

LANDFIRE 2008 “Refresh”

LANDFIRE has completed and delivered group “A” products (Tables 1 & 2) for all 50 States (Fig. 1). LANDFIRE 2008 Refresh focused on vegetation changes producing a comprehensive update to data layers developed during the original LANDFIRE 2001 project (version LF_1.0.0). LANDFIRE 2001 National project was concluded in December 2009. LANDFIRE 2008 Refresh includes the Continental United States (CONUS), Alaska and Hawaii, incorporating two versions, (1). LANDFIRE 2007 Rapid Refresh update in 13 Western states (version LF_1.0.1) concluded in June 2008, and (2). Improvements updates (LF_1.0.2).

The LANDFIRE Refresh project incorporated user feedback and new data focusing on vegetation changes producing two data sets.

1. LANDFIRE 2001 Refresh (LF_1.0.5) was produced to enhance LANDFIRE layers to allow for comparisons between the 2001 Landsat based image data products and the 2008 updates; and,

2. LANDFIRE Refresh 2008 (LF_1.1.0), was produced to update 1999 through 2008 vegetation changes / disturbances for the full suite of LANDFIRE data products.

LANDFIRE 2008 Refresh products were released on an incremental delivery schedule, sequenced by U.S. geographic regions (Figure 1) and were further divided given a number of factors. Some of these factors included an unexpected delay in starting contractual scientific and technical services and additional needs identified by executive leadership. A few of these factors were:

- Fire Program Analysis (FPA) need to have advanced delivery of LANDFIRE data products,

- The need for advanced access of Refresh 2001 (LF_1.0.5) data for the West Wide Wildfire Risk Assessment (WWA).

As a result, LANDFIRE partitioned data products into groups to facilitate FPA and WWA data needs, prompting the need for a staggered release of grouped products by geographic region due to scope and cost considerations. Tables 1 and 2 outline the delivery and division of data products into groups A and B.

The following table (Table 1) provides the fiscal year quarter dates for the scheduled delivery of LANDFIRE Refresh (LF_1.0.5 and LF_1.1.0) data products by geographic area.

Geographic Area	Group A	Group B
	Schedule	Schedule
Southeast	4th Quarter 2010	4th Quarter 2010
Pacific Northwest	1st Quarter 2011	3rd Quarter 2011
Pacific Southwest	2nd Quarter 2011	3rd Quarter 2011
Southwest	2nd Quarter 2011	3rd Quarter 2011
North Central	2nd Quarter 2011	3rd Quarter 2011
South Central	3rd Quarter 2011	3rd Quarter 2011
Northeast	3rd Quarter 2011	3rd Quarter 2011
Alaska and Hawaii	3rd Quarter 2011	4th Quarter 2011

Table 1. LANDFIRE 2008 Refresh staggered product delivery schedule with the data delivered at the “end” of the designated quarter of the fiscal year. Group “A” data products (Table 2) have been completed. Data products are available on the LANDFIRE Data Distribution Site.

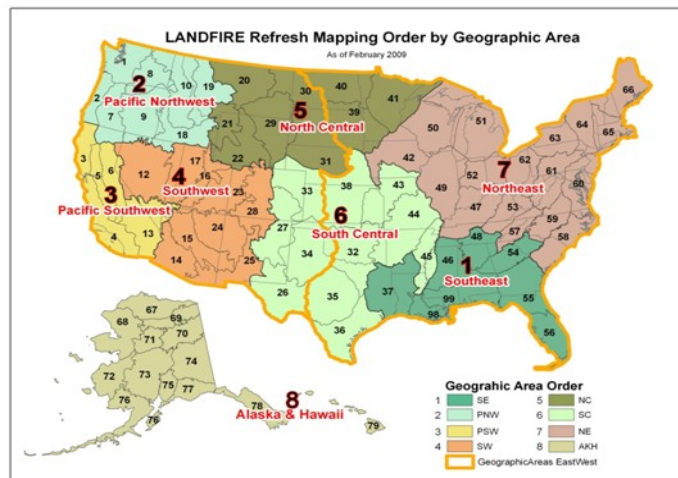
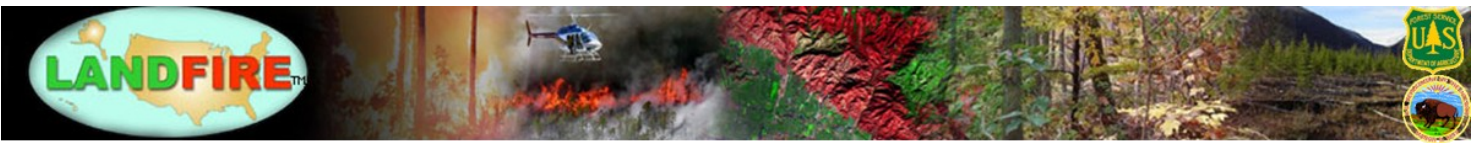


