

**A NATIONAL COHESIVE  
WILDLAND FIRE MANAGEMENT STRATEGY  
PHASE II NATIONAL REPORT**

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10/6/2011 **DRAFT**



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Insert photo of wildland fire

## EXECUTIVE SUMMARY

The Federal Land Assistance, Management and Enhancement Act of 2009 (the FLAME Act) was the catalyst for the development of a cohesive strategy for managing fire-prone landscapes and wildland fire across the nation. The challenges presented required a holistic approach, unified thinking, and cooperation among the multitude of stakeholders who share concern for America's landscapes. In 2010, Phase I of the National Cohesive Wildland Fire Management Strategy outlined a three-phase process to address the three greatest challenges to fire management: to restore and maintain resilient landscapes, to create fire-adapted communities, and to improve wildfire response.

### Phase II – A Unique Regional Approach

Phase II of the Cohesive Strategy provided a unique opportunity to the three regions of the country – Northeast, Southeast, and West – to chart their own course in landscape and wildland fire management to reduce the risks posed by wildland fire to multiple values. The regions formed Regional Strategy Committees (RSCs), which consist of representatives from federal and state agencies, tribes, county governments, and local fire service agencies. The RSCs came together, with the support of Working Groups that broadened engagement to non-governmental organizations and universities, to identify the challenges, values, and opportunities for improved land and fire management in their regions.

The RSCs were supported in their efforts by the National Science and Analysis Team (NSAT). The NSAT includes a range of individual scientists and analysts representing federal and state agencies, tribes, universities, and non-governmental organizations. The NSAT created conceptual models to assist the RSCs in assessing the consequences of alternative wildland fire management strategies as a process for reducing risk. Risk is characterized as “an inescapable component of living with wildfire” and the Cohesive Strategy can be viewed as a problem of risk management. Effective management requires understanding the nature of wildland fire and its contributing factors, recognizing the consequences—good and bad—of fire, addressing uncertainty, and crafting plans that reduce the chances of catastrophic losses.

The RSCs sought input and engagement from additional stakeholders through forums and other means. Local input was solicited and provided to all the RSCs. The conversations were directed by a series of questions developed from the Comparative Risk Assessment Framework and Tools (CRAFT) process for risk decision making. The CRAFT process will be carried through Phase III where it will provide input for analyzing the comparative risk of differing trade-offs for reducing risk. The RSCs developed regional assessments, which outline their existing situation in qualitative terms; the values they hold in common; the trends they see occurring; and the objectives, actions, and activities they can undertake to achieve the national goals.

This phase of the National Cohesive Wildland Management Strategy documents collaboration and sharing of ideas among all stakeholders in wildland fire management in each region. This report documents the results of the sharing, but the detail is still found in the regional assessments. Regional assessments include all the obstacles, real and perceived, that different stakeholders experience and reports strategies to remove them. Local input was provided to all the regions through the membership on the RSCs and through the forums and briefings.

Phase II gave the RSCs an opportunity to take ownership of regional ideas for improvement. It improved working relationships among stakeholders, increasing awareness of the wildland fire problem and

outlining options to be considered for dealing with these challenges from multiple perspectives. A collaborative spirit was fostered within the regions, and as partners, they will continue to develop and enhance these relationships. They will implement collaborative management strategies and use shared resources to achieve their common goals. Additionally, the RSCs interacted with each other and with national-level stakeholders and decision makers to share perspectives on natural resource management and fire management in a unified, national process to collaboratively and holistically address wildland fire.

This Phase II National Report brings together the three assessments with an overview of the similarities and differences among the findings of the RSCs and begins to draw national conclusions. The individual RSC assessments are separate documents, but the following elements are explored in greater detail in this report:

**Collaboration** – RSCs are collaborative teams representing all levels of wildland fire and land management agencies, tribes, industry, and non-governmental organizations. The RSCs undertook extensive outreach to stakeholders to get input on the core questions relating to challenges, values, trends and objectives. Over 1,300 people throughout the nation provided input to the regional assessments. RSC's contacted stakeholders through a variety of means including: focus groups, forums (in-person and virtual), telephone, email, and website postings.

**Policies and Regulations** – Policies and regulations guiding wildland fire management pose challenges and opportunities for each of the regions. Across the country, wildland fire management is a cross-jurisdictional issue that must respect the unique missions and management objectives of local, state, tribal, and federal agencies and organizations. Strategic opportunities exist to manage natural resources and reduce fire risk.

**Values** – Many value statements were articulated by each RSC, however, this section represents only a short overview. Several values were common to all three regions, including: safety of firefighters and the public, protection of private property, air and water quality, and aesthetics. The Northeast assessment cited recreation as significant, the Southeast assessment noted industrial infrastructure, and the West noted cultural values such as honoring tribal heritages and land uses, respecting the frontier culture, and stewarding public lands. These and the other values expressed provide the basis for developing regional objectives, actions, performance measures, and areas to explore for reducing risk.

**Objectives, Actions, and Performance Measures** – The RSCs adopted the national goals as their own: resilient landscapes, fire-adapted communities, and wildfire response, and crafted a suite of objectives and actions to implement each one. Several cross-cutting objectives, so-called because they will affect all three national goals simultaneously, were identified across the regions:

- Invest in, learn from, and build upon successful partnership and collaboration efforts.
- Develop and conduct effective education and outreach to empower citizen engagement in and support for wildland fire management activities.
- Proactively use a variety of active vegetation management tools and techniques, including prescribed fire, to achieve local and large landscape objectives.
- Support working forests, local economies and jobs, and diverse forest products markets.

Performance measures were developed for the Northeast and Southeast regions. These performance measures can be used to track progress toward achieving the national goals and objectives. More work on performance measures will occur in Phase III.

The communication framework for the Cohesive Strategy supports stakeholder efforts to rapidly disseminate information about progress, systematically acquire and use feedback and input, and enhance communication to improve the potential for highly effective collaboration.

## Looking Ahead

There are several differences between the Cohesive Strategy and earlier wildland fire management plans. This is the first time that all the agencies and stakeholders have come together to create one unified strategy, focusing on the whole picture, not just wildland fire; it explores issues of natural resource management, as well as the social and economic implications of landscape and fire management. It is the first time that regional and local stakeholders have been involved and their perspectives have been brought into the national decision making process. The opportunity for the RSCs to work with the NSAT to incorporate the best available science in the Cohesive Strategy has not been done in the past. The NSAT is using scientific information, data, and pre-existing models to develop a conceptual framework that describes the relative effectiveness of actions and activities for managing risks associated with wildland fire. The NSAT report on Phase II science analysis is a separate report.

The value of the collaboration at the regional level is shown through the great depth the RSCs went to in answering the CRAFT questions and writing the assessments. These reports bring the local and regional perspectives on resource and fire management to the arena of national level decision making. The qualitative nature of the descriptions of the current situations, the values, trends and risks, and the delineation of actions, objectives and performance measures will be valuable in the trade-off analysis to be conducted in Phase III. For detail beyond what is included in this national report, see the regional assessments.

# INTRODUCTION

## Background

Fire is a natural process and a mechanism for biological renewal across forest and rangeland ecosystems, but when landscapes burn, lives, property, and ecological values are at risk. During the 20<sup>th</sup> century, federal, state, and local firefighters were successful at putting out most wildfires in the early stages. An unintended consequence of their diligence, the nation's forests have become overstocked with trees and ladder fuels. These overstocked conditions combine with other stresses such as drought, insects and disease, invasive species, and longer, hotter summers to create uncharacteristically large wildfires that threaten homes, communities and resource values, and can cause widespread property damage.

In the late 20<sup>th</sup> century and the first years of the 21<sup>st</sup> century, many large wildfires focused public attention on a growing problem. In 1988, the Yellowstone fires burned nearly 800,000 acres in America's oldest national park. In 1991, the Oakland Hills Fire in California killed 25 people and destroyed 3,300 homes, awakening the public to wildfire risk in the wildland-urban interface (WUI). In 1994, 14 firefighters were killed on Storm King Mountain fighting the South Canyon fire in western Colorado. In 2000, 42,000 acres and 400 homes burned in the Los Alamos Fire, and in 2002, the largest wildfire in Colorado history, the Hayman Fire, impacted 138,000 acres and destroyed 133 homes. The 2003 Cedar Fire near San Diego was the largest wildfire in California history, killing 15 people, burning 280,000 acres and destroying 335

structures. The risks to communities and firefighters from wildland fires were increasing and the cost of fighting fires and the value of resources lost were staggering. In 2000, the cost of suppression was \$1.4 billion and in 2002, the cost was \$1.7 billion. The firefighting community came to realize that across much of the American landscape, wildfire is inevitable. It is not a question of if there will be a wildfire, but when there will be a wildfire, and what can be done to minimize risks to life, property, and resource values.

## **Foundational Documents and Legislation**

These and other large, destructive wildfires led up to the 1995 Federal Wildland Fire Policy and Program Review, the first comprehensive look at the nation's wildland fire issues, including fuels management, the role of fire in the environment, and wildland-urban interface issues. Wildland fire management is a complex process involving a wide range of stakeholders.

The 1995 review was updated in 2001, and that same year Congress passed the National Fire Plan. The National Fire Plan brought together diverse stakeholders, including federal and state land management agencies, private landowners, local governments, and firefighting agencies to develop the National Fire Plan 10-Year Strategy Implementation Plan to reduce fuels, protect communities through education and homeowner assistance, and improve firefighting capacity and coordination. Despite increased investment in fuels treatments and preventive efforts funded by the National Fire Plan, wildfire suppression costs have continued to rise. Since 2001, the U.S. Forest Service fire program has grown from less than 20 percent of the agency's budget to nearly 50 percent.

The Quadrennial Fire Review (QFR) was first conducted in 2005 and then in 2009. The intent of these assessments is to advance a unified wildland fire management strategic vision for the five resource management agencies under the Departments of the Interior (DOI) and Agriculture (USDA) in partnership with others in the fire community. The QFR attempts to anticipate future wildland fire management needs and describe core mission strategies and key capabilities that can be applied to the wildland fire management challenges. The 2009 QFR envisioned cumulative drought effects, continued escalation of wildfire risk in the WUI, and an increase in emergency response demands. These factors are anticipated to strain fire agency budget resources during a time of very tight or falling budgets (QFR 2009).

In 2009, the continuing challenge of the wildland fire management problem led Congress to pass the Federal Land Assistance and Enhancement Act (FLAME Act), which authorized a supplemental funding source for emergency wildland fire suppression. In addition, the FLAME Act directs USDA and DOI to develop a National Cohesive Wildland Fire Management Strategy (Cohesive Strategy), to comprehensively address wildfire management in the United States.

Within the fire community, a shared vision has taken shape: working together to prepare the landscape for natural fire occurrences, prepare communities to face wildfire risks, and coordinate effective wildland fire response. This vision was described in 2009 in three documents – *A Call to Action*, the *Missions Report*, and *Mutual Expectations* document – which build upon the National Fire Plan and Quadrennial Fire Review and have been designated as foundational documents of the Cohesive Strategy.



**Table 1. Cohesive Strategy foundational documents**

Document	Vision Statement / Key Recommendation
<i>A Call to Action</i>	“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.”
<i>Wildland Fire Protection and Response in the United States The Responsibilities, Authorities, and Roles of Federal, State, Local, and Tribal Government (Missions Report)</i>	“Inform current efforts to improve interagency coordination and response, by offering a framework for developing greater understanding and clarity about the missions, legal responsibilities and authorities, and roles of wildland fire protection organizations at both the national and local level.”
<i>Mutual Expectations</i>	“to clarify new direction and expectations for wildland fire protection agencies (Federal, State, and Local)...to initiate dialogue and action, while reducing the tensions being experienced during preparedness and suppression operations, cost-sharing negotiations and reimbursements.”

