



Wildland Fire Executive Council

Meeting
April 1, 2011

Washington, DC

Briefing Material



AGENDA

April 1, 2011

Yates Building, McArdle Room (1st floor)
 USDA Forest Service Headquarters
 1400 Independence Ave. SW
 Washington, DC 20250

9:00 – 11:00 AM – Eastern Time

Reminder: Agendas, Notes and Handouts are available at myfirecommunity.net – WFEC Neighborhood

<i>Time</i>	<i>#</i>		<i>Topic</i>	<i>Presenter</i>
0900 – 0905	1		Welcome/Introductions	Roy Johnson
0905 – 0910	2	<input checked="" type="checkbox"/> Information <input checked="" type="checkbox"/> Discussion <input type="checkbox"/> Decision	Meeting Objectives & Expectations <u>Description:</u> Since this is the first meeting of this chartered group, the objectives and expectations of this meeting will be discussed <u>Outcome:</u> 1. Understanding of why we are here and what we need to accomplish <u>Reference Material:</u> 1. Agenda	Roy Johnson
0910 – 0920	3	<input checked="" type="checkbox"/> Information <input checked="" type="checkbox"/> Discussion <input checked="" type="checkbox"/> Decision	WFEC Charter <u>Description:</u> Review the WFEC Charter to highlight why WFEC was created, authorities, and purpose. Review and agree on business rules and guidelines. <u>Outcome:</u> 1. Agreement on WFEC business rules and guidelines <u>Reference Material:</u> 1. Signed WFEC Charter 2. Member List 3. Wildland Fire Governance Calendar 4. Wildland Fire Governance	Roy Johnson
0920 – 0935	4	<input checked="" type="checkbox"/> Information <input checked="" type="checkbox"/> Discussion <input type="checkbox"/> Decision	FACA & Ethics Requirements <u>Description:</u> Briefing on the requirements and restrictions related to the Federal Advisory Committee Act and related ethics regulations. <u>Outcome:</u> 1. Understanding of requirements, restrictions, and responsibilities of WFEC as a FACA-chartered group. 2. Understanding of requirements, restrictions, and responsibilities of WFEC's members as members of a FACA-chartered group. <u>Reference Material:</u> 1. TBD	Cindy Cafaro Kim Hintz

<i>Time</i>	<i>#</i>		<i>Topic</i>	<i>Presenter</i>
0935 – 1035	5	<input checked="" type="checkbox"/> Information <input checked="" type="checkbox"/> Discussion <input checked="" type="checkbox"/> Decision	<p>Cohesive Strategy Briefing</p> <p><u>Description:</u> Briefing on the accomplishments to date on the Cohesive Strategy. Identification of sub-committees, their roles and responsibilities, and how they relate to WFEC.</p> <p><u>Outcome:</u></p> <ol style="list-style-type: none"> 1. Understanding of the status of the development and implementation of the Cohesive Strategy. 2. Agreement on roles and responsibilities. 3. Agreement on deliverables and milestones. 4. Establishment of Cohesive Strategy Committees <p><u>Reference Material:</u></p> <ol style="list-style-type: none"> 1. Phase II Development Schedule 2. Final Cohesive Strategy 3. Final Report to Congress 4. Cohesive Strategy Power Point Presentation 5. Regional Strategy Committee Names 6. Guidance – Regional Strategy Committee 7. RSC-WFEC-CSOC Contact Information 8. CS – Proposed Phase II-III Process 9. CS – Implementation Update 10. CS – Talking Points and Q&As 11. Cohesive Strategy Support Letters 	<p>Vicki Christiansen</p> <p>Caitlyn Pollihan</p>
1035 – 1045	6	<input checked="" type="checkbox"/> Information <input type="checkbox"/> Discussion <input type="checkbox"/> Decision	<p>Round Robin</p> <p><u>Description:</u> WFEC members have the opportunity to share information with the committee and identify issues that may result in potential future agenda items.</p> <p><u>Outcome:</u></p> <ol style="list-style-type: none"> 1. Understanding of activities within the members' organizations. <p><u>Reference Material:</u></p> <ol style="list-style-type: none"> 1. None 	WFEC Members
1045 – 1100	7	<input checked="" type="checkbox"/> Information <input type="checkbox"/> Discussion <input type="checkbox"/> Decision	<p>Public Comments</p> <p><u>Description:</u> Time for WFEC to hear from the public. Specific topics to be determined</p> <p><u>Outcome:</u></p> <ol style="list-style-type: none"> 1. Awareness of public opinions related to WFEC activities <p><u>Reference Material:</u></p> <ol style="list-style-type: none"> 1. TBD 	Public
1100 – 1115	8	<input type="checkbox"/> Information <input checked="" type="checkbox"/> Discussion <input checked="" type="checkbox"/> Decision	<p>Closeout</p> <p><u>Description:</u></p> <ol style="list-style-type: none"> 1. Review the outcomes of this meeting 2. Review decision and actions 3. Identify potential agenda items for May <p><u>Outcome:</u></p> <ol style="list-style-type: none"> 1. Agreement on decisions and actions 2. Agreement on focus for next meeting 	Roy Johnson



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April 1, 2011

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	I	Regional Strategy Committee Names
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UNITED STATES DEPARTMENT OF THE INTERIOR

UNITED STATES DEPARTMENT OF AGRICULTURE

**WILDLAND FIRE EXECUTIVE COUNCIL
CHARTER**

1. **Committee's Official Designation.** The Committee's official designation is the Wildland Fire Executive Council (WFEC).
2. **Authority.** The WFEC is a discretionary advisory committee established under the authorities of the Secretary of the Interior and Secretary of Agriculture, in furtherance of 43 U.S.C. 1457 and provisions of the Fish and Wildlife Act of 1956 (16 U.S.C. 742a-742j), the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 *et. seq.*), the National Wildlife Refuge System Improvement Act of 1997 (16 U.S.C. 668dd-668ee), and the National Forest Management Act of 1976 (16 U.S.C. 1600 *et. seq.*). The WFEC is established in accordance with the provisions of the Federal Advisory Committee Act (FACA), as amended, 5 U.S.C. App. 2.
3. **Objective and Scope of Activities.** The WFEC provides advice on the coordinated national level wildland fire policy leadership, direction, and program oversight in support to the Wildland Fire Leadership Council.
4. **Description of Duties.** The duties of the WFEC are solely advisory, and include:
 - Providing coordinating recommendations and advice to the Wildland Fire Leadership Council;
 - Facilitating development and implementation of a National Cohesive Wildland Fire Management Strategy;
 - Providing advice on wildland fire policy and program direction to the National Wildfire Coordinating Group;
5. **Agency or Official to Whom the Committee Reports.** The WFEC reports to the Secretary of the Interior and the Secretary of Agriculture through the Wildland Fire Leadership Council, which is comprised of, in part, the Assistant Secretary for Policy, Management and Budget and the Directors of National Park Service, the U.S. Fish and Wildlife Service, the Bureau of Land Management, the Bureau of Indian Affairs, and the U.S. Geological Survey for the Department of the Interior, and for the Department of Agriculture, the Under Secretary for Natural Resources and Environment, the Deputy Under Secretary for Natural Resources and Environment, and the Chief of the Forest Service.
6. **Support.** The Department of the Interior's Office of Wildland Fire Coordination will provide support for the WFEC.

7. **Estimated Annual Operating Costs and Staff Years.** The annual operating costs associated with supporting the WFEC's activities are estimated to be \$95,000, including all direct and indirect expenses and .25 staff years.
8. **Designated Federal Officer.** The Designated Federal Officer (DFO) is a full-time Federal employee appointed in accordance with Agency procedures. The DFO will approve or call all WFEC and subcommittee's meetings, adjourn any meeting when the DFO determines adjournment to be in the public interest, and chair meetings when directed to do so by the Secretaries.
9. **Estimated Number and Frequency of Meetings.** The WFEC will meet approximately 6-12 times a year, and at such other times as designated by the DFO.
10. **Duration.** Continuing.
11. **Termination.** The WFEC is subject to biennial renewal and will terminate 2 years from the date the Charter is filed, unless, prior to that date, the Charter is renewed in accordance with Section 14 of the FACA. The WFEC will not meet or take any action without a valid current charter.
12. **Membership and Designation.** Members of the WFEC shall be composed of representatives from the Federal Government, and from among, but not limited to, the following interest groups.
 - Director, Department of the Interior, Office of Wildland Fire Coordination (DOI OWFC)
 - Director, United States Department of Agriculture, Forest Service, Fire and Aviation Management (USDA FS FAM)
 - Assistant Administrator, U.S. Fire Administration (USFA)
 - Representative, National Wildfire Coordinating Group (NWCG)
 - Representative, National Association of State Foresters (NASF)
 - Representative, International Association of Fire Chiefs (IAFC)
 - Representative, Intertribal Timber Council (ITC)
 - Representative, National Association of Counties (NACO)
 - Representative, National League of Cities (NLC)
 - Representative, National Governors' Association (NGA)

Members serve at the discretion of the Secretary and are appointed on a staggered term basis for terms not to exceed 3 years. A vacancy on the WFEC is filled in the same manner in which the original appointment was made.

Members of the WFEC and its subcommittee members serve without compensation. However, while away from their homes or regular places of business, WFEC and subcommittee members engaged in WFEC, or subcommittee business, approved by the DFO, may be allowed travel expenses, including per diem in lieu of subsistence, in the same manner as persons employed intermittently in Government service under Section 5703 of Title 5 of the United States Code.

13. **Ethics Responsibilities of Members.** No WFEC or subcommittee members shall participate in any specific party matter including a lease, license, permit, contract, claim, agreement, or related litigation with the Department in which the member has a direct financial interest.
14. **Subcommittees.** Subject to the DFO's approval, subcommittees may be formed for the purpose of compiling information or conducting research. However, such subcommittees must act only under the direction of the DFO and must report their recommendations to the full WFEC for consideration. Subcommittees must not provide advice or work products directly to the Agency. The Council Chair, with the approval of the DFO, will appoint subcommittee members. Subcommittees will meet as necessary to accomplish their assignments, subject to the approval of the DFO and the availability of resources.
15. **Recordkeeping.** The records of the WFEC, and formally and informally established subcommittees of the WFEC, shall be handled in accordance with General Records Schedule 26, Item 2 or other approved Agency records disposition schedule. These records shall be available for public inspection and copying, subject to the Freedom of Information Act, 5 U.S.C. 552.



Secretary of the Interior

FEB 03 2011

Date Signed



Secretary of Agriculture

2-7-11

Date Signed

Date Filed



Membership

March 28, 2011

<input checked="" type="checkbox"/>	Member Name	Member Title	Organization
<input type="checkbox"/>	Tom Harbour	Director, Fire and Aviation	USDA FS
<input type="checkbox"/>	Kirk Rowdabaugh	Director, OWF	DOI
<input type="checkbox"/>	Glenn Gaines	Assistant Administrator	US Fire Administration
<input type="checkbox"/>	Jim Karels	Chair, Fire Committee	NASF, Forest Fire Protection Committee
<input type="checkbox"/>	Douglas MacDonald	Chair, Wildland Fire Policy Committee	I-Chiefs
<input type="checkbox"/>	Jim Erickson		Intertribal Timber Council
<input type="checkbox"/>	Ryan Yates		National Association of Counties
<input type="checkbox"/>	Bill Kaage	NPS Fire Director	Chair, NWCG
<input type="checkbox"/>	Elizabeth G.		National Governors' Association
<input type="checkbox"/>	Mary Jacobs	Assistant City Manager, Sierra Vista, AZ	National League of Cities
Support Staff			
<input type="checkbox"/>	Roy Johnson	Deputy Director, OWF	Designated Federal Officer
<input type="checkbox"/>	Shari Shetler	Senior Advisor, OWF	Executive Secretary

2011

Wildland Fire Governance Meetings

(updated 3/01/2011)

NOTES

All times entered are DC (Eastern)

JANUARY

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Jan 17 – Holiday
Jan 25-27 – IFEC (B)

Apr 1 – WFEC 0900
Apr 12 – FFPC 1300
Apr 26-28 – IFEC (DC)

Feb 7 – IFEC 1500
Feb 8 – FFPC 1300
Feb 21 - Holiday

May 6 – WFEC 0900
May 10 – FFPC 1300
May 30 - Holiday
May 31 – IFEC 1500

Mar 7 – IFEC 1500
Mar 10 – WFLC
Mar 28 – IFEC 1500

Jun 3 – WFEC 0900
Jun 14 – FFPC 1300
Jun 27 – IFEC 1500

2011

Wildland Fire Governance Meetings

(updated 3/01/2011)

NOTES

JULY

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Jul 1 – WFEC 0900
 Jul 4 – Holiday
 Jul 12 – FFPC 1300
 Jul 26-28 – IFEC (B)

Oct 3 – IFEC 1500
 Oct 7 – WFEC 0900
 Oct 10 – Holiday
 Oct 11 – FFPC 1300
 Oct 25-27 – IFEC (B)

Aug 5 – WFEC 0900
 Aug 9 – FFPC 1300
 Aug 29 – IFEC 1500

Nov 4 – WFEC 0900
 Nov 8 – FFPC 1300
 Nov 11 – Holiday
 Nov 24 – Holiday
 Nov 28 – IFEC 1500

Sep 2 – WFEC 0930
 Sep 5 – Holiday
 Sep 13 – FFPC 1300

Dec 2 – WFEC 0930
 Dec 13 – FFPC 1300
 Dec 26 – Holiday

Wildland Fire Governance

Approval

This governance structure is effective on the date of approval and shall remain in effect until revised or revoked by the Chair, Wildland Fire Leadership Council.

Chair, Wildland Fire Leadership Council

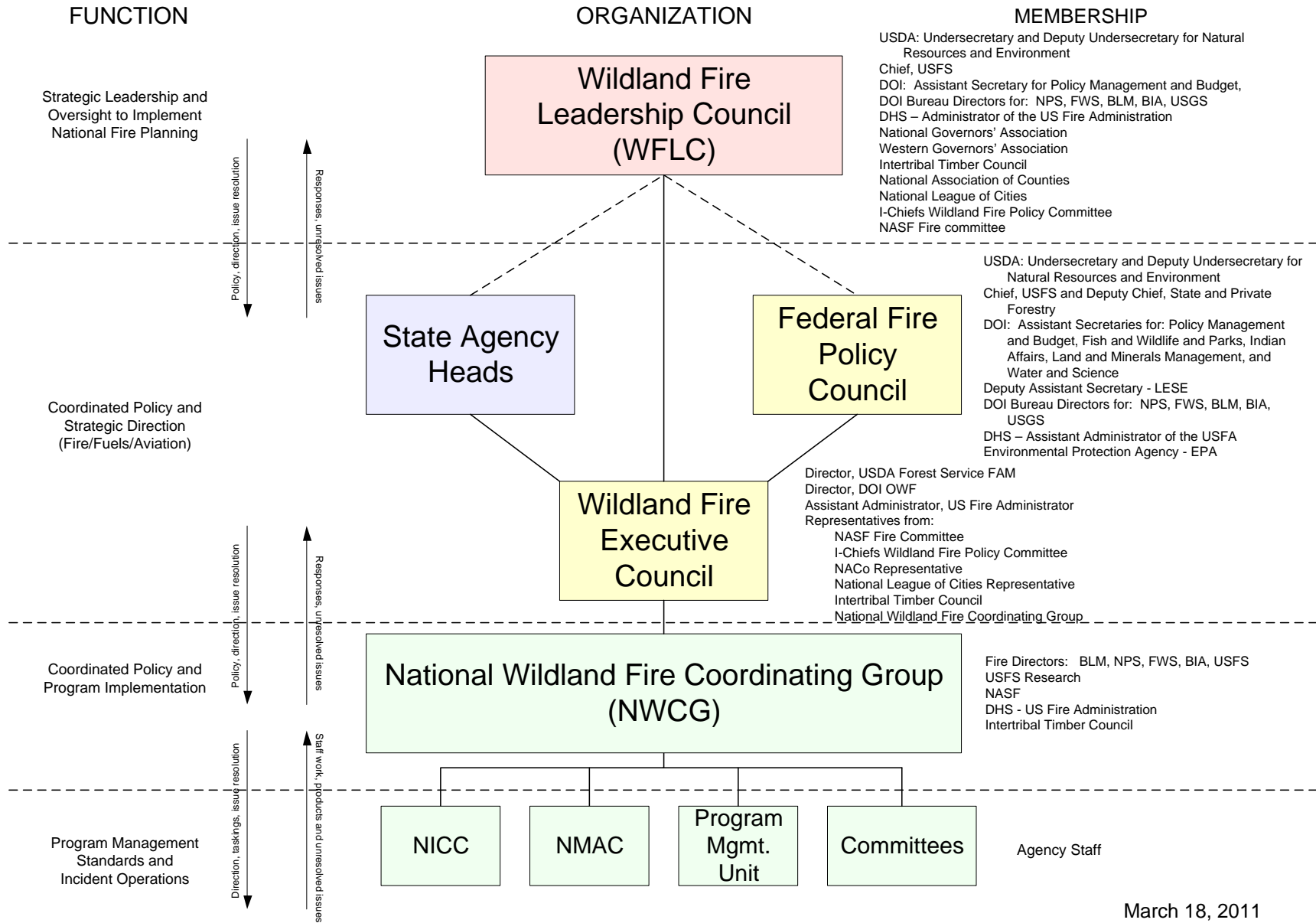
Date

Wildland Fire Governance Organizations

This document describes the organizations involved in developing and implementing the strategic direction for the country's wildland fire activities. Within these organizations all levels of government are represented. It is through this inclusive collaborative environment that our nation's communities, and forest and rangelands are protected.

The organizations described below are the Wildland Fire Leadership Council (WFLC), the Federal Fire Policy Council (FFPC), the Wildland Fire Executive Council (WFEC), and the National Wildland Fire Coordinating Group (NWCG). The following table identifies the formalized organizations, their respective governance role and membership.

Interagency Wildland Fire Governance Structure



March 18, 2011

Wildland Fire Leadership Council (WFLC)

Purpose:

The WFLC is an intergovernmental council of federal, state, tribal, county, and local government officials convened by the Secretaries of Agriculture and the Interior dedicated to consistent implementation of wildland fire policies, goals, and management activities. The WFLC is structured in accordance with its authorizing memorandum of understanding.

Membership:

Federal membership on the Council includes the U.S. Department of Agriculture's Undersecretary and Deputy Undersecretary for Natural Resources and Environment, and the Chief of the Forest Service; the U.S. Department of the Interior's Assistant Secretary for Policy Management and Budget, and the Directors of the National Park Service, the U.S. Fish and Wildlife Service, the Bureau of Land Management, the Bureau of Indian Affairs, and the U.S. Geological Survey. The Administrator of the U.S. Fire Administration represents the Department of Homeland Security.

In addition to the federal officials, the Council includes seven non-federal members comprised primarily of senior elected officials of state, tribal, county and municipal governments, including a State Governor representing the National Governors' Association, a State Governor representing the Western Governors' Association, the President of the Intertribal Timber Council, a County Commissioner representing the National Association of Counties and a Mayor representing the National League of Cities. These elected officers, along with a State Forester designated by their governor and a Fire Chief designated by their elected official, are invited to participate in the Wildland Fire Leadership Council because of their interest in and statutory responsibility for wildland fire management.

Primary Responsibilities:

- Provide strategic leadership to ensure policy coordination, accountability, and effective implementation of wildland fire management policy
- Provide strategic oversight of long-term strategies to address wildfire suppression, assistance to communities, hazardous fuels reduction, habitat restoration, and rehabilitation of the Nation's forests and rangelands

Relationship to Other Groups:

WFLC provides direction to the Wildland Fire Executive Council (WFEC). The WFEC provides support to accomplish the strategic goals and objectives of WFLC.

Group Leadership:

Chair rotates annually between USDA and US DOI.

Decision Making:

Decisions are made by consensus only.

Federal Fire Policy Council (FFPC)

Purpose:

The primary purpose of the Federal Fire Policy Council is to carry out the federal component of wildland fire management.

Membership:

The Federal Fire Policy Council shall be composed of the USDA Undersecretary and Deputy Undersecretary – Natural Resources and Environment, the Chief of the Forest Service and the Deputy Chief of State and Private Forestry, and for DOI the Assistant Secretaries for Policy, Management and Budget, Fish and Wildlife and Parks, Indian Affairs, Land and Minerals Management, and Water and Science; the Bureau Directors of the Bureau of Indian Affairs, the Bureau of Land Management, the Fish and Wildlife Service, the National Park Service, and the US Geological Survey; the Deputy Assistant Secretary – Law Enforcement, Security & Emergency Management, Assistant Administrator of DHS-US Fire Administration and Environmental Protection Agency representative.

Primary Responsibilities:

- Establish national policy guidance
- Formulate, coordinate, and integrate wildland fire policy
- Provide policy direction for the formulation of the wildland fire budgets
- Provide a forum to consider and resolve inter- and intra-departmental policy issues
- Ensure that program goals are identified and that results are measured for wildland fire
- Maintain national level fire activity situational awareness

Relationship to Other Groups:

FFPC provides a forum for federal issues only, through interfacing with both WFLC and WFEC.

Group Leadership:

The FFPC is co-chaired by the DOI Assistant Secretary-Policy, Management and Budget and the USDA Deputy Under Secretary for National Resources and Environment.

Decision Making:

The FFPC seeks to agree upon mutually acceptable policy and strategic decisions and direction to govern federal fire program activities. However, in the event that the FFPC cannot reach consensus about a significant fire policy issue, a member of the FFPC may elect, without prejudice, to raise the issue with the Secretaries for resolution.

Wildland Fire Executive Council (WFEC)

Purpose:

The Wildland Fire Executive Council provides coordinated interagency executive level wildland fire policy leadership, direction, and program oversight.

Membership:

The Wildland Fire Executive Council is composed of the Director, USDA Forest Service FAM; Director, DOI OWF; Assistant Administrator, U.S. Fire Administrator; Chair, NWCG; and representatives of the NASF Fire Committee; I-Chiefs Wildland Fire Policy Committee; Intertribal Timber Council; National Association of Counties; and The National League of Cities.

Primary Responsibilities:

- Provide coordinated recommendations and advice to the Secretary of the Interior and the Secretary of Agriculture through the Wildland Fire Leadership Council
- Facilitates the development and implementation of a National Cohesive Wildland Fire Management Strategy
- Provides advice on wildland fire policy and program direction to the National Wildfire Coordinating Group

Relationship to Other Groups:

WFEC is the focal point for supporting the accomplishment of WFLC's strategic direction. WFEC responds to requests from WFLC by directly engaging their staffs and through taskings to NWCG. NWCG elevates wildland fire issues that cannot be resolved within the NWCG organization structure to WFEC for resolution. WFEC elevates unresolved issues to WFLC.

Group Leadership:

WFEC is chartered as a discretionary advisory committee under the authorities of the Secretary of the Interior and Secretary of Agriculture. The WFEC is established in accordance with the provisions of the Federal Advisory Committee Act (FACA). The Deputy Director for the Office of Wildland Fire is the Designated Federal Officer (DFO) and will approve or call all WFEC and subcommittee meetings, adjourn any meeting when the DFO determines adjournment to be in the public interest, and chair meetings when directed to do so by the Secretaries.

Decision Making:

Decisions are made by consensus. In the event that consensus cannot be reached, the issue will be elevated to the WFLC.

National Wildfire Coordinating Group (NWCG)

Purpose:

- NWCG provides national leadership and establishes, implements, maintains, and communicates policy, standards, guidelines, and qualifications for wildland fire program management.
- NWCG provides a forum in which issues, both short and long term, involving standards and program implementation can be coordinated, discussed, and resolved. Serves as a clearinghouse and provides a forum for discussion of short and long-term wildland fire management issues and initiates actions to improve coordination and integration of state, tribal, and federal wildland fire programs while recognizing individual agency missions.

Membership:

The NWCG Executive Board is composed of representatives of the Forest Service, Bureau of Indian Affairs, Bureau of Land Management, Fish and Wildlife Service, National Park Service, the National Association of State Foresters, the Intertribal Timber Council and DHS-US Fire Administration.

Primary Responsibilities:

- Provide leadership in establishing and maintaining consistent interagency standards and guidelines, qualifications, and communications for wildland fire management
- Provide a formalized system for standards of training, equipment, qualifications, and other operational functions
- Provide coordinated policy and program implementation

Relationship to Other Groups:

NWCG responds to taskings from WFEC. NWCG accomplishes their work by engaging their interagency committees and sub-committees through the NWCG governance structure which is made up of the Program Management Unit and its Branch Coordinators and enterprise architects as well as its interagency committees. NWCG elevates wildland fire issues that cannot be resolved within the NWCG organization structure to WFEC for resolution.

Group Leadership:

The NWCG chair rotates amongst its membership on a two year rotation.

Decision Making:

Decisions are made by consensus. If NWCG cannot reach consensus, the issue will be raised to WFEC.

FACA Background

- Passed by Congress in 1972 to regulate numerous groups providing advice to the Federal Government
- Congressional oversight (reports, appropriations)
- Provides for public participation
- Codified at 5 U.S.C. App. 2
 - General Services Administration (GSA) regulations at 41 C.F.R. Part 102-3

FACA Applicability

- Groups established or utilized by the Executive Branch for the purpose of obtaining advice or recommendations
- “Utilized” means “actual management and control”
- Does not apply to:
 - individual advice
 - operational committees
 - inter/intra-governmental committees
 - local civic groups

FACA Requirements

- Advisory functions only
- Established by law, Presidential authority, or discretionary
- File a Charter containing authority, mission, goals, objectives, and logistics

FACA Requirements (cont.)

- Public notice of meetings; public may participate and file statements; detailed public minutes; can sometimes close meetings
- Designated Federal Officer (DFO) to call and be present at all meetings
- Terminate according to statute, when purpose completed, or after 2 years (unless renewed)

FACA Subcommittees

- Defined as groups reporting to full advisory committee; may include non-committee members
- Permissible when reporting to full committee for its consideration and deliberation
- FACA restrictions do not apply (meetings not public, do not have to give notice)

Miscellaneous FACA Considerations

- Public availability of FACA Committee and (some) subcommittee records
- Conflict of interest considerations
- Sanctions for failure to comply with FACA

National Cohesive Wildland Fire Management Strategy

Background and Progress Update



Vicki Christiansen, Caitlyn Pollihan
April 1, 2011
Wildland Fire Executive Council

What is the Cohesive Strategy?

- A **national, collaborative** approach to addressing wildland fire across all lands and jurisdictions
- Developed with input from wildland fire organizations, land managers and policy-making officials representing all levels of governmental and non-governmental organizations

Why is it Important?

- Wildland fire management is complex and involves a wide range of stakeholders
- Risks to communities and firefighters are increasing
- Decreasing financial and human resources to manage wildland fire
- Effectively addressing these issues requires a united, comprehensive effort

Background

- 2009 Federal Land Assistance Management (FLAME) Act:
 - Directs Departments of Agriculture and the Interior to develop Cohesive Wildfire Management Strategy
- Government Accountability Office (GAO) recommendations:
 - Articulate potential approaches
 - Estimate costs of each approach
 - Describe trade-offs associated with each approach

Wildland Fire Leadership Council (WFLC)

- WFLC leads and governs the Cohesive Strategy effort
 - Intergovernmental committee of federal, state, tribal, county and municipal government officials

Foundational Documents

- *A Call to Action*
- *2009 Quadrennial Fire Review*
- *Mutual Expectations for Preparedness and Suppression in the Interface*
- *Wildland Fire Protection and Response in the United States: The Responsibilities, Authorities and Roles of Federal, State, Local and Tribal Governments*
- Available at www.forestsandrangelands.gov

WFLC Members

Member	Agency	Member	Agency
Rhea Suh, Assistant Secretary for Policy, Management and Budget,	Department of the Interior	Glenn Gaines , United States Fire Administration	Department of Homeland Security
Jay Jensen, USDA Deputy Undersecretary for Natural Resources and the Environment	United States Department of Agriculture (USDA)	Ted Kulongoski, Governor, State of Oregon	Western Governors Association Representative
Tom Tidwell, Chief	USDA Forest Service	Dan Shoun, County Commissioner, Lake County, State of Oregon	Counties Representative
John Jarvis, Director	National Park Service	Joe Durglo, President, Confederated Salish and Kootenai Tribes	President, Intertribal Timber Council
Rowan Gould, Acting Director	United States Fish and Wildland Service	Mary Hamann-Roland, Mayor, City of Apple Valley, State of Minnesota	National League of Cities
Bob Abbey, Director	Bureau of Land Management	Jeff Jahnke, State Forester, State of Colorado	Representative for the National Association of State Foresters
Mike Black, Director	Bureau of Indian Affairs	Chief Robert Roper, Ventura County Fire Department State of California	Representative for the International Association of Fire Chiefs
Marcia McNutt, Director	United States Geological Service		

Cohesive Strategy Oversight Committee (CSOC)

- Appointed by WFLC to support completion of tasks assigned under FLAME Act
- Membership includes federal, state, local, tribal and non-governmental representatives

CSOC Members

Name	Affiliation	Name	Affiliation
Tom Harbour	USDA Forest Service	Joshua Simmons	Bureau of Indian Affairs
Kirk Rowdabaugh	United States Department of the Interior	Michael Carrier	Western Governors' Association
Maureen Hyzer	USDA Forest Service	Ann Walker	Western Governors' Association
Clint Cross	USDA Forest Service	Lynda Boody	Bureau of Land Management
Tim Sexton	USDA Forest Service	Wendy Reynolds	Bureau of Land Management
Bill Van Bruggen	USDA Forest Service	Dan Buckley	National Park Service
Susan Stewart	USDA Forest Service	John Morlock	National Park Service
Dan Smith	National Association of State Foresters	Ryan Yates	National Association of Counties
Caitlyn Pollihan	Council of Western State Foresters/National Association of State Foresters	Aitor Bidaburu	United States Fire Administration
Douglas MacDonald	International Association of Fire Chiefs	Jim Kelton	United States Fish and Wildlife Service
Bryan Rice	Bureau of Indian Affairs	Jim Erickson	Intertribal Timber Council

Vision

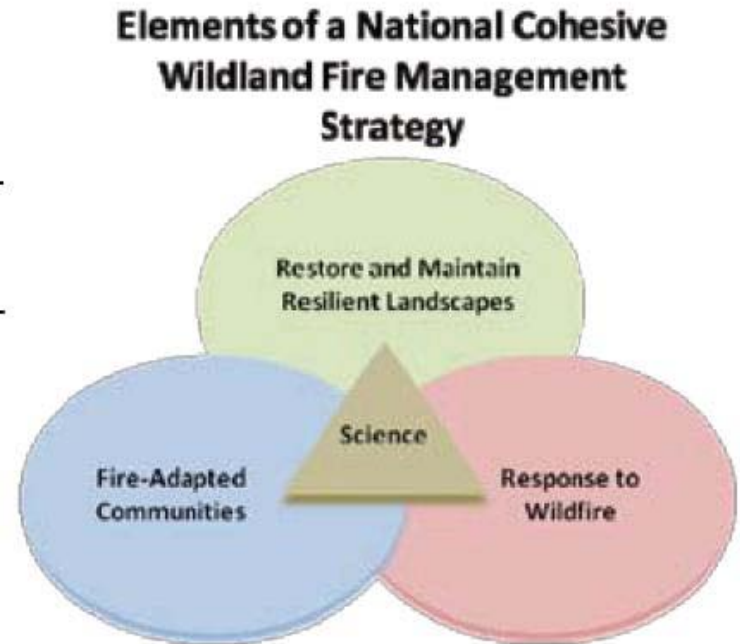
“Safely and effectively extinguish fire, when needed, use fire where allowable; manage our natural resources; and as nation, live with wildland fire.”