Figure 1. LANDFIRE 2008 Refresh Geographic Area Delivery



Group A	Group B
Fire Behavior Fuel Model 13 and Fire Behavior Fuel Model 40 (FBFM 13 and 40)	Biophysical Settings (BpS)
Canopy Bulk Density (CBD)	Fire Regime Condition Class (FRCC)
Canopy Base Height (CBH)	FRCC Departure Index
Forest Canopy Cover (CC)	Fire Regime Groups
Forest Canopy Height (CH)	Mean Fire Return Interval
Fuel Characteristic Classification System (FCCS)	Percent Low-severity Fire
Existing Vegetation Type (EVT)	Percent Mixed-severity Fire
Existing Vegetation Cover (EVC)	Percent Replacement-severity Fire
Existing Vegetation Height (EVH)	Fuel Loading Models (FLM)

Table 2. LANDFIRE Refresh division of data products for delivery by geographic area as listed in Table 1.

Web-enabled Landsat Data (WELD)

The LANDFIRE 2008 Refresh effort for Alaska has incorporated the analysis of data from the WELD project. This collaboration between the United States Geological Survey (USGS) Earth Resources Observation and Science (EROS) Center and the South Dakota State University Geographic Information Science Center of Excellence now provides a new level of “science-quality” data processed to a level suited for land cover analysis at a continental-scale. The WELD project provided composites of Landsat 7 Enhanced Thematic Mapper Plus (ETM+) data as weekly, monthly, seasonal and annual products for the conterminous United States. A maximum Normalized Differenced Vegetation Index (NDVI) composite of yearly image data sets from 1999 – 2008 were used in the LANDFIRE 2008 Refresh update. The compositing processes provided a data set of the most authentic ground representation to date given the current data available for Alaska and for that time sequence. This temporal compositing eliminates common pixel contamination from clouds, various atmospheric conditions, snow, etc., all of which are problematic issues with satellite acquisitions at northern latitudes. This composite provided valuable information reducing confusion and between divisions of the landscape covered in vegetation and non-vegetation land cover types, thereby, facilitating improvements with land cover classes depicting water, snow, ice, barren and sparsely vegetated landscapes. Similar to the steps taken in the

conterminous states as part of LANDFIRE Improvements (LF_1.0.2), the WELD data were used to improve LANDFIRE data layers in Alaska that may have had issues with land cover classes as produced in LANDFIRE 2001 National (LF_1.0.0) data products.

