WILDLAND FIRE EXECUTIVE COUNCIL

AGENDA

October 28, 2011

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

10:00 – 12:00 AM – Eastern Time

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

Time	#		Topic	Presenter
1000 – 1005	1		**Welcome/Introductions**	Roy Johnson
	2	☑ Information ☑ Discussion ☐ Decision	**Meeting Objectives & Expectations** Description: Outline the objectives and expectations of this meeting Outcome: 1. Understanding what we need to accomplish Reference Material: 1. Final Agenda	Tom Harbour
1005 – 1120	3	☑ Information ☑ Discussion ☑ Decision	**Finalize CS Phase 2 Report** Description: Discussion and finalization on comments received on the Phase 2 report Outcome: 1. WFEC CS Phase 2 (Recommended Report) Reference Material: 1. Track Changes Document 2. Version 2 – writer editor comments 3. Fatal Flaw Comments 4. Phase 2 Report – pdf version 5. Comment Results Document	WFEC
1120 – 1130	4	☑ Information ☑ Discussion ☑ Decision	**CS Communication** Description: Present the Communication Framework Implementation Scenarios Outcome: 1. Understanding of current activities and status of products. 2. WFEC approval of Implementation Scenarios Reference Material: 1. CS-CW Status Report 2. Communication Plan 3. Communication Framework Implementation Scenarios 4. Communication Framework Implementation Scenario Memo to WFLC	Mary Jacobs

WILDLAND FIRE EXECUTIVE COUNCIL

Time	#		Topic	Presenter
1130 – 1145	5	☑ Information ☑ Discussion ☑ Decision	**Finalize Agenda and Assignments for November WFLC Meeting** Description: Discuss final preparations for WFLC Meeting. Prepare for next week's WFEC meeting to run through the presentations and logistics for the November meeting. Outcome: 1. Make final assignments for WFLC meeting Reference Material: 1. WFLC agenda 2. WFEC Accomplishment Report	Tom Harbour
1145 – 1155	6	☑ Information ☐ Discussion ☐ Decision	**Public Comments** Description: Time for WFEC to hear from the public. Specific topics to be determined Outcome: 1. Awareness of public opinions related to WFEC activities Reference Material: 1. TBD	Public
1155 – 1200	7	☐ Information ☑ Discussion ☑ Decision	**Closeout** Description: 1. Review the outcomes of this meeting 2. Review decision and actions 3. Identify potential agenda items for September 16 Outcome: 1. Agreement on decisions and actions 2. Agreement on focus for next meeting	Tom Harbour
1200			***ADJOURN***	

A NATIONAL COHESIVE
WILDLAND FIRE MANAGEMENT STRATEGY
PHASE II NATIONAL REPORT

10/156/2011 DRAFT

10/17/2011 DRAFT

Formatted: Centered

Table of Contents

Insert photo of wildland fire

EXECUTIVE SUMMARY

The National Cohesive Wildland Fire Management Strategy (Cohesive Strategy) Phase II is a collaborative effort to identify, define and address wildland fire problems and opportunities in the three regions of the United States: the Northeast, the Southeast, and the West. Addressing wildland fire problems requires a multi-jurisdictional approach with cooperation and effective communication between the stakeholders. The Cohesive Strategy brings together representatives of federal, state, local and tribal governments, and non-governmental organizations to describe the unique problems experienced in each region and identify current successful actions and immediate steps than can be taken to reduce the risk of fire to communities, to restore resilient landscapes, and to improve wildfire response.

Clarifying the roles and responsibilities of those engaged in wildland fire protection will bring a renewed and strengthened approach to addressing our nation's wildland fire problems, and will lessen tensions that may be experienced in some locations. Increasing partnerships and increasing opportunities to collaborate among organizations is critical to maximizing opportunities for successful wildland fire management. Phase II brought about a commitment by cities, counties, states and public and private landowners to make progress on accomplishing the three goals of the Cohesive Strategy:

- Restoring and maintaining resilient landscapes;
- Creating fire-adapted communities; and
- Responding to wildfires.

The Wildland Fire Leadership Council (WFLC) has adopted this vision for the next century: "To safely and effectively extinguish fire when needed; use fire where allowable; manage our natural resources; and as a nation, to live with wildland fire." The fundamental role of the WFLC is to provide guidance to the regions through efficiency improvements, to fully utilize existing authorities to accomplish the three national goals, and to provide the decision space necessary to implement identified current successful regional actions.

The three regions face differing wildland fire problems due to differences in geography, climate, and land ownership patterns. In Phase II of the Cohesive Strategy, the regions formed Regional Strategy Committees (RSCs) to develop regional assessments, identify the regional challenges, improve communication among partners, and identify strategies and opportunities for improvement. The Regional Assessments form the basis for this National report on Phase II. Phase II brings together the RSCs in a holistic approach to create a unified strategy not just for wildland fire suppression, but exploring issues of natural resource management, and 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.

Northeastern Region

The region is comprised of 20 states and is the most densely populated region. The vast majority of the land is in private ownership and fires occur primarily in the spring, fall and summer. Seasonal and extended drought conditions often create wildfire hazards in the Northeast. Local partnerships focus on initial attack and putting fires out quickly. Fire suppression is accomplished through interstate compacts among the states and with Canada.

Southeastern Region

The Southeast region is comprised on 13 states stretching from the Atlantic Seaboard to Texas. High wildland fire occurrence, extensive Wildland Urban Interface (WUI), a year-round fire season, and rapid regrowth of vegetation/fuels characterize the wildfire problem in the Southeast. Land ownership is highly fragmented with the majority of forestlands in private ownership. Fragmentation poses a challenge to a coherent policy of landscape management and fuels reduction. A culture of prescribed burning exists in the Southeast and is essential to managing fuel loads. The Southeast implements more prescribed burns, with more acres treated than any other region, mostly on private land. Fire suppression is accomplished by cooperation and partnerships between local and state fire resources and interstate forest fire compacts.

Western Region

The western region is comprised of 17 states spanning nearly half of the continental U.S, including Alaska, Hawaii, and the affiliated Pacific Islands. Wildland fire in the West is challenging due to vast areas of publicly owned and managed lands, where access is extremely limited, terrain is steep, and the climate is arid or semi-arid. In these areas, wildland fire management focuses on achieving ecological objectives rather than a suppression response. The West has been in an extended drought for more than a decade, which not only increases the threat of wildfire, but also fosters infestations of bark beetles, which are killing trees and leaving millions of acres of dead, standing trees. The West has seen a rapid escalation of severe fire behavior over the past two decades resulting in increased fire suppression costs, significant home and property losses, and increased threats to communities. Wildland fires in the West result in complex and costly efforts for post-fire restoration due to steep topography and highly erosive soils and flooding.

Values, Objectives and Actions Common to All Regions

As part of the assessments, the RSCs identified regional values and objectives. Some common objectives and actions were identified in Phase II and are discussed in detail within the Phase II National Report.

Values – Many value statements were articulated by each RSC, a short overview of each is shown in this document. Several values were common to all three regions, including: safety of firefighters and the public, protection of private property, conservation of air and water quality, restoring healthy and resilient landscapes, 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 and Actions – 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.

- The regions support working forests and wildlands, local economies and jobs, and diverse products and markets.

Regional information, identification of values, trends and risks, and the delineation of actions, objectives and performance measures identified in the regional assessments will be valuable in Phase III of the Cohesive Strategy. The regional assessments will be used to build a national trade-off analysis. For detail beyond what is included in this national report, see the regional assessments.

The RSCs coordinate with the National Science and Analysis Team (NSAT) to incorporate the best available science into the Cohesive Strategy. The NSAT uses 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 is included in appendix XXX of this report. The WFEC, CSSC, RSCs and the NSAT will continue to work together in Phase III.

The key to the cohesive strategy's success is based on the commitment to collaboration. Working together will allow us to accomplish the goals of National Cohesive Strategy for Wildland Fire Management.

My notes indicate we need to remove process language and focus on highlights and action.

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."

Formatted: Indent: Left: 0.67", Space After: 13 pt, No widow/orphan control, Don't adjust space between Latin and Asian text, Don't adjust space between Asian text and numbers

Formatted: Font: Arial, 11 pt

Formatted: Font: Arial, 11 pt

Formatted: Font: Arial, 11 pt

Formatted: Font: Arial, 11 pt

Formatted: Font: Arial, 11 pt

Comment [ANS1]:

Formatted: Highlight

Formatted: Font: (Default) Arial, 11 pt

Formatted: Font: (Default) Arial, 11 pt

Formatted: Font: (Default) Arial, 11 pt

Comment [AMW2]: My notes indicated we need to rewrite/reorganize first 2 pages to reflect a summary of all reports – key points and uniqueness of regions. We need to remove 'process' language and put further back…

Formatted: Body Text1

Highlights the process of Phase II, the collaboration is a big theme

Communication is a big theme

Identification of current successful regional actions and immediate steps that can be taken now to further reduce risk to communities, improve wildfire response, and to restore resilient landscapes.

During Phase II, regional stakeholders have been engaged in the process and expect to be kept involved in Phase III.

Commitment by leadership and stakeholders to make progress on accomplishing the three goals of the strategy in cities, counties, states, and by public and private landowners.

Clarification of roles and responsibilities of those engaged in wildland fire protection should create a renewed and strengthened approach to address our nation's wildland fire problems and reduce tensions that may be experienced in some locations.

The fundamental role of the WFLC will be to provide guidance to the regions through efficiency improvements to fully utilize existing authorities to accomplish the three national goals and provide the decision space necessary to implement identified current successful regional actions.

Some of the common objectives that were identified….

Formatted: Body Text1

INTRODUCTION

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 (Cohesive Strategy) outlined a three-phase process to address the three primary factors presenting the greatest challenges and opportunities to make a positive difference to fire management: restoringto restore and maintaining resilient landscapes, to creatinge fire-adapted communities, and to improvinge wildfire response. The Cohesive Strategy builds upon previous work, the Foundational Documents, and Guiding Principles and Core Values identified in Phase I.

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. This regional approach to Phase II of the Cohesive Strategy for Wildland Fire Management will result in a national strategy that is supported by local, regional and national information, engagement and action.

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 and engagement among all stakeholders, managers, and analysts in wildland fire management in each region. This report documents the summaryresults of the engagementsharing, but the detail is still found in the regional assessment reportss. Regional assessments include all the obstacles, real and perceived, that different stakeholders experience and identifiesreports strategies to addressremove them. Local input was provided to all the regions through the membership on the RSCs and through the multiple 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 a variety ofmultiple 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. The collaboration of these diverse stakeholders throughout the crafting of the three phases of the cohesive strategy is the key to building a national cohesive strategy for wildland fire management.

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, conservation of air and water quality, restoringand healthy and resilient landscapes, 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 and, 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 and wildlands, local economies and jobs, and diverse forest products and 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 importance of communication framework throughoutfor 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

Comment [AMW3]: Moved to Exec Summary

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.

The commitment to the collaborative approach of the three phases of the Cohesive Strategy will continue after the completion of this process. It is key to moving towards the goals set within Phase I of the strategy and realizing the full possibilities of a national cohesive strategy for wildland fire management.

T

Comment [AMW4]: I like this in the exec summary, but it gets lost in the earlier process language. On Monday, lets revise this together.

he Wallow Fire in Arizona and New Mexico which burned over 841 square miles and destroyed more than 30 structures, the fires in the state of Texas which burned over 3.7 million acres and consumed over 7,000 structures, and the Pagami Creek Wildfire which burned over 100,000 acres in the Boundary

Waters Canoe Area Wilderness in Minnesota, are all examples of uncharacteristically large wildland fires occurring across the nation in 2011.

<p style="text-align:center">Introduction</p>

Background

When~~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. Fire is a natural process and a mechanism for biological renewal across forest and rangeland ecosystems. During the 20th century, federal, state, and local firefighters were successful at putting out most wildfires in the early stages. An unintended consequence of their diligence partnered with the lack of active management of our landscapes is the~~, the nation's forests have become~~ overstock~~ing of our nation's forests~~ed 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 20th century and the first years of the 21st 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 for the federal government was $1.4 billion and in 2002, the cost was $1.7 billion. Billions more have have been spent by the state and local agencies and governments. 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.~~

LFoundational Documents and Legislation

~~These and other l~~arge and ~~,~~destructive wildfires led to the drafting of~~up to~~ the 1995 Federal Wildland Fire Policy and Program Review, a look ~~the first comprehensive look at the nation's~~ at wildland fire issues, mainly focused on the federal ownership, 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, tribes, 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 wildland fire 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 and Fuels Review (QFR) was first conducted in 2005 and then in 2009 the Quadrennial Fire Review (QFR) was completed. 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 anticipated future wildland fire management needs and risk to communities and fire fighters as well as nd described 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). This was also the first in what would become a series of reviews, plans and strategies to move the fire community and the nation forward safely and more effectively. None however completely solved the problems, as communities and the wildfire environment are constantly changing requiring the fire community to do the same.

In 2000, the cost of suppression for the federal government was $1.4 billion and in 2002, the cost increased to $1.7 billion; billions more have have been spent by state and local governments. 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 wildland fire management in the United States. Despite increased investment in fuels treatments and preventive efforts funded by the National Fire Plan, wildland fire suppression costs have continued to rise.

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.

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. Foundational documents, as identified in the Phase I of the Cohesive Strategy, highlighted the need for shared responsibilities, effective partnerships, improved interagency coordination and response and the need for a new direction and expectations for federal, state and local wildland fire protection agencies as imperative to solve our nation's wildland fire problem and create well-prepared, fire-adapted communities and healthy, resilient landscapes at the most efficient cost.

In 2010, Phase I of the Cohesive Strategy outlined a three-phase process to address the three primary factors presenting the greatest challenges and opportunities to make a positive difference to fire management: restoring and maintaining resilient landscapes, creating fire-adapted communities, and improving wildfire response. The Cohesive Strategy builds upon previous work, the Foundational Documents, and Guiding Principles and Core Values identified in Phase I. In 2009, the continuing challenge of the wildland fire management problem led Congress to pass the Federal Land Assistance

<div style="border:1px solid #00f; padding:4px;">
Comment [ANS5]: Verbatim from Report to Congress page 3
</div>

<div style="border:1px solid #f0f; padding:4px;">
Comment [R6]: WFEC Comments were to remove the non-omb approved foundational documents in the chart, but include reference to them within the paragraph.
</div>

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 wildland fire 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 in the *Report to Congress* document. These documents highlighted the need for shared responsibilities, effective partnerships, improved interagency coordination and response and the need for a new direction and expactions for federal , state and local wildland fire protection agencies as imperative to solve our nation's wildland fire problem and create well-prepared, fire-adapted communities and healthy, resilient landscapes at the most efficient cost.

Table 1. Cohesive Strategy foundational documents

Document	Vision Statement / Key Recommendation
A Call to Action	"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."
Wildland Fire Protection and Response in the United States The Responsibilities, Authorities, and Roles of Federal, State, Local, and Tribal Government (Missions Report)	"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."
Mutual Expectations	"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 ApproachA 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, tThe 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 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 WFLC laid out a new vision for the next century 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 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 began in Phase II of the Strategy with the creation of RSCs and the development of regional strategies. Those regional strategies will combine unite to form one national strategy. What makes theThe Cohesive Strategy is different from all the priorother plans, which have preceded it, is thebecause of the collaborative process by which it wasthe strategy is being formulated. It is not merely a strategy for a ffederal agency or agencies,. iIt is a strategy for the many groups that have come together in the three regionsacross the nation to combine their multiple regional 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,~~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.

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 agencies, firefighting organizations, tribes, counties, and cities (see Figure 2).
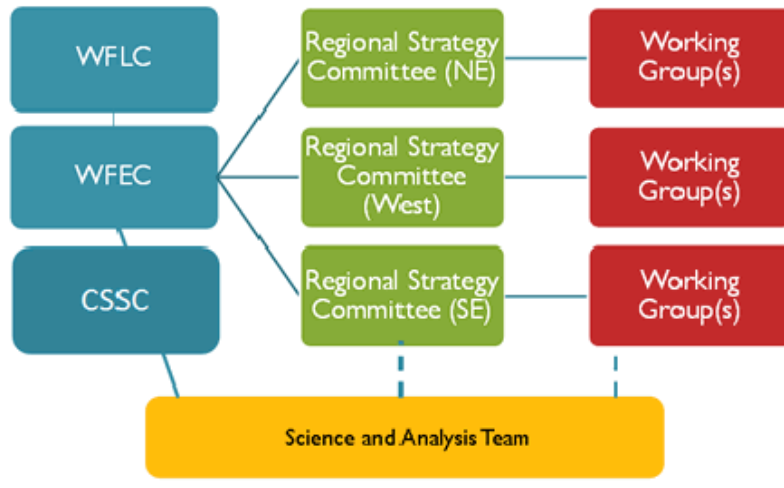
Figure 1. Organizational chart for Cohesive Strategy governance

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 meet the needs to complete Phase III. The WFEC is responsible for promoting and facilitating the implementation for the Cohesive Strategy. The CSSCs and RSCs are chartered sub-groups of the WFEC. The CSSC was chartered at the beginning of Phase I and the RSCs and their working groups were chartered at the beginning of Phase II and will continue to function through Phase III and beyond.

The RSCs are 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 WFEC, CSSC and RSCs as the Phase III trade-off analyses are completed.

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, the CSOC transitioned into the Cohesive Strategy Subcommittee (CSSC). The WFEC and CSSC guided Phase II through completion of the regional assessments and drafting of the national report. In Phase II of the strategy, Phase II was directed by the Wildland Fire Executive Council (WFEC) and developed by the Cohesive Strategy Sub Committee (CSSC) which are composed of representatives of federal and state 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.

Figure 2. Cohesive Strategy Regions: Northeast, Southeast, and West

Phase II of the Cohesive Strategy provided a unique opportunity to the three regions of the country – Northeast, Southeast, and West (see figure 1) – to chart their own course in landscape and wildland fire management to reduce the risks posed by wildland fire to multiple values. The RSCs came together, with the support of Working Groups that broadened engagement to regional stakeholders, managers and analysts, non-governmental organizations and universities, to identify the challenges, values, and opportunities for improved land and fire management in their regions. This regional approach to Phase II of the Cohesive Strategy for Wildland Fire Management will result in a national strategy that is supported by local, regional and national information, engagement and action. Regional assessments will include obstacles, real and perceived, that stakeholders experience and identify strategies to address them.

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 used by the WFEC, CSSC and the RSC's 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. 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

Comparative Risk Assessment within the Cohesive Strategy

A comparative risk assessment tool to evaluate the consequences of alternative wildland fire management strategies was proposed in Phase I of the Cohesive Strategy. The Phase I document 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.

In conjunction with the NSAT, the Regional Strategy Committees embarked on this Phase II process, which included specifying regional objectives nd designing initial alternatives.. 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 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 RSCs work identified current success, relationships and opportunities for work that can be done before the completion of Phase III of the Cohesive Strategy. 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.

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.

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 a variety of 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.

Comment [ANS10]: 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.

Formatted: Body Text1
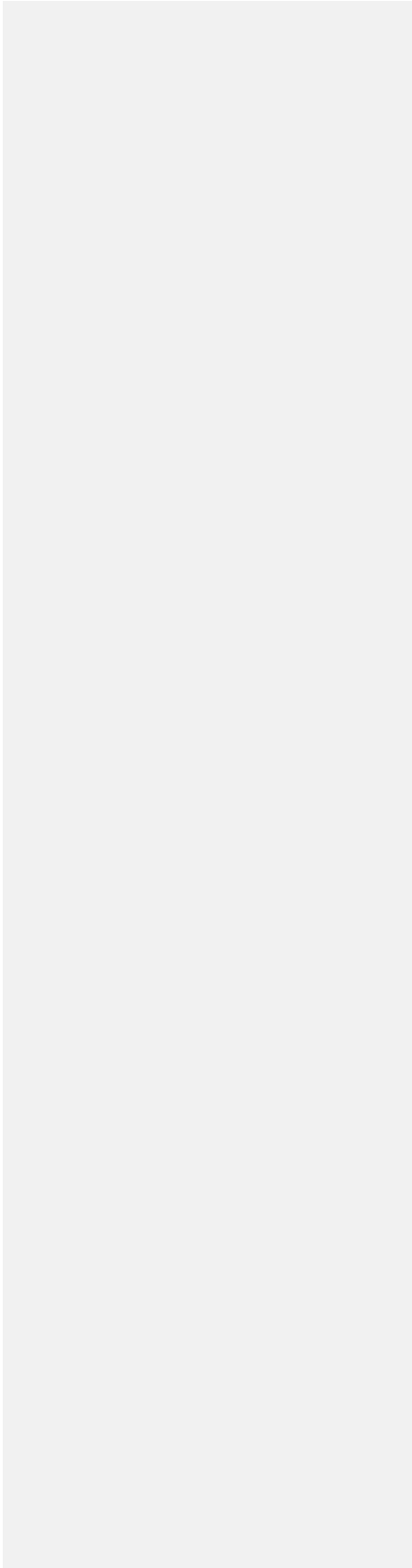
Phase II was directed by the Cohesive Strategy Sub-Committee (CSSC),Wildland Fire Executive Council (WFEC) and developed by the Cohesive Strategy Sub Committee (CSSC) which areis composed of representatives of federal and state land management agencies, tribes, industry groups, counties, municipalities 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 RSCswill be used by the WFEC, CSSC and the RSC's 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).
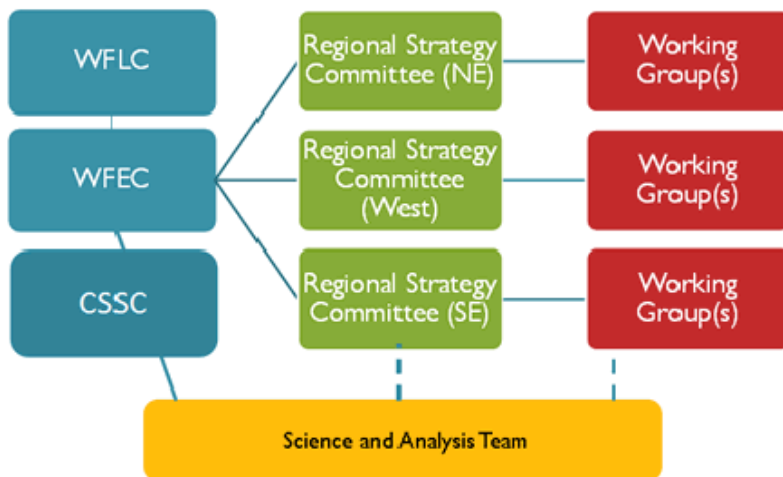

Figure 2. Organizational chart for Cohesive Strategy governance

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 meet the needs to complete Phase III. The WFECCSSC is responsible for promoting and facilitating the implementation for the Cohesive Strategy. The CSSCs and RSCs are chartered sub-groups of the WFEC. The CSSC was chartered at the beginning of Phase I and the RSCs and their working groups were chartered at the beginning of Phase II and will continue to function through Phase III and beyond.

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 supports the WFEC, CSSC and RSCs as the Phase III trade-off analyses are completedthat 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, theIn conjunction with the NSAT, the Regional Strategy Committees embarked on this four-stepPhase II process, which included , broadly characterized as: (1) specifying regional objectives nd d, (2) designing initial 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 RSCs work identified current success, relationships and opportunities for work that can be done before the completion of Phase III of the Cohesive Strategy.

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 34. Percent of federal lands in each state

The Phase II ReportPHASE II – REGIONAL ASSESSMENTS AND STRATEGIES 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 wildland firefire and fire response in each region. They describe the values, both ecological and social, within the regions and the trends and uncertainties relating to wildland fire and risks to landscapes and communities. The RSCs developed objectives, performance measures and and initial alternatives and actions.

As a prelude to Phase III, the RSCs described initial alternatives to be considered for reducing risk to meet the national goals identified in Phase I. They are a broad set of alternatives that, with the help of analytical methods provide information 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." The assessment process and the resulting collaboration and identification of regional issues will continue as we move into Phase III and beyond.

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 the report.

REGIONAL COLLABORATION AND OUTREACH

RSCs are collaborative teams representing wildland fire 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. This unprecedented outreach strategy is the key to building a national cohesive strategy for wildland fire management.

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 over 1,300 stakeholders by telephone and email and through posts to outreach websites and in person meetings. 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 legal, regulatory and jurisdictional environment in which wildland fire and resource management agencies operate nationally and regionally. Wildland fire and resource management decisions are guided and informed by a suite of laws, regulations and administrative policies that exist at the federal, state, tribal and local levels. The social license to conduct resource and wildland fire management activities plays an important role in theThe interpretation of the laws, policies and regulations and ultimately determine impacts implementation of management activities at all levels. Thus, the ability to accomplish resource and wildland fire management objectives and contingent upon the social license to do so within the framework of a rather complex suite of environmental laws, regulations and policies. For example, Phase II regional assessments identified ffederal laws such as the National Environmental Policy Act (NEPA) and the Endangered Species Act (ESA) guide planning processes on federally owned and managed landsfederal lands and provide for the protection and conservation of rare, threatened, and endangered species . The regional assessments identified NEPA and the ESA as significant laws impacting the accomplishment of wildland fire and resource management goals. Other key laws and regulations that impact the ability of managers to achieve resource and wildland fire management objectives identified across the regions included the National Forest Management Act (NFMA), the Environmental Protection Agency's smoke management policies and the U.S. Forest Service's National Forest System Land Management Planning Rule, among others.

Overlaying the changes, positive or negative, that may come in the form of new or revised legislation, administrative rules or regulations, and judicial interpretations, is the impact that social license has on the ability to conduct management activities on the ground. The social license for federal, state, tribal and

local agencies to undertake wildland fire and resource management activities influences activities throughout all branches and levels of government.

State, federal, tribal, local, and provincial governments, along with other partners in resource and wildland fire management, enter into formal and informal agreements that support coordination between agencies and partners. Nonetheless, policy conflicts persist across the country and within regions. But where conflict exists, so too does opportunity for change.

Through the development of regional objectives and actions, the Regional Strategy Committees proposed constructive resolutions to these ongoing policy conflicts and suggested ways to take advantage of the opportunities they present. Opportunities to address policy barriers and gaps that prevent full coordination and collaboration and/or the most flexible use of existing authorities to plan and implement landscape-scale treatments were identified in the regional assessment reports.

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 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

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,
- Restoring hHealthy and resilient landscapes, and
- Protection of scenic view -sheedsAesthetics.

Comment [R12]: New word to describe this?? I don't know if this is any better -

Trends and Risksisks

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

Land Ownership in the Northeast Region

Ownership
- Federal Land
- Native American Land
- State Land
- Other Public Land
- Private Land

0 75 150   300 Miles

1 inch = 157.83 miles

Produced by the U.S. Forest Service, Northeastern Area State and Private Forestry, MDH 9/15/11

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 wildland fire ~~fire~~ 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 wildland fire 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 wildland fire 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

Figure 3. Percent of federal lands in each state

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 and dynamic and diverse habitats. The aesthetic appearance of the landscape is important and aesthetics vary by individual, 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 wildland fire 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 AND ACTIONS, ~~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 sections outline the objectives and actions developed by the RSCs, highlighting objectives and actions that are held in common across the regions and/or across the national goals. The following concepts are synthesized from the regional objectives and actions ~~and actions~~, which are quoted from the regional assessments in the next sections. Objectives and actions 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. More information on these objectives and accompanying actions can be found in the regional assessment reports.

Actions ~~Supporting All Three National Goals~~ Common to the 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 and wildlands, local economies and jobs, and diverse ~~forest~~ products and 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 wildland fire protection planning.

Wildland Fire 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 Regional Actions Common to the 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 wildland fire 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.

<u>Northeast Region</u>

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 wildland fire 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

Response to this goal acknowledges the challenge of maintaining or restoring landscapes is especially complex with the wealth of small landowners in the Southeast, and the objectives focus on a need for locally-calibrated, proactive treatment to restore and maintain landscapes with the goal of achieving healthy forests resilient to fire, while balancing the need to reduce catastrophic wildfire risk to WUI communities throughout the Southeast. Healthy working forests are part of Southerner's cultural heritage, as well as a critical part of the present economy and maintaining large expanses of fire adapted landscapes. The region's diversity and uniqueness means that restoring and maintaining landscapes is a critical goal. The wildland fire management community agreed that flexibility to select locally appropriate management techniques must be retained and encouraged so that prescribed burns can be implemented where appropriate and feasible, while in other areas mechanical treatments may be the only option. One key objective is identifying and focusing on the areas in which limited resources can be leveraged or combined to create the most significant impact on restoring landscapes and reducing the risk of catastrophic wildfires. However, rapid urbanization and soaring population within the Southeast may necessitate a greater focus on communities and the WUI rather than landscapes; therefore although Restore and Maintain Landscapes is a priority goal in the Southeast, management directives must be written with the understanding that restoration efforts may not be feasible in certain areas of the Southeast where human structures mingle with fire adapted landscapes in the WUI.

- 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.

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 wildland fire (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 wildland fire 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 wWildland ffire hHazards.

- 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

This goal is of key importance in the South, where human communities are adjacent to and even located within wildland fire prone landscapes. Communities can survive wildfire without loss of life or significant damage to infrastructure and recover and thrive economically. However, this requires human populations directly engage in wildland fire planning to assess the level of wildfire risk to themselves and their communities, sharing responsibility and participating in actively mitigating the threat. In order for this to be successful, communities must take responsibility for the consequence of their actions. At the same time, the wildland fire management community must catalyze this process through education, engagement, and outreach, and participate and support communities in preparation and planning. In addition to engaging with existing communities, a vital part of the engagement process must be raising awareness of incorporating wildfire risk awareness as part of the design process for future homes or communities. In the Southeast, there may be as much potential for change through engaging in the process of creating fire adapted human communities than through fuels management.

- 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 wildland fire 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.

Wildland Ffire Response

The following objectives related to improving wildland fire 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

Focused on firefighter safety, wildland fire management, and flexibility for locally appropriate response to unplanned ignitions, two main objectives were identified below. Of particular

concern in the Southeast is the need for specialized equipment such as tractor plows that are not in widespread use outside of the region. A second major concern is ensuring appropriate and consistent training for partners and cooperators, particularly RFDs, whose membership changes frequently. Finally, promote indirect attack where appropriate and effective to minimize risk to firefighters and maximize resource benefit. The wildland fire management community agrees a need exists for agencies and organizations to retain the ability to select and apply techniques and tactics based on local conditions and needs. 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.

-

DEVELOPING INITIAL ALTERNATIVES

Management Scenarios and Areas to Explore for Reducing Risk

Phase II of the Cohesive Strategy had two main thrustsmain components: (1) to bring together the stakeholders and communities toand 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~~are built on an understanding of the national goals and regional needs and constraints. ~~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 management constraints ~~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. Analytical methods will be used to test initial alternatives developed by the RSCs. The initial ~~se~~ 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~~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. This process has highlighted the importance of data standards and data accessibility across federal, state, tribal, local and non-governmental organizations. 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.

Formatted: Left

PHASE III PROCESS AND TIMELINE

Phase II of the National Cohesive Wildland Fire Management Strategy has drawn to a close and transition to and preparation for Phase III is underwayhas begun. Groups involved in Phase III will include yet not be limited to:the WFLC, WFEC, CSSC, NSAT, RSCs, and Working Groups and many stakeholders. The objectives, outcomes and 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 is detailed in this section. It is important to understand the completion of each phase of the cohesive strategy is a separate milestone and that the national cohesive strategy is an iterative process that will continue into the future.

Objectives

(1)   AComplete a national trade-off analysis will be completed in Phase III. The analysis will be a that uses science-based risk assessment thatto identifies y 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)   The Phase III report will sSummarize the national trade-off analysis and identify steps necessary to move toward the national goals identified in Phase I. 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.

Formatted: No bullets or numbering

Formatted: No bullets or numbering

(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.

   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.

(11)(12)

Timeline

The WFEC will work with the NSAT will work with the CSSC, NSAT, 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 set the stage for future work but it is anticipated that work on the regional activities will begin before the end of Phase III will begin in 2013, as will work to set up for the next iteration of the Cohesive Strategy.

Table 21. Phase III milestones and deliverables

Actions	Tentative Dates
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
National and Regional ~~Implemntation~~Implementation Plans~~Phase III implementation and review~~	2013

Comment [R15]: Option B is needed….after election cycle….

Table 2. Phase III milestones and Deliverables OPTION 2 (After Election Cycle)

Comment [ANS16]: WFEC Needs to pic timeframe to include in final document

Actions	Tentative Dates
CSSC quarterly meetings	Jan, April, July, Sept 2012
Final draft report of Phase III is complete	November 2012
WFEC approves draft report of Phase III	January 2013
WFLC approves draft report of Phase III	February 2013
National and Regional Implementation Plans	2013-2014

~~COMMUNICATIONS FRAMEWORK~~IMPORTANCE OF COMMUNICATION

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

Formatted: Indent: Left: 0", Right: 0"

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 WFLC and the WFEC recognized the importance of communication during the cohesive strategy process and committed resources and support to ensure that all interested stakeholders were able to access timely information, engage in the process and ~~ee~~ffect the final outcome.

Formatted: Indent: Left: 0", Right: 0"

Three e Communication Framework is designed to meet three Ooverarching communication outcomes where agreed to:. Information Dissemination, Organizational Communication and Collaboration, and Implementation. This was to insure that stakeholders, interested parties and the public were informed of progress in the development of the cohesive strategy, that communication processes were used to enhance and sustain collaboration among stakeholders toward development and implementation of the cohesive strategy and that management and oversight options were available to move forward on the cohesive strategy in a collaborative manner.

The process undertaken to craft the National Cohesive Wildland Fire Management Strategy for Wildland Fire Mangement differs from previousmany wildland fire documents and processes in the past due to the enhancedfull partnership between the federal, state, tribal, local and non-governmental organizations that supported the need for a national approach for wildland fire management.

> *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 theis Cohesive Sstrategy for Wildland Fire Management 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. This collaborative process is just beginning and will continue into Phase III and beyond."

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 WFEC, 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 healthy and resilient landscapes to fire-adapted communities, and wildland firefire 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). 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.

Affected party	A person or group of people who are affected by the outcome of a decision or action.
Biomass	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).
Fire-adapted community	Human communities consisting of informed and prepared citizens collaboratively planning and taking action to safely coexist with wildland fire.
Fire-adapted ecosystem	An ecosystem is "an interacting, natural system, including all the component organisms, together with the abiotic environment and processes affecting them" (NWCG Glossary). A fire-adapted ecosystem is one that collectively has the ability to survive or regenerate (including natural successional processes) in an environment in which fire is a natural process.
Fire community	Collectively refers to all those who are engaged in any aspect of wildland fire-related activities.
Fire exclusion	Land management activity of keeping vegetation or ecosystems from burning in a wildland fire.
Fire management community	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.
Fire science community	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.