## A National Approach

The Cohesive Strategy is a national, collaborative approach to addressing wildland fire across all lands and jurisdictions. It is being developed with input from wildland fire agencies and organizations, land managers, and policy-making officials representing all levels of governmental and non-governmental organizations. The Cohesive Strategy takes a holistic view of wildland fire and resource management, including both natural wildfire ignitions and prescribed fire for landscape management purposes, and pre- and post fire management. The Cohesive Strategy presents a shared vision of the future of wildland fire and resource management.

The Cohesive Strategy is being built both from the top down and from the bottom up. At the national level, The Wildland Fire Leadership Council (WFLC) is the executive leadership body, which charts the path and direction for the Cohesive Strategy, and ensures the work and activities align with the spirit of the FLAME Act and foundational documents. WFLC is an intergovernmental council of federal, state, tribal, county, and municipal government officials representing different areas of the country.

## Guiding Principles and Core Values

The Cohesive Strategy guidance, vision, and goals are established by the WFLC. Decisions related to reducing risk will be made at the local, regional, and national levels. All three levels will be coordinated through the structure of the Cohesive Strategy. The Cohesive Strategy is built on several principles and values, including engaging stakeholders, managers, and scientists; using the best available science, knowledge, and experience; and emphasizing partnerships and collaboration.

*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.”*

The work from the “bottom-up” begins in Phase II of the Strategy with the creation of RSCs and the development of regional strategies. Those regional strategies will combine to form one national strategy. What makes the Cohesive Strategy different from all the other plans, which have preceded it, is the collaborative process by which the strategy is being formulated. It is not merely a strategy for a federal agency or agencies. It is a strategy for the many groups that have come together in the three regions to combine their multiple perspectives and create one holistic, shared vision of how all the stakeholders can work together to reduce risks of wildland fire to landscape, to communities, and to firefighters. The Cohesive Strategy is a collaborative process being used to create and implement three regional strategies, tailored to meet regional needs, and to work across land ownership boundaries.

The following guiding principles were crafted through discussions with federal, state, tribal, and local governmental and non-governmental organizational representatives. They are an overarching set of principles that apply to all stakeholders in the wildland fire management community – and reach across the different elements of the strategy, from resilient landscapes and fire-adapted communities to wildfire response. These guiding principles and core values were developed at the national level and were adopted by the three RSCs as regional guiding principles:

- 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, and local, state, and 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 Three National Goals

Flowing from the guiding principles and core values are three national goals. Each of the RSCs adopted these goals into their assessment and used them to further define objectives, actions, performance measures. The three national goals are:

- **Restore and Maintain Landscapes:** Landscapes across all jurisdictions are resilient to fire-related disturbances in accordance with management objectives.
- **Fire-adapted Communities:** Human populations and infrastructure can withstand a wildfire without loss of life and property.
- **Wildfire Response:** All jurisdictions participate in making and implementing safe, effective, efficient risk-based wildfire management decisions.

## A Three-Phase Process

The Cohesive Strategy has been structured as a three-phase process. Phase I began in March 2010 and was finished in March 2011 with the publication of the *National Cohesive Wildland Fire Management Strategy* and *The Federal Land Assistance, Management and Enhancement Act of 2009: Report to Congress*. Both documents were approved by WFLC and Office of Management and Budget (OMB), and signed by the Secretaries of Agriculture and Interior.

Phase I was guided by the WFLC who created the Cohesive Strategy Oversight Committee (CSOC). The CSOC was the collaborative planning body that developed the blueprint for a national Cohesive Strategy through three regional strategies. The CSOC understood that different regions of the country had different needs and that a “one-size fits all” approach would not meet those needs. The CSOC provided a detailed foundation for the national framework for risk management and elaborated on the national guiding principles, challenges, goals and governance. During Phase I, 14 forums were held around the nation, with over 400 participants commenting on what they found to be the greatest needs for addressing the wildland fire problem.

In Phase II of the strategy, the nation was divided into three regions: Northeast, Southeast, and West (see Figure 1). Each region established an RSC and was directed to bring together their diverse stakeholders to collaboratively develop regional objectives, actions, performance measures, and alternatives. In this way the development of strategies was sensitive to the uniqueness of the three regions.



**Figure 1. Cohesive Strategy Regions: Northeast, Southeast, and West**

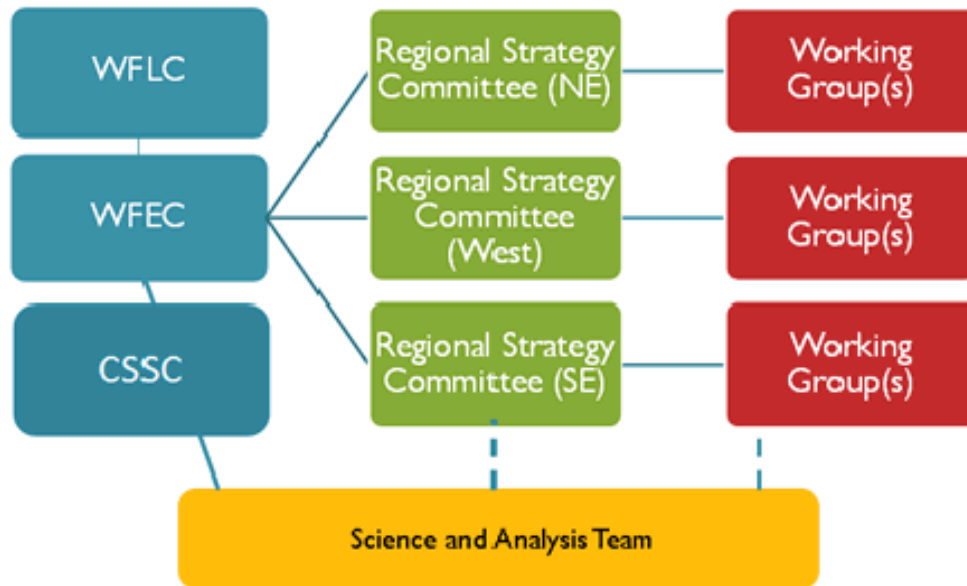
Phase II was directed by the Cohesive Strategy Sub-Committee (CSSC), which is composed of representatives of federal and state land management agencies, tribes, industry groups, counties, municipalities and non-governmental organizations. An RSC was formed in each of the three regions. Public outreach was conducted in each region, in the form of focus groups and forums to increase awareness of the Cohesive Strategy process and to gather input regarding local and regional perceptions. Following the forums, the RSCs reviewed the public input and developed their objectives, with a catalog of actions and options for risk reduction.

In Phase III, options for future alternatives will be explored using the Comparative Risk Assessment Framework and Tools (CRAFT) process, which integrates geographic features and risk factors relating to wildland fire with expressed values in a proven scientific analysis process. The results of the scientific analysis will be returned to the RSCs for their evaluation and determination of future risk reduction strategies.

The Cohesive Strategy is an iterative process that will be revisited every five years. Additionally, in 2012, the wildland firefighting agencies will begin working on the next QFR, which will be published in 2013. The QFR will be aligned with the Cohesive Strategy, and future Cohesive Strategies and QFRs will build on each other.

## **Governance**

The WFLC oversees the entire Cohesive Strategy effort. In Phase I, the WFLC designated the Wildland Fire Executive Council (WFEC) to support Phases II and III. The WFEC is composed of representatives of federal and state land management agencies, firefighting organizations, tribes, counties, and cities (see Figure 2).



**Figure 2. Organizational chart for Cohesive Strategy governance**

The WFEC is supported by the CSSC, which provides oversight and guidance on the development and execution of the proposed processes and tasks necessary to complete Phases II and III. The CSSC has reviewed all regional assessments to ensure the documents meet the requirements specified in Phase I and met the needs to complete Phase III. The CSSC is responsible for promoting and facilitating the implementation for the Cohesive Strategy.

The RSCs are chartered sub-groups of the WFEC, responsible for completing the Regional Strategies and Assessments in Phase II. A National Science and Analysis Team (NSAT), which reports to the CSSC, supports the RSCs during the trade-off analyses that will be part of Phase III. The RSCs and their working groups were formally chartered by WFEC; they were formed in Phase II and will continue to function through Phase III.

### **Comparative Risk Assessment within the Cohesive Strategy**

The Cohesive Strategy Phase I reports proposed comparative risk assessment as a structured process for evaluating the consequences of alternative wildland fire management strategies. The reports characterized risk as “an inescapable component of living with wildfire” and offered common and scientific definitions of risk and risk management. 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 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.

Given the premium placed on collaboration and engagement among all interested parties within the Cohesive Strategy, it is important that the quantitative aspects of risk assessment be embedded within a broader social discussion of values, options, potential consequences, and trade-offs inherent in any

chosen strategy. The Comparative Risk Assessment Framework Tool (CRAFT, ) is a structured process and set of tools designed to meet the needs of collaborative efforts to tackle complex resource management issues with conflicting values at stake and high levels of uncertainty.

During Phase II, the Regional Strategy Committees embarked on this four-step process, broadly characterized as: (1) specifying objectives, (2) designing alternatives, (3) modeling effects, and (4) synthesizing results. Each participant contributes to each step, although the role played by analysts and scientists differs from that of managers and stakeholders. CRAFT is being used to help ensure consistency among RSCs, using tools that have been specifically tailored for the Cohesive Strategy. CRAFT also provides the basic framework for the work of the NSAT.

## **Regional Strategy Committees**

The challenges of wildland fire management are formidable and growing more complex. The nation has diverse landscapes, demographics, and social values. Because of this, a national strategy must address these differences. The Cohesive Strategy takes a united, comprehensive effort to address these issues.

There have been many plans and strategies to reduce wildland fuels to protect landscapes and communities. But the Cohesive Strategy represents the first time that the regions and local representatives have had the opportunity to participate by defining their own challenges, objectives, and actions. The formation of the RSCs and their cooperative work in creating the assessments led to a spirit of collaboration that will live beyond the development of the Cohesive Strategy itself. Coming together and discussing the varying missions and responsibilities of the fire and land management agencies and landowners within the regions empowers the group to find efficiencies and partnerships that will last as they address wildland fire and natural resource management problems together.

The three regions are all very large, spanning multiple states and composed of a variety of geographic areas and vegetation types. States and regions possess detailed information relating to wildland fire as it interfaces with broad land management objectives. This information is included in state and local assessments, management plans, and policies. Phase II incorporates local information along with expertise and insights from the stakeholders who have been living and working in the region, dealing with wildland fire and natural resource problems. An example of the uniqueness of the regions and the challenges those differences present can be seen in a difference in land ownership patterns. The Northeast and the Southeast are characterized by private land with intense fragmentation of ownership, while the West is dominated by large blocks of public land (see Figure 4). All of the states have federal land within them. Both ownership patterns present challenges in fire management, and the regions are best able to articulate those challenges and to collaboratively develop solutions.

