

LANDFIRE

Program Charter

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Contents

1.0	Executive Summary.....	3
2.0	LANDFIRE Program Overview.....	3
2.1	Vision	3
2.2	Program Mission	3
2.3	Authority and Justification	4
2.4	Sponsorship	6
2.5	LANDFIRE Background.....	6
3.0	Program Roles and Responsibilities.....	7
3.1	Sponsors.....	8
3.2	Program Oversight.....	8
3.3	Business Lead(s)	8
3.4	Program Manager	9
3.5	Production Team – Technical Management	9
4.0	Program Scope	9
4.1	Program Deliverables and Quality Objectives.....	10
5.0	Advisory Group	11
5.1	Group Process	11
6.0	Program Support and Service Delivery	12
6.1	Partners.....	12
6.2	Communication and Marketing.....	12
6.3	Technology Transfer	12
7.0	Accountability	13
8.0	Approval Section and Duration	13

1.0 Executive Summary

The LANDFIRE Project successfully completed the original charter in 2010. This charter is a continuation of LANDFIRE as a Program to provide for maintenance and operations activities. The charter places the fire and fuels communities as the primary users and support of the program. However, the charter clearly states that the LANDFIRE Program is open to other users and support into the future.

There are a few changes from this program charter and the project charter from 2004. This charter provides information on the authority and justification of the program. The charter goes into additional detail on the roles and responsibilities of program management and addresses program oversight being provided by the Wildland Fire Executive Council (WFEC) members will provide program oversight instead of an Executive Oversight Committee. Also, included are more elements on the scope, deliverables, and quality objectives of the program and establishes a process for an advisory group of LANDFIRE users to improve information exchange. There is an increased focus on communication and technology transfer for the program for the user community.

2.0 LANDFIRE Program Overview

2.1 Vision

LANDFIRE is a cornerstone of a fully integrated National data information framework, supporting an all lands landscape conservation approach based on inter-agency / inter-organizational collaboration and cooperation acknowledged for management excellence and effective mission delivery.

The vision of LANDFIRE provides for the continued focus on data development and improvements to deliver updated vegetation and fire/fuels data products while also allowing for transitional maturity of existing and evolving National information framework of natural resource conservation, wildland fire management, and developing programs and science of authoritative data sources.

2.2 Program Mission

The mission of LANDFIRE is to provide leadership and managers with a common inter-agency/organizational data set of vegetation and wildland fire/fuels information for strategic fire management planning and analysis. LANDFIRE, is a multi-agency/organizational program that applies consistent methodologies to develop comprehensive geospatial data products across all 50 United States. This includes plot/polygon data, change detection data, vegetation data, fire behavior, fire regime, and fire effects data products. The mission provides for timely updated vegetation and wildland fire data products for fire behavior, fire regime, and fire effects to support a wide range of applications and programs.

Principal purposes of LANDFIRE data products:

- Provide National-level cross-boundary strategic geospatial data products to support fire and fuels management planning, analysis, and management alternatives.

- Provide consistent vegetation data for fire and natural resource management activities.

Data products may also supplement and assist in:

- Regional modeling of potential fire behavior and effects for strategic planning.
 - Prioritization of hazardous fuel reduction projects
 - Planning and management activities, including work such as; restoration of ecosystem integrity and monitoring
 - Identification of areas across the nation at risk to wildland fire to support community and firefighter protection
- Improved collaboration between agencies with regard to fire and other natural resource management
 - Resource prioritization, allocation, and collaboration between agencies and the public

The LANDFIRE program is necessary to maintain data timeliness, quality, and distribution services to support department, agency, and organization mission needs. LANDFIRE data are critical to multiple wildland fire management initiatives and decision support applications, including Cohesive Strategy, Fire Program Analysis (FPA), Wildland Fire Decision Support System (WFDSS), Hazardous Fuels Prioritization and Allocation System (HFPAS), and a number of key landscape conservation efforts including natural resources/rangeland management and carbon/climate science initiatives.