Comment [ANS17]: Multiple definitions of biomass are available. This is not the biomass definition that WGA, NASF, NACO, etc. are using....Suggest using the Farm Bill definition if one is included in this document

Resilient	Generally referred to in this document as "resilient ecosystems," which are those that resist damage and recover quickly from disturbances (such as wildland fires) and human activities.
Silviculture	"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.
Stakeholder	A person or group of people who has an interest and involvement in the process and outcome of a land management, fire management, or policy decision.

ACRONYM LIST

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

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

National Policy Framework Documents including:

- *A Call to Action*, 2009,
  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

A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment: A 10-Year Strategy Implementation Plan. Western Governors Association, 2006, http://forestsandrangelands.gov/resources/plan/documents/10-yearstrategyfinal_dec2006.pdf,

References and Documents

A National Cohesive Wildland Fire Management Strategy, 2010
http://forestsandrangelands.gov/strategy/documents/reports/1_CohesiveStrategy03172011.pdf

Federal Land Assistance, Management and Enhancement Act of 2009 Report to Congress, 2010,
http://forestsandrangelands.gov/strategy/documents/reports/2_ReportToCongress03172011.pdf

Jakes, P, et al, Improving Wildfire Preparedness: Lessons from Communities across the U.S., Human Ecology Review, Vol 14, No 2, 2007, Society of Human Ecology,
http://www.sfrc.ufl.edu/faculty/monroe/jakesetal.pdf

Northeastern Regional Strategy Committee. 2011. *A National Cohesive Wildland Fire Strategy: Northeastern Regional Assessment*. September 30, 2011. 56 p

O'Laughlin, **Jay**. 2011. "Federal Land as a Percentage of Total State Land Area," Fact Sheet #8, Policy Analysis Group, College of Natural Resources, University of Idaho, Moscow. Available online at http://www.cnrhome.uidaho.edu/default.aspx?pid=120573

Southeastern Regional Strategy Committee. 2011. *A National Cohesive Wildland Fire Strategy: Southeastern Regional Assessment*. September 30, 2011. 79 p.

Western Regional Strategy Committee. 2011. *A National Cohesive Wildland Fire Strategy: Western Regional Assessment*. September 30, 2011. 61 p.

References from A National Cohesive Wildland Fire Strategy: Northeastern Regional Assessment. September 30, 2011.

Cardille, Jeffrey A., S. J. Ventura, and M. G. Turner. 2001. Environmental and Social Factors Influencing Wildfires in the Upper Midwest, United States. *Ecological Applications* 11:111–127.

Noss, Reed F., E.T LaRoe III, and J.M. Scott, 1995. Endangered Ecosystems of the United States: A Preliminary Assessment of Loss and Degradation. U.S Dept. of the Interior, National Biological Service, Washington DC. (http://biology.usgs.gov/pubs/ecosys.htm)

Nowacki, Gregory J., and M. D. Abrams. 2008. The demise of fire and "mesophication" of forests in the eastern United States. *BioScience* 58:123–138.

Nowak, D., J. Walton, J. Dwyer, L. Kaya, and S. Myeong. 2005. The increasing influence of urban environments on U.S. forest management. *Journal of Forestry* 103(8): 377-382.

Nowak, D., and J. Walton. 2005. Projected urban growth (2000-2050) and its estimated impact on the U.S. forest resource. *Journal of Forestry* 103(8): 383-389.

McCaffrey, Sarah. Personal communication.

Mangan, Richard. 2007. Wildland firefighter fatalities in the United States: 1990–2006. Boise, ID: National Wildfire Coordinating Group, Safety and Health Working Team, National Interagency Fire Center 841: 28.

Radeloff, V. C., R. B. Hammer, S. I. Stewart, J. S. Fried, S. S. Holcomb, and J. F. McKeefry. 2005. The Wildland-Urban Interface in the United States. *Ecological Applications* 15:799–805.

Smith, B., P. Miles, C. Perry, and S. Pugh. 2009. Forest resources of the United States, 2007. Gen. Tech. Rep. Washington, DC: U.S. Department of Agriculture, Forest Service, Washington Office: 336.

Stein, S., R. McRoberts, R. Alig, M. Nelson, D. Theobald, M. Eley, M. Dechter, and M. Carr. 2005. Forests on the edge: housing development on America's private forests. Gen. Tech. Rep. PNW-GTR-636. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station: 16.

Swanston, C., M. Janowiak, L. Iverson, L. Parker, D. Mladenoff, L. Brandt, P. Butler, M. St. Pierre, A. Prasad, S. Matthews, M. Peters, D. Higgins, and A. Dorland. 2011. Ecosystem vulnerability assessment and synthesis: a report from the Climate Change Response Framework Project in northern Wisconsin. Gen. Tech. Rep. NRS-82. Newtown Square, PA: U.S Department of Agriculture, Forest Service, Northern Research Station: 142.

USDA Forest Service, Fire and Aviation Management. 2006. Annual Wildland Fire Summary Report. [On)line database]. http://famweb.nwcg.gov. [Date accessed unknown].

USDA Forest Service, Northeastern Area. 2007. Northeastern Area State and Private Forestry Strategic Plan Update for Fiscal Years 2008-2012. Newtown PA. (http://na.fs.fed.us/pubs/strat_plan/na_strategic_plan_2008-2012_lr.pdf)

USDA Forest Service, Northeastern Area State and Private Forestry, Cooperative Fire Management. 2007. Combined Summaries of Community Wildfire Protection Data, March. Newtown Square, PA.

References from *A National Cohesive Wildland Fire Strategy: Southeastern Regional Assessment*. September 30, 2011.

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

Brown, D.G., K. M. Johnson, T. R. Loveland, and D. M. Theobald. 2005. Rural Land-Use Trends in the Conterminous United States, 1950–2000. Ecological Applications, 15(6) 2005. pp. 1851-1863.

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

Buckley, D., D. Carlton, D. Krieter, and K. Sabourin. 2006. Southern Wildfire Risk Assessment Final Report. http://www.southernwildfirerisk.com/reports/projectreports.html

Butler, B. J. and D. N. Wear. 2011. Chapter 5. Forest Ownership Dynamics of Southern Forests. In: Forest Futures Technical Report. D. N. Wear and J. G. Greis. http://www.srs.fs.fed.usda.gov/futures/

Lippincott, C.L. 2000. Effects of Imperata cylindrica (L.) Beauv. Cogon grass invasion on fire regime in Florida sandhill (USA). *Natural Areas Journal* 20:140-149.

Managing the Impacts of Wildfire on Communities and the Environment – A Report to the President in Response to the Wildfires of 2000. Fire and Aviation Management, USDA Forest Service.

Miller, J. H. D. and J. Coulson Lemke. Chapter 15. The Invasion of Southern Forests by Nonnative Plants: Current and Future Occupation with Impacts, Management Strategies, and Mitigation Approaches. In: Forest Futures Technical Report. D. N. Wear and J. G. Greis. http://www.srs.fs.fed.usda.gov/futures/

Mutual Expectations for Preparedness and Suppression in the Interface, *http://www.forestsandrangelands.gov/strategy/documents/mutual_expectations_2010.pdf*

Nowacki, G.J. and M.D. Abrams. 2008. The demise of fire and "mesophication" of the eastern united states. *BioScience*, 58, 123–128.

Poulter, B., R.L. Feldman, M. M. Brinson, B. P. Horton, M. K. Orbach, S. H. Pearsall, E. Reyes, S. R. Riggs, and J. C. Whitehead. 2009. Sea-level rise research and dialogue in North Carolina: Creating windows for policy change. *Ocean and Coastal Management*. 52(3-4):147-153.

Smeins, F.E. and L.B. Merrill. 1988. Long-term Change in a Semi-arid Grassland. In. Edwards Plateau Vegetation – Plant Ecological Studies in Central Texas. Edited by B.B. Amos and F.R. Gehlbach. Baylor Univ. Press, Waco. 144 p.

Southern Group of State Foresters 2007. Issue Paper Wildland Fire and Forest Fuels on Private and State Lands. http://www.forestry.ok.gov/websites/forestry/images/3.5_3000_CF_Wildland%20Fire%20And%20Fuels%20Priority%20Issue%20Paper.pdf

Stanturf, J. A. and S. L. Goodrick. 2011. Chapter 17: Fire. In: Forest Futures Technical Report. D. N. Wear and J. G. Greis. http://www.srs.fs.fed.usda.gov/futures/

Stephens, S.L. 2005. Forest fire causes and extent on United States Forest Service lands. International *Journal of Wildland Fire*, 2005. 14, 213-222.

U.S. Forest Service. United States Global Change Research Program. 2011. Southeast Region. In. USGCRP Global Climate Change Impacts in the U.S. Accessed July 30, 2011. http://www.globalchange.gov/publications/reports/scientific-assessments/us-impacts/full-report/regional-climate-change-impacts/southeast

Western National Forests: A Cohesive Strategy is needed to address Catastrophic Wildland Fire Threats. 1999. U.S. General Accounting Office.

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

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

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

References from A National Cohesive Wildland Fire Strategy: Western Regional Assessment. September 30, 2011.

Public Land Ownership by States. http://www.nrcm.org/documents/publiclandownership.pdf

National Fire Protection Association (NFPA) Third Needs Assessment of the U.S. Fire Service; Conducted in 2010 and Including Comparisons to the 2001 and 2005 Needs Assessment Surveys.

APPENDIX C: MEMBERSHIP LISTS

Northeast Region

Northeast Regional Strategy Committee

Name	Agency / Organization
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

Name	Agency / Organization
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

Northeast RSC Support Staff

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

Southeast Region

Southeast Regional Strategy Committee

Name	Agency / Organization
Mike Zupko (Chair)	SGA / SGSF
Kevin Fitzgerald (Vice Chair)	NPS
Liz Struhar	NPS (alternate)
Liz Agpaoa	USFS Southern Region
Dan Olsen	USFS (alternate)
Toim 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

Name	Agency / Organization
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

Name	Agency / Organization
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

Western Region

Western Regional Strategy Committee

Name	Agency / Organization
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

Name	Title/Organization
Bill Avey	USFS
Bill Trip	Karuk Tribe
Carol Daly	Flathead Economic Policy - WGA
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 SubcommitteeOversight Committee

Name	Agency / Organization
Lew SouthardTom Harbour	USFS
Jenna Sloan/Gus SmithKirk Rowdabaugh	DOI
Maureen Hyzer	USFS
Clint Cross	USFS
Tim Sexton	USFS
Bill Van Bruggen	USFS
Susan Stewart	USFS
Dan Smith	NASF
Caitlyn Pollihan	NASF
Bob Roper/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
Patti BlankenshipAitor Bidaburu	USFA
Jim Kelton	USFWS
Jim Erickson	ITC

Wildland Fire Executive Council

Name	Agency / Organization
Bill Kaage	NWCG
Douglas MacDonald	IAFC
Elizabeth Strobridge	NGA
Glenn Gaines	DHS
Jim Erickson	ITC
Jim Karels	NASF
Kirk Rowdabaugh	DOI
Mary Jacobs	NLC
Ryan Yates	NACo
Tom Harbour	USFS
Support Staff	
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
Butch Blazer~~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
John Kitzhaber~~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

Situation and Context
1. What is the National Wildland Fire Management Cohesive Strategy (Cohesive Strategy)?
2. What are the primary overarching goals of the Cohesive Strategy?
3. What is the specific role of regional efforts in the Cohesive Strategy?
4. What do you hope to accomplish with this specific workshop?

Guidelines
5. What general policies, regulations or laws govern wildland fire management in your area, agency or organization?
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.

Values
7. What broad societal and environmental values have been associated with fire in this region?
8. Briefly characterize how each broad value relates to or is affected by fire.
9. What are the dominant common values or perspectives among agencies? What are the dominant conflicts among values or perspectives?
10. Which of these conflicts are exceptionally difficult to address and why?

Uncertainties
11. What challenges in wildland fire management are created or compounded by lack of knowledge or understanding?
12. What societal or environmental changes or trends could affect wildland fire?
13. Briefly describe the uncertainties associated with these changes or trends that make them difficult to predict.

Goals and Objectives
14. What broad management goals or priorities exist for this area that relate to wildland fire?
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)?
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?
    - 1. Restoring and maintaining resilient landscapes
        - 1.1
        - 1.2
    - 2. Creating fire-adapted communities
        - 2.1
        - 2.2
    - 3. Wildfire Response
17. Which of the above are the highest priorities for completing this assessment and analysis?
18. For each priority goal, identify contributing objectives, and a range of actions and activities that could meet each objective.
19. Now finalize into an objectives hierarchy.

Measures for Success (Endpoints)
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).
21. What is the level of acceptability of these endpoints given the range of perspectives and values?

ALTERNATIVES

Actions
22. List the possible broad actions and activities from the objectives section (#).

Alternatives
23. Identify the combination of actions and activities that best reflects the continuation of current policies and practices.
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.
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.
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.

A NATIONAL COHESIVE
WILDLAND FIRE MANAGEMENT STRATEGY
PHASE II NATIONAL REPORT
10/~~1515~~18/2011 DRAFT

Table of Contents

Insert photo of wildland fire

EXECUTIVE SUMMARY

The National Cohesive Wildland Fire Management Strategy (Cohesive Strategy) Phase II is a collaborative effort to identify, define, and address wildland fire problems and opportunities in the three regions of the United States: the Northeast, the Southeast, and the West. Addressing wildland fire problems requires a multi-jurisdictional approach with cooperation and effective communication between the stakeholders. The Cohesive Strategy brings together representatives of federal, state, local, and tribal governments, and non-governmental organizations to describe the unique problems experienced in each region. These stakeholders collaboratively and identify current successful actions and immediate steps than can be taken to reduce the risk of fire to communities, to restore resilient landscapes, and to improve wildfire wildland fire response.

Clarifying the roles and responsibilities of those engaged in wildland fire protection will bring a renewed and strengthened approach to addressing our nation's wildland fire problems, and will lessen tensions that may be experienced in some locations. Increasing partnerships and increasing opportunities to collaborate among organizations is critical to maximizing opportunities for successful wildland fire management. Phase II brought about a commitment by cities, counties, states, and public and private landowners to make progress on accomplishing the three goals of the Cohesive Strategy:

- Restoring and maintaining resilient landscapes;
- Creating fire-adapted communities; and
- Responding to wildfires. (wildland fires).

The Wildland Fire Leadership Council (WFLC) has adopted this vision for the next century: "To safely and effectively extinguish fire when needed; use fire where allowable; manage our natural resources; and as a nation, to live with wildland fire." The fundamental role of the WFLC is to provide guidance to the regions through efficiency improvements, to fully utilize existing authorities to accomplish the three national goals, and to provide the decision space necessary to implement identified current successful regional actions.

The three regions face differing wildland fire problems due to differences in geography, climate, and land ownership patterns. In Phase II of the Cohesive Strategy, the regions formed Regional Strategy Committees (RSCs) to develop regional assessments, identify the regional challenges, improve communication among partners, and identify strategies and opportunities for improvement. The Regional Assessments form the basis for this NationalNnational report on Phase II. Phase II brings together the RSCs in a holistic approach to create a unified strategy, not just for wildland fire suppression, but exploringto exploreingexploring issues of natural resource management, and 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.

Northeast Region

The Northeast ~~region~~ Region ~~is comprised ofof~~comprises 20 states and is the most densely populated region. The vast majority of the land is in private ownership and fires occur primarily in the spring, fall, and summer. Seasonal and extended drought conditions often create ~~wildfire~~ wildland fire hazards in the Northeast. Local partnerships focus on initial attack and putting fires out quickly. Fire suppression is accomplished through interstate compacts among the states and with Canada.

Southeast Region

The ~~Southeast region~~Southeast~~Southeast~~ ~~r~~Region ~~is comprised onon~~comprises 13 states stretching from the Atlantic Seaboard to Texas. High wildland fire occurrence, extensive ~~Wildland Urban Interface~~W~~wildland-~~u~~Urban I~~interface (WUI), a year-round fire season, and rapid regrowth of vegetation/fuels characterize the ~~wildfire~~wildland fire problem in the Southeast. Land ownership is highly fragmented with the majority of forestlands in private ownership. Fragmentation poses a challenge to a coherent policy of landscape management and fuels reduction. A culture of prescribed burning exists in the Southeast and is essential to managing fuel loads. The Southeast implements more prescribed burns, with more acres treated than any other region, mostly on private land. Fire suppression is accomplished by cooperation and partnerships between local,~~ and~~ state, and federal fire resources, and interstate forest fire compacts.

West Region

The ~~western region~~W~~west~~western~~ r~~Region ~~is comprised of~~ comprises 17 states spanning nearly half of the continental U.S, including Alaska, Hawaii, and the affiliated Pacific Islands. Wildland fire in the West is challenging due to vast areas of publicly owned and managed lands where access is extremely limited, terrain is steep, and the climate is arid or semi-arid. In ~~these~~ areas managed for wilderness values, wildland fire management focuses on achieving ecological objectives rather than a suppression response. The West has been in an extended drought for more than a decade, which ~~not only~~ increases ~~the~~ threats posed by~~ of~~ wildfire, but also fosters infestations of bark beetles, which are killing trees and leaving millions of acres of dead, standing trees (see appendix F).~~ ~~ The West has seen a rapid escalation of severe fire behavior over the past two decades resulting in increased fire suppression costs, significant home and property losses, and increased threats to communities. Wildland fires in the West result in complex and costly efforts for post-fire restoration due to steep topography and highly erosive soils and flooding. Fire suppression is accomplished by cooperation and partnerships ~~between~~among local, state, and federal ~~fire resources~~agencies and organizations.

Values, Objectives and Actions Common to All Regions

 As part of the assessments, the RSCs identified regional values and objectives. Some common objectives and actions were identified in Phase II and are discussed in detail within the Phase II National Report.

Values – ~~Many~~Each RSC articulated ~~M~~many value statements ~~were articulated by each RSC~~, and a short overview of each ~~is shownshown~~appears in this document. Several values were common to all three regions, including: safety of firefighters and the public, protection of private property, conservation of air and water quality, restoring healthy and resilient landscapes, 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 and Actions – 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. The regions support working forests and wildlands, local economies and jobs, and diverse products and markets. Several cross-cutting objectives, so-called because they will affect all three national goals simultaneously, were identified across the regions:

(1) Invest in, learn from, and build upon successful partnership and ~~collaboration~~collaborative~~on~~ efforts, including Community Wildfire Protection Plans, or their equivalent~~collaboration efforts~~.

(2) Develop and conduct effective education and outreach to empower citizen engagement in, and support for, wildland fire management activities.

(3) Proactively use a variety of active vegetation management tools and techniques, including prescribed fire, to achieve local and large landscape objectives.

~~The regions support working forests and wildlands, local economies and jobs, and diverse products and markets.~~

Regional information, identification of values, trends and risks, and the delineation of actions, objectives, and performance measures identified in the regional assessments will be valuable in Phase III of the Cohesive Strategy. The regional assessments will be used to build a national trade-off analysis. For detail beyond what is included in this national report, see the regional assessments.

The RSCs coordinate with the National Science and Analysis Team (NSAT) to incorporate the best available science into the Cohesive Strategy. The NSAT uses 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 is included in appendix G of this report. The WFEC, CSSC, RSCs and the NSAT will continue to work together in Phase III.

The key to the Cohesive Strategy's success is the commitment to collaboration. Working together will allow us to accomplish the goals of the National Cohesive Strategy for Wildland Fire Management.

INTRODUCTION

When landscapes burn, lives, property, and ecological values are at risk. In 2011, t~~T~~he Wallow Fire in Arizona and New Mexico ~~which~~ burned over 841 square miles and destroyed more than 30 structures, ~~the~~ fires in the state of Texas ~~which~~ burned over 3.7 million acres and consumed over 7,000 structures, and the Pagami Creek Wildfire ~~which~~ burned over 100,000 acres in the Boundary Waters Canoe Area Wilderness in Minnesota. ~~, are all examples of uncharacteristically large wildland fires occurring across the nation in 2011.~~

~~When landscapes burn, lives, property, and ecological values are at risk.~~ Fire is a natural process and a mechanism for biological renewal across forest and rangeland ecosystems. During the 20th century, federal, state, and local firefighters were successful at putting out most ~~wildfires~~ wildland fires in the early stages. An unintended consequence of their diligence, partnered with the lack of active management of our landscapes, is the overstocking of our nation's forests 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~~wildland fires that threaten homes, communities and resource values, and can cause widespread property damage.

Large and destructive ~~wildfires~~wildland fires led to the drafting of the 1995 Federal Wildland Fire Policy and Program Review, a look at wildland fire issues, mainly focused on the federal ownership, including fuels management, the role of fire in the environment, and wildland-urban interface issues. 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, tribes, 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.

The Quadrennial Fire and Fuels Review was conducted in 2005, and then in 2009 the Quadrennial Fire Review (QFR) was completed. 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 anticipated future wildland fire management needs. ~~and~~ risk to communities and fire-fighters, as well as described core mission strategies and key capabilities that can be applied to ~~the~~ wildland fire management challenges. This was also the first in what would become a series of reviews, plans and strategies to move the fire community and the nation forward safely and more effectively. None, however, completely solved the problems, as communities and the ~~wildfire~~wildland fire environment are constantly changing, requiring the fire community to do the same.

Annual fire suppression costs are high. In ~~2000~~2002, the cost of suppression to the federal government ~~for the federal government was $1.4 billion and in~~~~was~~~~in~~ ~~2002, the cost increased to~~ $1.7 billion. ~~And in~~In 2008, $11.6 ~~; billion was spent~~; billions more have ~~have~~ been spent by state and local governments spent over $1.6 billion on suppression and wildland fire mitigation. 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 wildland fire management in the United States. ~~Despite increased investment in fuels treatments and preventive efforts funded by the National Fire Plan, wildland fire suppression costs have continued to rise.~~

> **Comment [ANS1]:** Verbatim from Report to Congress page 3

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.

Within the fire community, a shared vision has taken shape: working together to prepare the landscape for natural fire occurrences, to prepare communities to face wildfire risks, and to coordinate effective wildland fire response. Foundational documents, as identified in the Phase I of the Cohesive Strategy, highlighted the need for shared responsibilities, effective partnerships, and improved interagency coordination and response. They created an imperative for and the need for a new direction in and direction and expectations for federal, state, and local wildland fire protection agencies as imperative to solve address solve solve our nation's wildland fire problem and create well-prepared, fire-adapted communities and healthy, resilient landscapes at the most efficient cost.

In 2010, Phase I of the Cohesive Strategy outlined a three-phase process to address the three primary factors presenting the greatest challenges and opportunities to make a positive difference to fire management: restoring and maintaining resilient landscapes, creating fire-adapted communities, and improving wildfire response. The Cohesive Strategy builds upon previous work, the Foundational f Foundational d Documents Foundational Documents, and Guiding Principles and Core Values identified in Phase I.

A NATIONAL APPROACH National APPROACH 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.

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 WFLC laid out a new vision for the next century 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" began in Phase II of the Strategy strategy with the creation of RSCs and the development of regional strategies. Those regional strategies will unite to form one national strategy. The Cohesive Strategy is different from all prior plans because of the collaborative process by which it was formulated. It is not merely a strategy for federal agencies, it is a strategy for the many groups that have come together across the nation to combine their regional perspectives and create one holistic,

shared vision of how all stakeholders can work together to reduce risks of wildland fire to landscapes~~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, 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.

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 agencies, firefighting organizations, tribes, counties, and cities (see figure 1).

Figure 1. 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 meet the needs to complete Phase III. The WFEC is responsible for promoting and facilitating the implementation for the Cohesive Strategy. The CSSCs and RSCs are chartered sub-groups of the WFEC. The CSSC was chartered at the beginning of Phase I and the RSCs and their working groups were chartered at the beginning of Phase II and will continue to function through Phase III and beyond.

The RSCs are 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 WFEC, CSSC and RSCs as the Phase III trade-off analyses are completed.

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.

In Phase II, the CSOC transitioned into the Cohesive Strategy ~~Subcommittee~~Sub-Ceommittee~~Subcommittee~~ (CSSC). ~~The WFEC and CSSC guided Phase II through completion of the regional assessments and drafting of the national report.~~ Phase II was directed by the Wildland Fire Executive Council (WFEC) and developed by the Cohesive Strategy Sub-Committee (CSSC) which are composed of representatives of federal and state 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.

Figure 2. Cohesive Strategy Regions: Northeast, Southeast, and West

Phase II of the Cohesive Strategy provided a unique opportunity to the three regions of the country— —Northeast, Southeast, and West (see ~~figure 1)~~figure 2)— —to chart their own course in landscape and wildland fire management to reduce the risks posed by wildland fire to multiple values. The RSCs came together~~,~~, with the support of Working Groups, and~~that that~~ broadened engagement ~~to~~of~~to~~ regional stakeholders, managers and analysts, non-governmental organizations and universities, to identify the challenges, values, and opportunities for improved land and fire management in their regions.- This regional approach to Phase II of the Cohesive Strategy ~~for Wildland Fire Management~~ will result in a national strategy that is supported by local, regional and national information, engagement and action. Regional assessments ~~will~~ include obstacles, real and perceived, that stakeholders experience and identify strategies to address them.

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 used by the WFEC, CSSC and the RSC's 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.

Comparative Risk Assessment within the Cohesive Strategy

A comparative risk assessment tool to evaluate the consequences of alternative wildland fire management strategies was proposed in Phase I of the Cohesive Strategy. The Phase I document 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.

In conjunction with the NSAT, the R~~egional Strategy CommitteesCommittees~~SCs embarked on this Phase II process, which included specifying regional objectives ~~nd~~and~~nd~~ designing initial alternatives. 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~~the~~e~~the ~~basic~~ framework for the work of the NSAT.

Regional Strategy Committees

The RSCs were supported in their efforts by the ~~National Science and Analysis Team (~~NSAT~~).~~), which ~~.~~. ~~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 RSCs ~~work~~ identified current ~~successsuccessessuccess~~, relationships, and opportunities for work that can be done before the completion of Phase III of the Cohesive Strategy. ~~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.

Comment [ANS6]: 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.</comment>

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. A~~d (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.

Comment [CR7]: Will the map of public land ownership be inserted here?

Phase II gave the RSCs an opportunity to take ownership of regional ideas and goals~~ 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 a variety of 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.

Comment [CR8]: We need the communications framework in this document somewhere.

PHASE II – REGIONAL ASSESSMENTS AND STRATEGIES 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 E). 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 wildland fire and fire response in each region. They describe the values, both ecological and social, within the regions and the trends and uncertainties relating to wildland fire and risks to landscapes and communities. The RSCs developed objectives and initial alternatives and actions.

As a prelude to Phase III, the RSCs described initial alternatives to be considered for reducing risk to meet the national goals identified in Phase I. They are a broad set of alternatives that, with the help of analytical methods 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." The assessment process and the resulting collaboration and identification of regional issues will continue as we move into Phase III and beyond.

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 the report.

REGIONAL COLLABORATION AND OUTREACH

RSCs are collaborative teams representing wildland fire agencies, tribes, industry, and non-governmental organizations. The RSCs undertook extensive outreach to contact stakeholders for input on the core questions relating to challenges, values, trends, and objectives. This unprecedented outreach strategy is the key to building a national cohesive strategy for wildland fire management.

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, and 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 AppendixAappendix C D for RSC and Working Group members.)

RSCs contacted over 1,300 stakeholders by telephone and email and through posts to outreach websites and in person at meetings. 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.

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

Phase II of the Cohesive Strategy identifiesdidentified the unique legal, regulatory and jurisdictional environment in which wildland fire and resource management agencies operate nationally and regionally. Wildland fire and resource management decisions are guided and informed by a suite of laws, regulations and administrative policies that exist at the federal, state, tribal and local levels. The interpretation of the laws, policies and regulations ultimately determine management activities. Phase II regional assessments identifyied ffederalidentified federal laws – such as the National Environmental Policy Act

and the Endangered Species Act, which (ESA) guide planning processes on federal lands and provide for the protection and conservation of rare, threatened, and endangered species – as significant laws impacting the accomplishment of wildland fire and resource management goals. Other key laws and regulations that impact the ability of managers to achieve natural resource and wildland fire management objectives identified across the regions includedareincluded the National Forest Management Act (NFMA), . the Environmental Protection Agency's smoke management policies and the U.S. Forest Service's National Forest System Land Management Planning Rule, among others.

Through the development of regional objectives and actions, the Regional Strategy CommitteesSCs proposed constructive resolutions to these ongoing policy conflicts and suggested ways to take advantage of the opportunities they present. Opportunities to address policy barriers and gaps that prevent full coordination and collaboration and/or the most flexible use of existing authorities to plan and implement landscape-scale treatments awererewere identified in the regional assessment reports.

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 (Aappendix DDDE) 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.

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,
- Restoring Restoration of healthy and resilient landscapes, and
- Protection of scenic view sheds. (visible natural environment).

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 identify 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,

<div style="float:right; border:1px solid; padding:4px;">
Comment [R10]: New word to describe this?? I don't know if this is any better –
PG: Definition of viewshed at first mention might help.

Formatted: Heading 2
</div>

- 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

Land Ownership in the Northeast Region

Ownership
- ▮ Federal Land
- ▮ Native American Land
- ▮ State Land
- ▮ Other Public Land
- ▮ Private Land

0 75 150   300 Miles

1 inch = 157.83 miles

Produced by the U.S. Forest Service, Northeastern Area State and Private Forestry, MDH 9/15/11

Figure 3. Map showing Northeast Region land ownership

Values

The Northeast RSC ~~identified~~ identifies a variety of unique values and ~~grouped~~ groups 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 ~~thethe~~these 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~~ will be 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, all of 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

PLACEHOLDER SOUTHERN MAP

Figure 4. Map showing Southeast Region land ownership

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~~ categorizes 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 wildland fire ~~and~~ prescribed burns~~,),~~ ~~have~~ has a significant place in the history and culture of the Southeast. Historically, individual landowners played a large role in prescribed burning, ~~and~~ 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 wildland fire 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 ~~wildfirewildfire~~wildland fire 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 wildland fire 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 West~~ern~~ Region Values, Trends, and Risks

Figure 5~~. Percent of federal lands in each state~~

The West is dominated by large blocks of public land, which present challenges in fire and land management~~.~~

Values

The Western RSC ~~identified~~ identifies many values similar to those of the other two regions; however, the following values ~~were~~ are 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

Formatted: Figure caption

Unique West~~ern~~ Region Values, Trends, and Risks

Figure 5~~. Percent of federal lands in each state~~

The West is dominated by large blocks of public land, which present challenges in fire and land management~~.~~

Formatted: Figure caption

Values

The Western RSC ~~identified~~ identifies many values similar to those of the other two regions; however, the following values ~~were~~ are 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, cultural resources, and dynamic and diverse habitats. The appearance of the landscape is important and aesthetics vary by individual, 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 ofmaintaining public access to them the lands 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 wildland fire 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 addresses 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 Western RSC sought seeks to build upon in developing its assessment and strategy.

OBJECTIVES ~~AND ACTIONS~~AND ACTIONS~~, ACTIONS, AND PERFORMANCE MEASURES~~ACTIONS

The aim of the Cohesive Strategy is to produce a strategy for achieving the national goals and reducing risks posed by wildland fire~~risk~~ that incorporates objectives and actions at the national, regional, and local level. Phase II ~~did~~ does 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 identify~~iedidentified~~ objectives ~~and actions~~ in exactly the same language, there are significant elements held in common among all three regions. The following sections outline the objectives and actions developed by the RSCs, highlighting objectives and actions that are held in common across the regions and/or across the national goals. The ~~following~~ common concepts are synthesized from the regional objectives and actions~~ and actions~~, which are quoted from the regional assessments in the next sections. Objectives and actions 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.~~-~~ More information on these objectives and ~~accompanying~~ actions can be found in the regional assessment reports.

Actions ~~Supporting All Three National Goals~~Common to the Three National Goals

Each of the RSCs identify~~iedidentified~~ concepts that contribute to success in each of the three national goals. In reviewing these proposed actions, all three RSCs emphasize~~d~~ 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 and wildlands, local economies and jobs, and diverse ~~forest~~ products and markets.

Restore and Maintain Resilient Landscapes

Despite the unique regional ecosystems and social-economic contexts under which objectives and actions ~~were~~ have been developed, a number of ideas emerge~~d~~ 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 emergeelements that contribute to creating fire-adapted communities are held in commondemerged:

- Reduce unwanted human-caused wildland fire ignitions in and near communities.

- Support community wildland fire protection planning.

Wildland Fire Response

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

- Provide for firefighter and public safety.

- Improve effectiveness and efficiency of the wildland fire management organization.

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.

Regional Actions Common to the Three National Goals

The focus of Phase II is 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.

Based on unique regional conditions and stakeholder engagement, the Northeast, Southeast, and West identify, individually,ied 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 awerewere 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 identifiesdidentified several actions and activities common across the national goals and regional objectives. Listed below, theyThese actionsthey 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 agreesdagreed 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 wildland fire 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 wildland fire 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

Response to this goal in the Southeast, acknowledges the challenge of maintaining or restoring landscapes ~~is especially~~in a ~~especially~~ complex ~~with the wealth~~ environment of many small landowners~~;~~ in ~~the Southeast, and~~ the objectives focus on a need for locally-calibrated, proactive treatment to restore and maintain landscapes. Resilient landscapes are ~~with the goal of achieving healthy forests~~ resilient to fire and balance~~,~~ while balancing the need to reduce catastrophic wildfire risk to WUI communities throughout the Southeast. Healthy working forests are part of ~~Southerner's~~the Southeast's~~Southerner's~~ cultural heritage, as well as a critical part of the ~~present~~regional~~present~~ economy~~ and maintaining large expanses of fire adapted landscapes~~. The region's diversity and uniqueness means that restoring and maintaining landscapes is a critical goal. The wildland fire management community agrees~~agreed~~ that flexibility to select locally-appropriate management techniques must be retained and encouraged so that prescribed burns can be implemented where appropriate and feasible, while in other areas mechanical treatments may be the only option. One key objective is identifying and focusing on the areas in which limited resources can be leveraged or combined to create the most significant impact on restoring landscapes and reducing the risk of catastrophic wildfires. However, rapid urbanization and soaring population within the Southeast may necessitate a greater focus on communities and the WUI rather than landscapes; therefore although Restore and Maintain Landscapes is a priority goal in the Southeast, management directives must be written with the understanding that restoration efforts may not be feasible in certain areas of the Southeast where human structures mingle with fire adapted landscapes in the WUI.

- 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 wildland fire (i.e. storm damage, insects, ice storms, hurricanes, insects and disease) that reduce ecosystem vitality and increase susceptibility to wildfire.

~~Western~~ West 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 at the center of coordinated cross-jurisdictional wildland fire 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 wildland fire 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

This goal is of key importanceparticularly importantimportance in the SoutheastSouth, where human communities are adjacent to and evenoreven located within wildland fire prone landscapes.