Cohesive Strategy Principles

- Engages stakeholders, managers, and scientists
- Based on best available science, knowledge and experience
- Emphasis on partnerships and collaboration
- Balances long-term goals and near-term outcomes
- Approach needs to be a “from-the-ground up” effort

Cohesive Strategy Focus Areas:

- Restore and maintain resilient landscapes
- Fire adapted communities
- Response to wildfire



A Phased Approach

Phase I (complete)

- National Cohesive Wildland Fire Management Strategy and Report to Congress

Phase II (2011)

- Development of Regional Goals, Objectives, Actions and Activities

Phase III (2012)

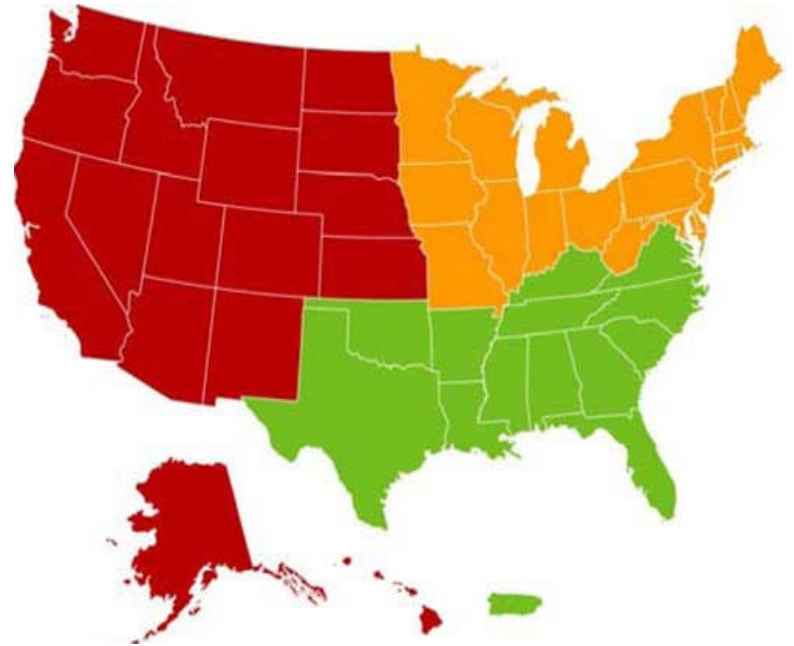
- National Trade-Off Analysis and Execution

Phase I – National Strategy

- Fourteen forums were held nationwide with 400+ participants
- Developed foundational documents:
 - *A National Cohesive Wildfire Management Strategy*
 - *Report to Congress: The Federal Land Assistance, Management and Enhancement Act of 2009*
- Documents approved by WFLC, OMB and signed by Secretaries of Agriculture and Interior

Phase II – Develop Regional Goals, Objectives, Actions and Activities

- Three regions have been identified
 - Northeast
 - Southeast
 - West
- Regional Strategy Committee
- Implement a collaborative planning process and analytical protocol



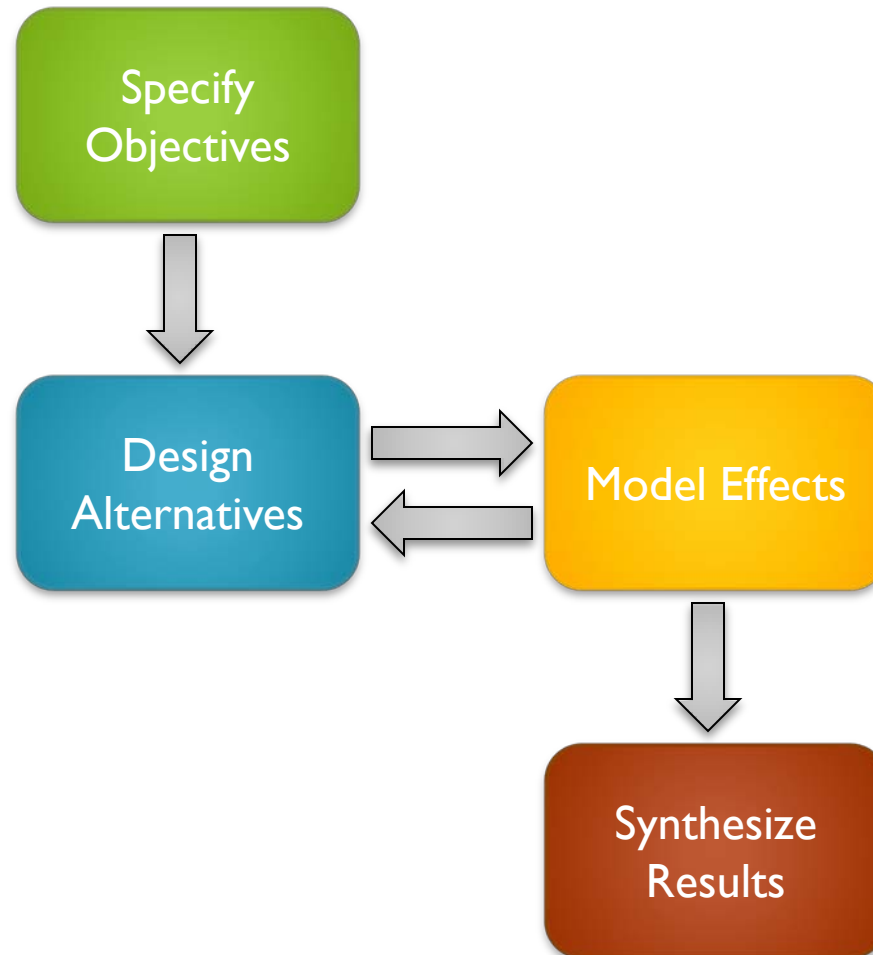
Basic Principles of Phase II

- Collaborative
 - Engages stakeholders, managers, and analysts
 - Shared responsibility and ownership of process and results
- Rigorous
 - Adopts a formal definition of risk
 - Uses scientifically credible data and analyses
- Transparent
 - All steps are documented and shared

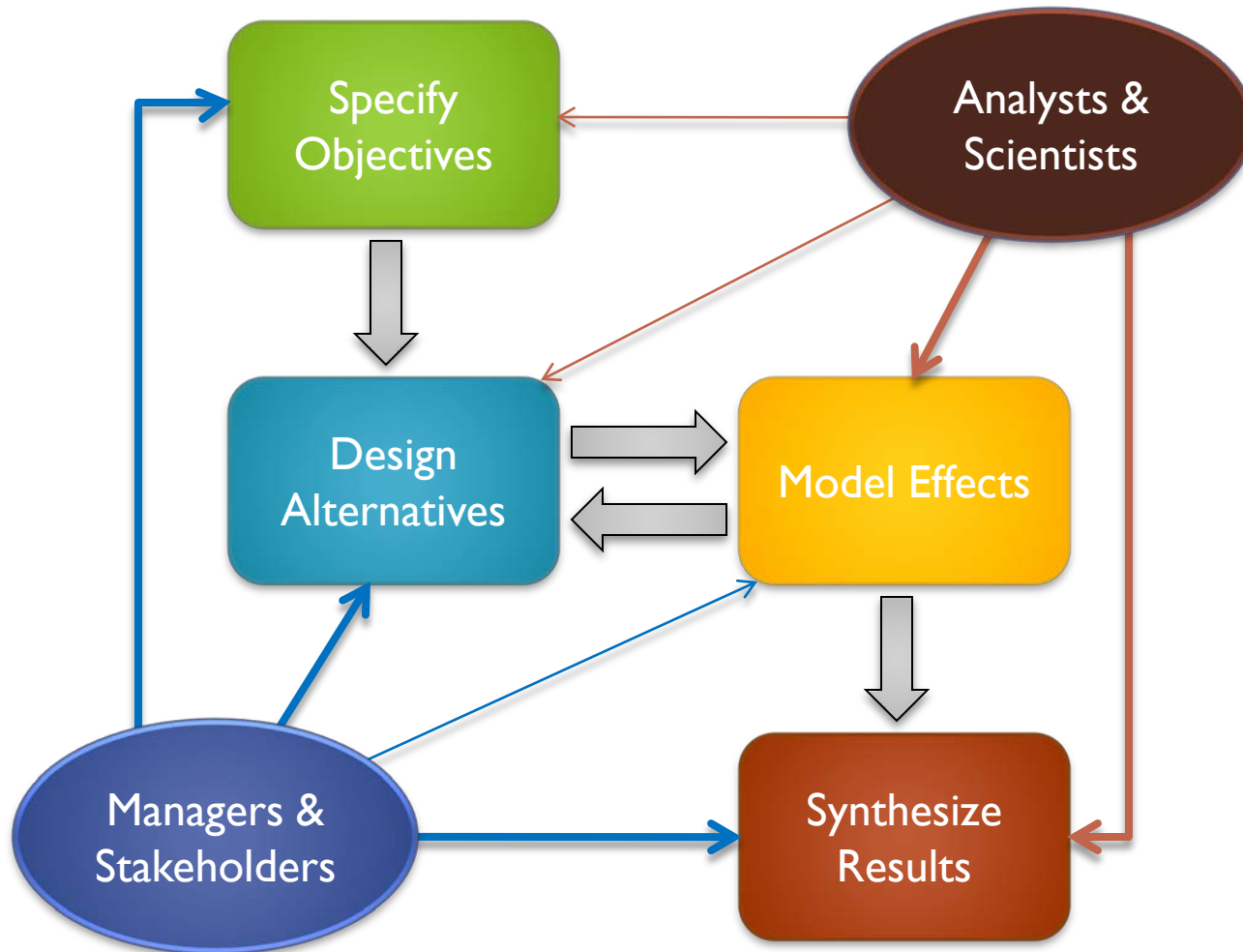
Intent and Deliverables

- Define regional goals and objectives and portfolio of actions and activities
- Complete qualitative analysis of goals and objectives and portfolio of actions and activities
- Develop protocol and guidance to complete quantitative analysis in Phase III (National Tradeoff Analysis)
 - Conceptual models, analytical models
 - Local and national data

Four Step Planning and Analysis Process



Role of Different Groups



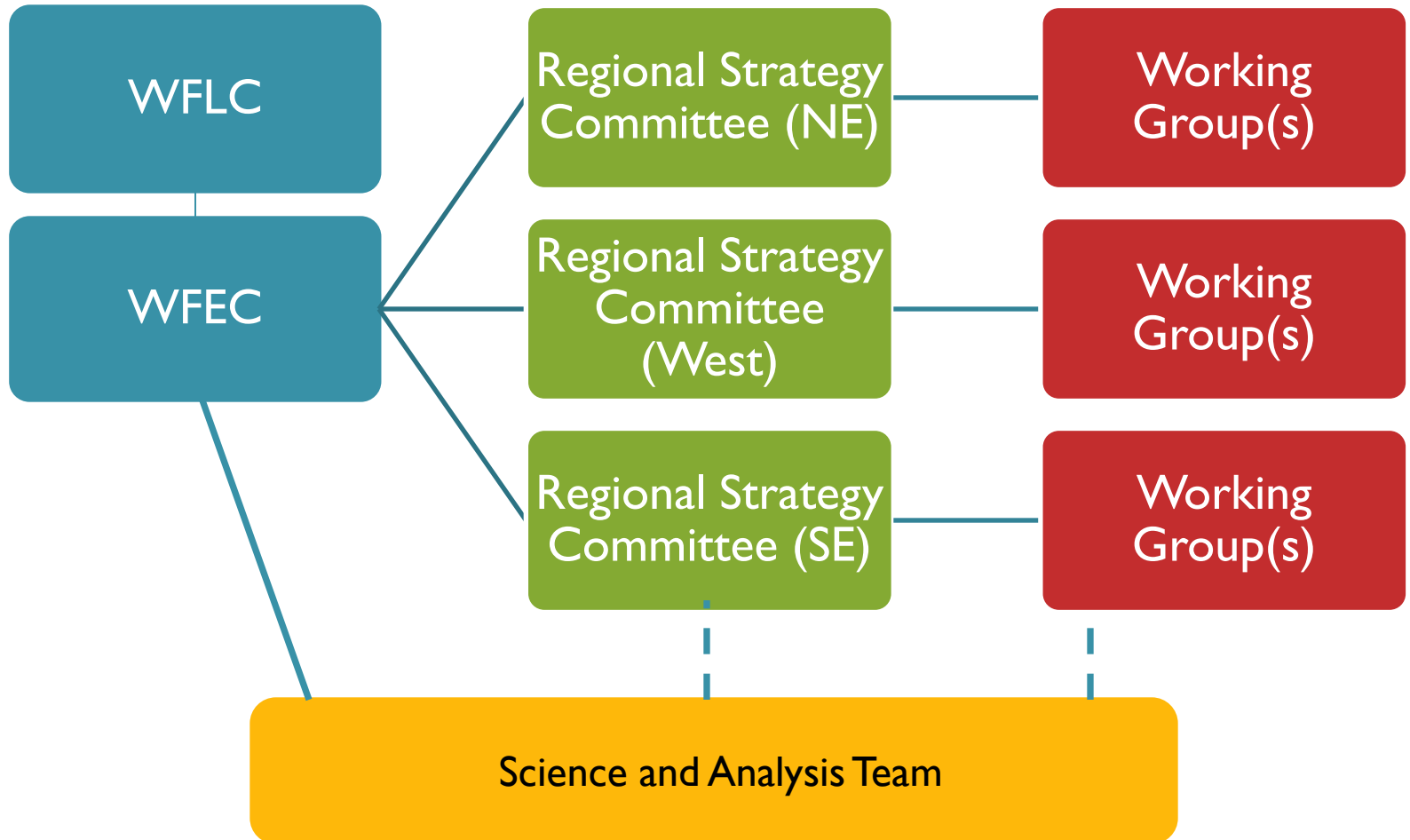
Tools

- **CRAFT: Comparative Risk Assessment Framework and Tools**



- A structured approach for making complex decisions
- “Wizard”—a guide through the planning process and GIS Viewer
- Probability modeling software and support for a range of ancillary models and datasets

Governance



Phase III – National Risk Trade-Off Analysis & Execution

- Phase III will build on Phase II.
- Regional goals, objectives, and portfolio of actions and activities will be used to perform a national-level trade-off risk analysis.
- Trade-off risk analysis will inform a national strategy to mitigate wildland fire risks to communities and landscapes.
- Implement National Cohesive Strategy

Timeline

- **Phase I: Completed March 2011**
 - WFLC agreement on documents (March 2011)
 - Secretary signatures process, (March 2011)
- **Phase II: Present - September 30, 2011**
 - WFLC agreement on process, deliverables and timeline (March 2011)
 - Regional Strategy Committee members appointed (March 2011)
- **Phase III: September 30, 2011 -
September 30, 2012**

Resources

- Continued Cohesive Strategy updates available at:

www.forestsandrangelands.gov

- Comparative Risk Assessment Framework and Tools (CRAFT):

<http://www.forestthreats.org/current-projects/project-summaries/CRAFT>

Questions





A NATIONAL COHESIVE WILDLAND FIRE MANAGEMENT STRATEGY



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Rural firefighters provide structure protection during the Castle Rock fire in Idaho. Credit: NIFC, Kari Greer

EXECUTIVE SUMMARY

Addressing wildfire is not simply a fire management, fire operations, or wildland-urban interface problem — it is a larger, more complex land management and societal issue. The vision for the next century is to:

Safely and effectively extinguish fire, when needed; use fire where allowable; manage our natural resources; and as a Nation, live with wildland fire.

Three primary factors have been identified as presenting the greatest challenges and the greatest opportunities for making a positive difference in addressing the wildland fire problems to achieve this vision. They are:

- **Restoring and maintaining resilient landscapes.** The strategy must recognize the current lack of ecosystem health and variability of this issue from geographic area to geographic area. Because landscape conditions and needs vary depending on local climate and fuel conditions, among other elements, the strategy will address landscapes on a regional and sub-regional scale.
- **Creating fire-adapted communities.** The strategy will offer options and opportunities to engage communities and work with them to become more resistant to wildfire threats.
- **Responding to Wildfires.** This element considers the full spectrum of fire management activities and recognizes the differences in missions among local, state, tribal and Federal agencies. The strategy offers collaboratively developed methodologies to move forward.

Three Primary Factors

Restoring and Maintaining Resilient Landscapes, Creating Fire-Adapted Communities and Responding to Wildfires



The Cohesive Strategy is defined by three phases. This phased approach allows stakeholders to both systematically and thoroughly develop a dynamic approach to planning for, responding to, and recovering from a wildland fire incident. The three phases include:

- **Phase I: National Cohesive Wildland Fire Management Strategy**
- **Phase II: Development of Regional Strategies and Assessments**
- **Phase III: National Trade-Off Analysis and Execution**

A cohesive strategy must commit to this shared national vision for present and future wildland fire and land management activities in the United States. It must build on the foundation of other efforts to establish direction for wildland fire management in America — the 1995 Federal Wildland Fire Policy and Program Review; the documents that comprised the National Fire Plan; *A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment: A 10-Year Strategy*; both editions of the Quadrennial Fire Review; *Mutual Expectations for Preparedness and Suppression in the Interface*; *A Call to Action*; and *Wildland Fire Protection and Response in the United States, The Responsibilities, Authorities, and Roles of Federal, State, Local and Tribal Governments*.

The past two decades have seen a rapid escalation of severe fire behavior, home and property losses, higher costs, increased threats to communities and worsening conditions on the land. These trends call for a broad-based, collaborative and cohesive response to better address the mounting challenges. Congress, the fire community, and the public have recognized a need for a new strategy, a new path forward and perhaps, a new way of thinking about wildland fire, recognizing a one-size-fits-all approach does not work across the Nation.

The challenges of fire management are formidable and growing more complex. The Nation has diverse landscapes, demographics, and social values; and because of this, a national strategy must address these differences. It will take a united, comprehensive effort to successfully address these issues.

The key to a cohesive strategy is its inclusiveness. A national strategy must be just that — one that has applicability and relevance across the board from the small, rural fire department in Maine, to a large city in California, to a state forestry department in North Carolina or a tribal community in the Midwest, as well as to the Federal agencies. Simply including all stakeholders is not enough. A strategy, shaped by a shared vision, requires building new relationships among those stakeholders. Skepticism and issues of trust must be recognized and overcome; all voices must be acknowledged and heard.

The Federal Land Assistance, Management and Enhancement Act of 2009 (the FLAME Act) was signed by the President in November 2009. The Act states, in part, “Not later than one year after the date of the enactment, the Secretary of the Interior and Secretary of Agriculture shall submit to Congress a report that contains a cohesive wildfire management strategy.” The FLAME Act directs that a cohesive strategy be developed addressing seven specific topic areas ranging from how best to allocate fire budgets at the Federal level to assessing risk to communities, and prioritizing hazardous fuels project funds. The FLAME Act is the catalyst for bringing fire leadership at all levels together and prompting a new approach to how wildland fire is managed. This new approach will guide the development of a national cohesive strategy that paves the way for developing a national wildland fire management policy.

PART 1: NATIONAL CHALLENGES - MANAGING WILDFIRE ON THE NATIONAL LANDSCAPE

Wildland fire management response in the United States has evolved into an increasingly complex and multifaceted system. Climate change, fuels management, expanding wildland-urban interface and associated infrastructure, budgets, along with mission differences are some of the challenges facing wildland fire managers today. The National Cohesive Wildland Fire Management Strategy seeks to ensure that the values and concerns of the public and all governments are accurately understood and reflected. This demands a more comprehensive understanding of the diverse perspectives that underlie this situation – encompassing both the social/human and science dimensions.

Managers and natural resource experts recognize that the creation of a truly national cohesive strategy will include not only the seven elements identified in the FLAME Act but must also envision a broader, overarching and comprehensive consideration of all lands and fire programs. Therein lies the primary challenges facing wildfire managers, land managers, and communities in developing a strategy that meets local, regional and national needs.

Wildfire knows no boundaries; it does not recognize jurisdictional responsibilities. A single wildfire often crosses private, county, state, tribal and Federal lands and threatens communities, infrastructure, economies, and valuable natural resources that affect citizens, landowners and fire managers across all landscapes. Significant issues facing all departments and agencies are the effects of climate change, fuels management, and protecting resource values. Yet, there are critical differences in agency/department cultures and missions, and funding levels across fire management entities creating national challenges for all.

National Challenges

Engaging the public. While building and landscaping codes can aid in reducing the risk to homes and communities, additional actions must be taken by individual property owners. One of the leading challenges fire managers face is engaging the public to a level where individuals and communities assume responsibility for making their own properties fire-resistant. Measures, taken prior to a wildfire occurrence, by property owners on their own properties, result in the most effective efforts in protecting homes and communities. A national cohesive strategy will build upon earlier efforts, as an effective means to engage the public.



Firefighters talk to a home owner in the wildland urban interface on a fire in Idaho. Credit: Kari Greer, NIFC.

More resilient landscapes in dynamic environments. Declining vegetative health across the national landscape has contributed to the increasing risk of catastrophic wildfire which threatens landscapes and communities. These factors — including weather variability, fire exclusion, spread of insects and diseases and non-native species, changing land use, fragmentation, and urbanization — pose a significant challenge to establishing and maintaining healthy, resilient landscapes and communities.

Roles and responsibilities. Managing the Nation's wildfires is a comprehensive undertaking. Taking initial action at the most local level, managing large complexes of wildfires threatening communities, infrastructure and valuable natural resources, and all actions in between, are responsibilities of the Nation's fire community. A workable strategy must include and define the varying roles and responsibilities of fire managers at all levels and determine how those levels blend together to achieve the national goal of cohesive wildfire management.

Agency and mission differences. A local fire department's primary mission may be structural in nature, but its mission often includes initial attack on wildfire ignitions within its jurisdiction. State forestry agencies are bound to their mission of suppressing all fires threatening state and private timber and other resources. Federal agencies have a broader mission on public land and may employ alternative fire management strategies. Federal agencies also have a special trust obligation to Native Americans, their land and reserved rights.

An effective cohesive strategy must guide all organizations to recognize and accept each others' management differences and promote a more cohesive response to the wildfire management challenges across all jurisdictions.

Building on past success and shared understanding. The Nation's wildland fire community has greatly evolved since the days when firefighting resources were not shared, and fire crews would not cross jurisdictional boundaries to suppress a fire. Gone, too, are the days when Federal and state or local firefighters had no capability to communicate with each other on the fire line. While great strides have been made in collaboration and cooperation, there continues to be differences of perspective and associated tensions which must be addressed and resolved in order for a cohesive strategy to be effective.

Shared Assumptions

In spite of differences in culture, responsibilities, missions, funding and other elements of their respective fire programs, fire managers, at all levels, agree there are commonalities to be recognized in a national cohesive strategy. Addressing wildfire is not simply a fire management, fire operations or wildland-urban interface problem – it is a much larger, more complex land management and societal issue.

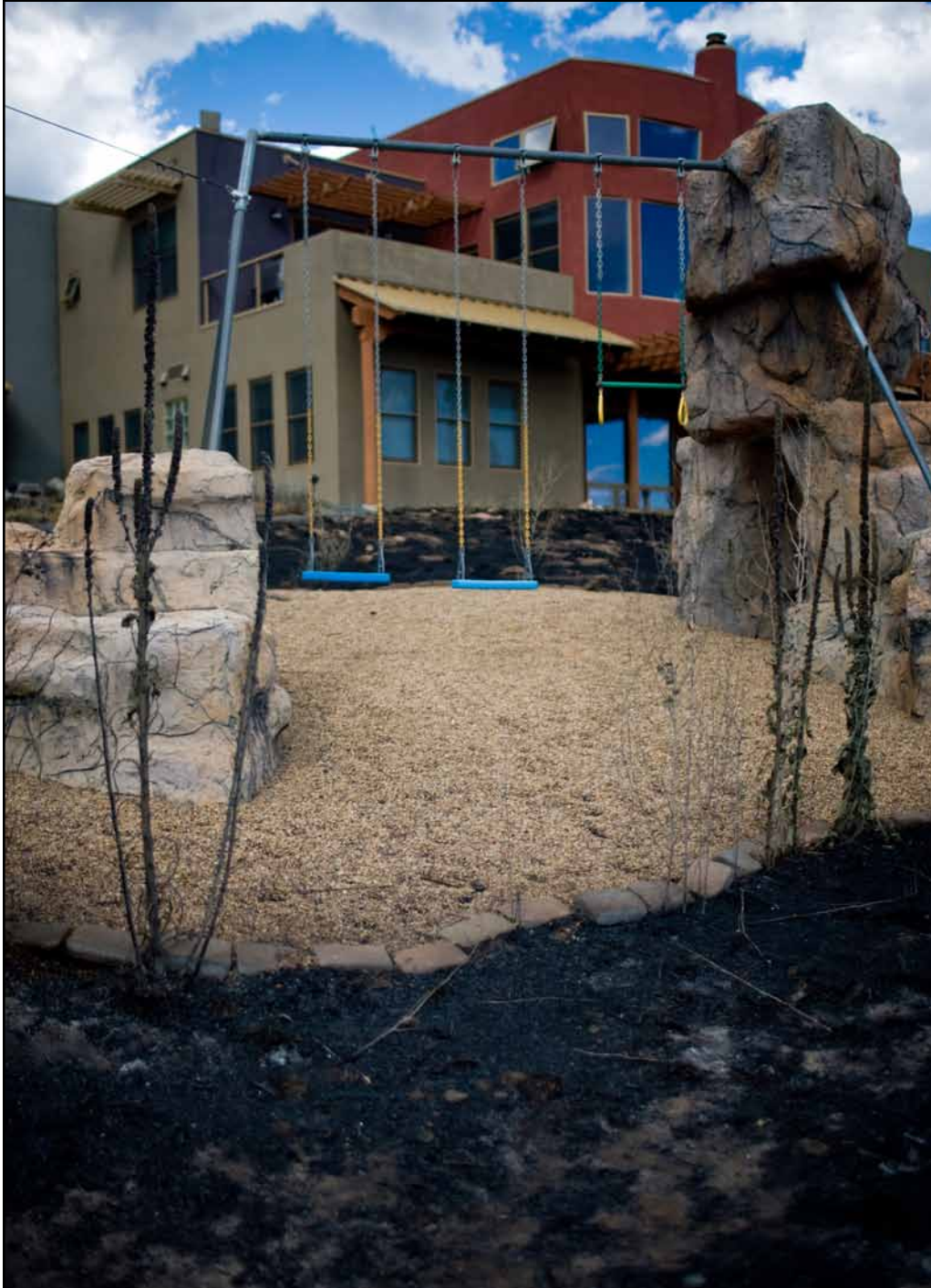
Insufficient active management and the need for a better understanding of fire's natural role in landscape health must be reflected in a cohesive strategy as a trigger for change. There are social and regulatory challenges to the active management of landscapes and biomass utilization. Because of fire's impact on air quality and water resources, and on commodity and community values, there are regulatory and social constraints on its use and management.

A national cohesive strategy must recognize the differences and tensions that exist among the partners and stakeholders and why those differences exist (e.g., different priorities, planning processes, legal mandates, values and resources) and seek to resolve them. It must build stronger relationships based on the successes of intergovernmental agreements for mutual response; incorporate cost and data sharing; include community protection planning (Community Wildfire Protection Plans or their equivalent), regional fire risk assessments, State and Forest Resource Assessments and Strategies; and encourage increased use of partnerships, grants and other funding opportunities. Each of these tools can be used to build stronger collaborative processes and move toward shared understandings that resolve conflicts and enhance partnerships among multiple landowners across all lands and jurisdictions.



Firefighters watch a plume of smoke during a WUI fire. Credit: FWS.

To achieve workable solutions, a cohesive strategy must ensure the human dimension is accorded equal weight with the physical and ecological science dimensions of wildfire. A national strategy will recognize the differences among the diverse areas of the Country – and promote public acceptance and understanding – i.e., how people filter, receive, accept, embrace and take action before, during, and after wildfires. True ownership for a “national” strategy is the means to the transformational process envisioned for landscapes and communities.



This house is inside the perimeter of the Fourmile Canyon Fire near Boulder, Colorado, in the wildland-urban interface. The 7,000 acre fire claimed nearly 170 houses in the first days of the blaze. The owners properly prepared their land for the potential of wildfire, including building with fire resistant materials, and preparing defensible, fuel-minimized spaces in the areas surrounding their home. Credit: Matt Slaby, NIFC.

PART 2: GUIDING PRINCIPLES AND CORE VALUES

A component of building on success includes moving beyond organizationally specific sets of guidelines that direct Federal, state, tribal or local fire policies. The following guiding principles were crafted through discussions with Federal, state, tribal, and local governmental and non-governmental organizational representatives. The goal was to build an overarching set of principles that would apply to all stakeholders in the wildland fire management community – and would also reach across the different elements, from resilient landscapes and fire-adapted communities to wildfire response. In developing regional strategies, these guiding principles and core values must be considered:

- Reducing risk to firefighters and the public is the first priority in every fire management activity.
- Sound risk management is the foundation for all management activities.
- Actively manage the land to make it more resilient to disturbance, in accordance with management objectives.
- Improve and sustain both community and individual responsibilities to prepare for, respond to and recover from wildfire through capacity-building activities.
- Rigorous wildfire prevention programs are supported across all jurisdictions.
- Wildland fire, as an essential ecological process and natural change agent, may be incorporated into the planning process and wildfire response.
- Fire management decisions are based on the best available science, knowledge and experience, and used to evaluate risk versus gain.
- Federal agencies, local, state, tribal governments support one another with wildfire response, including engagement in collaborative planning and the decision-making processes that take into account all lands and recognize the interdependence and statutory responsibilities among jurisdictions.
- Where land and resource management objectives differ, prudent and safe actions must be taken through collaborative fire planning and suppression response to keep unwanted wildfires from spreading to adjacent jurisdictions.
- Safe aggressive initial attack is often the best suppression strategy to keep unwanted wildfires small and costs down.
- Fire management programs and activities are economically viable and commensurate with values to be protected, land and resource management objectives, and social and environmental quality considerations.



The West Cinder prescribed fire in Idaho burned cheat grass and tumble mustard.
Credit: Kari Greer, NIFC.

PART 3: NATIONAL GOALS AND PERFORMANCE MEASURES

Wildfire crosses and affects all lands and resources regardless of jurisdiction and ownership. Each responding organization has a role in working together to protect lives, property and resources. Concise, mutually accepted goals and guiding principles are the foundation of a cohesive strategy. Clear accountability will ultimately promote transparency and aid oversight during the implementation phase. These overarching, broad goals and performance measures will be used as a foundation as regional tasks and actions and performance measures are developed in Phase II. Measurement of risk will be the common thread. Probability and consequences will be determined by region to inform this risk calculation.

Restore and Maintain Landscapes:

GOAL: *Landscapes across all jurisdictions are resilient to fire-related disturbances in accordance with management objectives.*

Outcome-based Performance Measure:

- Risk to landscapes is diminished.

National output-based metrics, in support of the national measure, will center on risk to ecosystems at landscape scales.

Fire Adapted Communities:

GOAL: *Human populations and infrastructure can withstand a wildfire without loss of life and property.*

Outcome-based Performance Measure:

- Risk of wildfire impacts to communities is diminished.
- Individuals and communities accept and act upon their responsibility to prepare their properties for wildfire.
- Jurisdictions assess level of risk and establish roles and responsibilities for mitigating both the threat and the consequences of wildfire.
- Effectiveness of mitigation activities is monitored, collected and shared.

National output-based metrics will include indicators relevant to communities with mitigation plans and planned or completed treatments.

Wildfire Response:

GOAL: *All jurisdictions participate in making and implementing safe, effective, efficient risk-based wildfire management decisions.*

Outcome-based Performance Measure:

- Injuries and loss of life to the public and firefighters are diminished.
- Response to shared-jurisdiction wildfire is efficient and effective.
- Pre-fire multi-jurisdictional planning occurs.

National output-based metrics will reflect trends in changing risk to support the national measure. Indicators will include pre-season agreements and annual operating plans, integrated wildfire response scenarios, and shared training. Risk exposure to firefighters will be based on a balanced consideration of values protected and the probability of success.

Monitoring and Evaluation

Understandable, verifiable metrics will be developed in Phase II and Phase III to assess outcomes, ensure transparency, and provide oversight to the three primary factors of the Cohesive Strategy – restoring and maintaining landscapes, achieving fire-adapted communities, and responding to wildfire. Mechanisms for monitoring, evaluating, acquiring feedback, and sharing lessons-learned will be used to enable and encourage more timely adaptive management of the approaches and activities identified during the implementation phase of this strategy. Monitoring and evaluation of strategies and their effectiveness will be essential to the long-term success of a national cohesive strategy. Monitoring metrics will be developed to address trends over time.



A prescribed fire in Palm Beach County, Florida, helped to reduce the threat of wildfire for the surrounding community and improve wildlife habitat.

PART 4: GOVERNANCE

The Cohesive Strategy is designed to account for many of the needs, challenges, opportunities, and issues for all wildfire organizations, at all levels, across the Country. The Cohesive Strategy is dynamic and responsive to changes in the wildland fire community and environment. The FLAME Act requires that the Cohesive Strategy be revised at least every 5 years to consider changes with respect to landscape, vegetation, climate, and weather. The next two phases will address regional and local issues, with full implementation planned. For those reasons alone, the need for the Cohesive Strategy governance will continue.

Overall Governance of the Cohesive Strategy

The Secretaries of the United States Department of Agriculture (USDA) and the Department of the Interior (DOI) ultimately govern the development and implementation of the Cohesive Strategy; Congress exercises oversight. The Secretaries delegated the responsibility of overseeing development of the Cohesive Strategy to the Wildland Fire Leadership Council (WFLC). The WFLC is an intergovernmental council of Federal, state, tribal, county, local and municipal government officials convened by the Secretaries of the Interior, Agriculture, and Homeland Security to ensure consistent implementation of wildland fire policies, goals and management activities. The WFLC will remain as the body with oversight and decision-making authority through all phases of the cohesive strategy process. For a list of WFLC members, see Appendix E.

Future Governance

The WFLC designated the Wildland Fire Executive Council (WFEC) to oversee implementation of the Cohesive Strategy. The WFEC's organizational structure closely mirrors that of WFLC; thus, the same broad representation of local, state, tribal and Federal organizations remains intact. As Phase II of the Cohesive Strategy begins, regional strategy committees will be established. Local and regional plans and direction will take form during Phase II. Regions may elect to establish sub-regions to ensure inclusivity. The delegation of responsibility and authority for the Cohesive Strategy ensures a voice in governance at all levels and fire jurisdictions. For a list of WFEC members, see Appendix H.

Regional Strategy Committees

Regional Strategy Committees will include members from the DOI agencies, USDA Forest Service (Forest Service), tribes, state foresters, and representatives of the following elected officials: a governor, county commissioner, and mayor. Additional members may be added to the regional strategy committees as the committees see fit. One strategy committee will be established for each region. The regional strategy committee will be responsible for the identification of appropriate analysis areas. The regional committees will utilize expertise and information from existing entities within the region—scientists, traditional ecological knowledge sources, land managers, and other experts in wildland management, when conducting analyses for these areas.



A member of the Jackson hotshot crew cuts through thick brush while working on a hazardous fuels reduction project in Florida. Credit: BLM.

PART 5:
PHASE II: DEVELOPMENT OF REGIONAL STRATEGIES AND ASSESSMENTS
PHASE III: NATIONAL TRADE-OFF ANALYSIS AND EXECUTION

The Cohesive Strategy must reconcile concerns about wildfire risk, values at risk, and appropriate response to wildfire at different temporal and geographic scales. There is a need to balance a uniform evaluation of wildfire risk across the Nation, while ensuring that local and regional concerns and values are neither compromised nor overlooked. The full development of a national cohesive strategy will include a number of regional strategies supported by local and regional priorities, which may vary depending on local and regional concerns.

Wildfire Risk Assessment Process

A science-based framework will allow for systematic evaluation of a range of alternative future scenarios and land management options at national, regional, sub-regional and local scales. The wildfire risk assessment process provides a template that allows wildfire risk maps to link the probability of fire and fire intensity with potential resource benefits and loss of resources. The assessment process will be temporally scalable by including short-term versus long-term trade-off analyses. The process also will be geographically scalable by using nationally consistent data for coarse-scale analysis and refining data as the national template is adapted at regional and sub-regional assessment levels. The analyses results can be used at the national level by policy-makers and at regional and local scales by planners and managers to prioritize projects and investments to reduce wildfire risk. The process can be used to weigh management options within the context of land and resource management plans, collaborative frameworks, community protection plans, and other landscape planning efforts. The risk assessment process is more fully explored in Appendix A – *A Comparative Risk Assessment*.

Regional Strategies and Assessments

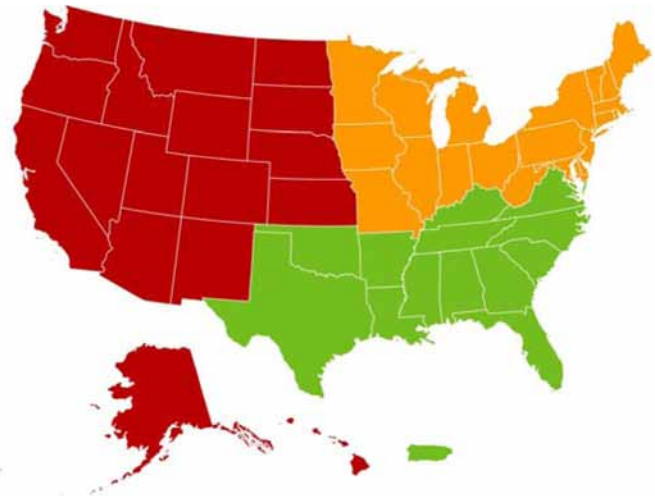
Regions

Three major regions of the Country have been identified—the Northeast, Southeast, and West. The Regional Strategy Committee will rely on information for all lands that is readily available to conduct wildfire risk analyses. These analyses will be informed by State Forest Resource Assessments and Strategies, Regional Wildfire Risk Assessments, Fire Program Analysis (FPA), resource and land management plans, and the Ecosystem Management Decision System (EMDS). Each region will use nationally consistent performance measures that translate to regional performance metrics.

Each region will identify strategies that consist of a portfolio of activities that address social and environmental values, risks and investments and will document progress and accomplishments. This information will identify the total multi-jurisdictional effort in meeting stated goals.

Regional strategies, which include the identification of barriers to the efficiency and effectiveness of the activities, will be used to inform a national trade-off analysis and identify the most effective allocation of funds. Regional Strategy Committees may delineate sub-regional areas for finer-scale analyses to inform priorities. Analyses at national, regional, sub-regional and local levels will be used to refine subsequent analyses at all three levels.

Figure 1. In Phase II, three regions have been identified by WFLC — Northeast, Southeast, and West.