2.3 Authority and Justification

National Fire Plan (NFP) direction was given in 2000 to the Secretaries of Interior and Agriculture following a landmark wildland fire season with the Secretaries establishing the Wildland Fire Leadership Council (WFLC). LANDFIRE was sponsored by WFLC to support elements of firefighting, rehabilitation, hazardous fuels reduction, community assistance, and accountability. The LANDFIRE program will not only continue to function under this same authority but will also function to support the Flame Act and Cohesive Strategy from congressional direction in 2010. In order to fully maximize the LANDFIRE investment, program aspects of operations, maintenance, improvements, and innovation activities need to be provided for in the future; this charter serves as the delegation of authority to the designated program managers who are to oversee and direct the LANDFIRE program in accordance with sponsoring governance.

Substantial changes in science, technology, and management have continued to develop at a rapid pace. New knowledge and information are needed to support management with full use of the best science in fire management. LANDFIRE produces useable data products based on science for field implementation. Strategic initiatives, studies, and policy reviews have articulated improving the effectiveness and efficiency of federal fire management. The LANDFIRE mission and actions are consistent with the following strategic plans:

USDA Forest Service Strategic Plan:

Goal 1. Restore, sustain, and enhance the Nation's forests and grasslands.

Goal 7. Provide science-based applications and tools for sustainable natural resources management.

DOI 2011-2016 Strategic Plan:

MISSION AREA 1

Provide Natural and Cultural Resource Protection and Experiences

GOAL #1 Protect America's Landscapes

PRIORITY GOAL Climate Change

GOAL #2 Protect America's Cultural and Heritage Resources

GOAL #4 Manage the Impacts of Wildland Fire

MISSION AREA 2

Sustainably Manage Energy, Water, and Natural Resources

MISSION AREA 3

Advance Govt-to-Govt Relationships with Indian Nations and Honor Commitments to Insular Areas

PRIORITY GOAL Safe Indian Communities

MISSION AREA 4

Provide a Scientific Foundation for Decision Making

2009 Quadrennial Fire Review:

Expand risk management to enable a much greater involvement in fire management planning and implementation activities. Advocate and carry out investments in risk management commensurate with production pressures, expectation demands, and increasing accountability.

Promote inclusion of new models, new scientific knowledge, and other emerging information on human error, safety, risk management, and implications for safe and effective operations throughout all fire and aviation management activities.

Improve wildland fire decision-making and implementation through the introduction of a system to document strategic decisions, facilitate access and use of the next generation of risk-informed decision support tools, and allow for the completion of a detailed set of implementation actions as needed. Realign decision-making to be more agile, flexible, and responsive to rapidly developing and changing conditions and retain relevancy over longer time periods.

Federal Wildland Fire Management Policy (2009 Guidance for Implementation of Federal Wildland Fire Management Policy):

Guides for Implementation: Managers will use a decision support process to guide and document wildfire management decisions. The process will provide situational assessment, analyze hazards and risk, define implementation actions, and document decisions and rationale for those decisions.

Guiding Principles:

- *Fire management programs and activities are economically viable, based upon values to be protected, costs, and land and resource management objectives.*

- *Fire Management Plans and activities are based upon the best available science.*

Policy Statements – Science:

- *Fire Management Plans and programs will be based on a foundation of sound science. Research will support ongoing efforts to increase our scientific knowledge of biological, physical, and sociological factors. Information needed to support fire management will be developed through an integrated interagency fire science program. Scientific results must be made available to managers in a timely manner and must be used in the development of land management plans, Fire Management Plans, and implementation plans.*
- *Increase the body of scientific knowledge and understanding of management tools and transfer of knowledge to practitioners and decision makers.*

National Wildfire Management, Report to Congress and Cohesive Strategy (in draft preparation):

The Science Perspective provides statements of the importance of risk-based management, leveraging technology and analysis models within a risk framework to fire management planning and implementation. The National Cohesive Wildfire Management Strategy section states that the best available science will be used to identify land and communities with highest risk and using that information in decision making for appropriate actions.