Communities can survive wildfire without loss of life or significant damage to infrastructure and recover and thrive economically. However, this requires human populations directly engage in wildland fire planning to assess the level of wildfire risk to themselves and their communities, sharing responsibility and participating in actively mitigating the threat. In order for this to be successful, communities must take responsibility for the consequence of their actions. At the same time, the wildland fire management community must catalyze this process through education, engagement, ~~and~~ outreach, and ~~participate and~~ support to communities in preparation and planning. In addition to engaging with existing communities, a vital part of the engagement process must be raising awareness of incorporating wildfire risk ~~awareness as part ofinto~~of the design process for future homes ~~and~~eror communities. In the Southeast, there may be as much potential for change through engaging in the process of creating fire adapted human communities ~~than~~as~~than~~ through ~~effective~~ fuels management.

- 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.

West~~ern~~ Region

Preventing or minimizing the loss of life and property due to wildland fire 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.

Wildland Fire Response

The following objectives related to improving wildland fire 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. Focused on firefighter safety, wildland fire management, and flexibility for locally-appropriate response to unplanned ignitions, two main objectives are identified below. Of particular concern in the Southeast is the need for specialized equipment such as tractor plows that are not in widespread use outside of the region. A second major concern is ensuring appropriate and consistent training for partners and cooperators, particularly RFDs, whose membership changes frequently. Finally, promoting indirect attack where appropriate has proven an effective way to minimize risk to firefighters and maximize resource benefit. The wildland fire management community agrees a need exists for agencies and organizations to retain the ability to select and apply techniques and tactics based on local conditions and needs.

- Increase firefighter safety by using risk management.

- Increase and leverage resource capability and capacity. Streamline and support training across all areas to maximize effectiveness.

West~~ern~~ Region

Focused on firefighter safety, wildland fire management, and flexibility for locally appropriate response to unplanned ignitions, two main objectives were identified below. Of particular concern in the Southeast is the need for specialized equipment such as tractor plows that are not in widespread use outside of the region. A second major concern is ensuring appropriate and consistent training for partners and cooperators, particularly RFDs, whose membership changes frequently. Finally, promote indirect attack where appropriate and effective to minimize risk to firefighters and maximize resource benefit. The

wildland fire management community agrees a need exists for agencies and organizations to retain the ability to select and apply techniques and tactics based on local conditions and needs.

- ~~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.

DEVELOPING INITIAL ALTERNATIVES

Management Scenarios and Areas to Explore for Reducing Risk

Phase II of the Cohesive Strategy had two main components: (1) to bring together the stakeholders and communities to 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 built on an understanding of the national goals and regional needs and constraints. 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 management constraints 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. Analytical methods will be used to test initial alternatives developed by the RSCs. The initial 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"

To develop "alternative management scenarios", the nNortheast RSC spent much of their time identifying objectives and activities that would significantly increase, decrease, or change their ability to meet the national goals. They developed a list of activities that they wanted the NSAT to explore to determine how much change would occur if the activity wais increased, decreased, or eliminated. The activities listed are not proposed "alternatives.". They are simply a list of areas to explore to determine if efficiencies can be gained by reallocating resources. The Northeast RSC feltels they simply needed more data to develop althernative management scenarios. The Northeast articulatedsThe 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~~modifying~~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~~ sees 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, focusing on~~across~~ ~~across~~ the national goals. Each scenario emphasizes a subset of the regional objectives and actions while assuming no significant increase~~s~~ or decrease~~s~~ 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~~fuels~~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. This process has highlighted the importance of data standards and data accessibility across federal, state, tribal, local and non-governmental organizations.

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.

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 transition to Phase III ~~.underway~~under way. Groups involved in Phase III include the WFLC, WFEC, CSSC, NSAT, RSCs, Working Groups, and many other stakeholders. The objectives, outcomes, and timeline for completing Phase III and moving toward implementation and revision of the Cohesive Strategy ~~is~~are detailed in this section. It is important to understand that the completion of each phase ~~of the cohesive strategy~~Cohesive ~~s~~Strategy is a separate milestone and that the ~~national c~~Cohesive ~~S~~strategy~~cohesive strategy~~ is a national, iterative process that will continue into the future.

~~Objectives~~

~~AComplete aA~~ national trade-off analysis will be completed in Phase III. The analysis will be a ~~that uses~~ science-based risk assessment ~~that~~to identif~~ies y~~a range of alternatives that:

- ~~a.~~ Point toward an effective path to~~ward~~ 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.

The Phase III report will ~~sSummarize~~summarize the national trade-off analysis and identify steps necessary to move toward the national goals identified in Phase I.

~~(2)   Engage stakeholders in the crafting and updating of the national trade-off analysis and Phase III report.~~

~~(3)   Assign responsibility for implementation of regional and national priority actions.~~

~~(4)   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.

(6)(7) Clearly articulates wildland fire governance, roles, and responsibilities.

(7)(8) Facilitates individual and community acceptance of and action upon their responsibility to prepare their properties for wildfire.

(8)(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.

(9)(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.

(12) Establishes 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.

(13) Fully articulates the Cohesive Strategy as an ongoing, iterative process to develop and explore alternatives.

Timeline

The WFEC will work with the CSSC, NSAT, RSCs, and other 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 Table .

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 strategies identified in Phase III will set the stage for future work, but it is anticipated that

work on the regional activities will begin before the end of Phase III, as will work to set up for the next iteration of the Cohesive Strategy.

Table 21. Phase III milestones and deliverables

Actions	**Tentative Dates**
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
National and Regional Implementation Plans	2013

Table 2. Phase III milestones and Deliverables OPTION 2 (After Election Cycle)

Actions	**Tentative Dates**
CSSC quarterly meetings	Jan, April, July, Sept 2012
Final draft report of Phase III is complete	November 2012
WFEC approves draft report of Phase III	January 2013
WFLC approves draft report of Phase III	February 2013
National and Regional Implementation Plans	2013-2014

IMPORTANCE OF COMMUNICATION

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

The Wildland Fire Executive Council (WFEC) created the Cohesive Strategy Communication Workgroup on September 2, 2011. The WFLC and the WFEC recognized the importance of communication during the cohesive strategyCohesive sStrategy process and committed resources and support to ensure that all interested stakeholders were are able to access timely information, engage in the process, and aeffect the final outcome.

Overarching communication outcomes where agreed toupon: Information Dissemination, Organizational Communication and Collaboration, and Implementation. This was is to insureensure that stakeholders, interested parties, and the public were are informed of progress in the development of the cohesive

Cohesive ~~strategy~~Strategy, that communication processes ~~were~~ are used to enhance and sustain collaboration among stakeholders toward development and implementation of the ~~cohesive~~ Cohesive ~~s~~Strategy, and that management and oversight options ~~were~~ are available to move forward on the ~~cohesive~~ Cohesive ~~s~~Strategy in a collaborative manner.

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. Successful implementation of the Cohesive Strategy ~~for Wildland Fire Management~~ 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. This collaborative process is just beginning and will continue into Phase III and beyond.

Phase II has shown the value of a decision-making structure that operates from the top-down and from the bottom-up. 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 WFEC, CSSC, ~~to~~ the RSCs, ~~to~~ and 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 healthy and resilient landscapes to fire-adapted communities, and wildland fire 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). 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.

Affected party

A person or group of people who are affected by the outcome of a decision or action.

Biomass

Any organic matter that is available on a renewable or recurring basis. Under the Farm Security and Rural Investment Act of 2002 (Title IX, Sec. 9001), biomass includes agricultural crops, trees grown for energy production, wood waste and wood residues, plants (including aquatic plants and grasses), residues, fibers, animals wastes and other waste materials, and fats, oils, and greases (including recycled fats, oils, and greases), but not recycled paper or unsegregated solid waste. ~~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 (fromfromFfrom USDA Forest Service Southern Research Station Glossary of terms).)~~ Farm Bill Glossary on the National Agricultural Law Center website http://nationalaglawcenter.org/#.)

Fire-adapted community

Human communities consisting of informed and prepared citizens collaboratively planning and taking action to safely coexist with wildland fire.

Fire-adapted ecosystem

An ecosystem is "an interacting, natural system, including all the component organisms, together with the abiotic environment and processes affecting them" (NWCG Glossary). A fire-adapted ecosystem is one that collectively has the ability to survive or regenerate (including natural successional processes) in an environment in which fire is a natural process.

Fire community

Collectively refers to all those who are engaged in any aspect of wildland fire-related activities.

Fire exclusion

Land management activity of keeping vegetation or ecosystems from burning in a wildland fire.

Fire management community

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.

Fire science community
Subset of the fire community consisting of those who study, analyze, communicate, or educate others on the components of fire management that can be measured, such as fire behavior, fire effects, fire economics, and other related fire science disciplines.

Resilient
Generally referred to in this document as "resilient ecosystems," which are those that resist damage and recover quickly from disturbances (such as wildland fires) and human activities.

Silviculture
"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.

Stakeholder
A person or group of people who has an interest and involvement in the process and outcome of a land management, fire management, or policy decision.

Viewshed
An area of land, water, or other environmental element that is visible to the human eye from a fixed vantage point.

APPENDIX B: ACRONYMS

AD	Administratively Determined
BAER	Burned Area Emergency Rehabilitation
BAR	Burned Area Rehabilitation
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
CAR	Community at Risk
CE	Categorical Exclusion
CEQ	Council of Environmental Quality
CRAFT	Comparative Risk Framework and Tools
CS	Cohesive Strategy
CSOC	Cohesive Strategy Oversight Committee
CSSC	Cohesive Strategy Sub-Committee
CWPP	Community Wildfire Protection Plan
DHS	Department of Homeland Security
DOD	Department of Defense
DOI	Department of the Interior
EACG	Eastern Area Coordinating Group
EAJA	Equal Access to Justice Act
EMAC	Emergency Management Assistance Compact
EMDS	Ecosystem Management Decision Support system
ESA	Endangered Species Act
FACA	Federal Advisory Committee Act
FEMA	Federal Emergency Management Agency
FEPP	Federal Excess Property Program
FFT2	Firefighter 2
FLAME Act	Federal Land Assistance, Management, and Enhancement Act
FLN	Fire Learning Network
4FRI	Four Forest Restoration Initiative (in Arizona)
FPA	Fire Program Analysis
FPU	Fire Planning Unit
FWS	U.S. Fish and Wildlife Service
GACC	Geographic Area Coordinating Center

GAO	General Accounting Office
HB	House Bill
HFRA	Healthy Forest Restoration Act
HVR	Highly Valued Resource
IAFC	International Association of Fire Chiefs
ICS	Incident Command System
ID	Idaho
IMT	Incident Management Team
IQCS	Incident Qualification and Certification System
ITC	Intertribal Timber Council
JFSP	Joint Fire Science Project
LMPs	Land Management Plans
LRMPs	Land and Resource Management Plans
MAC	Multi-Agency Coordination
METI	Management and Engineering Technologies International, Inc
MNICS	Minnesota Incident Command System
MOU	Memorandum of Understanding
MT	Montana
NACo	National Association of Counties
NASA	National Aeronautics and Space Administration
NASF	National Association of State Foresters
NEMAC	National Environmental Modeling and Analysis Center (UNC Asheville)
NEPA	National Environmental Protection Act
NFPA	National Fire Protection Association
NGA	National Governors' Association
NGO	Non-government Organization (e.g., non profit)
NICC	National Interagency Coordination Center
NIFC	National Interagency Fire Center
NLC	National League of Cities
NMAC	National Multi-Agency Coordinating Group
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service
NSAT	National Science and Analysis Team
NVC	Net Value Change

PDSI	Palmer Drought Severity Index
NWCG	National Wildfire Coordinating Group
OMB	Office of Management and Budget
OR	Oregon
OWFC	Office of Wildland Fire Coordination
PPE	personal protective equipment
QFR	Quadrennial Fire Review
RFA	Rural Fire Assistance
RFD	Rural Fire Department
ROSS	Resource Ordering and Status System
RPL	Recognition of Prior Learning
RSC	Regional Strategy Committee
SAF	Society of American Foresters
SERPPAS	Southern Regional Partnership for Planning and Sustainability
SFA	State Fire Assistance
SGA	Southern Governors' Association
SGSF	Southern Group of State Foresters
SWRA	Southern Wildfire Risk Assessment
TNC	The Nature Conservancy
USDA	U.S. Department of Agriculture
USFA	U.S. Fire Administration
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VFA	Volunteer Fire Assistance
VFD	volunteer fire department
WFDSS	Wildfire Decision Support System
WFEC	Wildland Fire Executive Council
WFLC	Wildland Fire Leadership Council
WG	Western Regional Working Group
WGA	Western Governors' Association
WRSC	Western Regional Strategy Committee
WUI	Wildland-urban Interface

APPENDIX C: REFERENCES

Cohesive Wildland Fire Management Strategy Foundational Documents

2009 Quadrennial Fire Review (QFR), 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

- 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

A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment: A 10-Year Strategy Implementation Plan. Western Governors Association, 2006, http://forestsandrangelands.gov/resources/plan/documents/10-yearstrategyfinal_dec2006.pdf,

References and Documents

A National Cohesive Wildland Fire Management Strategy, 2010
http://forestsandrangelands.gov/strategy/documents/reports/1_CohesiveStrategy03172011.pdf

Federal Land Assistance, Management and Enhancement Act of 2009 Report to Congress, 2010,
http://forestsandrangelands.gov/strategy/documents/reports/2_ReportToCongress03172011.pdf

Jakes, P, et al, Improving Wildfire Preparedness: Lessons from Communities across the U.S., Human Ecology Review, Vol 14, No 2, 2007, Society of Human Ecology,
http://www.sfrc.ufl.edu/faculty/monroe/jakesetal.pdf

Northeastern Regional Strategy Committee. 2011. *A National Cohesive Wildland Fire Strategy: Northeastern Regional Assessment.* September 30, 2011. 56 p

O'Laughlin, **Jay**. 2011. "Federal Land as a Percentage of Total State Land Area," Fact Sheet #8, Policy Analysis Group, College of Natural Resources, University of Idaho, Moscow. Available online at http://www.cnrhome.uidaho.edu/default.aspx?pid=120573

Southeastern Regional Strategy Committee. 2011. *A National Cohesive Wildland Fire Strategy: Southeastern Regional Assessment.* September 30, 2011. 79 p.

Western Regional Strategy Committee. 2011. *A National Cohesive Wildland Fire Strategy: Western Regional Assessment.* September 30, 2011. 61 p.

***References from A National Cohesive Wildland Fire Strategy: Northeastern Regional Assessment.
September 30, 2011.***

Cardille, Jeffrey A., S. J. Ventura, and M. G. Turner. 2001. Environmental and Social Factors Influencing Wildfires in the Upper Midwest, United States. *Ecological Applications* 11:111–127.

Noss, Reed F., E.T LaRoe III, and J.M. Scott, 1995. Endangered Ecosystems of the United States: A Preliminary Assessment of Loss and Degradation. U.S Dept. of the Interior, National Biological Service, Washington DC. (http://biology.usgs.gov/pubs/ecosys.htm)

Nowacki, Gregory J., and M. D. Abrams. 2008. The demise of fire and "mesophication" of forests in the eastern United States. *BioScience* 58:123–138.

Nowak, D., J. Walton, J. Dwyer, L. Kaya, and S. Myeong. 2005. The increasing influence of urban environments on U.S. forest management. *Journal of Forestry* 103(8): 377-382.

Nowak, D., and J. Walton. 2005. Projected urban growth (2000-2050) and its estimated impact on the U.S. forest resource. *Journal of Forestry* 103(8): 383-389.

McCaffrey, Sarah. Personal communication.

Mangan, Richard. 2007. Wildland firefighter fatalities in the United States: 1990–2006. Boise, ID: National Wildfire Coordinating Group, Safety and Health Working Team, National Interagency Fire Center 841: 28.

Radeloff, V. C., R. B. Hammer, S. I. Stewart, J. S. Fried, S. S. Holcomb, and J. F. McKeefry. 2005. The Wildland-Urban Interface in the United States. *Ecological Applications* 15:799–805.

Smith, B., P. Miles, C. Perry, and S. Pugh. 2009. Forest resources of the United States, 2007. Gen. Tech. Rep. Washington, DC: U.S. Department of Agriculture, Forest Service, Washington Office: 336.

Stein, S., R. McRoberts, R. Alig, M. Nelson, D. Theobald, M. Eley, M. Dechter, and M. Carr. 2005. Forests on the edge: housing development on America's private forests. Gen. Tech. Rep. PNW-GTR-636. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station: 16.

Swanston, C., M. Janowiak, L. Iverson, L. Parker, D. Mladenoff, L. Brandt, P. Butler, M. St. Pierre, A. Prasad, S. Matthews, M. Peters, D. Higgins, and A. Dorland. 2011. Ecosystem vulnerability assessment and synthesis: a report from the Climate Change Response Framework Project in northern Wisconsin. Gen. Tech. Rep. NRS-82. Newtown Square, PA: U.S Department of Agriculture, Forest Service, Northern Research Station: 142.

USDA Forest Service, Fire and Aviation Management. 2006. Annual Wildland Fire Summary Report. [On)line database]. http://famweb.nwcg.gov. [Date accessed unknown].

USDA Forest Service, Northeastern Area. 2007. Northeastern Area State and Private Forestry Strategic Plan Update for Fiscal Years 2008-2012. Newtown PA. (http://na.fs.fed.us/pubs/strat_plan/na_strategic_plan_2008-2012_lr.pdf)

USDA Forest Service, Northeastern Area State and Private Forestry, Cooperative Fire Management. 2007. Combined Summaries of Community Wildfire Protection Data, March. Newtown Square, PA.

References from A National Cohesive Wildland Fire Strategy: Southeastern Regional Assessment. September 30, 2011.

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

Brown, D.G., K. M. Johnson, T. R. Loveland, and D. M. Theobald. 2005. Rural Land-Use Trends in the Conterminous United States, 1950–2000. Ecological Applications, 15(6) 2005. pp. 1851-1863.

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

Buckley, D., D. Carlton, D. Krieter, and K. Sabourin. 2006. Southern Wildfire Risk Assessment Final Report. http://www.southernwildfirerisk.com/reports/projectreports.html

Butler, B. J. and D. N. Wear. 2011. Chapter 5. Forest Ownership Dynamics of Southern Forests. In: Forest Futures Technical Report. D. N. Wear and J. G. Greis. http://www.srs.fs.fed.usda.gov/futures/

Lippincott, C.L. 2000. Effects of Imperata cylindrica (L.) Beauv. Cogon grass invasion on fire regime in Florida sandhill (USA). *Natural Areas Journal* 20:140-149.

Managing the Impacts of Wildfire on Communities and the Environment – A Report to the President in Response to the Wildfires of 2000. Fire and Aviation Management, USDA Forest Service.

Miller, J. H. D. and J. Coulson Lemke. Chapter 15. The Invasion of Southern Forests by Nonnative Plants: Current and Future Occupation with Impacts, Management Strategies, and Mitigation Approaches. In: Forest Futures Technical Report. D. N. Wear and J. G. Greis. http://www.srs.fs.fed.usda.gov/futures/

Mutual Expectations for Preparedness and Suppression in the Interface, *http://www.forestsandrangelands.gov/strategy/documents/mutual_expectations_2010.pdf*

Nowacki, G.J. and M.D. Abrams. 2008. The demise of fire and ''mesophication'' of the eastern united states. *BioScience*, 58, 123–128.

Poulter, B., R.L. Feldman, M. M. Brinson, B. P. Horton, M. K. Orbach, S. H. Pearsall, E. Reyes, S. R. Riggs, and J. C. Whitehead. 2009. Sea-level rise research and dialogue in North Carolina: Creating windows for policy change. *Ocean and Coastal Management.* 52(3-4):147-153.

Smeins, F.E. and L.B. Merrill. 1988. Long-term Change in a Semi-arid Grassland. In. Edwards Plateau Vegetation – Plant Ecological Studies in Central Texas. Edited by B.B. Amos and F.R. Gehlbach. Baylor Univ. Press, Waco. 144 p.

Southern Group of State Foresters 2007. Issue Paper Wildland Fire and Forest Fuels on Private and State Lands. http://www.forestry.ok.gov/websites/forestry/images/3.5_3000_CF_Wildland%20Fire%20And%20Fuels%20Priority%20Issue%20Paper.pdf

Stanturf, J. A. and S. L. Goodrick. 2011. Chapter 17: Fire. In: Forest Futures Technical Report. D. N. Wear and J. G. Greis. http://www.srs.fs.fed.usda.gov/futures/

Stephens, S.L. 2005. Forest fire causes and extent on United States Forest Service lands. International *Journal of Wildland Fire*, 2005. 14, 213-222.

U.S. Forest Service. United States Global Change Research Program. 2011. Southeast Region. In. USGCRP Global Climate Change Impacts in the U.S. Accessed July 30, 2011. http://www.globalchange.gov/publications/reports/scientific-assessments/us-impacts/full-report/regional-climate-change-impacts/southeast

Western National Forests: A Cohesive Strategy is needed to address Catastrophic Wildland Fire Threats. 1999. U.S. General Accounting Office.

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

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

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

References from A National Cohesive Wildland Fire Strategy: Western Regional Assessment. September 30, 2011.

Public Land Ownership by States. http://www.nrcm.org/documents/publiclandownership.pdf

National Fire Protection Association (NFPA) Third Needs Assessment of the U.S. Fire Service; Conducted in 2010 and Including Comparisons to the 2001 and 2005 Needs Assessment Surveys.

APPENDIX ~~C~~D: MEMBERSHIP LISTS

Northeast Region

Northeast Regional Strategy Committee

Name	Agency / Organization
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

Name	Agency / Organization
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

Northeast RSC Support Staff

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

Southeast Region

Southeast Regional Strategy Committee

Name	Agency / Organization
Mike Zupko (Chair)	SGA / SGSF
Kevin Fitzgerald (Vice Chair)	NPS
Liz Struhar	NPS (alternate)
Liz Agpaoa	USFS Southern Region
Dan Olsen	USFS (alternate)
Tom 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

Name	Agency / Organization
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

Name	Agency / Organization
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

Western Region

Western Regional Strategy Committee

Name	Agency / Organization
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

Name	Title/Organization
Bill Avey	USFS
Bill Trip	Karuk Tribe
Carol Daly	Flathead Economic Policy - WGA
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 Subcommittee

Name	Agency / Organization
Lew Southard~~Southard~~	USFS
Jenna Sloan/Gus Smith~~Smith~~	DOI
Dan Smith	NASF
Caitlyn Pollihan	NASF/ CWSF
Bob Roper/Douglas MacDonald	IAFC
Ann Walker	WGA
Ryan Yates	NACo
Patti Blankenship~~Blankenship~~	USFA
Jim Erickson	ITC

Wildland Fire Executive Council

Name	Agency / Organization
Bill Kaage	NWCG
Douglas MacDonald	IAFC
Elizabeth Strobridge	NGA
Glenn Gaines	DHS
Jim Erickson	ITC
Jim Karels	NASF
Kirk Rowdabaugh	DOI
Mary Jacobs	NLC
Ryan Yates	NACo
Tom Harbour	USFS
Support Staff	
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
Butch Blazer, 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
John Kitzhaber, 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~~E: QUESTIONS FROM THE COMPARATIVE RISK ASSESSMENT FRAMEWORK AND TOOLS (CRAFT)

OBJECTIVES

Situation and Context

1. What is the National Wildland Fire Management Cohesive Strategy (Cohesive Strategy)?
2. What are the primary overarching goals of the Cohesive Strategy?
3. What is the specific role of regional efforts in the Cohesive Strategy?
4. What do you hope to accomplish with this specific workshop?

Guidelines

5. What general policies, regulations or laws govern wildland fire management in your area, agency or organization?
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.

Values

7. What broad societal and environmental values have been associated with fire in this region?
8. Briefly characterize how each broad value relates to or is affected by fire.
9. What are the dominant common values or perspectives among agencies? What are the dominant conflicts among values or perspectives?
10. Which of these conflicts are exceptionally difficult to address and why?

Uncertainties

11. What challenges in wildland fire management are created or compounded by lack of knowledge or understanding?
12. What societal or environmental changes or trends could affect wildland fire?
13. Briefly describe the uncertainties associated with these changes or trends that make them difficult to predict.

Goals and Objectives

14. What broad management goals or priorities exist for this area that relate to wildland fire?
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)?
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?
    1. Restoring and maintaining resilient landscapes
        1.1
        1.2
    2. Creating fire-adapted communities
        2.1
        2.2
    3. Wildfire Response
17. Which of the above are the highest priorities for completing this assessment and analysis?
18. For each priority goal, identify contributing objectives, and a range of actions and activities that could meet each objective.
19. Now finalize into an objectives hierarchy.

Measures for Success (Endpoints)

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).
21. What is the level of acceptability of these endpoints given the range of perspectives and values?

ALTERNATIVES

Actions

22. List the possible broad actions and activities from the objectives section (#).

Alternatives

23. Identify the combination of actions and activities that best reflects the continuation of current policies and practices.
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.
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.
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.

APPENDIX F: MAPS

Figure 6. Tree mortality in the United States in 2010

Figure 7. National insect and disease risk in 2006

APPENDIX G: NSAT REPORT

APPENDIX H: COMMUNICATIONS FRAMEWORK

A National Cohesive
Wildland Fire Management Strategy
Phase II National Report
10/18/2011 DRAFT

DRAFT Version includes Version 1 and Version 2 as accepted changes. The track changes in this document are comments received from the CSSC, RSC Chairs, NSAT and the WFEC members.

Table of Contents

Insert photo of wildland fire

The National Cohesive Wildland Fire Management Strategy (Cohesive Strategy) ~~Phase II~~ is a collaborative effort to identify, define, and address wildland fire problems and opportunities across the country and in the three regions of the United States: the Northeast, the Southeast, and the West. Addressing wildland fire problems requires a multi-jurisdictional approach with cooperation and effective communication ~~between the~~among all stakeholders. ~~Phase II of t~~The Cohesive Strategy ~~brings~~ has brought together representatives of federal, state, local, and tribal governments, ~~and~~ non-governmental organizations and others to describe the unique problems experienced in each region. These stakeholders have collaboratively ~~identify current~~identified successful actions that are being taken now and ~~immediate~~ next steps than can be taken to restore resilient landscapes, reduce the risk of fire to communities, ~~to restore resilient landscapes,~~ and to improve wildland fire response. This national report summarizes and builds on these regional ideas to conclude Phase II and set the stage for Phase III of the Cohesive Strategy.

Clarifying the roles and responsibilities of those engaged in wildland fire ~~protection will bring~~management brings a renewed and strengthened approach to addressing our nation's wildland fire problems, and ~~may~~will lessen tensions ~~that may be~~ experienced in some locations. ~~Increasing~~ Building partnerships and ~~increasing~~ enhancing opportunities to collaborate among organizations ~~are~~is critical to ~~maximizing opportunities for~~ successful wildland fire management. ~~Phase II brought about a commitment by C~~Cities, counties, states, tribes and other public and private landowners have expressed an interest in collaborating with each other to meet ~~to make progress on accomplishing~~ the three goals of the Cohesive Strategy:

- ~~Restoring and maintaining resilient landscapes~~Restore and Maintain Landscapes: Landscapes across all jurisdictions are resilient to fire-related disturbances in accordance with management objectives.~~;~~
- ~~Creating fire-adapted communities; and~~ Fire Adapted Communities: Human populations and infrastructure can withstand a wildfire without loss of life and property.
- ~~Responding to wildfires (wildland fires).~~Wildfire Response: All jurisdictions participate in making and implementing safe, effective, efficient risk-based wildfire management decisions.

The Wildland Fire Leadership Council (WFLC) has adopted this vision for ~~the next~~ this century: "To safely and effectively extinguish fire when needed; use fire where allowable; manage our natural resources; and as a nation, to live with wildland fire." The fundamental role of the WFLC is to provide guidance to the regions through efficiency improvements, to fully utilize existing authorities to accomplish the three national goals, and to provide the ~~decision space~~ necessary resources and investments to implement identified current successful regional actions.

The three regions face differing wildland fire problems due to differences in geography, climate, and land ownership patterns. In Phase II of the Cohesive Strategy, the regions formed Regional Strategy Committees (RSCs) to develop regional assessments, identify the regional challenges, improve communication among partners, and identify proposed strategies and opportunities for improvement. The Regional Assessments form the basis for this national report on Phase II.

Comment [CP1]: WRSC – the exec summary required some work both in context and the fact that the importance of a communications and implementation strategy was not mentioned in the exec summary. Additionally neither wfec or wflc provide any decision space to all the stakeholders, consequently upon approval of phase II and agreement to move ahead with Phase III, both entities will commit to the resources and investments needed to implement selected actions from the regions. Below the proposed changes are just marked WRSC ES

Comment [CP2]: WRSC ES

Comment [CP3]: WRSC ES

Comment [CP4]: WRSC ES

Comment [CP5]: WRSC ES

Comment [CP6]: WRSC ES

Comment [CP7]: SRSC – CS brings together more than this….should add 'and others' to clarify

Comment [CP8]: WRSC ES

Comment [CP9]: WRSC ES

Comment [CP10]: WRSC ES

Comment [CP11]: WRSC ES

Comment [CP12]: WRSC ES

Comment [CP13]: WRSC ES

Comment [CP14]: WRSC ES

Comment [CP15]: WRSC ES

Comment [CP16]: WRSC ES

Comment [CP17]: WRSC ES

Comment [AMW18]: I think this should be 'are'

Comment [CP19]: WRSC ES

Comment [CP20]: SRSC – Groups haven't made an actual commitment but they have expressed an interest in collaboration

Comment [CP21]: WRSC ES – or could be….Phase II provided the opportunity for cities, counties, states, tribes, and other public and private landowners to make progress on accomplishing the three goals of the cohesive strategy

Comment [CP22]: WRSC ES

Comment [CP23]: Mac McDonald – This should be 'this' century.

Comment [CP24]: WRSC ES

Comment [CP25]: SRSC – strategies and actions are not set in stone

Phase II brings together the RSCs in a holistic approach to create a unified strategy, not just for wildland fire suppression, but to explore issues of natural resource management, and 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 on wildfire management issues.

Northeast Region

The Northeast Region comprises 20 states and is the most densely populated region. The vast majority of the land is in private ownership and fires occur primarily in the spring, fall, and summer. Seasonal and extended drought conditions often create wildland fire hazards in the Northeast. Local partnerships focus on initial attack and putting fires out quickly. Fire suppression is accomplished through interstate compacts among the states and with Canada.

Lands are owned and owned and held in stewardship by a diversity of individuals, tribes, industry, organizations, and local, state and federal agencies. The vast majority of land is in private ownership. Land uses and ownership patterns are complex, with many small holdings creating a diverse range of owner objectives. Public lands are often isolated among other land uses, including private and industrial forests and agricultural lands. Land ownership and management, natural and weather/climate event created fuels, high wildfire occurrence, and extensive wildland urban interface characterize the Northeast Region.

Southeast Region

The Southeast Region comprises 13 states stretching from the Atlantic Seaboard to Texas. High wildland fire occurrence, extensive wildland-urban interface (WUI), a year-round fire season, and rapid regrowth of vegetation/fuels characterize the wildland fire problem in the Southeast. Land ownership is highly fragmented with the majority of forestlands in private ownership. Fragmentation poses a challenge to a coherent policy of landscape management and fuels reduction. A culture of prescribed burning exists in the Southeast and is essential to managing fuel loads. The Southeast implements more prescribed burns, with more acres treated than any other region, mostly on private land. Fire suppression is accomplished by cooperation and partnerships between local, state, and federal fire resources, and interstate forest fire compacts.

West Region

The West Region comprises 17 states spanning nearly half of the continental U.S, including Alaska, Hawaii, and the affiliated Pacific Islands. Wildland fire in the West is challenging due to vast areas of publicly owned and managed lands where access is extremely limited, terrain is steep, and the climate in many locations is arid or semi-arid. In areas managed for wilderness values, wildland fire management focuses on achieving ecological objectives maintaining wilderness characteristics rather than a suppression response. The West has been in an extended drought for more than a decade, which increases threats posed by wildfire, but also fosters infestations of bark beetles, which are killing trees and leaving millions of acres of dead, standing trees (see appendix F). The West has seen a rapid escalation of severe fire behavior over the past two decades resulting in increased fire suppression costs, significant home and

Comment [CP26]: SRSC – this sentence makes it sound like regional and national stakeholders have not been involved in the past in any national issues. Adding this language clarifies the intents

Comment [CP27]: WRSC ES – recommends "in such a comprehensive manner."

Comment [CP28]: NRSC - This is not entirely accurate and sounds like the compacts are the main source of fire suppression. Actually, fire suppression is accomplished in a manner similar to the south and west.

Comment [CP29]: NRSC – missed mention of event fuels impacts on local resources and their ability to manage and treat. Depending on the local infrastructure, jurisdictions and policy requirements the ownership it may take years to treat the fuels to achieve a lower risk. Also not mentioned is the private land and patterns. – Suggested statement included….

Comment [CP30]: WRSC – Recommended changing Canada to Canadian provinces

Comment [AMW31]: Duplicate - delete

Comment [CP32]: WRSC ES

Comment [CP33]: WRSC ES

property losses, and increased threats to communities. Wildland fires in the West result in complex and costly efforts for post-fire restoration due to steep topography and highly erosive soils and flooding. Fire suppression is accomplished by cooperation and partnerships among local, state, and federal agencies and organizations.

Values, Objectives and Actions Common to All Regions

As part of the assessments, the RSCs identified regional values and objectives. Some common objectives and actions were identified in Phase II and are discussed in detail within the Phase II National Report.

Values – Each RSC articulated many value statements, and a short overview of each appears in this document. Several values were common to all three regions, including: safety of firefighters and the public, protection of private property, conservation of air and water quality, restoring healthy and resilient landscapes, and aesthetics. The Northeast assessment cited recreation as significant, the Southeast assessment noted industrial forestry infrastructure, and the West noted cultural values such as honoring tribal heritages and land uses, respecting the frontier culture, and stewarding public lands and working forests. These, and the other values expressed, provide the basis for developing regional objectives, actions, performance measures, and areas to explore for reducing risk.

Objectives and Actions – The RSCs adopted the national goals as their own: resilient landscapes, fire-adapted communities, and wildfire response, and crafted a suite of initial objectives and actions to implement support each one. All three regions developed information that includes; identification of values, trends and risks and the delineation of initial actions and objectives. This information, as identified in the regional assessments, will be valuable in Phase III of the Cohesive Strategy. The regions support working forests and wildlands, local economies and jobs, and diverse products and markets.

Several cross-cutting objectives, so-called because they will affect all three national goals simultaneously, were identified across the regions:

(1) Invest in, learn from, and build upon successful partnership and collaborative efforts, including Community Wildfire Protection Plans, or their equivalent.

(2) Develop and conduct effective education and outreach to empower citizen engagement in, and support for, wildland fire management activities.

(3) Proactively use a variety of active vegetation management tools and techniques, including prescribed fire, to achieve local and large landscape objectives.

(3)(4) The regions supportSupport working forests and wildlands, local economies and jobs, and diverse products and markets.