The National Cohesive Wildland Fire Management Strategy intends to consistently address risks at multiple scales. There are analysis cycles that occur at the national, regional (and sub-regional), and local levels. It is important that linkages exist between each level from a top-down as well as a bottom-up perspective. Local risks are managed through local risk analyses/decision-making; regional risks are managed through regional risk analyses/decision-making; and national risks are managed through national risk analyses/decision-making. National goals and priorities influence regional goals and priorities, and national and regional goals and priorities influence local goals and priorities. Likewise, local goals and priorities influence regional/national goals and priorities. Information is shared in an upward way to inform higher level analyses and decision-making. Local values and risks influence regional and national values and risks. Likewise, national values and risks influence regional and local values and risks. The risk management framework of the National Cohesive Wildland Fire Management Strategy is designed to consistently address these elements.



Wildfire burns in the Guadalupe Mountains National Park in Texas. Credit: Fred Armstrong

Comparing National and Regional Strategies

As the National Cohesive Wildland Fire Management Strategy evolves, regional strategies will be developed that include different investment levels and mixes of options for reducing wildfire risk. These differences would reflect varying levels of emphasis on the major goals, in addition to recognizing fiscal and practical constraints. The Cohesive Strategy will include selected strategies from each region.

A comparative risk assessment is one method for rigorously comparing differences among strategic alternatives. Risk assessment is a mature scientific approach to quantifying risk. Comparative risk assessment extends the analysis to include the decision space available to managers and stakeholders to allow them to explore trade-offs among alternative courses of action. Taking this additional step requires understanding risk tolerance.

Assembling the various options into regional alternatives and then choosing among those alternatives to build a national strategy is an exercise in social choice and collaborative decision-making. Formal analytical methods exist that can help structure the decision process and make trade-offs transparent. These methods begin with clear articulation of goals and objectives and identification of alternatives, which will occur through a collaborative process involving the full spectrum of stakeholders. Quantitative analysis of each of the proposed alternatives would fall to regional analysis teams that would include university scientists and professional consultants in addition to Government researchers and analysts.

Phase II: Development of Regional Strategies and Assessments

Regional strategies will be developed and analyzed using a collaborative process that cycles between analysis and engagement with stakeholders. The process will include the following steps:

- WFEC identifies the national science/analysis team;
- WFEC adopts guidance for Regional Strategy Committees;
- Regional Strategy Committees are identified and will develop an understanding of the governance/oversight roles.
- Each Regional Strategy Committee will include representatives identified and selected by WFEC;
- Regional analytical teams are identified.
- Timeframes for the following four steps will be determined by the Regional Strategy Committees:
 1. Define the analysis process. This will include identifying the information available; the analytical tools that can be employed; and who is available to engage in the analysis.
 2. Define and analyze initial alternatives. This will involve describing an initial set of broad alternatives, including understanding the goals of each alternative, the components that are needed for the analysis of each alternative and the bounds of the analysis and problem to be addressed. Analysis of these alternatives will help test the analytical methods,

and ultimately provide information that will be needed by the regional technical and stakeholder groups to help refine specific regional alternatives.

3. Collaboratively identify the regional alternatives. Relying on local and regional knowledge and insights, describe a small set of regional alternatives. This exercise draws from the understanding gained from analysis of the initial alternatives. These alternatives would be shared with and shaped by regional stakeholders.
 4. Analyze the regional alternatives and share the results with stakeholders. Update content based on regional feedback.
- Submit results of the regional analyses for national analysis.



Fire was used by the North Carolina Division of Forest Resources to reduce hazardous fuels during a prescribed burn project. Credit: Dan Smith, NASF.

Phase III: National Trade-Off Analysis and Execution

During Phase III, the following steps will occur:

- Conduct the national analysis. Develop a draft national summary of the regional alternatives. The summary will include a description of the decision space available, a description of the activities and priorities associated with the regional alternatives, and a description of the tradeoffs associated among the alternatives.
- Share the results of the national results and summarization with stakeholders.
- Update and conclude the analysis based on feedback from the stakeholders.
- Establish a 5 year review cycle to provide updates to Congress.

In Conclusion

The Cohesive Strategy envisioned by the WFLC builds on successes of the past while incorporating a new collaborative approach to managing a complex national problem — wildfire. This new approach includes all the partners involved in fire management and gives each a voice and a role in addressing a collective problem. Reducing the risk of wildfire to landscapes and communities and crafting more effective responses to wildfire are daunting challenges at the local, regional, and national levels.

Decisions concerning investment to manage wildfire risk across the landscape must consider a wide range of strategic issues. Programs to protect lives and property will compete for available resources over different geographical areas. Comparative benefits will be valued by long-term effectiveness at reducing risk. Considering the problem at multiple scales (local, regional, and national), provides the best method to evaluate the impact of those programs and to deliver the desired results.

The Cohesive Strategy takes into account the fact that there are unique needs and environmental differences across the Country. It does not take a national top-down approach. Instead, it divides the Country into three regions that can be further divided into analysis areas, each of which will create strategies for best addressing localized or regional wildfire problems. Risk assessments will be used to identify lands and communities with highest risk and determine the actions that will have the most impact. Within the three regions, tribal, state, regional, and local interests will be heard and considered before regional strategies are rolled up into a national strategy.

The cohesive strategy process outlined here is not an endpoint. It is a beginning. Goals and principles have been agreed to by national representatives of all the stakeholders. Now begins the hard work of bringing the stakeholders, landowners, homeowners, and natural resource and fire managers together to do the regional analyses, discuss priorities, and share the mantle of responsibility for minimizing wildfire risk. Tribes, states, counties, and communities must be full partners with fire managers in protecting homes and lives from wildfire.

Taking a proactive, collaborative approach to solving the Nation's wildfire problem and involving all stakeholders provides the best opportunity to restore and maintain landscapes, protect communities from wildfire and effectively respond to wildfires when they occur.

As cited in the 2009 *A Call to Action* formulated by fire managers across multiple jurisdictions and identified as a foundational document by WFLC, "Effective partnerships, with shared responsibility held by all stakeholders of the wildland fire problem, will create well-prepared, fire-adapted communities and healthy, resilient landscapes at the most efficient cost." This is a challenge of the National Cohesive Wildland Fire Management Strategy.

APPENDIX A: COMPARATIVE RISK ASSESSMENT

The National Cohesive Wildland Fire Management Strategy (National Cohesive Strategy) is a national strategy inclusive of all lands – applicable and relevant to local, state, tribal, and Federal entities. A key to the National Cohesive Strategy is its inclusiveness. The success of Phase II of the National Cohesive Strategy hinges on regional and national trade-off analyses with meaningful participation by diverse partners.

The following appendix, Comparative Risk Assessment Framework for Wildland Fire Management, describes possible approaches and methodologies for the analytical processes of Phase II. The primary purpose of the example is to demonstrate and test the framework and explore risk-based approaches. The regional and national analyses of Phase II are expected to utilize more comprehensive data than was possible in the current example. The expectation is that Phase II will rely on the best available information from local, regional, and national sources that can be consistently assembled. While this will surface data shortcomings, there is a commitment to continuously update the National Cohesive Strategy and improve the datasets used in the Comparative Risk Assessment.

A Comparative Risk Assessment Framework for Wildland Fire Management

I. Background

Major investments are being made throughout the United States in ongoing efforts to reduce human and ecological losses from catastrophic wildfire. It is becoming increasingly clear that landscape scale changes in vegetation structure and fuel loadings are needed to significantly alter wildfire behavior, reduce wildfire losses, and achieve longer term fire resiliency. The most efficient way to achieve these long-term landscape goals remains unclear, and there are different perceptions on the relative role and effectiveness of management activities versus natural and managed wildfire to reduce fuels.

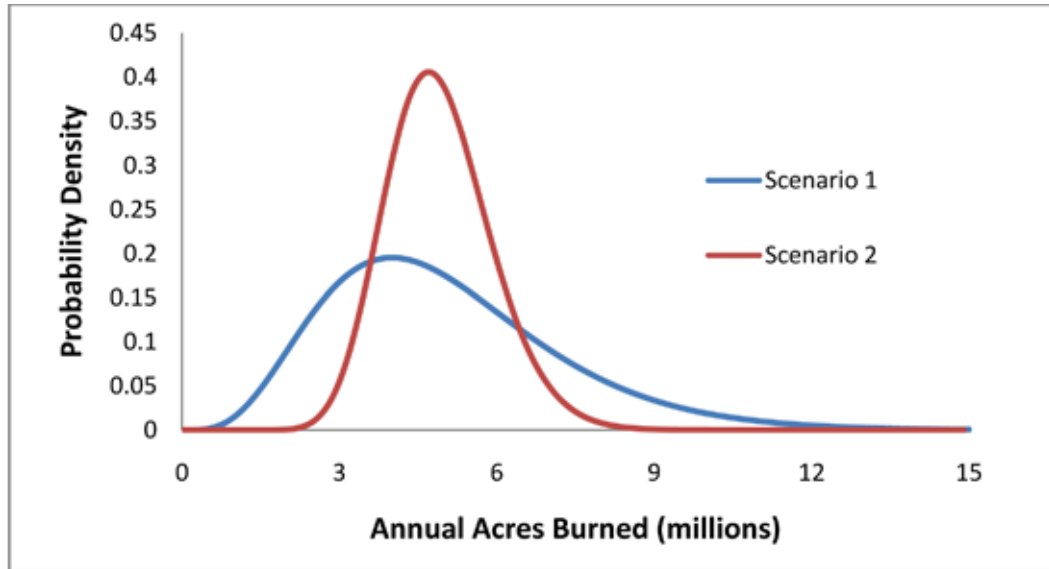
Risk is an inescapable component of living with wildfire. Whether one uses risk in the conventional sense of “something bad may happen” or a more precise definition such as the expected loss from an uncertain future event(s), the basic elements of uncertainty and loss are there. Following this basic reasoning, one can view the National Cohesive Strategy as a classic problem of *risk management*. That is, effective management requires understanding the nature of wildfire and its contributing factors, recognizing the consequences—good and bad—of fire, addressing uncertainty, and crafting plans that reduce the chances of catastrophic losses. Real-world constraints on funding, available resources, and administrative flexibility further require consideration of economic efficiency and practicality.

In order to help meet the challenges of the National Cohesive Strategy, the Science Panel proposes using comparative risk assessment as a rigorous basis for analyzing strategic alternatives (see complete report at <http://www.forestsandrangelands.gov>). Risk assessment is a long standing and mature scientific approach to quantifying risk; comparative risk assessment simply extends the analysis to include the decision space available to managers and stakeholders to allow them to explore the trade-offs between alternative courses of action. Taking this additional step requires understanding preferences and risk tolerance. Ultimately, choosing among available options demands clarity in management objectives, and where multiple objectives are present, understanding management priorities. A cornerstone of the National Cohesive Strategy will be regional strategies that address regional risks. A shared risk framework ensures consistency and comparability across goals, performance measures, methodologies, and data collection.

Recent developments in technology and decision support systems have improved the ability to assess, monitor, and respond to wildfire risk. For example, wildfire simulation models support tactical and strategic decisions related to reducing wildfire risk, and have been coupled with geospatial data on values to build risk-based decision support systems. The result has been a rapid advance in the application of risk analysis across a full range of wildfire management activities. Risk analyses are now being applied across the U.S. for a wide range of wildfire problems, including risk monitoring, strategic budget planning, wildland fire decision support systems, and fuel treatment planning.

Any rigorous approach to risk begins with a clear definition of the terminology. Herein, risk is defined as a composite measure of the probability of a set of possible outcomes and the consequences associated with each outcome. That is, risk is a two-dimensional measure that includes both the probability and magnitude of potential outcomes. For example, consider the two probability distributions shown in Figure 1, which represent the uncertainty in the number of acres burned annually under two scenarios. Both distributions have an average value of 5 million acres, but the wider spread in the curve tagged Scenario 1 suggests greater uncertainty in what the actual value in a given year will be. If the social or ecological consequences associated with each acre that burns increases with the total acres burning, then Scenario 2 would be preferable to Scenario 1, despite having the same expected value. Discerning such differences requires understanding the consequences of fire beyond simple summary statistics.

Figure 1. Quantifying risk as a probability distribution



Although the full probability distribution is preferred for many comparative risk assessments, reducing risk to a single index can aid risk comparisons across complex landscapes where the sheer numbers to consider can be overwhelming. One such index is the probabilistic expectation of net resource value change in response to fire. Mathematically, this is defined as:

$$E(NVC_j) = \sum_i p(f_i)RF_j(f_i)$$

where:

$E(NVC_j)$ expected net value change to resource j

$p(f_i)$ probability of a fire at intensity level i

$RF_j(f_i)$ response function for resource j as a function of fire intensity level i

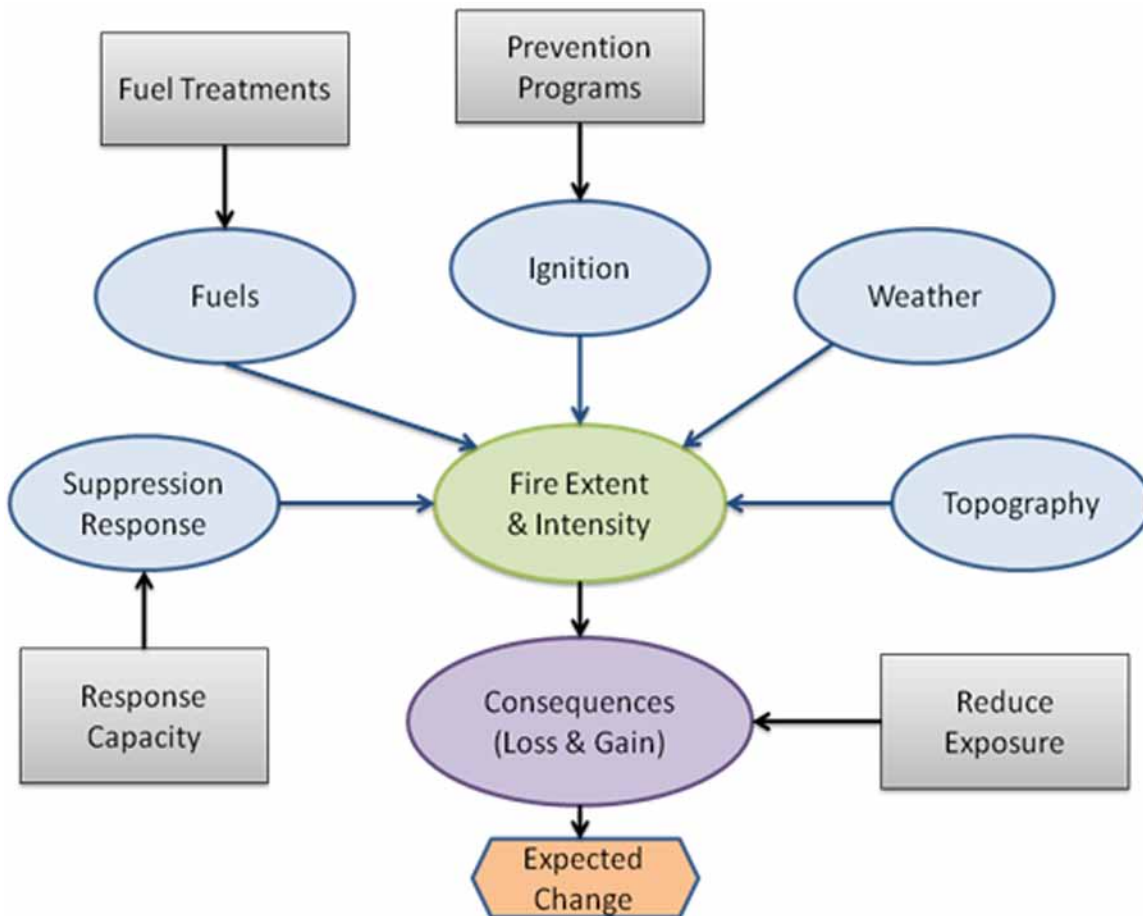
Thus, the expected NVC is the product of burn probability at a given fire intensity and the resulting change in resource value, summed over all possible fire intensities. The components required to generate spatially explicit wildfire risk indices are: 1) burn probability maps generated from wildfire simulation models, 2) spatially identified resources, and 3) response functions describing the impact of fire on the resource(s) in question.

Essential Elements for Analyzing Risk

One of the first steps in comparative risk assessment is developing a conceptual model that simplifies the problem into a set of basic components and provides a framework for discussing strategic options. For example, consider the hypothetical case of a single wildfire. Whether a wildfire ignites and how extensively and intensively it burns depends on the interactions of five factors: a source of ignition, available fuels, topography, weather, and suppression response. By itself, the fire is simply an event. It can be described by its location, intensity, duration, extent, or other characteristics, but it has no normative value—it is neither good nor bad. The consequences matter, however, whenever homes and other structures are involved, or when critical habitat for an endangered species will be rendered unsuitable for decades following the fire. Naturally, the extent of the loss of value depends on the extent and intensity of the fire and how many homes or acres of habitat are affected.

This simple model of risk can be completed by adding consequences (value changes) and management options available that might directly affect factors contributing to risk (**Figure 2**). For example, a fire prevention program could lessen the probability of human caused ignitions. Similarly, a fuels treatment program might change fire behavior and make it less damaging or easier to suppress. A third option might be to consider adding firefighting capacity to the local community or management unit so that wildfires are more often contained before they grow large and damaging. Finally, some consideration might be given to reducing the likelihood of a wildfire damaging homes or other structures by focusing on the immediate area around the home or near critical habitats. The intent in this option is not to change fire directly, but rather to lessen the consequences if it occurs.

Figure 2. A simple conceptual model of wildfire, its contributing factors, consequences, and management options.



The next step in comparative risk assessment is translating the conceptual model into a probabilistic model that can be used to generate quantitative estimates of risk, given alternative management choices as inputs. Such models must be parameterized and validated using rigorous statistical methods and checked against empirical data if they are to rise to the standard of high-quality risk assessment tools. Finding the appropriate balance among model complexity, data demands, and utility is a major challenge. The example analyses described in following sections suggest that current models and data are available to help meet this challenge, but more work is needed.

Balancing Regional and National Priorities

Developing an overarching national strategy invariably will involve tradeoffs between regional and national priorities. As the National Cohesive Strategy evolves, various regional strategies will be proposed that include different investment levels and mixes of options for reducing wildfire risk. These differences would reflect varying levels of emphasis on the major goals of the National Cohesive Strategy, in addition to recognizing fiscal and practical constraints. For example, each regional strategy could consist of a given funding level for each of the three key components of the National Cohesive Strategy— Landscapes, Fire Adapted Communities, and Wildfire Response. The National Cohesive Strategy will comprise selected strategies from each region.

Assembling the various options into regional alternatives and then choosing among those alternatives to build a national strategy is fundamentally an exercise in social choice and collaborative decision making. Formal analytical methods exist that can help structure the decision process and make trade-offs transparent. Consistency among the methods used in each region will help facilitate national comparisons. There is a tension between adopting a top-down approach and retaining analytical and decision flexibility at regional and local scales. The more disparate regional analyses are, the greater the difficulty of integrating analyses, maintaining and updating analyses over time, and comparing outputs over time to previous versions.

One of the primary challenges for both regional and national efforts is developing performance measures (i.e., assessment endpoints) that accurately represent accomplishments in risk reduction and integrate the diversity of regionally specific issues and management priorities. Regional analyses can provide more refined risk analysis than available at the national scale and clarify the relative priority of protecting potentially competing resource demands. However each region may identify alternative methods for considering risk to individual resources and consider different sets of values. Accommodating these differences—while maintaining the capacity for national comparison—requires careful attention to methods and data.

II. Probabilistic Assessment of Wildfire Risk: A National Example

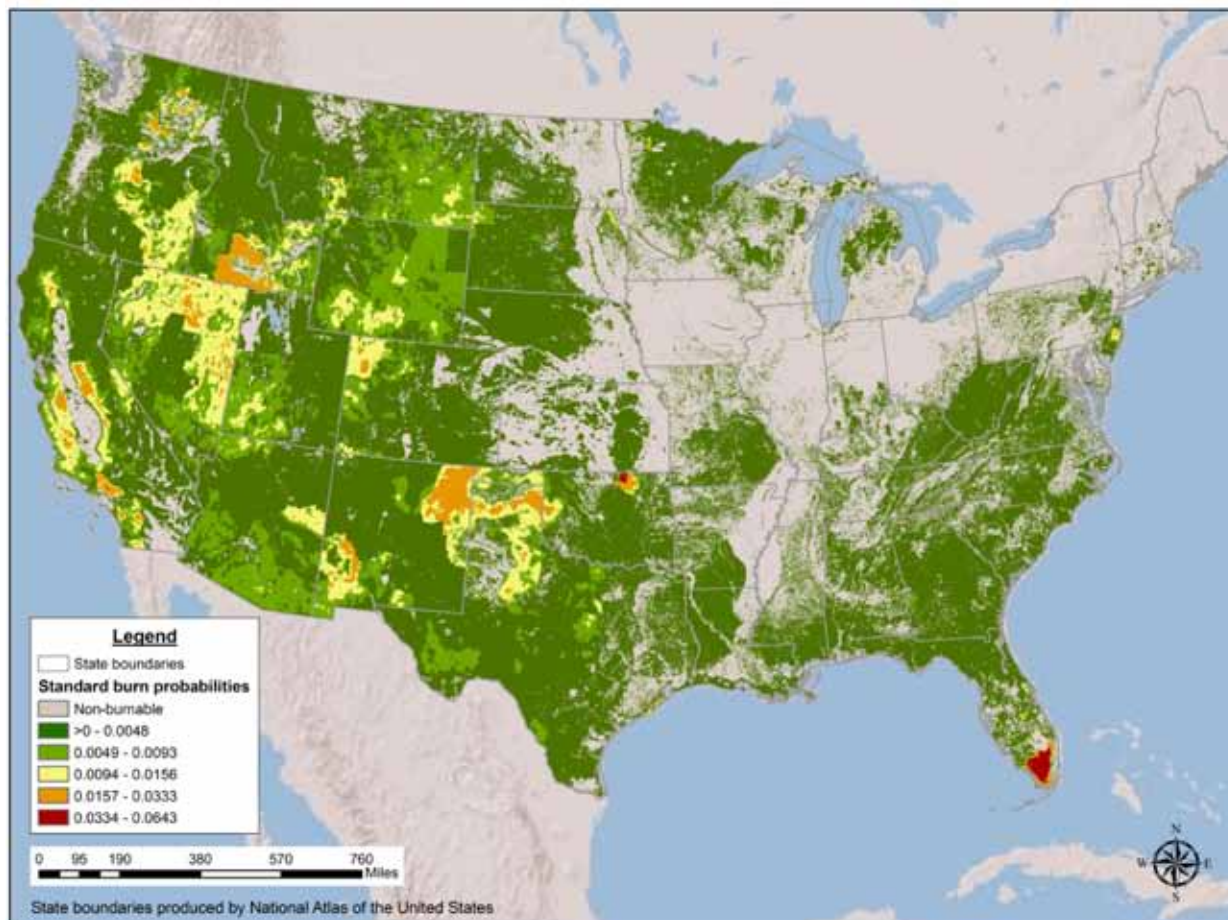
A recent publication, *Wildland Fire Risk and Hazard: Procedures for the First Approximation*, describes a baseline assessment framework from which to build national, regional, and sub-regional analyses. This national assessment provides an example of how wildfire risk can be assessed at the national level. It was completed to facilitate monitoring trends in wildfire risk over time, and to develop information useful in prioritizing fuels treatments and mitigation measures. The project employed a risk framework that included:

- Estimating spatially explicit fire probability and intensity through the use of a wildfire simulation model
- Characterizing important resource values and assets (for example, municipal watersheds, endangered species habitat, and where people live)
- Developing response functions to quantify how important resource values and assets change under varying levels of fire intensity
- Calculating expected NVC and summarizing by geographical areas

Seven broad categories of developed and natural resources were included in the assessment: populated areas, fire-adapted ecosystems, fire-susceptible species, energy infrastructure, recreation infrastructure, municipal watersheds, and air quality. These values were consolidated into a single measure using relative scoring criteria commonly used in problems involving multiple variables that are not directly comparable. It is recognized that the resources considered in this first approximation do not include all the resources deemed important to each region of the Country.

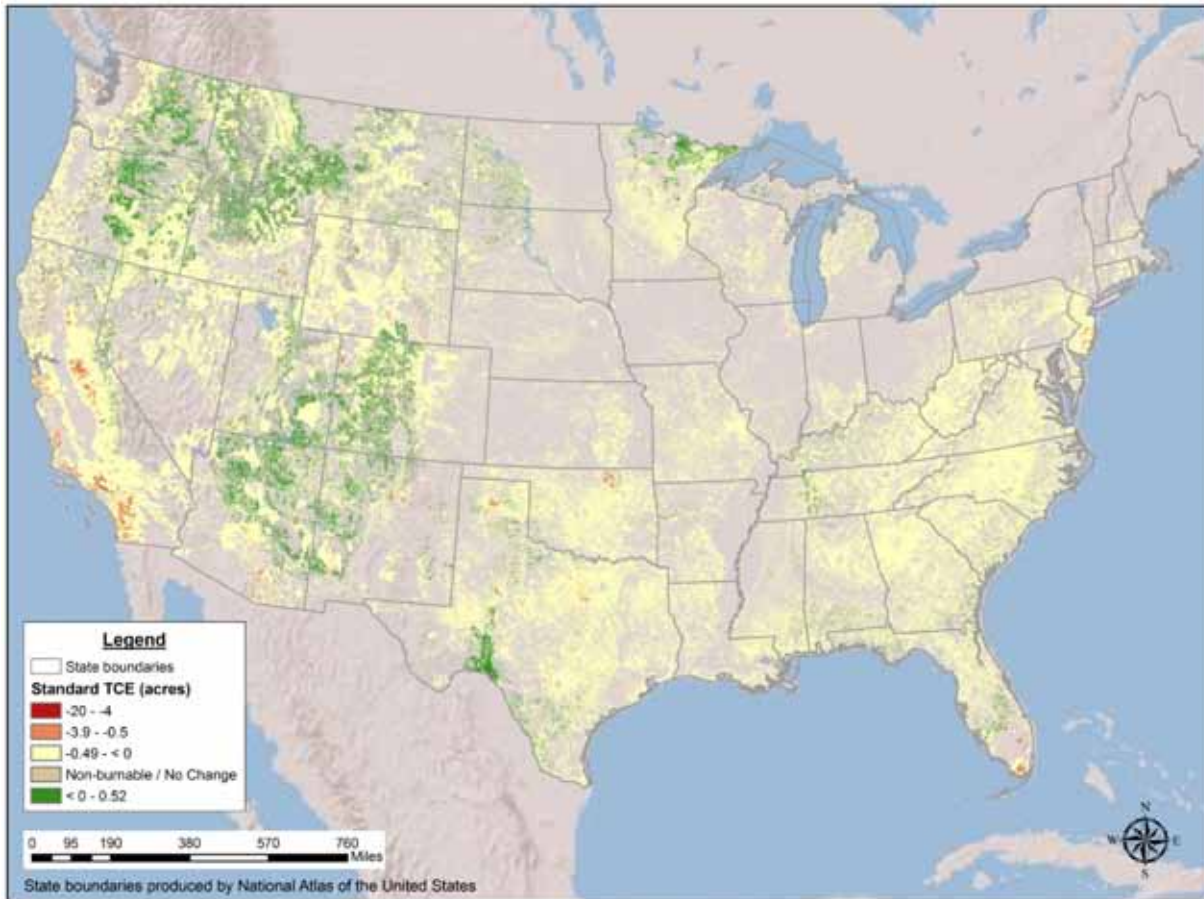
The national maps of burn probability and conditional fire intensities reveal important regional differences. First, burn probabilities are generally higher in the western half of the Country, with the notable exception of southern Florida (Figure 3). Fires often grow larger in the west because of the continuity of wildland vegetation. Second, flame lengths tend to also be greater in the west and along the edge of the east coast because of the potential for crown fire caused by conifer forest and fuel structure. Higher probabilities of low flame lengths predominate in the eastern half of the Country.

Figure 3. National map of burn probability generated using simulation modeling.



Similar regional patterns are apparent in the national risk map (Figure 4). Higher expected losses appear concentrated in southern Florida, southern California, and the along Sierra Nevada mountain range. Examining the factors that comprise risk helps identify why some regions have higher values than others. For example, southern Florida exhibits high burn probabilities and high conditional flame lengths, as well as fire-susceptible endangered species like the Cape Sable Seaside Sparrow. Southern California has moderately high burn probabilities and conditional flame lengths paired with high population density and other resource values exposed to fire. The risk map suggests the beneficial influence of wildfire to fire-adapted ecosystems throughout the interior Great Basin and Northern Rockies regions.

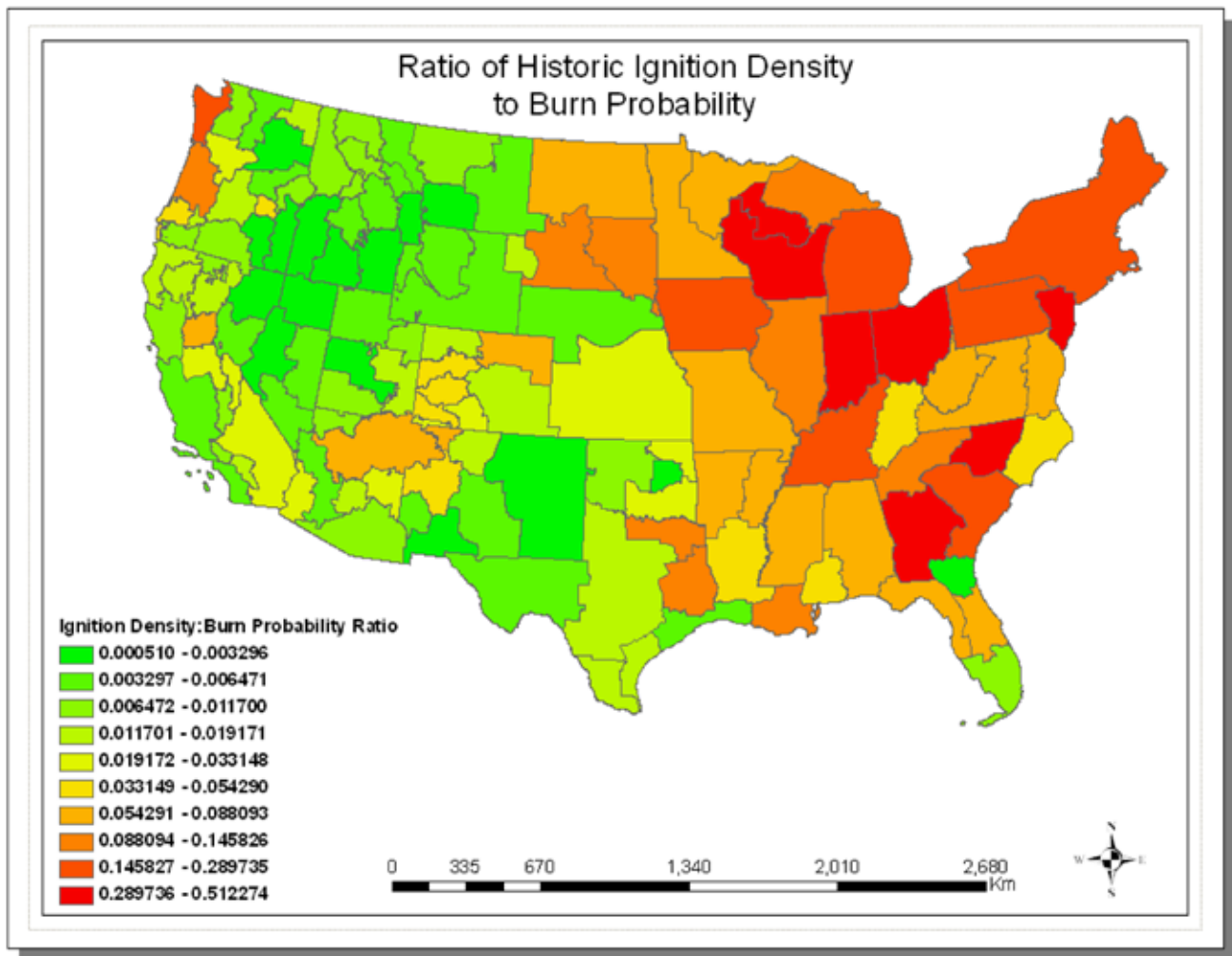
Figure 4. National map of wildfire risk as quantified by the total change equivalent (TCE), an area-based measure (acres per 18-acre pixel per year) of relative acres gained/lost due to wildfire.



Estimates of overall risk can be summarized by resource category and geographic area. In this analysis, populated areas contribute most to national wildfire risk (58 percent) followed by municipal watersheds (20 percent), fire susceptible species (13 percent), infrastructure (7 percent), air quality (2 percent) and recreation (.02 percent). Fire adapted ecosystems actually reduce overall risk by 1 percent, which demonstrates a net beneficial response to wildfire. Although benefits are observed across broad areas, their overall magnitude is quite modest relative to anticipated losses associated with populated areas and watersheds. Among geographical areas, California representing 30 percent of national wildfire risk, followed by the Southern Area (22 percent), Southwest (17 percent), Great Basin (10 percent), Rocky Mountain (10 percent), Northwest (5 percent), Northern Rockies (4 percent) and Eastern (3 percent).

The national risk maps also highlight an important distinction between wildfire risk and wildfire occurrence. While relevant to emergency fire response and firefighting infrastructure, ignition locations or densities depict only localized impacts from nearby ignitions and not from fire spread or area burned. This is because burn probability can be relatively high in areas with large fires, even though ignition probability is low. As fires grow large, they spread long distances and burn locations distal to the ignition. Figure 5 depicts the ratio of ignition density (#/ac/year) and burn probability from historical fire records. High values in Eastern areas and the Northwest coast imply high numbers of ignitions relative to the total area burned.

Figure 5. Ratio of ignition density (#/ac/yr) to burn probability from historical data (1980-2008). High values shown in red and orange indicate many ignitions relative to area burned.



III. Exploring Options for Reducing Risk

The discussions above focus on current levels of risk or simple conceptualizations of how natural factors and management actions affect risk. Broader management options that might be taken to affect those risks are implied, but have not been specifically analyzed. More complete analyses of regional and national investment strategies are expected as the National Cohesive Strategy progresses. In the interim, it is instructive to consider the types of options available, how they might be analyzed, and what available information might be relevant. The simple conceptual model in Figure 2 identified four basic options for affecting risk:

- Invest to prevent human caused ignitions
- Invest in fuel treatments
- Invest to build capacity in wildfire response
- Invest to protect values exposed to risk

We speak to each of these individually, but as will become readily apparent, the real work is in trying to understand how they might best be applied together.