Elements of the Federal Land Assistance, Management and Enhancement Act 2009 (FLAME Act):

- *Element 1: Most Cost-Effective Means for Allocating Budget Resources, using sound scientific protocols.*
- *Element 3: Assessing Risk to Communities*
- *Element 4: Employ Appropriate Management Response*
- *Element 5: Allocation of Hazardous Fuels Reduction Funding Based on Priority Projects*
- *Element 6: Assessing the Impacts of Climate Change and the Frequency and Severity of Wildfire*

This charter addresses these strategic focus areas and provides a structure for implementation to produce and provide essential data to support this leadership direction.

2.4 Sponsorship

This program is sponsored by the Wildland Fire Leadership Council (WFLC).

2.5 LANDFIRE Background

Wildland fires from the late 80's, 90's, and into the early 2000's highlighted the need for consistent data. The Government Accountability Office (GAO) addressed the wildland fire program inadequacies in many reports (1999 – *A cohesive strategy is needed*; 2001 - Federal

agencies *not organized*; 2002 – *Sustained and coordinated effort needed*; 2003 - Identify and prioritize fuels reduction; 2004 - Fire agencies *need better information*).

GAO stated, “Unfortunately, federal land management agencies *do not have adequate data* for making informed decisions and measuring the agencies’ progress in *reducing fuels*” and further commented that, “The infusion of *hundreds of millions of dollars* of new money for hazardous fuel reduction activities ... *accentuate the need for accurate, complete, and comparable data.*”

During this time period many changes were occurring within the wildland fire management program with the development of; The National Fire Plan, 10-Year comprehensive Strategy, Healthy Forests Restoration Act (HFRA) and Healthy Forests Initiative (HFI) along with the creation of the Wildland Fire Leadership Council.

Some of the initial components of LANDFIRE began in 2001 with a prototype proposal submitted to USDA FS and DOI Washington offices and the development of the 2002 coarse scale – 1km Fire Regime Condition Class data set. In 2002 the prototype for LANDFIRE was funded with two mapping areas in Montana and Utah. At that time GAO reported that, “On the basis of our review, LANDFIRE is the only proposed project so far that appears capable of producing *consistent* national inventory data for *improving the prioritization* of fuel projects and communities” (GAO-02-259).

In 2004 the Landscape Fire and Resource Management Planning Tools project, also referred to as LANDFIRE, was sponsored by the Wildland Fire Leadership Council (WFLC). It was apportioned between the Forest Service (60%) and Department of the Interior (40%) being managed by two business leads from each organization under an Executive Oversight Committee. The Forest Service was the lead agency for LANDFIRE oversight with a project manager coordinating with DOI.

The original charter covered the development phase and addressed scope, quality, schedule, and management objectives. LANDFIRE mapped all 50 United States delivering 24 geo-spatial data products which was the first effort of this magnitude to be completed for the nation. The original charter also stipulated that an “Operations and Maintenance Handoff Plan” be delivered. Included within the “handoff plan” are segment plans, including a business plan, technical plan, and implementation plan. LANDFIRE delivered all charter elements and as a project was officially closed out in February 2010. Since that time LANDFIRE has been managed by USDA FS Fire & Aviation Management and DOI Office of Wildland Fire Coordination as it transitions to update and refresh the data products from the production phase into a long-term operations and maintenance (O&M) program to update changes from a variety of disturbances and vegetation changes.

3.0 Program Roles and Responsibilities

The LANDFIRE program is organized to provide a clear hierarchy from the sponsors to the management and production team. This governance has a strong link to provide quality products and services to the wildland fire and fuel communities. The LANDFIRE Program is organized to support its primary mission of providing high quality, objective data products needed to support wildland fire management and landscape conservation initiatives. The Roles, Responsibilities, and Governance will be adjusted to expand partnerships and program support as opportunities mature.