Regional information; identification of values, trends and risks; and the delineation of actions, objectives, and performance measures identified in the regional assessments will be valuable in Phase III of the Cohesive Strategy. The regional assessments will be used to build a national

<div style="float:right">

Comment [CP34]: SRSC – insert forestry before infrastructure to clarify

Comment [CP35]: SRSC – insert and working forests to be in line with the southern regional document

Comment [CP36]: WRSC ES

Comment [CP37]: SRSC

Comment [CP38]: WRSC ES

Comment [CP39]: See next comment

Comment [CP40]: WRSC ES agrees with this.

Comment [CP41]: SRSC and WRSC – fourth bullet disappeared and needed to be pulled out of the above paragraph and included as a bullet

</div>

trade-off analysis. For detail beyond what is included in this national report, see the regional assessments.

The RSCs will continue to coordinate with the National Science and Analysis Team (NSAT) to incorporate the best available science into the Cohesive Strategy. The NSAT uses 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 is included in appendix G of this report. The WFEC, CSSC, RSCs and the NSAT will continue to work together in Phase III.

There are two keys to the Cohesive Strategy's success: first is the commitment to collaborateion. Working together will allow us to accomplish the goals of the National Cohesive Strategy for Wildland Fire Management. The second is a requirement for a comprehensive communication and implementation strategy which provides information and seeks feedback from all stakeholders throughout the process.

INTRODUCTION

When ~~landscapes burn~~wildland fire is not appropriately managed, lives, property, and ecological values are at risk. In 2011, the Wallow Fire in Arizona and New Mexico burned over 841 square miles and destroyed more than 30 structures, fires in the state of Texas burned over 3.7 million acres and consumed over 7,000 structures, and the Pagami Creek Wildfire burned over 100,000 acres in the Boundary Waters Canoe Area Wilderness in Minnesota. Fire is a natural process and a mechanism for biological renewal across forest and rangeland ecosystems. During the 20th century, federal, state, and local firefighters were successful at putting out most wildland fires in the early stages. An unintended consequence of their diligence, partnered with the lack of active management of our landscapes, is the overstocking of our nation's forests 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 wildland fires that threaten homes, communities and resource values, and can cause widespread property damage.

Large and destructive wildland fires led to the drafting of the 1995 Federal Wildland Fire Policy and Program Review, a look at wildland fire issues, mainly focused on the federal ownership, including fuels management, the role of fire in the environment, and wildland-urban interface issues. 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, tribes, 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.

The Quadrennial Fire and Fuels Review was conducted in 2005, and then in 2009 the Quadrennial Fire Review (QFR) was completed. 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 anticipated future wildland fire management needs, risk to communities and firefighters, as well as described core mission strategies and key capabilities that can be applied to wildland fire management challenges. This was also the first in what would become a series of reviews, plans and strategies to move the fire community and the nation forward safely and more effectively. None, however, completely solved the problems; as communities and the wildland fire environment are constantly changing, requiring the fire community to do the same.

Annual fire suppression costs are high. In 2002, the cost of suppression to the federal government was $1.7 billion. In 2008, state and local governments spent over $1.6 billion on suppression and wildland fire mitigation. 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 federal emergency wildland fire suppression. In addition, the FLAME Act directs USDA and DOI to develop a National Cohesive Wildland Fire Management Strategy, to comprehensively address wildland fire management in the United States.

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.

Comment [CP47]: SRSC – This sentence is an alarmist statement due to the impact on even routine prescribed fires sounding scary. Change to 'when wildland fire is not appropriately managed.

Comment [CP48]: WRSC – this is an alarmist statement. Recommend replacing it with 'when wildland fire and fire prone landscapes are not strategically managed…..

Comment [CP49]: NRSC – The wording on preparedness for the eventuality of a naturally ignited fire needs to more aggressively stress the importance of prepositioning and availability of adequate resources especially the CL215's, should conditions threaten and then get out of control.

Comment [CP50]: SRSC – This number seems low. Does this include suppression and mitigation for all 50 states including locals?

Comment [CP51]: SRSC – clarification point

Within the fire community, a shared vision has taken shape: working together to prepare the landscape for natural fire occurrences, to prepare communities to face wildfire risks, and to coordinate effective wildland fire response. An example of this vision is the Greater Okefenokee Association of Landowners. This is an organization of over 70 landowners/agencies (private, state, and federal) that work together on strategy for wildfires that occur in and near the fire prone Okefenokee Swamp in southeast Georgia. Foundational documents, as identified in the Phase I of the Cohesive Strategy, highlighted the need for shared responsibilities, effective partnerships, and improved interagency coordination and response. They created an imperative for a new direction in expectations for federal, state, and local wildland fire protection agencies to address our nation's wildland fire problem at the most efficient cost.

In 2010, Phase I of the Cohesive Strategy outlined a three-phase process to address the three primary factors presenting the greatest challenges and opportunities to make a positive difference to fire management: restoring and maintaining resilient landscapes, creating fire-adapted communities, and improving wildfire response. The Cohesive Strategy builds upon previous work, the foundational documents, and Guiding Principles and Core Values identified in Phase I.

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.

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 WFLC laid out a new vision for the next century 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" began in Phase II of the strategy with the creation of RSCs and the development of regional strategies. Those regional strategies will unite to form one national strategy. The Cohesive Strategy is different from all prior plans because of the collaborative process by which it was formulated. It is not merely a strategy for federal agencies, it is a strategy for the many groups that have come together across the nation to combine their regional perspectives and create one shared vision of how all stakeholders can work together to reduce risks of wildland fire to landscapes, 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.

Comment [CP52]: SRSC – it is important to emphasize the accomplishments made in the past. This is a good way to show the collaboration we are envisioning.

Comment [CP53]: WRSC – while this paragraph attempts to describe the bottom up efforts; are regional strategies truly considered bottom up? Where do field level efforts come into play? Suggest adding verbiage regarding composition of RSC' to acknowledge that field input was included in these efforts if/where field personnel contributed. This will hopefully provide more credibility to the CS and ground level buyin

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, 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 draftefine 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.

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 agencies, firefighting organizations, tribes, counties, and cities (see Figure 1figure 1).

Figure 1. 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 meet the needs to complete Phase III. The WFEC is responsible for promoting and facilitating the implementation for the Cohesive Strategy. The CSSCs and RSCs are chartered sub-groups of the WFEC. The CSSC was chartered at the beginning of Phase I and the RSCs and their working groups were chartered at the beginning of Phase II and will continue to function through Phase III and beyond.

The RSCs are 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 WFEC, CSSC and RSCs as the Phase III trade-off analyses are completed.

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.

In Phase II, the CSOC transitioned into the Cohesive Strategy Sub-Committee (CSSC). The WFEC and CSSC guided Phase II through completion of the regional assessments and drafting of the national report. Phase II was directed by the Wildland Fire Executive Council (WFEC) and developed by the Cohesive Strategy Sub-Committee (CSSC) which are composed of representatives of federal and state 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.

Figure 2. Cohesive Strategy Regions: Northeast, Southeast, and West

Phase II of the Cohesive Strategy provided a unique opportunity to the three regions of the country—Northeast, Southeast, and West (see Figure 2~~figure 2~~)—to chart their own course in landscape and wildland fire management to reduce the risks posed by wildland fire to multiple values. The RSCs came together, with the support of Working Groups, and broadened engagement of regional stakeholders, managers and analysts, non-governmental organizations and universities, to identify the challenges, values, and opportunities for improved land and fire management in their regions. This regional approach to Phase II of the Cohesive Strategy will result in a national strategy that is supported by local, regional

and national information, engagement and action. Regional assessments include obstacles, real and perceived, that stakeholders experience and identify strategies to address them.

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 used by the WFEC, CSSC and 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.

Comparative Risk Assessment within the Cohesive Strategy

A comparative risk assessment tool to evaluate the consequences of alternative wildland fire management strategies was proposed in Phase I of the Cohesive Strategy. The Phase I document 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 reasoning, one can view the Cohesive Strategy as a 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 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.

In conjunction with the NSAT, the RSCs embarked on this Phase II process, which included proposing specifying regional objectives and designing initial alternatives. 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 framework for the work of the NSAT.

Regional Strategy Committees

The RSCs were supported in their efforts by the NSAT, which 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. 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 RSCs identified current successes, relationships, and opportunities for work that can be done before the completion of Phase III of the Cohesive Strategy. 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.

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. All of the states have federal, state, local and private land within them. Each uniqueBoth ownership patterns presents challenges in fire management, and the regions are best able to articulate those challenges and to collaboratively develop solutions.

Phase II gave the RSCs an opportunity to take ownership of regional ideas and goals. 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 a variety of 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.

Comment [CP57]: SRSC – it is important to keep this document all lands and that we do not single out any specific land ownership.

PHASE II – REGIONAL ASSESSMENTS AND STRATEGIES 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 E). 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 wildland fire and fire response in each region. They describe the values, both ecological and social, within the regions and the trends and uncertainties relating to wildland fire and risks to landscapes and communities. The RSCs developed initial objectives and initial alternatives and actions.

As a prelude to Phase III, the RSCs described initial alternatives to be considered for reducing risk to meet the national goals identified in Phase I. They are a broad set of alternatives that, with the help of analytical methods 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 homessuch as enhancing opportunities for homeowners to proactively reduce hazards around their homes and property, 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." The assessment process and the resulting collaboration and identification of regional issues will continue as we move into Phase III and beyond.

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 the report.

REGIONAL COLLABORATION AND OUTREACH

RSCs are collaborative teams representing wildland fire agencies, tribes, industry, and non-governmental organizations. The RSCs undertook extensive outreach to contact stakeholders for input on the core questions relating to challenges, values, trends, and objectives. This unprecedented outreach strategy is the key to building a national cohesive strategy for wildland fire management.

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, and local agencies and organizations,
- Local natural resource and fire service agencies,
- Industry groups,
- Private landowners, and 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 D for RSC and Working Group members.)

RSCs contacted over 1,300 stakeholders by telephone and email and through posts to outreach websites and in person at meetings. 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.

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

Phase II of the Cohesive Strategy identifies the unique legal, regulatory and jurisdictional environment in which wildland fire and resource management agencies operate nationally and regionally. Wildland fire and resource management decisions are guided and informed by a suite of laws, regulations and administrative policies that exist at the federal, state, tribal and local levels. The interpretation of the laws,

Comment [CP60]: SRSC – if private landowners are not included then the NE and SE will struggle to see this as an all-lands, national document and it will limit buy'in

Comment [CP61]: WRSC – a lot of interests are not mentioned here that probably should be: environmental/conservation organizations, recreation, sporting, and wildlife interests, community and economic development groups, local firewise and firesafe groups, etc.

Comment [pg62]: I think this number is actually higher – the Southeast sent out over 1,400 invitations, the Northeast made over 600 contacts, and the West never stated a total number of contacts, but received 135 comments and had 107 participants in forums.

Comment [CP63]: SRSC – The SE contacted 1500 in our region alone. The same with the west….this needs to be revised

policies and regulations ultimately determine management activities. Phase II regional assessments identify federal laws – such as the National Environmental Policy Act and the Endangered Species Act, which guide planning processes on federal lands and provide for the protection and conservation of rare, threatened, and endangered species – as significant laws impacting the accomplishment of wildland fire and resource management goals. Other key laws and regulations that impact the ability of managers to achieve natural resource and wildland fire management objectives identified across the regions are the National Forest Management Act, the Environmental Protection Agency's smoke management policies and the U.S. Forest Service's National Forest System Land Management Planning Rule, among others.

Through regional objectives and actions, the RSCs propose constructive resolutions to ongoing policy conflicts and suggest ways to take advantage of the opportunities they present. ~~Opportunities to address policy barriers and gaps that prevent full coordination and collaboration and/or the most flexible use of existing authorities to plan and implement landscape-scale treatments are identified in the regional assessment reports.~~ Some viable opportunities to address policy barriers and gaps that prevent full coordination and collaboration and/or the most flexible use of existing authorities to plan and implement landscape-scale treatments have been examined in the regional assessment reports.

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 E) 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.

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,
- Maintain and enhance economies,
- Restoration of healthy and resilient landscapes, and
- Protection of scenic viewsheds (visible natural environment).

Trends and Risks

Response, input, and observations also reveal 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 identify 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,

Comment [CP64]: SRSC – This is not something that the SE regional assessment focused on unless it is referring to the management scenarios section. Recommend removing

Comment [CP65]: WRSC – can we confidently state that we identified all the opportunities. See suggested change

Comment [CP66]: WRSC - These need to be expanded similar to what was done for the regions following these brief statements. These are stated as being similar across all the regions and that carries power to be examined

Comment [CP67]: SRSC – The 'maintain and enhance' bullet was dropped…recommend including it as it is a common value across all regions

- 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.

Land Ownership in the Northeast Region

Produced by the U.S. Forest Service, Northeastern Area State and Private Forestry, MDH 9/15/11

Figure 3. Map showing Northeast Region land ownership

Values

The Northeast RSC identifies a variety of unique values and groups 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. Prevention education can have a significant impact on reducing wildfires in this region, where greater than 95% of the fires are human caused.

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 these issues.

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 will be 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:

Lack of Fire: Lack of fire has created two primary issues in the Northeast. First, 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

Comment [CP68]: NRSC – There is no mention of the high % of ignitions caused by humans, which I think is very important. Lightening is responsible for a small number of ignitions, meaning education and awareness about prevention can make a very big difference in the Northeast. See changes….

Comment [CP69]: NRSC – see comment below

Comment [CP70]: NRSC – move below lack of fire

Comment [CP71]: NRSC - **the paragraph on "Lack of Fire" misses an important point. Somewhere in this paragraph, it needs to mention the role that lack of fire plays. In that I mean the West has big fires somewhere every single year, and usually many big fires. The Southeast has a culture of fire, both wild and prescribed, and is stated so right on page 18 of the draft report. However, most places in the Northeast do not have really big fires on a regular basis nor is fire a part of the culture, prescribed or otherwise. Use of prescribed fire is miniscule when compared to the many millions of acres of forest in the region. This lack of fire, and very long fire return intervals for most forest types, creates a lack of awareness, understanding, potential, etc. for many stakeholders. Whether they be a volunteer firefighter who has never seen a significant fire and therefore thinks they can't happen where he lives, or whether it is a homeowner who thinks the risk of a fire is so remote it's not worth the time to "firewise" their home, or whether it's a local or state government that needs to cut the budget and thinks "we never have fires around here" and therefore decreases capacity, the complacency due to infrequent fires is a real issue. It goes well beyond just modifying fire-dependent ecosystems.**

Comment [CP72]: NRSC - recommend moving this to the top and moving prescribed burning down

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, all of which can increase fuel loading that may lead to more extreme fire behavior and negative impacts.

The second primary issue that lack of wildfire plays is complacency on several levels. The Northeast can be described in risk management terms as low occurrence but high risk. Unlike the West which has large, significant fires on an annual basis, or the Southeast which has a history and culture of fire (both wildfire and prescribed), the Northeast neither has large fires on a regular basis nor does prescribed fire play a significant role. With long intervals between large wildfire events, investments in preparedness, whether by governments or homeowners, is challenged and questioned. Wildfire preparedness at the local fire department level can be overshadowed or downplayed because of the responsibility for more-frequent all hazard and medical emergency response.

~~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, all of which can increase fuel loading that may lead to more extreme fire behavior and negative impacts.~~

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 will be 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.

Comment [CP73]: NRSC – move below lack of fire

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.

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 these issues.

Comment [CP74]: NRSC – see comment above….recommend moving prescribed burning lower on the list than #1

Unique Southeast Region Values, Trends, and Risks
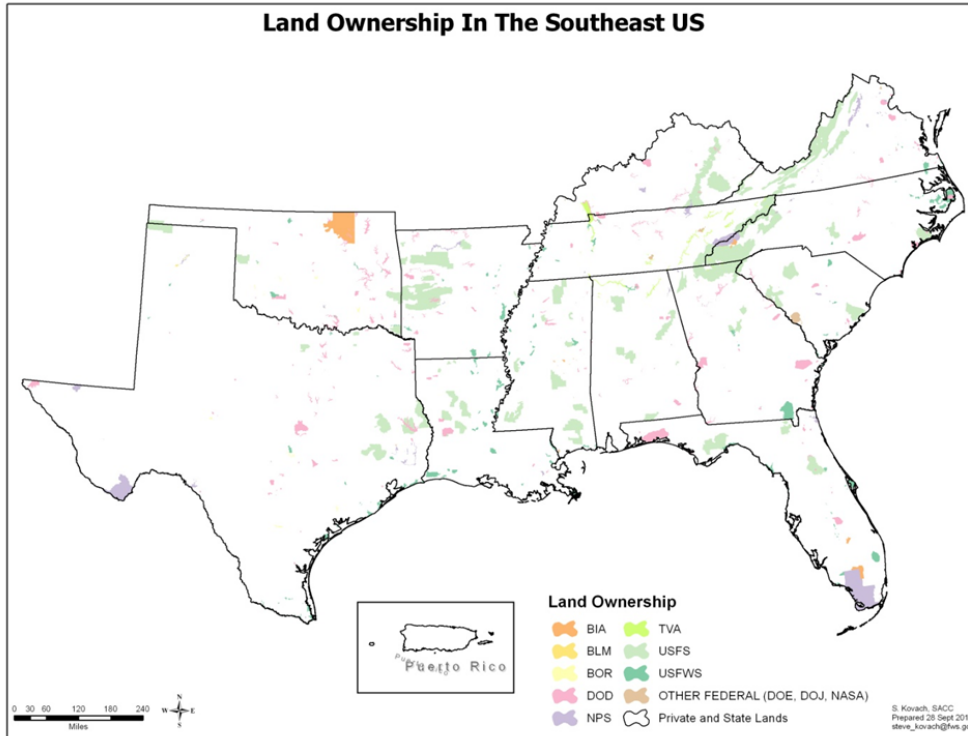
Figure 4. Map showing Southeast Region land ownership

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 categorizes these values into five overarching categories of values: ecosystem, infrastructure, societal, economic, and wildland fire management.

The ***Ecosystem*** includes values associated with ~~biodiversity, wildlife habitat~~air and water quality, and other ecosystem components such as biodiversity, wildlife habitat, and healthy forests/landscapes/ecosystems. And healthy forest/landscapes, as well as the air and water quality components, many of which are fire adapted and require periodic burning to maintain characteristic ecosystem structure and diversity.

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

> **Comment [CP75]:** SRSC – Recommend revision as the original focuses on air and water which might be appropriate for emphasis on quick wildfire suppression, but not using fire as a management tool. Wildland fire, as a general rule, does not help air and water quality, but can have positive effects if used to improve the health of the overall ecosystem

> **Comment [CP76]:** SRSC 0 This is a tremendous concern for southerners given the significant number of communities considered at risk of wildfire-related losses in the southeast.

The *Societal System* encompasses human, social, and cultural values. Fire (both wildland fire and prescribed burns) has a significant place in the history and culture of the Southeast. Historically, individual landowners played a large role in prescribed burning, and 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. Wildfire can cause economic devastation in the region, damaging or destroying marketable timber, biomass and other forest products and can also create costs associated with restoration activities. Failing to implement the full range of wildland fire management options can also have negative effects on local economies where natural systems rely on active land management practices such as prescribed fire to maintain landscape resiliency.

The *Fire Management System* includes values related to wildland fire 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

Comment [CP77]: SRSC – this description was copied and pasted from the SE report but the entire description was not copied. What is in here makes it sound like all wildfire response is bad for the economic system. Promoting prescribed fire and wildland fire for resource benefit will actually have a positive effect on the economy. Include additional sentence

Comment [CP78]: WRSC – this sentence needs to be included.

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 wildland fire 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 RFDs to provide initial wildland fire 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 West Region Values, Trends, and Risks

Figure 5. The West is dominated by large blocks of public land~~, which present challenges in fire and land management~~

Values

The Western RSC identifies many values similar to those of the other two regions; however, the following values are 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, cultural resources, and dynamic and diverse habitats. The appearance of the landscape is important and aesthetics vary by individual, 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 maintaining public access to the lands 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 wildland fire 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 addresses 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 Western RSC seeks to build upon in developing its assessment and strategy.

OBJECTIVES AND ACTIONS

The aim of the Cohesive Strategy is to produce a strategy for achieving the national goals and reducing risks posed by wildland fire that incorporates objectives and actions at the national, regional, and local level. Phase II does 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. While no two regions identify objectives in exactly the same language, there are significant elements held in common among all three regions. The following sections outline the initial objectives and actions developed by the RSCs, proposing highlighting objectives and actions that are held in common across the regions and/or across the national goals. The common concepts are synthesized from the regional initial objectives and actions, which are quoted from the regional assessments in the next sections. Proposed oObjectives and actions are not presented in order of priority. Additional similarities exist at the sub-objective and action level, but this summary focuses primarily on regional initial objectives. More information on these proposed objectives and actions can be found in the regional assessment reports.

Comment [CP81]: SRSC – initial and proposing should be added to clarify. We need room to change as we go through the iterative process

Comment [CP82]: SRSC – see above comment

Actions Common to the Three National Goals

Comment [CP83]: WRSC – again these need to be expanded similar to what was done for the regions following these brief statements. These are stated as being similar across the regions and that carries power to be examined.

Each of the RSCs identify concepts that contribute to success in each of the three national goals. In reviewing these proposed actions, all three RSCs emphasize 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 and wildlands, local economies and jobs, and diverse products and markets.

Restore and Maintain Resilient Landscapes

Comment [CP84]: WRSC – again these need to be expanded similar to what was done for the regions following these brief statements. These are stated as being similar across the regions and that carries power to be examined.

Despite the unique regional ecosystems and social-economic contexts under which objectives and actions have been developed, a number of ideas emerge 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.

Comment [CP85]: SRSC – same as the goal itself? redundant

- 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 express their vision of creating fire-adapted communities quite differently, but these elements that contribute to creating fire-adapted communities are held in common:

- Reduce unwanted human-caused wildland fire ignitions in and near communities.

- Support community wildland fire protection planning.

Wildland Fire Response

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

- Provide for firefighter and public safety.

- Maintaining capacity.

- Improve effectiveness and efficiency of the wildland fire management organization.

Regional Actions Common to the Three National Goals

The focus of Phase II is 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.

Based on unique regional conditions and stakeholder engagement, the Northeast, Southeast, and West identify, individually, 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 are 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 identifies several actions and activities common across the national goals and regional objectives. These actions 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.

Comment [CP86]: WRSC – again these need to be expanded similar to what was done for the regions following these brief statements. These are stated as being similar across the regions and that carries power to be examined.

Comment [CP87]: WRSC – again these need to be expanded similar to what was done for the regions following these brief statements. These are stated as being similar across the regions and that carries power to be examined.

Comment [CP88]: WRSC - grammar

Comment [CP89]: SRSC – Maintaining capacity was addressed in all three regions

- 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 agrees 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 as well as individual objectives under each goal.

- 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 wildland fire 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.

West 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 wildland fire 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

Response to this goal in the Southeast acknowledges the challenge of maintaining or restoring landscapes in a complex environment of many small landowners; the objectives focus on a need for locally-calibrated, proactive treatment to restore and maintain landscapes. Resilient landscapes are resilient to fire and balance the need to reduce catastrophic wildfire risk to WUI communities throughout the Southeast. Healthy working forests are part of the Southeast's cultural heritage, as well as a critical part of the regional economy. The region's diversity and uniqueness means that restoring and maintaining landscapes is a critical goal. The wildland fire management community agrees that flexibility to select locally-appropriate management techniques must be retained and encouraged so that prescribed burns

can be implemented where appropriate and feasible, while in other areas mechanical treatments may be the only option. One key objective is identifying and focusing on the areas in which limited resources can be leveraged or combined to create the most significant impact on restoring landscapes and reducing the risk of catastrophic wildfires. However, rapid urbanization and soaring population within the Southeast may necessitate a greater focus on communities and the WUI rather than landscapes; therefore although Restore and Maintain Landscapes is a priority goal in the Southeast, management directives must be written with the understanding that restoration efforts may not be feasible in certain areas of the Southeast where human structures mingle with fire adapted landscapes in the WUI.

- 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 wildland fire (i.e. storm damage, insects, ice storms, hurricanes, insects and disease) that reduce ecosystem vitality and increase susceptibility to wildfire.

West 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 at the center of coordinated cross-jurisdictional wildland fire 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 wildland fire 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

This goal is particularly important in the Southeast, where human communities are adjacent to or located within wildland fire prone landscapes. Communities can survive wildfire without loss of life or significant damage to infrastructure and recover and thrive economically. However, this requires human populations directly engage in wildland fire planning to assess the level of wildfire risk to themselves and their communities, sharing responsibility and participating in actively mitigating the threat. In order for this to be successful, communities must take responsibility for the consequence of their actions. At the same time, the wildland fire management community must catalyze this process through education, engagement, outreach, and support to communities in preparation and planning. In addition to engaging with existing communities, a vital part of the engagement process must be raising awareness of incorporating wildfire risk into the design process for future homes and communities. In the Southeast, there may be as much potential for change through engaging in the process of creating fire adapted human communities as through effective fuels management.

- 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.

Comment [CP91]: NRSC – remove NE and West, not formatted like others.

West Region

Preventing or minimizing the loss of life and property due to wildland fire 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.

Wildland Fire Response

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

Northeast Region

Throughout the Northeast, 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. Focused on firefighter safety, wildland fire management, and flexibility for locally-appropriate response to unplanned ignitions, two main objectives are identified below. Of particular concern in the Southeast is the need for specialized equipment such as tractor plows that are not in widespread use outside of the region. A second major concern is ensuring appropriate and consistent training for partners and cooperators, particularly RFDs, whose membership changes frequently. Finally, promoting indirect attack where appropriate has proven an effective way to minimize risk to firefighters and maximize resource benefit. The wildland fire management community agrees a need exists for agencies and organizations to retain the ability to select and apply techniques and tactics based on local conditions and needs.

- Increase firefighter safety by using risk management.

- Increase and leverage resource capability and capacity. Streamline and support training across all areas to maximize effectiveness.

West 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.

Focused on firefighter safety, wildland fire management, and flexibility for locally appropriate response to unplanned ignitions, two main objectives were identified below. Of particular concern in the Southeast is the need for specialized equipment such as tractor plows that are not in widespread use outside of the region. A second major concern is ensuring appropriate and consistent training for partners and cooperators, particularly RFDs, whose membership changes frequently. Finally, promote indirect attack where appropriate and effective to minimize risk to firefighters and maximize resource benefit. The wildland fire management community agrees a need exists for agencies and organizations to retain the ability to select and apply techniques and tactics based on local conditions and needs.

Comment [CP92]: Joe Freeland – This paragraph is the southeast paragraph. Needs to be replaced with the western language above.

Comment [CP93]: SRSC – duplicate , remove

- 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.

DEVELOPING INITIAL ALTERNATIVES

Management Scenarios and Areas to Explore for Reducing Risk

Phase II of the Cohesive Strategy had two main components: (1) to bring together the stakeholders and communities to 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 built on an understanding of the national goals and regional needs and constraints. 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 management constraints 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. Analytical methods will be used to test initial alternatives developed by the RSCs. The initial 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. Management options to be considered will be evaluated not only for potential cost effectiveness, but also from a perspective of social acceptability and consistency with prevailing policies. 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.

Comment [CP94]: Danny Lee – this is attributed to NSAT but it is from Phase I Appendix A. Also used on Page 9 Paragaph 3

Comment [CP95]: Whose maps and models will be used? There are a great many to choose from and some differ greatly

Comment [CP96]: Danny Lee – the original sentence doesn't mean anything. Alternative sentence suggested

Comment [CP97]: WRSC – this isn't accurate. Sounds like we are going back to square one. Should be deleted.

Comment [CP98]: WRSC - Here and in other places throughout the document the words 'we' or 'us' appear, and it is never really clear who we (or us) is – the WFLC? The RSCs? The fire services community? Anyone using the plan to inform their actions?

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 the RSCs worked, 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"

To develop "alternative management scenarios", the Northeast RSC spent much of their time identifying objectives and activities that would significantly increase, decrease, or change their ability to meet the national goals. They developed a list of activities that they want the NSAT to explore to determine how much change would occur if the activity is increased, decreased, or eliminated. The activities listed are not proposed "alternatives." They are simply a list of areas to explore to determine if efficiencies can be gained by reallocating resources. The Northeast RSC feels they need more data to develop alternative management scenarios. The Northeast articulates 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 modifying 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 sees 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, focusing on the national goals. Each scenario emphasizes a subset of the regional objectives and actions while assuming no significant increase or decrease 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 fuels 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.

Comment [CP100]: SRSC – this is a writeup on wildfire, not on what the science team contributed. Recommend removing

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.

Comment [CP101]: Danny Lee – This is the same paragraph as paragraph 2 on page 33

Comment [CP102]: SRSC – duplicate - remove

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. This process has highlighted the importance of data standards and data accessibility across federal, state, tribal, local and non-governmental organizations.

Fine-scale processes tend to be better understood than broad-scale processes or strategic issues. For example, there is 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.

Each subteam 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 transition to Phase III under way. Groups involved in Phase III include the WFLC, WFEC, CSSC, NSAT, RSCs, Working Groups, and many other stakeholders. The objectives, outcomes, and timeline for completing Phase III and moving toward implementation and revision of the Cohesive Strategy are detailed in this section. It is important to understand that the completion of each phase Cohesive Strategy is a separate milestone and that the Cohesive Strategy is a national, iterative process that will continue into the future.

AA national trade-off analysis will be completed in Phase III. The analysis will be a science-based risk assessment that identifies a range of alternatives that:

- Point toward an effective path to achieving the national goals and regional objectives and reducing risk,

- Leverage regional values and investments,

- Explore the full decision space available to national and regional stakeholders, and

- Articulate national trade-offs among alternative activities and priorities associated with alternatives.

The Phase III report will summarize the national trade-off analysis and identify steps necessary to move toward the national goals identified in Phase I.

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 set the stage for future work, but it is anticipated that work on the regional activities will begin before the end of Phase III, as will work to set up for the next iteration of the Cohesive Strategy.

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.

Comment [CP103]: Danny Lee - Grammer

Comment [AMW104]: Added 'of'

Comment [CP105]: WRSC – this paragraph answers some of the questions from the previous comment. suggest moving this to page 35 just before the mid-page sentence that begins…at the conclusion of phase 3 which will reduce readers confusion when they read numbered items.

(4) Documents the need for and assigns responsibility for developing a thorough implementation plan that identifies concrete actions ~~to~~ that can 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.

(12) Establishes 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.

(13) Fully articulates the Cohesive Strategy as an ongoing, iterative process to develop and explore alternatives.

Timeline

The WFEC will work with the CSSC, NSAT, RSCs, and other 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 1.

~~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 strategies identified in Phase III will set the stage for future work, but it is anticipated that work on the regional activities will begin before the end of Phase III, as will work to set up for the next iteration of the Cohesive Strategy.~~

Table 1. Phase III milestones and deliverables

Comment [CP106]: SRSC – Insinuates all the concreate actions will occur and due to budget constrainst and other external forces we do not need to give the impression simply because we have an agreed upon implementation plan that all action s will be taken

Comment [CP107]: WRSC – this seems to be a pivotal item that needs to be more clearly spelled out. Does this mean that no concrete actions will be recommended at the end of Pase III? If the end product of the CS effort is essentially a planning framework (as opposed to an actual plan) then is each community, county, state, region, agency, etc. to develop its own specific plan, using the shared framework to help ensure that all those individual plans fit together? I m not sure how some of the other items, especially #7, #10 and #12 can be accomplished without having an implementation plan in place

Comment [CP108]: WRSC – should this be table one?

Comment [CP109]: WRSC – this paragraph answers some of the questions from the previous comment. suggest moving this to page 35 just before the mid-page sentence that begins…at the conclusion of phase 3 which will reduce readers confusion when they read numbered items.

Comment [R110]: Option B is needed….after election cycle….

Actions	Tentative Dates
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
National and Regional Implementation Plans	2013

Table 2. Phase III milestones and Deliverables OPTION 2 (After Election Cycle)

Actions	Tentative Dates
CSSC quarterly meetings	Jan, April, July, Sept 2012
Final draft report of Phase III is complete	November 2012
WFEC approves draft report of Phase III	January 2013
WFLC approves draft report of Phase III	February 2013
National and Regional Implementation Plans	2013-2014

~~IMPORTANCE OF~~ COMMUNICATION AND OUTREACH

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

The Wildland Fire Executive Council (WFEC) created the Cohesive Strategy Communication Workgroup on September 2, 2011. The WFLC and the WFEC recognized the importance of communication during the Cohesive Strategy process and committed resources and support to ensure that all interested stakeholders are able to access timely information, engage in the process, and affect the final outcome.

Overarching communication outcomes were agreed upon: Information Dissemination, Organizational Communication and Collaboration, and Implementation. This is to ensure that stakeholders, interested parties, and the public are informed of progress in the development of the Cohesive Strategy, that communication processes are used to enhance and sustain collaboration among stakeholders toward development and implementation of the Cohesive Strategy, and that management and oversight options are available to move forward on the Cohesive Strategy in a collaborative manner.

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. Successful implementation of the Cohesive 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. This collaborative process is ~~just beginning~~ongoing and will continue into Phase III and beyond.

Phase II has shown the value of a decision-making structure that operates from the top-down and from the bottom-up. 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 WFEC, CSSC, the RSCs, and 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 healthy and resilient landscapes to fire-adapted communities, and wildland fire 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.

Comment [CP113]: SRSC - Insert ongoing. We need to make sure we recognize and ensure readers do not get the impression we have never worked together before on these issues. Especially in the south, it would put many in the fire community off if they read that sentence as is. Important to recognize the good work that is already occurring and we are collectively attempting to move it up a not

APPENDIX A: GLOSSARY

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). 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.

Affected party
A person or group of people who are affected by the outcome of a decision or action.

Biomass
Any organic matter that is available on a renewable or recurring basis. Under the Farm Security and Rural Investment Act of 2002 (Title IX, Sec. 9001), biomass includes agricultural crops, trees grown for energy production, wood waste and wood residues, plants (including aquatic plants and grasses), residues, fibers, animals wastes and other waste materials, and fats, oils, and greases (including recycled fats, oils, and greases), but not recycled paper or unsegregated solid waste. (From Farm Bill Glossary on the National Agricultural Law Center website http://nationalaglawcenter.org/#.)

Fire-adapted community
Human communities consisting of informed and prepared citizens collaboratively planning and taking action to safely coexist with wildland fire.

Fire-adapted ecosystem
An ecosystem is "an interacting, natural system, including all the component organisms, together with the abiotic environment and processes affecting them" (NWCG Glossary). A fire-adapted ecosystem is one that collectively has the ability to survive or regenerate (including natural successional processes) in an environment in which fire is a natural process.

Fire community
Collectively refers to all those who are engaged in any aspect of wildland fire-related activities.

Fire exclusion
Land management activity of keeping vegetation or ecosystems from burning in a wildland fire.

Fire management community
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.

Fire science community
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.

Landscape ~~Resilient~~Resilience   ~~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.~~The ability of a landscape to absorb the effects of fire by regaining or maintaining its characteristic structural, compositional and functional attributes. The amount of resilience a landscape possesses a landscape possesses is proportional to the magnitude of fire effects required to fundamentally change the system.