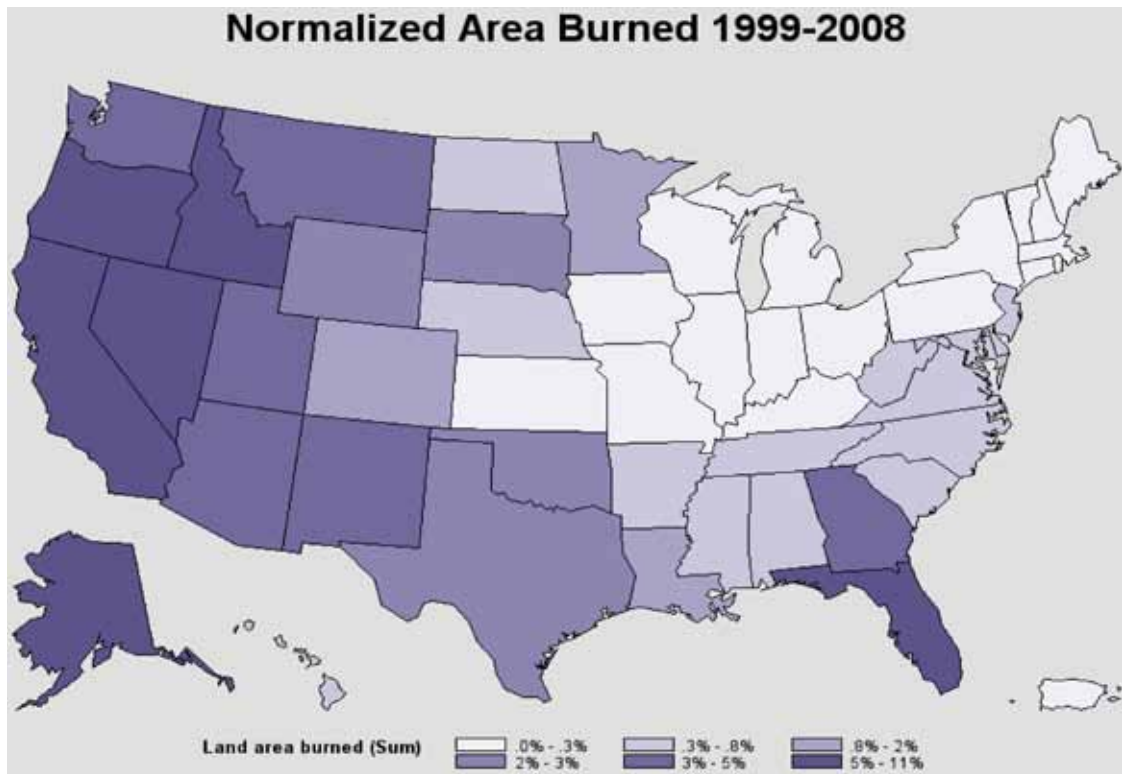
To understand how each option might play out, it's necessary to 1) establish a historical point of reference, 2) develop an analytical capacity to examine the relative effectiveness of each option, and 3) project conditions into the future. Fortunately, there are numerous completed and ongoing assessment and planning efforts that provide a good start on having the tools and information needed. For example, Fire Program Analysis (FPA) is an interagency effort that focuses on investment effectiveness. The analytical system designed and built to

support FPA models the effectiveness of fire prevention programs, investments in preparedness resources, and landscape fuel treatments. Effectiveness is evaluated by examining various performance measures tied to the probability and intensity of areas burning within the analysis area and the suppression costs associated with responding to wildfires. FPA is not the only modeling framework available to tackle these issues, but it is remarkable in its level of detail and extensive accounting and analysis features.

One of the more critical data sets used by FPA is the historical fire occurrence data compiled by Federal and state agencies. FPA uses these data to determine the location and cause of wildfire ignitions, as well as providing a basis for model calibration. The FPA data set has some known issues associated with data accuracy and completeness, especially regarding fires on non-Federal lands. Updated versions of the data set will correct some problems related to duplicate records and missing or inaccurate location information, but the updated data will likely still exclude some fires that occurred historically. The FPA records for fires occurring from 1999 to 2008 are used here for illustrative purposes, recognizing that improved and more comprehensive data may become available that could change the results.

As a point of reference, approximately 447,000 recorded wildfires occurred across the US between 1999 and 2008, burning nearly 70 million acres during this time period. Although the Southern geographic region led all regions with number of recorded wildfires (41 percent of total), most of the acreage burned in western states—over 18 million in Alaska alone—which tend to experience fewer, but larger fires on average. The 10-year historical average for the conterminous 48 states is close to the roughly 5 million acres per year of simulated wildfires used to generate the burn probability map shown above in Figure 3. Dividing the area burned in a 10-year period by the land area of each state produces an area-adjusted map of historical burning that corresponds well to the simulated burn probability map (Figure 6).

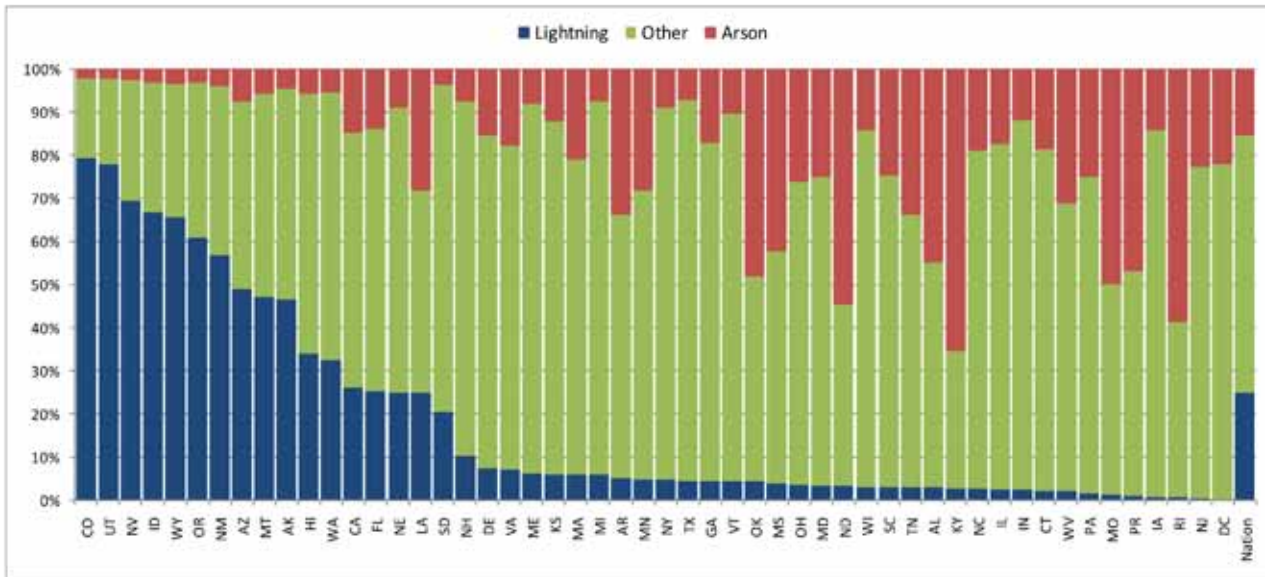
Figure 6. Cumulative area burned in each state from 1999-2008. Areas are normalized by dividing the area burned by the total land area in each state.



Option 1. Invest to Prevent Human Caused Ignitions

There is an old adage that the best way to stop a wildfire is to make sure it never starts. Wildfire prevention programs form an important component of any comprehensive wildfire management strategy. Ranging from the familiar Smokey the Bear® public education campaign to focused law enforcement, prevention efforts target those sources of human ignitions that can be avoided, including arson, debris burning, campfires, smoking, off-road vehicle use, and others. The degree to which human-caused ignitions contribute to wildfire is substantial. Nationwide, human ignitions (everything except lightning) accounted for nearly 75 percent of all wildfires starts, yet only 30 percent of the acreage burned. This disparity is due to geographical differences in wildfires; the western states experience larger fires dominated by lightning ignitions, while smaller wildfires in most eastern states are human caused (Figure 7).

Figure 7. Historical distribution of reported cause of wildfire ignitions by state (1999-2008)



Despite a long and storied history of fire prevention programs in the United States, scholarly analysis of the effectiveness of these programs is scarce. A recent article by Prestemon and others (2010) is a notable exception, who remark “although a common belief is that wildfire prevention education is worthwhile, there is a striking absence of studies documenting its effectiveness.” One of the more commonly used tools for estimating the effects of prevention programs is the Risk Assessment and Mitigation Strategies (RAMS) model, which was developed in the mid 1990’s using expert opinion. The RAMS model uses a combination of effectiveness factors and preventability factors to calculate the expected reduction in human ignitions given a prescribed mix of program elements such as patrols, signs, law enforcement, and public contact. The degree to which fire can be prevented varies by specific cause. The FPA incorporates RAMS in its suite of models and caps the preventability levels by cause. For example, no more than 7 percent of arson fires can be prevented within FPA, while 16 percent of fires started by debris burning and children can be prevented.

For illustrative purposes, the maximum preventability factors and historical fire information from FPA were used to calculate the upper limit for expected change in ignitions and area burned. Nationwide, an estimated 9.4 percent of the reported ignitions from 1999 to 2008 could have been prevented, which would have reduced the expected acres burned by 3.4 percent. The differences among states are dramatic, again, depending on whether fires are predominately human-caused. Normalized by land area within each state, the greatest gains in terms of ignitions per square mile are found in high-fire-frequency states such Georgia, New Jersey, South Carolina, and Florida. In terms of relative change in the number of ignitions, many eastern states exceed the national average, while western states dominated by lightning-caused ignitions show relatively small benefits. Further analyses at the county level would show similar variation among counties within many states such as California with a mix of urban and wildland areas.

A comparison of these national results with the empirical results of Prestemon and others (2010) from Florida suggests that the limits on preventability imposed by RAMS may seriously underestimate the benefit of prevention programs in some areas. Using a sophisticated empirical model, Prestemon and others show that increased investment in wildlife prevention education (WPE) could result in reductions in preventable ignitions upwards of 80 percent, with associated reductions in acres burned a more modest 10 percent or less. Prestemon and others go further in their analysis, incorporating estimates of change in net value similar to the process described above to estimate that the marginal benefits of averted wildfire damages are 35 times the investment in WPE in Florida; reduced suppression costs alone account for 15 percent of the estimated benefit.

Option 2. Invest in Fuel Treatments

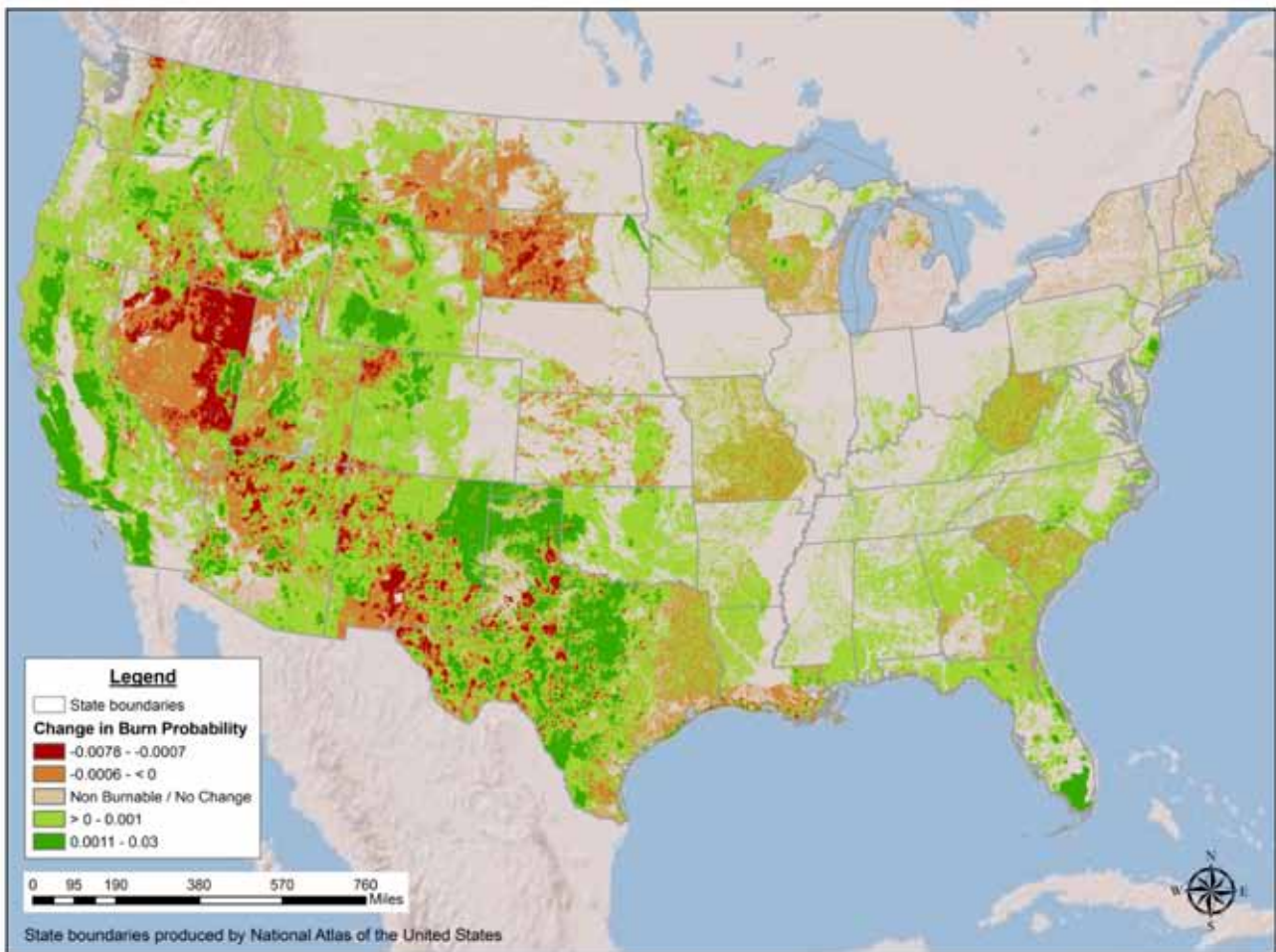
Considerable research has been conducted on landscape fuel treatment design, especially the spatial arrangement of treatments to achieve optimum reduction in fire spread and intensity. Viewing the landscape treatment problem through the lens of risk assessment offers a more comprehensive framework to inform fuel treatment strategies in terms of location, amount, type, and spatial patterns of treatments. While risk provides a comprehensive index of likelihood, intensity, and potential effects, the measure needs to be decomposed to develop and analyze options for operational fuel treatment strategies. Specifically, wildfire risk factors combined with: 1) spatial pattern of values, 2) fire management objectives, and 3) fire regime, determine fuel treatment and overall fire management strategies. The risk factors determine the relative mix of intensity and likelihood of wildfire, while the spatial pattern of values determines the interaction of wildfire risk factors with values perceived to be at risk. Fire management objectives determine whether mitigation emphasizes restoring natural fire regimes, or suppression to protect highly valued resources (HVR), or a strategy in between. All of these components inform operational fuel treatment strategies.

The complexity and importance of a comprehensive fuels management program cannot be overstated. Local effectiveness depends heavily on the type of vegetation involved, the nature of the treatment, the spatial extent and location of treatments, and interactions of all of the above with topography, weather, infrastructure, and the suppression resources engaged if and when a wildfire occurs.

These complexities notwithstanding, it is informative to examine how broad-scale applications of fuel treatments might affect risk using basic models with simplifying assumptions. Fuel treatment scenarios were modeled spatially but very generally for each Fire Planning Unit (FPU) as part of the FPA process. The methods consisted of first soliciting treatment prescriptions by fuel and vegetation type from local fire planners. These prescriptions contained details on changes to surface fuel models and canopy characteristics that constitute treatments applicable to current fuel type descriptions. Then, an automated procedure applied these prescriptions to specific stands throughout the planning unit until roughly 15 percent of treatable landscape was treated. The quasi-random placement of treatment units meant that smaller areas within the planning unit varied considerably from this average figure. The treatment effect was estimated by running the fire behavior models for a treated landscape using identical simulation settings as for the reference baseline landscape. The contrast between risk metrics for each landscape illustrates the magnitude of possible changes resulting from this treatment level and considering only fuel types in placing treatments.

The FPA fuel treatment scenario resulted in modified burn probability (Figure 8) and conditional flame length across the Country. Intersecting these modified burn probability and flame lengths with the resource layers resulted in total national risk being reduced by 24 percent. Risk reduction to individual units was highly variable, ranging from an 11 percent increase in risk to 69 percent reduction in risk. This range of results is due largely to the following factors: 1) the arrangement of fuels relative to values, 2) the effectiveness of treatment in reducing fire spread and intensity in certain fuel types, and 3) how the individual planning units defined the treatment prescriptions that were evaluated.

Figure 8. Changes in simulated burn probability resulting from fuel treatments on 15% of each FPU (standard run minus treatment run). Thus, red and orange colors indicate increases in burn probability with treatment whereas green colors indicate reductions of burn probability (positive difference).



The effect of treatment on national risk to individual resource categories varied across categories. Beneficial effects of wildfire on fire adapted ecosystems were reduced while all other resources experienced a reduction in loss. Fire susceptible species experienced the lowest reduction of risk at 16 percent with recreational areas seeing a risk reduction of 63 percent. Populated areas that represented 58 percent of national risk in the standard run experienced a 23 percent reduction in risk. The ranking of geographical areas based on contribution to national risk did not change between the treated and standard runs. However, the relative contribution to national risk was reduced in the 2 highest ranked areas, California and Southern Area, while the Southwest, Great Basin, and Rocky Mountain all increased as a proportion of national risk.

Estimating changes in risk by looking at both burn probability and fire intensity is highly informative, but computationally demanding. By simplifying further and assuming that risk is proportional to area burned, the potential magnitude of changes in risk from fuel treatments can be examined using statistical approximation. A statistical model was fit to the simulation results during the FPA analysis completed in 2010. This model used a series of matched simulations to derive statistical relationships that use the fire spread inherent in a particular location, the weather conditions during a wildfire, and the extent of fuel treatment in the area surrounding the fire ignition point to estimate the expected size of each simulated wildfire. The statistical model fits the simulated data reasonably well in most planning units, with exceptions in some eastern states with highly fragmented fuel patterns. The statistical approximation approach promises to be useful for analyzing a broad range of options.

Option 3. Invest to Build Capacity in Fire Response

Analyzing investments in wildfire response can be very complicated. In addition to the complexities of fire behavior, one has to address interactions among the distribution of available resources, their performance on the fire, the dispatch logic used to send resources to a fire, and multiple operational constraints. The FPA includes a highly detailed Initial Response Simulator which addresses many of these issues, but is designed to only simulate responses in the first 18 hours following discovery of a wildfire. This simulator will be essential to understanding the feedback between initial attack effectiveness and behavior of fires that escape. Although poorly quantified at present, highly successful initial attack means that fires escape only under the rarest and most extreme weather conditions, becoming more severe. Thus, potential benefits to fuels or habitat from wildfires burning under moderate conditions are never realized, and, in turn, increases demand for initial attack effort and resources. Through more detailed analysis and the modeling in FPA, this feedback process may become understood and incorporated into the risk framework.

Once a wildfire has escaped initial containment efforts, further complications arise as resources are drawn from remote locations, fire behavior becomes difficult to predict, and even the objectives of the suppression response may change from day to day depending on circumstances that are not easily understood, much less modeled. Ongoing research directed at better understanding the management context and decision processes used in large fire suppression may lead to more reliable models that can capture the principal factors influencing performance—however it might be measured.

Option 4. Invest to Protect Values Exposed to Risk

The motivation behind options designed to lessen values at risk is relatively simple. If you cannot change the likelihood of a wildfire occurring, you might instead focus on lessening the chances that fire would have negative consequences. Such thinking motivates many of the activities focused at homeowners in the wildland-urban interface, who are taught to actively manage areas adjacent to their homes to reduce the chances of wildfires reaching their homes, or are encouraged to think ahead and have emergency supplies readily at hand and evacuation plans that can be implemented at a moment's notice. Similarly, important cultural or archeological sites may be managed in ways that offer passive resistance to wildfires. Species conservation plans also can be designed to manage risks by ensuring that no single event has the capacity to eliminate large blocks of the population or critical habitat.

Analyzing such options seems easy at first glance, but becomes increasingly difficult the better it is understood. In the analytical framework proposed above, reducing the exposure to risk is as simple as changing the response functions or benefit/loss values. This presumes, of course, that the appropriate values are addressed in the analysis to begin with and that the initial response functions accurately capture changes in value. Neither presumption is likely to go unchallenged. Although society generally agrees that human lives and property are important and should be protected, it seems that consensus often stops there. The range of other values that should be included in the analysis and how these values might change with fire can often be contentious. A second problem concerns the sensitivity of the response function to management actions. In the prototype risk analyses described above, stylized response functions were used that only crudely capture the effects of fire at varying intensities on values of concern. If the function is derived with little or no empirical basis, any change in that function could seem arbitrary without quantitative analyses to support it. Furthermore, the signal to noise ratio in the response function may be very weak and much of the change in the function due to proposed management actions may not rise to the level necessary to overcome the noise.

The net results of these considerations is that any action short of major shifts in policies or broad-scale changes in management are likely best left to local analyses that can be appropriately scaled to capture the appropriate changes.

An important concept related to reducing exposure is socioeconomic vulnerability. The intersection of human population, valued resources, and wildfire creates opportunities to strategically allocate wildfire response or prevention actions to minimize risk to human life and property. In the field of hazards, risk, and resiliency, a clear distinction is made between risk assessments which describe the expected loss of assets, and vulnerability assessments which characterize the exposure, sensitivity, and resilience of communities to a hazard. Both types of analyses apply to the goals and objectives of the National Cohesive Strategy.

In the risk assessment realm, additional research would address the expected impact of wildfires on economic activity and housing/infrastructure value. By looking at regional economic output in addition to the potential damage to structures a more complete view of the economic costs of wildfires can be compared across regions and among communities. Such analyses could, for example, highlight areas where natural resource or recreational dependent communities might be affected more severely by wildfire compared to communities with a diversified economic base.

Social vulnerability to natural hazards is a growing area of interdisciplinary research included in risk reduction strategies. Studies have analyzed how vulnerability varies among different segments of the population and how they will respond to a hazard, how hazards affect business and regional economic output, and how social vulnerability to hazards has changed over time across the US. This research attempts to characterize hazards and vulnerability from a more holistic perspective, particularly in the wake of natural disasters such as Hurricane Katrina or the Gulf Oil Spill, where economic damages do not fully represent the long term changes made to the physical, ecological, social and economic structure of the communities in the Gulf of Mexico.

IV. Risk Analyses at Smaller Spatial Scales

As stated above, the comparative risk framework can be applied to management problems at a range of scales. Three examples from ongoing and recently published work demonstrate this scalability. These include analyses at the scale of a Forest Service region, forest, and project. Regional analyses will play prominently in the early phase of the development of regional strategies, and in later implementation and monitoring. The forest and project examples will be particularly useful in later implementation phases of the National Cohesive Strategy and illustrate a consistent application of risk assessment and management across scales.

The Regional prototype is being developed in the Forest Service's Pacific Northwest Region (Region 6) and considers multiple threats (climate change, insect and disease, invasive plants) and values (carbon, critical habitat, etc.) to meet the needs of ongoing, regionally specific assessments. Thus the regional assessments can serve both local and national needs, the former having a scope beyond fire and fuels. The process leverages regional data sets to the extent they are available. Specific questions that are being addressed in the Region 6 example include:

- Are there associations among threats like wildfire, insects, and climate change that form spatial patterns in the region?
- Which human and ecological values are most associated with particular threats?
- How and where is management opportunities aligned with the occurrence of particular threat – value combinations?
- Where are restoration activities needed most and how are they associated with management opportunity?
- How can watersheds be ranked relative to the complete constellation of threats and values that face land managers?

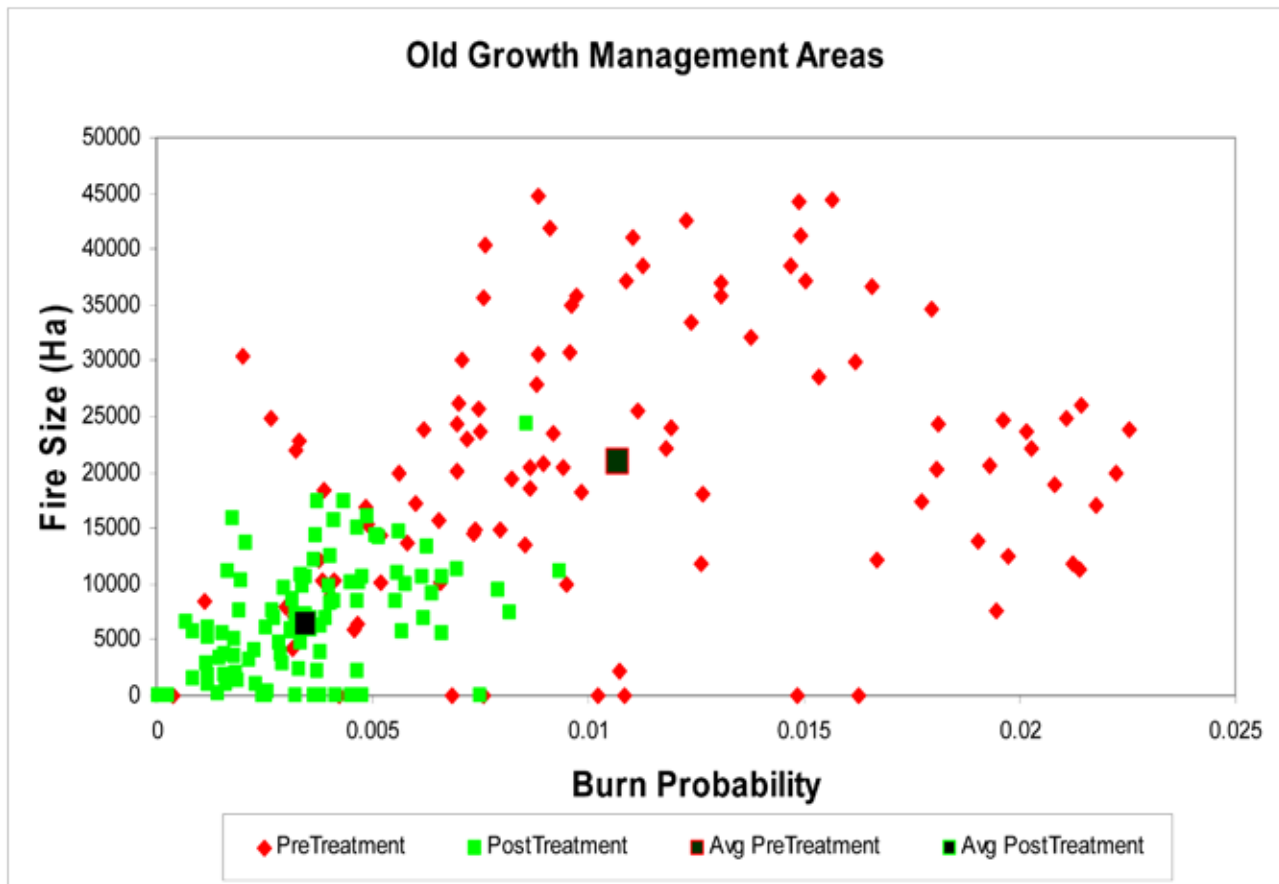
Risk analyses also can be applied at the level of a national forest or similar management unit to address a range of fuel treatment planning issues, including assessing the relative risk to resources of local values, and the assessment of treatment effectiveness for forest-wide plans. The example presented here was excerpted from a larger risk assessment study on the Deschutes National Forest in central Oregon. This work demonstrated the application of risk assessment to analyze the relative risk to human and ecological values. The assessment focused on three key questions of keen interest to Federal managers and policymakers:

- Are the wildfire risks to conservation and other forest plan reserves more or less than land designations receiving fuel treatments?
- What is the relative wildfire risk to urban interface areas compared to different land-use designations?
- Are specific conservation reserves responsible for the transmission of wildfire to other reserves?

The analyses revealed spatial variation in wildfire risk that is useful in prioritizing fuels treatments and guiding other wildfire mitigation activities. The work also illuminated the conflict between biodiversity conservation efforts on Federally managed lands and the high wildfire risk on fire-prone landscapes. In this study, estimates of burn probabilities and conditional flame lengths were used to examine the relative risk among land management allocations, conservation reserves, urban interface areas, and other designations on the Forest and surrounding lands. Thus, the highly valued resources were tiered directly to forest plan standards and management plan land designations. Selected outputs from these analyses revealed wide variation among and within polygons belonging to specific land designations, providing a clear identification of priority targets for mitigation activities. Specific designations and conservation reserves showed markedly higher conditional flame lengths, such as spotted owl active and potential home ranges. In contrast, the general forest matrix showed relatively high burn probabilities and lower conditional flame length. Most of the urban interface showed lower burn probability and expected flame length.

A fuel treatment priority map for the Forest was used to simulate fuel treatments and examine change in wildfire risk. The treatment scenario called for 64,000 ha of treatments in the general forest management areas. The ratio of the burn probability after and before the treatments was used to examine change in wildfire likelihood. The analysis suggested large reductions in burn probability in conservation areas and other reserves. For instance, the likelihood of a fire in the old growth reserves was 30 percent of the pre-treatment conditions. The effect of treatments on both burn probability and fire size for specific reserves like old growth show large reductions post treatment (Figure 9).

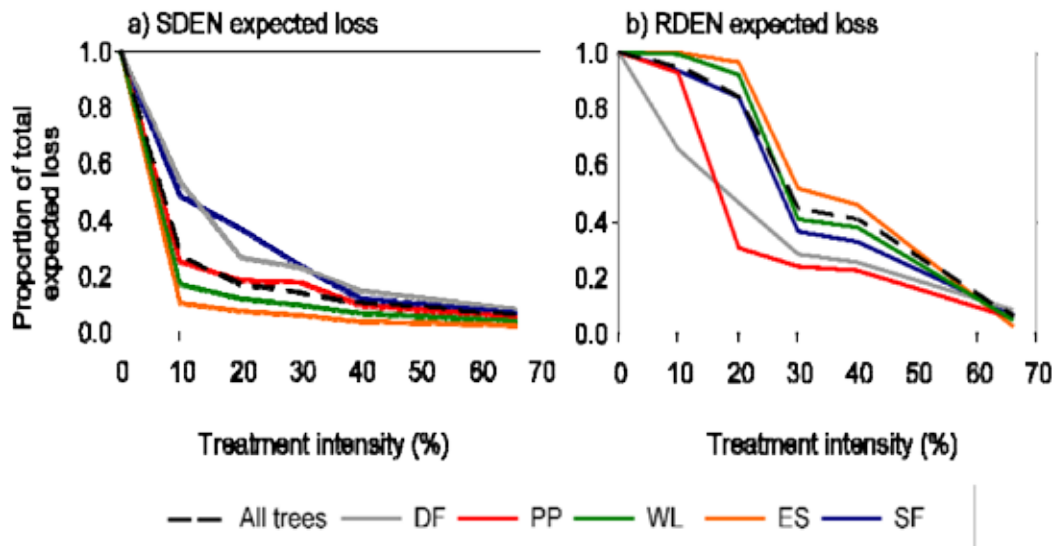
Figure 9. Change in burn probability and fire size to old growth units on the Deschutes National Forest after simulating treatments on about 20% of the forested areas. Treatments were not placed inside old growth units.



Example Project Scale Prototype

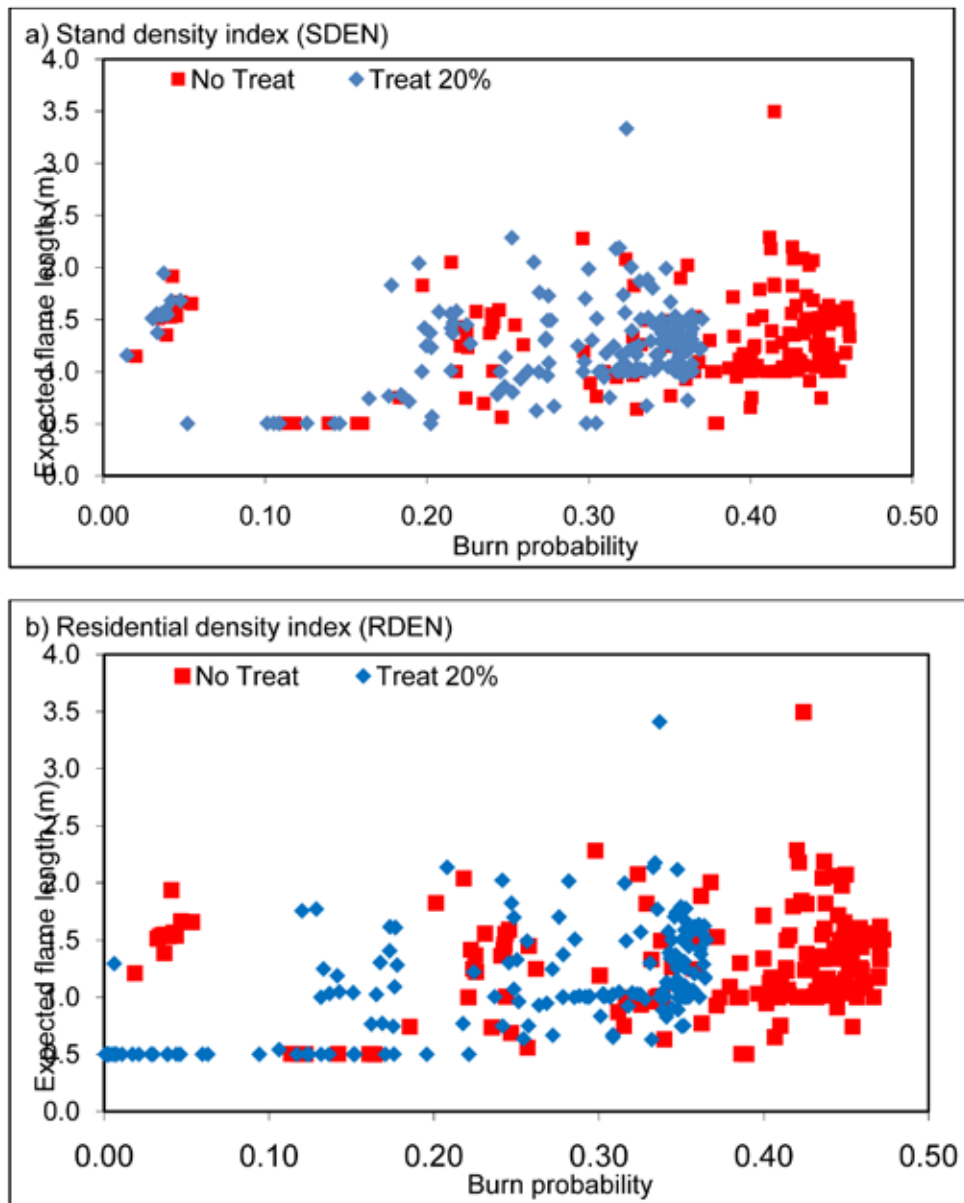
Individual project planning can readily benefit from targeted risk assessments. Ager and others (2010) used risk analysis to examine the tradeoff between landscape restorations versus protection of structures within a typical wildland-urban interface in eastern Oregon. The treatment strategies were evaluated by simulating 10,000 wildfires with random ignition locations and calculating burn probabilities by 0.5 m flame length categories for each 30 x 30 m pixel in the study area. The burn conditions for the wildfires were chosen to replicate severe fire events based on 97th percentile historic weather conditions. The burn probabilities were used to calculate wildfire risk profiles for each of the 170 residential structures within the urban interface, and to estimate the expected (probabilistic) wildfire mortality of large trees (>21 inches) that are a key indicator of stand restoration objectives. Expected wildfire mortality for large trees was calculated by building flame-length mortality functions using the Forest Vegetation Simulator, and subsequently applying these functions to the burn probability outputs. Results suggest that treatments on a relatively minor percentage of the landscape (10 percent) result in a roughly 70 percent reduction in the expected wildfire loss of large trees for the restoration scenario (Figure 10).