Visit the WELD web page for further info concerning that project: <http://landsat.usgs.gov/WELD.php>

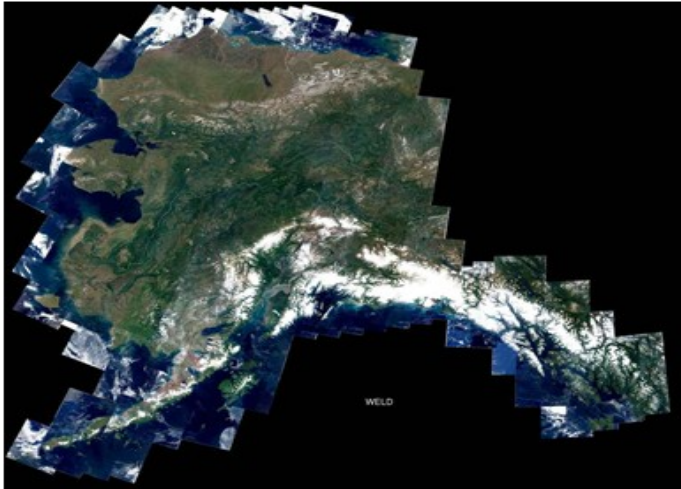


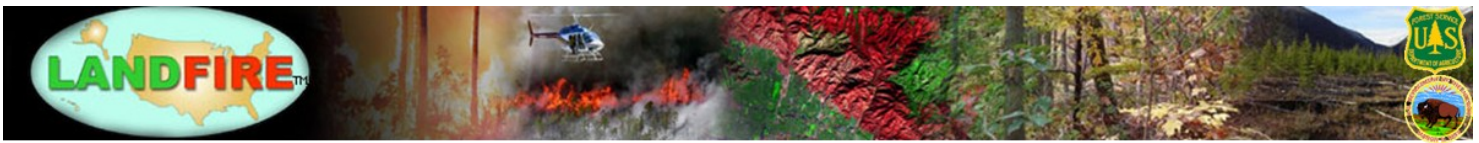
Figure 2. Image of Landsat composite data for Alaska as part of the new Web-enabled Landsat Data (WELD).

Futures Forum

A LANDFIRE Futures Forum was held in Park City, Utah, in November of 2010. The forum was designed as a venue for agency leadership to build consensus on a long-term vision for the LANDFIRE program. Specifically the leadership was asked to consider, "How much emphasis should the LANDFIRE program place on serving stakeholders outside of the fire management community?" Leadership directed the LF program to pursue two tracks:

- (1) Draft a new charter under the WFLC that re-emphasizes LANDFIRE’s primary commitment to the wildfire community while being open to other stakeholders; and,
- (2) Participate, as a member, of a larger effort to craft a vision for a National Landscape Conservation Information Framework. The framework would feature coordinated data and harmonized applications and models.

A second futures forum was originally planned for the spring of 2011. That forum was intended to focus on a technical and



logistical response to the vision outlined in the first forum. Because of the two track nature of the vision outlined by agency leadership in Park City, a second forum in the spring of 2011 was premature. Therefore a futures forum addressing technical matters will be delayed until a charter with oversight direction and potentially a National Landscape Conservation Information Framework has evolved to the point of identifying and prioritizing technical challenges.

Governance and Re-Charter

The previous LANDFIRE charter was closed in the spring of 2010, with a Final Report to the LANDFIRE Executive Oversight Committee (EOC), noting that the LANDFIRE Charter dated May 2004 was fulfilled and deliverables accepted. As a result, the LANDFIRE Business Leads were directed to prepare a new program charter for review and approval by the Wildland Fire Leadership Council (WFLC).

In March 2011, LANDFIRE leadership met with the Wildland Fire Leadership Council (WFLC), the original sponsors of LANDFIRE, to discuss future LANDFIRE direction. Information presented included:

- Completion of LANDFIRE 2001 National data products, applications of the data, and recommendations from the General Management Evaluation (GME), and
- Discussion on re-chartering the LANDFIRE program, information from the Leadership Futures Forum, and a notional National Landscape Conservation Information Framework.

At the March 2011 WFLC meeting, Tom Harbour (Forest Service, Fire and Aviation Management) and Kirk Rowdabaugh (Department of the Interior, Office of Wildland Fire Coordination) presented a preliminary draft charter for discussion.

WFLC is reviewing a draft charter which continues support for landscape-scale land management vegetation, fire, and fuels mapping for future decision support and applications.