Silviculture   "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.

Stakeholder   A person or group of people who has an interest and involvement in the process and outcome of a land management, fire management, or policy decision.

Viewshed   An area of land, water, or other environmental element that is visible to the human eye from a fixed vantage point.

APPENDIX B: ACRONYMS

AD	Administratively Determined
BAER	Burned Area Emergency Rehabilitation
BAR	Burned Area Rehabilitation
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
CAR	Community at Risk
CE	Categorical Exclusion
CEQ	Council of Environmental Quality
CRAFT	Comparative Risk Assessment Framework and Tools
CS	Cohesive Strategy
CSOC	Cohesive Strategy Oversight Committee
CSSC	Cohesive Strategy Sub-Committee
CWPP	Community Wildfire Protection Plan
DHS	Department of Homeland Security
DOD	Department of Defense
DOI	Department of the Interior
EACG	Eastern Area Coordinating Group
EAJA	Equal Access to Justice Act
EMAC	Emergency Management Assistance Compact
EMDS	Ecosystem Management Decision Support system
ESA	Endangered Species Act
FACA	Federal Advisory Committee Act
FEMA	Federal Emergency Management Agency
FEPP	Federal Excess Property Program
FFT2	Firefighter 2
FLAME Act	Federal Land Assistance, Management, and Enhancement Act
FLN	Fire Learning Network
4FRI	Four Forest Restoration Initiative (in Arizona)
FPA	Fire Program Analysis
FPU	Fire Planning Unit
FWS	U.S. Fish and Wildlife Service
GACC	Geographic Area Coordinating Center

Comment [CP115]: Danny Lee - Correction

GAO	General Accounting Office
HB	House Bill
HFRA	Healthy Forest Restoration Act
HVR	Highly Valued Resource
IAFC	International Association of Fire Chiefs
ICS	Incident Command System
ID	Idaho
IMT	Incident Management Team
IQCS	Incident Qualification and Certification System
ITC	Intertribal Timber Council
JFSP	Joint Fire Science Project
LMPs	Land Management Plans
LRMPs	Land and Resource Management Plans
MAC	Multi-Agency Coordination
METI	Management and Engineering Technologies International, Inc
MNICS	Minnesota Incident Command System
MOU	Memorandum of Understanding
MT	Montana
NACo	National Association of Counties
NASA	National Aeronautics and Space Administration
NASF	National Association of State Foresters
NEMAC	National Environmental Modeling and Analysis Center (UNC Asheville)
NEPA	National Environmental Protection Act
NFPA	National Fire Protection Association
NGA	National Governors' Association
NGO	Non-government Organization (e.g., non profit)
NICC	National Interagency Coordination Center
NIFC	National Interagency Fire Center
NLC	National League of Cities
NMAC	National Multi-Agency Coordinating Group
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service
NSAT	National Science and Analysis Team
NVC	Net Value Change

PDSI	Palmer Drought Severity Index
NWCG	National Wildfire Coordinating Group
OMB	Office of Management and Budget
OR	Oregon
OWFC	Office of Wildland Fire Coordination
PPE	personal protective equipment
QFR	Quadrennial Fire Review
RFA	Rural Fire Assistance
RFD	Rural Fire Department
ROSS	Resource Ordering and Status System
RPL	Recognition of Prior Learning
RSC	Regional Strategy Committee
SAF	Society of American Foresters
SERPPAS	Southern Regional Partnership for Planning and Sustainability
SFA	State Fire Assistance
SGA	Southern Governors' Association
SGSF	Southern Group of State Foresters
SWRA	Southern Wildfire Risk Assessment
TNC	The Nature Conservancy
USDA	U.S. Department of Agriculture
USFA	U.S. Fire Administration
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VFA	Volunteer Fire Assistance
VFD	Volunteer Fire Department
WFDSS	Wildfire Decision Support System
WFEC	Wildland Fire Executive Council
WFLC	Wildland Fire Leadership Council
WG	Western Regional Working Group
WGA	Western Governors' Association
WRSC	Western Regional Strategy Committee
WUI	Wildland-urban Interface

Comment [CP116]: SRSC – capitalize to be consistent

APPENDIX C: REFERENCES

Cohesive Wildland Fire Management Strategy Foundational Documents

2009 Quadrennial Fire Review (QFR), 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

- 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

A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment: A 10-Year Strategy Implementation Plan. Western Governors Association, 2006,
http://forestsandrangelands.gov/resources/plan/documents/10-yearstrategyfinal_dec2006.pdf,

References and Documents

A National Cohesive Wildland Fire Management Strategy, 2010
http://forestsandrangelands.gov/strategy/documents/reports/1_CohesiveStrategy03172011.pdf

Federal Land Assistance, Management and Enhancement Act of 2009 Report to Congress, 2010,
http://forestsandrangelands.gov/strategy/documents/reports/2_ReportToCongress03172011.pdf

Jakes, P, et al, Improving Wildfire Preparedness: Lessons from Communities across the U.S., Human Ecology Review, Vol 14, No 2, 2007, Society of Human Ecology,
http://www.sfrc.ufl.edu/faculty/monroe/jakesetal.pdf

Northeastern Regional Strategy Committee. 2011. *A National Cohesive Wildland Fire Strategy: Northeastern Regional Assessment*. September 30, 2011. 56 p

O'Laughlin, **Jay**. 2011. "Federal Land as a Percentage of Total State Land Area," Fact Sheet #8, Policy Analysis Group, College of Natural Resources, University of Idaho, Moscow. Available online at http://www.cnrhome.uidaho.edu/default.aspx?pid=120573

Southeastern Regional Strategy Committee. 2011. *A National Cohesive Wildland Fire Strategy: Southeastern Regional Assessment*. September 30, 2011. 79 p.

Western Regional Strategy Committee. 2011. *A National Cohesive Wildland Fire Strategy: Western Regional Assessment*. September 30, 2011. 61 p.

Comment [CP117]: Unbold

References from A National Cohesive Wildland Fire Strategy: Northeastern Regional Assessment. September 30, 2011.

Cardille, Jeffrey A., S. J. Ventura, and M. G. Turner. 2001. Environmental and Social Factors Influencing Wildfires in the Upper Midwest, United States. *Ecological Applications* 11:111–127.

Noss, Reed F., E.T LaRoe III, and J.M. Scott, 1995. Endangered Ecosystems of the United States: A Preliminary Assessment of Loss and Degradation. U.S Dept. of the Interior, National Biological Service, Washington DC. (http://biology.usgs.gov/pubs/ecosys.htm)

Nowacki, Gregory J., and M. D. Abrams. 2008. The demise of fire and "mesophication" of forests in the eastern United States. *BioScience* 58:123–138.

Nowak, D., J. Walton, J. Dwyer, L. Kaya, and S. Myeong. 2005. The increasing influence of urban environments on U.S. forest management. *Journal of Forestry* 103(8): 377-382.

Nowak, D., and J. Walton. 2005. Projected urban growth (2000-2050) and its estimated impact on the U.S. forest resource. *Journal of Forestry* 103(8): 383-389.

McCaffrey, Sarah. Personal communication.

Mangan, Richard. 2007. Wildland firefighter fatalities in the United States: 1990–2006. Boise, ID: National Wildfire Coordinating Group, Safety and Health Working Team, National Interagency Fire Center 841: 28.

Radeloff, V. C., R. B. Hammer, S. I. Stewart, J. S. Fried, S. S. Holcomb, and J. F. McKeefry. 2005. The Wildland-Urban Interface in the United States. *Ecological Applications* 15:799–805.

Smith, B., P. Miles, C. Perry, and S. Pugh. 2009. Forest resources of the United States, 2007. Gen. Tech. Rep. Washington, DC: U.S. Department of Agriculture, Forest Service, Washington Office: 336.

Stein, S., R. McRoberts, R. Alig, M. Nelson, D. Theobald, M. Eley, M. Dechter, and M. Carr. 2005. Forests on the edge: housing development on America's private forests. Gen. Tech. Rep. PNW-GTR-636. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station: 16.

Swanston, C., M. Janowiak, L. Iverson, L. Parker, D. Mladenoff, L. Brandt, P. Butler, M. St. Pierre, A. Prasad, S. Matthews, M. Peters, D. Higgins, and A. Dorland. 2011. Ecosystem vulnerability assessment and synthesis: a report from the Climate Change Response Framework Project in northern Wisconsin. Gen. Tech. Rep. NRS-82. Newtown Square, PA: U.S Department of Agriculture, Forest Service, Northern Research Station: 142.

USDA Forest Service, Fire and Aviation Management. 2006. Annual Wildland Fire Summary Report. [On)line database]. http://famweb.nwcg.gov. [Date accessed unknown].

USDA Forest Service, Northeastern Area. 2007. Northeastern Area State and Private Forestry Strategic Plan Update for Fiscal Years 2008-2012. Newtown PA. (http://na.fs.fed.us/pubs/strat_plan/na_strategic_plan_2008-2012_lr.pdf)

USDA Forest Service, Northeastern Area State and Private Forestry, Cooperative Fire Management. 2007. Combined Summaries of Community Wildfire Protection Data, March. Newtown Square, PA.

References from A National Cohesive Wildland Fire Strategy: Southeastern Regional Assessment. September 30, 2011.

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

Andreu, A. and L. A. Hermansen-Baez. 2008. Southern Group of State Foresters. Fire in the South 2. The Southern Wildfire Risk Assessment.

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

Brown, D.G., K. M. Johnson, T. R. Loveland, and D. M. Theobald. 2005. Rural Land-Use Trends in the Conterminous United States, 1950–2000. Ecological Applications, 15(6) 2005. pp. 1851-1863.

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

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

Buckley, D., D. Carlton, D. Krieter, and K. Sabourin. 2006. Southern Wildfire Risk Assessment Final Report. http://www.southernwildfirerisk.com/reports/projectreports.html

Butler, B. J. and D. N. Wear. 2011. Chapter 5. Forest Ownership Dynamics of Southern Forests. In: Forest Futures Technical Report. D. N. Wear and J. G. Greis. http://www.srs.fs.fed.usda.gov/futures/

Hermansen-Baez, L.A., Prestemon, J.P., Butry, D.T., Abt, K.L., Sutphen, R. The Economic Benefits of Wildfire Prevention Education. 2011. http://www.interfaceSoutheast.org/products/fact_sheets_the-economic-benefits-of-wildfire-prevention-education/ or www.srs.fs.usda.gov/pubs/ja/ja_hermansenoo2.pdf

Lippincott, C.L. 2000. Effects of Imperata cylindrica (L.) Beauv. Cogon grass invasion on fire regime in Florida sandhill (USA). *Natural Areas Journal* 20:140-149.

Managing the Impacts of Wildfire on Communities and the Environment – A Report to the President in Response to the Wildfires of 2000. Fire and Aviation Management, USDA Forest Service.

Miller, J. H. D. and J. Coulson Lemke. Chapter 15. The Invasion of Southern Forests by Nonnative Plants: Current and Future Occupation with Impacts, Management Strategies, and Mitigation Approaches. In: Forest Futures Technical Report. D. N. Wear and J. G. Greis. http://www.srs.fs.fed.usda.gov/futures/

Mutual Expectations for Preparedness and Suppression in the Interface, *http://www.forestsandrangelands.gov/strategy/documents/mutual_expectations_2010.pdf*

Comment [CP118]: SRSC – revisions below include our foundational documents.

Formatted: Indent: Left: 0", First line: 0"

Nowacki, G.J. and M.D. Abrams. 2008. The demise of fire and ''mesophication'' of the eastern united states. *BioScience*, 58, 123–128.

Poulter, B., R.L. Feldman, M. M. Brinson, B. P. Horton, M. K. Orbach, S. H. Pearsall, E. Reyes, S. R. Riggs, and J. C. Whitehead. 2009. Sea-level rise research and dialogue in North Carolina: Creating windows for policy change. *Ocean and Coastal Management.* 52(3-4):147-153.

Prestemon, J.P., Butry, D.T., Abt, K.L., and R. Sutphen. 2010. Net benefits of wildfire prevention education efforts. Forest Science 56 (2): 181-192.

Smeins, F.E. and L.B. Merrill. 1988. Long-term Change in a Semi-arid Grassland. In. Edwards Plateau Vegetation – Plant Ecological Studies in Central Texas. Edited by B.B. Amos and F.R. Gehlbach. Baylor Univ. Press, Waco. 144 p.

Southern Group of State Foresters 2007. Issue Paper Wildland Fire and Forest Fuels on Private and State Lands. http://www.forestry.ok.gov/websites/forestry/images/3.5_3000_CF_Wildland%20Fire%20And%20Fuels%20Priority%20Issue%20Paper.pdf

Stanturf, J. A. and S. L. Goodrick. 2011. Chapter 17: Fire. In: Forest Futures Technical Report. D. N. Wear and J. G. Greis. http://www.srs.fs.fed.usda.gov/futures/

Stephens, S.L. 2005. Forest fire causes and extent on United States Forest Service lands. International *Journal of Wildland Fire*, 2005. 14, 213-222.

U.S. Forest Service. United States Global Change Research Program. 2011. Southeast Region. In. USGCRP Global Climate Change Impacts in the U.S. Accessed July 30, 2011. http://www.globalchange.gov/publications/reports/scientific-assessments/us-impacts/full-report/regional-climate-change-impacts/southeast

Wear, D. N. and J. G. Greis. 2011. The Southern Forest Futures Project Summary Report (Draft). U.S. Forest Service.

Western National Forests: A Cohesive Strategy is needed to address Catastrophic Wildland Fire Threats. 1999. U.S. General Accounting Office.

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

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

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

References from A National Cohesive Wildland Fire Strategy: Western Regional Assessment. September 30, 2011.

Public Land Ownership by States. http://www.nrcm.org/documents/publiclandownership.pdf

National Fire Protection Association (NFPA) Third Needs Assessment of the U.S. Fire Service; Conducted in 2010 and Including Comparisons to the 2001 and 2005 Needs Assessment Surveys.

Northeast Region

Northeast Regional Strategy Committee

Name	Agency / Organization
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

Name	Agency / Organization
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

Northeast RSC Support Staff

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

Southeast Region

Southeast Regional Strategy Committee

Name	Agency / Organization
Mike Zupko (Chair)	SGA / SGSF
Kevin Fitzgerald (Vice Chair)	NPS
Liz Struhar	NPS (alternate)
Liz Agpaoa	USFS Southern Region
Dan Olsen	USFS (alternate)
Tom Boggus	Texas State Forester - NASF
Ed Brunson	BIA
Larry Mahler	BIA (Alternate)
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
Kier Klepzig	SRS

Comment [CP119]: SRSC – names added and titles corrected

Southeast Working Group

Name	Agency / Organization
David Frederick (Chair)	SGSF
Darryl Jones (Vice Chair)	~~Southeast Carolina~~South 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

Comment [CP120]: SRSC - correction

Southeast Region Support Staff

Name	Agency / Organization
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

Western Region

Western Regional Strategy Committee

Name	Agency / Organization
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

Name	Title/Organization
Bill Avey	USFS
Bill Tripp	Karuk Tribe
Carol Daly	Flathead Economic Policy - WGA
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 Rocky Mountain Experimental Station
Laura McCarthy	TNC
Sue Stewart	USFS
Travis Medema	Oregon Department of Forestry

Comment [CP121]: WRSC – Bill's name has 2 p's in it

Comment [CP122]: WRSC - clarification

Cohesive Strategy Subcommittee

Name	Agency / Organization
Lew Southard	USFS
Jenna Sloan/Gus Smith	DOI
Dan Smith	NASF
Caitlyn Pollihan	NASF/ CWSF
Bob Roper/Douglas MacDonald	IAFC
Ann Walker	WGA
Ryan Yates	NACo
Patti Blankenship	USFA
Jim Erickson	ITC

Wildland Fire Executive Council

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

Wildland Fire Leadership Council Membership

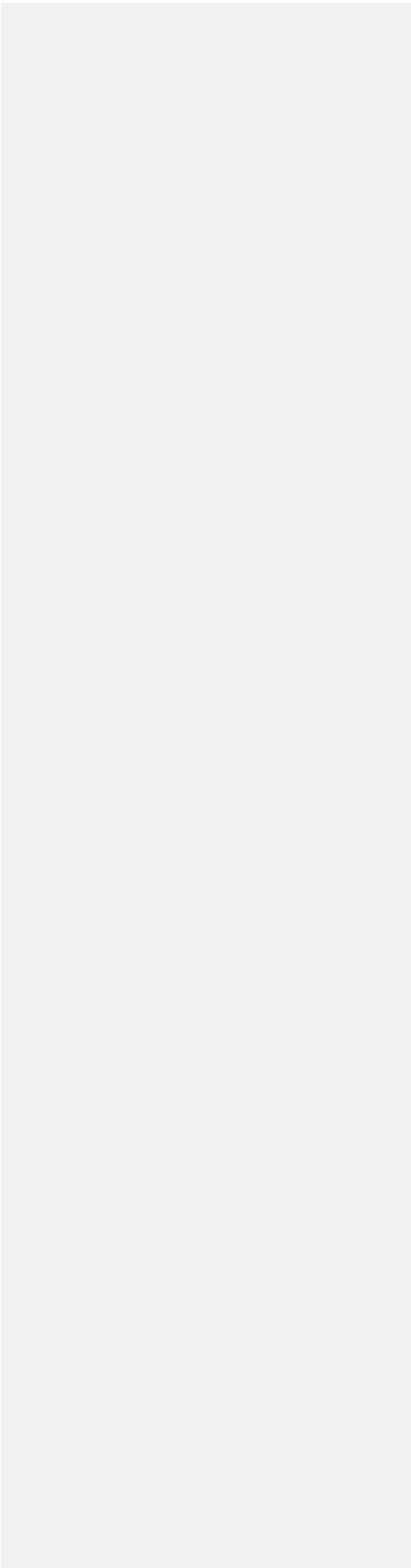| Member	Agency / Organization
Rhea Suh, Assistant Secretary for Policy, Management and Budget, WFLC Chair	DOI
Butch Blazer, USDA Deputy Undersecretary for Natural Resources and the Environment	USDA
Tom Tidwell, Chief	USFS
~~John~~Johnathan Jarvis, Director	NPS
Rowan Gould, Acting Director	USFWS
Bob Abbey, Director	BLM
Mike Black, Director	BIA
Marcia McNutt, Director	USGS
Glenn Gaines , United States Fire Administration	DHS
John Kitzhaber, Governor, State of Oregon	Governor, Western States Representative
Bev Perdue, Governor, State of North Carolina	Governor, National Governors' Association
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

Comment [CP123]: SRSC - correction

Comment [CP124]: SRSC - correction

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

OBJECTIVES

Situation and Context
1. What is the National Wildland Fire Management Cohesive Strategy (Cohesive Strategy)?
2. What are the primary overarching goals of the Cohesive Strategy?
3. What is the specific role of regional efforts in the Cohesive Strategy?
4. What do you hope to accomplish with this specific workshop?

Guidelines
5. What general policies, regulations or laws govern wildland fire management in your area, agency or organization?
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.

Values
7. What broad societal and environmental values have been associated with fire in this region?
8. Briefly characterize how each broad value relates to or is affected by fire.
9. What are the dominant common values or perspectives among agencies? What are the dominant conflicts among values or perspectives?
10. Which of these conflicts are exceptionally difficult to address and why?

Uncertainties
11. What challenges in wildland fire management are created or compounded by lack of knowledge or understanding?
12. What societal or environmental changes or trends could affect wildland fire?
13. Briefly describe the uncertainties associated with these changes or trends that make them difficult to predict.

Goals and Objectives
14. What broad management goals or priorities exist for this area that relate to wildland fire?
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)?
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?
    1. Restoring and maintaining resilient landscapes
        1.1
        1.2
    2. Creating fire-adapted communities
        2.1
        2.2
    3. Wildfire Response
17. Which of the above are the highest priorities for completing this assessment and analysis?
18. For each priority goal, identify contributing objectives, and a range of actions and activities that could meet each objective.
19. Now finalize into an objectives hierarchy.

Measures for Success (Endpoints)
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).
21. What is the level of acceptability of these endpoints given the range of perspectives and values?

ALTERNATIVES

Actions
22. List the possible broad actions and activities from the objectives section (#).

Alternatives
23. Identify the combination of actions and activities that best reflects the continuation of current policies and practices.
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.
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.
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.

APPENDIX F: MAPS

Figure 6. Tree mortality in the United States in 2010

Figure 7. National insect and disease risk in 2006

APPENDIX G: NSAT REPORT

APPENDIX H: COMMUNICATIONS FRAMEWORK

A National Cohesive
Wildland Fire Management Strategy
Phase II National Report
10/18/2011 DRAFT

Table of Contents

Insert photo of wildland fire

EXECUTIVE SUMMARY

The National Cohesive Wildland Fire Management Strategy (Cohesive Strategy) Phase II is a collaborative effort to identify, define, and address wildland fire problems and opportunities in the three regions of the United States: the Northeast, the Southeast, and the West. Addressing wildland fire problems requires a multi-jurisdictional approach with cooperation and effective communication between the stakeholders. The Cohesive Strategy brings together representatives of federal, state, local, and tribal governments, and non-governmental organizations to describe the unique problems experienced in each region. These stakeholders collaboratively identify current successful actions and immediate steps than can be taken to reduce the risk of fire to communities, to restore resilient landscapes, and to improve wildland fire response.

Clarifying the roles and responsibilities of those engaged in wildland fire protection will bring a renewed and strengthened approach to addressing our nation's wildland fire problems, and will lessen tensions that may be experienced in some locations. Increasing partnerships and increasing opportunities to collaborate among organizations is critical to maximizing opportunities for successful wildland fire management. Phase II brought about a commitment by cities, counties, states, and public and private landowners to make progress on accomplishing the three goals of the Cohesive Strategy:

- Restoring and maintaining resilient landscapes;
- Creating fire-adapted communities; and
- Responding to wildfires (wildland fires).

The Wildland Fire Leadership Council (WFLC) has adopted this vision for the next century: "To safely and effectively extinguish fire when needed; use fire where allowable; manage our natural resources; and as a nation, to live with wildland fire." The fundamental role of the WFLC is to provide guidance to the regions through efficiency improvements, to fully utilize existing authorities to accomplish the three national goals, and to provide the decision space necessary to implement identified current successful regional actions.

The three regions face differing wildland fire problems due to differences in geography, climate, and land ownership patterns. In Phase II of the Cohesive Strategy, the regions formed Regional Strategy Committees (RSCs) to develop regional assessments, identify the regional challenges, improve communication among partners, and identify strategies and opportunities for improvement. The Regional Assessments form the basis for this national report on Phase II. Phase II brings together the RSCs in a holistic approach to create a unified strategy, not just for wildland fire suppression, but to explore issues of natural resource management, and 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.

Northeast Region

The Northeast Region comprises 20 states and is the most densely populated region. The vast majority of the land is in private ownership and fires occur primarily in the spring, fall, and summer. Seasonal and extended drought conditions often create wildland fire hazards in the Northeast. Local partnerships focus on initial attack and putting fires out quickly. Fire suppression is accomplished through interstate compacts among the states and with Canada.

Southeast Region

The Southeast Region comprises 13 states stretching from the Atlantic Seaboard to Texas. High wildland fire occurrence, extensive wildland-urban interface (WUI), a year-round fire season, and rapid regrowth of vegetation/fuels characterize the wildland fire problem in the Southeast. Land ownership is highly fragmented with the majority of forestlands in private ownership. Fragmentation poses a challenge to a coherent policy of landscape management and fuels reduction. A culture of prescribed burning exists in the Southeast and is essential to managing fuel loads. The Southeast implements more prescribed burns, with more acres treated than any other region, mostly on private land. Fire suppression is accomplished by cooperation and partnerships between local, state, and federal fire resources, and interstate forest fire compacts.

West Region

The West Region comprises 17 states spanning nearly half of the continental U.S, including Alaska, Hawaii, and the affiliated Pacific Islands. Wildland fire in the West is challenging due to vast areas of publicly owned and managed lands where access is extremely limited, terrain is steep, and the climate is arid or semi-arid. In areas managed for wilderness values, wildland fire management focuses on achieving ecological objectives rather than a suppression response. The West has been in an extended drought for more than a decade, which increases threats posed by wildfire, but also fosters infestations of bark beetles, which are killing trees and leaving millions of acres of dead, standing trees (see appendix F). The West has seen a rapid escalation of severe fire behavior over the past two decades resulting in increased fire suppression costs, significant home and property losses, and increased threats to communities. Wildland fires in the West result in complex and costly efforts for post-fire restoration due to steep topography and highly erosive soils and flooding. Fire suppression is accomplished by cooperation and partnerships among local, state, and federal agencies and organizations.

Values, Objectives and Actions Common to All Regions

As part of the assessments, the RSCs identified regional values and objectives. Some common objectives and actions were identified in Phase II and are discussed in detail within the Phase II National Report.

Values – Each RSC articulated many value statements, and a short overview of each appears in this document. Several values were common to all three regions, including: safety of firefighters and the public, protection of private property, conservation of air and water quality, restoring healthy and resilient landscapes, 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 and Actions – 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. The regions support working forests and wildlands, local economies and jobs, and diverse products and markets. Several cross-cutting objectives, so-called because they will affect all three national goals simultaneously, were identified across the regions:

(1) Invest in, learn from, and build upon successful partnership and collaborative efforts, including Community Wildfire Protection Plans, or their equivalent.

(2) Develop and conduct effective education and outreach to empower citizen engagement in, and support for, wildland fire management activities.

(3) Proactively use a variety of active vegetation management tools and techniques, including prescribed fire, to achieve local and large landscape objectives.

Regional information; identification of values, trends and risks; and the delineation of actions, objectives, and performance measures identified in the regional assessments will be valuable in Phase III of the Cohesive Strategy. The regional assessments will be used to build a national trade-off analysis. For detail beyond what is included in this national report, see the regional assessments.

The RSCs coordinate with the National Science and Analysis Team (NSAT) to incorporate the best available science into the Cohesive Strategy. The NSAT uses 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 is included in appendix G of this report. The WFEC, CSSC, RSCs and the NSAT will continue to work together in Phase III.

The key to the Cohesive Strategy's success is the commitment to collaboration. Working together will allow us to accomplish the goals of the National Cohesive Strategy for Wildland Fire Management.

INTRODUCTION

When landscapes burn, lives, property, and ecological values are at risk. In 2011, the Wallow Fire in Arizona and New Mexico burned over 841 square miles and destroyed more than 30 structures, fires in the state of Texas burned over 3.7 million acres and consumed over 7,000 structures, and the Pagami Creek Wildfire burned over 100,000 acres in the Boundary Waters Canoe Area Wilderness in Minnesota. Fire is a natural process and a mechanism for biological renewal across forest and rangeland ecosystems. During the 20th century, federal, state, and local firefighters were successful at putting out most wildland fires in the early stages. An unintended consequence of their diligence, partnered with the lack of active management of our landscapes, is the overstocking of our nation's forests 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 wildland fires that threaten homes, communities and resource values, and can cause widespread property damage.

Large and destructive wildland fires led to the drafting of the 1995 Federal Wildland Fire Policy and Program Review, a look at wildland fire issues, mainly focused on the federal ownership, including fuels management, the role of fire in the environment, and wildland-urban interface issues. 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, tribes, 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.

The Quadrennial Fire and Fuels Review was conducted in 2005, and then in 2009 the Quadrennial Fire Review (QFR) was completed. 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 anticipated future wildland fire management needs, risk to communities and firefighters, as well as described core mission strategies and key capabilities that can be applied to wildland fire management challenges. This was also the first in what would become a series of reviews, plans and strategies to move the fire community and the nation forward safely and more effectively. None, however, completely solved the problems; as communities and the wildland fire environment are constantly changing, requiring the fire community to do the same.

Annual fire suppression costs are high. In 2002, the cost of suppression to the federal government was $1.7 billion. In 2008, state and local governments spent over $1.6 billion on suppression and wildland fire mitigation. 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, to comprehensively address wildland fire management in the United States.

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.

Within the fire community, a shared vision has taken shape: working together to prepare the landscape for natural fire occurrences, to prepare communities to face wildfire risks, and to coordinate effective wildland fire response. Foundational documents, as identified in the Phase I of the Cohesive Strategy, highlighted the need for shared responsibilities, effective partnerships, and improved interagency coordination and response. They created an imperative for a new direction in expectations for federal, state, and local wildland fire protection agencies to address our nation's wildland fire problem at the most efficient cost.

In 2010, Phase I of the Cohesive Strategy outlined a three-phase process to address the three primary factors presenting the greatest challenges and opportunities to make a positive difference to fire management: restoring and maintaining resilient landscapes, creating fire-adapted communities, and improving wildfire response. The Cohesive Strategy builds upon previous work, the foundational documents, and Guiding Principles and Core Values identified in Phase I.

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.

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 WFLC laid out a new vision for the next century 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" began in Phase II of the strategy with the creation of RSCs and the development of regional strategies. Those regional strategies will unite to form one national strategy. The Cohesive Strategy is different from all prior plans because of the collaborative process by which it was formulated. It is not merely a strategy for federal agencies, it is a strategy for the many groups that have come together across the nation to combine their regional perspectives and create one shared vision of how all stakeholders can work together to reduce risks of wildland fire to landscapes, 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, 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.

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 agencies, firefighting organizations, tribes, counties, and cities (see Figure 1).

Figure 1. 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 meet the needs to complete Phase III. The WFEC is responsible for promoting and facilitating the implementation for the Cohesive Strategy. The CSSCs and RSCs are chartered sub-groups of the WFEC. The CSSC was chartered at the beginning of Phase I and the RSCs and their working groups were chartered at the beginning of Phase II and will continue to function through Phase III and beyond.

The RSCs are 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 WFEC, CSSC and RSCs as the Phase III trade-off analyses are completed.

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.

In Phase II, the CSOC transitioned into the Cohesive Strategy Sub-Committee (CSSC). The WFEC and CSSC guided Phase II through completion of the regional assessments and drafting of the national report. Phase II was directed by the Wildland Fire Executive Council (WFEC) and developed by the Cohesive Strategy Sub-Committee (CSSC) which are composed of representatives of federal and state 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.

Figure 2. Cohesive Strategy Regions: Northeast, Southeast, and West

Phase II of the Cohesive Strategy provided a unique opportunity to the three regions of the country—Northeast, Southeast, and West (see Figure 2)—to chart their own course in landscape and wildland fire management to reduce the risks posed by wildland fire to multiple values. The RSCs came together, with the support of Working Groups, and broadened engagement of regional stakeholders, managers and analysts, non-governmental organizations and universities, to identify the challenges, values, and opportunities for improved land and fire management in their regions. This regional approach to Phase II of the Cohesive Strategy will result in a national strategy that is supported by local, regional and national information, engagement and action. Regional assessments include obstacles, real and perceived, that stakeholders experience and identify strategies to address them.

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 used by the WFEC, CSSC and 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.

Comparative Risk Assessment within the Cohesive Strategy

A comparative risk assessment tool to evaluate the consequences of alternative wildland fire management strategies was proposed in Phase I of the Cohesive Strategy. The Phase I document 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 reasoning, one can view the Cohesive Strategy as a 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 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.

In conjunction with the NSAT, the RSCs embarked on this Phase II process, which included specifying regional objectives and designing initial alternatives. 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 framework for the work of the NSAT.

Regional Strategy Committees

The RSCs were supported in their efforts by the NSAT, which 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. 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 RSCs identified current successes, relationships, and opportunities for work that can be done before the completion of Phase III of the Cohesive Strategy. 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.

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. 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.

Phase II gave the RSCs an opportunity to take ownership of regional ideas and goals. 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 a variety of 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.

PHASE II – REGIONAL ASSESSMENTS AND STRATEGIES 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 E). 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 wildland fire and fire response in each region. They describe the values, both ecological and social, within the regions and the trends and uncertainties relating to wildland fire and risks to landscapes and communities. The RSCs developed objectives and initial alternatives and actions.

As a prelude to Phase III, the RSCs described initial alternatives to be considered for reducing risk to meet the national goals identified in Phase I. They are a broad set of alternatives that, with the help of analytical methods 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." The assessment process and the resulting collaboration and identification of regional issues will continue as we move into Phase III and beyond.

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 the report.

REGIONAL COLLABORATION AND OUTREACH

RSCs are collaborative teams representing wildland fire agencies, tribes, industry, and non-governmental organizations. The RSCs undertook extensive outreach to contact stakeholders for input on the core questions relating to challenges, values, trends, and objectives. This unprecedented outreach strategy is the key to building a national cohesive strategy for wildland fire management.

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, and 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 D for RSC and Working Group members.)

RSCs contacted over 1,300 stakeholders by telephone and email and through posts to outreach websites and in person at meetings. 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.

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

Phase II of the Cohesive Strategy identifies the unique legal, regulatory and jurisdictional environment in which wildland fire and resource management agencies operate nationally and regionally. Wildland fire and resource management decisions are guided and informed by a suite of laws, regulations and administrative policies that exist at the federal, state, tribal and local levels. The interpretation of the laws, policies and regulations ultimately determine management activities. Phase II regional assessments identify federal laws – such as the National Environmental Policy Act and the Endangered Species Act, which guide planning processes on federal lands and provide for the protection and conservation of rare, threatened, and endangered species – as significant laws impacting the accomplishment of wildland fire

and resource management goals. Other key laws and regulations that impact the ability of managers to achieve natural resource and wildland fire management objectives identified across the regions are the National Forest Management Act, the Environmental Protection Agency's smoke management policies and the U.S. Forest Service's National Forest System Land Management Planning Rule, among others.

Through regional objectives and actions, the RSCs propose constructive resolutions to ongoing policy conflicts and suggest ways to take advantage of the opportunities they present. Opportunities to address policy barriers and gaps that prevent full coordination and collaboration and/or the most flexible use of existing authorities to plan and implement landscape-scale treatments are identified in the regional assessment reports.

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 E) 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.

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,
- Restoration of healthy and resilient landscapes, and
- Protection of scenic viewsheds (visible natural environment).

Trends and Risks

Response, input, and observations also reveal 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 identify 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.

Land Ownership in the Northeast Region

Ownership
- Federal Land
- Native American Land
- State Land
- Other Public Land
- Private Land

0 75 150   300 Miles

1 inch = 157.83 miles

Produced by the U.S. Forest Service, Northeastern Area State and Private Forestry, MDH 9/15/11

Figure 3. Map showing Northeast Region land ownership

Values

The Northeast RSC identifies a variety of unique values and groups 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 these issues.

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 will be 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, all of which 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

Figure 4. Map showing Southeast Region land ownership

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 categorizes 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 wildland fire and prescribed burns) has a significant place in the history and culture of the Southeast. Historically, individual landowners played a large role in prescribed burning, and 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 wildland fire 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 wildland fire 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 RFDs to provide initial wildland fire 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 West Region Values, Trends, and Risks

Figure 5. The West is dominated by large blocks of public land, which present challenges in fire and land management

Values

The Western RSC identifies many values similar to those of the other two regions; however, the following values are 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, cultural resources, and dynamic and diverse habitats. The appearance of the landscape is important and aesthetics vary by individual, 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 maintaining public access to the lands 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 wildland fire 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 addresses 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 Western RSC seeks to build upon in developing its assessment and strategy.