Figure 10. Graph from Ager et al (2010), which shows the expected loss of old growth trees (>53.3 cm diameter at 137.2 cm above ground) as a function of 6 treatment intensities and 2 spatial treatment scenarios. The graphs indicate that treatments in the urban interface area (RDEN scenario) are relatively ineffective at reducing expected loss of large trees compared to treatments in the wildlands (SDEN scenario) where stands were thinned to promote fire resiliency. Species codes are: DF: Douglas-fir, PP: ponderosa pine, WL: western larch, ES: Engelmann spruce, SF: subalpine fir.



Treating stands near residential structures resulted in a higher expected loss of large trees, but relatively lower burn probability and flame length within structure buffers. Substantial reduction in burn probability and flame length around structures was also observed in the restoration scenario where fuel treatments were located 5–10 km distant (Figure 11). This study demonstrated tradeoffs between ecological management objectives on wildlands (large fire resilient trees) versus protection of structures.

Figure 11. Example of flame length and annual burn probability scatter plots from Ager et al. (2010) showing values for individual structures for the Mt Emily wildland urban interface in northeastern Oregon. The stand density (SDEN) and residential density (RDEN) scenarios used different spatial treatment priorities that emphasized fire resiliency in the wildlands versus protection of structures in the urban interface. Points are average values for all pixels within a 45.7 m radius around each structure. The figure shows that burn probability, and to a lesser extent flame length, can be reduced around structures when fuel treatments are located outside the interface to address forest restoration and create fire resilient forests.



The Mount Emily study and others like it quantify off-site fuel treatment effects that often are not analyzed in fuel management studies. Moreover, they revealed spatial variation in burn probability and intensity that is useful for prioritizing fuels treatments to protect specific human and ecological values. This work advances the application of quantitative risk analysis to the problem of wildfire threat assessment for fuel treatment projects. Risk scatter plots and burn probability were developed as a decision tool to evaluate risk, prioritize treatments, and measure the potential treatment effects. The methods employed here demonstrated a quantitative approach to risk assessment using existing models that are widely used within the USDA Forest Service and other public land management agencies in the US.

V. Historic Range of Variability for Wildfire Risk

One of the more engaging discussions that occur frequently is whether historical levels of wildland fire can be restored and sustained. Quantitative risk analysis was performed for an assumed historical condition that would serve as a baseline for comparing modern risk in areas where ecological processes and ecosystem sustainability are likely and possible objectives. This historical risk is not applicable where lands are no longer managed for ecological sustainability. Sustainability is defined by both disturbance processes and vegetation/ecosystem structure (including vegetation and wildlife species and populations). Maps delineating these land management objectives were not available, and for demonstration purposes, public land was used to indicate potential areas.

The procedures for producing the historical risk analysis are based on LANDFIRE data products. Two main risk components, namely average historical burn probability and distributions of fire severity, were derived from LANDFIRE layers of mean fire return interval (MFRI) and biophysical setting (BPS), respectively. A national map of each of these data themes was created for the conterminous United States at a resolution of 270 meters. Historical Burn Probability was derived from the MFRI data which represent 22 classes of average historical fire intervals. The reciprocal of the midpoint of the interval is the estimated historical burn probability. The Historical Fire Severity Distribution was derived from the BPS data theme which represents the vegetation that may have been dominant on the landscape prior to Euro-American settlement. Each BPS map unit was matched to a vegetation succession model which includes information on disturbance regimes, including fire. For each succession model the probability of three fire severity types: surface, mixed and stand replacement were available. The fire severity types were linked back to the individual BPS vegetation map units so that they could be spatially analyzed in concert with the derived historical burn probability. The absolute probability of a specific fire severity was then the product of the historic burn probability and the conditional fire severity probability. The historical probability and severity information was then used to analyze the historical risk to contemporary high valued resources and compared with modern risk.

Comparison of the historical and modern risk components reveals the well known shift toward much lower rates of burning than historically existed. Burn probabilities for almost all areas are lower now than under historical conditions (Figure 12). The ratio of modern to historical probabilities identifies many places where the departure is the greatest – particularly in forests (Figure 13). Much higher burn probabilities occurred historically in agricultural areas no longer managed for wildland values. However, the ratio map also indicates substantial regions of the West and Southwest where burn probabilities are actually higher today. These correspond to places where invasive annual grasses have contributed to higher burning rates and larger fires than historical conditions could sustain (for example cheat grass replacing sage brush in the Great Basin). The same trend appears where excessive numbers of human ignitions occur adjacent to urban areas.

Figure 12. Historical burn probabilities derived from LANDFIRE data layers. These probabilities are substantially higher than modern probabilities (see Figure 3).

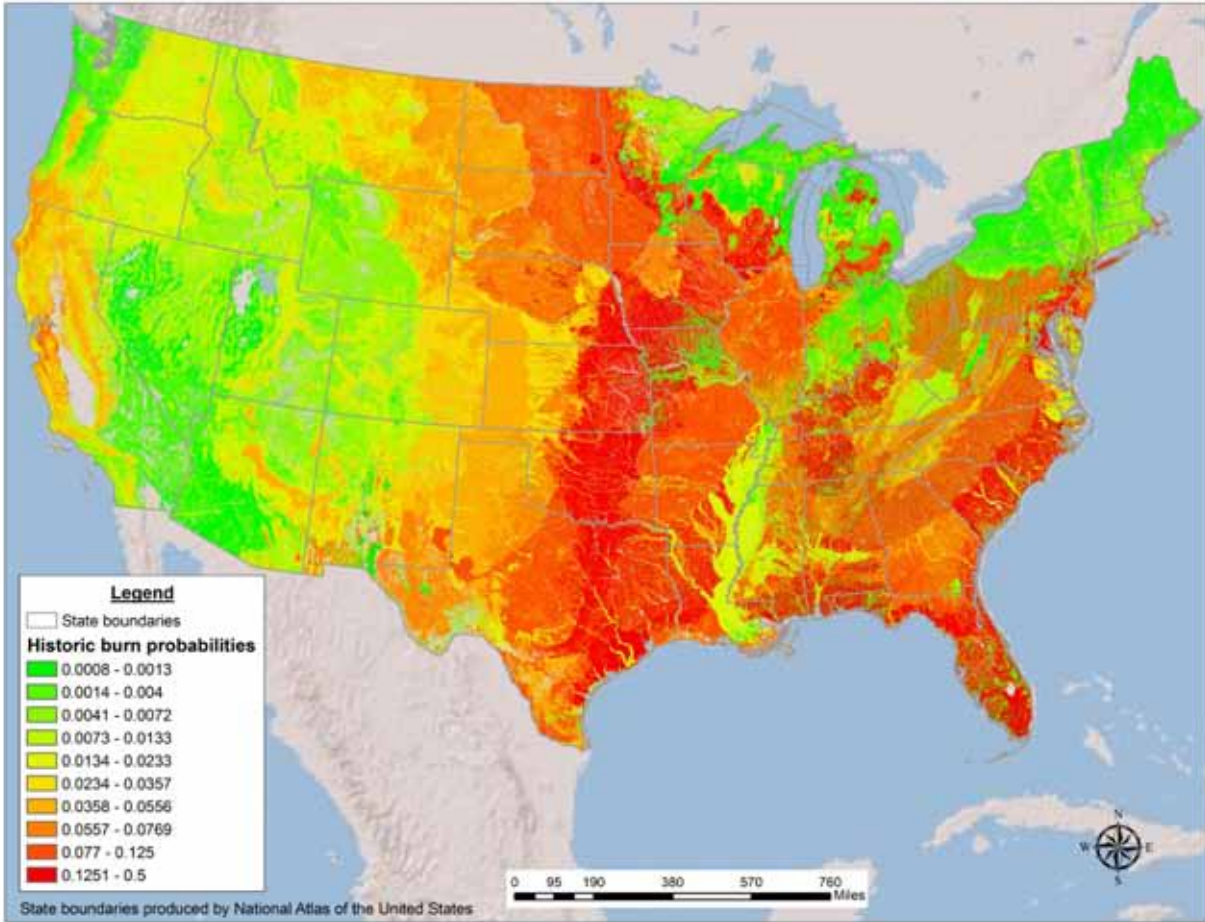
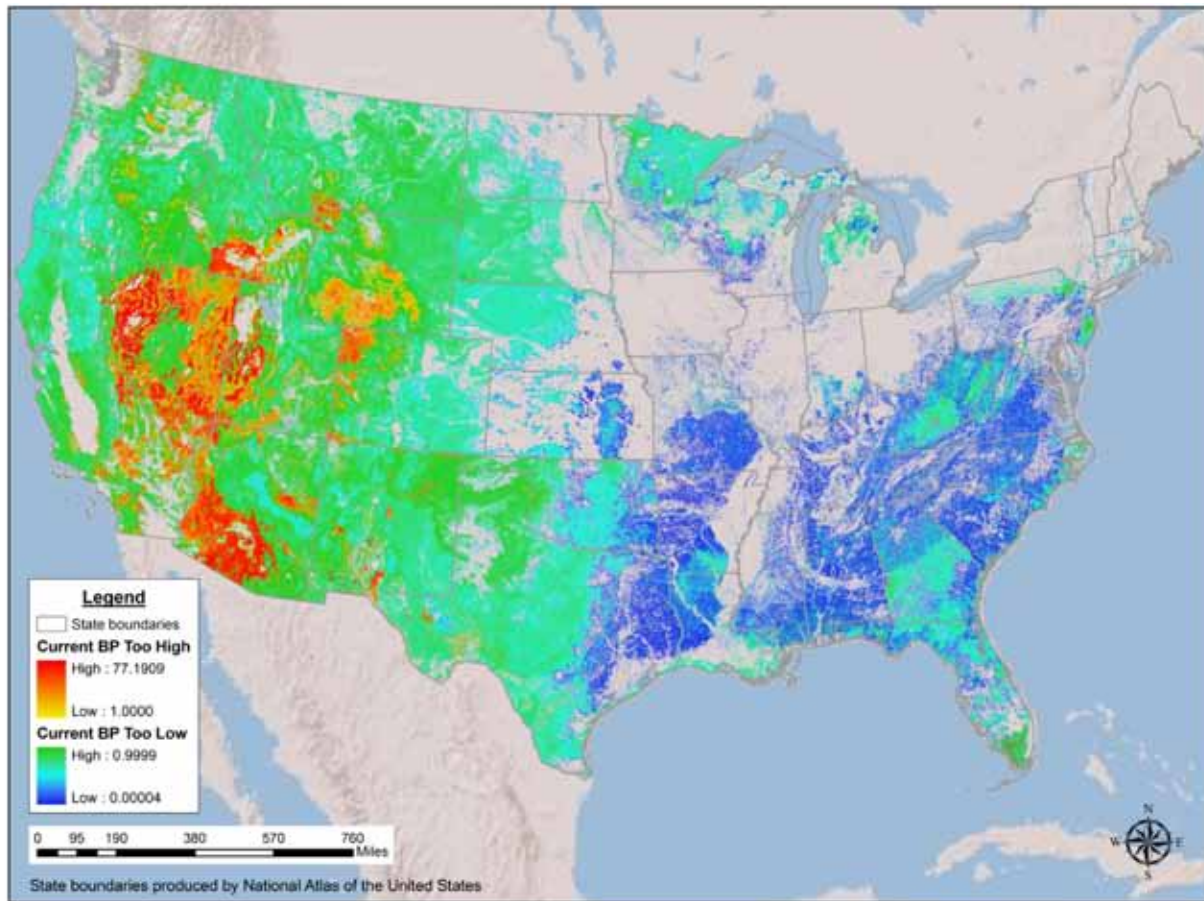


Figure 13. Ratio of modern to historical burn probabilities. Ratios are higher now than historical values in the Southwest and Great Basin, likely because of invasive grasses and increased human ignition. Ratios are substantially lower today in most of the forest types of the Country than historically existed.



Sustainability

The combined use of the historical risk components and treatment effectiveness suggests areas and frequencies of fire that would be important to sustaining ecological process and structure. For many lands, historical fire regimes are not consistent with modern land use objectives. Some lands, particularly some public lands in the west, however, do have management objectives consistent with ecosystem sustainability for which the historical conditions are a relevant comparison. As an example calculation, the large public ownership in the west is where historical fire regimes confer a net reduction in risk. This includes increased rates of burning in many low elevation forest types as well as fuel treatments to decrease rates of burning in some desert shrublands. Using the estimates of historical and modern burning rates by ecoregion on Federal lands in the west, it is possible to estimate the amount of area requiring annual burning. Summary tables were generated of the annual acres burned historically by ecoprovince and under the current fire regime. The difference is the total additional area requiring burning by ecoprovince achieving estimated historical burning rates. This same process could be used ultimately to estimate the area requiring burning by severity class or intensity class that conforms to historical regimes.

If it were a goal to return fire to the wild landscapes of the west, the amount of annual burning that would occur is substantially more than is currently occurring. Using a few ecoprovinces as examples indicates how much of an increase in burning would occur (Table 1). For instance, the Middle Rocky Mountain Steppe-Coniferous Forest-Alpine Meadow Province historically burned over 490,000 acres per year whereas now the area burns approximately 72,000 acres per year. Achieving the historic burn rate would be an increase in burning of approximately 500 percent above current. The Nevada-Utah Mountains-Semi-Desert-Coniferous Forest-Alpine Meadow Province historically burned over 222,000 acres compared to approximately 155,000 acres now. Achieving the historic burn rate would be an increase in burning of approximately 43 percent above current. The Sierran Steppe-Mixed Forest-Coniferous Forest-Alpine Meadow Province historically burned over 803,000

acres compared to approximately 70,000 acres now. Achieving the historic burn rate would be an increase in burning of approximately 1,047 percent or ten times the amount of burning. On Federal lands in the eastern U.S, even more dramatic contrasts are seen between estimated historical burning rates that the modern rates. Burning rates would have to increase by thousands of percent for most ecoprovinces. The historical contribution of Native American burning practices to the historical fire regime in many of these areas would probably have to be considered dominant over natural ignitions.

The issue of smoke management and tolerance will play a considerable role in decisions regarding the degree to which fire will be tolerated on the landscape. If the goal is to return fire to the landscape on these ecoprovinces to the extent it likely existed in the pre-European settlement era, smoke tolerance constraints are likely to limit implementation. It warrants discussion concerning the potential goal to increase fire on the landscape, but to what degree. It is shown here that achieving the same level of burning as pre-European settlement would involve dramatic shifts from current burning levels in most regions even if wildfire, prescribed fire, and fuels treatment were jointly counted toward the acres burned level.

Conclusions

Living with and managing wildland fire inherently involves facing uncertainty and the potential for catastrophic losses. Ultimately, the success of the Cohesive Wildland Fire Strategy may hinge on how well risk is properly understood, quantified, and managed. Formal comparative risk assessment as described above could provide a sound foundation for analyzing and evaluating alternative management strategies. The examples shown above demonstrate the types of risk analyses made possible with modern information and tools at multiple planning scales. Additional information and details are available in the complete report of the science panel, which also addresses additional issues relevant to wildland fire and risk assessment. Information provided above and in the complete report establishes a solid foundation for moving forward.

Table 1. Examples of estimated historical burning rates as compared to current rates for selected ecoprovinces in the western United States

Ecoprovince	Historical Burn Rate (ac/yr)	Current Burn Rate (ac /yr)	Net Diff. (ac/yr)	Historical % of Current
Middle Rocky Mountain Steppe-Coniferous Forest-Alpine Meadow	493,123	72,071	421,052	584%
Nevada-Utah Mountains-Semi-Desert-Conif Forest-Alpine Meadow	222,107	155,215	66,891	43%
N. Rocky Mountain Forest-Steppe-Conif Forest-Alpine Meadow	159,945	17,107	142,837	835%
Sierran Steppe-Mixed Forest-Coniferous Forest-Alpine Meadow	803,369	70,324	733,045	1,042%
S. Rocky Mtn Steppe-Open Woodl.-Conif Forest-Alpine Meadow	507,141	114,478	392,662	343%
Southwest Plateau and Plains Dry Steppe and Shrub	59,769	2,968	56,800	1,914%

Authors of the report: Danny C Lee, Alan A. Ager, Dave E. Calkin, Mark A. Finney, Matthew P. Thompson, Thomas M. Quigley, and Charles W. McHugh.

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USDA Forest Service (in review). A Comparative Risk Assessment Framework for Wildland Fire Management: Science Report to the Cohesive Strategy Oversight Committee.

APPENDIX B: GLOSSARY

An extensive glossary of fire management terminology and acronyms is maintained by the National Wildfire Coordinating Group (NWCG) as found at www.nwcg.gov/pms//pubs/glossary/index.htm. Some of the important terms used in this document that have specific meaning in the context of wildland fire management, but are not currently found in the NWCG glossary, are defined below.

Affected party	A person or group of people who are affected by the outcome of a decision or action.
Fire-adapted community	Human communities consisting of informed and prepared citizens collaboratively planning and taking action to safely co-exist with wildland fire.
Fire-adapted ecosystem	An ecosystem is “an interacting natural system, including all the component organisms, together with the abiotic environment and processes affecting them.” (NWCG Glossary). A fire-adapted ecosystem is one that collectively has the ability to survive or regenerate (including natural successional processes) in an environment in which fire is a natural process.
Fire community	A term that collectively refers to all those who are engaged in any aspect of wildland fire-related activities.
Fire exclusion	The land management activity of keeping vegetation or ecosystems from burning in a wildland fire.
Fire management community	A subset of the fire community that is has a role and responsibility for managing wildland fires and their effects on the environment.
Fire science community	A subset of the fire community consisting of those who study, analyze, communicate, or educate others on the components of fire management that can be measured, such as fire behavior, fire effects, fire economics, and other related fire science disciplines.
Resilient	Generally referred to in this document as “resilient ecosystems,” which are those that resist damage and recover quickly from disturbances (such as wildland fires) and human activities.
Stakeholder	A person or group of people who has an interest and involvement in the process and outcome of a land management, fire management, or policy decision.

APPENDIX C: ACRONYM LIST

CWPP	Community Wildfire Protection Plan
DOI	Department of the Interior
EMDS	Ecosystem Management Decision Support system
FLAME Act	Federal Land Assistance, Management, and Enhancement Act
FPA	Fire Program Analysis
FPU	Fire Planning Unit
GAO	General Accounting Office
HVR	Highly Valued Resource
IAFC	International Association of Fire Chiefs
NASF	National Association of State Foresters
NFPA	National Fire Protection Association
NICC	National Interagency Coordination Center
NIFC	National Interagency Fire Center
NVC	Net Value Change
NWCG	National Wildfire Coordinating Group
PDSI	Palmer Drought Severity Index
USDA	US Department of Agriculture
WFDSS	Wildfire Decision Support System
WFEC	Wildland Fire Executive Council
WFLC	Wildland Fire Leadership Council
WUI	Wildland-Urban Interface

APPENDIX D: REFERENCES

Cohesive Wildland Fire Management Strategy Foundational Documents

2009 Quadrennial Fire Review (QFR), <http://www.nifc.gov/QFR/index.htm>

National Policy Framework Documents including:

- *A Call to Action*, <http://www.nifc.gov/QFR/index.htm>
- *Mutual Expectations for Preparedness and Suppression in the Interface*, http://www.forestsandrangelands.gov/strategy/documents/mutual_expectations_2010.pdf
- *Wildland Fire Protection and Response in the United States, The Responsibilities, Authorities, and Roles of Federal, State, Local, and Tribal Government*, <http://www.forestsandrangelands.gov/strategy/documents/wildlandfireprotectionandresponseusaug09.pdf>

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A Cohesive Strategy the Forest Service Management Response to the General Accounting Office Report, GAO/RCED-99-65, April 13, 2000

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A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment: A 10-Year Strategy. Western Governors Association, 2001

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Wildland Fire Management: Important Progress Has Been Made, but Challenges Remain to Completing a Cohesive Strategy. U.S. Government Accountability Office, January 2005

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Wildland Fire Management: Update on Federal Agency Efforts to Develop a Cohesive Strategy to Address Threats. U.S. Government Accountability Office, May 2006

Wildland Fire Management: Federal Agencies Have Taken Important Steps Forward, but Additional Strategic Action is needed to capitalize on Those Steps. U.S. Government Accountability Office, September 2009

Briefing paper: State Forestry Agency Perspectives Regarding 2009 Federal Wildfire Policy Implementation, July 2010 <http://www.stateforesters.org/files/201007-NASF-FedFirePolicy-Briefing-Paper.pdf>

Briefing paper: Identifying Communities at Risk and Prioritizing Risk-Reduction Projects, July 2010 <http://www.stateforesters.org/files/201007-NASF-CAR-Briefing-Paper.pdf>

APPENDIX E: WILDLAND FIRE LEADERSHIP COUNCIL MEMBERSHIP

U.S. Department of Agriculture, Undersecretary for Natural Resources and Environment
 U.S. Department of Agriculture, Deputy Undersecretary for Natural Resources and Environment
 Chief of the Forest Service
 U.S. Department of the Interior, Assistant Secretary for Policy Management and Budget
 Director, Bureau of Indian Affairs
 Director, Bureau of Land Management
 Director, National Park Service
 Director, U.S. Fish and Wildlife Service
 Director, U.S. Geological Survey
 Department of Homeland Security, U.S. Fire Administration, Administrator

In addition to the Federal officials, WFLC includes seven non-Federal members comprised primarily of senior elected officials of state, tribal, county and municipal governments, including a state governor representing the National Governors' Association, a state governor representing the Western Governors' Association, the president of the Intertribal Timber Council, a county commissioner representing the National Association of Counties, and a mayor representing the National League of Cities. These elected officers, along with a state forester designated by its governor and a fire chief designated by its elected official, are invited to participate with the WFLC due to their interest in and statutory responsibility for wildland fire management.

Current membership of WFLC includes:

Member	Agency
Rhea Suh, Assistant Secretary for Policy, Management and Budget, WFLC Chair	Department of the Interior
Jay Jensen, USDA Deputy Undersecretary for Natural Resources and the Environment	United States Department of Agriculture (USDA)
Tom Tidwell, Chief	USDA Forest Service
John Jarvis, Director	National Park Service
Rowan Gould, Acting Director	United States Fish and Wildland Service
Bob Abbey, Director	Bureau of Land Management
Mike Black, Director	Bureau of Indian Affairs
Marcia McNutt, Director	United States Geological Service
Glenn Gaines , United States Fire Administration	Department of Homeland Security
Ted Kulongoski, Governor, State of Oregon	Governor Western States Representative
Dan Shoun, County Commissioner, Lake County, State of Oregon	Counties Representative
Joe Durglo, President, Confederated Salish and Kootenai Tribes	President, Intertribal Timber Council
Mary Hamann-Roland, Mayor, City of Apple Valley	National League of Cities
Jeff Jahnke, State Forester, State of Colorado	Designated representative for the National Association of State Foresters
Chief Robert Roper, Ventura County (California) Fire Department	Designated representative for the International Association of Fire Chiefs

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Dan Smith	National Association of State Foresters
Caitlyn Pollihan	National Association of State Foresters
Douglas MacDonald	International Association of Fire Chiefs
Bryan Rice	Bureau of Indian Affairs
Joshua Simmons	Bureau of Indian Affairs
Michael Carrier	Western Governors' Association
Ann Walker	Western Governors' Association
Lynda Boody	Bureau of Land Management
Wendy Reynolds	Bureau of Land Management
Dan Buckley	National Park Service
John Morlock	National Park Service
Ryan Yates	National Association of Counties
Aitor Bidaburu	United States Fire Administration
Jim Kelton	United States Fish and Wildlife Service
Jim Erickson	Intertribal Timber Council

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Sandy Cantler	USDA Forest Service
Priscila Franco	USDA Forest Service
Pete Lahm	USDA Forest Service
Mike Hiberner	USDA Forest Service
Christie Wiley	USDA Forest Service
Roy Johnson	Department of the Interior
Peter Teensma	Department of the Interior
Bradley Washa	Bureau of Land Management
Erik Berg	United States Geological Survey
Ann Walker	Western Governors' Association
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Matthew P. Thompson	
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APPENDIX H: WILDLAND FIRE EXECUTIVE COUNCIL MEMBERSHIP

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Director, DOI Office of Wildland Fire Coordination

Assistant Administrator U.S. Fire Administration

Chair, National Association of State Foresters (NASF) Fire Committee

Chair, International Association of Fire Chiefs (IAFC) Wildland Fire Policy Committee

Representative, Intertribal Timber Council (ITC)

Representative, National Association of Counties (NACo)

Representative, National League of Cities (NLC)

Chair, National Wildfire Coordinating Group (NWCG)

APPENDIX I: PROCESS OVERVIEW

With the passage of the Federal Land Assistance, Management and Enhancement Act (FLAME Act) in October 2009, the Secretaries of the Interior and Agriculture were directed, in part, to provide a report to Congress addressing seven specific elements and a cohesive wildland fire management strategy, consistent with recommendations in recent Government Accountability Office reports. The report was due back to Congress within one year.

Recognizing that a true national cohesive strategy must include all levels of fire management, the Wildland Fire Leadership Council (WFLC), an intergovernmental committee of fire program leaders representing Federal, state, tribal, county and municipal interests, subsequently appointed a 24-member Cohesive Strategy Oversight Committee (CSOC) to complete the tasks assigned in the FLAME Act. The CSOC membership represented a broad cross-section of interests, including seven state, local, tribal and non-governmental organization representatives; five members each from the Department of the Interior and USDA Forest Service, including senior agency members; four Federal regional line officers; and three additional Federal partners.

The purpose of the CSOC was to formulate strategy goals, options and trade-offs; to establish technical assessments provided by science research; and to seek field comments and other relevant studies, reports and documents to provide an overarching foundational document for WFLC and agency review.

In the performance of its work, the CSOC held 14 regional forums with diverse groups of stakeholders to gather input regarding critical issues, values, timelines, concerns, priorities, and planning. These forums were held in locations throughout the Country from Alaska to Virginia and drew more than 450 attendees and garnered 375 comments. Concurrent with the forums, a science panel developed a report containing a risk analysis framework example to accompany the strategy formulation.

Initial drafts of the FLAME Act/GAO Report, a collaboratively designed cohesive strategy and Science Report were produced by early August and distributed among the CSOC members and others for comment. The initial drafts were revised in mid-August and subsequently presented to WFLC for review and acceptance on August 25. With WFLC's comments and approval, the documents were carried forward for additional refinement.

Additionally, the latter draft was distributed for comment to more than 300 individuals and groups who previously requested an opportunity to be involved in the process as it unfolded. Of these, more than 80 responses containing more than 300 pages of comments were returned.

In its fourth general meeting, held in St. Paul, Minnesota September 13-16, the CSOC considered and incorporated comments received as it further refined the documents in preparation for submission back to WFLC.



**THE FEDERAL LAND ASSISTANCE, MANAGEMENT
AND ENHANCEMENT ACT OF 2009
REPORT TO CONGRESS**



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Rural firefighters provide structure protection during the Castle Rock fire in Idaho. Credit: NIFC, Kari Greer.

EXECUTIVE SUMMARY

Wildland fire management across all lands and jurisdictions in the United States involves a complex matrix of fuel types, climate considerations, mission goals, policies, land and resource values, social concerns, and costs. None of these issues are new. However, because each of these elements — individually and collectively — is dynamic, the fire community is continually adapting and evolving to meet the challenges posed by wildland fire.

The past two decades have seen a rapid escalation of extreme fire behavior, increased risk to responders, home and property losses, higher costs, and increased threats to communities and landscapes. These trends call for a broad-based, collaborative and cohesive response to better address these mounting challenges. Congress, the fire community, and the public have recognized a need for a new strategy, a new path forward, and perhaps a new way of thinking about wildland fire.

As is the nature of many evolutionary phases, this current effort has generated collaborative consideration and examination of wide-ranging but pertinent elements in creating a synergistic move forward. While this report addresses the specific elements requested by Congress in the FLAME Act — most cost-effective means for allocating budget resources; reinvest in non-fire programs; employ appropriate management response; allocation of hazardous fuel reduction funding based on priority projects; assessing the impacts of climate change on the frequency and severity of wildfire; and study the effects of invasive species on wildfire risk — a separate but companion document expands upon the elements here and outlines a path toward development of a national cohesive wildland fire management strategy which will provide a foundation from which to build local and regional actions and direction.

Together, these documents address the elements requested by Congress and represent the next stage in an evolving world of wildland fire management with the goal of achieving safer, more efficient, cost-effective public and resource protection goals and more resilient landscapes.

This collaboratively developed report establishes a way forward. In responding to a request from Congress, the report addresses the seven primary elements facing fire and natural resource managers and the fire community at all levels, from local to national and from states to tribes.

A separate companion document titled, *A National Cohesive Wildland Fire Management Strategy*, presents a collaboratively designed approach to a national strategy. It adds to and builds upon the information presented in this report by clearly identifying the national challenges, guiding principles, goals and performance measures. It culminates in presenting a path forward on how the national fire community will proceed, together, to develop and implement the national strategy.

Three primary factors have been identified as presenting both the greatest challenges and the greatest opportunities for making a positive difference in addressing wildland fire problems and costs. They are:

- **Restoring and maintaining resilient landscapes.** The strategy recognizes the current lack of health and the variability of this issue from geographic area to geographic area. Because landscape conditions and needs vary depending on local climate and fuel conditions, among other elements, the strategy will address landscapes on a regional — more localized — scale, instead of a single model.
- **Creating fire-adapted communities.** The strategy will offer options and opportunities to engage communities and work with them to become more resistant to wildfire threats.
- **Wildfire response.** This element considers the full spectrum of fire management, from preparedness to full suppression to managing fire for multiple objectives. The strategy recognizes differences in missions among local, state, tribal and Federal organizations and will offer collaboratively developed methodologies to move forward.

This document and its companion — *A National Cohesive Wildland Fire Management Strategy* do not represent an end-point, but rather a beginning. There is a tremendous amount of work to be done, science to be considered and incorporated, and differences to be resolved. The direction is set and the wheels are in motion to address the significant issues that have increasingly plagued the fire community and the Nation.



INTRODUCTION

Fire has been a natural and integral part of ecosystems for thousands of years.

Early in the last century, wildfires on the landscape often burned in remote areas and, with rare exception, without devastating and widespread effects on homes and citizens. As suppression became a necessary goal, firefighting agencies evolved but remained discrete entities for decades.

Today is different. Trends in urbanization and development patterns have resulted in millions of citizens, homes, and entire communities located in fire-prone environments. Previous decades of aggressive fire suppression have resulted in widespread hazardous accumulations of flammable vegetation. As the climate changed, fire seasons grew longer, hotter, and drier; these factors converged, creating increasingly explosive and risk-laden conditions. Fire programs and firefighting operations grew more complex, costly, and challenging; and it became imperative that fire agencies and organizations work together.

As these changes were evolving, so too, were the political landscape, public perceptions, fire science, fire costs and budgeting. Costs in particular soared, not only for suppression but in costs related to economic, resource, and environmental losses. The challenges of fire management became exacerbated by the diversity of land ownership and jurisdictions as well as a lack of integration between fire and resource management programs and, in some cases, the lack of authority to merge the two. Consistent with and preceding this mix of evolutionary phases, a few notable events in the late years of the last century brought national attention to the wildfire community.

The Yellowstone fires in 1988 burned nearly 800,000 acres in America's oldest national park and sparked an intense national debate about the role of fire in nature and how it is managed. The Oakland Hills wildfires in 1991 killed 25 people and turned more than 3,300 homes to ashes, drawing keen awareness to the risks of living in the wildland-urban fire environment. The 1994 tragedy on Colorado's Storm King Mountain killed 14 firefighters and gave rise to discussions about risks to firefighters versus values being protected. These events foreshadowed what are now identified to be the three primary parts of a cohesive strategy: landscape health, fire-adapted communities, and fire response.



Old Faithful erupting during the Yellowstone fires in 1988. A plume of smoke and the Old Faithful Inn can be seen in the distance. Credit: NPS, Jim Peaco.

These and other incidents led up to the 1995 Federal Wildland Fire Policy and Program Review, the first comprehensive stem-to-stern look at the Nation's wildland fire issues, including fuel management, the role of fire in the environment, and wildland-urban interface issues. This was also the first in what would become a series of reviews, plans, and strategies to move the fire community and the Nation forward safely and more effectively.

The 1995 review was updated in 2001, the same year that saw the birth of the National Fire Plan. This congressionally directed plan was signed to develop a response to severe wildfires, reduce fire impacts on rural communities, and assure sufficient firefighting capacity in the future.



A wildfire in Ohio in 2009. Credit: National Association of State Foresters (NASF).

Each moved us forward as a Nation and fire management community. The science and understanding of fire expanded, critical strategic and tactical efforts were developed, and cooperation and collaboration was strengthened at all levels, locally and nationally. None, however, completely solved the problems, as communities and the wildfire environment are constantly changing, requiring agencies and programs to do the same. An update is needed.

THE FLAME ACT: THE NEXT STAGE IN THE PROCESS OF EVOLUTION

Wildfire suppression costs have grown tremendously in recent years. Projections indicate this trend may increase as a result of unhealthy forests, hazardous fuel build-up, changes in climate conditions, and increasingly populated wildland-urban interface areas.

In 2009, a highly diverse group of interests came together for the specific purpose of advocating a fix for the fire suppression funding challenge. The Partner Caucus on Fire Suppression Funding Solutions--a coalition of 114 environmental, industry, outdoor recreation, and forestry organizations led by National Association of State Foresters (NASF), The Wilderness Society and American Forests, believed that the establishment of a Federal Land Assistance, Management, and Enhancement (FLAME) fund would help to move the USDA Forest Service (Forest Service) and the Department of the Interior (DOI) toward a sustainable suppression funding mechanism better suited to deal with the escalating costs of fighting emergency fires.

Subsequently, Congress passed the Federal Land Assistance, Management, and Enhancement Act of 2009 (the FLAME Act). This legislation established a separate account for funding for emergency wildfire suppression activities undertaken on Department of the Interior and National Forest System lands.

In addition to the funding language, the Act required that within a year of enactment, the Secretaries of Agriculture and the Interior, acting jointly, submit to Congress a report containing a cohesive strategy addressing how the two Departments, working together, will address the wildland fire problems. Further, the report was to be consistent with recommendations described in recent Government Accountability Office (GAO) reports relative to a cohesive strategy and the strategic elements identified to be addressed.

Leadership in both Departments recognized that in order to be truly national in scope, a cohesive strategy must go beyond the DOI and Forest Service and include tribal, state, local, public and stakeholder interests. Wildfire knows no jurisdictional boundaries and the agencies and entities having direct or indirect fire management responsibilities are therefore linked at all levels. Inclusion, collaboration and cooperation are absolute requirements in today's wildland fire environment.

Embarking on a strategy development effort, the Wildland Fire Leadership Council (WFLC) — a consortium of Federal, state, tribal, county and local authorities — established a Cohesive Strategy Oversight Committee (CSOC) consisting of representatives from all levels of fire management and charged them with moving forward.

The subsequent process included a series of forums held in 14 locations across the Country to gain insight and input in identifying problems, challenges, and possible actions to effectively address them. Additional input was gained through smaller meetings, informal conversations, and written comments. Still other input was compiled by a team of scientists convened to inform both the strategy development process and the resulting strategy. Overall, input was gathered from stakeholders, including a cross section of entities having an interest in wildland fire, from Federal, state, tribal and local agencies, to individual citizens and communities, non-governmental organizations, and institutions and academia.