The current draft charter reiterates the fundamental obligation of the LANDFIRE program to provide data to fire managers and the wildland fire community with continual improvement of data and processes. LANDFIRE data are also designed and relevant to other program uses and LANDFIRE expects to further serve the needs of these stakeholders in the future.

Data Draw / Contribution

LANDFIRE is once again looking to collect or receive local data to assist in improving and enhancing the suite of LANDFIRE data products. In the past, LANDFIRE conducted individual data calls with varying deadlines for different regions across the country. This approach for many was difficult to follow. LANDFIRE is working to evolve the rolling data call to a yearly data draw, where data may be submitted at times convenient to the contributor. LANDFIRE uses recent natural disturbances and management treatments to update layers in areas where vegetation and fuel have changed. Change is a constant factor across the dynamic landscapes of the United States. A key component of capturing changing conditions includes new field data (point and polygon) to provide information on the current state of landscape vegetation and locations where management or natural ecological disturbances have occurred. As such, LANDFIRE is responding to this continual change through developing plans and processes for the next LANDFIRE data update. As the plans are finalized, information will be provided through our monthly user conference calls, e-mail contact or notification through your organization. Stay tuned for more information in a soon to be released LANDFIRE Data Draw / Data Contribution letter.

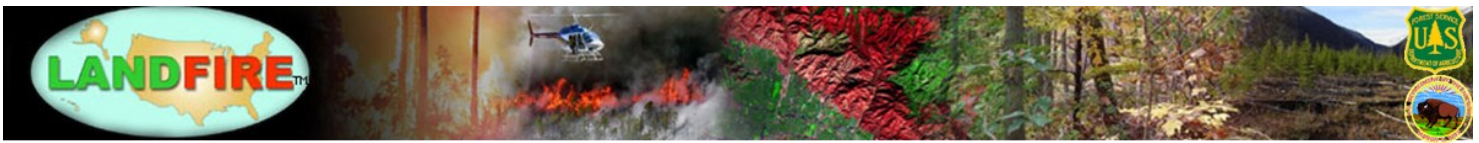
Communications and Outreach

The LANDFIRE Team continues to reach out and inform the user community in a myriad of ways, including presentations and posters at conferences, brochures and web pages. The following is a list of conferences and meetings recently attended or those that are planned to attend in the near term:

Recent Conferences and Meetings

- LANDFIRE Leadership Future's Forum, November, 2010.
- LANDFIRE presentation "Supporting Conservation Using LANDFIRE Products," at The Nature Conservancy (TNC) Central Division Science and Stewardship Meeting.
- LANDFIRE poster displayed at the Region 8 Prescribed Fire Workshop.
- LANDFIRE presentation "Don't Let the Name Fool You: LANDFIRE and Freshwater," TNC International Freshwater Conference. April, 2011.
- LANDFIRE poster displayed at the Longleaf Pine GIS Workshop.





- *Simulating Treatment Effects in Pine-Oak Forests of the Ouachita Mountains*, Fire and Eastern Oaks Conference. May, 2011. [Poster]
- *Improved Data and Tools Support Large Area Analyses*, ESRI Southeast User Group Meeting, May, 2011. [Presentation]
- *The Role of Vegetation Modeling in LANDFIRE*, State and Transition Modeling Workshop, June, 2011 [Presentation]
- *Modeling on the Grand Scale*, State and Transition Modeling Workshop. June, 2011. [Presentation]
- *A Process for Comparing Alternative Management Strategies*, North American Forest Ecology Workshop, June, 2011. [Poster]
- *The LANDFIRE Program: Who, What, Where, Why and When*, InterTribal Timber Council National Meeting, June, 2011. [Presentation]

Visit www.conservationgateway.org/topic/landfire to view and download unique information, how the products have been used by many partners, and to view and download a variety of posters, brochures, case studies and other reports.