OBJECTIVES AND ACTIONS

The aim of the Cohesive Strategy is to produce a strategy for achieving the national goals and reducing risks posed by wildland fire that incorporates objectives and actions at the national, regional, and local level. Phase II does 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. While no two regions identify objectives in exactly the same language, there are significant elements held in common among all three regions. The following sections outline the objectives and actions developed by the RSCs, highlighting objectives and actions that are held in common across the regions and/or across the national goals. The common concepts are synthesized from the regional objectives and actions, which are quoted from the regional assessments in the next sections. Objectives and actions 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. More information on these objectives and actions can be found in the regional assessment reports.

Actions Common to the Three National Goals

Each of the RSCs identify concepts that contribute to success in each of the three national goals. In reviewing these proposed actions, all three RSCs emphasize 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 and wildlands, local economies and jobs, and diverse products and markets.

Restore and Maintain Resilient Landscapes

Despite the unique regional ecosystems and social-economic contexts under which objectives and actions have been developed, a number of ideas emerge 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 express their vision of creating fire-adapted communities quite differently, but these elements that contribute to creating fire-adapted communities are held in common:

- Reduce unwanted human-caused wildland fire ignitions in and near communities.

- Support community wildland fire protection planning.

Wildland Fire Response

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

- Provide for firefighter and public safety.

- Improve effectiveness and efficiency of the wildland fire management organization.

Regional Actions Common to the Three National Goals

The focus of Phase II is 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.

Based on unique regional conditions and stakeholder engagement, the Northeast, Southeast, and West identify, individually, 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 are 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 identifies several actions and activities common across the national goals and regional objectives. These actions 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 agrees 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 wildland fire 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.

West 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 wildland fire 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

Response to this goal in the Southeast acknowledges the challenge of maintaining or restoring landscapes in a complex environment of many small landowners; the objectives focus on a need for locally-calibrated, proactive treatment to restore and maintain landscapes. Resilient landscapes are resilient to fire and balance the need to reduce catastrophic wildfire risk to WUI communities throughout the Southeast. Healthy working forests are part of the Southeast's cultural heritage, as well as a critical part of the regional economy. The region's diversity and uniqueness means that restoring and maintaining landscapes is a critical goal. The wildland fire management community agrees that flexibility to select locally-appropriate management techniques must be retained and encouraged so that prescribed burns

can be implemented where appropriate and feasible, while in other areas mechanical treatments may be the only option. One key objective is identifying and focusing on the areas in which limited resources can be leveraged or combined to create the most significant impact on restoring landscapes and reducing the risk of catastrophic wildfires. However, rapid urbanization and soaring population within the Southeast may necessitate a greater focus on communities and the WUI rather than landscapes; therefore although Restore and Maintain Landscapes is a priority goal in the Southeast, management directives must be written with the understanding that restoration efforts may not be feasible in certain areas of the Southeast where human structures mingle with fire adapted landscapes in the WUI.

- 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 wildland fire (i.e. storm damage, insects, ice storms, hurricanes, insects and disease) that reduce ecosystem vitality and increase susceptibility to wildfire.

West 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 at the center of coordinated cross-jurisdictional wildland fire 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 wildland fire 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

This goal is particularly important in the Southeast, where human communities are adjacent to or located within wildland fire prone landscapes. Communities can survive wildfire without loss of life or significant damage to infrastructure and recover and thrive economically. However, this requires human populations directly engage in wildland fire planning to assess the level of wildfire risk to themselves and their communities, sharing responsibility and participating in actively mitigating the threat. In order for this to be successful, communities must take responsibility for the consequence of their actions. At the same time, the wildland fire management community must catalyze this process through education, engagement, outreach, and support to communities in preparation and planning. In addition to engaging with existing communities, a vital part of the engagement process must be raising awareness of incorporating wildfire risk into the design process for future homes and communities. In the Southeast, there may be as much potential for change through engaging in the process of creating fire adapted human communities as through effective fuels management.

- 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.

West Region

Preventing or minimizing the loss of life and property due to wildland fire 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.

Wildland Fire Response

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

Northeast Region

Throughout the Northeast, 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. Focused on firefighter safety, wildland fire management, and flexibility for locally-appropriate response to unplanned ignitions, two main objectives are identified below. Of particular concern in the Southeast is the need for specialized equipment such as tractor plows that are not in widespread use outside of the region. A second major concern is ensuring appropriate and consistent training for partners and cooperators, particularly RFDs, whose membership changes frequently. Finally, promoting indirect attack where appropriate has proven an effective way to minimize risk to firefighters and maximize resource benefit. The wildland fire management community agrees a need exists for agencies and organizations to retain the ability to select and apply techniques and tactics based on local conditions and needs.

- Increase firefighter safety by using risk management.

- Increase and leverage resource capability and capacity. Streamline and support training across all areas to maximize effectiveness.

West Region

Focused on firefighter safety, wildland fire management, and flexibility for locally appropriate response to unplanned ignitions, two main objectives were identified below. Of particular concern in the Southeast is the need for specialized equipment such as tractor plows that are not in widespread use outside of the region. A second major concern is ensuring appropriate and consistent training for partners and cooperators, particularly RFDs, whose membership changes frequently. Finally, promote indirect attack where appropriate and effective to minimize risk to firefighters and maximize resource benefit. The wildland fire management community agrees a need exists for agencies and organizations to retain the ability to select and apply techniques and tactics based on local conditions and needs.

- 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.

DEVELOPING INITIAL ALTERNATIVES

Management Scenarios and Areas to Explore for Reducing Risk

Phase II of the Cohesive Strategy had two main components: (1) to bring together the stakeholders and communities to 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 built on an understanding of the national goals and regional needs and constraints. 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 management constraints 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. Analytical methods will be used to test initial alternatives developed by the RSCs. The initial 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"

To develop "alternative management scenarios", the Northeast RSC spent much of their time identifying objectives and activities that would significantly increase, decrease, or change their ability to meet the

national goals. They developed a list of activities that they want the NSAT to explore to determine how much change would occur if the activity is increased, decreased, or eliminated. The activities listed are not proposed "alternatives." They are simply a list of areas to explore to determine if efficiencies can be gained by reallocating resources. The Northeast RSC feels they need more data to develop alternative management scenarios. The Northeast articulates 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 modifying 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 sees 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, focusing on the national goals. Each scenario emphasizes a subset of the regional objectives and actions while assuming no significant increase or decrease 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 fuels 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. This process has highlighted the importance of data standards and data accessibility across federal, state, tribal, local and non-governmental organizations.

Fine-scale processes tend to be better understood than broad-scale processes or strategic issues. For example, there is 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.

Each subteam 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 transition to Phase III under way. Groups involved in Phase III include the WFLC, WFEC, CSSC, NSAT, RSCs, Working Groups, and many other stakeholders. The objectives, outcomes, and timeline for completing Phase III and moving toward implementation and revision of the Cohesive Strategy are detailed in this section. It is important to understand that the completion of each phase Cohesive Strategy is a separate milestone and that the Cohesive Strategy is a national, iterative process that will continue into the future.

AA national trade-off analysis will be completed in Phase III. The analysis will be a science-based risk assessment that identifies a range of alternatives that:

- Point toward an effective path to achieving the national goals and regional objectives and reducing risk,

- Leverage regional values and investments,

- Explore the full decision space available to national and regional stakeholders, and

- Articulate national trade-offs among alternative activities and priorities associated with alternatives.

The Phase III report will summarize the national trade-off analysis and identify steps necessary to move toward the national goals identified in Phase I.

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.

(12) Establishes 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.

(13) Fully articulates the Cohesive Strategy as an ongoing, iterative process to develop and explore alternatives.

Timeline

The WFEC will work with the CSSC, NSAT, RSCs, and other 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 .

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 strategies identified in Phase III will set the stage for future work, but it is anticipated that work on the regional activities will begin before the end of Phase III, as will work to set up for the next iteration of the Cohesive Strategy.

Table 1. Phase III milestones and deliverables

Actions	**Tentative Dates**
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

Actions	Tentative Dates
WFLC approves draft report of Phase III	November 2012
National and Regional Implementation Plans	2013

Table 2. Phase III milestones and Deliverables OPTION 2 (After Election Cycle)

Actions	Tentative Dates
CSSC quarterly meetings	Jan, April, July, Sept 2012
Final draft report of Phase III is complete	November 2012
WFEC approves draft report of Phase III	January 2013
WFLC approves draft report of Phase III	February 2013
National and Regional Implementation Plans	2013-2014

IMPORTANCE OF COMMUNICATION

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

The Wildland Fire Executive Council (WFEC) created the Cohesive Strategy Communication Workgroup on September 2, 2011. The WFLC and the WFEC recognized the importance of communication during the Cohesive Strategy process and committed resources and support to ensure that all interested stakeholders are able to access timely information, engage in the process, and affect the final outcome.

Overarching communication outcomes were agreed upon: Information Dissemination, Organizational Communication and Collaboration, and Implementation. This is to ensure that stakeholders, interested parties, and the public are informed of progress in the development of the Cohesive Strategy, that communication processes are used to enhance and sustain collaboration among stakeholders toward development and implementation of the Cohesive Strategy, and that management and oversight options are available to move forward on the Cohesive Strategy in a collaborative manner.

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. Successful implementation of the Cohesive 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. This collaborative process is just beginning and will continue into Phase III and beyond.

Phase II has shown the value of a decision-making structure that operates from the top-down and from the bottom-up. 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 WFEC, CSSC, the RSCs, and 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 healthy and resilient landscapes to fire-adapted communities, and wildland fire 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

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). 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.

Affected party	A person or group of people who are affected by the outcome of a decision or action.
Biomass	Any organic matter that is available on a renewable or recurring basis. Under the Farm Security and Rural Investment Act of 2002 (Title IX, Sec. 9001), biomass includes agricultural crops, trees grown for energy production, wood waste and wood residues, plants (including aquatic plants and grasses), residues, fibers, animals wastes and other waste materials, and fats, oils, and greases (including recycled fats, oils, and greases), but not recycled paper or unsegregated solid waste. (From Farm Bill Glossary on the National Agricultural Law Center website http://nationalaglawcenter.org/#.)
Fire-adapted community	Human communities consisting of informed and prepared citizens collaboratively planning and taking action to safely coexist with wildland fire.
Fire-adapted ecosystem	An ecosystem is "an interacting, natural system, including all the component organisms, together with the abiotic environment and processes affecting them" (NWCG Glossary). A fire-adapted ecosystem is one that collectively has the ability to survive or regenerate (including natural successional processes) in an environment in which fire is a natural process.
Fire community	Collectively refers to all those who are engaged in any aspect of wildland fire-related activities.
Fire exclusion	Land management activity of keeping vegetation or ecosystems from burning in a wildland fire.
Fire management community	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.
Fire science community	Subset of the fire community consisting of those who study, analyze, communicate, or educate others on the components of fire management that can be measured, such as fire behavior, fire effects, fire economics, and other related fire science disciplines.

Resilient

Generally referred to in this document as "resilient ecosystems," which are those that resist damage and recover quickly from disturbances (such as wildland fires) and human activities.

Silviculture

"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.

Stakeholder

A person or group of people who has an interest and involvement in the process and outcome of a land management, fire management, or policy decision.

Viewshed

An area of land, water, or other environmental element that is visible to the human eye from a fixed vantage point.

APPENDIX B: ACRONYMS

AD	Administratively Determined
BAER	Burned Area Emergency Rehabilitation
BAR	Burned Area Rehabilitation
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
CAR	Community at Risk
CE	Categorical Exclusion
CEQ	Council of Environmental Quality
CRAFT	Comparative Risk Framework and Tools
CS	Cohesive Strategy
CSOC	Cohesive Strategy Oversight Committee
CSSC	Cohesive Strategy Sub-Committee
CWPP	Community Wildfire Protection Plan
DHS	Department of Homeland Security
DOD	Department of Defense
DOI	Department of the Interior
EACG	Eastern Area Coordinating Group
EAJA	Equal Access to Justice Act
EMAC	Emergency Management Assistance Compact
EMDS	Ecosystem Management Decision Support system
ESA	Endangered Species Act
FACA	Federal Advisory Committee Act
FEMA	Federal Emergency Management Agency
FEPP	Federal Excess Property Program
FFT2	Firefighter 2
FLAME Act	Federal Land Assistance, Management, and Enhancement Act
FLN	Fire Learning Network
4FRI	Four Forest Restoration Initiative (in Arizona)
FPA	Fire Program Analysis
FPU	Fire Planning Unit
FWS	U.S. Fish and Wildlife Service
GACC	Geographic Area Coordinating Center

GAO	General Accounting Office	
HB	House Bill	
HFRA	Healthy Forest Restoration Act	
HVR	Highly Valued Resource	
IAFC	International Association of Fire Chiefs	
ICS	Incident Command System	
ID	Idaho	
IMT	Incident Management Team	
IQCS	Incident Qualification and Certification System	
ITC	Intertribal Timber Council	
JFSP	Joint Fire Science Project	
LMPs	Land Management Plans	
LRMPs	Land and Resource Management Plans	
MAC	Multi-Agency Coordination	
METI	Management and Engineering Technologies International, Inc	
MNICS	Minnesota Incident Command System	
MOU	Memorandum of Understanding	
MT	Montana	
NACo	National Association of Counties	
NASA	National Aeronautics and Space Administration	
NASF	National Association of State Foresters	
NEMAC	National Environmental Modeling and Analysis Center (UNC Asheville)	
NEPA	National Environmental Protection Act	
NFPA	National Fire Protection Association	
NGA	National Governors' Association	
NGO	Non-government Organization (e.g., non profit)	
NICC	National Interagency Coordination Center	
NIFC	National Interagency Fire Center	
NLC	National League of Cities	
NMAC	National Multi-Agency Coordinating Group	
NOAA	National Oceanic and Atmospheric Administration	
NPS	National Park Service	
NSAT	National Science and Analysis Team	
NVC	Net Value Change	

PDSI	Palmer Drought Severity Index
NWCG	National Wildfire Coordinating Group
OMB	Office of Management and Budget
OR	Oregon
OWFC	Office of Wildland Fire Coordination
PPE	personal protective equipment
QFR	Quadrennial Fire Review
RFA	Rural Fire Assistance
RFD	Rural Fire Department
ROSS	Resource Ordering and Status System
RPL	Recognition of Prior Learning
RSC	Regional Strategy Committee
SAF	Society of American Foresters
SERPPAS	Southern Regional Partnership for Planning and Sustainability
SFA	State Fire Assistance
SGA	Southern Governors' Association
SGSF	Southern Group of State Foresters
SWRA	Southern Wildfire Risk Assessment
TNC	The Nature Conservancy
USDA	U.S. Department of Agriculture
USFA	U.S. Fire Administration
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VFA	Volunteer Fire Assistance
VFD	volunteer fire department
WFDSS	Wildfire Decision Support System
WFEC	Wildland Fire Executive Council
WFLC	Wildland Fire Leadership Council
WG	Western Regional Working Group
WGA	Western Governors' Association
WRSC	Western Regional Strategy Committee
WUI	Wildland-urban Interface

APPENDIX C: REFERENCES

Cohesive Wildland Fire Management Strategy Foundational Documents

2009 Quadrennial Fire Review (QFR), 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

- 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

A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment: A 10-Year Strategy Implementation Plan. Western Governors Association, 2006, http://forestsandrangelands.gov/resources/plan/documents/10-yearstrategyfinal_dec2006.pdf,

References and Documents

A National Cohesive Wildland Fire Management Strategy, 2010 http://forestsandrangelands.gov/strategy/documents/reports/1_CohesiveStrategy03172011.pdf

Federal Land Assistance, Management and Enhancement Act of 2009 Report to Congress, 2010, http://forestsandrangelands.gov/strategy/documents/reports/2_ReportToCongress03172011.pdf

Jakes, P, et al, Improving Wildfire Preparedness: Lessons from Communities across the U.S., Human Ecology Review, Vol 14, No 2, 2007, Society of Human Ecology, http://www.sfrc.ufl.edu/faculty/monroe/jakesetal.pdf

Northeastern Regional Strategy Committee. 2011. *A National Cohesive Wildland Fire Strategy: Northeastern Regional Assessment*. September 30, 2011. 56 p

O'Laughlin, **Jay**. 2011. "Federal Land as a Percentage of Total State Land Area," Fact Sheet #8, Policy Analysis Group, College of Natural Resources, University of Idaho, Moscow. Available online at http://www.cnrhome.uidaho.edu/default.aspx?pid=120573

Southeastern Regional Strategy Committee. 2011. *A National Cohesive Wildland Fire Strategy: Southeastern Regional Assessment*. September 30, 2011. 79 p.

Western Regional Strategy Committee. 2011. *A National Cohesive Wildland Fire Strategy: Western Regional Assessment*. September 30, 2011. 61 p.

References from A National Cohesive Wildland Fire Strategy: Northeastern Regional Assessment. September 30, 2011.

Cardille, Jeffrey A., S. J. Ventura, and M. G. Turner. 2001. Environmental and Social Factors Influencing Wildfires in the Upper Midwest, United States. *Ecological Applications* 11:111–127.

Noss, Reed F., E.T LaRoe III, and J.M. Scott, 1995. Endangered Ecosystems of the United States: A Preliminary Assessment of Loss and Degradation. U.S Dept. of the Interior, National Biological Service, Washington DC. (http://biology.usgs.gov/pubs/ecosys.htm)

Nowacki, Gregory J., and M. D. Abrams. 2008. The demise of fire and "mesophication" of forests in the eastern United States. *BioScience* 58:123–138.

Nowak, D., J. Walton, J. Dwyer, L. Kaya, and S. Myeong. 2005. The increasing influence of urban environments on U.S. forest management. *Journal of Forestry* 103(8): 377-382.

Nowak, D., and J. Walton. 2005. Projected urban growth (2000-2050) and its estimated impact on the U.S. forest resource. *Journal of Forestry* 103(8): 383-389.

McCaffrey, Sarah. Personal communication.

Mangan, Richard. 2007. Wildland firefighter fatalities in the United States: 1990–2006. Boise, ID: National Wildfire Coordinating Group, Safety and Health Working Team, National Interagency Fire Center 841: 28.

Radeloff, V. C., R. B. Hammer, S. I. Stewart, J. S. Fried, S. S. Holcomb, and J. F. McKeefry. 2005. The Wildland-Urban Interface in the United States. *Ecological Applications* 15:799–805.

Smith, B., P. Miles, C. Perry, and S. Pugh. 2009. Forest resources of the United States, 2007. Gen. Tech. Rep. Washington, DC: U.S. Department of Agriculture, Forest Service, Washington Office: 336.

Stein, S., R. McRoberts, R. Alig, M. Nelson, D. Theobald, M. Eley, M. Dechter, and M. Carr. 2005. Forests on the edge: housing development on America's private forests. Gen. Tech. Rep. PNW-GTR-636. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station: 16.

Swanston, C., M. Janowiak, L. Iverson, L. Parker, D. Mladenoff, L. Brandt, P. Butler, M. St. Pierre, A. Prasad, S. Matthews, M. Peters, D. Higgins, and A. Dorland. 2011. Ecosystem vulnerability assessment and synthesis: a report from the Climate Change Response Framework Project in northern Wisconsin. Gen. Tech. Rep. NRS-82. Newtown Square, PA: U.S Department of Agriculture, Forest Service, Northern Research Station: 142.

USDA Forest Service, Fire and Aviation Management. 2006. Annual Wildland Fire Summary Report. [On)line database]. http://famweb.nwcg.gov. [Date accessed unknown].

USDA Forest Service, Northeastern Area. 2007. Northeastern Area State and Private Forestry Strategic Plan Update for Fiscal Years 2008-2012. Newtown PA. (http://na.fs.fed.us/pubs/strat_plan/na_strategic_plan_2008-2012_lr.pdf)

USDA Forest Service, Northeastern Area State and Private Forestry, Cooperative Fire Management. 2007. Combined Summaries of Community Wildfire Protection Data, March. Newtown Square, PA.

References from A National Cohesive Wildland Fire Strategy: Southeastern Regional Assessment. September 30, 2011.

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

Brown, D.G., K. M. Johnson, T. R. Loveland, and D. M. Theobald. 2005. Rural Land-Use Trends in the Conterminous United States, 1950–2000. Ecological Applications, 15(6) 2005. pp. 1851-1863.

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

Buckley, D., D. Carlton, D. Krieter, and K. Sabourin. 2006. Southern Wildfire Risk Assessment Final Report. http://www.southernwildfirerisk.com/reports/projectreports.html

Butler, B. J. and D. N. Wear. 2011. Chapter 5. Forest Ownership Dynamics of Southern Forests. In: Forest Futures Technical Report. D. N. Wear and J. G. Greis. http://www.srs.fs.fed.usda.gov/futures/

Lippincott, C.L. 2000. Effects of Imperata cylindrica (L.) Beauv. Cogon grass invasion on fire regime in Florida sandhill (USA). *Natural Areas Journal* 20:140-149.

Managing the Impacts of Wildfire on Communities and the Environment – A Report to the President in Response to the Wildfires of 2000. Fire and Aviation Management, USDA Forest Service.

Miller, J. H. D. and J. Coulson Lemke. Chapter 15. The Invasion of Southern Forests by Nonnative Plants: Current and Future Occupation with Impacts, Management Strategies, and Mitigation Approaches. In: Forest Futures Technical Report. D. N. Wear and J. G. Greis. http://www.srs.fs.fed.usda.gov/futures/

Mutual Expectations for Preparedness and Suppression in the Interface, *http://www.forestsandrangelands.gov/strategy/documents/mutual_expectations_2010.pdf*

Nowacki, G.J. and M.D. Abrams. 2008. The demise of fire and ''mesophication'' of the eastern united states. *BioScience*, 58, 123–128.

Poulter, B., R.L. Feldman, M. M. Brinson, B. P. Horton, M. K. Orbach, S. H. Pearsall, E. Reyes, S. R. Riggs, and J. C. Whitehead. 2009. Sea-level rise research and dialogue in North Carolina: Creating windows for policy change. *Ocean and Coastal Management.* 52(3-4):147-153.

Smeins, F.E. and L.B. Merrill. 1988. Long-term Change in a Semi-arid Grassland. In. Edwards Plateau Vegetation – Plant Ecological Studies in Central Texas. Edited by B.B. Amos and F.R. Gehlbach. Baylor Univ. Press, Waco. 144 p.

Southern Group of State Foresters 2007. Issue Paper Wildland Fire and Forest Fuels on Private and State Lands. http://www.forestry.ok.gov/websites/forestry/images/3.5_3000_CF_Wildland%20Fire%20And%20Fuels%20Priority%20Issue%20Paper.pdf

Stanturf, J. A. and S. L. Goodrick. 2011. Chapter 17: Fire. In: Forest Futures Technical Report. D. N. Wear and J. G. Greis. http://www.srs.fs.fed.usda.gov/futures/

Stephens, S.L. 2005. Forest fire causes and extent on United States Forest Service lands. International *Journal of Wildland Fire*, 2005. 14, 213-222.

U.S. Forest Service. United States Global Change Research Program. 2011. Southeast Region. In. USGCRP Global Climate Change Impacts in the U.S. Accessed July 30, 2011. http://www.globalchange.gov/publications/reports/scientific-assessments/us-impacts/full-report/regional-climate-change-impacts/southeast

Western National Forests: A Cohesive Strategy is needed to address Catastrophic Wildland Fire Threats. 1999. U.S. General Accounting Office.

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

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

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

References from A National Cohesive Wildland Fire Strategy: Western Regional Assessment. September 30, 2011.

Public Land Ownership by States. http://www.nrcm.org/documents/publiclandownership.pdf

National Fire Protection Association (NFPA) Third Needs Assessment of the U.S. Fire Service; Conducted in 2010 and Including Comparisons to the 2001 and 2005 Needs Assessment Surveys.

APPENDIX D: MEMBERSHIP LISTS

Northeast Region

Northeast Regional Strategy Committee

Name	Agency / Organization
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

Name	Agency / Organization
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

Northeast RSC Support Staff

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

Southeast Region

Southeast Regional Strategy Committee

Name	Agency / Organization
Mike Zupko (Chair)	SGA / SGSF
Kevin Fitzgerald (Vice Chair)	NPS
Liz Struhar	NPS (alternate)
Liz Agpaoa	USFS Southern Region
Dan Olsen	USFS (alternate)
Tom 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

Name	Agency / Organization
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

Name	Agency / Organization

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

Western Region

Western Regional Strategy Committee

Name	Agency / Organization
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

Name	Title/Organization
Bill Avey	USFS
Bill Trip	Karuk Tribe
Carol Daly	Flathead Economic Policy - WGA
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 Subcommittee

Name	Agency / Organization
Lew Southard	USFS
Jenna Sloan/Gus Smith	DOI
Dan Smith	NASF
Caitlyn Pollihan	NASF/ CWSF
Bob Roper/Douglas MacDonald	IAFC
Ann Walker	WGA
Ryan Yates	NACo
Patti Blankenship	USFA
Jim Erickson	ITC

Wildland Fire Executive Council

Name	Agency / Organization
Bill Kaage	NWCG
Douglas MacDonald	IAFC
Elizabeth Strobridge	NGA
Glenn Gaines	DHS
Jim Erickson	ITC
Jim Karels	NASF
Kirk Rowdabaugh	DOI
Mary Jacobs	NLC
Ryan Yates	NACo
Tom Harbour	USFS
Support Staff	
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
Butch Blazer, 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
John Kitzhaber, 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 E: Questions from the Comparative Risk Assessment Framework and Tools (CRAFT)

OBJECTIVES

Situation and Context

1. What is the National Wildland Fire Management Cohesive Strategy (Cohesive Strategy)?
2. What are the primary overarching goals of the Cohesive Strategy?
3. What is the specific role of regional efforts in the Cohesive Strategy?
4. What do you hope to accomplish with this specific workshop?

Guidelines

5. What general policies, regulations or laws govern wildland fire management in your area, agency or organization?
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.

Values

7. What broad societal and environmental values have been associated with fire in this region?
8. Briefly characterize how each broad value relates to or is affected by fire.
9. What are the dominant common values or perspectives among agencies? What are the dominant conflicts among values or perspectives?
10. Which of these conflicts are exceptionally difficult to address and why?

Uncertainties

11. What challenges in wildland fire management are created or compounded by lack of knowledge or understanding?
12. What societal or environmental changes or trends could affect wildland fire?
13. Briefly describe the uncertainties associated with these changes or trends that make them difficult to predict.

Goals and Objectives

14. What broad management goals or priorities exist for this area that relate to wildland fire?
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)?
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?
    1. Restoring and maintaining resilient landscapes
        1.1
        1.2
    2. Creating fire-adapted communities
        2.1
        2.2
    3. Wildfire Response
17. Which of the above are the highest priorities for completing this assessment and analysis?
18. For each priority goal, identify contributing objectives, and a range of actions and activities that could meet each objective.
19. Now finalize into an objectives hierarchy.

Measures for Success (Endpoints)

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).
21. What is the level of acceptability of these endpoints given the range of perspectives and values?

ALTERNATIVES

Actions

22. List the possible broad actions and activities from the objectives section (#).

Alternatives

23. Identify the combination of actions and activities that best reflects the continuation of current policies and practices.
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.
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.
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.

APPENDIX F: MAPS

Figure 6. Tree mortality in the United States in 2010

Figure 7. National insect and disease risk in 2006

APPENDIX G: NSAT REPORT

APPENDIX H: COMMUNICATIONS FRAMEWORK

WFEC Review Results

#	Description	Tom Harbour	Kirk Rowdabaugh	Glenn Gaines	Jim Karels	Douglas MacDonald	Jim Erickson	Ryan Yates	Bill Kaage	Mary Jacobs
1	From a presentation standpoint, the document badly needs to be reworked to make it internally consistent, tighter, sharper, grammatically correct, and generally more readable. The first few sections are repetitive and have the same flaw (not fatal but annoying) that was in the Phase I document—lots of words and many restatements of the same few points over and over again, but not a whole lot of substance. In the third paragraph from the bottom of page 11, we are still telling people what 'the report' is going to say!				D Too late to start over	A	AM; see JRE Edits		AM – let's work to clean it up for final. Do the best we can.	A
2	In general, I have a concern over the lack of one voice in the document. In particular you see this evident in the discussion of the Trends & Risks for the West located on page 21. It is not formatted the same way as neither of the other regions nor the same way that the West displayed values right above. This is also evident in places such as how and when Phase III is referenced by the Southeast region on page 23. Related to this issue is the use of headings throughout the document. It appears that only 2 levels of headings were used yet many of the topics appear to be subtopics and I would suggest the use of 3 headings to help provide a link message.				D Same as above	A	A		AM- same as above.	A
3	There are numerous grammar edits and revisions to ensure correct use of verbiage, tense, definitions and to correct incorrect statements and details.				A	A	A	A	AM – same.	A

WFEC Review Results

#	Description	Tom Harbour	Kirk Rowdabaugh	Glenn Gaines	Jim Karels	Douglas MacDonald	Jim Erickson	Ryan Yates	Bill Kaage	Mary Jacobs
4	The executive summary required some work both in context and the fact that the importance of a communications and implementation strategy was not mentioned in the exec. Summary. Additionally, neither WFEC nor WFLC provide any decision space to the stakeholders, consequently upon approval of Phase II and agreement to move ahead with Phase III, both entities will commit to the resources and investments needed to implement selected actions from the regions. All changes in the executive summary from the WRSC work towards this goal. The SRSC and NRSC also had comments on the Executive Summary that work well with the proposed western changes.				A	A	AM; Decision space will come when needed	A	D- unclear what is the issue, and what we're supposed to do about it in this document.	A
5	next to last paragraph and elsewhere. The NSAT report is described as being in Appendix G. I've been under the impression that it would be a separate report, same as the Regional reports.				A	A	AM: they all will be separate components of one strategy. Be consistent with references.	A	A	A
6	"When landscapes burn" is an alarmist statement. WRSC proposes replace it with "when wildland fire and fire-prone landscapes are not strategically managed" and the SRCS proposes replacing it with "when wildland fire is not appropriately managed"				D Keep it simple and in line with Phase I. yes landscapes do burn	A	A	A	A – I like the change we captured.	A
7	The wording on preparedness for the eventuality of a naturally ignited fire needs to more aggressively stress the importance of prepositioning and availability of adequate resources especially the CL215's, should conditions threaten and then get out of control.				D	A	D: too specific	A		A
8	$1.6 billion seems very low. Does this include suppression and mitigation for 50 states and local response?				AM 1.6 billion is states only	A	AM; use state data is easily accessible	AM "According to…?"		A
9	Addition of the word 'federal' for clarification purposes				A	A	A	A	A	A

WFEC Review Results

#	Description	Tom Harbour	Kirk Rowdabaugh	Glenn Gaines	Jim Karels	Douglas MacDonald	Jim Erickson	Ryan Yates	Bill Kaage	Mary Jacobs
10	it is important to emphasize the accomplishments made in the past. This is a good way to show the collaboration we are envisioning. Add sentence "An example of this vision is the Greater Okefenokee Association of Landowners. This is an organization of over 70 landowners/agencies (private, state, and federal) that work together on strategy for wildfires that occur in and near the fire prone Okefenokee Swamp in southeast Georgia"				A	A	AM: shorten it into one sentence	A	A	A
11	while this paragraph attempts to describe the bottom up efforts; are regional strategies truly considered bottom up? Where do field level efforts come into play? Suggest adding verbiage regarding composition of RSC' to acknowledge that field input was included in these efforts if/where field personnel contributed. This will hopefully provide more credibility to the CS and ground level buy-in				D Current wording is clear	A	A	A	A	A
12	The word 'define' should be changed to 'draft'				A	A	A	A	A	A
13	"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." Did any of the regional strategy committees use focus groups?				D Not a deal breaker	A	Yes, in aloes sense of the word. This recommendation too nit-picky	D = The focus groups occurred prior to regional committee development	A	A
14	The word 'specifying' should be changed to 'proposing'				A	A		A	A	A
15	It is important to keep this document all lands and that we do not single out any specific land ownership – proposed changes are more inclusive				A	A	A	A	A	A
16	Add 'initial' in front of the word objectives: clarifying status of objectives				AM only use initial once	A	A	A	A	A

WFEC Review Results

#	Description	Tom Harbour	Kirk Rowdabaugh	Glenn Gaines	Jim Karels	Douglas MacDonald	Jim Erickson	Ryan Yates	Bill Kaage	Mary Jacobs
17	The phrase, "encouraging homeowners to take responsibility for their homes," is likely to be poorly received by many homeowners. Alternative language might be, "enhancing opportunities for homeowners to proactively reduce hazards around their homes and property," or "engaging homeowners in ..." Such language suggests that homeowners want to be proactive but may find it difficult to do so, rather than implying they are irresponsible.				D Need strong statement here, no reason to water it down	A	A	A	A	A
18	SRSC - if private landowners are not included then the NE and SE will struggle to see this as an all-lands, national document and it will limit buy-in: add them as a bullet. WRSC - a lot of interests are not mentioned here that probably should be: environmental/conservation organizations, recreation, sporting, and wildlife interests, community and economic development groups, local firewise and firesafe groups, etc.				A	A	AM: Add and change "community members" to "Communities"	A	A	A
19	I think this number is actually higher – the Southeast sent out over 1,400 invitations, the Northeast made over 600 contacts, and the West never stated a total number of contacts, but received 135 comments and had 107 participants in forums. The SE contacted 1500 in our region alone. The same with the west….this needs to be revised				AM 2000	A	A	A	A	A

#	Description	Tom Harbour	Kirk Rowdabaugh	Glenn Gaines	Jim Karels	Douglas MacDonald	Jim Erickson	Ryan Yates	Bill Kaage	Mary Jacobs
20	Concerns about the last sentence. SRSC recommended removal, WRSC recommended replacing with "Some viable opportunities to address policy barriers and gaps that prevent full coordination and collaboration and/or the most flexible use of existing authorities to plan and implement landscape-scale treatments have been examined in the regional assessment reports."				A	A	A	A	AM – We need to remove word "impacting" and "impact" in the second paragraph and replace with "affecting" and "affect". Impact has negative connotations that don't hold true across all agencies. Making the change will allow for a better fit with what is recommended herein.	A
21	These sections need to be expanded similar to what was done for the regions following these brief statements. These are stated as being similar across all the regions and that carries power to be examined				D Already too long, not dealbreaker	A	D: expanded how, what language? We need specifics at this stage.	A	A	A
22	The 'maintain and enhance' bullet was dropped…recommend including it as it is a common value across all regions				A	A	A	A	A	A
23	No addressing of the large percentage of human caused fires. Add sentence "Prevention education can have a significant impact on reducing wildfires in this region, where greater than 95% of the fires are human caused."				A	A	A	A	A	A