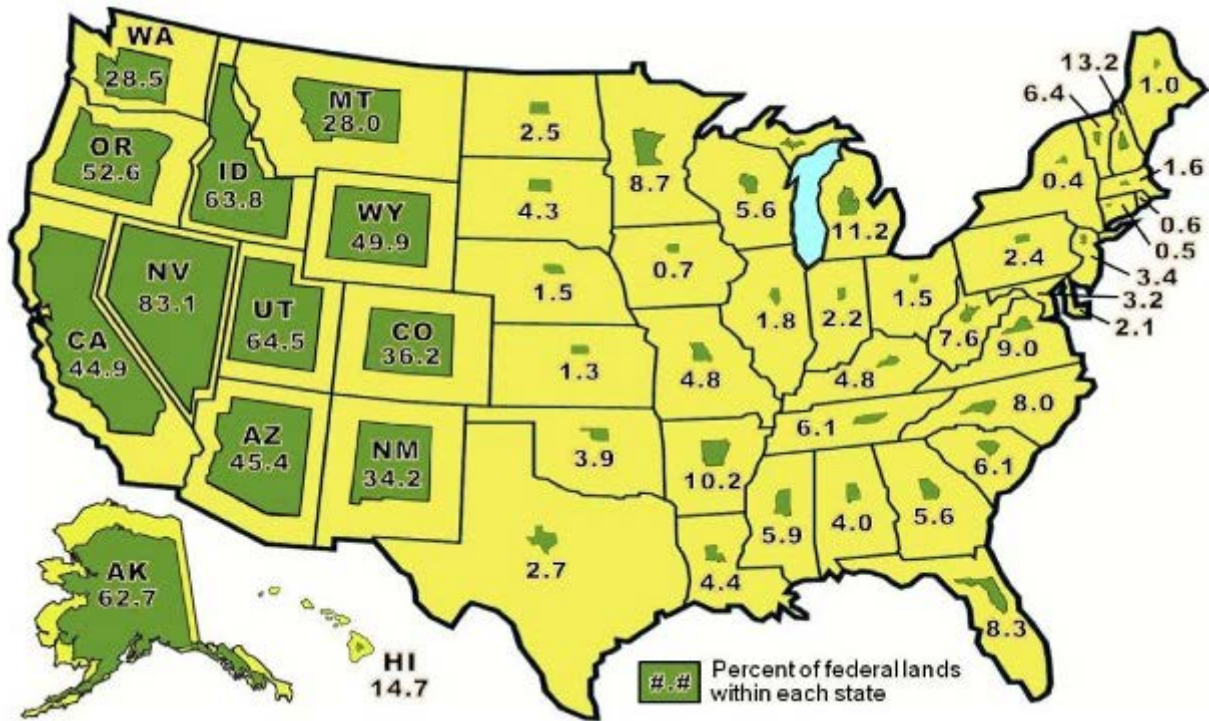


Figure 4. Percent of federal lands in each state

## The Phase II Report

Phase II of the Cohesive Strategy was accomplished in 2011. This document brings together the three regional assessments, the report by the NSAT, and the Communications Framework for the Cohesive Strategy. The three regional assessments are separate documents reflecting the unique context in each of the regions. In this document we will bring out the similarities and differences among the three regions and their strategies for reducing wildland fire risk. We will include section summaries with excerpts from the content of the regional assessments. Additional details can be found by reading the three full regional reports.

The CRAFT framework provided a list of 26 questions for the regions to consider as they created their regional assessments (see Appendix D). The CRAFT questions were selected to identify regional challenges and opportunities and to guide the conversations during Phase II. These conversations included forums and comments by stakeholders, and the deliberations of the RSCs. By focusing on a discrete set of questions, the regional assessments yield consistent types of information, and allow us to build a national picture from three regional perspectives.

The regional assessments describe the overall context of wildfire and fire response in each region. They describe the values, both ecological and social, within the regions and the trends and uncertainties relating to wildfire and risks to landscapes and communities. The RSCs developed objectives, performance measures and actions.

As a prelude to Phase III, the RSCs described initial alternatives to be considered for reducing risk. They are a broad set of alternatives that will help test the analytical methods and provide information that will be needed by the RSCs to help refine specific regional alternatives in Phase III. They are not plans for future fire or land management.

The RSCs noted in their assessments that some actions can be embarked on immediately at little to no cost, such as encouraging homeowners to take responsibility for their homes, increasing collaboration across agencies, and thinking beyond the wildland-urban interface. As the Western RSC points out in its assessment, “the three goals of the Cohesive Strategy are interdependent. Investment in these actions can and should lead to success in all three national goals.”

## **COLLABORATION AND OUTREACH**

Phase II of the National Wildland Fire Management Cohesive Strategy continues developing the existing national strategy by engaging people affected by and essential to implementation at a regional scale. The goals of Phase II are twofold: (1) to solicit input and build collaborative relationships between wildland fire management organizations and stakeholders affected by the strategy, and (2) to better represent the unique resources and values associated with distinct geographic regions of the United States. Collaboration and communication will continue beyond Phase II as integral components of the Cohesive Strategy.

The Cohesive Strategy effort is the first time all wildland fire organizations, land managers and policy-making officials representing all levels of governmental and non-governmental organizations have come together to create a shared national strategy. It is also the first time individual regions of the country have had the opportunity to identify regional goals, objectives, and challenges to be incorporated in the national strategy. In preparing their assessments and strategies, the Northeast, Southeast, and West RSCs reached out to the following groups to gather input and concerns:

- Federal, state, tribal, local agencies and organizations,
- Local natural resource and fire service agencies,
- Industry groups, and
- Community members.

Each RSC held meetings to familiarize members with the Cohesive Strategy and to develop the process for obtaining input from stakeholder groups. Each RSC identified individuals representing diverse skills, experience, backgrounds, and organizations to create a Working Group to gather input, build relationships, and support the work of the RSC during the effort. (See Appendix C for RSC and Working Group members.)

RSCs contacted stakeholders by telephone and email and through posts to outreach websites. Stakeholders provided input through an online form, written comments, and/or in focus groups and forums. Participation and response varied among the regions and stakeholder groups. Brief overviews of each RSC’s outreach efforts follow.

### **Northeast**

The Northeast RSC’s formal outreach for the Cohesive Strategy began on July 22 and concluded August 19, 2011. Members of the RSC and the Working Group used four approaches to gather input and build relationships:



- Telephone and email interaction with individuals and organizations (over 600 contacts)
- Virtual discussion forums (48 participants in four forums)
- Posting the Draft Regional Assessment on the regional outreach website and soliciting written comments on a general questionnaire (10 responses received)
- Distributing information on the regional outreach website and collecting comments on the Draft Regional Assessment (6 individuals provided detailed comments on the draft report).

## **Southeast**

The Southeast Regional Assessment was developed through a multilateral effort with input and participation from a broad range of agencies, organizations, partners, and entities active in the wildland fire management community throughout the Southeast. The Working Group analyzed strategies for the Southeast and captured information from previously completed analyses (i.e., Southern Wildfire Risk Assessment, Southern Forest Futures Report, and State Forest Action Plans) as well as input from the wildland fire management community and all stakeholders to identify values, priorities, and regional objectives and strategies. Input was gathered through the following outreach techniques:

- Two focus groups (invitations to 1,400 stakeholders; 80 attendees)
- Numerous facilitated conference calls and webinars involving interest groups and prescribed fire councils
- Comments received by email, phone, and through an online comment form (sent out over 1,500 requests for comments and stakeholders submitted over 400 comments).

## **West**

The Western RSC's outreach efforts began in late June 2011 and concluded July 29, 2011. Two desired outcomes were identified by the Western RSC for the outreach effort: (1) Comments and suggestions provided by stakeholders assist in identifying and/or validating the important and unique objectives, values, challenges, and opportunities related to wildland fire management in the West; and (2) Stakeholder input helps identify and refine wildland fire management objectives, actions needed, and challenges which must be addressed to achieve those objectives, in addition to the appropriate allocation of responsibility among all stakeholders for achieving the agreed-upon objectives.

The outreach strategy was three-pronged and encouraged participation of all interested parties. The outreach distributed information about the Cohesive Strategy and requested comments and suggestions through:

- Face-to-face and virtual forum discussions (6 forums held, 107 participants),
- Online comment form (135 comment forms completed), and
- Email and/or phone discussions with a working group member.

To maximize opportunities for participation, a variety of methods provided flexibility in scheduling as well as multiple input/feedback channels. These included:

- WRSC website,
- Western Region updates (also posted to the website),

- Individual contacts and invitations to participate, and
- Use of organization networks to communicate purpose, status, and opportunities to contribute.

Engagement with diverse stakeholders during outreach efforts provided valuable information to help identify common societal and environmental values and concerns, in addition to trends and risks for each region. Refer to the three regional assessment reports for expanded discussions of the collaboration and outreach efforts and the resulting values, trends, and risks identified during Phase II. The following sections of this report present identified values, risks, and concerns and identify opportunities, options, and possible alternatives for developing and implementing the Cohesive Wildland Fire Management Strategy.

## **POLICIES AND REGULATIONS**

Wildland fire management actions are guided by a suite of laws and administrative policies at the federal, state, and local level. These laws are implemented through regulations and adopted as agency policy after public review and comment. While creating order and value for society, regulations and policies (and/or their implementation) are sometimes more limiting than authorizing legislation, and may impede the accomplishment of management objectives and timelines. Positive change may come in the form of new or different legislation or through administrative changes and different interpretations of the law.

Common across all regions are state and tribal mandates to suppress wildland fire. These regulations are developed to protect life, property, and natural resources that many states and tribes hold in trust for their constituents. Common also are federal regulations like the National Environmental Protection Act (NEPA) and Endangered Species Act (ESA) that guide planning processes on federally owned and managed land and the conservation of rare, threatened, and endangered species.

States, federal, and local agencies, tribes, national and provincial governments, and other partners in resource and wildland fire management enter into formal and informal agreements to support coordination. However, policy conflicts persist, some common across the U.S., others particularly expressed in different regions. But wherever conflict exists, so does opportunity. Phase II of the Cohesive Strategy identified the unique regulatory and jurisdictional environment within which resource and wildland fire management occurs in each region. Through the development of regional objectives and actions, the RSCs proposed constructive resolution to ongoing policy conflicts and suggested ways to take advantage of opportunities.

## **VALUES, TRENDS, AND RISKS**

Values are characteristics or qualities of life considered significant with respect to personal or cultural importance, worth (whether intrinsic or monetary), usefulness, or excellence. Questions in the CRAFT

framework (Appendix D) guided the RSCs in delineating their primary values relating to wildland fire and resource management, in addition to trends and risks that may present future challenges.

## **Values, Trends, and Risks Common to All Regions**

### ***Values***

Stakeholder input, RSC and Working Group members' professional observations, and earlier studies and analyses identified values through both Phase I and Phase II of the Cohesive Strategy. The following values are common to all regions:

- Safety of firefighters and the public,
- Protection of private property,
- Conservation of air and water quality, and
- Aesthetics.

### ***Trends and Risks***

Response, input, and observations also revealed trends or general directions of concern in wildland fire management and common risks or uncertainties that must be considered in developing and implementing the Cohesive Strategy. As with the values, all regions identified some universal trends and risks:

- Population growth,
- Increasing wildland-urban interface,
- Changing climate,
- Invasive species spread,
- Changing public expectations with regard to wildland fire response,
- Economic fluctuations,
- Tightened federal and state government budgets,
- Increasing role of traditional wildland fire capability (equipment and personnel) in other disaster and all-hazard response.

Although the three regions share many similar values and concerns, each region has unique values, trends, and risks, some examples from the three regional assessments are presented in the following paragraphs.

## **Unique Northeast Region Values, Trends, and Risks**

### ***Values***

The Northeast identified a variety of unique values and grouped them according to three main areas: Land and Resources, Willingness to Collaborate and Create Partnerships across Jurisdictions, and Education and Awareness. Refer to the Northeast Regional Assessment for an expanded discussion of specific issues.

## **Land and Resources**

**Recreation:** The Northeast contains a large portion of the country's population and wildland-urban interface areas. Many residents and visitors use wildlands for recreational activities such as hunting, fishing, camping, birdwatching, mountain-biking, hiking, and leaf-peeping. Wildfire and wildland fire management activities can impact trails, campgrounds, wildlife habitat, and cause temporary closures for public safety, negatively affecting recreational opportunities in the short and/or long term.

**Tribal heritage and traditional uses of the land:** Used for generations, fire is an integral part of the region's history. It continues to be an important land management and cultural tool on tribal lands. Timber resources are a valuable trust asset and tribes accept and generally encourage timber management that results in healthy forests and local economic gains. Being a firefighter is a respected and desired profession, and firefighting is an economic benefit in tribal communities.