3.1 Sponsors

WFLC are the sponsors of LANDFIRE and are responsible for:

- Providing and facilitating funding across program areas.
- Ensuring Congressional mandates and Agency and OMB policies are fulfilled.
- Providing strategic direction for this and related initiatives with coordination and collaboration within and between agencies.
- Remaining informed of program status.
- Supporting incorporation of data products into organization business practices.
- Facilitating and coordinating linkages among related national efforts (i.e. reference data acquisition / national information framework across agencies and participation in initiatives).
- Approving and signing charter.
- Endorsing and supporting the membership of program oversight.

3.2 Program Oversight

Wildland Fire Executive Council (WFEC) members provide oversight from cross program areas that benefit from deliverables and are responsible for:

- Reviewing, accepting, and approving program plans for scope, schedule, and budget for deliverables that meet guidelines and standards.
- Remaining informed of program status and relevant issues.
- Implementing strategic direction for this and related initiatives with the incorporation of data products into organizational business practices.
- Supporting and assisting in reference data acquisition / national information framework across agencies and participation in initiatives.
- Advising the Business Lead(s) and Program Manager regarding scope, schedule, and budget tradeoffs.

3.3 Business Lead(s)

Business Lead(s) represent the business community external from the program production teams responsible for:

- Coordinating interagency funding to implement program.
- Providing program direction and requirements to the Program Manager and Technical Managers to ensure that stakeholder expectations are met.
- Establishing, maintaining, and communicating the business case for LANDFIRE.
- Representing LANDFIRE as spokespersons to stakeholders and publics.
- Program coordination among staff units and agencies at the Washington Office and Regional/State level.
- Assisting the Program Manager resolving issues on scope, time, quality, and cost.
- Providing LANDFIRE progress reports and feedback.
- Providing all of the above to the program manager as well as elevating issues up through the organization for consideration, help, and resolution
- Business Leads are advised by and considering recommendations from a user community Advisory Group - composed of agency/organization representatives and technical specialists

3.4 Program Manager

The LANDFIRE Program Manager is responsible for:

- Leading, and directing the LANDFIRE Program Teams.
- Ensuring that program elements are completed within scope, on schedule and within budget. (i.e. completion, delivery, and acceptance of all deliverables).
- Developing, maintaining, and managing comprehensive program management plans.
- Working with Production managers in developing budgets, controlling and tracking schedules, deliverables, and expenditures (i.e. reporting program status as required).
- Reporting status according to sponsoring entity requirements.
- Providing all of the above to the production team managers as well as elevating issues up through the business leads for consideration, help, and resolution.
- Promote improvement and innovation to enhance quality, timeliness, and defensible science that supports LF data products.

3.5 Production Team – Technical Management

Production Team Managers direct all personnel that conduct the work to successfully implement the program. Team managers are technical in nature and may include personnel from USDA Forest Service, USGS EROS Data Center (EDC), and other agencies as needed. Responsible for:

- Organizing, staffing, leading production teams.
- Tracking and reporting production scope, schedule, deliverables, and budget.
- Developing, maintaining, and managing production plans.
- Developing and submitting budgets.
- Providing all of the above to the program manager as well as elevating issues for consideration, assistance, and resolution.

4.0 Program Scope

The LANDFIRE program will continue to function as a landscape-scale comprehensive vegetation and wildland fire fuel characteristics mapping program in support of natural resources and fire management. Data products will be produced using consistent methods across the United States. The program will use the best available science, technology, and field data to provide for data timeliness, quality, and distribution services to support department, agency, and organization mission needs. Updated data products will reflect dynamic changes in landscape condition due to natural and human-caused environmental events supplying managers with the necessary data and resources to effectively make informed management decisions regarding a variety of natural resources issues. The LANDFIRE program will provide for periodic data updates. LANDFIRE will work with departmental geospatial organizations and governance to coordinate and align deliverable products across agencies and program areas.

The LANDFIRE (LF) program is comprised of the following components: Operations, Maintenance, Improvements, Innovation, and Governance/Oversight.

Operations: The addition of newly acquired or updated data, data archiving, documentation, technical transfer, user-support, and infrastructure services for distribution of data products.

Maintenance: The actual updating of the LF data products as approved by governance.

Improvement: Includes development approved through the governance process to enhance quality, timeliness, and defensible science that supports LF data products.