A rural fire engine heads to the Yellow Rail Prairie fire on the Anahuac National Wildlife Refuge in Texas. Credit: FWS.



Firefighters ignite a prescribed fire near homes near the Petit Manann National Wildlife Refuge in Maine. Credit: FWS.

FLAME ACT ELEMENT 1: MOST COST-EFFECTIVE MEANS FOR ALLOCATING BUDGET RESOURCES

The means of allocating budgets within the Federal fire agencies has been a challenge for many years. Historically, the Federal fire agencies had separate systems for distributing their funding with little coordination and overlap. As a result, the level of funding for specific programs within fire and aviation was often inconsistent, and subjective criteria were reflected in decisions. As fire seasons are generally becoming longer and more difficult and more communities are at risk this approach for allocating funds is inadequate.

Currently, through the auspices of congressional budget allocations, a number of programs and activities are funded annually which support not only the Federal wildfire programs but also encompass Federal assistance to states, tribes and local jurisdictions. The level of funding and the relative mix of funds supporting preparedness, suppression, prevention, research, state and volunteer fire assistance, and hazardous fuel is at the center of ongoing discussion. A number of factors affect the relative level of funding allocations across programs and jurisdictions. The resulting decisions must address a multitude of needs at the Federal, state, tribal, and local levels.

Cost-effective strategy characteristics include:

- Approaches that demonstrate advanced risk management based on managing exposure to the public and emergency responders, while meeting reasonable management objectives of multiple partners.
- Responses and approaches that leverage skills and abilities of a variety of involved partners and stakeholders.
- Investments that result in reduced cumulative risk, based on cost/loss assessments, using sound scientific protocols.

Many modeling sources are available to help with landscapes, communities, and wildfire analyses. They include State Forest Resources Assessments, Regional Wildfire Risk Assessments, resource and land management plans, Ecosystem Management Decision Support, Fire Program Analysis, and others. Connection to community-level efforts and revised modeling approaches will be necessary.

As the Cohesive Strategy evolves, various regional strategies will be proposed to include different investment levels and mixes of options for reducing wildfire risk. These differences would reflect varying levels of emphasis on the major goals of a cohesive strategy.

Developing and enhancing tools to support funding decisions remains a work in progress. The principles of monitoring and adaptive management will be applied. To be successful, all jurisdictions need to be aware of what works and what does not, and be willing to take the steps that will guide their efforts along the best possible course.



Fuels reduction project conducted by Florida Division of Forestry, Photo Credit FL Division of Forestry

FLAME ACT ELEMENT 2: REINVEST IN NON-FIRE PROGRAMS

In past years, when the cost of managing Federal wildfires exceeded the funds appropriated by Congress, monies were often shifted from non-fire programs to cover the cost. Over the past decade, the Forest Service fire program has gone from encompassing less than 20 percent of the Agency's budget to nearly 50 percent.

With the enactment of the FLAME Act funding is available to cover the cost of large or complex fire events or for use when the incident meets certain criteria (300 acres, threat to life and property, or when the cumulative cost of suppression exceeds appropriated amounts). Fires that do not meet the criteria are funded through the traditional agency suppression budgets. Once a declaration is made by the appropriate Secretary, the eligible wildfire suppression event can be funded through the FLAME fund.

The Act also allows for the use of new methods when formulating fire suppression funding estimates for the Wildland Fire Management and FLAME fund appropriation accounts. The expectation is for the Secretaries to consider data regarding actual prior-year fire suppression expenditures, predictive modeling and any other criteria they deem appropriate, rather than the inflation-adjusted 10-year average suppression expenditures as has been done in the past. The FLAME Act limits any transfers until after the FLAME funds and the Agencies' regular suppression funds are exhausted.

Once implemented, a cohesive strategy will enable land managers to focus on broader work activities that will contribute to more resilient landscapes and communities – e.g., work to control invasive species, manage wildlife habitat, implement fire prevention and conservation education programs, landowner assistance education, fire management, and management of insect and disease issues.



A father and son kayak a scenic river in the Northwest. Credit: NIFC.

FLAME ACT ELEMENT 3: ASSESSING RISK TO COMMUNITIES

Nationwide, about 70,000 communities are estimated to be at risk from wildfire. Assessing the level of risk to the larger landscape and wildland-urban interface (WUI) — the places where structures and wildland fuel intermingle — is a task that goes far beyond just counting homes in fire-prone areas. The NASF provides guidance for identifying and maintaining state-level data for all communities designated by the state as being at risk from wildfire. National guidance for this effort is provided in the NASF Briefing Paper: *Identifying Communities at Risk and Prioritizing Risk Reduction Projects*. Communities-at-risk should continue to be identified on a state-by-state basis with involvement of all organizations with wildfire protection responsibilities—local, state, tribal, and Federal—along with other interested cooperators, partners, and stakeholders.

Identifying Risks

Risk to communities is generally determined by the number, size and types of wildfires that have historically affected the area; topography; fuel and weather; suppression capability of local and regional resources; where and what types of structures are in the WUI and; what types of pre-fire mitigation activities have been completed. States are expected to provide appropriate community risk analyses and to identify causes of risk that may be addressed through projects. In some locations this has been done on a geographic-area basis.

A number of tools have emerged to identify and define risk and to assess the level of threat to communities. These tools largely assess risk based on common parameters. The tools include the Southern Wildfire Risk Assessment, Northeastern Wildfire Risk Assessment, the Westwide Risk Assessment as well as other agency risk assessments.

Additionally, fire scientists have made important advances in mapping populated areas and measuring wildfire risk to communities in a national assessment using LandScan USA data, which provides new methods for estimating spatial population data. New methods to measure risk to communities have been presented by the fire science community in the regional and forest prototypes using burn probability and intensity pilots, and related risk analyses. Subsequent decisions regarding the specific strategies at regional and national levels will better define how to achieve fire-adapted communities and assess risk to them.

Community Wildfire Protection Planning

On the local level, Community Wildfire Protection Plans (CWPPs) or the equivalent provide a specific risk-assessment to a county or community. The CWPPs are a comprehensive wildfire planning tool for a community or a county and include a specific risk assessment which collaboratively identifies values at risk. Working together to create a CWPP is an important first step in bringing the awareness of shared wildfire risk home to the community. The Healthy Forest Restoration Act of 2003 (HFRA) clearly supports the role of communities in Federal land management planning. This successful model to mitigate wildfire risk has been used in communities without adjacency to Federal lands.



Firefighter removing debris around a house in the wildland-urban interface in Northern California. Credit: NIFC, Kari Greer.

The minimum requirements for a CWPP are defined in the HFRA with more detailed guidance provided in the publication, *Preparing a Community Wildfire Protection Plan: A Handbook for Wildland-Urban Interface Communities*, (March 2004) and the *Community Guide to Preparing and Implementing a Community Wildfire Protection Plan*, (August 2008).

The HFRA identifies the following requirements for a CWPP:

- collaboration;
- prioritized fuel reduction; and
- measures to reduce structural ignitability.

The HFRA requires that three entities mutually agree to the final contents of a CWPP:

- the applicable city or county government;
- the local fire department(s); and
- the state entity responsible for forest management.

These plans also include educating homeowners; targeting, prioritizing, and scheduling fuel treatments; and building response capability. Human and financial resources will be needed to build local fire planning capacity.

Local authorities such as fire departments, fire protection associations, county planning and zoning departments, and other authorities conduct risk assessments that help them determine their local needs for fuel treatments, equipment, personnel, training, mitigation needs, local ordinances or code adoption and enforcement. Local assessments can also identify which mitigation programs are best for a given community, such as National Fire Protection Association's "Firewise" and the International Association of Fire Chief's (IAFC), "Ready, Set, Go!"

Regulation through codes and ordinances and subsequent enforcement is a major challenge for communities-at-risk since most of those communities are small. Even if they have authority to adopt codes, many communities do not have the resources to enforce them.

Most communities-at-risk are served by volunteer fire departments, if they have fire protection at all. Many of these departments do not have the resources to take on additional responsibility without additional funding. The paradox is obvious: communities-at-risk that can do the most to make their communities fire-adapted do not have the resources to do so.

Fire-Adapted Communities

Despite the challenges of assessing and countering risks, progress is being made to address the threats. One approach is the concept of "fire-adapted communities," which is one of the three primary elements of a cohesive strategy.

This aspect of a cohesive strategy relies heavily on communication, education, funding, and the willingness on the part of citizens and agencies at all levels to work closely together to map out and carry forth a community vision. This vision, turned into action at the local level and repeated thousands of times across the Country, is the best approach to successfully address communities-at-risk.



More than 600 communities have met the "Firewise" requirements. Credit: NIFC.

A fire-adapted community is one consisting of informed and prepared citizens collaboratively taking action to safely co-exist with wildland fire. An inherent part of becoming a fire-adapted community is to assess the community and the threat posed to it by wildfire. A fire-adapted community generally has achieved or is working toward:

- Implementing “Firewise” principles to safeguard homes and “Ready, Set, Go!” principles to prepare for fire and evacuation.
- Developing adequate local fire suppression capacity to meet community protection needs.
- Designing, constructing, retrofitting and maintaining structures and landscaping in a manner that is resistant to ignition.
- Adopting and enforcing local codes that require fire-resistant home design and building materials.
- Raising the awareness of and creating incentives for growth planning and management that reduces, rather than increases, fire-prone development.
- Properly spacing, sequencing and maintaining fuel treatments across the landscape.
- Developing and implementing a CWPP or equivalent.
- Establishing interagency mutual aid agreements.
- Designating internal safety zones.

Fire-Adapted Communities within a Cohesive Strategy

A key feature of a cohesive strategy is its direction that communities take on the responsibility of becoming fire-adapted. A cohesive strategy is aimed at promoting fire-adapted communities through:

- Fuel treatments that are properly placed, sequenced and maintained.
- Restoring and managing healthy, resilient landscapes to reduce risks to nearby communities.
- Building capacity of local, rural, and volunteer fire departments.
- Public involvement in risk and mitigation activities.

Local Fit, National Programs

“Firewise” and “Ready, Set, Go!” concentrate on assessing community risk and addressing it through community and individual responsibility.

“Firewise” is a national program designed to educate the public about how to reduce fuel around homes, retrofit homes with non-combustible roofs and building materials, clean gutters and yards, trim ladder fuel, move firewood, propane tanks and other combustible fuel away from the house, provide safe access and egress, and take other steps to make the home defensible in case of fire. More than 600 national “Firewise Communities” have met the standards for pre-fire mitigation. Countless other communities have used “Firewise” principles to reduce risk but have not achieved full Firewise Community status.

“Ready, Set, Go!” is a federally funded, national program delivered through local fire departments. “Ready” is the “Firewise” message of being prepared before wildfire strikes. “Set” teaches people in communities at risk to be aware of imminent fire danger and to prepare for successful evacuation. “Go!” emphasizes the importance of evacuating when instructed to do so.



Snake River Helitack crew member limbs trees to reduce fuels around the Tavaputs River Ranch during the Trail Canyon Fire near Price, Utah, on the BLM Moab District.

Fire Safe Councils are another tool available to help assess risk. These councils originated in California as a way to validate mitigation projects in the WUI and grew to provide mitigation education. The Fire Safe Council model delivers the defensible space/Firewise message and has spread to include several other states.

All Must be Involved

Consistent, complete, and up-to-date assessment methods are needed to track both the risk and the reduction of risk to the Nation's communities near wildfire-prone areas. Essential to the success of risk assessments are ongoing, integrated efforts to educate and involve local property owners in a program of continued mitigation.

The NASF briefing paper *Communities at Risk and Prioritizing Reduction Projects*, states, "Federal, state and local governments should collaborate across jurisdictions with a variety of partners and plan community risk reduction projects that complement surrounding jurisdictions. Approval of projects at the state level or Federal regional level should take into account the value of collaborative projects."

As the *2009 Quadrennial Fire Review* noted, to truly achieve fire-adapted communities the Nation must take "...steps for increasing knowledge and commitment, and building a sense of responsibility among private landowners, homeowners, the insurance industry, fire districts, local governments and other key players in interface communities for wildfire prevention and mitigation."



Mescalero Apache Reservation/Lincoln National Forest Boundary. Taken by Bernie Ryan, Senior Forester, BIA. Photo shows a clear delineation of the jurisdictional lines where forest/fuels management projects have been completed on tribal lands to the left and non-treated other Federal lands to the right.

FLAME ACT ELEMENT 4: EMPLOY APPROPRIATE MANAGEMENT RESPONSE

Fire has played an integral role in maintaining healthy North American ecosystems for more than 10,000 years. Native Americans recognized through experiential learning the value and uses of fire to sustain healthy, diverse ecosystems as a means to sustain their quality and style of life. Fire still has an important and special place in the natural order of succession, and this role needs to be recognized.

For much of the past century, prevailing social and resource views led fire management in the United States to be shaped by the Federal “10 a.m. policy” and state nuisance laws, whereby all wildfires were to be extinguished by 10 a.m. the day following ignition. This led to a standard practice across virtually all jurisdictions of immediate and aggressive full suppression of all natural and human-caused ignitions. The policy created a set of social, ecological and financial conditions, and expectations and outcomes that have been under increasing scrutiny and adjustment.

Beginning in the 1970s, there was growing recognition that a full-suppression response policy at all cost had proven unacceptable and unsustainable both ecologically and from a perspective of cost stewardship. This precipitated the National Wildfire Coordinating Group’s (NWCG) creation and evolution of the Federal Wildland Fire Management Policy over the past 15 years. The current Federal Wildland Fire Management Policy allows Federal fire managers the opportunity to manage fires for multiple objectives. Those multiple objects can include cost-effectiveness, safety of firefighters and the public, or resource management goals.

Although the phrase “appropriate management response” is used in Federal fire policy, previous restrictions limited how it was implemented. Revised implementation guidance now provides for a full range of responses appropriate to conditions, risks and plans, including managing wildland fire for multiple objectives. The current paradigm recognizes both the benefit and threat posed by wildfire. This approach also recognizes there are inherent risks which, to a large extent, can be managed and minimized; and that fire is an integral part of the ecosystem and it must play a more natural role on the landscape.

State and local entities, however, have a mission focused less on ecosystem management regarding wildland fire and more on aggressive protection of property and resources that contribute to sustainable state economies. The differences between current Federal and state fire management policy presents a number of challenges and issues of concern, particularly regarding multi-jurisdictional fires.

Moving forward, these issues will continue to require close cooperative management among Federal, tribal, state and local jurisdictions.

In 2009, the NWCG clarified existing Federal fire policy, leading to changes in terminology and implementation guidelines regarding how wildfires are managed. These changes broadened the response options available to Federal fire managers to include the entire spectrum from full suppression to point protection to monitoring, based on fire and land-use planning, conditions, threats and opportunities. This allows Federal fire managers to focus resources, costs and effort on those fires or portions of fires posing a threat to life, property and infrastructure while allowing fire to play its natural role for resource benefits on other fires or portions of the same fire.



Airtanker provides support to the firefighters on the ground as they work to protect a home in southern California. Credit: AP.

This approach has been adopted at the Federal level and has been reasonably successful in most cases. There was a steady increase from 2009 to 2010 in the number of Federal fires being managed under the new implementation guidelines.

While the states generally acknowledge the value of fire's role on the landscape, the dictates of their missions require them to take aggressive suppression action in nearly every instance to protect property and resources. This gives rise to issues related to the risk of Federal wildfires managed for multiple objectives spreading to lands managed by other jurisdictions and threatening lives, property, and resources.

In an effort to proactively address these issues, the NASF has endeavored to capture lessons learned from the 2009 fire season and provide recommendations as to how those lessons can be incorporated in future wildfire incident management. The intent is to improve the level of cooperation and understanding by all parties engaged in or affected by wildfires that are managed for multiple objectives.

Of significant concern to Federal, state, and local agencies are those fires having the potential to become multi-jurisdictional, thus adding to the complexity of an incident and increasing the threats to life and property. Concerns most cited by state and local fire protection agencies regarding this issue include the following:

- Firefighter and public safety
- Threats to private property, or natural resources with economic, social and cultural values on public lands
- Application of decision-making models in the dynamic fire environment
- Effects on interagency relationships
- Impacts to available suppression resources
- Air quality
- Poor public relations due to unclear communication
- Cost
- Critical watersheds and municipal water supplies

About 60 percent of the Nation's forested land is private and, in some areas, multijurisdictional. Roughly 75 percent of all wildfires reported to the National Interagency Coordination Center (NICC) in Boise, Idaho, are under non-Federal jurisdictions (approximately 63,000 fires annually); and, according to NASF, more than 90 percent of these fires threaten structures. These factors result in both a major workload given the high number of complex initial attack fires.

Local, State, Tribal and Federal Fire Suppression Partnership

As a foundation for discussion about how best to move forward, a number of shared assumptions should be noted regarding local, state, tribal and Federal fire management policy, strategies, and interaction. Specifically:

- Safety of firefighters and the public is the first priority in determining a response to a wildfire.
- Continued cooperation and communication are essential to success. State, local, tribal and Federal agencies will continue to work together on an integrated response to wildfires, particularly those on shared protection.
- All wildland fire agencies have the prerogative to determine their management response for any wildfire that lies solely within their jurisdictions. This response may be dictated by a number of factors, including values at risk, natural resource objectives and available fire suppression resources.
- Ultimately, public agencies are accountable to the people they serve and thus are obligated to be as forthright and clear as possible in communicating their intent in responding to wildfires.
- Safe and aggressive initial attack often is the best response to keep unwanted wildfires small and short-term costs down. Local, state, tribal and Federal agencies will continue to support one another with wildfire response.
- Individual circumstances for each wildfire will drive decisions about response.

Protection Expectations and Responsibilities

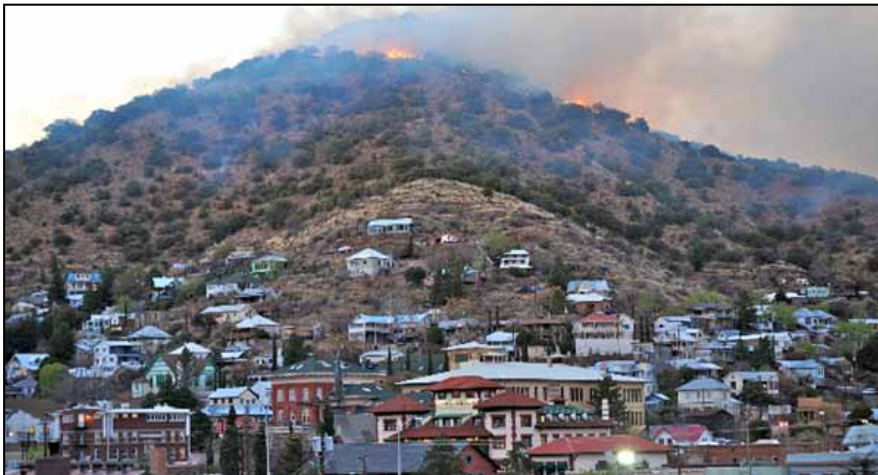
Successfully moving forward with response and decision-making in the dynamic wildfire environment requires that all stakeholders continue to work together, communicate effectively, and be active participants in decisions that could ultimately affect them and the land for which they are responsible. In turn, fire managers must understand and respect the policies and legal mandates of each agency that drive their decisions regarding wildfire suppression decisions and actions, and proceed based on the following expectations.

- Recognizing there is significant and continuing tension among wildland fire protection organizations regarding wildfires spreading across jurisdictional boundaries, response organizations will look at the surrounding landscape and collectively identify high-value areas on either side of incident boundaries and assess and address adverse economic impacts to local communities. Collaborative strategies will be devised to reduce the potential for fire spread in these areas.
- Given that it is common for state and local fire agencies to have dual or overlapping fire protection responsibilities, all response organizations will note locations within their state where there is either no organized wildfire protection or where there is dual or overlapping protection. Further, if either of these situations exist, they will agree to communicate and coordinate their responses (or lack of response) in these areas; and how they will, or will not, share costs.
- Discussions should recognize the potential for transferring safety and financial risk across jurisdictions and over time. Future dialogue will seek to clarify tactical mitigation measures including operational strategies that will keep fire on their own jurisdiction where appropriate and outline mutually developed cost-share expectations for all areas of response. This overall effort will greatly improve the ability to achieve coordinated, efficient fire prevention education, hazard mitigation and suppression operations.
- In areas where fire use is appropriate, stakeholders will continue dialogue aimed at clearly conveying the roles, responsibilities and liabilities that may come with such strategies. Pre-season exercises and discussions are vital to ensure management of such fires address threats to adjacent property and the frustration of affected communities.

Guidance from Mutual Expectations for Preparedness and Suppression in the Interface

As identified in the collaboratively prepared report, *Mutual Expectations for Preparedness and Suppression in the Interface*, once Federal, state, tribal, and local agencies have agreed upon and confirmed their responsibilities, authority and jurisdiction based on the above expectations, they will identify opportunities to realign interface protection expectations and responsibilities among existing organizations to better match respective organizational missions and capabilities. Examples include:

- **Community Wildfire Response Planning.** If Federal, state or tribal-protected lands are adjacent to a community with a fully developed CWPP or an equivalent plan and a robust local response capability, consider developing a joint community wildfire response plan that links to the Federal/state/tribal fire management plan. Such a plan will provide for immediate local government assistance on wildfires originating in pre-defined areas on adjacent Federal/state/tribal protection lands, and provide full Federal/state/tribal reimbursement of suppression costs to local government. This response plan would provide for a local response that greatly exceeds what is typically included in a standard mutual aid agreement.



Moon Canyon Fire above the town of Bisbee, Arizona, March 2008. Credit: BLM.

- **Exchanges of Protection Responsibility.** Identify opportunities for Federal, tribal, state, and local agencies/entities to formally exchange areas of legal fire protection jurisdiction. For example; one objective may be to allow Federal agencies to protect predominately undeveloped state or private forest land, while states could protect Federal land adjacent to areas with significant wildland-urban interface (WUI) development.
- **Trading Initial Response Areas.** Develop agreements among Federal and tribal agencies and state or local government to trade areas of initial response authority to improve the response capability in areas with significant WUI development.
- **Cost-Share / Mutual-Aid Agreements.** Before a wildfire starts, agencies will ensure the various entities responsible for wildfire protection have agreed on available cost-share methodologies and have clarified mutual-aid response expectations.
- **Initial Response Contracts.** As appropriate, identify opportunities to consider contracting with local, state, tribal and/or Federal Government for initial response on adjacent lands.
- **Training.** Wildland firefighting resources will be trained with equivalency in mind, meaning that qualifications under one entity will be recognized by another.

Fire Prevention

Continued fire prevention efforts for the reduction of human-caused wildfires are a shared responsibility across all jurisdictions and one that has served all agencies and the public well for many years. Results, while difficult to measure, indicate that careless and accidental fire starts are effectively reduced through this invaluable cross-agency program. Funding for sustaining and expanding this aspect of our interagency wildland fire management program is a fundamental component of a cohesive strategy.



Over the past 65 years, Smokey Bear has been an icon for fire prevention efforts in the United States. Smokey and Sparky the Fire Dog teamed up at the Treasure Valley Fire Prevention and Safety Coop's Fire Prevention Day in Meridian, Idaho.

FLAME ACT ELEMENT 5: ALLOCATION OF HAZARDOUS FUEL REDUCTION FUNDING BASED ON PRIORITY PROJECTS

Current State of Hazardous Fuel Reduction Projects

Allocating hazardous fuel funds spans all three cohesive strategy principles — restoring and maintaining healthy landscape, fire-adapted communities, and response to wildfires. It is essential that priorities be set correctly and that allocations be made on the basis of effectiveness and efficiency. Otherwise, all three cohesive strategy principles could suffer.

Hazardous fuel reduction projects occur throughout the United States, on all levels — Federal, state, county, tribal and local government and private land. Funding of projects, regardless of the jurisdiction, often occurs through many of the same sources. Hazardous fuel is common to virtually all fire-management jurisdictions and, to address it successfully, must be approached in a united, collaborative way.

There is little question about the value of reducing fuel that often congest forests, woodlands and rangelands. Successful hazardous fuel reduction programs have many benefits. They strengthen landscape resiliency, reduce risks to people and their communities, decrease smoke emissions and improve air quality. Removing hazardous fuel preserves important habitat, diminishes threats to watersheds and water quality, and provides economic opportunities to rural and tribal communities.

Hazardous fuel work is common to many fire organizations from the local level up, using a variety of ways to fund the projects. The scale of hazardous fuel projects ranges from big to small, from multi-jurisdictional landscape-scale treatments covering thousands of acres to individual private lots of less than an acre. Ideally, collaboration occurs in identifying projects and extends into implementation of the project where partnerships join together to share in the work and cost of a project. Expanding partnerships is a key to hazardous fuel treatment efficiencies. New partnerships can treat more land, share costs and responsibilities, and reduce the risk to communities.

Hazardous fuel is reduced through a mix of actions that include prescribed fire, mechanical and chemical treatments, and active forest management. It is a practice that is widely accepted and its benefits are widely recognized.



Excavator with mastication head reduces fuels within the WUI on the Medford BLM District near Grants Pass, Oregon. Credit: Bradley Washa, BLM

Prioritization of Fuel Reduction Work

Federal and state agencies use a hazardous fuel allocation and prioritization system to support decisions and ensure financial resources are directed to the highest-priority projects or programs in the highest-priority areas.

The Federal allocation system uses the Ecosystem Management Decision Support (EMDS) model to identify areas of highest priority by evaluating environmental factors influencing wildfire potential and the negative consequences of wildfire. The states routinely use CWPPs or their equivalent, risk assessments and a competitive grant process.

Other factors are part of the prioritization mix for Federal agencies and states. Considerations include funding needed for continuity of operations, emergency conditions, fiscal-year priority factors not included in EMDS data, multi-year treatments, contracting opportunities, and available funding from other appropriations and partnerships. Woody biomass utilization is another consideration. As noted in a 2003 Memorandum of Understanding signed by the Secretaries of the Interior, Agriculture, and Energy, "... the harvest and utilization of woody biomass by-products can be an effective restoration and hazardous fuel reduction tool ..." capable of assisting with "forest, woodland, and rangeland restoration ..."



Firefighter uses a drip torch to ignite a prescribed fire in the Upper Souris National Wildlife Reserve in North Dakota.
Credit: FWS.

Prioritization of Local Fuel Reduction Work

Identifying priority projects at the local level focuses on where hazardous fuel reduction projects are developed and are based on national and regional direction and local considerations. Local consideration of treatments is shaped by a number of factors:

- Collaboration with partners and stakeholders
- Alignment with CWPPs or their equivalent
- Integration with other projects having a collateral effect of hazardous fuel reduction
- Response to emergencies, such as rapid increases in hazardous fuel associated with hurricanes, insect damage, invasive species, and other landscape-scale disturbances
- Projects that restore fire-adapted ecosystems
- Opportunities to maintain or restore threatened critical native habitats
- Opportunities to restore fire-adapted ecosystems in non-WUI areas
- Opportunities to maintain investments in previous treatments
- Exploring biomass partnerships
- Supporting local economies

Moving Forward

Adaptive management is used to increase effectiveness of hazardous fuel treatments and ensure the greatest areas at risk are given highest priority for funding. Over time, the prioritization process will be reviewed, adjusted, and, if needed, redirected. Prioritization and allocation models and processes also will be refined as scientific advances occur in risk quantification.

Additionally, strong emphasis will continue to be placed on working together at all levels of the fire community to ensure alignment of priorities. It will be of limited value to conduct an intensive fuel reduction project in one jurisdiction, while a neighboring jurisdiction or community does little or nothing. Other considerations in the evaluative process include watersheds, boundary areas at the edges of jurisdiction where wildfire response strategies significantly differ, and other areas containing resources of great value to the public. All of this can add up to a strong, collaborative effort to place most of the treatments in the areas at most risk, regardless of land ownership, and where they will be the most beneficial when unwanted fire breaks out.

Landscapes

Establishing fire-adapted communities and working to reduce fuel in and around them are important. They have become part of the fire landscape, too. But it is only part of the equation. Healthy, fire-adapted ecosystems are essential to restoring and maintaining landscapes. It can be counterproductive to promote fire-adapted communities while minimizing or excluding the importance of fire's role in the larger ecosystems. Both are vital for healthy landscapes and healthy communities. Both deserve attention and support.

Vast, landscape-scale restoration efforts are important to improving the health and resiliency of our forests and public lands. With improved landscape health including integration of fire as part of the natural process, impacts of catastrophic fire on our natural and cultural resources and communities will be reduced.

A cohesive strategy must ensure commitments to collaborative efforts and partnerships that have developed in improving landscape health. Small, piecemeal projects will not achieve the kinds of changes needed to promote healthy, fire-adapted ecosystems.

Reducing hazardous fuel in and near WUI communities rightfully continues to be a high priority and will continue to be the focus of the majority of Federal wildland fire hazardous fuels activities. Any acres treated should be identified through a prioritization process. Most non-WUI treatments on Federal lands are accomplished with restoration funds such as the proposed Forest Service's Integrated Resource Restoration (IRR) funds or with land health and restoration treatment funds within each DOI land management bureaus. For the last decade, emphasis on the importance of and funding has been given to the wildland-urban interface and CWPPs or equivalent plans. Landscape restoration and mitigating hazardous fuels are important and need to be addressed collaboratively. A greater emphasis needs to be placed on risk assessments when determining areas for treatment.

All three cohesive strategy principles need to be factored into funding based on land management objectives and the priority of hazardous fuel reduction projects. A balance among the three principles and prioritization of hazardous fuel projects needs to involve all organizational levels, from those on the ground to national-level direction. Only through such a balanced approach can a successful hazardous fuel program, serving communities and healthy landscapes, be achieved.



Healthy landscapes can decrease the fire risk to communities.
Credit: NIFC, Kari Greer.

FLAME ACT ELEMENT 6: ASSESSING THE IMPACTS OF CLIMATE CHANGE ON THE FREQUENCY AND SEVERITY OF WILDFIRE

It is extremely difficult to accurately assess the impacts of climate change on wildfire in the United States because most climate-change modeling has been completed on a global scale. The wide range of variability in both climate and wildfire behavior is also a factor. Yet, resource management agencies have collected fire records for a considerable length of time, and climate-wildfire research efforts are yielding some valuable results.

Regarding the long-term outlook, the models generally forecast increases in temperature across the western United States during the 21st century. These projections, plus projected further expansion of the WUI indicates catastrophic wildfire will continue to be a problem, particularly in the West.

Additionally, while there seems to be agreement within the models of a general drying trend in the West, there is still considerable uncertainty about seasonal and regional precipitation patterns, and the models are unable to predict the locations of future wildfires. However, because the West encompasses vast landscapes over a wide range of climates, it can be typically assumed at least some portion of the West will experience a severe wildfire season each year.

Magnitude, Scope and Geographic Location of Impacts

While most of the projections relating to climate change in the United States are for the Western region, there is a growing body of research that projects the impacts of climate on wildfire in other regions of the Country as well. In 2001, the U.S. Global Climate Change Program predicted the seasonal severity of fire hazard is likely to increase by 10 percent over much of the United States, with possibly larger increases in the Southeastern region and Alaska, but with decreases in the Northern Great Plains area.

According to a 2004 USDA Forest Service report, the southeast could be severely affected by increased temperatures through drought, insect infestation and wildfire, all of which could possibly change the predominant landscape from forest to grassland or savanna. The report recommended not trying to restore forests to pre-European settlement levels, warning that, “we would be trying to restore against a strong climate signal, like trying to push the tide back out into the ocean.”

Additionally, drought records based on the 110-year Palmer Drought Severity Index (PDSI) show that the decade from 2000–2009 was the third worst drought decade in the past 110 years. During 2009, drought extended over more than one-fourth of the Country.

There is a high level of confidence the West will be strongly affected by climate change, and these impacts are already making significant changes across many landscapes. As average temperature rises, the summers are longer, creating drier conditions. This promotes easier fire ignition and spread. High fire risks are associated with early snowmelt and increased spring and summer temperatures. The greatest increases noted by scientists occurred in mid-elevation, Northern



Aerial survey of the beetle kill in the Deefield Lake area of the Black Hills National Forest in South Dakota. Credit: Forest Service.

Rockies forests. A 2006 study by A.L. Westerling, et al, titled *Warming and Earlier Spring Increase Western U.S. Forest Wildfire*, notes “the projected regional warming and consequent increase in wildfire activity in the western United States is likely to magnify the threats to human communities and ecosystems, and substantially increase the management challenges in restoring forests and reducing greenhouse gas emissions.”

A 2008 study by Ryan, et al for the U.S. Global Climate Research Program, titled *The Effects of Climate Change on Agriculture, Land Resources, Water Resources, and Biodiversity in the United States*, reports that “fires, insect pests, disease pathogens, and invasive weed species have increased, and these trends are likely to continue.” It also reports “in the western United States, both the frequency of large wildfires and the length of the fire season have increased substantially in recent decades, due primarily to earlier spring snowmelt and higher spring and summer temperatures.”

These changes in climate have reduced the availability of moisture, drying out the vegetation that provides fuel for fires. Alaska also has experienced large increases in fire, with the area burned more than doubling in recent decades. As in the western United States, higher air temperature is a key factor. In Alaska, for example, June air temperatures alone explained approximately 38 percent of the increase in the area burned annually from 1950 to 2003.

Additionally, America’s forests are threatened by insects and diseases. It is uncertain whether infestations are due to a change in climate conditions, or due to a century of fire exclusion or lack of active forest management, or a mix of these and other factors. However, the increase in tree mortality due to insects and disease increase fire severity.

According to *Climatic Change, Wildfire and Conservation*, a 2004 study by D. McKenzie, et al, “If climatic change increases the amplitude and duration of extreme fire weather, we can expect significant changes in the distribution and abundance of dominant plant species in some ecosystems, which would thus affect habitat of some sensitive plant and animal species. Some species that are sensitive to fire may decline, whereas the distribution and abundance of species favored by fire may be enhanced.”

“The effects of climatic change will partially depend on the extent to which resource management modifies vegetation structure and fuel,” the study adds, stating further, “Reasoned discussions amongst decision makers, public-land managers, and stakeholders at local and regional scales can help in the development of resource management strategies that mitigate risk to ecosystems and sensitive species.”

Climate, Wildfire, Biomass and Carbon Management Concerns

Another concern related to the effect of climate change on wildfire is the issue of carbon sequestration and carbon emissions from wildfires. Forests and rangelands are considered a “carbon sink” because vegetation removes carbon from the ecosystem and stores it for long periods of time. The Westerling study found, “...if wildfire trends continue, biomass burning will result in carbon release, suggesting that the forests of the western United States may become a source of increased atmospheric carbon dioxide rather than a sink, even under a relatively modest temperature-increase scenario.” This concern is widely shared in the science community.

Globally, biomass burning contributes half the amount of carbon as fossil fuel. For this reason, and for issues relating to smoke, emissions from wildfires are a source of public concern. If projected trends in increasing temperature and increasing variability and longer fire seasons hold true, then the following could occur: increasing variability may mean extreme events will become more common and record high and record low temperatures may be expected.

Reducing Carbon Emissions

The use of prescribed fire to reduce fuel hazards may have the added benefit of reducing carbon emissions by reducing the quantity of biomass consumed by a wildfire. To reduce the risk of severe wildfire in the dry forests of the western United States, overstocked forests may need to have biomass removed either mechanically or with prescribed burning.

