



# GREAT BASIN FIRE SCIENCE DELIVERY

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## *Webinar Brief for Resource Managers*

Great Basin Fire Science Delivery | 1664 N. Virginia St./MS 0186, Reno, NV 89557 | 775-784-1107 | [emb@cabnr.unr.edu](mailto:emb@cabnr.unr.edu)

## LANDFIRE: Data for Land Management

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*By Kori Blankenship, Fire Ecologist, The Nature Conservancy & Louis Provencher, Director of Conservation Ecology, The Nature Conservancy*

### **Project Summary:**

The Landscape Fire and Resource Management Planning Tools Program— LANDFIRE – is an innovative project designed to create and periodically update comprehensive vegetation, fire and fuel characteristics data using a consistent process for the entire United States. Additionally, LANDFIRE developed quantitative vegetation models and comprehensive ecological descriptions for all major vegetation systems in the US and a suite of GIS tools that will help fire and resource managers utilize the products effectively.

### **Abstract:**

LANDFIRE is a nationwide, multi-partner program designed to map and model vegetation, fire regimes and fuel characteristics for the entire United States. LANDFIRE products include a suite of more than 20 geospatial layers and vegetation dynamics models describing reference conditions for every ecological system mapped in the country. The comprehensive nature of the products and the consistent methods used to produce them make LANDFIRE datasets valuable for land management, conservation planning and treatment prioritization activities. The LANDFIRE spatial data products are updated biannually. The next update, scheduled for delivery this year, will incorporate succession and disturbance processes to bring the products current as of circa 2010. LANDFIRE products were designed to work on national, regional and large sub-regional landscapes (such as fire management units) but tools and guidance are available to help users review and modify the data as needed for finer scale applications.

### **Management Implications**

- LANDFIRE produces and periodically updates wall-to-wall spatial data and vegetation dynamics models for the U.S. All program data are available for free online.
- Off-the-shelf LANDFIRE products are generally employed best for broad-scale assessments but can be reviewed and modified as needed for finer-scale applications.
- LANDFIRE data have been used in conjunction with local data to support ecologically appropriate and economically sound land management planning in the Great Basin.

LANDFIRE products have been used across the U.S. to support land management and planning efforts. Landscape Conservation Forecasting™ (LCF), a planning method that relies on LANDFIRE concepts and local and/or LANDFIRE data, has been used successfully on several landscapes in the Great Basin. Louis Provencher, Director of Science at The Nature Conservancy's Nevada Chapter, along with former Conservancy colleagues Greg Low and Susan Abele developed LCF, which uses remote sensing, predictive ecological models, and cost-benefit assessments to develop a landscape-scale conservation action plan. The methods provide quantitative measurements of current and predicted future ecological conditions and evaluate the benefits and costs of alternative management strategies.

This webinar will:

- Provide an overview of the LANDFIRE program and the data it produces;
- Describe the process for updating LANDFIRE spatial data with specific emphasis on mapping changes that affect the Great Basin;
- Discuss the intended scale of LANDFIRE products and how they can be reviewed and modified for local application;
- Demonstrate the use of LANDFIRE and local data to support ecologically appropriate and economically sound land management planning through the LCF process.

#### **Most Relevant References:**

##### ABOUT LANDFIRE:

- Reeves, Matthew C., Kevin C. Ryan, Matthew G. Rollins, Thomas G. Thompson. 2009. **Spatial fuel data products of the LANDFIRE Project**. *International Journal of Wildland Fire* 18(3) 250–267.
- Rollins, Matthew G. **LANDFIRE: a nationally consistent vegetation, wildland fire, and fuel assessment**. *International Journal of Wildland Fire (IAWF 2009)*, 18: 235-249
- Vogelmann, James E., Jay R. Kost, Brian Tolk, Stephen Howard, Karen Short, Xuexia Chen, Chengquan Huang, Kari Pabst and Matthew Rollins. **Landscape Change for LANDFIRE Using Multi-Temporal Satellite Imagery and Ancillary Data**. In: *Selected Topics in Applied Earth observations and Remote Sensing*. 4:2. June 2011.

##### GREAT BASIN APPLICATIONS:

- Connelly, J.W., C.A. Hagen and M.A. Schroeder. 2011. Characteristics and dynamics of Greater Sage-Grouse populations. In S. T. Knick and J. W. Connelly (eds). **Greater Sage-Grouse: Ecology and conservation of a landscape species and its habitats**. *Studies in Avian Biology Series* (vol. 38), University of California Press, Berkeley, CA. **LANDFIRE Summary**.
- Low, Greg, Louis Provencher and Susan Abele. 2010. **Enhanced conservation action planning: Assessing landscape condition and predicting benefits of conservation strategies**. *Journal of Conservation Planning*, Vol 6 (2010) 36-60.

- Provencher, Louis, Kori Blankenship, Jim Smith, Jeff Campbell and Mike Polly. **Comparing Locally Derived and LANDFIRE Geo-Layers in the Great Basin, USA.** *Fire Ecology*, Vol 5, No. 2, 2009.
- Provencher, Louis, Jeff Campbell and Jan Nachlinger. 2008. **Implementation of mid-scale fire regime condition class mapping at Mt. Grant, Nevada.** *International Journal of Wildland Fire* 2008 (17), 390-406.
- Xuexia, C., S. Liub, Z. Zhu, J. Vogelmann, Z. Lia and D. Ohlen. 2011. **Estimating aboveground forest biomass carbon and fire consumption in the U.S. Utah High Plateaus using data from the Forest Inventory and Analysis Program, Landsat, and LANDFIRE.** *Ecological Indicators* 11(1): 140-148.

#### WEBSITES:

- LANDFIRE  
[www.landfire.gov](http://www.landfire.gov)
- LANDFIRE on Conservation Gateway  
<http://www.conservationgateway.org/ConservationPractices/FireLandscapes/LANDFIRE/Pages/landfire.aspx>
- LANDFIRE Videos  
<http://www.youtube.com/user/LANDFIREvideo?feature=mhee>
- LANDFIRE Twitter  
[https://twitter.com/nature\\_LANDFIRE](https://twitter.com/nature_LANDFIRE)

#### CONTACT INFORMATION:

Kori Blankenship  
[kblankenship@tnc.org](mailto:kblankenship@tnc.org)

Louis Provencher  
[lprovencher@tnc.org](mailto:lprovencher@tnc.org)