**Forest product markets** are crucial to local and regional economies of many northeastern states. Protection of the forest resource to provide raw materials is essential, and a robust forest products industry provides a cost-effective means for reducing hazardous fuels and achieving resilient fire-dependent ecosystems.

## **Willingness to Collaborate and Create Partnerships across Jurisdictions**

**Jurisdictions and ownership:** The Northeast is a patchwork of jurisdictions and ownership, and often more than one agency is involved in managing wildland fire. This strategy will include many stakeholders at various levels and it will need buy-in by many parties to be successful.

**Coordinated efforts to engage the public** in issues and collaboration with all stakeholders will enable effective and efficient wildland fire management. As much as coordination and collaboration are considered important, for the Cohesive Strategy to be successful it must ensure that partners are able to maintain their unique missions and values. Because of the many geographic and cultural divisions of the Northeast, flexibility in implementing the strategy will be imperative.

## **Education and Awareness**

**Continued engagement with the public** on wildland fire management issues is crucial. Lack of action on the part of the public or landowner is not necessarily due to lack of knowledge and understanding of fire risk. Trust in those conveying the information and the availability of personal resources to mitigate fire risk are necessary, too. Educational programming should provide consistent messages, be realistic and related to local values and needs, and encourage personal responsibility.

## **Trends and Risks**

**Prescribed burning** is accomplished on a small but increasing percentage of the region; state and federal agencies conduct most activities. Uncertainties exist related to how much should or could be burned given the capacity of agencies and organizations, budgets, air quality issues related to smoke, and other local concerns. More expertise with smoke modeling, particularly in the highly dissected landscapes, is needed to avoid putting too much smoke into communities. Improved ability to identify and work with those households and individuals with smoke-related health concerns is also needed. Sharing and learning from successful projects can contribute to building capacity and responding to the issues outlined above.

**Fire-related Science.** An abundance of fire-related science is pertinent to most areas in the Northeast. The challenge for fire managers as well as land managers is synthesizing and applying the abundant

science to their local conditions to plan and implement fire management objectives on small parcels and landscapes, and across ownerships.

**Lack of Fire.** Fire-dependent ecosystems continue to change without fire on the landscape. Fire regimes have departed from historical conditions and fire-dependent plants are being replaced by shade-tolerant, fire-sensitive vegetation which is less flammable. Although this vegetation change can benefit areas (such as the wildland-urban interface) where there are values to be protected, negative impacts to the function of and services from fire-dependent ecosystems can be severe. Shade-tolerant forests are not excluded from wind, ice, and drought events, nor are they immune to insects and disease such as emerald ash borer, eastern hemlock woolly adelgid, or beech bark disease, which all can increase fuel loading that may lead to more extreme fire behavior and negative impacts.

**Forest products industry.** The forest products industry is integral to cost-effective landscape restoration, hazard mitigation, and fuels reduction. The industry infrastructure (skills and equipment) for using pulp, saw timber, and biomass are all necessary for cost-effective treatments. Lack of a sustainable supply of wood has caused industry infrastructure to decline or disappear in some areas like Illinois and Indiana. In other areas with abundant supplies of wood, the recent decline in the forest products industry has forced forest product companies to close. When infrastructure and skills are lost, costs for services increase. There is a reluctance to invest in high-value equipment and facilities when uncertainties exist like sustainable supply or contracts for services. It is unclear how the demand for wood products, including biomass, will impact wildland fire management in the Northeast. Currently where biomass markets are available, non-merchantable material can be treated and disposed of at a lower cost.

## Unique Southeast Region Values, Trends, and Risks

### Values

Diverse values are associated with wildland fire and resource management in the Southeast (refer to the Southeast Regional Assessment for a detailed discussion of the region's values, trends, and risks). The Southeast RSC broadly categorized these values into five overarching categories of values: ecosystem, infrastructure, societal, economic, and wildland fire management.

The **Ecosystem** includes values associated with air and water quality, and other ecosystem components such as biodiversity, wildlife habitat, and healthy forests/landscapes/ecosystems.

The **Infrastructure System** contains values associated with human infrastructure, habitations, other structures, and private property.

The **Societal System** encompasses human, social, and cultural values. Fire, both wildfire and prescribed burns, have a significant place in the history and culture of the Southeast. Historically, individual landowners played a large role in prescribed burning; the tradition continues today. As fire was limited throughout the United States during the first half of the 20th century, Southerners continued to implement prescribed burns to support traditional land uses, for aesthetic purposes, and for fuel reduction. The values gathered under the Societal System include:

- Aesthetics – viewsheds and indirect community benefits,
- Quality of life – human health and safety, clean water, public services, safety for wildland fire responders, and

- Land use – traditional land uses (e.g., hunting, recreation, grazing, farming, silviculture), tribal issues, community involvement in and acceptance of wildland fire management and prescribed fire.

The **Economic System** includes values related to direct and indirect costs of wildland fires (suppression expenditures as well as short- and long-term impacts to economies related to silviculture and biomass, tourism, and recreation). Though wildland fire response may create a small increase in short-term employment, wildfires may have a significant negative long-term impact on local economies that rely on working forests, recreation, and/or tourism.

The **Fire Management System** includes values related to wildfire response capacity and capability, interagency collaboration and coordination across jurisdictions, training and planning to ensure adequate resource availability, and succession planning.

### **Trends and Risks**

While changes in the southeastern United States are rapid, no single driver dominates; instead a combination of processes will determine the future of the region's landscapes. Changes in demographics, land ownership patterns, socio-economic conditions, firefighting capacity, and Rural Fire Department (RFD) training and retention rates will also impact the occurrence of and ability to manage wildland fire.

**Private land ownership.** Changes in the patterns and trends in land ownership in the Southeast create challenges related to wildland fire management. The majority of forest land in the Southeast is privately owned and managed, and most of the holdings are relatively small. The divestiture of three quarters of the region's industrial timberlands since 1998 has contributed to ownership fragmentation, making landscape-scale management more complex. The trend away from intensive forest management (also a result of divestiture) leads to increased fuel loads and the potential for more intense wildland fires. Traditionally, public and private land managers have relied on prescribed fire for fuels management. As surrounding lands are developed, the effective use of prescribed burning will be impacted, leading to more costly management techniques (e.g., mechanical clearing to avoid short-term smoke impacts) or potentially increasing the risk of wildland fire.

**Understanding of wildland fire.** Demographic shifts are also expected to impact wildland fire management. Populations in the region are becoming increasingly diverse, with new residents representing a broad range of ages, ethnicities, backgrounds, and varying levels of understanding of wildland fire. Some areas with high rates of citizen turnover make wildfire education and the use of prescribed burning a challenge. In these areas, every new cohort of citizens has to be educated with respect to wildland fire, the use of prescribed burning, smoke management, and effective land management of their own property to reduce wildland fire risk. Each transfer of ownership has been shown to increase the potential for moving away from traditional management toward a less intensive approach (increasing fuels) and/or toward development (increasing wildland-urban interface).

**Rural Fire Departments.** State forestry agencies rely heavily on rural fire departments (RFDs) to provide initial wildfire response and reporting. RFDs assist in suppressing many ignitions before they grow large enough to pose a threat to people and values to be protected. However, RFDs experience high turnover rates; training and retention are constant challenges for RFDs and the state forestry organizations that support them.

**Economic trends.** Increasing demand for softwood and bioenergy production is expected to impact some areas of the Southeast. The impact on wildland fire from this increase in demand is unclear.

## Unique Western Region Values, Trends, and Risks

### Values

The Western RSC identified many values similar to those of the other two regions; however, the following values were expressed uniquely by the West. A detailed discussion of the West's values, trends, and risks can be found in the Western Regional Assessment.

**Honoring tribal heritages and land uses.** Preserving and respecting traditional uses and practices is vitally important. Wildland fire and resource management policies and practices need to take into account cultural values and beliefs, related historic and spiritual sites and resources, and the relevant lessons to be gleaned from traditional ecological knowledge.

**Valuing people for who they are, not what they have in the bank.** Western communities and their individual residents differ widely in their technical, infrastructural, social, and economic capacity to locally address wildland fire management issues. Management strategies need to recognize those differences so future responsibilities and resources can be allocated appropriately.

**Living and respecting the western or frontier culture.** Among the key (and sometimes contradictory) elements of the culture of the West are a spirit of adventure and curiosity, concern for preserving individual liberties and private property rights, admiration of self-reliance (but quick response to neighbors needing help), and a strong sense of connection with the land. Management strategies seen as directive or imposed from afar are almost certain to be less well-received (and often prove less effective) than ones developed locally and collaboratively.

**Enjoying vast, wild, open landscapes.** People in the West count on the land to provide numerous ecological services; support a variety of land uses (hunting, fishing, recreation, farming, ranching, timber, mining, etc.); offer a desirable backdrop and physical setting for homes and communities; and support a plethora of historic, spiritual, and cultural resources. The aesthetic appearance of the landscape is important, and management activities that are perceived as having a negative impact on that appearance are usually resisted.

**Using and stewarding public lands.** Public lands comprise more than half the total land area of the West, and maintenance of public access to them has long been a treasured – and zealously guarded – western value. Events during the last two decades have clearly shown the need for improved communication and cooperation among all landowners, managers, and other concerned stakeholders in restoring and maintaining the on-the-ground conditions and practices necessary to preserve the watersheds, critical habitats, and other western values to be protected from uncharacteristic wildfire. The growing numbers of large landscape-scale community wildfire protection plans, multiple-ownership hazardous fuels reduction projects, and landscape restoration efforts will be significant elements of future wildland fire management strategies.

### Trends and Risks

In addition to the trends and risks shared among the regions, the Western RSC addressed additional issues in the development of regional objectives and actions including the increased incidence and spread of uncharacteristically large wildfires, the proposed listing of endangered species, degradation of

drinking water and watersheds, the spread of native and non-native insects and pathogens, and a lack of succession planning to ensure adequate staffing and training of wildland fire responders. The decline of the forest products industry (i.e., loss of infrastructure and skilled labor) and growth of a biomass industry and alternative markets have affected and will continue to affect local, rural economies. The prevalence of collaboration and large-scale collaborative planning is a significant positive trend in the West that the WRSC sought to build upon in developing its assessment and strategy.

## **OBJECTIVES, ACTIONS, AND PERFORMANCE MEASURES**

The aim of the Cohesive Strategy is to produce a strategy for achieving the national goals and reducing risk that incorporates objectives and actions at the national, regional, and local level. Phase II did not identify national actions, per se, but synthesis of the regional assessments and strategies does point toward a national perspective that leverages regional values and proposes actions with distinctly national relevance.

The following sections outline the objectives, actions, and performance measures developed by the RSCs, highlighting objectives and actions that are held in common across the regions and/or across the national goals.

### **Objectives and Actions Shared Among the Regions**

While no two regions identified objectives and actions in exactly the same language, there are significant elements held in common among all three regions. The following concepts are synthesized from the regional objectives and actions, which are quoted from the regional assessments in the next sections. Objectives are not presented in order of priority. Additional similarities exist at the sub-objective and action level, but this summary focuses primarily on regional objectives.

### ***Actions Supporting All Three National Goals***

Each of the RSCs identified concepts that contribute to success in each of the three national goals. In reviewing these proposed actions, all three RSCs emphasized these ideas:

- Invest in, learn from, and build upon successful partnerships and collaboration efforts.
- Develop and conduct effective education and outreach to empower citizen engagement in and support for wildland fire management activities.
- Proactively use a variety of active vegetation management tools and techniques including prescribed fire to achieve local and large landscape objectives.
- Support working forests, local economies and jobs, and diverse forest products markets.

### ***Restore and Maintain Resilient Landscapes***

Despite the unique regional ecosystems and social-economic contexts under which objectives and actions were developed, a number of ideas emerged that can be considered common across two or more regions with regard to restoring and maintaining resilient landscapes.