WFEC Review Results

#	Description	Tom Harbour	Kirk Rowdabaugh	Glenn Gaines	Jim Karels	Douglas MacDonald	Jim Erickson	Ryan Yates	Bill Kaage	Mary Jacobs
24	Lack of Fire section needs to be revised and moved up towards the top of the list. the paragraph on "Lack of Fire" misses an important point. Somewhere in this paragraph, it needs to mention the role that lack of fire plays. In that I mean the West has big fires somewhere every single year, and usually many big fires. The Southeast has a culture of fire, both wild and prescribed, and is stated so right on page 18 of the draft report. However, most places in the Northeast do not have really big fires on a regular basis nor is fire a part of the culture, prescribed or otherwise. Use of prescribed fire is miniscule when compared to the many millions of acres of forest in the region. This lack of fire, and very long fire return intervals for most forest types, creates a lack of awareness, understanding, potential, etc. for many stakeholders. Whether they be a volunteer firefighter who has never seen a significant fire and therefore thinks they can't happen where he lives, or whether it is a homeowner who thinks the risk of a fire is so remote it's not worth the time to "firewise" their home, or whether it's a local or state government that needs to cut the budget and thinks "we never have fires around here" and therefore decreases capacity, the complacency due to infrequent fires is a real issue. It goes well beyond just modifying fire-dependent ecosystems. See revised Language				A	A	A	A	A	A
25	Ecosystem section: Recommend revision as the original focuses on air and water which might be appropriate for emphasis on quick wildfire suppression, but not using fire as a management tool. Wildland fire, as a general rule, does not help air and water quality, but can have positive effects if used to improve the health of the overall ecosystem				A	A	AM: The track changes do not make sense. They need a cleaner re-write.	A	A	A
26	Infrastructure language is a tremendous concern for southerners given the significant number of communities considered at risk of wildfire-related losses in the southeast.				A	A	What is there to agree to or disagree with? We are looking for final wording	A	A	A

WFEC Review Results

#	Description	Tom Harbour	Kirk Rowdabaugh	Glenn Gaines	Jim Karels	Douglas MacDonald	Jim Erickson	Ryan Yates	Bill Kaage	Mary Jacobs
27	This description was copied and pasted from the SE report but the entire description was not copied. What is in here makes it sound like all wildfire response is bad for the economic system. Promoting prescribed fire and wildland fire for resource benefit will actually have a positive effect on the economy. Include additional sentence….see revisions				A	A	AM: in the last line change "such as" to "including"	A	AM – I think we need to capture full range of options: prescribed fire and managing wildfire for multiple objectives	A
28	this caption should end after public land and not infer any statement on challenges				A	A	A	D	A	A
29	'however the following values were expressed uniquely by the west'. Tribal heritage and land use was a highlighted value of the northeast as well, therefore, it is not 'expressed uniquely by the west" suggest rewording paragraph introductory vibiage for tribal heritage and land use for the NE and West sections to isolate the real uniqueness of each assuming they are really unique to each region				A	A	A	A	A	A
30	"initial" and "proposing" should be added to clarify. We need room to change as we go through the iterative process (changes throughout this paragraph)				A	A	A	A	A	A
31	Actions Heading - again these need to be expanded similar to what was done for the regions following these brief statements. These are stated as being similar across the regions and that carries power to be examined.				A	A	??????	A	A	A
32	Restore Heading - again these need to be expanded similar to what was done for the regions following these brief statements. These are stated as being similar across the regions and that carries power to be examined.				A	A	??????	A	A	A
33	First bullet is the same as the goal itself? Redundant and should be deleted				A	A	D		A	A

WFEC Review Results

#	Description	Tom Harbour	Kirk Rowdabaugh	Glenn Gaines	Jim Karels	Douglas MacDonald	Jim Erickson	Ryan Yates	Bill Kaage	Mary Jacobs
34	Fire Adapted Communities Heading - again these need to be expanded similar to what was done for the regions following these brief statements. These are stated as being similar across the regions and that carries power to be examined.				A	A	?????	A	A	A
35	Wildland Fire Response Heading - again these need to be expanded similar to what was done for the regions following these brief statements. These are stated as being similar across the regions and that carries power to be examined.				A	A	?????	A	A	A
36	In the Wildland Fire Response bullets Maintaining capacity was addressed in all three regions and should be included				A	A	A	A	A	A
37	As written it insinuates that strategic opportunities only apply to the cross cutting actions, which they do not. They also incorporate actions specific to single goals.				A	A	A	A	A	A
38	The quote attributed to the NSAT comes from Appendix A of the Phase I report. The same language is used on page 9, paragraph 3, without attribution. Personally, I don't think it's necessary to quote NSAT in either instance and it's a matter of preference as to whether the language bears repeating in two places.				A	A	A	A	A	A
39	"They will use the values and trends information to apply social acceptability to the methodologies to be considered" is meaningless to me. I don't know where it came from, but if I find it in our report I'll be sure to strike it. Here's some alternative language: Management options to be considered will be evaluated not only for potential cost effectiveness, but also from a perspective of social acceptability and consistency with prevailing policies.				A	A	A	A	A	A
40	Where are the maps and models that are referenced coming from? There are many out there and may differ greatly.				?	A	??????	A		A
41	Here and in other places throughout the document the words 'we' or 'us' appear, and it is never really clear who we (or us) is – the WFLC? The RSCs? The fire services community? Anyone using the plan to inform their actions?				?	A	AM, keep the respondent perspective throughout the document.	A		A

WFEC Review Results

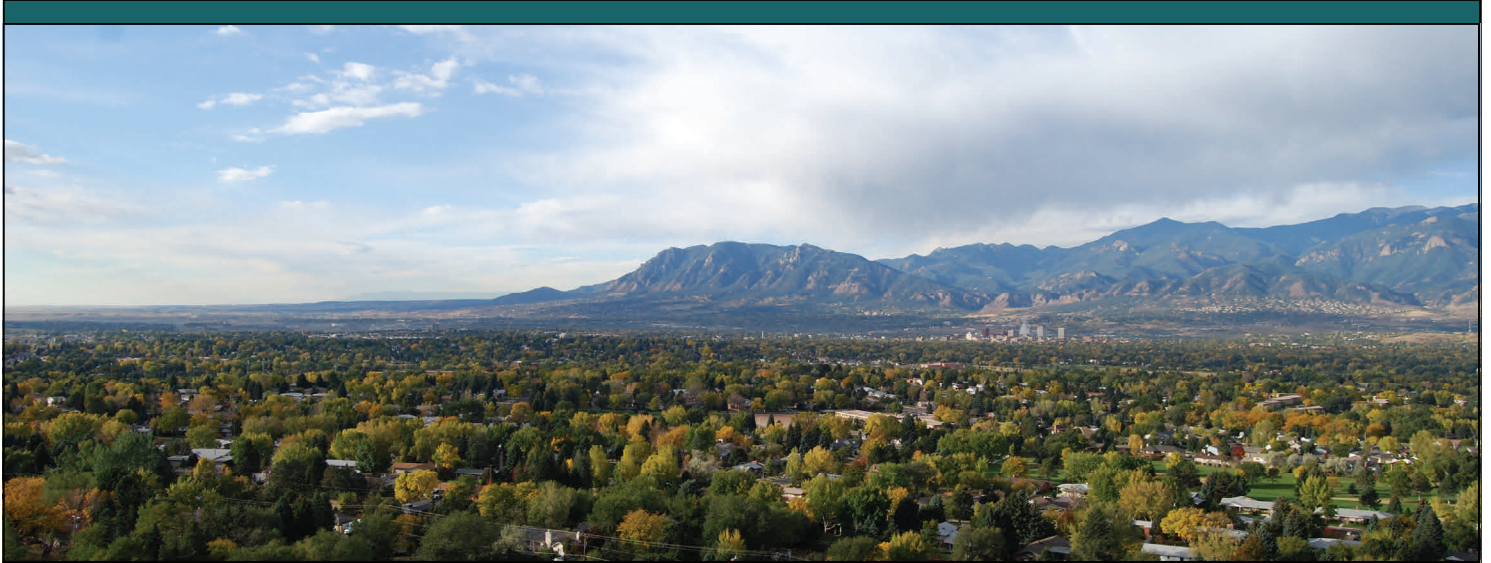| #	Description	Tom Harbour	Kirk Rowdabaugh	Glenn Gaines	Jim Karels	Douglas MacDonald	Jim Erickson	Ryan Yates	Bill Kaage	Mary Jacobs
42	"Then, to identify other reasonable combinations of actions and activities that collectively could contribute to long and short-term goals" is not a complete sentence and should be edited to make it clearer.				A	A	A	A	A	A
43	this is a writeup on wildfire, not on what the science team contributed. Recommend removing paragraph				A	A	A	A	A	A
44	Language is repeated in these two places, suggesting that a cut and paste operation went awry.				A	A	A	A	A	A
45	This paragraph answers some of the questions from the previous comment. …at the conclusion of phase 3 which will reduce readers confusion when they read numbered items. Moved verbatim from another section on page 38				A	A	A	A	A	A
46	WRSC - this seems to be a pivotal item that needs to be more clearly spelled out. Does this mean that no concrete actions will be recommended at the end of Pase III? If the end product of the CS effort is essentially a planning framework (as opposed to an actual plan) then is each community, county, state, region, agency, etc. to develop its own specific plan, using the shared framework to help ensure that all those individual plans fit together? I'm not sure how some of the other items, especially #7, #10 and #12 can be accomplished without having an implementation plan in place. SRSC - Insinuates all the concreate actions will occur and due to budget constraints and other external forces we do not need to give the impression simply because we have an agreed upon implementation plan that all action s will be taken				?	A	A	A	A	A
47	Decide between the two tables detailing timeline. Drafted based on WFEC comments					A	A	A	D - Two tables for two alternative timelines for WFLC to choose from.	A

WFEC Review Results

#	Description	Tom Harbour	Kirk Rowdabaugh	Glenn Gaines	Jim Karels	Douglas MacDonald	Jim Erickson	Ryan Yates	Bill Kaage	Mary Jacobs
48	by titling this heading 'importance of communications' it seems like we are trying to justify communications….should say just communications or communications in outreach. I would encourage the later as we also need to discuss the opportunity to outreach to appropriators and others to show due dillegence that is occurring since passing FLAME and the collective responsibility we are taking to financial accountability				A	A	A	A	A	A
49	Insert ongoing. We need to make sure we recognize and ensure readers do not get the impression we have never worked together before on these issues. Especially in the south, it would put many in the fire community off if they read that sentence as is. Important to recognize the good work that is already occurring and we are collectively attempting to move it up a not				A	A	A	A	A	A
50	Definition of resilient. I'm probably pushing a rope on this one, but I really dislike the definition of resilient here. As written, it implies that resilient ecosystems recover quickly from human activities. Such definitions unnecessarily separate humans from the ecosystems of which they are a part. The scientific literature on resiliency is well established and it makes no such distinction. The definitions of resiliency given in the NSAT report are well grounded in the literature and apply to all ecosystems or communities, human-dominated or not. Here's what we came up with in the NSAT report: Landscape Resilience: the ability of a landscape to absorb the effects of fire by regaining or maintaining its characteristic structural, compositional and functional attributes. The amount of resilience a landscape possesses is proportional to the magnitude of fire effects required to fundamentally change the system.				A	A	A	A	A	A
51	"Assessment" is missing as the A in CRAFT. Also, we have more acronyms than are actually used in the document. For example, NVC is not used.				A	A	A	A	A	A

A National Cohesive Wildland Fire Management Strategy

Phase II National Report - 10/27/11 Draft

TABLE OF CONTENTS

Big Cypress National Preserve Complex on Florida Panther National Wildlife Refuge. Credit: Florida Forest Service

EXECUTIVE SUMMARY

The National Cohesive Wildland Fire Management Strategy (Cohesive Strategy) is a collaborative effort to identify, define, and address wildland fire problems and opportunities across the country and in the three regions of the United States: the Northeast, the Southeast, and the West. Addressing wildland fire problems requires a multi-jurisdictional approach with cooperation and effective communication among all stakeholders. Phase II of the Cohesive Strategy has brought together representatives of federal, state, local, and tribal governments, non-governmental organizations and others to describe the unique problems experienced in each region. These stakeholders have collaboratively identified successful actions that are being taken now and next steps than can be taken to restore resilient landscapes, reduce the risk of fire to communities, and to improve wildland fire response. This national report summarizes and builds on these regional ideas to conclude Phase II and set the stage for Phase III of the Cohesive Strategy.

Clarifying the roles and responsibilities of those engaged in wildland fire management brings a renewed and strengthened approach to addressing our nation's wildland fire problems, and may lessen tensions experienced in some locations. Building partnerships and enhancing opportunities to collaborate among organizations are critical to successful wildland fire management. Cities, counties, states, tribes, and other public and private landowners have expressed an interest in collaborating with each other to meet the three goals of the Cohesive Strategy:

- 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.

The Wildland Fire Leadership Council (WFLC) has adopted this vision for this century: "To safely and effectively extinguish fire when needed; use fire where allowable; manage our natural resources; and as a nation, to live with wildland fire." The fundamental role of the WFLC is to provide guidance to the regions through efficiency improvements, to fully utilize existing authorities to accomplish the three national goals, and to provide the necessary resources and investments to implement identified current successful regional actions.

Prescribed burn, 2008. Credit: West Region

The three regions face differing wildland fire problems due to differences in geography, climate, and land ownership patterns. In Phase II of the Cohesive Strategy, the regions formed Regional Strategy Committees (RSCs) to develop regional assessments, identify the regional challenges, improve communication among partners, and identify proposed strategies and opportunities for improvement. The regional assessments form the basis for this national report on Phase II. Phase II brings together the RSCs in a holistic approach to create a unified strategy, not just for wildland fire suppression, but to explore issues of natural resource management, and 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 on wildland fire management issues.

Northeast Region

The Northeast Region comprises 20 states and is the most densely populated region. The vast majority of the land is in private ownership and fires occur primarily in the spring, fall, and summer. Seasonal and extended drought conditions often create wildland fire hazards in the Northeast. Local partnerships focus on initial attack and putting fires out quickly.

Lands are owned and held in stewardship by a diversity of individuals, tribes, industry, organizations, and local, state and federal agencies. The vast majority of land is in private ownership. Land uses and ownership patterns are complex, with many small holdings creating a diverse range of owner objectives. Public lands are often isolated among other land uses, including private and industrial forests and agricultural lands. Land ownership and management, natural and weather/climate event created fuels, high wildfire occurrence, and extensive wildland urban interface characterize the Northeast Region.

Southeast Region

The Southeast Region comprises 13 states stretching from the Atlantic Seaboard to Texas. High wildland fire occurrence, extensive wildland-urban interface (WUI), a year-round fire season, and rapid regrowth of vegetation/fuels characterize the wildland fire problem in the Southeast. Land ownership is highly fragmented with the majority of forestlands in private ownership. Fragmentation poses a challenge to a coherent policy of landscape management and fuels reduction. A culture of prescribed burning exists in the Southeast and is essential to managing fuel loads. The Southeast implements more prescribed burns, with more acres treated than any other region, mostly on private land. Fire suppression is accomplished by cooperation and partnerships between local, state, and federal fire resources, and interstate forest fire compacts.

West Region

The West Region comprises 17 states spanning nearly half of the continental U.S, including Alaska, Hawaii, and the affiliated Pacific Islands. Wildland fire in the West is challenging due to vast areas of publicly owned and managed lands where access is extremely limited, terrain is steep, and the climate in many locations is arid or semi-arid. In areas managed for wilderness values, wildland fire management focuses on maintaining wilderness characteristics rather than a suppression response. The West has been in an extended drought for more than a decade, which increases threats posed by wildfire, but also fosters infestations of bark beetles, which are killing trees and leaving millions of acres of dead, standing trees (see appendix F). The West has seen a rapid escalation of severe fire behavior over the past two decades resulting in increased fire suppression costs, significant home and property losses, and increased threats to communities. Wildland fires in the West result in complex and costly efforts for post-fire restoration due to steep topography and highly erosive soils and flooding. Fire suppression is accomplished by cooperation and partnerships among local, state, and federal agencies and organizations.

Values, Objectives, and Actions Common to All Regions

As part of the assessments, the RSCs identified regional values and objectives. Some common objectives and actions were identified in Phase II and are discussed in detail within the Phase II National Report.

Values – Each RSC articulated many value statements, and a short overview of each appears in this document. Several values were common to all three regions, including: safety of firefighters and the public, protection of private property, conservation of air and water quality, restoring healthy and resilient landscapes, and aesthetics. The Northeast assessment cited recreation as significant, the Southeast assessment noted industrial forestry infrastructure, and the West noted cultural values such as honoring tribal heritages and land uses, respecting the frontier culture, and stewarding public lands and working forests. These, and the other values expressed, provide the basis for developing regional objectives, actions, performance measures, and areas to explore for reducing risk.

Objectives and Actions – The RSCs adopted the national goals as their own and crafted a suite of initial objectives and actions to support each one. All three regions developed information that includes; identification of values, trends, and risks and the delineation of initial actions and objectives. This information, as identified in the regional assessments, will be valuable in Phase III of the Cohesive Strategy.

Several cross-cutting objectives, so-called because they will affect all three national goals simultaneously, were identified across the regions:

(1) Invest in, learn from, and build upon successful partnership and collaborative efforts, including Community Wildfire Protection Plans, or their equivalent.

(2) Develop and conduct effective education and outreach to empower citizen engagement in, and support for, wildland fire management activities.

(3) Proactively use a variety of active vegetation management tools and techniques, including prescribed fire, to achieve local and large landscape objectives.

(4) Support working forests and wildlands, local economies and jobs, and diverse products and markets.

The RSCs will continue to coordinate with the National Science and Analysis Team (NSAT) to incorporate the best available science into the Cohesive Strategy. The NSAT uses 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 WFEC, CSSC, RSCs, and the NSAT will continue to work together in Phase III.

There are two keys to the Cohesive Strategy's success: first is the commitment to collaborate. Working together will allow us to accomplish the goals of the National Cohesive Strategy for Wildland Fire Management. The second is a requirement for a comprehensive communication and implementation strategy which provides information and seeks feedback from all stakeholders throughout the process.

INTRODUCTION

When wildland fire is not appropriately managed, lives, property, and ecological values are at risk. In 2011, the Wallow Fire in Arizona and New Mexico burned over 841 square miles and destroyed more than 30 structures, fires in the state of Texas burned over 3.7 million acres and consumed over 7,000 structures, and the Pagami Creek Wildfire burned over 100,000 acres in the Boundary Waters Canoe Area Wilderness in Minnesota. Fire is a natural process and a mechanism for biological renewal across forest and rangeland ecosystems. During the 20th century, federal, state, and local firefighters were successful at putting out most wildland fires in the early stages. An unintended consequence of their diligence, partnered with the lack of active management of our landscapes, is the overstocking of our nation's forests 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 wildland fires that threaten homes, communities, and resource values, and can cause widespread property damage.

Large and destructive wildland fires led to the drafting of the 1995 Federal Wildland Fire Policy and Program Review, a look at wildland fire issues, mainly focused on the federal ownership, including fuels management, the role of fire in the environment, and wildland-urban interface issues. 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, tribes, 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.

The Quadrennial Fire and Fuels Review was conducted in 2005, and then in 2009 the Quadrennial Fire Review (QFR) was completed. 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 anticipated future wildland fire management needs, risk to communities and firefighters, as well as described core mission strategies and key capabilities that can be applied to wildland fire management challenges. This was also the first in what would become a series of reviews, plans and strategies to move the fire community and the nation forward safely and more effectively. None, however, completely solved the problems; as communities and the wildland fire environment are constantly changing, requiring the fire community to do the same.

Annual fire suppression costs are high. In 2002, the cost of suppression to the federal government was $1.7 billion. In 2008, state and local governments spent over $1.6 billion on suppression and wildland fire mitigation. In 2009, the continuing challenge of the wildland

**Lake City, TN, wildland fire near home.
Credit: South Region**

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

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 require a holistic approach, unified thinking, and cooperation among the multitude of stakeholders who share concern for America's landscapes.

Within the fire community, a shared vision has taken shape: working together to prepare the landscape for natural fire occurrences, to prepare communities to face wildfire risks, and to coordinate effective wildland fire response. An example of this vision is the Greater Okefenokee Association of Landowners. This is an organization of over 70 landowners/agencies (private, state, and federal) that work together on strategy for wildfires that occur in and near the fire prone Okefenokee Swamp in southeast Georgia. Foundational documents, as identified in the Phase I of the Cohesive Strategy,

Outreach and collaboration, June 2006.
Credit: West Region

highlighted the need for shared responsibilities, effective partnerships, and improved interagency coordination and response. They created an imperative for a new direction in expectations for federal, state, and local wildland fire protection agencies to address our nation's wildland fire problem at the most efficient cost.

In 2010, Phase I of the Cohesive Strategy outlined a three-phase process to address the three primary factors presenting the greatest challenges and opportunities to make a positive difference to fire management: restoring and maintaining resilient landscapes, creating fire-adapted communities, and improving wildfire response. The Cohesive Strategy builds upon previous work, the foundational documents, and Guiding Principles and Core Values identified in Phase I.

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.

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 WFLC laid out a new vision for the next century 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" began in Phase II of the strategy with the creation of RSCs and the development of regional strategies. Those regional strategies will unite to form one national strategy. The Cohesive Strategy is different from all prior plans because of the collaborative process by which it was formulated. It is not merely a strategy for federal agencies, it is a strategy for the many groups that have come together across the nation to combine their regional perspectives and create one shared vision of how all stakeholders can work together to reduce risks of wildland fire to landscapes, 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, 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 draft 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.

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 agencies, firefighting organizations, tribes, counties, and cities (see Figure 1).

Figure 1. Organizational chart for Cohesive Strategy governance

The WFEC is supported by the Cohesive Strategy Sub-Committee (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 meet the needs to complete Phase III. The WFEC is responsible for promoting and facilitating the implementation for the Cohesive Strategy. The CSSCs and RSCs are chartered sub-groups of the WFEC. The CSSC was chartered at the beginning of Phase I and the RSCs and their working groups were chartered at the beginning of Phase II and will continue to function through Phase III and beyond.

The RSCs are 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 WFEC, CSSC and RSCs as the Phase III trade-off analyses are completed.

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.

In Phase II, the CSOC transitioned into the CSSC. The WFEC and CSSC guided Phase II through completion of the regional assessments and drafting of the national report. Phase II was directed by the Wildland Fire Executive Council (WFEC) and developed by the CSSC, which are composed of representatives of federal and state 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.

Phase II of the Cohesive Strategy provided a unique opportunity to the three regions of the country—Northeast, Southeast, and West (see Figure 2)—to chart their own course in landscape and wildland fire management to reduce the risks posed by wildland fire to multiple values. The RSCs came together, with the support of Working Groups, and broadened engagement of regional stakeholders, managers and analysts, non-governmental organizations and universities, to identify the challenges, values, and opportunities for improved land and fire management in their regions. This regional approach to Phase II of the Cohesive Strategy will result in a national strategy that is supported by local, regional, and national information, engagement and action. Regional assessments include obstacles, real and perceived, that stakeholders experience and identify strategies to address them.

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 used by the WFEC, CSSC, and the RSCs for their evaluation and determination of future risk reduction strategies.

Figure 2. Cohesive Strategy Regions: Northeast, Southeast, and West

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.

Comparative Risk Assessment within the Cohesive Strategy

A comparative risk assessment tool to evaluate the consequences of alternative wildland fire management strategies was proposed in Phase I of the Cohesive Strategy. The Phase I document 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 reasoning, one can view the Cohesive Strategy as a 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 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.

In conjunction with the NSAT, the RSCs embarked on this Phase II process, which included proposing regional objectives and designing initial alternatives. 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 framework for the work of the NSAT.

Regional Strategy Committees

The RSCs were supported in their efforts by the NSAT, which 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. 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 RSCs identified current successes, relationships, and opportunities for work that can be done before the completion of Phase III of the Cohesive Strategy. 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.

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. All of the states have federal, state, local and private land within them. Each unique ownership pattern presents challenges in fire management, and the regions are best able to articulate those challenges and to collaboratively develop solutions.

Phase II gave the RSCs an opportunity to take ownership of regional ideas and goals. 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 a variety of 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.

PHASE II – REGIONAL ASSESSMENTS AND STRATEGIES 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 E). 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 wildland fire and fire response in each region. They describe the values, both ecological and social, within the regions and the trends and uncertainties relating to wildland fire and risks to landscapes and communities. The RSCs developed initial objectives and initial alternatives and actions.

As a prelude to Phase III, the RSCs described initial alternatives to be considered for reducing risk to meet the national goals identified in Phase I. They are a broad set of alternatives that, with the help of analytical methods 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 enhancing opportunities for homeowners to proactively reduce hazards around their homes and property, 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." The assessment process and the resulting collaboration and identification of regional issues will continue as we move into Phase III and beyond.

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 the report.

REGIONAL COLLABORATION AND OUTREACH

RSCs are collaborative teams representing wildland fire agencies, tribes, industry, and non-governmental organizations. The RSCs undertook extensive outreach to contact stakeholders for input on the core questions relating to challenges, values, trends, and objectives. This unprecedented outreach strategy is the key to building a national cohesive strategy for wildland fire management.

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, and local agencies and organizations,

- Local natural resource and fire service agencies,

- Industry groups,

- Private landowners, 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 D for RSC and Working Group members.)

RSCs contacted over 4,500 stakeholders by telephone and email and through posts to outreach websites and in person at meetings. 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.

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

Phase II of the Cohesive Strategy identifies the unique legal, regulatory and jurisdictional environment in which wildland fire and resource management agencies operate nationally and regionally. Wildland fire and resource management decisions are guided and informed by a suite of laws, regulations and administrative policies that exist at the federal, state, tribal and local levels. The interpretation of the laws, policies and regulations ultimately determine management activities. Phase II regional assessments identify federal laws – such as the National Environmental Policy Act and the Endangered Species Act, which guide planning processes on federal lands and provide for the protection and conservation of rare, threatened, and endangered species – as significant laws impacting the accomplishment of wildland fire and resource management goals. Other key laws and regulations that impact the ability of managers to achieve natural resource and wildland fire management objectives identified across the regions are the National Forest Management Act, the Environmental Protection Agency's smoke management policies and the U.S. Forest Service's National Forest System Land Management Planning Rule, among others. Through regional objectives and actions, the RSCs propose constructive resolutions to ongoing policy conflicts and suggest ways to take advantage of the opportunities they present. Some viable opportunities to address policy barriers and gaps that prevent full coordination and collaboration and/or the most flexible use of existing authorities to plan and implement landscape-scale treatments have been examined in the regional assessment reports.

Ding Darling National Wildlife Refuge, June 2004. Credit: U.S. Fish and Wildlife Service

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 E) 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.

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,
- Maintenance and enhancement of economies,
- Restoration of healthy and resilient landscapes, and
- Protection of scenic viewsheds (visible natural environment).

Trends and Risks

Response, input, and observations also reveal 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 identify 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

Land Ownership in the Northeast Region

Ownership
- Federal Land
- Native American Land
- State Land
- Other Public Land
- Private Land

0 75 150   300 Miles

1 inch = 157.83 miles

Produced by the U.S. Forest Service, Northeastern Area State and Private Forestry, MDH 9/15/11

Figure 3. Map showing Northeast Region land ownership

Values

The Northeast RSC identifies a variety of unique values and groups 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. Prevention education can have a significant impact on reducing wildfires in this region, where greater than 95 percent of the fires are human-caused.

Trends and Risks

*Lack of Fire***:** Lack of fire has created two primary issues in the Northeast. First, 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, all of which can increase fuel loading that may lead to more extreme fire behavior and negative impacts.

The second primary issue is complacency on several levels. The Northeast can be described in risk management terms as low occurrence but high risk. Unlike the West which has large, significant fires on an annual basis, or the Southeast which has a history and culture of fire (both wildfire and prescribed), the Northeast neither has large fires on a regular basis nor does prescribed fire play a significant role. With long intervals between large wildfire events, investments in preparedness, whether by governments or homeowners, is challenged and questioned. Wildfire preparedness at the local fire department level can be

overshadowed or downplayed because of the responsibility for more-frequent all hazard and medical emergency response.

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 will be 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.

Forest products industry: The forest products industry is integral to cost-effective landscape restoration, hazard mitigation, and fuels reduction. Industry infrastructure (skills and equipment) for using pulp, saw timber, and biomass is 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.

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 these issues.

Prescribed burn. Credit: Georgia Forestry Commission

Unique Southeast Region Values, Trends, and Risks

Land Ownership In The Southeast US

Land Ownership

BIA — TVA
BLM — USFS
BOR — USFWS
DOD — OTHER FEDERAL (DOE, DOJ, NASA)
NPS — Private and State Lands

S. Kovach, SACC
Prepared 26 Sept 2011
steve_kovach@fws.gov

Figure 4. Southeast Region land ownership

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 categorizes these values into five overarching categories of values: ecosystem, infrastructure, societal, economic, and wildland fire management.

The *Ecosystem* includes values associated with biodiversity, wildlife habitat And healthy forest/landscapes, as well as the air and water quality components, many of which are fire adapted and require periodic burning to maintain characteristic ecosystem structure and diversity.

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 wildland fire and prescribed burns) has a significant place in the history and culture of the Southeast. Historically, individual landowners played a large role in prescribed burning, and 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. Wildfire can cause economic devastation in the region, damaging or destroying marketable timber, biomass and other forest products and can also create costs associated with restoration activities. Failing to implement the full range of wildland fire management options can also have negative effects on local economies where natural systems rely on active land management practices such as prescribed fire to maintain landscape resiliency.

The ***Fire Management System*** includes values related to wildland fire 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 wildland fire 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 RFDs to provide initial wildland fire 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.

Tractors working a fire break. Credit: Florida Department of Forestry

Unique West Region Values, Trends, and Risks

Figure 5. The West is dominated by large blocks of public land

Values

The Western RSC identifies many values similar to those of the other two regions; however, the following values are 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, cultural resources, and dynamic and diverse habitats. The appearance of the landscape is important and aesthetics vary by individual, 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 maintaining public access to the lands 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

Alaskan forest. Credit: Dana Coelho, Region 2

preserve the watersheds, critical habitats, and other western values to be protected from uncharacteristic wildfire. The growing numbers of large landscape-scale community wildland fire 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 addresses 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 Western RSC seeks to build upon in developing its assessment and strategy.

OBJECTIVES AND ACTIONS

The aim of the Cohesive Strategy is to produce a strategy for achieving the national goals and reducing risks posed by wildland fire that incorporates objectives and actions at the national, regional, and local level. Phase II does 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. While no two regions identify objectives in exactly the same language, there are significant elements held in common among all three regions. The following sections outline the initial objectives and actions developed by the RSCs, proposing objectives and actions that are held in common across the regions and/or across the national goals. The common concepts are synthesized from the regional initial objectives and actions, which are quoted from the regional assessments in the next sections. Proposed objectives and actions are not presented in order of priority. Additional similarities exist at the sub-objective and action level, but this summary focuses primarily on regional initial objectives. More information on these proposed objectives and actions can be found in the regional assessment reports.

Actions Common to the Three National Goals

Each of the RSCs identify concepts that contribute to success in each of the three national goals. In reviewing these proposed actions, all three RSCs emphasize 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 and wildlands, local economies and jobs, and diverse products and markets.

Restore and Maintain Resilient Landscapes

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

- 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 express their vision of creating fire-adapted communities quite differently, but these elements that contribute to creating fire-adapted communities are held in common:

- Reduce unwanted human-caused wildland fire ignitions in and near communities.

- Support community wildland fire protection planning.

Wildland Fire Response

Given the very different wildland fire environments in the Northeast, Southeast, and West, approaches to improving wildland fire response differ. Three common, overarching elements are:

Providing for firefighter and public safety.

- Maintaining capacity.

- Improving effectiveness and efficiency of the wildland fire management organization.

Fire-adapted community showing wildland-urban interface.
Credit: West Region

Regional Actions Common to the Three National Goals

The focus of Phase II is 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.

Based on unique regional conditions and stakeholder engagement, the Northeast, Southeast, and West identify, individually, 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 are 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 identifies several actions and activities common across the national goals and regional objectives. These actions 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 agrees 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 as well as individual objectives under each goal.

- 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 wildland fire 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.

West 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 firefighters 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 wildland fire planning using the best available science.

Blowdown prescribed burn in Minnesota.
Credit: Northeast Region

- 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

Response to this goal in the Southeast acknowledges the challenge of maintaining or restoring landscapes in a complex environment of many small landowners; the objectives focus on a need for locally-calibrated, proactive treatment to restore and maintain landscapes. Resilient landscapes are resilient to fire and balance the need to reduce catastrophic wildfire risk to WUI communities throughout the Southeast. Healthy working forests are part of the Southeast's cultural heritage, as well as a critical part of the regional economy. The region's diversity and uniqueness means that restoring and maintaining landscapes is a critical goal. The wildland fire management community agrees that flexibility to select locally-appropriate management techniques must be retained and encouraged so that prescribed burns can be implemented where appropriate and feasible, while in other areas mechanical treatments may be the only option. One key objective is identifying and focusing on the areas in which limited resources can be leveraged or combined to create the most significant impact on restoring landscapes and reducing the risk of catastrophic wildfires. However, rapid urbanization and soaring population within the Southeast may necessitate a greater focus on communities and the WUI rather than landscapes; therefore although Restore and Maintain Landscapes is a priority goal in the Southeast, management directives must be written with the understanding that restoration efforts may not be feasible in certain areas of the Southeast where human structures mingle with fire adapted landscapes in the WUI.

**USFWS using aerial ignition for prescribed burn.
Credit: Rick S.**

- 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 wildland fire (i.e., storm damage, insects, ice storms, hurricanes, insects and disease) that reduce ecosystem vitality and increase susceptibility to wildfire.

West 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 at the center of coordinated cross-jurisdictional wildland fire 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 wildland fire hazards.

- Reduce unwanted human ignitions in and near communities.

- 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

This goal is particularly important in the Southeast, where human communities are adjacent to or located within wildland fire prone landscapes. Communities can survive wildfire without loss of life or significant damage to infrastructure and recover and thrive economically. However, this requires human populations directly engage in wildland fire planning to assess the level of wildfire risk to themselves and their communities, sharing responsibility and participating in actively mitigating the threat. In order for this to be successful, communities must take responsibility for the consequence of their actions. At the same time, the wildland fire management community must catalyze this process through education, engagement, outreach, and support to communities in preparation and planning. In addition to engaging with existing communities, a vital part of the engagement process must be raising awareness of incorporating wildfire risk into the design process for future homes and communities. In the Southeast, there may be as much potential for change through engaging in the process of creating fire adapted human communities as through effective fuels management.

Smoke from a fire near a South Carolina Community.

- 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.

West Region

Preventing or minimizing the loss of life and property due to wildland fire 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.