Social Media

Get on the Twitter bandwagon and learn about The LANDFIRE Program, the LANDFIRE partners, and applications---go to twitter.com/nature_LANDFIRE#

Technology Transfer & Training Updates

The National Interagency Fuels, Fire, and Vegetation Technology Transfer (NIFTT) team develops software tools and online courses to help users download, interpret, manipulate, and analyze LANDFIRE data. Six software tools are currently available (Table 3):

You can learn more about LANDFIRE at:

Websites

MAIN PAGE—Visit www.landfire.gov, the official program website, to learn about the data products that are produced by the LANDFIRE team, data quality, and applications of the products across the nation.

DATA DISTRIBUTION SITE—To view and download LANDFIRE spatial products, go to <http://landfire.cr.usgs.gov/viewer>

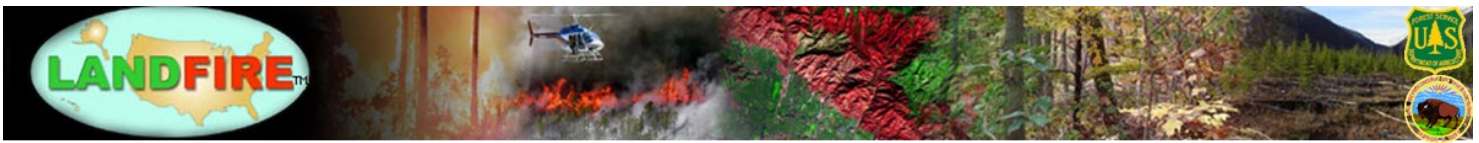
TECH TRANSFER—What can the National Interagency Fuels, Fire and Vegetation Technology Team do for you? Visit www.nifft.gov

LANDFIRE Data Access Tool (LFDAT)	Allows users to download and display LANDFIRE data directly in ArcMap
LANDFIRE Total Fuel Change Tool (LFTFCT)	Facilitates editing LANDFIRE rule sets to create customized fuel layers
Wildland Fire Assessment Tool (WFAT)	Integrates ArcMap, FlamMap, and FOFEM for generating fire behavior and fire effect outputs
Area change Tool (ACT)	Edits AcrGRIDs to refine existing data or make changes to existing data based upon disturbances and/or potential management treatments
FRCC Mapping Tool (FRCCMT)	Spatially depicts various departure metrics associated with FRCC
FRCC Software Application (FRCCSA)	Non-spatial application for deriving departure metrics associated with FRCC



Table 3. List of tools that the National Interagency Fuels, Fire and Vegetation Technology Transfer (NIFTT) provides and supports

Two LANDFIRE tools (LANDFIRE Data Access Tool and the LANDFIRE Total Fuel Change tool) are specific for downloading or manipulating LANDFIRE data—both have



been recently updated to run using ARCGIS 10. Although the other tools can be run using LANDFIRE data, they process other data as well. Migrating all tools to ARCGIS 10 is a high priority for fiscal year (FY) 2011.

NIFTT has also developed a suite of online courses pertaining to the assessment of fire behavior, fire effects, and ecological departure (e.g., FRCC). Three of the courses are specific to the use and interpretation of LANDFIRE data. Other courses are specific to the use of NIFTT tools or more general in nature for assessing fire behavior or FRCC. Online courses currently available include:

- LANDFIRE: Concepts, Data, and Methods
- Fire Regime Condition Class
- Introduction to the 40 Fire Behavior Fuel Models
- Introduction to the Fuel Characteristic Classification System (FCCS)
- Introduction to Fuel Loading Models (FLM)¹
- Using Fire Behavior Nomographs to Estimate Fire Behavior Characteristics
- Area Change Tool (ACT)
- First Order Fire Effects Mapping Tool (FOFEMMT)
- FRCC Mapping Tool (FRCCMT)

¹ Scheduled for release shortly

Visit www.nifft.gov to learn more about tools and online courses for interpreting, manipulating, and analyzing LANDFIRE data.

**Please visit
www.landfire.gov
for program details and
LANDFIRE data products
or to communicate with the
LANDFIRE team through the
[“Contact Us”](#) link
on the homepage**