Innovation: Numerous opportunities provide capability to enlarge the original application of LF data assets for applications outside of its original scope through scientific, research and development advances. This work is coordinated under the governance and oversight structure with input from the program managers, technical advisory group, and change management board.

Governance: Includes roles and responsibilities partitioned between program sponsors, oversight, business lead(s), and program manager.

4.1 Program Deliverables and Quality Objectives

The LANDFIRE program deliverables may be produced on different schedules than those of the past or near future as technology improves but will be periodically updated and maintained providing a consistent suite of products. The national products will be publically available. Other deliverables also include intermediate map products, models, protocols and methods to be available to researchers, developers, and technical specialists. Specific data deliverables include the following:

LANDFIRE deliverables:

- Reference Database (Point and polygon)
- Vegetation and Succession class models
- Biophysical Settings and Environmental Site Potential
- Existing vegetation – type, cover, and height
- Fire regime, Fire regime condition class
- Fire behavior models – Anderson 13 and Scott/Reinhardt
- Canopy characteristics – Canopy Bulk Density, Canopy Base Height, Canopy Height
- Fire effects models – Fuel Loading and Fuel Characteristic Classification System
- Data Product quality Agreement Assessments
- Technology transfer and user support
- Product distribution

Data quality and objectivity are essential to the LANDFIRE program as the data are foundational information used in a multitude of applications. LANDFIRE data integrity and objectivity is a cornerstone of the program. LANDFIRE program deliverables will be compatible with previous products to help monitor changes over time. Map data will be produced based on peer-reviewed science related to remote sensing, modeling, simulation, vegetation disturbance/dynamics, and fire behavior/effects. Consistency across all ownerships and iterative data improvements remain key quality objectives of the program. Product quality agreement assessments will be performed at appropriate times based on available and applicable data. Agreement assessments quality is targeted to be 60-80% agreement at the macro-group level within the National Vegetation Classification System (NVCS) vegetation hierarchy and 70-90% agreement at the group level in the hierarchy. Products and practices will comply with applicable Federal Geographic Data Committee (FGDC) and National Wildfire Coordinating Group (NWCG) standards.

Consistent with the business practices employed to produce LANDFIRE deliverables, best practices in program/project management will be implemented to ensure that effective stewardship of budgetary and human resources is brought to bear on the program.

Performance measures and evaluation are management tools that aid in monitoring both the quality objectives for LANDFIRE data products as well as effectiveness objectives in program execution and contribution to strategic and mission objectives.

The LANDFIRE program will progress towards “continual” updates and improvements based on, a data inputs, advisory recommendations, National Vegetation Classification Standard, and landcover change monitoring.

5.0 Advisory Group

LANDFIRE leadership considers it important to engage advisory groups from different geographic areas promoting insight and data for LANDFIRE. A two-way communication process is an essential element of improving information exchanges between LANDFIRE and users. Involvement of an advisory group will help speed up the improvement process and result in better decisions, which strengthen the LANDFIRE effort. Such participation also facilitates a broader understanding of LANDFIRE.

An advisory group can improve representation and communication of national and regional needs or issues helping guide future data set development. The role is participatory in nature and is a collection of individuals who possess unique knowledge and skills that are related to LANDFIRE goals. The advisors are a group of technical experts from private, state, and federal agencies who benefit from LANDFIRE data products. The goals of the group are to identify, coordinate, and express to LANDFIRE leadership the needs and issues providing information and knowledge from their areas of expertise to assess and quantify known information to improve LANDFIRE data products. The group also helps promote LANDFIRE and are critical to the successful implementation and delivery of the LANDFIRE data products in their respective organizations and areas. They function as a “sounding board” by identifying needs and representing the views of the broader communities. The group shall endeavor to ensure that, as far as is feasible, all areas are adequately represented. Final decisions on program direction and requirements will reside with LANDFIRE oversight and leadership.