Harvesting trees for timber and biomass is another proven option, actively managing forests to reduce tree stocking levels and corresponding fire danger. Timber and biomass production provides jobs and economic value to rural communities, building products, biomass for renewable energy, and fiber for paper and other products. Wood building products help store carbon for long periods of time, and wood biomass energy helps offset fossil fuel emissions with relatively carbon-neutral sources.

Next Steps

Scientists associated with the development of a national cohesive strategy have described a risk-based analysis to evaluate expected carbon and expected emissions under different fuel treatment scenarios. This information is useful to project the climatic implications of alternative fire management strategies. Where current science is lacking is in understanding the temporal and spatial dynamics of wildfire risk in response to a changing climate. More work is needed at the regional assessment level to better understand climate change effects on wildfire risk. That work can proceed as the cohesive strategy regional assessments are conducted.

On a broader scale, additional scientific information is needed on a range of climate-change impacts related to many issues, including wildfires, agriculture, changes in air quality, hydrology, fish, and wildlife. It is of paramount importance for Federal agencies to coordinate closely with the states to identify the top priorities in these areas so that successful strategies for adaptation planning may be developed, and limited Federal research dollars are spent strategically.

In order to improve the effectiveness of science to inform the decision-making process, priority will be placed on enhanced and sustained support for climate-related monitoring, data accessibility and improved data-oriented decision-support systems. More research is needed to improve predictive capabilities for climate change and related impacts at regional and global levels. Further, enhanced communication and dialogue between the science community and decision makers is essential to help set priorities for scientific investment in information that informs decision makers, and also for maximizing the usability of knowledge created by the science community.

This view is consistent with the regional and local approach of further analyses identified in the *Comparative Risk Assessment Framework for Wildland Fire Management* and the phased approach adopted by the WFLC. This approach also is consistent with the DOI Secretarial Order as well as Interior's implementation documents for science coordination by interagency Climate Science Centers, and the collaboration identified in the Associated Landscape Conservation Cooperatives.



Federal and state fuels crews work year-round alongside local fire departments to remove hazardous fuels on private land. Credit: BLM, Idaho.

FLAME ACT ELEMENT 7: STUDY THE EFFECTS OF INVASIVE SPECIES ON WILDFIRE RISK

Background

A cohesive strategy will ultimately recognize the need for resilient landscapes across all jurisdictions. Landscapes are considered resilient when they can endure a disturbance, such as a wildfire, and recover with little or no intervention. This implies native vegetation is healthy and able to restore itself.

The National Invasive Species Council (Executive Order 13112) defines an invasive species as “an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health.” More than 100 million acres (an area roughly the size of California) in the United States are suffering from invasive plant infestations. The U.S. Environmental Protection Agency estimates the Country spends at least \$138 billion per year to fight and control invasive plant and animal species.

The problem of invasive species goes beyond just losing one plant species to another and the associated loss of habitat and diversity. Many of the invasive species increase the risk from wildfire. Cheatgrass (*Bromus tectorum*), for example, an invasive species from Central Asia, dominates more than 25 million acres of public land in the Great Basin, according to the Bureau of Land Management. Cheatgrass moves aggressively into disturbed areas and seeds prolifically. It dries out early and is highly flammable.



Muck thistle, an invasive species common in parts of the West. Credit: BLM, Idaho.

Cheatgrass is not the only species that contributes to catastrophic/severe wildfires. In the South, almost 400 non-native vegetative species have been identified. It is conservatively estimated that 80 percent of the species on the invasive plant list are influenced by or influence fire behavior. Three species in particular, cogon grass (*Imperata cylindrica*), kudzu (*Pueraria Montana var. lobata*) and climbing ferns (*Lygodium spp.*) pose particular problems regarding fire behavior and intensity.

A fundamental goal of the Cohesive Strategy will be to “ensure landscapes across all jurisdictions are resilient to disturbance in accordance with management objectives.” Achieving resilient landscapes is a challenge facing all land owners, managers, and land users. Scientists and land managers have expressed the need to develop a strategy for more aggressive invasive species prevention, early detection, and management.

Coordinated National Actions Are Needed

Coordinated, multi-state management, and eradication actions are needed to limit or eliminate intentional and unintentional introductions and improve control of invasive species. Programs for the control and/or eradication of invasive species must incorporate education, prevention, early detection, and rapid response techniques.

Natural resource management agencies, state and local governments, tribes, universities, nonprofit organizations, and the private sector must collaborate and form partnerships with states to prevent the spread of invasive species, avert new unauthorized introductions, and work together to find creative new approaches for protecting and restoring natural, agricultural, and recreational resources.

A coordinated regional approach will assist in invasive species management. Federal agencies should partner with states to develop efficient coordination and communication mechanisms to share information and allow for the most effective and rapid response. Furthermore, Federal and state partners must establish consistent and effective policies and procedures to prevent transport, sale and dispersal of undesirable species, particularly those under eradication in specific states, and increase awareness and support for effective public outreach and education about invasive species.

Invasive Species Research Projects

Invasive grasses pose problems in different regions of the Country. The table below shows an example of the invasive grasses and related studies.

Invasive	Region	Effect	Study	More info
Cheatgrass	Great Basin/ Colorado Plateau cold desert	Increased fire intensity and frequency	Joint Fire Science Project - 5 Studies; SageSTEP; Great Basin Native Plant Selection and Increase Project	www.sagestep.org ; www.fs.fed.us/rm.boise/research/shrub/greatbasin.com
Cheatgrass and medusahead	Great Plains/ Columbia Plateau	increased fuel, reduced grazing	Ecologically Based Invasive Plant Management Project	www.ebipm.org
Buffelgrass	Sonoran Desert	Brings fire to non-fire-adapted environment	Wildfires and Invasives in American Deserts Symposium	www.srmjournals.org/toc/rala/31/3
Red brome	Southwest	Increased fire intensity and frequency	American Deserts Symposium	http://www.fs.fed.us/database/feis/plants/graminoid/brospp/introductory.html
Medusahead wildrye	Pacific Northwest	Greater fire hazard than cheatgrass		http://www.fs.fed.us/database/feis/plants/graminoid/taecap/introductory.html
Cogon Grass	Southern region	Increased fuel loads and shortens fire return intervals	Effects of Imperata Cylindrica invasion on fire regime in Florida Sandhill	http://www.fs.fed.us/database/feis/plants/graminoid/impspp/introductory.html

In the Great Basin and the Eastern Colorado Plateau, cheatgrass invades millions of acres of the cold desert and contributes to the loss of native vegetation and increased fire cycles and fire intensity. In Arizona's Sonoran Desert, buffelgrass is choking out native species. This exotic species greatly affects fire frequency and intensity, and reduces soil productivity.

The Sonoran Desert evolved without fire and most of its native plants cannot tolerate fire. However, in recent years the encroachment of buffelgrass has carried fire into areas that have never before burned. Another species, medusahead wildrye, occupies millions of acres in eastern Oregon, northeast California and southwest Idaho.

The southern region of the United States extends across three recognized bioregions. Several invasive species inhabit this area. In USDA Forest Service Region 8 alone there are 284 species, including 79 species from subtropical Florida. These species result in increased fire hazards throughout the region; with cogon and kudzu receiving the most attention in prevention, control and eradication. A group of climbing ferns is emerging as an additional problematic invasive species due to alterations in fire intensity and behavior caused by their presence.

Saltcedars are fire-prone and disturb the ecology of the areas they invade by outcompeting native plants for water and increasing fire frequency and intensity. Different varieties of saltcedars are found in the Intermountain West, California, Texas, and in the Great Basin.

These are just a few examples of the invasive species that can increase wildfire risk and severity across the Country. In some parts of the Country, land managers have been working for decades to control some of these species and there is a foundation of achievement to be built upon and expanded. More can and must be done to limit the loss of new ground to invasives.

Federal, state, local, tribal, non-profit, academic, and private land managers are forming partnerships to address this growing problem. These partnerships provide research, technical knowledge transfer and project implementation with the ultimate goal of reducing these species. The science group supporting and informing a cohesive strategy notes specifically that more work is needed at the regional assessment level and during the next phase of development. Overall, a cohesive strategy supports the continued development of partnerships across all jurisdictions and the associated research and actions needed to reduce these species.



Cheatgrass has infested public land throughout the Great Basin. Credit: NIFC, Kari Greer.

RECOMMENDED MANAGEMENT STRATEGIES

For more than a decade, the United States Government Accountability Office (GAO) registered concerns in numerous reports regarding the negative effects of wildfire and questioned the efficiency and cost-effectiveness of management strategies used by Federal wildland fire management officials. Since 1999, GAO has asked officials of the Federal land management agencies to develop a cohesive strategy to “address catastrophic wildfires.”

In 2009, GAO acknowledged, in part, that “the Federal agencies have taken important steps forward, but additional strategic action is needed to capitalize on those steps.” One of the management strategies identified by GAO, as “yet to be accomplished,” was relevant to the development of a cohesive strategy and included:

“laying out various potential approaches for addressing the growing wildfire threat, estimating the costs associated with each approach, and identifying the trade-offs involved.”

GAO believed this information would be helpful to the Federal agencies and Congress when making fundamental decisions about an effective, affordable approach to responding to fires.

The FLAME Act set forth by Congress asked the Secretaries of Agriculture and the Interior to address seven specific elements and to create a cohesive strategy that incorporates a response to the previous GAO concern relative to an effective, affordable approach to responding to wildfires and addressing the trade-offs associated with those approaches. Because the threat of wildfire transcends all boundaries and jurisdictions, the WFLC determined a cohesive strategy would be developed using a national approach encompassing all land ownerships. *A National Cohesive Wildland Fire Management Strategy*, written in collaboration with other Federal, state, tribal, and local governmental and non-governmental partners to assure a national approach, is presented as a companion document to this report.

Approaches for Addressing Wildfire

Wildland fire is not new and is a natural part of the ecosystem. In many areas of the Country, the question is not if a wildfire will occur, but rather when it will occur. Therefore, the approaches to addressing the wildfire in the United States must be proactive in nature, rather than reactive. The threat must be addressed before it occurs, thereby reducing the risks when wildfires happen. Approaches and investments must concentrate on restoring and maintaining landscapes regardless of the boundaries encountered and increasing the numbers of fire-adapted communities across the Nation. Only then will the threat of catastrophic wildfire be effectively reduced.

The approaches are described, and they must be compared with one another and considered in complex social and political environments at multiple scales, in addition to the trade-off analyses described below.

Restore and Maintain Landscapes

Following the historic fires of 1910, wildland fire managers committed to a policy of total fire suppression. By 1935, the “10 a.m. Policy” was implemented and mandated suppression of all fires by the morning following their first report. Attitudes about fire suppression started to change at the Federal level in the 1960s as agencies began to heed the advice of scientists who questioned the exclusion of fire from the ecosystem.

By the 1970s, there was a Federal effort to reintroduce fire into the ecosystem through planned burning. Wildfires in western Montana in 2000 were instrumental in gaining broad state and Federal bipartisan support for a National Fire Plan. Under the National Fire Plan, the Federal agencies received more funding for and greatly expanded hazardous fuel treatments. However, these fuel treatments were seen as only one of several vital components necessary for restoring and maintaining landscapes. In 2008, regarding wildfires only on Federal land, land managers and incident commanders were afforded the flexibility to choose the response action most suitable to conditions, including less than full and aggressive suppression actions. The following year, in 2009, Federal wildland fire agencies with the support of the WFLC introduced new implementation guidelines for the Federal Wildland Fire Management Policy that formalized the greater flexibility in response actions.

Those guidelines allow multiple options for managing wildfires, including the option of managing naturally ignited fires to accomplish natural resource objectives. Some state and local statutes do not afford the opportunity to entertain any tactics other than full suppression, which is notable because 60 percent of the Nation's forest land is private and in most cases will be under protection objectives; and at least 90 percent of all state wildfires threaten structures.

Although wildland fire management practices have evolved over the years and there is a recognition that fire must play a more natural role on the landscape, the consequences of the past century have resulted in a hazardous-fuel treatment and ecological-restoration task of a daunting scale and urgent need. Considerations include the effects of increased development in wildland urban interface, climate variability and climate change, the spread of invasive species, and widespread insect infestations and disease outbreaks. In light of this, the protection of life, property, and natural resources continues to grow ever more complex, demanding and expensive.

Estimated Costs Associated with Approaches

Cost comes in many forms. In order for a cohesive strategy to be successful, it needs to be a "from-the-ground up" effort. Wildland fire management officials, the public and all levels of government need to be actively involved. Solutions to the problems must come from all stakeholders.

Phase II of the Cohesive Strategy is to develop an implementation plan which is outlined in the companion document, that will clearly define regional-specific approaches and costs — monetary and non-monetary — needed to address the wildfire threat across America. Along with the approaches and costs, pertinent trade-offs will likewise be addressed.

Costs are not always preceded by a dollar sign

Throughout history there have been costs, of one type or another, associated with tactics and strategies developed to respond to the threat of wildfire. Those costs, however, do not always come preceded by a dollar sign. They are the cost to the efficiency and effectiveness of getting the job done and are, at times, the hardest to "fund," because resolutions are outside the immediate control of wildland fire managers. Some examples include:

- **Jurisdictional boundaries and conflicting environmental compliance regulations.** There is a need across the United States to improve the vegetation conditions on a landscape scale, regardless of jurisdictional boundaries. Certain laws and different statutes, however, limit wildland fire managers' ability to do so.
- **Conflicting agency roles, policies and missions.** Preservation of wildlife habitat for endangered and threatened species and the reintroduction of the natural role of fire on the landscape are both necessary. Indeed, fire, habitat, and healthy watersheds are not mutually exclusive, but complementary. However, there are conflicting Code of Federal Regulations that may limit or, in some cases, make the actions and intentions required on behalf of both fire and healthy resources in the same areas unlawful.
- **Litigation.** The harvest of trees and other natural resources is often necessary in some areas to reduce the risk of wildland fire. Yet litigation at times halts the needed land management actions on public lands resulting in an exacerbated risk of wildfire, delays in program management and increased costs.
- **Smoke management and air quality regulations.** Air quality regulations can be a major barrier to the use of fire on the landscape. Wildfires and prescribed fires both produce smoke emissions. The management of fire can have both positive and negative, as well as short- and long-term, effects on the carbon cycle and can have similar trade-offs on the potential to affect human health. The solution with the least negative effects may not always be viable in the current regulatory system.

Trade-offs Associated with Approaches and Costs

Building upon the foundation of a cohesive strategy in the first phase, the second will identify regionalized approaches and costs associated with addressing the wildfire threat in America. Once the approaches and costs have been established, trade-off analyses will be developed with the help of risk-informed science and stakeholders input to ensure they are both efficient and effective.



Standing dead trees with young lodgepole pines in Yellowstone National Park in 1998. Credit: NPS, Jim Peaco.

Evaluation of the Trade-Offs

The overarching goal of a cohesive strategy is to provide sound options designed to

maximize opportunities to successfully address the Nation's wildland fire problems by focusing on three key principles: restoring and maintaining resilient landscapes; creating fire-adapted communities; and wildfire response. The approaches will be regionalized, in concert with a cohesive strategy goals, guiding principles and performance measures, and will drive the associated costs and trade-offs.

Regionalized Trade-Off Analyses

As the methods are identified, a common analysis approach will be undertaken for each region. Trade-off alternatives will be made at each level by a consortium of stakeholders, agency decision-makers, fire managers, scientists, and others. These analyses will be conducted by an interagency/intergovernmental science team using common tools. Results will include common performance measures, risk levels, assumed levels of treatment in each component area, and will be compiled for the trade-off analysis. Considering the three main focus areas, the analysis will select a strategy for each region based on that which best meets the national goals as measured in the performance measures.

The risk analyses, coupled with other management tools such as the new Wildland Fire Decision Support System (WFDSS) which assists in assessing risk and fire behavior during a fire event and Fire Program Analysis (FPA), used to analyze and compare trade-offs between initial response capability and fuels management practices, among other systems, will aid fire leaders in better managing investments in the short-term and with budget and cost management into the future.

Finally, wildland fire, its management and all affiliated activities are never static for any length of time. Rather, there are multiple moving parts and elements in various stages of evolution. Research, technology, partnerships, conditions on the land, the resources used to manage fire and the very nature of fire itself are subject to change as conditions change. Only through truly cooperative efforts at all levels among Federal, state, tribal and local entities can the Nation adapt, adjust and better manage and benefit from fire.

In Summary

The companion document to this report presents a cohesive strategy to satisfy both the GAO concerns and the Congressional intent described in the FLAME Act.

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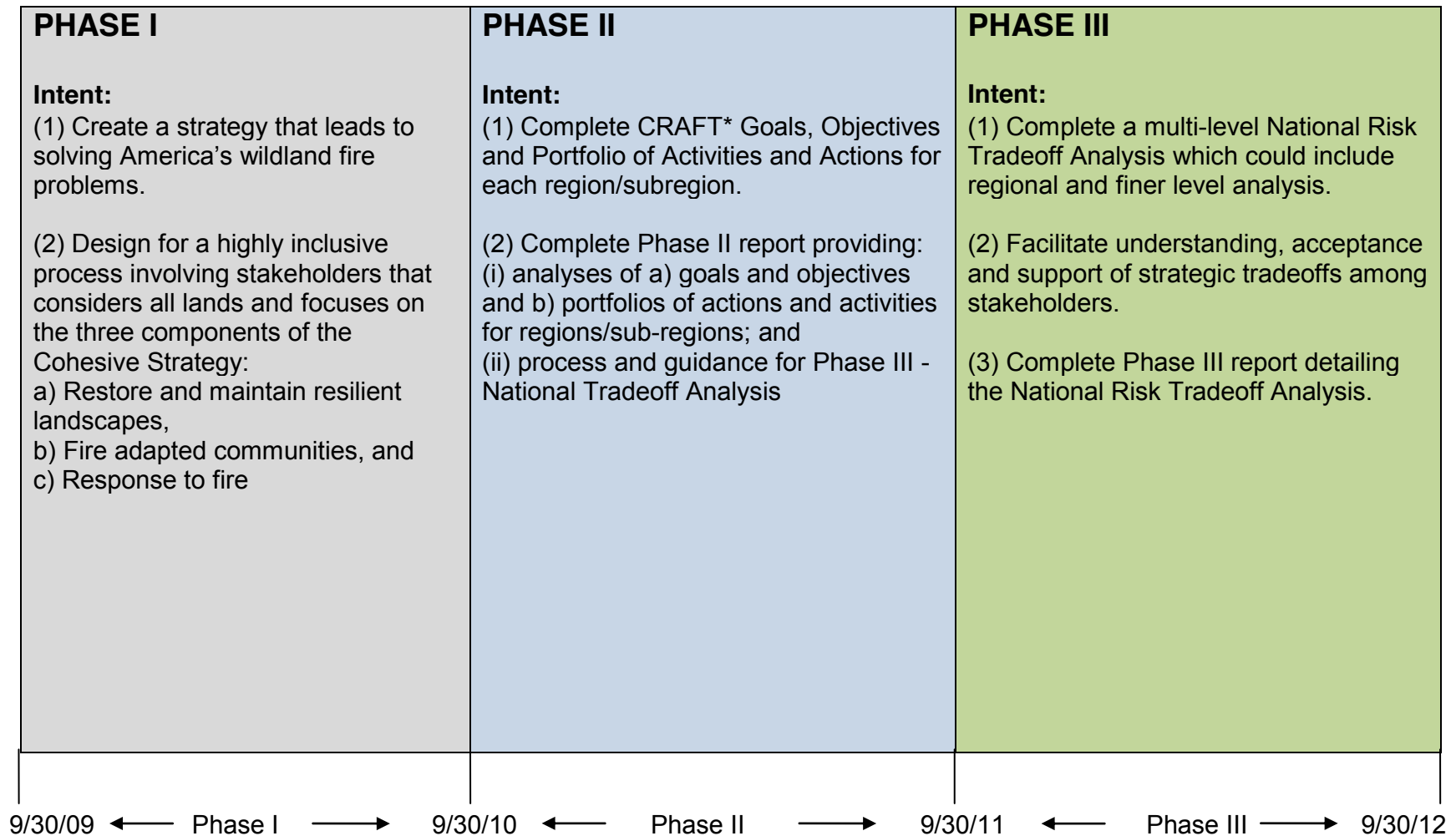
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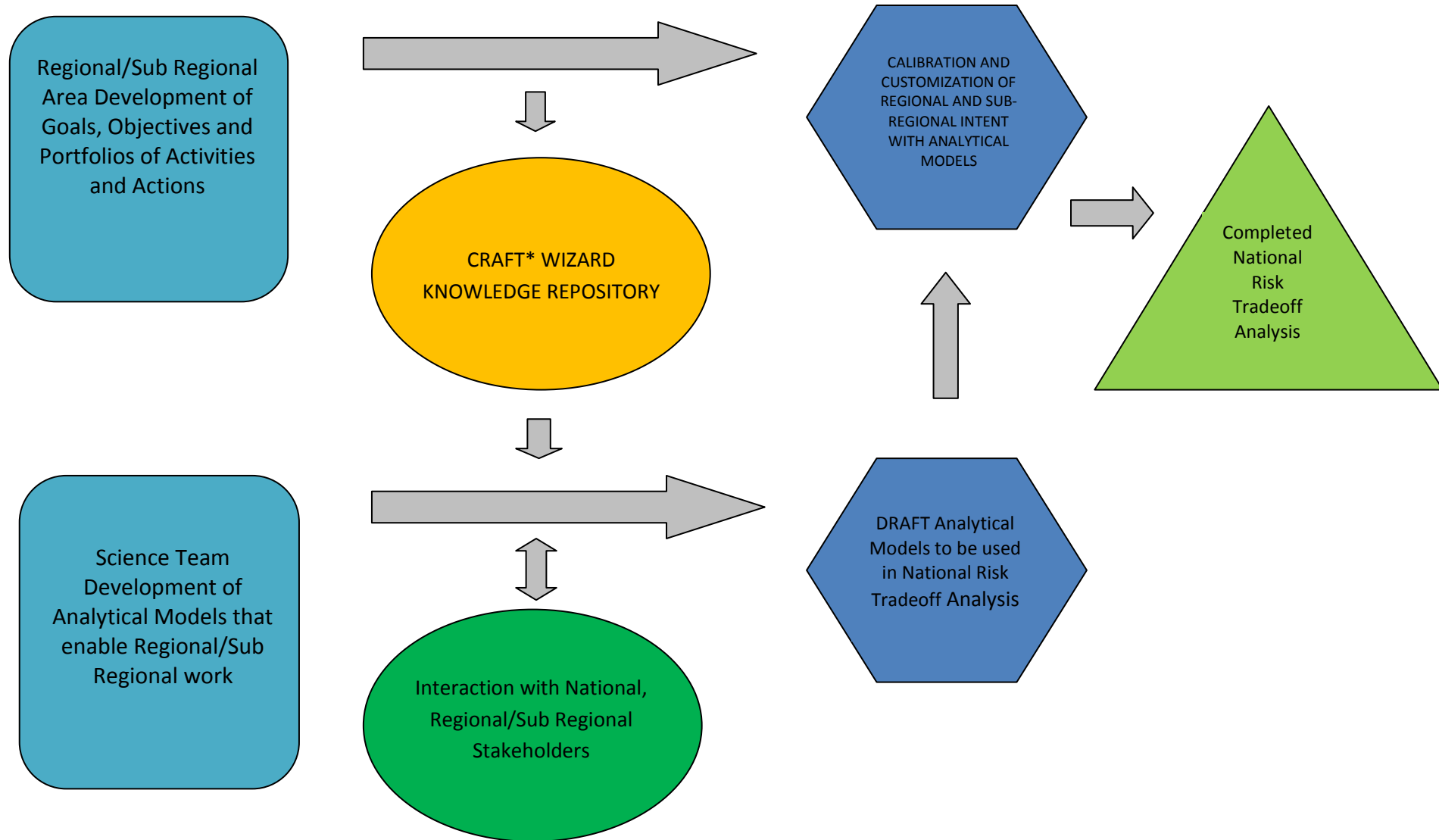
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PROPOSED COHESIVE STRATEGY PHASES WITH INTENDED DELIVERABLES



*CRAFT: Comparative Risk Assessment Framework and Tools (<http://www.forestthreats.org/current-projects/project-summaries/CRAFT>)

PROPOSED COHESIVE STRATEGY PHASE II AND III PROCESS



*CRAFT: Comparative Risk Assessment Framework and Tools (<http://www.forestthreats.org/current-projects/project-summaries/CRAFT>)

NATIONAL COHESIVE WILDLAND FIRE MANAGEMENT STRATEGY

Briefing Paper

DATE: March 15, 2011

Topic: National Cohesive Wildland Fire Management Strategy

Issue: Implementation Update

Background

In response to requirements of the Federal Land Assistance, Management, and Enhancement (FLAME) Act of 2009, the Wildland Fire Leadership Council (WFLC) directed the development of the National Cohesive Wildland Fire Management Strategy (Cohesive Strategy). The Cohesive Strategy addresses the nation's wildfire problems by focusing on three key areas: Restore and Maintain Resilient Landscapes, Fire Adapted Communities and Response to Wildland Fire. The cohesive strategy effort utilizes a collaborative, science-based approach with active involvement of all levels of government and non-governmental organizations, as well as the public, to seek solutions to wildland fire management issues on all lands.

Status and Next Steps

The cohesive strategy effort is being implemented in three phases, allowing stakeholders to systematically and thoroughly develop a dynamic approach to planning for, responding to, and recovering from wildland fire incidents. Information on this effort is available on the web via www.forestsandrangelands.gov. A status update for each of the three phases is provided below.

Phase I: National Cohesive Wildland Fire Management Strategy

Phase I involved the development of two reports: the first is *A National Cohesive Wildland Fire Management Strategy* and the second is the *Report to Congress: The Federal Land Assistance, Management and Enhancement Act of 2009*. Together, these reports provide the foundation for the entire cohesive strategy effort. Fourteen listening forums were held across the nation from April through June 2010 where more than 400 participants representing federal, state, tribal, local and non-governmental organizations discussed their concerns about land management and wildfire related risks. The input from these forums was included in the Cohesive Strategy. Phases II and III will implement the direction articulated in the Phase I reports.

Phase II: Development of Regional Goals, Objectives and Portfolio of Actions and Activities

The Cohesive Strategy Oversight Committee (CSOC) is developing a proposed collaborative planning and analysis process to implement Phases II and III. A prototype of the proposed planning and analysis process was initiated February 7-11, 2011 in Asheville, NC. The prototype considered wildland fire management in AL, GA, NC and SC. Input from the Southeast prototype was presented to the WFLC on March 10, as well as a proposed plan and timeline for national implementation of Phase II. An integral part of the proposed implementation timeline includes the designation of a Regional Strategy Committee for each of the three regions (Northeast, Southeast and West), as outlined in the Cohesive Strategy. These committees will provide executive leadership and oversight to the planning process within their respective region. Agency nominations for each of the three Committees were approved by WFLC on March 10.

Phase III: National Risk Tradeoff Analysis

Building on the work and progress of Phase II, a National Risk Tradeoff Analysis will be performed in Phase III. The National Risk Tradeoff Analysis will inform the proposed strategic tradeoffs discussion among stakeholders.

NATIONAL COHESIVE WILDLAND FIRE MANAGEMENT STRATEGY

Talking Points and Q&As

DATE: March 24, 2011

Topic: National Cohesive Wildland Fire Management Strategy

Issue: The foundational reports for the National Cohesive Wildland Fire Management Strategy have been signed and released by the Secretaries of Agriculture and Interior. There are two reports: *Report to Congress: The Federal Land Assistance, Management and Enhancement Act of 2009*, and *A National Cohesive Wildfire Management Strategy*.

Key Messages:

- The National Wildland Fire Management Cohesive Strategy (Strategy) is an effort on behalf of federal, tribal, state, and local governments and non-governmental organizations to collaboratively address growing wildfire challenges in the U.S.
- The Strategy is being developed in response to the Federal Land Management and Enhancement (FLAME) Act. Passed by Congress in 2009, the FLAME Act directs the Departments of Agriculture and Interior to develop and implement a cohesive wildland fire management strategy.
- The Wildland Fire Leadership Council (WFLC), an intergovernmental committee of federal, tribal, state, county and municipal government officials, is directing the development of the Cohesive Strategy.
- The intent of the Strategy is to establish a direction for wildland fire management that represents the needs and capabilities of all cooperators and includes the public.
- The Strategy is about more than fire suppression. It also emphasizes restoring resilient landscapes and promoting fire adapted communities.
- The Strategy is designed to better align national level decision-making with regional and local interests.
- Two companion documents outlining the Strategy have been developed, and are being released today:
 - The first, *Report to Congress: The Federal Land Assistance, Management and Enhancement Act of 2009*, responds directly to seven key elements highlighted by Congress in the FLAME Act.
 - The second, *A National Cohesive Wildland Fire Management Strategy*, provides a vision for the fire management community. It incorporates input from 14 forums that were held nationwide throughout 2010, where more than 400 participants representing governmental and non-governmental organizations provided feedback on wildland fire management issues.

- Next steps include the development of regional assessments. The Strategy divides the country into three regions: the West, Northeast and Southeast. Each of these regions will develop its own assessment, outlining wildland fire management goals, objectives, activities and actions for each region.
- Once the regional assessments are complete, they will be used to develop a National Risk Tradeoff Analysis, which will weigh the benefits and costs of various management scenarios.
- Status updates are available on the web via www.forestsandrangelands.gov.

Questions and Answers

1. Why do we need a Cohesive Strategy?

Wildland fire management challenges are growing throughout the country. Currently, many different agencies and organizations prevent and respond to wildland fire. Although there is a great deal of cooperation, an overall strategy in which all the players have a part will help us develop fire adapted communities and restore resilient landscapes across all jurisdictions.

2. Who are the participants?

While the FLAME Act directs USDA and DOI to develop the Strategy, the Departments quickly realized that a successful strategy must be truly collaborative and involve more than federal partners. The Departments tasked the Wildland Fire Leadership Council (WFLC) to oversee the effort. The WFLC is an intergovernmental committee of federal, tribal, state, county and municipal government officials appointed by the Secretaries of Agriculture, Interior and Homeland Security.

3. So, is this another federal project?

No. All members of the wildland fire community have an equal voice. This is a key tenant of the Strategy. The needs and perspectives of states, tribes, local governments and non-governmental partners are equally important.

4. What makes this Strategy different from past efforts?

This Strategy goes beyond previous efforts to coordinate wildland fire response. It recognizes regional differences and delves more deeply into the tough questions and tradeoffs that need to be addressed by using science in the decision making process to reduce risks to communities, firefighters and landscapes.

5. Where will the Strategy be used?

This is a national strategy but its application will be informed by input at the regional level. Because wildland fire knows no boundaries, all lands, regardless of jurisdiction, are part of the Strategy.

6. Will the Strategy make it safer to manage wildland fire?

Reducing risk to firefighters and the public is the first priority in every fire management activity. It is envisioned that through shared decision-making and communication, the Cohesive Strategy process will reduce risk to firefighters and the public by restoring landscape resilience and promoting fire adapted communities.

7. Will local governments, states, tribes and agencies retain their decision space?

Yes. This Strategy intends to provide collectively-determined goals and objectives that can help all members of the wildland fire management community make better decisions that contribute to restoring resilient landscapes, promoting fire adapted communities and strengthening wildland fire response.

8. When will all of this happen?

Regional goals and objectives will be developed by Fall 2011. This regional input will be used to inform the national Strategy, which will be completed by Fall 2012. The Strategy will be updated every five years.

9. Will this Strategy affect who pays for what in wildland fire management?

The Strategy will inform but not direct how all partners can contribute human and financial resources to reducing wildfire risks and costs. The Strategy will facilitate better outcomes for everyone through improved wildland fire management decisions at every level of the fire management community. By providing collectively defined goals, the Strategy will help inform how investments to restore resilient landscapes, promote fire adapted communities and respond to fire can have the most impact.

10. Managing wildland fire is expensive. Will implementation of the Strategy result in cost-savings?

The Strategy aims to better define the most cost-effective ways to manage the wildland fire workload. The findings of the Strategy will inform Congress and others making funding decisions on the best approaches for fire management. The Strategy will also guide fire managers at all levels across the country.

11. Will there be changes on the ground for fire managers as a result of this Strategy?

Decision making capacity will still rest with those who have always had it. The Strategy is not designed to take away fire management responsibilities. The process is designed to include input from local, state, federal, tribal and other fire management entities in all phases of Strategy development. On the ground, it is hoped that this process will lead to increased collaboration among fire managers, better delineation of roles and responsibilities, and a more seamless and cost-effective approach to fire management before, during and after wildland fire events.

12. How does this effort relate to Fire Planning Analysis (FPA)?

FPA provides a mechanism for DOI and USDA budget formulation for firefighting activities at the national level. What we learn from the Strategy will enhance the capabilities of FPA by providing information on non-federal fire management capability.

13. Where can I get information?

Updates on the Cohesive Strategy are available on the web via www.forestsandrangelands.gov.

REGIONAL STRATEGY COMMITTEE Guidance for Completing the Cohesive Strategy Phase II

BACKGROUND

Role of the Regional Strategy Committee

There are three geographic regions established for the Cohesive Strategy effort – the West, the Northeast and the Southeast. There is one Regional Strategy Committee (RSC) for each region, for a total of three committees nationally. The Committee will provide executive leadership, oversight and guidance for Phases II and III of the Cohesive Strategy. During Phase II, the RSCs will provide guidance on the development of regional goals, objectives and portfolios of activities and actions that support the focus areas of the Cohesive Strategy. These focus areas are to 1) restore and maintain resilient landscapes, 2) promote fire adapted communities and 3) respond to wildland fire. Regional Strategy Committees will need to be familiar with the Cohesive Strategy Reports - *A National Cohesive Wildland Fire Management Strategy* and the *Report to Congress: The Federal Land Assistance, Management and Enhancement Act of 2009* – as well as foundational documents for this effort, available at www.forestsandrangelands.gov.

Phase II Governance

The Wildland Fire Leadership Council (WFLC) oversees the entire cohesive strategy effort. WFLC appointed the Wildland Fire Executive Committee (WFEC), to support Phases II and III of the Cohesive Strategy. WFEC is a FACA chartered committee, and its membership reflects that of the WFLC. RSCs are sub-chartered groups of the WFEC, and will report to the WFEC throughout Phase II. A template charter is being developed for use by the RSCs.

RSCs may appoint regional or sub-regional Working Groups to support the development of regional goals, objectives and portfolios of actions and activities.

A National Science and Analysis Team will support the RSCs.



Major Responsibilities of Regional Strategy Committee

- Deliver a report containing regional goals, objectives and a portfolio of associated actions and activities to the WFEC by September 2011.
- Develop an understanding of the governance and oversight roles for the Region (i.e. [Interaction between Teams and Groups](#)).
- Determine if sub-regions will be delineated, and if so the geographic boundaries of each (i.e. [Establishment of Sub-Regions](#)). Proposals for sub-regions will be submitted to WFEC, which may approve or amend proposed sub-regions. When considering the establishment of sub-regions, RSCs are encouraged to be mindful of regional capacity to adequately staff sub-regional Working Groups.
- Determine the appropriate membership on the Working Group(s) to ensure necessary input from land managers, stakeholders, partners, and the public (i.e. [Establishment of Working Group\(s\)](#)).
- Provide guidance to Working Group(s) on expectations for conducting outreach and ensuring participation throughout the Phase II process (i.e. [Outreach and Participation of Stakeholders](#)).
- Establish timeframes and ensure completion of sub-regional goals, objectives and portfolios of actions and activities (i.e. [Interaction between Teams and Groups](#)).
- Regional Strategy Committees, as well as the WFEC, have the responsibility to communicate progress and/or issues throughout the Phase II process.
- Regional Strategy Committees must ensure that regional interests are represented throughout the Phase II process.