- Restore and maintain healthy, resilient, fire-adapted ecosystems.
- Address ongoing and episodic (e.g., invasive species, insects and disease, storms) non-fire threats that may increase susceptibility to wildland fire.
- Develop and sustain capacity (e.g., skills, resources, infrastructure) to plan and carry out landscape treatments.
- Take advantage of opportunities to address policy barriers that prevent full coordination and collaboration and/or the most flexible use of existing authorities to plan and implement landscape treatments.
- Foster communication and promote strategic interagency policy development and planning across agencies, organizations, and the public.
- Increase public awareness to ensure acceptance and active participation in efforts to achieve landscape objectives.

### ***Fire-adapted Communities***

The three RSCs expressed their vision of creating fire-adapted communities quite differently, but these common elements emerged:

- Reduce unwanted human-caused wildland fire ignitions in and near communities.
- Support community wildfire protection planning.

### ***Wildfire Response***

Given very different wildland fire environments in the Northeast, Southeast, and West, approaches to improving wildland fire response differed. Two common, overarching elements emerged:

- Provide for firefighter and public safety.
- Improve effectiveness and efficiency of the wildland fire management organization.

### **Regional Objectives and Actions**

The focus of Phase II was the identification of regional values and the development of objectives and actions that respect those unique values and contribute to achieving the national goals of the Cohesive Strategy. Honoring the work done by the RSCs, their objectives are presented below. They are not presented in order of priority.

### ***Actions Supporting All Three National Goals***

Based on unique regional conditions and stakeholder engagement, the Northeast, Southeast, and West identified the following concepts as cross-cutting, in that they affect all three of the national goals. The following actions are quoted from each of the regional assessments.

#### **Northeast Region**

Although not stated as cross-cutting actions, per se, these three items were included in the Executive Summary of the *Northeast Regional Assessment* as "three main recommendations that emerged from a

collaborative effort to identify, define, and address wildland fire management problems and opportunities in the Northeast Region of the United States."

- Invest in successful partnerships and collaboration.
- Invest in local resources for wildland fire response.
- Invest in joint management planning and implementation that achieves strategic objectives and reduces the effects of fragmentation of fire dependent landscapes.

### **Southeast Region**

The Southeast RSC identified several actions and activities common across the national goals and regional objectives. Listed below, they should be considered part of each of the regional objectives. This concept is particularly important for the modeling work to be done in Phase III since it outlines how each action is related to the regional objectives and national goals.

- Conduct education and outreach to incorporate all Southeastern residents as active participants in fire adapted communities and wildfire prevention, landscape restoration, including prescribed fire and fuels management.
- Encourage the standardization of a simplified fire reporting system so that all fires, regardless of jurisdiction are captured.
- Support for maintaining working forest and viable forest products markets.
- Expand the use of prescribed burning.

The Southeast RSC also agreed on three "strategic opportunities" for reducing fire threat and impact. Similar to the "main recommendations" from the Northeast RSC, these concepts are critical to achieving success across the three national goals. They add detail and context to the cross-cutting actions listed above.

- Expand outreach and education to landowners and residents, particularly those new to the region and/or with a non-traditional ownership background. The outreach and education should stress prevention, increase awareness and acceptance of wildland fire management activities across the landscape, explain smoke dynamics between wildfire and prescribed fire, and encourage WUI residents to take personal responsibility for making their home and communities more fire adapted. (SE and West)
- Enhance collaboration, training, and capacity-building across agencies to increase firefighter safety, wildfire response, and management effectiveness.
- Continue proactive fuels mitigation through all management techniques including prescribed burning to allow for maintenance of ecosystem function and to reduce fire hazard.

### **Western Region**

The Western RSC went through a process in developing the objectives hierarchy that initially included a great deal of repetition of ideas common across the national goals and regional objectives. The WRSC ultimately chose to highlight these actions as "Common across the Three National Goals" to underscore their fundamental importance to being successful in implementing the Cohesive Strategy.

- Invest in efforts that have a track record of success in meeting community and landscape objectives through effective collaboration, including leveraging investment capability and overcoming typical barriers to success. Use the lessons learned from these efforts to inform and encourage the development of similar capacity in other communities. Provide collaboration training and assistance where needed to facilitate planning.
- Use a variety of active vegetation management tools and techniques, including planned and unplanned wildland fire, to achieve local and large landscape objectives. Emphasize the design and use of treatments that reduce hazardous fuels and contribute to resilient landscapes while meeting social and economic needs.
- Collaboratively identify post-fire hazards in advance of fire seasons to clarify roles and responsibilities, position for the best response to post-fire natural hazard impacts on landscapes and communities, and use the local workforce to perform work whenever possible.
- Support existing industries (e.g., forest products, grazing, fishing, hunting, tourism, recreation, energy and minerals development) and encourage new markets (e.g., biomass) that facilitate implementation of landscape treatments where sustainable and economically feasible. Support employment conditions consistent with existing hiring practices and processes that lead to fair competition and the creation of family-wage jobs.
- Combine the best elements of existing education programs to create a West-wide wildland fire management education campaign with a strong, visible, and memorable message.

### ***Restore and Maintain Resilient Landscapes***

The following objectives supporting the national goal related to restoring and maintaining resilient landscapes are quoted from each of the regional assessments.

#### **Northeast Region**

Objectives and actions specific to challenges in the Northeast Region (e.g., fragmentation, hazardous fuels, episodic events, lack of active management in fire-dependent ecosystems) seek to restore landscapes that are resilient to fire, provide habitat to the organisms that depend on them, and present low risk to the human communities that border them and the fire fighters who protect them. The RSC members and stakeholders who developed the *Northeast Regional Assessment* believe that the most resilient landscapes in the Northeast will be achieved by thoughtful planning and management. Restoring landscapes is a regional interest, and fire resiliency is one piece of this interest.

- Restore and maintain structure, composition, and function of fire-dependent communities (e.g., jack pine systems, oak woodlands, prairie and grasslands, barrens and savannas).
- Treat (weather/pest/drought-related) event fuels expeditiously in fire-dependent and non fire-dependent landscapes.
- Protect threatened, endangered and sensitive animal and plant habitat.
- Prevent the spread of invasive plants.
- Maintain/increase skills and resource capacity to return fire to fire-dependent landscapes.
- Improve treatment effectiveness and wildfire planning using the best available science.
- Identify and address policy barriers and conflicts that prevent full coordination and collaboration.

- Foster communication among stakeholders and build partnerships.
- Reduce landscape fragmentation by building shared objectives.
- Utilize existing Burned Area Emergency Rehabilitation (BAER), Burned Area Rehabilitation (BAR) funding and expertise to identify and treat invasive organisms, water quality issues, and erosion.

### **Southeast Region**

The objectives and actions developed by the Southeast RSC address a number of challenges and opportunities including a year-round fire season, widespread wildland-urban interface, smoke management, policy conflicts across multiple jurisdictions, invasive species, and other issues.

- Build and maintain resiliency in Southeastern landscapes through strategic use of prescribed fire, mechanical treatments, grazing, etc, and manage wildfire where and when appropriate based on ownership and landscape context.
- Promote strategic interagency policy development and planning across agencies, organizations, and the public to more effectively integrate wildland fire planning into land-use planning and economic development.
- Develop and sustain capability and capacity required to plan and carry out landscape treatments, including prescribed fire.
- Encourage increased public awareness to ensure public acceptance and active participation in achieving landscape objectives.
- Mitigate environmental threats other than wildfire (i.e. storm damage, insects, ice storms, hurricanes, insects and disease) that reduce ecosystem vitality and increase susceptibility to wildfire.

### **Western Region**

Sustaining landscape resiliency and the role of wildland fire as a critical ecological process in the West requires a mix of actions that are consistent with management objectives; use all available methods and tools; consider and conserve a diversity of ecological, social, and economic values; include sincere coordination and integration with all partners; and support market-based, flexible, proactive solutions that take advantage of economies of scale. All aspects of wildland fire will be used to restore and maintain resilient landscapes.

- Actively manage the land to achieve healthy forest and rangeland conditions.
- Protect landscapes and multiple values from the effects of unwanted fire.
- Improve interagency and stakeholder coordination and planning of actions that contribute to achieving landscape resiliency.
- Develop and maintain professional and industrial capacity to implement cost-effective and sustainable landscape treatments and support local economies.
- Fully use existing policies and procedures to provide the management flexibility needed to implement a mix of landscape treatments.
- Increase public awareness, acceptance, and active participation in achieving landscape objectives using all available tools.

- Identify and prepare for non-fire threats and disturbances that may increase susceptibility to wildland fire and/or impair ecosystem function.

### ***Fire-adapted Communities***

The following objectives related to the national goal of creating fire-adapted communities are quoted from each of the regional assessments.

#### **Northeast Region**

A suite of issues including expanding human populations, increased human-caused wildfire ignitions, and fuel accumulation (from wind, ice, insect and disease events, as well as vegetation growth in the absence of fire) continue to create complex challenges for communities across the Northeast. Community adaptability is the center of coordinated cross-jurisdictional wildfire management that addresses quality of life as a part of the larger environmental landscape. A fire-adapted community acknowledges the risks associated with its surroundings and, together with fire authorities including local fire departments, mitigates risks to safety and a sustainable quality of life.

- Fire authorities, local governments, and community members negotiate/accept risk and the range of actions taken to mitigate risk.
- Reduce Wildfire Hazards.
- Reduce unwanted human ignitions in and near communities. (NE and West)
- Identify and address conflicts/barriers to fire-adaptation in local land use planning, building ordinances, and building codes.
- Develop agreements and memorandum of understanding (MOUs) that ease jurisdictional barriers for efficient and effective treatment and maintenance of fuel treated areas (for example, neighborhood agreements).

#### **Southeast Region**

The objectives and actions developed by the Southeast RSC address a number of challenges and opportunities including a year-round fire season, widespread wildland-urban interface, smoke management, policy conflicts across multiple jurisdictions, and other issues.

- Support development of, and maintain engagement with communities by developing and leveraging partnerships through community wildfire planning for improved preparedness.
- Eliminate loss of life and minimize loss of structures.
- Coordinate public policy and shared responsibility across jurisdictions.

#### **Western Region**

Preventing or minimizing the loss of life and property due to wildfire in the West requires a combination of thorough pre-fire planning and action, followed by prudent and immediate response during an event. Post-fire activities can also speed community recovery efforts and help limit the long-term effects and costs of wildfire. Community Wildlife Protection Plans (CWPPs) or their equivalents should identify high-risk areas and community-specific requirements. Collaboration, self-sufficiency, individuals' and/or communities' acceptance of the risks and consequences of their actions (or non-action), treating homes

and property equally regardless of appraised value (social justice), and facilitating culture and behavior changes are important concepts.

- Prevent unwanted human-caused wildland fire ignitions within or in close proximity to communities.
- Reduce hazardous fuels within the wildland-urban interface and nearby areas containing community values to be protected.
- Continue to develop, support, and maintain CWPPs as one of the primary tools to achieve the goals of the Cohesive Strategy.
- Build a culture of self-sufficiency to prepare for and protect life and property from wildland fire.
- Improve effectiveness and self-sufficiency of emergency response within each community.
- Improve post-fire recovery efforts that impact public health and safety, water sources, power transmission corridors, and other critical infrastructure.

### ***Wildfire Response***

The following objectives related to improving wildfire response are quoted from each of the regional assessments.

#### **Northeast Region**

Throughout the Northeast Region, local fire departments, both professional and volunteer, are key partners and are often the first and sole responders on wildland fires; support from federal and state agencies is vital. Wildfires may be small in size but numerous and occur in bursts throughout the fire seasons. These factors, combined with the density of people and parcels of land under diverse ownership, create a complex wildland fire response environment. A balanced wildfire response requires integrated pre-fire planning with effective, efficient, and coordinated emergency response.

