho, WFDSS provided 30-day fire spread projections across an extensive land area including four national forests. Fire managers developed a Wildland Fire Situation Analysis (WFSA) to help coordinate fire strategies for the entire area. The scope of the situation indicated that a more comprehensive strategy was needed, which triggered decision-making involving the Chief of the Forest Service. A WFSA of this scale had not been produced before in the continental U.S. and would have been impossible to create without the consistent coverage provided by LANDFIRE data.

#### Key Points

- Data and analysis were used across large areas and provided coverage in areas with no other data sources.
- LANDFIRE data were used as starting point, which increased speed and efficiency in obtaining final results.
- LANDFIRE data were combined with locally relevant or other assessment data; LANDFIRE data were also modified due to changes on the landscape.
- LANDFIRE data were used because they are consistent across multiple jurisdictions and/or administrative boundaries.
- These data provided useful management information used for setting priorities, focusing investments, improving communication, and allowing for faster, more informed, more confident management decisions.

*See next page for associated graphic...*





**Tin Cup Fire near Darby Montana, August 9, 2007 -- Rapid Assessment of Values at Risk (RAVAR) & Fire Spread Probabilities (FSPro) outputs from WFDSS.**

The FSPro Analysis shows percent probabilities that this fire would spread across the landscape under given fuels, topography, and weather data. Spread probabilities are shown in red, orange, yellow, green, blue, and pink polygons – see legend. Additionally shown are RAVAR values-at-risk; structures are shown in black triangles, and aqueducts are shown in blue-green lines. Together, these analyses helped managers determine planning and suppression responses.