GUIDANCE

A. Establishment of Sub-Regions:

A responsibility of each Regional Strategy Committee is to determine the geographic area parameters to be used for analysis within their region. Each Regional Strategy Committee will consider and determine whether to delineate sub-regions for analysis, subject to approval by the WFEC. Each Regional Strategy Committee may choose to delineate sub-regions to ensure inclusiveness, which will facilitate Phase II analysis. Regions do not need to delineate sub-regional areas for analysis if analysis can be successfully completed at the regional scale, provided adequate outreach to include local land managers, stakeholders, partners and the public is performed.

If a region chooses not to delineate into sub-regions for analysis, the following will be the organizational structure for the region to complete Phase II development of Regional goals, objectives and portfolio of actions and activities:

- Regional Strategy Committee
- Regional Working Group

If a region chooses to delineate into sub-regions for analysis, the following will be the organizational structure for the region to complete Phase II development of Regional goals, objectives and portfolio of actions and activities:

- Regional Strategy Committee
- Sub-region 1 Working Group
- Sub-region 2 Working Group
- Sub-region 3 Working Group

Guidance on Establishment of Sub-Regions:

- 1) Regions will document a brief narrative describing the rationale for each sub-region (1-2 sentences) to the WFEC, which will approve or amend the proposed sub-region(s).
- 2) The total number of sub-regions that can be delineated nationally is limited to allow adequate national-level support and regional staffing abilities for all analyses conducted. .
- 3) Each sub-region will need to establish a stand-alone Working Group that reflects stakeholder interests to provide input for analysis. The Regional Strategy Committee will ensure that each proposed sub-region is able to therefore:
 - a) Fully staff a Working Group for the sub-region
 - b) Meet the timeframes associated with Phase II completion.
 - c) A key role of the Working Groups is to transfer data to the National Science and Analysis Team throughout the Phase II process, and is also expected to validate results during Phase III.
 - d) Regions should also consider the following in determining appropriate geographic boundaries for sub-regions:
 - a. Existing interagency/intergovernmental groups, similar to the Geographic Coordination Groups may greatly facilitate the coordination that will need to occur and/or the organization of the Working Group.
 - b. Eco-regions or ecosystem.
 - c. Existing boundaries for other regional assessments, plans or efforts, such as eco-regional assessments, state assessments.
 - d. Organized social/collaborative groups.

B. Establishment of Working Group(s):

Each Regional Strategy Committee will determine the appropriate membership on the Working Group(s) to ensure necessary input from land managers, stakeholders, partners, and others.

Working Groups will be formed at the regional or sub-regional level. If the region does not delineate sub-regions, there will be one Working Group to support the analysis at the regional-level. If a region delineates sub-regions, there will be one Working Group formed for each sub-region. The Regional Strategy Committee will assign members from the sub-regional working groups to assist in conducting and developing the regional goals, objectives and portfolios of actions and activities.

Guidance for Membership of Working Group(s):

- 1) A recommended skill set for each Working Group includes:
 - Team leader
 - Facilitator
 - Note taker
 - Staff assistant, responsible for any pre-work to facilitate working group progress
 - Leadership representative from the RSC
 - Trainers
 - GIS/technology support
 - Planner
 - Writer/editor
 - Agency administrator
 - Logistics coordinator

Individuals serving on the Working Group may cover multiple skill sets (e.g. the note-taker may also be the writer/editor, etc.)

- 2) Part of the RSCs role in establishing Working Groups is to ensure they are fully staffed and supported, and are committed to completing Phase II and III tasks within the given timeframe.
- 3) Workgroups should be limited in membership to those individuals who can facilitate the planning and analysis process to successfully complete Phase II.
- 4) Members should have the collaboration skills necessary to work in team settings. They will directly interface with the National Science and Analysis Team for their region and interact with the Regional Strategy Committee.
- 5) Members should have the ability to outreach and solicit information from interested individuals and organizations, as well as being the conduit to carry information to and from their constituents.
- 6) Members should be able to serve as coordinators for the organizations or interests they represent. This would include being able to gather the necessary resources, input, and/or data to support the planning and analysis process.

- 7) Members should be able to represent the broad interest for the types of groups or government bodies they represent.
- 8) Members need to have the capacity to contribute throughout the planning and analysis process. There may be up to three face-to-face meetings required, as well as several conference calls where full participation will be required. There will also be specific tasks required of members, such as ensuring that necessary agency data is provided, data validation is completed, and appropriate coordination and vetting of process results. In some cases this might involve a significant time commitment of members and/or their staff.

C. Outreach and Participation of Stakeholders

A responsibility of each Working Group is outreach to groups or organizations not represented by the Regional Strategy Committee that are considered stakeholders and have the ability to contribute to the Cohesive Strategy effort.

Guidance for Outreach and Participation:

- 1) Members of Working Groups will keep leadership of represented organizations, agencies, and governments abreast of the progress and outcomes of effort. This may include describing the goals and objectives of the strategy, the needs and challenges, as well as progress updates.
- 2) As stated in the prior guidance, Regional Strategy Committees should select Working Group Members that have the ability to represent and gather information from broad interest groups. Regional Strategy Committees and Working Groups therefore have a communication, outreach and coordination role as Members.
- 3) Regions/Sub-regions might consider assigning a staff individual as a point of contact that interested individuals or parties could contact. It is suggested that this individual be responsible for keeping current mailing lists for outreach efforts and progress updates.
- 4) Regions/Sub-regions should consider holding listening sessions or workshops in key geographic locations to solicit input.
- 5) Working Groups and/or Regional Strategy Committees shall provide feedback and updates for WFEC/WFLC members, as well as updates as appropriate for posting publically on www.forestsandrangelands.gov.

D. Interaction between the Teams and Groups

The Regional Strategy Committee ultimately determines the organizational structure necessary to complete Phase II for their region. It is the responsibility of the Regional Strategy Committee to develop an understanding of governance and oversight roles for the Region.

Guidance on Oversight and Interaction:

- 1) The Regional Strategy Committee will issue a charter developed by WFEC to the Working Groups establishing timeframes, deliverables, chairs, co-chairs, procedural expectations, etc.
- 2) Any changes to the Charter will require WFEC approval prior to issuance.
- 3) The Regional Strategy Committee might assign a member or two from its committee as a liaison to the workgroup. This individual(s) could track progress, validate the analysis is in line and consistent with regional strategies, and report back to the full Regional Strategy Committee.
- 4) The National Science and Analysis Team supports the entire region in completing the planning and analysis process. The National Science Team will designate sub-teams that will focus on specific topics or issues that address regional needs. Close coordination with the various Working Groups and the RSCs will be necessary.



WESTERN GOVERNORS' ASSOCIATION

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March 22, 2011

The Honorable Ken Salazar
Secretary
U.S. Department of the Interior
1849 C Street, N.W., Room 6151
Washington, DC 20240

The Honorable Tom Vilsack
Secretary
U.S. Department of Agriculture
1400 Independence Ave. S.W.
Washington, DC 20250

Dear Secretaries Salazar & Vilsack:

Congratulations on the successful completion of Phase 1 of the new National Cohesive Wildland Fire Management Strategy and Federal Land Assistance and Management Enhancement Report to Congress. By building upon the successful collaborative model of the 10 Year Comprehensive Strategy and recognizing the shared responsibilities as outlined in the foundational documents, as determined by the Wildland Fire Leadership Council, we believe you have achieved a solid first step toward a truly national cohesive wildland fire strategy.

Although there have been challenges throughout the process of developing these two documents, we recognize several very important components to this successful achievement as noted below:

- Commitment of all participants and recognition of all stakeholders
- Increased understanding of shared responsibilities
- Dedication to working through difficulties
- Incorporation of management and restoration for resilient landscapes, which are important to reducing risks to communities
- Involvement of local expertise with regional strategy committees

We look forward to being involved in the important next phase on Regional Assessments and Strategies. Western Governors and the members of our Forest Health Advisory Committee are ready to engage with the Regional Strategy Committee for the Western region. Western Governors recently adopted a policy urging a focus on large scale forest restoration. We encourage you to incorporate this information as you work through evaluation of Western assessments and the development of successful strategies.

Sincerely,

C.L. "Butch" Otter
Governor of Idaho
Chairman

Christine O. Gregoire
Governor of Washington
Vice Chair

John Hickenlooper
Governor of Colorado
Forest Health Co-lead Governor



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14 March 2011

The Honorable Ken Salazar
Secretary
U.S. Department of the Interior
Washington, D.C. 20510

The Honorable Tom Vilsack
Secretary
U.S. Department of Agriculture
Washington, D.C. 20510

Dear Secretaries Salazar and Vilsack:

On behalf of the nearly 13,000 chief fire and emergency officers of the International Association of Fire Chiefs (IAFC), I am pleased to relay our gratitude for having been afforded the opportunity to participate as full partners in the creation and completion of the Cohesive Strategy for Wildland Fire Management, as authorized in the Federal Land Assistance, Management and Enhancement Act of 2009 (FLAME Act). The IAFC is proud to have worked for the enactment of this law and endorses the processes utilized in the development of both the *Report to Congress* and the *Path Towards a Cohesive Wildland Fire Management Strategy (Cohesive Strategy)*.

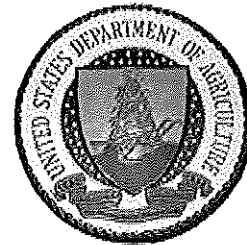
The *Cohesive Strategy's* success is not only illustrated in how it brings all the stakeholders to the table – including federal, state, tribal, local and others – but also how it engages this diverse group in a beneficial dialogue, creating a wildland fire management strategy that best serves the overall need, not just that of one or two parties. We are especially pleased that the strategy included a focus on firefighter safety and fire suppression as one of the three tenets. The focus on restoring and maintaining resilient landscapes; creating fire-adaptive communities; and suppressing fires effectively will have a lasting positive impact on our nation's response to wildland fire.

We look forward to continued engagement in the next phases of the *Cohesive Strategy*, including fire service representation on the Wildland Fire Executive Committee; Phase II efforts in the Regional Strategy Committees; and the working groups that will be formed to undertake the regional analysis that will comprise the Phase III National Trade-Off Analysis. We thank you both for your agencies' continued leadership on these issues.

Sincerely,

A handwritten signature in black ink that reads "John E. Parow".

Chief Jack Parow, MA, EFO, CFO
President and Chairman of the Board



MAR 25 2011

The Honorable Senator Jack Reed
Chairman, Subcommittee on Interior, Environment, and Related Agencies
Committee on Appropriations
United States Senate
Washington, DC 20510

Dear Mr. Chairman:

Title V, section 503, of the 2010 Department of the Interior, Environment and Related Agencies Appropriations Act, cited as the “Federal Land Assistance, Management, and Enhancement Act of 2009” or “FLAME Act of 2009,” directed the Secretary of the Interior and the Secretary of Agriculture, acting jointly, to submit to Congress a report that contains a cohesive wildfire management strategy, consistent with the recommendations described in recent reports of the Government Accountability Office regarding management strategies. Recognizing that wildland fire management issues cross all lands and jurisdictions and involve a complex matrix of land and resource values, social concerns, and varying agency missions, goals, and policies, our decision was to use a collaborative approach with Federal, state, tribal, local and nongovernmental partners to develop a comprehensive wildland fire management strategy. This collaborative effort seeks solutions to wildland fire management issues on all lands, with active involvement of all levels of Government and non-governmental organizations, as well as the public.

The effort to develop a cohesive strategy focuses on restoring and maintaining resilient landscapes, creating fire-adapted communities, and responding to wildfires and is being undertaken in three phases. This phased approach will allow the Department of the Interior and the Department of Agriculture to work with our partners to systematically and thoroughly develop a dynamic, science-based approach to planning for, responding to, and recovering from wildland fire incidents. Phase I involved the development of two documents: the first is *A National Cohesive Wildland Fire Management Strategy* (Cohesive Strategy), and the second is *The Federal Land Assistance, Management and Enhancement Act of 2009 – Report to Congress*. Both of these documents are enclosed. Together, these documents provide the foundation for the entire cohesive strategy effort. Regional strategies will be developed in the next phase, and a national trade-off analysis will be conducted in the third and final phase.

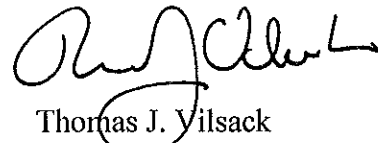
The Cohesive Strategy articulates our shared national challenges, assumptions, core values, goals, and performance measures for addressing the Nation's wildfire challenges. This collaboratively developed document establishes a way forward. The accompanying Report to Congress addresses the elements requested by Congress in the FLAME Act. In responding to a request from Congress, the Report addresses the seven primary elements facing fire and natural resource managers and the fire community at all levels, from local to national, and from states to tribes.

We believe this effort represents a new path forward for wildland fire management in the 21st century, in which Federal, state, tribal, local and nongovernmental partners will work closely to meet shared goals and objectives.

Sincerely,

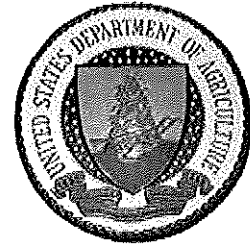


Ken Salazar
Secretary
Department of the Interior



Thomas J. Vilsack
Secretary
Department of Agriculture

Enclosures



MAR 25 2011

The Honorable Senator Lisa Murkowski
Ranking Member, Subcommittee on Interior, Environment, and Related Agencies
Committee on Appropriations
United States Senate
Washington, DC 20510

Dear Senator Murkowski:

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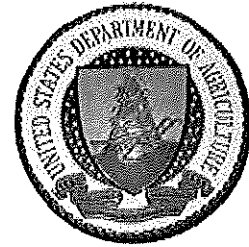


Ken Salazar
Secretary
Department of the Interior



Thomas J. Vilsack
Secretary
Department of Agriculture

Enclosures



MAR 25 2011

The Honorable Representative Mike Simpson
Chairman, Subcommittee on Interior, Environment, and Related Agencies
Committee on Appropriations
House of Representatives
Washington, DC 20515

Dear Mr. Chairman:


Title V, section 503, of the 2010 Department of the Interior, Environment and Related Agencies Appropriations Act, cited as the “Federal Land Assistance, Management, and Enhancement Act of 2009” or “FLAME Act of 2009,” directed the Secretary of the Interior and the Secretary of Agriculture, acting jointly, to submit to Congress a report that contains a cohesive wildfire management strategy, consistent with the recommendations described in recent reports of the Government Accountability Office regarding management strategies. Recognizing that wildland fire management issues cross all lands and jurisdictions and involve a complex matrix of land and resource values, social concerns, and varying agency missions, goals, and policies, our decision was to use a collaborative approach with Federal, state, tribal, local and nongovernmental partners to develop a comprehensive wildland fire management strategy. This collaborative effort seeks solutions to wildland fire management issues on all lands, with active involvement of all levels of Government and non-governmental organizations, as well as the public.


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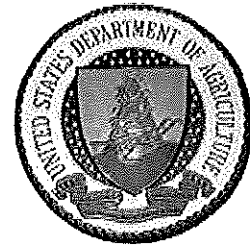
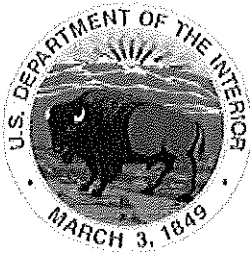
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Sincerely,


Ken Salazar
Secretary
Department of the Interior


Thomas J. Vilsack
Secretary
Department of Agriculture

Enclosures



MAR 25 2011

The Honorable Representative Jim Moran
Ranking Member, Subcommittee on Interior, Environment, and Related Agencies
Committee on Appropriations
House of Representatives
Washington, DC 20515

Dear Representative Moran:

Title V, section 503, of the 2010 Department of the Interior, Environment and Related Agencies Appropriations Act, cited as the "Federal Land Assistance, Management, and Enhancement Act of 2009" or "FLAME Act of 2009," directed the Secretary of the Interior and the Secretary of Agriculture, acting jointly, to submit to Congress a report that contains a cohesive wildfire management strategy, consistent with the recommendations described in recent reports of the Government Accountability Office regarding management strategies. Recognizing that wildland fire management issues cross all lands and jurisdictions and involve a complex matrix of land and resource values, social concerns, and varying agency missions, goals, and policies, our decision was to use a collaborative approach with Federal, state, tribal, local and nongovernmental partners to develop a comprehensive wildland fire management strategy. This collaborative effort seeks solutions to wildland fire management issues on all lands, with active involvement of all levels of Government and non-governmental organizations, as well as the public.

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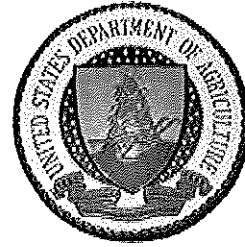


Ken Salazar
Secretary
Department of the Interior



Thomas J. Vilsack
Secretary
Department of Agriculture

Enclosures



MAR 25 2011

The Honorable Senator Jeff Bingaman
Chairman, Energy and Natural Resources Committee
United States Senate
Washington, DC 20510

Dear Mr. Chairman:


Title V, section 503, of the 2010 Department of the Interior, Environment and Related Agencies Appropriations Act, cited as the “Federal Land Assistance, Management, and Enhancement Act of 2009” or “FLAME Act of 2009,” directed the Secretary of the Interior and the Secretary of Agriculture, acting jointly, to submit to Congress a report that contains a cohesive wildfire management strategy, consistent with the recommendations described in recent reports of the Government Accountability Office regarding management strategies. Recognizing that wildland fire management issues cross all lands and jurisdictions and involve a complex matrix of land and resource values, social concerns, and varying agency missions, goals, and policies, our decision was to use a collaborative approach with Federal, state, tribal, local and nongovernmental partners to develop a comprehensive wildland fire management strategy. This collaborative effort seeks solutions to wildland fire management issues on all lands, with active involvement of all levels of Government and non-governmental organizations, as well as the public.


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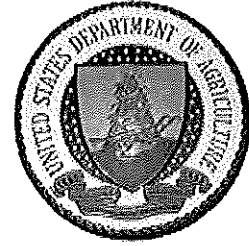
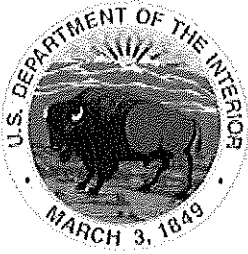
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Sincerely,


Ken Salazar
Secretary
Department of the Interior


Thomas J. Vilsack
Secretary
Department of Agriculture

Enclosures



MAR 25 2011

The Honorable Senator Lisa Murkowski
Ranking Member, Energy and Natural Resources Committee
United States Senate
Washington, DC 20510

Dear Senator Murkowski:

Title V, section 503, of the 2010 Department of the Interior, Environment and Related Agencies Appropriations Act, cited as the "Federal Land Assistance, Management, and Enhancement Act of 2009" or "FLAME Act of 2009," directed the Secretary of the Interior and the Secretary of Agriculture, acting jointly, to submit to Congress a report that contains a cohesive wildfire management strategy, consistent with the recommendations described in recent reports of the Government Accountability Office regarding management strategies. Recognizing that wildland fire management issues cross all lands and jurisdictions and involve a complex matrix of land and resource values, social concerns, and varying agency missions, goals, and policies, our decision was to use a collaborative approach with Federal, state, tribal, local and nongovernmental partners to develop a comprehensive wildland fire management strategy. This collaborative effort seeks solutions to wildland fire management issues on all lands, with active involvement of all levels of Government and non-governmental organizations, as well as the public.

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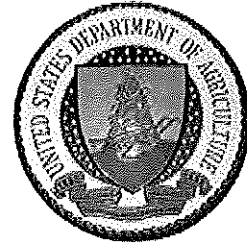
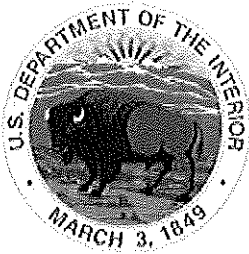


Ken Salazar
Secretary
Department of the Interior



Thomas J. Vilsack
Secretary
Department of Agriculture

Enclosures



MAR 25 2011

The Honorable Representative Doc Hastings
Chairman, Natural Resources Committee
House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

Title V, section 503, of the 2010 Department of the Interior, Environment and Related Agencies Appropriations Act, cited as the “Federal Land Assistance, Management, and Enhancement Act of 2009” or “FLAME Act of 2009,” directed the Secretary of the Interior and the Secretary of Agriculture, acting jointly, to submit to Congress a report that contains a cohesive wildfire management strategy, consistent with the recommendations described in recent reports of the Government Accountability Office regarding management strategies. Recognizing that wildland fire management issues cross all lands and jurisdictions and involve a complex matrix of land and resource values, social concerns, and varying agency missions, goals, and policies, our decision was to use a collaborative approach with Federal, state, tribal, local and nongovernmental partners to develop a comprehensive wildland fire management strategy. This collaborative effort seeks solutions to wildland fire management issues on all lands, with active involvement of all levels of Government and non-governmental organizations, as well as the public.

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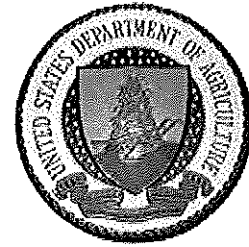
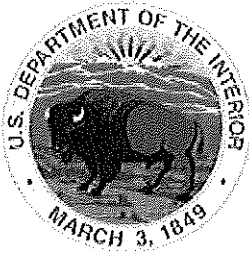


Ken Salazar
Secretary
Department of the Interior



Thomas J. Vilsack
Secretary
Department of Agriculture

Enclosures



MAR 25 2011

The Honorable Representative Edward Markey
Ranking Member, Natural Resources Committee
House of Representatives
Washington, D.C. 20515

Dear Representative Markey:


Title V, section 503, of the 2010 Department of the Interior, Environment and Related Agencies Appropriations Act, cited as the “Federal Land Assistance, Management, and Enhancement Act of 2009” or “FLAME Act of 2009,” directed the Secretary of the Interior and the Secretary of Agriculture, acting jointly, to submit to Congress a report that contains a cohesive wildfire management strategy, consistent with the recommendations described in recent reports of the Government Accountability Office regarding management strategies. Recognizing that wildland fire management issues cross all lands and jurisdictions and involve a complex matrix of land and resource values, social concerns, and varying agency missions, goals, and policies, our decision was to use a collaborative approach with Federal, state, tribal, local and nongovernmental partners to develop a comprehensive wildland fire management strategy. This collaborative effort seeks solutions to wildland fire management issues on all lands, with active involvement of all levels of Government and non-governmental organizations, as well as the public.


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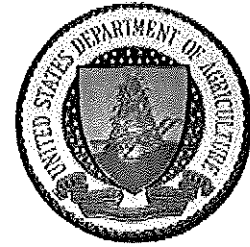
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Ken Salazar
Secretary
Department of the Interior


Thomas J. Vilsack
Secretary
Department of Agriculture

Enclosures



MAR 25 2011

The Honorable Senator Debbie Stabenow
Chairwoman, Agriculture, Nutrition and Forestry Committee
United States Senate
Washington, DC 20510

Dear Madam Chairwoman:

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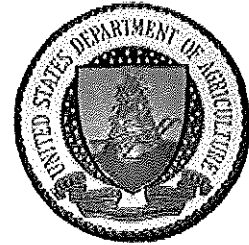


Ken Salazar
Secretary
Department of the Interior



Thomas J. Vilsack
Secretary
Department of Agriculture

Enclosures



MAR 25 2011

The Honorable Pat Roberts
Ranking Member, Agriculture, Nutrition and Forestry Committee
United States Senate
Washington, DC 20510

Dear Senator Pat Roberts:

Title V, section 503, of the 2010 Department of the Interior, Environment and Related Agencies Appropriations Act, cited as the "Federal Land Assistance, Management, and Enhancement Act of 2009" or "FLAME Act of 2009," directed the Secretary of the Interior and the Secretary of Agriculture, acting jointly, to submit to Congress a report that contains a cohesive wildfire management strategy, consistent with the recommendations described in recent reports of the Government Accountability Office regarding management strategies. Recognizing that wildland fire management issues cross all lands and jurisdictions and involve a complex matrix of land and resource values, social concerns, and varying agency missions, goals, and policies, our decision was to use a collaborative approach with Federal, state, tribal, local and nongovernmental partners to develop a comprehensive wildland fire management strategy. This collaborative effort seeks solutions to wildland fire management issues on all lands, with active involvement of all levels of Government and non-governmental organizations, as well as the public.

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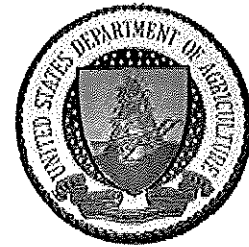
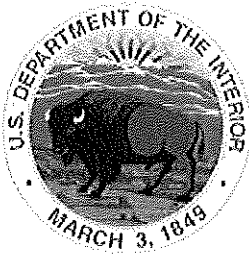


Ken Salazar
Secretary
Department of the Interior



Thomas J. Vilsack
Secretary
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Enclosures



MAR 25 2011

The Honorable Representative Frank D. Lucas
Chairman, Agriculture Committee
House of Representatives
Washington, DC 20515

Dear Mr. Chairman:

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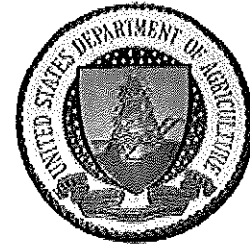


Ken Salazar
Secretary
Department of the Interior



Thomas J. Vilsack
Secretary
Department of Agriculture

Enclosures



MAR 25 2011

The Honorable Representative Collin Peterson
Ranking Member, Agriculture Committee
House of Representatives
Washington, DC 20515

Dear Representative Peterson:

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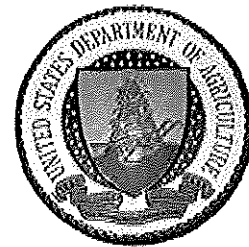
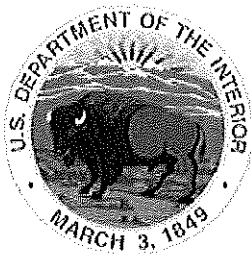


Ken Salazar
Secretary
Department of the Interior



Thomas J. Vilsack
Secretary
Department of Agriculture

Enclosures



MAR 25 2011

The Honorable Daniel Akaka
Chairman, Committee on Indian Affairs
United States Senate
Washington, DC 20510

Dear Mr. Chairman:

Title V, section 503, of the 2010 Department of the Interior, Environment and Related Agencies Appropriations Act, cited as the “Federal Land Assistance, Management, and Enhancement Act of 2009” or “FLAME Act of 2009,” directed the Secretary of the Interior and the Secretary of Agriculture, acting jointly, to submit to Congress a report that contains a cohesive wildfire management strategy, consistent with the recommendations described in recent reports of the Government Accountability Office regarding management strategies. Recognizing that wildland fire management issues cross all lands and jurisdictions and involve a complex matrix of land and resource values, social concerns, and varying agency missions, goals, and policies, our decision was to use a collaborative approach with Federal, state, tribal, local and nongovernmental partners to develop a comprehensive wildland fire management strategy. This collaborative effort seeks solutions to wildland fire management issues on all lands, with active involvement of all levels of Government and non-governmental organizations, as well as the public.

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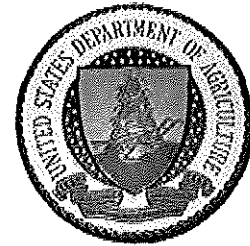
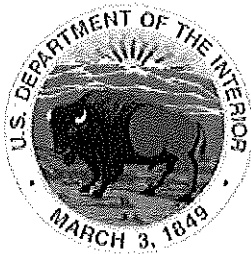


Ken Salazar
Secretary
Department of the Interior



Thomas J. Vilsack
Secretary
Department of Agriculture

Enclosures



MAR 25 2011

The Honorable John Barrasso
Vice Chairman, Committee on Indian Affairs
United States Senate
Washington, DC 20510

Dear Senator Barrasso:

Title V, section 503, of the 2010 Department of the Interior, Environment and Related Agencies Appropriations Act, cited as the “Federal Land Assistance, Management, and Enhancement Act of 2009” or “FLAME Act of 2009,” directed the Secretary of the Interior and the Secretary of Agriculture, acting jointly, to submit to Congress a report that contains a cohesive wildfire management strategy, consistent with the recommendations described in recent reports of the Government Accountability Office regarding management strategies. Recognizing that wildland fire management issues cross all lands and jurisdictions and involve a complex matrix of land and resource values, social concerns, and varying agency missions, goals, and policies, our decision was to use a collaborative approach with Federal, state, tribal, local and nongovernmental partners to develop a comprehensive wildland fire management strategy. This collaborative effort seeks solutions to wildland fire management issues on all lands, with active involvement of all levels of Government and non-governmental organizations, as well as the public.

The effort to develop a cohesive strategy focuses on restoring and maintaining resilient landscapes, creating fire-adapted communities, and responding to wildfires and is being undertaken in three phases. This phased approach will allow the Department of the Interior and the Department of Agriculture to work with our partners to systematically and thoroughly develop a dynamic, science-based approach to planning for, responding to, and recovering from wildland fire incidents. Phase I involved the development of two documents: the first is *A National Cohesive Wildland Fire Management Strategy (Cohesive Strategy)*, and the second is *The Federal Land Assistance, Management and Enhancement Act of 2009 – Report to Congress*. Both of these documents are enclosed. Together, these documents provide the foundation for the entire cohesive strategy effort. Regional strategies will be developed in the next phase, and a national trade-off analysis will be conducted in the third and final phase.

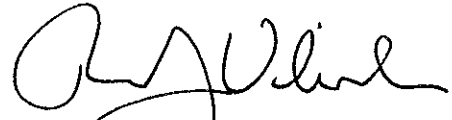
The Cohesive Strategy articulates our shared national challenges, assumptions, core values, goals, and performance measures for addressing the Nation's wildfire challenges. This collaboratively developed document establishes a way forward. The accompanying Report to Congress addresses the elements requested by Congress in the FLAME Act. In responding to a request from Congress, the Report addresses the seven primary elements facing fire and natural resource managers and the fire community at all levels, from local to national, and from states to tribes.

We believe this effort represents a new path forward for wildland fire management in the 21st century, in which Federal, state, tribal, local and nongovernmental partners will work closely to meet shared goals and objectives.

Sincerely,



Ken Salazar
Secretary
Department of the Interior



Thomas J. Vilsack
Secretary
Department of Agriculture

Enclosures



March 16, 2011

Secretary Ken Salazar
U.S. Department of the Interior
1849 C Street NW
Washington, DC 20240

Secretary Tom Vilsack
U.S. Department of Agriculture
1400 Independence Ave., SW, Suite 200-A
Washington, DC 20250

Dear Secretary Salazar and Secretary Vilsack –

On behalf of the National Association of Counties (NACo), I am writing to communicate our sincere appreciation for the opportunity to collaborate in the development of a cohesive strategy for wildland fire management. NACo is proud to have served as a partner in the development of two principle documents crafted to address the wildland fire management challenges across America -- *A National Cohesive Wildland Fire Management Strategy (Cohesive Strategy)* and *The Federal Land Assistance, Management and Enhancement Act of 2009 – Report to Congress*.

NACo would like to formally endorse both documents and commit to continued cooperation on the implementation of the National Cohesive Wildland Fire Management Strategy. As you well know, authorities (and responsibilities) differ between local, state, and Federal land management agencies. Without careful coordination, conflict can arise due to the complexities associated with wildland fire management.

The development of these two landmark documents, paired with the long-term success of a cohesive wildland fire management strategy, provides a clear vision on how to address critical issues such as wildfire suppression, assistance to communities, hazardous fuels reduction, habitat restoration, and rehabilitation of the Nation's forests and rangelands.

We look forward to our continued engagement in the next phases of the Cohesive Strategy which include local county representation on the Wildland Fire Executive Committee, the Regional Strategy Committees and the working groups that will be formed to undertake the regional analysis' that will comprise the Phase III National Trade-Off Analysis.

Sincerely,

A handwritten signature in black ink that reads "Larry E. Naake". The signature is written in a cursive, flowing style.

Larry E. Naake
Executive Director
National Association of Counties



March 11, 2011

Secretary Ken Salazar
 U.S. Department of the Interior
 1849 C Street NW
 Washington, DC 20240

Secretary Tom Vilsack
 U.S. Department of Agriculture
 1400 Independence Ave., SW, Suite 200-A
 Washington, DC 20250

Dear Secretary Salazar and Secretary Vilsack,

On behalf of the National Association of State Foresters, I express our appreciation for the opportunity for state forestry agencies to participate as full partners in the development, review and completion of the Cohesive Strategy for Wildland Fire Management as called for in the Federal Land Assistance, Management and Enhancement Act of 2009 (FLAME Act). We endorse the processes utilized in the development of both the Report to Congress and the Path Towards a Cohesive Wildland Fire Management Strategy. Discussing and addressing our wildland fire problems in a national, cohesive approach is a step in the right direction.

We all recognize the importance of the document in framing future dialogue on wildland fire management issues. The states' commitment to participate in the process ensured that a broad range of interests were considered and melded into the report. We look forward to our continued engagement in the next phases of the Cohesive Strategy including state forester representation on the Wildland Fire Executive Committee, the Regional Strategy Committees and the working groups that will be formed to undertake the regional analysis' that will comprise the Phase III National Trade-Off Analysis.

Sincerely,

Jeff Jahnke
 President
 National Association of State Foresters



2011 Officers

President
James E. Mitchell, Jr.
Council Member
Charlotte, North Carolina

First Vice President
Ted Ellis
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Bluffton, Indiana

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Avondale, Arizona

Immediate Past President
Ronald O. Loveridge
Mayor
Riverside, California

Executive Director
Donald J. Borut

March 18, 2011

The Honorable Ken Salazar
Secretary
U.S. Department of the Interior
1849 C Street, N.W.
Washington, D.C. 20240

The Honorable Tom Vilsack
Secretary
U.S. Department of Agriculture
1400 Independence Avenue, S.W.
Washington, D.C. 20250

Dear Secretaries Salazar and Vilsack:

On behalf of America’s 19,000 cities and towns, the National League of Cities has appreciated serving as a partner with federal, state, tribal and county representatives in providing strategic leadership and oversight for wildland fire issues. Over the last several months, with Mayor Mary Hamann-Roland, mayor of Apple Valley, Minnesota, as our representative to the Wildland Fire Leadership Council (WFLC), we have collaborated with government officials to develop a national cohesive strategy that recognizes the importance of engaging all levels of government in this important mission. We now take this opportunity to support the *Report to Congress* and a *National Cohesive Wildland Fire Management Strategy*, which are being submitted to you today.

As an organization, we believe that the protection of communities should be central to any wildfire protection plan. We recognize and support the work that WFLC has done to promote the restoration and maintenance of resilient landscapes, fire-adapted communities, and safe and effective fire response. Thank you for welcoming the local government perspective in preparing this cohesive strategy. We look forward to continuing our partnership in the next phases of its implementation.

Sincerely,

Donald J. Borut
Executive Director