- Provide for firefighter and public safety.
- Ensure that wildfire response reflects the broader wildland fire management strategy.
- Maintain the capacity to suppress unwanted fires.
- Improve organizational efficiencies and wildfire response effectiveness.
- Coordinate planning, training, detection and response activities for efficiencies.
- Improve and maintain infrastructure (airports, roads and bridges, etc.) that affect wildfire response.
- Address capacity issues related to all-hazard response.
- Provide access and reporting standards to all wildfire response agencies and organizations.

#### **Southeast Region**

The objectives and actions developed by the Southeast RSC address a number of challenges and opportunities including a year-round fire season, widespread wildland-urban interface, smoke management, policy conflicts across multiple jurisdictions, and other issues.

- Increase firefighter safety by using risk management.
- Increase and leverage resource capability and capacity. Streamline and support training across all areas to maximize effectiveness.

### **Western Region**

Balanced wildfire response in the West requires integrated pre-fire planning with effective, efficient, and coordinated emergency response. Pre-fire planning helps tailor responses to wildfires across jurisdictions and landscape units that have different uses and management objectives. Improved prediction and understanding of weather, burning conditions, and various contingencies during wildfire events can improve firefighting effectiveness, thereby reducing losses and minimizing risks to firefighter and public health and safety.

- Provide for safety of wildland fire responders and the public.
- Guide response using risk management principles and values to be protected, as determined by early and frequent involvement of all partners, before, during, and after a wildland fire event.
- Improve effectiveness and efficiency of the wildland fire management organization.
- Improve administration and maximize the coordination and effectiveness of wildland fire management resources.
- Develop community-based strategies to deal with post-fire hazards on natural and cultural resources, responders, communities, and planned activities.
- Collect and use accurate and consistent fire information from all wildland fire protection jurisdictions to improve understanding of the wildland fire and response workload and provide feedback to decision support systems.

### **Performance Measures**

Objective-specific performance measures were discussed among each of the RSCs to suggest a starting point for continued conversation around regional and national performance measures during Phase III that will best track progress toward achieving the national goals and reducing risk. These discussions are further outlined in each of the regional assessments.

## **INITIAL ALTERNATIVES**

### **Management Scenarios and Areas to Explore for Reducing Risk**

Phase II of the Cohesive Strategy had two main thrusts: (1) to bring together the stakeholders and look for synergies and ways to work together to improve land management, reduce wildfire risk, and improve suppression capability; and (2) to gather information describing conditions in the three regions pertaining to the threat of wildfire, values at risk, trends, and uncertainties. The next step is to define initial alternatives. Initial alternatives are a 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. These Initial alternatives will help test the analytical methods

developed by the NSAT. The RSCs began the task of exploring alternatives through the development of management scenarios (as described in the Southeast and the West) and areas to explore for reducing risk (as described in the Northeast). The ideas expressed by the RSCs set the stage for the analysis to take place in Phase III, but are not alternatives for implementation.

According to the NSAT, “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 chance of catastrophic losses. Real-world constraints on funding, available resources, and administrative flexibility further require consideration of economic efficiency and practicality.”

Stakeholders and the NSAT worked together to define the initial alternatives for reducing risk in each region. The alternatives presented in the three regional assessments are not plans or decisions. They are articulations of options and possible areas of program emphasis to reduce the risk of wildland fire. These alternatives are preliminary and will be used to test the model at the start of Phase III.

Using the CRAFT process, the NSAT will explore the likely outcomes of the scenarios presented and additional scenarios yet to be developed. They will use wildfire risk maps and fire behavior models to determine the relative effectiveness of different approaches across the landscape. They will use the values and trends information to apply social acceptability to the methodologies to be considered. After processing the scenarios in light of the best scientific data and risk assessment models available, they will come back to the RSCs with options and recommendations, and the work will begin again.

It is difficult to judge the effectiveness of one alternative action or activity against another. Since effectiveness is the ability to get a desired change in real-world conditions, it will vary according to the conditions. There is no one correct strategy for reducing risk and protecting communities and firefighters. While reducing fuels through prescribed burning or mechanical treatment might be most effective in some areas of the country, in others it may be more effective to focus on educating landowners, preventing ignitions, and preparing communities for wildfire. And with limited resources, it makes sense to use science to help us locate the most effective programs for the different areas of the country.

The CRAFT process guided the RSCs to list possible broad actions and activities and identify the combination of actions and activities that best reflects the continuation of current policies and practices. Then, to identify other reasonable combinations of actions and activities that collectively could contribute to long and short-term goals.

## **The Northeast’s “Areas to Explore for Reducing Risk”**

The Northeast approached the development of alternatives by articulating four investment options:

- Invest in preventing human caused ignitions,
- Invest in fuels treatments,
- Invest in building capacity in wildfire response, and
- Invest in protecting values at risk.

Within those categories, specific actions are listed. For example, “invest in human caused ignitions” sets out three levels of funding for prevention activities and the option of investing in local ordinances that reduce unwanted ignitions from debris burning and other sources.



Under “invest in fuels treatments” three levels of funding for fuels treatments will be explored, and the option of treating only around communities in fire-risk landscapes, or in landscapes affected by wind, storm, pest, drought, or other events.

Under “invest to build capacity in wildfire response” the options range from increased staffing, training, and detection, to investing in water scooping aircraft, to eliminating barriers to cost sharing and cross billing, or appointing a fire warden in each town.

And, under “invest to protect values exposed to risk,” some of the options are: to treat fire-dependent ecosystems with prescribed fire, invest in fire-proofing homes, and influencing developers and code, planning, and permitting administrators to modify codes for structure protection.

It is anticipated that the result of the analysis will show that a mix of investments in some, if not all, of these areas will be recommended. These alternatives are set out in a manner that gives the NSAT the ability to test each action separately and then return information to the RSC as to which actions are most likely to be effective, and where they are likely to be effective.

## **The Southeast’s Management Scenarios**

The Southeast saw the development of alternatives as a way to weigh various national and regional values and goals to strategically use available resources to greatest effect. They set out four potential management scenarios:

- Present management situation (as described in the assessment);
- Increased personal responsibility through outreach and education;
- Increased firefighter safety and wildfire response through enhanced collaboration, training and capacity; and
- Increased proactive fuels mitigation through all management techniques including prescribed burning.

These management scenarios are described along with anticipated consequences. The intent is to see what an increase in certain areas of management emphasis might accomplish. Running these changes in program emphasis through the scientific analysis will allow managers to compare trade-offs to make better management decisions.

## **The West’s Management Scenarios**

The West also developed management scenarios to explore different levels of emphasis on a suite of actions for implementation across the national goals. Each scenario emphasizes a subset of the regional objectives and actions while assuming no significant increases or decreases in budgets. While each scenario emphasizes actions to focus on one of the goals, efforts toward the other goals are assumed to continue.

- Scenario One – Emphasize landscape resiliency. This scenario places greater emphasis on restoring the landscape with fuels treatments through prescribed fire, wildfire, and mechanical treatments in those landscapes where they are appropriate, and using suppression where appropriate, to enhance landscape resiliency.

- Scenario Two – Emphasize fuel treatments to create fire-adapted communities. This scenario places greater emphasis on fuels treatments within the WUI and areas identified in CWPPs and similar plans.
- Scenario Three – Emphasize the creation of fire-adapted communities through collaboration and self-sufficiency. This scenario places greater emphasis on assisting private citizens, landowners, and land managers to increase collaborative efforts and take action to protect their values at risk.
- Scenario Four – Emphasize effectiveness in wildfire response. This scenario places greater emphasis on increasing the effectiveness and efficiency of firefighting organizations across all jurisdictions.

The West assumes that emphasis on specific objectives and actions within a scenario will result in synergies from the alignment of energy by those involved in implementation of the emphasized objectives. This synergy would lead to implementation levels that exceed the current level even in the absence of additional funding or reduction in implementation of other objectives.

## **NATIONAL SCIENCE AND ANALYSIS TEAM**

The National Science and Analysis Team (NSAT) was created to: (1) provide analytical support to the RSCs and CSSC and (2) support the development and implementation of the Cohesive Strategy through the application of proven scientific processes and analysis. To achieve this goal, the NSAT is charged with three primary tasks during Phase II and Phase III:

1. Assemble credible scientific information, data, and preexisting models that can be used by all teams working on the Cohesive Strategy.
2. Develop a conceptual framework that describes the relative effectiveness of proposed actions and activities on managing risks associated with wildland fire.
3. Construct an analytical system using the products developed in tasks 1 and 2 to quantitatively analyze regional and national alternatives identified by the RSCs and CSSC.

Tasks 1 and 2 were addressed within Phase II, and will continue. Task 3 is exclusively a Phase III effort.

### **NSAT Efforts During Phase II**

A wide range of individual scientists and analysts were invited to participate in the NSAT. These individuals represent federal, state, and tribal agencies, universities, and various non-governmental organizations, as well as a variety of topic areas spanning the complex issue of wildland fire management. The subteams that were active during Phase II include:

- Fuels management, wildfire extent and intensity
- Wildfire ignitions and preventions
- Smoke management impacts

- Landscape resilience
- Firefighter safety
- Fire adapted human communities
- Wildfire response and suppression effectiveness
- Public acceptance and policy effectiveness

Due to the complexity of wildland fire, many of the identified topics necessarily overlap or intersect. This is especially true for issues such as landscape resilience, fire-adapted human communities, and public acceptance and policy effectiveness. As the conceptual models developed during Phase II are translated into more quantitative models to be used in Phase III, the various components and relationships among them will be made more explicit. Additional detail regarding subteam reports, expectations for Phase III, and conclusions are provided in the full NSAT report.

Wildland fire is a complex phenomenon that encompasses numerous interacting social, ecological, and physical factors. The Cohesive Strategy can be viewed conceptually as a collection of management actions, policies, and activities that influence four major interacting processes: vegetation composition and structure, wildfire extent and intensity, response to wildfire, and community preparedness and resiliency. These processes in turn influence the goods and services received from forests and rangelands, firefighter and public safety, and homes and property affected by fire.

The NSAT subteam efforts built upon and expanded each of these major processes. For example, the wildfire ignitions subteam considered a broad range of factors that affect where, when, and how wildfires start and how various combinations of engineering, enforcement, and education can influence human-caused ignitions. Similarly, the fuels management subteam examined how various combinations of prescribed fire and other fuel treatments affect vegetation structure and composition, which in turn influence (and is influenced by) wildfire extent and intensity. Such interactions play out differently across different ecological biomes and at different spatial and temporal scales.

Due to the complexity of wildland fire, many of the identified factors necessarily overlap or intersect between and among topical areas. This is especially true for the more integrated issues such as landscape resilience, fire adapted human communities, and public acceptance and policy effectiveness. Thus the narratives provided by each subteam often reference components shared between teams.

In many ways the products from the subteam efforts reflect the state of knowledge about various aspects of wildland fire and the availability of existing models and data. Several trends are evident.

Fine-scale processes tend to be better understood than broad-scale processes or strategic issues. For example, there is an extensive literature on fire behavior and combustible properties of fuels; less is understood about the large-scale effectiveness of strategic fuel treatments.

There has been considerably more research focused on the biophysical aspects of wildland fire than has been directed at equally important socio-political issues. Thus we can assuredly state that fire-wise landscaping and construction materials will help reduce the incidence of homes lost to wildfire; we are less confident as to how to ensure such practices are implemented. Smoke is an archetypal issue—technically well-understood but socio-politically complex and difficult.

Data from Federal agencies is decidedly more complete and accessible than from other entities. Such inconsistencies can lead to inaccurate conclusions if the limitations of the data are not understood.