5.1 Group Process

The group plays an advisory role expressing the needs and issues of the organizations and areas they represent. The group’s responsibilities are to:

- advise LANDFIRE Business Lead(s) on matters of concern through annual to biennial after action reviews
- coordinate facts, ensure all information is included, and express recommendations to the LANDFIRE leadership group
- inform LANDFIRE Business Lead(s) about any matter that might affect the LANDFIRE mapping effort in the regional / geographic area
- contribute to the education of area managers regarding LANDFIRE
- provide key information and materials, such as helping identify potential data sources (geo-referenced field data)
- serve as a point of contact within the region(s) for obtaining and disseminating information
- provide minutes of all meetings or conference calls held by the group

The Advisory group should have a designated chair that leads the group. The group chair will serve as the point of contact between the group and LANDFIRE leadership.

6.0 Program Support and Service Delivery

LANDFIRE consolidates business support for wildland fire decision support services with other programs where applicable providing key program support data for wildland fire decision support systems and joint ventures with other national programs.

6.1 Partners

The LANDFIRE program components and activities provide data products that support key landscape conservation business needs, including climate change and carbon assessments, landscape and state-wide assessments, and landscape conservation planning. LANDFIRE plays a key part in a national information data framework seeking opportunities to simplify redundant programs by partnering with programs to focus scope and responsibilities thereby improving the products used by partners and user groups based on authoritative data sources. This suite of complementary programs in this national framework focuses on key data that are linked between programs. Partners provide support in the framework with both leadership and technical support in the strategic alignment of linked programs. Partners may be shareholders in the governance and oversight of linked programs to synch data products in a timely fashion to support multiple downstream needs.

6.2 Communication and Marketing

Communication and marketing services are focused on improving information for the user community and supporting customer service. This strategy is implemented with shared communication support across many wildland fire programs and systems. The strategy includes communication to and from the organizations represented.

The LANDFIRE website is a primary medium for communicating information about the program and it serves as a foundation for communicating with potential users and partners. Access to LANDFIRE National data products is provided via the web and designed to support that access. Data alerts and technical guidance regarding LANDFIRE data products are provided via the website with some information provided in the metadata of the geospatial data products.

6.3 Technology Transfer

A robust technology transfer program is fully coordinated with other wildland fire systems and organized under a common coordinated structure. Technology transfer supports multiple wildland fire applications and natural resource management applications. LANDFIRE data products and on-line training are provided and incorporated within the National Wildfire Coordinating Group (NWCG) curriculum. The National Interagency Fuels Technology Transfer team (NIFTT), the Fire Learning Network of The Nature Conservancy and Fire Modeling Institute could serve as a core group supporting technology transfer.

- User forums and meetings (organized by Geographic Area Coordination Centers (GACC) or similar units) could be held to provide a venue for discussion of program status, user needs, profile examples of proper application, and innovations.
- Technology transfer emphasizes on-line training using GIS tools to ensure data are applied appropriately and efficiently to support organization business needs, and appropriate use of LANDFIRE data products to scale and data resolution.
- Description of the utility of the LANDFIRE National data products to support land and resource management planning business requirements.
- Develop information and crosswalks between LANDFIRE National data products and higher thematic and spatial resolution data used for project planning and assessment.

7.0 Accountability

All Program leadership and staff will be accountable for their roles and responsibilities. This implies appropriate participation in meetings, support of decisions, completion of action item assignments, and fulfillment of responsibilities. Performance issues that cannot be resolved by the functional level will be elevated to the next higher level for resolution.

8.0 Approval Section and Duration

This Charter builds off the first charter approved in May 2004 and establishes program direction. The LANDFIRE Program Charter will be in effect for a ten year period from the date of signature. The Charter will be reviewed after five years from the time of signature to evaluate consistency with the program of work, continued relevancy of direction, financing, personnel, and accomplishments. Amendments may be made as appropriate by WFEC direction and WFLC review. Participating units may elect to terminate the program after full discussion among all involved parties during the course of the Charter.

Approved by: Jay Jenson,
USDA Deputy Undersecretary for Natural Resources and Environment
Chair of Wildland Fire Leadership Council

Date