Each subteam has produced one or more conceptual models of the processes operating within their area of interest. Collectively, these conceptual models create a rich tapestry that illustrates the extensiveness, complexity and interconnectedness of wildland fire. Along with the information summarized on existing analytical models and data sources, the conceptual models provide a strong foundation for building more rigorous models in Phase III that can be used to compare and contrast alternative strategies for reducing risk.

## **PHASE III PROCESS AND TIMELINE**

Phase II of the National Cohesive Wildland Fire Management Strategy has drawn to a close and preparation for Phase III has begun. Groups involved in Phase III will include yet not be limited to: WFLC, WFEC, CSSC, NSAT, RSCs, and Working Groups. In this section, we present objectives, desired outcomes, and a proposed timeline for completing Phase III and moving toward implementation and revision of the Cohesive Strategy.

### **Objectives**

- (1) Complete a national trade-off analysis that uses science-based risk assessment to identify a range of alternatives that:
  - a. Point toward an effective path toward achieving the national goals and regional objectives and reducing risk,
  - b. Leverage regional values and investments,
  - c. Explore the full decision space available to national and regional stakeholders, and
  - d. Articulate national trade-offs among alternative activities and priorities associated with alternatives.
- (2) Summarize the national trade-off analysis and identify next steps in a final Phase III report.
- (3) Engage stakeholders in the crafting and updating of the national trade-off analysis and Phase III report.
- (4) Assign responsibility for implementation of regional and national priority actions.
- (5) Establish a 5-year review process that makes use of adaptive management principles to determine where goals and objectives are being met and make adjustments as necessary to achieve the national goals and reduce risk. Fully articulate the Cohesive Strategy as an ongoing, iterative process to develop and explore alternatives.

### **Outcomes**

At the conclusion of Phase III, the Cohesive Strategy:

- (1) Is accepted as a holistic national wildland fire management framework – one that links resilient landscapes to fire-adapted communities, and wildfire response, rather than considering them separately.
- (2) Develops a shared understanding based in science of how to most effectively invest limited energy and resources in achieving the national goals and reducing risk.
- (3) Recognizes that organizations and communities are changing the way they do business. Collaboration will lead to better landscape decisions that connect land management priorities and leverage resources.
- (4) Documents the need for and assigns responsibility for developing a thorough implementation plan that identifies concrete actions to be taken toward achieving national goals and regional objectives.
- (5) Is positioned to integrate into all land and fire management plans within and among agencies, organizations, and non-governmental entities in a way that encourages the most effective reduction of wildland fire risk to wildlife, forest management, watersheds, airsheds, and other resources and values.
- (6) Supports the development of instruments, models, and/or systems to scientifically and programmatically measure progress toward the national goals using the regional objectives and performance measures.
- (7) Clearly articulates wildland fire governance, roles, and responsibilities.
- (8) Facilitates individual and community acceptance of and action upon their responsibility to prepare their properties for wildfire.
- (9) Will reduce risks in fire-adapted communities and to firefighters and the public, and will begin movement toward a more sustainable and resilient landscape.
- (10) Will include agreed upon performance measures that meet the needs of the entire wildland fire management community.
- (11) Recognizes that fire is everyone's problem. Future discussions will include collaboration with non-traditional partners.

## **Timeline**

The NSAT will work with the CSSC, RSCs, and stakeholders to develop, refine, and validate conceptual and analytical models that will analyze various regional and national strategies to achieve the national goals and reduce risk through 2012. Success will hinge upon clear conversation between the NSAT and RSCs. Stakeholder engagement will continue through Phase III and afterward as implementation and communications plans are developed. Specific milestones and deliverables are outlined in Table 2.

It is important to note that the activities in 2012 constitute a framework and not a finished product. The process of soliciting and incorporating stakeholder feedback to the models and strategies will take time. Implementation of strategies identified in Phase III will begin in 2013, as will work to set up for the next iteration of the Cohesive Strategy.

**Table 2. Phase III milestones and deliverables**

<u>Actions</u>	<u>Tentative Dates</u>
CSSC quarterly meetings	Jan, April, July, Sept 2012
Final draft report of Phase III is complete	September 2012
WFEC approves draft report of Phase III	October 2012
WFLC approves draft report of Phase III	November 2012
Phase III implementation and review	2013

## COMMUNICATIONS FRAMEWORK

The Wildland Fire Executive Council (WFEC) created the Cohesive Strategy Communication Workgroup on September 2, 2011. The following quotation from the tasking memorandum expresses the purpose of the workgroup:

*In order to effectively implement the National Cohesive Wildland Fire Management Strategy process (hereafter referred to as the Cohesive Strategy) the development of a unified communication guidance and direction document is critical.*

The Communication Framework is designed to meet three overarching communication outcomes: Information Dissemination, Organizational Communication and Collaboration, and Implementation.

**Information:** To keep stakeholders, interested parties, and the public informed of progress in the development of the Cohesive Strategy

**Organizational Communication and Collaboration:** Communication processes that enhance and sustain collaboration among stakeholders toward development and implementation of the Cohesive Strategy

**Implementation:** Management and oversight options for communication efforts during implementation of the Cohesive Strategy

The Framework supports communication through all three phases of Cohesive Strategy development and during implementation.

## CONCLUSIONS

The completion of Phase II is a significant milestone in the development of a National Cohesive Wildland Fire Management Strategy. The synthesis of regional assessments and strategies meets the goals laid out by WFLC for Phase II and supplies an initial set of options to be added to and analyzed during the

national trade-off analysis in Phase III. More than that, it has resulted in the development of robust regional assessments and strategies that are supported by numerous stakeholders and ready for action. Focusing on engaging regional and local stakeholders in the development of objectives and actions gives the Cohesive Strategy a measure of local support that was not present in previous efforts to improve wildland fire management. The ownership of and investment in regional strategies by those who developed them is a remarkable and early sign of success.

This national collaborative process that integrates local, regional, and national concerns was envisioned in the National Fire Plan 10-Year Implementation Strategy in 2001, one of the foundational documents. As stated in that document: “Successful implementation of this strategy requires a collaborative process among multiple levels of government and a range of interests, resulting in healthier watersheds, enhanced community protection, and diminished risk and consequences of severe wildland fire.”

Phase II has shown the value of a decision making structure that operates from the top-down and from the bottom-up, based on proven science. In order to truly take an all-lands and landscape scale approach to land and wildland fire management, all voices must be at the table. The multi-stakeholder representation on the committees, from the WFLC to the CSSC, to the RSCs, to the NSAT has resulted in shared support for the Cohesive Strategy.

This early success positions all stakeholders for moving forward into Phase III and the development of a full range of options to be analyzed for their ability to achieve a shared vision for the future, as articulated in the national goals and regional objectives of the Cohesive Strategy.

This Cohesive Strategy is not a report for the shelf; rather, it is one piece of a living, ongoing process that requires continued engagement. The Cohesive Strategy builds on existing collaborative efforts in the wildland fire management community with the expected outcome of building a holistic, national wildland fire management framework – one that links resilient landscapes to fire-adapted communities, and wildfire response, rather than considering them separately.

We are committed to implementing, effectively communicating, and regularly revisiting the Cohesive Strategy in the context of adaptive management and we believe that all of these are critical elements for continued success.

## APPENDIX A: GLOSSARY AND ACRONYMS

The National Wildfire Coordinating Group (NWCG) maintains an extensive glossary of fire management terminology and acronyms (found at [www.nwcg.gov/pms//pubs/glossary/index.htm](http://www.nwcg.gov/pms//pubs/glossary/index.htm)). Some terms used in this document that have specific meaning in the context of wildland fire management, but are not found in the NWCG glossary are defined below.

<b>Affected party</b>	A person or group of people who are affected by the outcome of a decision or action.
<b>Biomass</b>	The above-ground green weight of solid wood and bark in live trees 1.0 inch diameter at breast height and larger from the ground to the tip of the tree. All foliage is excluded. The weight of wood and bark in lateral limbs, secondary limbs, and twigs under 0.5 inch in diameter at the point of occurrence on sapling-size trees is included but is excluded on poletimber and sawtimber-size trees (from USDA Forest Service Southern Research Station Glossary of terms).
<b>Fire-adapted community</b>	Human communities consisting of informed and prepared citizens collaboratively planning and taking action to safely coexist with wildland fire.
<b>Fire-adapted ecosystem</b>	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.
<b>Fire community</b>	Collectively refers to all those who are engaged in any aspect of wildland fire-related activities.
<b>Fire exclusion</b>	Land management activity of keeping vegetation or ecosystems from burning in a wildland fire.
<b>Fire management community</b>	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.
<b>Fire science community</b>	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.



<b>Resilient</b>	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.
<b>Silviculture</b>	“The art and science of controlling the establishment, growth, composition, health, and quality of forests and woodlands to meet the diverse needs and values of landowners and society on a sustainable basis” - definition from John A. Helms, ed., 1998. The Dictionary of Forestry. The Society of American Foresters, Bethesda MD.
<b>Stakeholder</b>	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.

## ACRONYM LIST

<b>BIA</b>	Bureau of Indian Affairs
<b>BLM</b>	Bureau of Land Management
<b>CRAFT</b>	Comparative Risk Framework and Tools
<b>CSOC</b>	Cohesive Strategy Oversight Committee
<b>CSSC</b>	Cohesive Strategy Sub-Committee
<b>CWPP</b>	Community Wildfire Protection Plan
<b>DHS</b>	Department of Homeland Security
<b>DOI</b>	Department of the Interior
<b>EAJA</b>	Equal Access to Justice Act
<b>ESA</b>	Endangered Species Act
<b>FLAME Act</b>	Federal Land Assistance, Management, and Enhancement Act
<b>GAO</b>	General Accounting Office
<b>HFRA</b>	Healthy Forest Restoration Act
<b>IAFC</b>	International Association of Fire Chiefs
<b>ITC</b>	Intertribal Timber Council
<b>MOU</b>	Memorandum of Understanding
<b>NACo</b>	National Association of Counties
<b>NASF</b>	National Association of State Foresters
<b>NEPA</b>	National Environmental Protection Act
<b>NFPA</b>	National Fire Protection Association
<b>NGA</b>	National Governors' Association
<b>NLC</b>	National League of Cities
<b>NPS</b>	National Park Service
<b>NSAT</b>	National Science and Analysis Team
<b>NWCG</b>	National Wildfire Coordinating Group

<b>OMB</b>	Office of Management and Budget
<b>OWFC</b>	Office of Wildland Fire Coordination
<b>QFR</b>	Quadrennial Fire Review
<b>RFD</b>	Rural Fire Department
<b>RSC</b>	Regional Strategy Committee
<b>SGA</b>	Southern Governors' Association
<b>SGSF</b>	Southern Group of State Foresters
<b>TNC</b>	The Nature Conservancy
<b>USDA</b>	U.S. Department of Agriculture
<b>USFA</b>	U.S. Fire Administration
<b>USFS</b>	U.S. Forest Service
<b>USFWS</b>	U.S. Fish and Wildlife Service
<b>USGS</b>	U.S. Geological Survey
<b>WFEC</b>	Wildland Fire Executive Council
<b>WFLC</b>	Wildland Fire Leadership Council
<b>WGA</b>	Western Governors' Association
<b>WUI</b>	Wildland-urban Interface

## APPENDIX B: REFERENCES

### Cohesive Wildland Fire Management Strategy Foundational Documents

2009 Quadrennial Fire Review (QFR), [http://www.iafc.org/files/wild\\_QFR2009Report.pdf](http://www.iafc.org/files/wild_QFR2009Report.pdf)

National Policy Framework Documents including:

- *A Call to Action*, 2009, [http://forestsandrangelands.gov/strategy/documents/call\\_to\\_action\\_01232009.pdf](http://forestsandrangelands.gov/strategy/documents/call_to_action_01232009.pdf)
- Artley, Donald, Wildland Fire Protection and Response in the United States The Responsibilities, Authorities, and Roles of Federal, State, Local, and Tribal Government, International Association of Fire Chiefs, 2009, (Missions Report) <http://forestsandrangelands.gov/strategy/documents/wildlandfireprotectionandresponseusaug09.pdf>
- *Mutual Expectations for Preparedness and Suppression in the Interface*, [http://forestsandrangelands.gov/strategy/documents/mutual\\_expectations\\_2010.pdf](http://forestsandrangelands.gov/strategy/documents/mutual_expectations_2010.pdf)

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## APPENDIX C: MEMBERSHIP LISTS

### Northeast Region

#### *Northeast Regional Strategy Committee*

<b>Name</b>	<b>Agency / Organization</b>
George Baker (Co-Chair)	IAFC
Doreen Blaker	Keweenaw Bay Indian Community
Steve Jakala, retired	FWS
Tim Hepola	FWS
Jim Johnson	County Commissioner, Minnesota - NACo
Jim Loach	NPS
Logan Lee	USFS Northern Region
Tom Remus	BIA
Matt Rollins (Co-Chair)	USGS
Tom Schuler	USFS, Northern Research Station
Brad Simpkins	New Hampshire State Forester - NASF
Dan Yaussy	USFS, Northern Research Station
Danny Lee (NSAT Liaison)	USFS, National Science Team
Jenna Sloan (Coordination Lead)	DOI
Billy Terry	USFS (Alternate)
Paul Charland	FWS (Alternate)
Dan Dearborn	FWS

#### *Northeast RSC Working Group*

<b>Name</b>	<b>Agency / Organization</b>
Maureen Brooks, Working Group Lead	USFS
Terry Gallagher, Working Group Lead	USFS
Steve Olsen	Fond du Lac Band of Lake Superior Chippewa
Laura McCarthy	TNC
Jack McGowan-Stinski	TNC
Scott Bearer	TNC
Drew Daily	Big Rivers Compact



Ron Stoffel	Great Lakes Compact
Randy White	Mid-Atlantic Compact
Tom Parent	Northeast Compact
Marty Cassellius	BIA
Dave Pergolski	BIA
Jeremy Bennett	BIA
Jeffrey (Zeke) Seabright	NPS
Cody Wienk	NPS
Allen Carter	FWS

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***Northeast RSC Support Staff***

<b>Name</b>	<b>Agency / Organization</b>
Jenna Sloan, Coordination Lead	DOI
Gus Smith, Coordination Lead	DOI
Maureen Brooks	USFS
Terry Gallagher	USFS

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## Southeast Region

### *Southeast Regional Strategy Committee*

<b>Name</b>	<b>Agency / Organization</b>
Mike Zupko (Chair)	SGA / SGSF
Kevin Fitzgerald (Vice Chair)	NPS
Liz Struhar	NPS (alternate)
Liz Agpaoa	USFS Southern Region
Dan Olsen	USFS (alternate)
Tim Boggus	Texas State Forester - NASF
Ed Brunson	BIA
Rob Doudrick	USFS Southern Research Station
Bob Eaton	FWS
Jim Ham	County Commissioner, Georgia
Tom Lowry	Choctaw Nation
Alexa McKerrow	USGS
Bruce Woods	Texas Forest Service / IAFC

### *Southeast Working Group*

<b>Name</b>	<b>Agency / Organization</b>
David Frederick (Chair)	SGSF
Darryl Jones (Vice Chair)	Southeast Carolina Forestry Commission
Tom Spencer (Vice Chair)_	Texas Forest Service
Forrest Blackbear	BIA
Vince Carver	FWS
Margit Bucher	The Nature Conservancy
Alexa McKerrow	USGS
Shardul Raval	USFS Southern Region
Rachel Smith	USFS Southern Region
Liz Struhar	NPS

### ***Southeast Region Support Staff***

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<b>Name</b>	<b>Agency / Organization</b>
Sandy Cantler (SE Coordination Lead)	USFS
Carol Deering	USGS
Jim Fox	UNC Asheville
Jeff Hicks	UNC Asheville
Matthew Hutchins	UNC Asheville
Jim Karels (WFEC Liaison)	Florida Forest Service
Danny Lee	USFS / National Science Team
Karin Lichtenstein – Project Manager/Research Scientist, NEMAC	UNC Asheville
Tom Quigley	National Science Team

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## Western Region

### ***Western Regional Strategy Committee***

<b>Name</b>	<b>Agency / Organization</b>
Aden Seidlitz	BLM
Alan Quan (CSSC liaison)	USFS
Ann Walker	WGA
Bob Harrington	Montana State Forester - NASF
Corbin Newman (Co-Chair)	USFS Southwest Region
Dana Coelho (Writer/Editor)	Western Forestry Leadership Coalition / USFS
Doug MacDonald (WFEC Liaison)	IAFC
Joe Stutler (Co-Chair; WWG Liaison)	Deschutes County, Oregon - IAFC
John Philbin	BIA
Karen Taylor-Goodrich	NPS
Pam Ensley	FWS
Robert Cope	Lemhi County, Idaho - NACo
Sam Foster	USFS Rocky Mountain Research Station
Tony Harwood	Confederated Salish and Kootenai Tribes
Warren Day	USGS

### ***Western Working Group***

<b>Name</b>	<b>Title/Organization</b>
Bill Avey	USFS
Bill Trip	Karuk Tribe
Carol Daly	Flathead Economic Policy
Craig Glazier	Idaho Department of Lands
David Seesholtz	USFS
Eric Knapp	USFS
Gene Lonning	BIA
Jesse Duhnkrack	NPS
Joe Freeland (Team Lead)	BLM
Kevin Ryan	USFS
Laura McCarthy	TNC
Sue Stewart	USFS
Travis Medema	Oregon Department of Forestry

## Cohesive Strategy Oversight Committee

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<b>Name</b>	<b>Agency / Organization</b>
Tom Harbour	USFS
Kirk Rowdabaugh	DOI
Maureen Hyzer	USFS
Clint Cross	USFS
Tim Sexton	USFS
Bill Van Bruggen	USFS
Susan Stewart	USFS
Dan Smith	NASF
Caitlyn Pollihan	NASF
Douglas MacDonald	IAFC
Bryan Rice	BIA
Joshua Simmons	BIA
Michael Carrier	WGA
Ann Walker	WGA
Lynda Boody	BLM
Wendy Reynolds	BLM
Dan Buckley	NPS
John Morlock	NPS
Ryan Yates	NACo
Aitor Bidaburu	USFA
Jim Kelton	USFWS
Jim Erickson	ITC

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## Wildland Fire Executive Council

<b>Name</b>	<b>Agency / Organization</b>
Bill Kaage	NWCG
Douglas MacDonald	IAFC
Elizabeth Strobebridge	NGA
Glenn Gaines	DHS
Jim Erickson	ITC
Jim Karels	NASF
Kirk Rowdabaugh	DOI
Mary Jacobs	NLC
Ryan Yates	NACo
Tom Harbour	USFS
<b>Support Staff</b>	
Roy Johnson, DFO	OWFC
Shari Shetler, Exec. Sec.	OWFC

## Wildland Fire Leadership Council Membership

Member	Agency / Organization
Rhea Suh, Assistant Secretary for Policy, Management and Budget, WFLC Chair	DOI
Jay Jensen, USDA Deputy Undersecretary for Natural Resources and the Environment	USDA
Tom Tidwell, Chief	USFS
John Jarvis, Director	NPS
Rowan Gould, Acting Director	USFWS
Bob Abbey, Director	BLM
Mike Black, Director	BIA
Marcia McNutt, Director	USGS
Glenn Gaines , United States Fire Administration	DHS
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, ITC
Mary Hamann-Roland, Mayor, City of Apple Valley	NLC
Jeff Jahnke, State Forester, State of Colorado	NASF
Chief Robert Roper, Ventura County (California) Fire Department	IAFC

## APPENDIX D: QUESTIONS FROM THE COMPARATIVE RISK ASSESSMENT FRAMEWORK AND TOOLS (CRAFT)

OBJECTIVES
<p><i>Situation and Context</i></p> <ol style="list-style-type: none"> <li>1. What is the National Wildland Fire Management Cohesive Strategy (Cohesive Strategy)?</li> <li>2. What are the primary overarching goals of the Cohesive Strategy?</li> <li>3. What is the specific role of regional efforts in the Cohesive Strategy?</li> <li>4. What do you hope to accomplish with this specific workshop?</li> </ol> <p><i>Guidelines</i></p> <ol style="list-style-type: none"> <li>5. What general policies, regulations or laws govern wildland fire management in your area, agency or organization?</li> <li>6. Which of these, if any, have created conflicts among agencies and across lands? Which of these have helped create effective collaboration across different agencies? Explain briefly.</li> </ol> <p><i>Values</i></p> <ol style="list-style-type: none"> <li>7. What broad societal and environmental values have been associated with fire in this region?</li> <li>8. Briefly characterize how each broad value relates to or is affected by fire.</li> <li>9. What are the dominant common values or perspectives among agencies? What are the dominant conflicts among values or perspectives?</li> <li>10. Which of these conflicts are exceptionally difficult to address and why?</li> </ol> <p><i>Uncertainties</i></p> <ol style="list-style-type: none"> <li>11. What challenges in wildland fire management are created or compounded by lack of knowledge or understanding?</li> <li>12. What societal or environmental changes or trends could affect wildland fire?</li> <li>13. Briefly describe the uncertainties associated with these changes or trends that make them difficult to predict.</li> </ol> <p><i>Goals and Objectives</i></p> <ol style="list-style-type: none"> <li>14. What broad management goals or priorities exist for this area that relate to wildland fire?</li> <li>15. Are there more specific goals which are not explicit to wildland fire but may be related (i.e., an historic site with preservation goals for a particular landscape, or a natural area managed for ecosystem process)?</li> <li>16. How do your goals as stated above relate to the national goals of the Cohesive Strategy? Are there additional goals that contribute to the broader national goals?               <ol style="list-style-type: none"> <li>1. Restoring and maintaining resilient landscapes                   <ol style="list-style-type: none"> <li>1.1</li> <li>1.2</li> </ol> </li> <li>2. Creating fire-adapted communities                   <ol style="list-style-type: none"> <li>2.1</li> <li>2.2</li> </ol> </li> <li>3. Wildfire Response</li> </ol> </li> <li>17. Which of the above are the highest priorities for completing this assessment and analysis?</li> <li>18. For each priority goal, identify contributing objectives, and a range of actions and activities that could meet each objective.</li> <li>19. Now finalize into an objectives hierarchy.</li> </ol> <p><i>Measures for Success (Endpoints)</i></p> <ol style="list-style-type: none"> <li>20. How do you or can you quantify management success in meeting the goals and objectives? Identify endpoints or performance measures that could be used to illustrate outcomes. For each endpoint, identify the spatial and temporal resolution and units of measure (e.g., dollars, acres, etc).</li> <li>21. What is the level of acceptability of these endpoints given the range of perspectives and values?</li> </ol>
ALTERNATIVES
<p><i>Actions</i></p> <ol style="list-style-type: none"> <li>22. List the possible broad actions and activities from the objectives section (#).</li> </ol> <p><i>Alternatives</i></p> <ol style="list-style-type: none"> <li>23. Identify the combination of actions and activities that best reflects the continuation of current policies and practices.</li> <li>24. Identify other reasonable combinations of actions and activities (alternatives) that collectively could contribute to long and short-term goals. Consider how actions might affect each other with possible cumulative or interactive effects.</li> <li>25. Are there technical or financial constraints that limit the range of actions and activities that might be pursued? Consider how overcoming these barriers might create opportunities for greater success.</li> <li>26. Consider how issues vary across the region and where some actions might be more successful than elsewhere. If necessary, refine the alternatives to recognize and incorporate spatial variability.</li> </ol>