Wildland Fire Response

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

Northeast Region

Throughout the Northeast, 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. Focused on firefighter safety, wildland fire management, and flexibility for locally-appropriate response to unplanned ignitions, two main objectives are identified below. Of particular concern in the Southeast is the need for specialized equipment such as tractor plows that are not in widespread use outside of the region. A second major concern is ensuring appropriate and consistent training for partners and cooperators, particularly RFDs, whose membership changes frequently. Finally, promoting indirect attack where appropriate has proven an effective way to minimize risk to firefighters and maximize resource benefit. The wildland fire management community

agrees a need exists for agencies and organizations to retain the ability to select and apply techniques and tactics based on local conditions and needs.

- Increase firefighter safety by using risk management.

- Increase and leverage resource capability and capacity. Streamline and support training across all areas to maximize effectiveness.

<u>West Region</u>

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.

Fire crew working the Clearwater Fire in Idaho. Credit: West Region

Management Scenarios and Areas to Explore for Reducing Risk

Phase II of the Cohesive Strategy had two main components: (1) to bring together the stakeholders and communities to 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 built on an understanding of the national goals and regional needs and constraints. 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 management constraints 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. Analytical methods will be used to test initial alternatives developed by the RSCs. The initial 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. Management options to be considered will be evaluated not only for potential cost effectiveness, but also from a perspective of social acceptability and consistency with prevailing policies. 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.

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 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, the RSCs worked 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"

To develop "alternative management scenarios," the Northeast RSC spent much of their time identifying objectives and activities that would significantly increase, decrease, or change their ability to meet the national goals. They developed a list of activities that they want the NSAT to explore to determine how much change would occur if the activity is increased, decreased, or eliminated. The activities listed are not proposed "alternatives." They are simply a list of areas to explore to determine if efficiencies can be gained by reallocating resources. The Northeast RSC feels they need more data to develop alternative management scenarios. The Northeast articulates 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 preventing 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 in building 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 in protecting values at risk," some of the options are: to treat fire-dependent ecosystems with prescribed fire, invest in fire-proofing homes, and modify codes for structure protection.

House sprinkler system in Minnesota.
Credit: Northeast Region

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 sees 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, focusing on the national goals. Each scenario emphasizes a subset of the regional objectives and actions while assuming no significant increase or decrease 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 fuels 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.

Active vegetation management, Deschutes County, OR. Credit: West Region

- 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.

National Science and Analysis Team 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.

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.

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. This process has highlighted the importance of data standards and data accessibility across federal, state, tribal, local and non-governmental organizations.

Fine-scale processes tend to be better understood than broad-scale processes or strategic issues. For example, there is 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.

Each subteam 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.

Team analyzing wildland fire management options. Credit: West Region

PHASE III PROCESS AND TIMELINE

Phase II of the National Cohesive Wildland Fire Management Strategy has drawn to a close and transition to Phase III under way. Groups involved in Phase III include the WFLC, WFEC, CSSC, NSAT, RSCs, Working Groups, and many other stakeholders. The objectives, outcomes, and timeline for completing Phase III and moving toward implementation and revision of the Cohesive Strategy are detailed in this section. It is important to understand that the completion of each phase Cohesive Strategy is a separate milestone and that the Cohesive Strategy is a national, iterative process that will continue into the future.

A national trade-off analysis will be completed in Phase III. The analysis will be a science-based risk assessment that identifies a range of alternatives that:

- Point toward an effective path to achieving the national goals and regional objectives and reducing risk,

- Leverage regional values and investments,

- Explore the full decision space available to national and regional stakeholders, and

- Articulate national trade-offs among alternative activities and priorities associated with alternatives.

The Phase III report will summarize the national trade-off analysis and identify steps necessary to move toward the national goals identified in Phase I.

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 set the stage for future work, but it is anticipated that work on the regional activities will begin before the end of Phase III, as will work to set up for the next iteration of the Cohesive Strategy. 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 that can 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.

(12) Establishes 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.

(13) Fully articulates the Cohesive Strategy as an ongoing, iterative process to develop and explore alternatives.

Timeline

The WFEC will work with the CSSC, NSAT, RSCs, and other 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 1.

Table 1. Phase III milestones and deliverables

Actions	Tentative Dates
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
National and Regional Implementation Plans	2013

Table 2. Phase III milestones and Deliverables OPTION 2 (After Election Cycle)

<u>Actions</u>	<u>Tentative Dates</u>
CSSC quarterly meetings	Jan, April, July, Sept 2012
Final draft report of Phase III is complete	November 2012
WFEC approves draft report of Phase III	January 2013
WFLC approves draft report of Phase III	February 2013
National and Regional Implementation Plans	2013-2014

COMMUNICATION AND OUTREACH

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

The WFEC created the Cohesive Strategy Communication Workgroup on September 2, 2011. The WFLC and the WFEC recognized the importance of communication during the Cohesive Strategy process and committed resources and support to ensure that all interested stakeholders are able to access timely information, engage in the process, and affect the final outcome.

Overarching communication outcomes were agreed upon: Information Dissemination, Organizational Communication and Collaboration, and Implementation. This is to ensure that stakeholders, interested parties, and the public are informed of progress in the development of the Cohesive Strategy, that communication processes are used to enhance and sustain collaboration among stakeholders toward development and implementation of the Cohesive Strategy, and that management and oversight options are available to move forward on the Cohesive Strategy in a collaborative manner.

Idaho wildland fire management planning. Credit: West Region

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. Successful implementation of the Cohesive 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. This collaborative process is ongoing and will continue into Phase III and beyond.

Phase II has shown the value of a decision-making structure that operates from the top-down and from the bottom-up. 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 WFEC, CSSC, the RSCs, and 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 healthy and resilient landscapes to fire-adapted communities, and wildland fire 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.

Thinned trees. Credit: Jen Chase

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). 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.

Affected party   A person or group of people who are affected by the outcome of a decision or action.

Biomass   Any organic matter that is available on a renewable or recurring basis. Under the Farm Security and Rural Investment Act of 2002 (Title IX, Sec. 9001), biomass includes agricultural crops, trees grown for energy production, wood waste and wood residues, plants (including aquatic plants and grasses), residues, fibers, animals wastes and other waste materials, and fats, oils, and greases (including recycled fats, oils, and greases), but not recycled paper or unsegregated solid waste. (From Farm Bill Glossary on the National Agricultural Law Center website http://nationalaglawcenter.org/#.)

Fire-adapted community   Human communities consisting of informed and prepared citizens collaboratively planning and taking action to safely coexist with wildland fire.

Fire-adapted ecosystem   An ecosystem is "an interacting, natural system, including all the component organisms, together with the abiotic environment and processes affecting them" (NWCG Glossary). A fire-adapted ecosystem is one that collectively has the ability to survive or regenerate (including natural successional processes) in an environment in which fire is a natural process.

Fire community   Collectively refers to all those who are engaged in any aspect of wildland fire-related activities.

Fire exclusion   Land management activity of keeping vegetation or ecosystems from burning in a wildland fire.

Fire management community   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.

Fire science community   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.

Landscape Resilience

The ability of a landscape to absorb the effects of fire by regaining or maintaining its characteristic structural, compositional and functional attributes. The amount of resilience a landscape possesses a landscape possesses is proportional to the magnitude of fire effects required to fundamentally change the system.

Silviculture

"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.

Stakeholder

A person or group of people who has an interest and involvement in the process and outcome of a land management, fire management, or policy decision.

Viewshed

An area of land, water, or other environmental element that is visible to the human eye from a fixed vantage point.

Southwest riparian forest. Credit: Dana Corelho

APPENDIX B: ACRONYMS

AD	Administratively Determined
BAER	Burned Area Emergency Rehabilitation
BAR	Burned Area Rehabilitation
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
CAR	Community at Risk
CE	Categorical Exclusion
CEQ	Council of Environmental Quality
CRAFT	Comparative Risk Assessment Framework and Tools
CS	Cohesive Strategy
CSOC	Cohesive Strategy Oversight Committee
CSSC	Cohesive Strategy Sub-Committee
CWPP	Community Wildfire Protection Plan
DHS	Department of Homeland Security
DOD	Department of Defense
DOI	Department of the Interior
EACG	Eastern Area Coordinating Group
EAJA	Equal Access to Justice Act
EMAC	Emergency Management Assistance Compact
EMDS	Ecosystem Management Decision Support system
ESA	Endangered Species Act
FACA	Federal Advisory Committee Act
FEMA	Federal Emergency Management Agency
FEPP	Federal Excess Property Program
FFT2	Firefighter 2
FLAME Act	Federal Land Assistance, Management, and Enhancement Act
FLN	Fire Learning Network
4FRI	Four Forest Restoration Initiative (in Arizona)
FPA	Fire Program Analysis
FPU	Fire Planning Unit
FWS	U.S. Fish and Wildlife Service

GACC	Geographic Area Coordinating Center
GAO	General Accounting Office
HB	House Bill
HFRA	Healthy Forest Restoration Act
HVR	Highly Valued Resource
IAFC	International Association of Fire Chiefs
ICS	Incident Command System
ID	Idaho
IMT	Incident Management Team
IQCS	Incident Qualification and Certification System
ITC	Intertribal Timber Council
JFSP	Joint Fire Science Project
LMPs	Land Management Plans
LRMPs	Land and Resource Management Plans
MAC	Multi-Agency Coordination
METI	Management and Engineering Technologies International, Inc
MNICS	Minnesota Incident Command System
MOU	Memorandum of Understanding
MT	Montana
NACo	National Association of Counties
NASA	National Aeronautics and Space Administration
NASF	National Association of State Foresters
NEMAC	National Environmental Modeling and Analysis Center (UNC Asheville)
NEPA	National Environmental Protection Act
NFPA	National Fire Protection Association
NGA	National Governors' Association
NGO	Non-government Organization (e.g., non profit)
NICC	National Interagency Coordination Center
NIFC	National Interagency Fire Center
NLC	National League of Cities
NMAC	National Multi-Agency Coordinating Group
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service
NSAT	National Science and Analysis Team

PDSI	Palmer Drought Severity Index
NWCG	National Wildfire Coordinating Group
OMB	Office of Management and Budget
OR	Oregon
OWFC	Office of Wildland Fire Coordination
PPE	personal protective equipment
QFR	Quadrennial Fire Review
RFA	Rural Fire Assistance
RFD	Rural Fire Department
ROSS	Resource Ordering and Status System
RPL	Recognition of Prior Learning
RSC	Regional Strategy Committee
SAF	Society of American Foresters
SERPPAS	Southern Regional Partnership for Planning and Sustainability
SFA	State Fire Assistance
SGA	Southern Governors' Association
SGSF	Southern Group of State Foresters
SWRA	Southern Wildfire Risk Assessment
TNC	The Nature Conservancy
USDA	U.S. Department of Agriculture
USFA	U.S. Fire Administration
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VFA	Volunteer Fire Assistance
VFD	Volunteer Fire Department
WFDSS	Wildfire Decision Support System
WFEC	Wildland Fire Executive Council
WFLC	Wildland Fire Leadership Council
WG	Western Regional Working Group
WGA	Western Governors' Association
WRSC	Western Regional Strategy Committee
WUI	Wildland-urban Interface

Cohesive Wildland Fire Management Str**ategy Foundational Documents**

2009 Quadrennial Fire Review (QFR), 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

- 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

A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment: A 10-Year Strategy Implementation Plan. Western Governors Association, 2006, http://forestsandrangelands.gov/resources/plan/documents/10-yearstrategyfinal_dec2006.pdf,

References and Documents

A National Cohesive Wildland Fire Management Strategy, 2010 http://forestsandrangelands.gov/strategy/documents/reports/1_CohesiveStrategy03172011.pdf

Federal Land Assistance, Management and Enhancement Act of 2009 Report to Congress, 2010, http://forestsandrangelands.gov/strategy/documents/reports/2_ReportToCongress03172011.pdf

Jakes, P, et al, Improving Wildfire Preparedness: Lessons from Communities across the U.S., Human Ecology Review, Vol 14, No 2, 2007, Society of Human Ecology, http://www.sfrc.ufl.edu/faculty/monroe/jakesetal.pdf

Northeastern Regional Strategy Committee. 2011. *A National Cohesive Wildland Fire Strategy: Northeastern Regional Assessment*. September 30, 2011. 56 p

O'Laughlin, Jay. 2011. "Federal Land as a Percentage of Total State Land Area," Fact Sheet #8, Policy Analysis Group, College of Natural Resources, University of Idaho, Moscow. Available online at http://www.cnrhome.uidaho.edu/default.aspx?pid=120573

Southeastern Regional Strategy Committee. 2011. *A National Cohesive Wildland Fire Strategy: Southeastern Regional Assessment*. September 30, 2011. 79 p.

Western Regional Strategy Committee. 2011. *A National Cohesive Wildland Fire Strategy: Western Regional Assessment*. September 30, 2011. 61 p.

References from A National Cohesive Wildland Fire Strategy: Northeastern Regional Assessment. September 30, 2011.

Cardille, Jeffrey A., S. J. Ventura, and M. G. Turner. 2001. Environmental and Social Factors Influencing Wildfires in the Upper Midwest, United States. *Ecological Applications* 11:111–127.

McCaffrey, Sarah. Personal communication.

Mangan, Richard. 2007. Wildland firefighter fatalities in the United States: 1990–2006. Boise, ID: National Wildfire Coordinating Group, Safety and Health Working Team, National Interagency Fire Center 841: 28.

Noss, Reed F., E.T LaRoe III, and J.M. Scott, 1995. Endangered Ecosystems of the United States: A Preliminary Assessment of Loss and Degradation. U.S Dept. of the Interior, National Biological Service, Washington DC. (http://biology.usgs.gov/pubs/ecosys.htm)

Nowacki, Gregory J., and M. D. Abrams. 2008. The demise of fire and "mesophication" of forests in the eastern United States. *BioScience* 58:123–138.

Nowak, D., and J. Walton. 2005. Projected urban growth (2000-2050) and its estimated impact on the U.S. forest resource. *Journal of Forestry* 103(8): 383-389.Nowak, D., J. Walton, J. Dwyer, L. Kaya, and S. Myeong. 2005. The increasing influence of urban environments on U.S. forest management. *Journal of Forestry* 103(8): 377-382.

Radeloff, V. C., R. B. Hammer, S. I. Stewart, J. S. Fried, S. S. Holcomb, and J. F. McKeefry. 2005. The Wildland-Urban Interface in the United States. *Ecological Applications* 15:799–805.

Smith, B., P. Miles, C. Perry, and S. Pugh. 2009. Forest resources of the United States, 2007. Gen. Tech. Rep. Washington, DC: U.S. Department of Agriculture, Forest Service, Washington Office: 336.

Stein, S., R. McRoberts, R. Alig, M. Nelson, D. Theobald, M. Eley, M. Dechter, and M. Carr. 2005. Forests on the edge: housing development on America's private forests. Gen. Tech. Rep. PNW-GTR-636. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station: 16.

Swanston, C., M. Janowiak, L. Iverson, L. Parker, D. Mladenoff, L. Brandt, P. Butler, M. St. Pierre, A. Prasad, S. Matthews, M. Peters, D. Higgins, and A. Dorland. 2011. Ecosystem vulnerability assessment and synthesis: a report from the Climate Change Response Framework Project in northern Wisconsin. Gen. Tech. Rep. NRS-82. Newtown Square, PA: U.S Department of Agriculture, Forest Service, Northern Research Station: 142.

USDA Forest Service, Fire and Aviation Management. 2006. Annual Wildland Fire Summary Report. [On) line database]. http://famweb.nwcg.gov. [Date accessed unknown].

USDA Forest Service, Northeastern Area. 2007. Northeastern Area State and Private Forestry Strategic Plan Update for Fiscal Years 2008-2012. Newtown PA. (http://na.fs.fed.us/pubs/strat_plan/na_strategic_plan_2008-2012_lr.pdf)

USDA Forest Service, Northeastern Area State and Private Forestry, Cooperative Fire Management. 2007. Combined Summaries of Community Wildfire Protection Data, March. Newtown Square, PA.

References from A National Cohesive Wildland Fire Strategy: Southeastern Regional Assessment. September 30, 2011.

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

Andreu, A. and L. A. Hermansen-Baez. 2008. Southern Group of State Foresters. Fire in the South 2. The Southern Wildfire Risk Assessment.

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

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

Brown, D.G., K. M. Johnson, T. R. Loveland, and D. M. Theobald. 2005. Rural Land-Use Trends in the Conterminous United States, 1950–2000. Ecological Applications, 15(6) 2005. pp. 1851-1863.

Buckley, D., D. Carlton, D. Krieter, and K. Sabourin. 2006. Southern Wildfire Risk Assessment Final Report. http://www.southernwildfirerisk.com/reports/projectreports.html

Butler, B. J. and D. N. Wear. 2011. Chapter 5. Forest Ownership Dynamics of Southern Forests. In: Forest Futures Technical Report. D. N. Wear and J. G. Greis. http://www.srs.fs.fed.usda.gov/futures/

Hermansen-Baez, L.A., Prestemon, J.P., Butry, D.T., Abt, K.L., Sutphen, R. The Economic Benefits of Wildfire Prevention Education. 2011. http://www.interfaceSoutheast.org/products/fact_sheets_the-economic-benefits-of-wildfire-prevention-education/ or www.srs.fs.usda.gov/pubs/ja/ja_hermansen002.pdf

Lippincott, C.L. 2000. Effects of *Imperata cylindrica* (L.) Beauv. Cogon grass invasion on fire regime in Florida sandhill (USA). *Natural Areas Journal* 20:140-149.

Managing the Impacts of Wildfire on Communities and the Environment – A Report to the President in Response to the Wildfires of 2000. Fire and Aviation Management, USDA Forest Service.

Miller, J. H. D. and J. Coulson Lemke. Chapter 15. The Invasion of Southern Forests by Nonnative Plants: Current and Future Occupation with Impacts, Management Strategies, and Mitigation Approaches. In: Forest Futures Technical Report. D. N. Wear and J. G. Greis. http://www.srs.fs.fed.usda.gov/futures/

Mutual Expectations for Preparedness and Suppression in the Interface, *http://www.forestsandrangelands.gov/strategy/documents/mutual_expectations_2010.pdf*

Nowacki, G.J. and M.D. Abrams. 2008. The demise of fire and ''mesophication'' of the eastern united states. *BioScience*, 58, 123–128.

Poulter, B., R.L. Feldman, M. M. Brinson, B. P. Horton, M. K. Orbach, S. H. Pearsall, E. Reyes, S. R. Riggs, and J. C. Whitehead. 2009. Sea-level rise research and dialogue in North Carolina: Creating windows for policy change. *Ocean and Coastal Management.* 52(3-4):147-153.

Prestemon, J.P., Butry, D.T., Abt, K.L., and R. Sutphen. 2010. Net benefits of wildfire prevention education efforts. Forest Science 56 (2): 181-192.

Smeins, F.E. and L.B. Merrill. 1988. Long-term Change in a Semi-arid Grassland. In. Edwards Plateau Vegetation – Plant Ecological Studies in Central Texas. Edited by B.B. Amos and F.R. Gehlbach. Baylor Univ. Press, Waco. 144 p.

Southern Group of State Foresters 2007. Issue Paper Wildland Fire and Forest Fuels on Private and State Lands. http://www.forestry.ok.gov/websites/forestry/images/3.5_3000_CF_Wildland%20Fire%20And%20Fuels%20Priority%20Issue%20Paper.pdf

Stanturf, J. A. and S. L. Goodrick. 2011. Chapter 17: Fire. In: Forest Futures Technical Report. D. N. Wear and J. G. Greis. http://www.srs.fs.fed.usda.gov/futures/

Stephens, S.L. 2005. Forest fire causes and extent on United States Forest Service lands. International *Journal of Wildland Fire*, 2005. 14, 213-222.

U.S. Forest Service. United States Global Change Research Program. 2011. Southeast Region. In. USGCRP Global Climate Change Impacts in the U.S. Accessed July 30, 2011. http://www.globalchange.gov/publications/reports/scientific-assessments/us-impacts/full-report/regional-climate-change-impacts/southeast

Wear, D. N. and J. G. Greis. 2011. The Southern Forest Futures Project Summary Report (Draft). U.S. Forest Service.

Western National Forests: A Cohesive Strategy is needed to address Catastrophic Wildland Fire Threats. 1999. U.S. General Accounting Office.

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

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

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

References from A National Cohesive Wildland Fire Strategy: Western Regional Assessment. September 30, 2011.

Public Land Ownership by States. http://www.nrcm.org/documents/publiclandownership.pdf

National Fire Protection Association (NFPA) Third Needs Assessment of the U.S. Fire Service; Conducted in 2010 and Including Comparisons to the 2001 and 2005 Needs Assessment Surveys.

Northeast Region

Northeast Regional Strategy Committee

Name	Agency / Organization
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

Name	Agency / Organization
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

Northeast RSC Support Staff

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

Southeast Region

Southeast Regional Strategy Committee

Name	Agency / Organization
Mike Zupko (Chair)	SGA / SGSF
Kevin Fitzgerald (Vice Chair)	NPS
Liz Struhar	NPS (alternate)
Liz Agpaoa	USFS Southern Region
Dan Olsen	USFS (alternate)
Tom 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
Kier Klepzig	SRS

Southeast Working Group

Name	Agency / Organization
David Frederick (Chair)	SGSF
Darryl Jones (Vice Chair)	South 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

Name	Agency / Organization
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

Western Region

Western Regional Strategy Committee

Name	Agency / Organization
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

Name	Agency / Organization
Bill Avey	USFS
Bill Tripp	Karuk Tribe
Carol Daly	Flathead Economic Policy - WGA
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 Rocky Mountain Experimental Station
Laura McCarthy	TNC
Sue Stewart	USFS
Travis Medema	Oregon Department of Forestry

Cohesive Strategy Sub-Committee

Name	Agency / Organization
Lew Southard	USFS
Jenna Sloan/Gus Smith	DOI
Dan Smith	NASF
Caitlyn Pollihan	NASF/CWSF
Bob Roper/Douglas MacDonald	IAFC
Ann Walker	WGA
Ryan Yates	NACo
Patti Blankenship	USFA
Jim Erickson	ITC

Wildland Fire Executive Council

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

Wildland Fire Leadership Council Membership

Name	Agency / Organization
Rhea Suh, Assistant Secretary for Policy, Management and Budget, WFLC Chair	DOI
Butch Blazer, USDA Deputy Undersecretary for Natural Resources and the Environment	USDA
Tom Tidwell, Chief	USFS
Johnathan 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
John Kitzhaber, Governor, State of Oregon	Governor, Western States Representative
Bev Perdue, Governor, State of North Carolina	Governor, National Governors' Association
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

OBJECTIVES

Situation and Context

1. What is the National Wildland Fire Management Cohesive Strategy (Cohesive Strategy)?
2. What are the primary overarching goals of the Cohesive Strategy?
3. What is the specific role of regional efforts in the Cohesive Strategy?
4. What do you hope to accomplish with this specific workshop?

Guidelines

5. What general policies, regulations or laws govern wildland fire management in your area, agency or organization?
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.

Values

7. What broad societal and environmental values have been associated with fire in this region?
8. Briefly characterize how each broad value relates to or is affected by fire.
9. What are the dominant common values or perspectives among agencies? What are the dominant conflicts among values or perspectives?
10. Which of these conflicts are exceptionally difficult to address and why?

Uncertainties

11. What challenges in wildland fire management are created or compounded by lack of knowledge or understanding?
12. What societal or environmental changes or trends could affect wildland fire?
13. Briefly describe the uncertainties associated with these changes or trends that make them difficult to predict.

Goals and Objectives

14. What broad management goals or priorities exist for this area that relate to wildland fire?
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)?
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?
    1. Restoring and maintaining resilient landscapes
        1.1
        1.2
    2. Creating fire-adapted communities
        2.1
        2.2
    3. Wildfire Response
17. Which of the above are the highest priorities for completing this assessment and analysis?
18. For each priority goal, identify contributing objectives, and a range of actions and activities that could meet each objective.
19. Now finalize into an objectives hierarchy.

Measures for Success (Endpoints)

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).
21. What is the level of acceptability of these endpoints given the range of perspectives and values?

ALTERNATIVES

Actions

22. List the possible broad actions and activities from the objectives section (#).

Alternatives

23. Identify the combination of actions and activities that best reflects the continuation of current policies and practices.
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.
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.
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.

Tree mortality in the United States in 2010

National insect and disease risk map

APPENDIX G: COMMUNICATIONS FRAMEWORK

**Total Roundwood Harvest Volume
thousand cubic feet**

- 0
- 1 - 50000
- 50001 - 125000
- 125001 - 425000
- 425001 - 750000
- 750001 - 1250000

Alaska: 62,011
Hawaii: 0

United States total roundwood harvest map. Smith, W. Brad, tech. coord.; Miles, Patrick D., data coord.; Pugh, Scott A., Data CD coord U.S. Department of Agriculture, Forest Service, Washington Office.

APPENDIX G: COMMUNICATIONS FRAMEWORK

A National Cohesive Wildland Fire Management Strategy

Phase II National Report - 10/27/11 Draft

TABLE OF CONTENTS

Big Cypress National Preserve Complex on Florida Panther National Wildlife Refuge. Credit: Florida Forest Service

EXECUTIVE SUMMARY

The National Cohesive Wildland Fire Management Strategy (Cohesive Strategy) is a collaborative effort to identify, define, and address wildland fire problems and opportunities across the country and in the three regions of the United States: the Northeast, the Southeast, and the West. Addressing wildland fire problems requires a multi-jurisdictional approach with cooperation and effective communication among all stakeholders. Phase II of the Cohesive Strategy has brought together representatives of federal, state, local, and tribal governments, non-governmental organizations and others to describe the unique problems experienced in each region. These stakeholders have collaboratively identified successful actions that are being taken now and next steps than can be taken to restore resilient landscapes, reduce the risk of fire to communities, and to improve wildland fire response. This national report summarizes and builds on these regional ideas to conclude Phase II and set the stage for Phase III of the Cohesive Strategy.

Clarifying the roles and responsibilities of those engaged in wildland fire management brings a renewed and strengthened approach to addressing our nation's wildland fire problems, and may lessen tensions experienced in some locations. Building partnerships and enhancing opportunities to collaborate among organizations are critical to successful wildland fire management. Cities, counties, states, tribes, and other public and private landowners have expressed an interest in collaborating with each other to meet the three goals of the Cohesive Strategy:

- 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.

The Wildland Fire Leadership Council (WFLC) has adopted this vision for this century: "To safely and effectively extinguish fire when needed; use fire where allowable; manage our natural resources; and as a nation, to live with wildland fire." The fundamental role of the WFLC is to provide guidance to the regions through efficiency improvements, to fully utilize existing authorities to accomplish the three national goals, and to provide the necessary resources and investments to implement identified current successful regional actions.

Prescribed burn, 2008. Credit: West Region

The three regions face differing wildland fire problems due to differences in geography, climate, and land ownership patterns. In Phase II of the Cohesive Strategy, the regions formed Regional Strategy Committees (RSCs) to develop regional assessments, identify the regional challenges, improve communication among partners, and identify proposed strategies and opportunities for improvement. The regional assessments form the basis for this national report on Phase II. Phase II brings together the RSCs in a holistic approach to create a unified strategy, not just for wildland fire suppression, but to explore issues of natural resource management, and 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 on wildland fire management issues.

Northeast Region

The Northeast Region comprises 20 states and is the most densely populated region. The vast majority of the land is in private ownership and fires occur primarily in the spring, fall, and summer. Seasonal and extended drought conditions often create wildland fire hazards in the Northeast. Local partnerships focus on initial attack and putting fires out quickly.

Lands are owned and held in stewardship by a diversity of individuals, tribes, industry, organizations, and local, state and federal agencies. The vast majority of land is in private ownership. Land uses and ownership patterns are complex, with many small holdings creating a diverse range of owner objectives. Public lands are often isolated among other land uses, including private and industrial forests and agricultural lands. Land ownership and management, natural and weather/climate event created fuels, high wildfire occurrence, and extensive wildland urban interface characterize the Northeast Region.

Southeast Region

The Southeast Region comprises 13 states stretching from the Atlantic Seaboard to Texas. High wildland fire occurrence, extensive wildland-urban interface (WUI), a year-round fire season, and rapid regrowth of vegetation/fuels characterize the wildland fire problem in the Southeast. Land ownership is highly fragmented with the majority of forestlands in private ownership. Fragmentation poses a challenge to a coherent policy of landscape management and fuels reduction. A culture of prescribed burning exists in the Southeast and is essential to managing fuel loads. The Southeast implements more prescribed burns, with more acres treated than any other region, mostly on private land. Fire suppression is accomplished by cooperation and partnerships between local, state, and federal fire resources, and interstate forest fire compacts.

West Region

The West Region comprises 17 states spanning nearly half of the continental U.S, including Alaska, Hawaii, and the affiliated Pacific Islands. Wildland fire in the West is challenging due to vast areas of publicly owned and managed lands where access is extremely limited, terrain is steep, and the climate in many locations is arid or semi-arid. In areas managed for wilderness values, wildland fire management focuses on maintaining wilderness characteristics rather than a suppression response. The West has been in an extended drought for more than a decade, which increases threats posed by wildfire, but also fosters infestations of bark beetles, which are killing trees and leaving millions of acres of dead, standing trees (see appendix F). The West has seen a rapid escalation of severe fire behavior over the past two decades resulting in increased fire suppression costs, significant home and property losses, and increased threats to communities. Wildland fires in the West result in complex and costly efforts for post-fire restoration due to steep topography and highly erosive soils and flooding. Fire suppression is accomplished by cooperation and partnerships among local, state, and federal agencies and organizations.

Values, Objectives, and Actions Common to All Regions

As part of the assessments, the RSCs identified regional values and objectives. Some common objectives and actions were identified in Phase II and are discussed in detail within the Phase II National Report.

Values – Each RSC articulated many value statements, and a short overview of each appears in this document. Several values were common to all three regions, including: safety of firefighters and the public, protection of private property, conservation of air and water quality, restoring healthy and resilient landscapes, and aesthetics. The Northeast assessment cited recreation as significant, the Southeast assessment noted industrial forestry infrastructure, and the West noted cultural values such as honoring tribal heritages and land uses, respecting the frontier culture, and stewarding public lands and working forests. These, and the other values expressed, provide the basis for developing regional objectives, actions, performance measures, and areas to explore for reducing risk.

Objectives and Actions – The RSCs adopted the national goals as their own and crafted a suite of initial objectives and actions to support each one. All three regions developed information that includes; identification of values, trends, and risks and the delineation of initial actions and objectives. This information, as identified in the regional assessments, will be valuable in Phase III of the Cohesive Strategy.

Several cross-cutting objectives, so-called because they will affect all three national goals simultaneously, were identified across the regions:

(1) Invest in, learn from, and build upon successful partnership and collaborative efforts, including Community Wildfire Protection Plans, or their equivalent.

(2) Develop and conduct effective education and outreach to empower citizen engagement in, and support for, wildland fire management activities.

(3) Proactively use a variety of active vegetation management tools and techniques, including prescribed fire, to achieve local and large landscape objectives.

(4) Support working forests and wildlands, local economies and jobs, and diverse products and markets.

The RSCs will continue to coordinate with the National Science and Analysis Team (NSAT) to incorporate the best available science into the Cohesive Strategy. The NSAT uses 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 WFEC, CSSC, RSCs, and the NSAT will continue to work together in Phase III.

There are two keys to the Cohesive Strategy's success: first is the commitment to collaborate. Working together will allow us to accomplish the goals of the National Cohesive Strategy for Wildland Fire Management. The second is a requirement for a comprehensive communication and implementation strategy which provides information and seeks feedback from all stakeholders throughout the process.

INTRODUCTION

When wildland fire is not appropriately managed, lives, property, and ecological values are at risk. In 2011, the Wallow Fire in Arizona and New Mexico burned over 841 square miles and destroyed more than 30 structures, fires in the state of Texas burned over 3.7 million acres and consumed over 7,000 structures, and the Pagami Creek Wildfire burned over 100,000 acres in the Boundary Waters Canoe Area Wilderness in Minnesota. Fire is a natural process and a mechanism for biological renewal across forest and rangeland ecosystems. During the 20th century, federal, state, and local firefighters were successful at putting out most wildland fires in the early stages. An unintended consequence of their diligence, partnered with the lack of active management of our landscapes, is the overstocking of our nation's forests 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 wildland fires that threaten homes, communities, and resource values, and can cause widespread property damage.

Large and destructive wildland fires led to the drafting of the 1995 Federal Wildland Fire Policy and Program Review, a look at wildland fire issues, mainly focused on the federal ownership, including fuels management, the role of fire in the environment, and wildland-urban interface issues. 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, tribes, 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.

The Quadrennial Fire and Fuels Review was conducted in 2005, and then in 2009 the Quadrennial Fire Review (QFR) was completed. 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 anticipated future wildland fire management needs, risk to communities and firefighters, as well as described core mission strategies and key capabilities that can be applied to wildland fire management challenges. This was also the first in what would become a series of reviews, plans and strategies to move the fire community and the nation forward safely and more effectively. None, however, completely solved the problems; as communities and the wildland fire environment are constantly changing, requiring the fire community to do the same.

**Lake City, TN, wildland fire near home.
Credit: South Region**

Annual fire suppression costs are high. In 2002, the cost of suppression to the federal government was $1.7 billion. In 2008, state and local governments spent over $1.6 billion on suppression and wildland fire mitigation. 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 federal emergency wildland fire suppression. In addition, the FLAME Act directs USDA and DOI to develop a National Cohesive Wildland Fire Management Strategy, to comprehensively address wildland fire management in the United States.

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 require a holistic approach, unified thinking, and cooperation among the multitude of stakeholders who share concern for America's landscapes.

Within the fire community, a shared vision has taken shape: working together to prepare the landscape for natural fire occurrences, to prepare communities to face wildfire risks, and to coordinate effective wildland fire response. An example of this vision is the Greater Okefenokee Association of Landowners. This is an organization of over 70 landowners/agencies (private, state, and federal) that work together on strategy for wildfires that occur in and near the fire prone Okefenokee Swamp in southeast Georgia. Foundational documents, as identified in the Phase I of the Cohesive Strategy,

Outreach and collaboration, June 2006.
Credit: West Region

highlighted the need for shared responsibilities, effective partnerships, and improved interagency coordination and response. They created an imperative for a new direction in expectations for federal, state, and local wildland fire protection agencies to address our nation's wildland fire problem at the most efficient cost.

In 2010, Phase I of the Cohesive Strategy outlined a three-phase process to address the three primary factors presenting the greatest challenges and opportunities to make a positive difference to fire management: restoring and maintaining resilient landscapes, creating fire-adapted communities, and improving wildfire response. The Cohesive Strategy builds upon previous work, the foundational documents, and Guiding Principles and Core Values identified in Phase I.

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.

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 WFLC laid out a new vision for the next century 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" began in Phase II of the strategy with the creation of RSCs and the development of regional strategies. Those regional strategies will unite to form one national strategy. The Cohesive Strategy is different from all prior plans because of the collaborative process by which it was formulated. It is not merely a strategy for federal agencies, it is a strategy for the many groups that have come together across the nation to combine their regional perspectives and create one shared vision of how all stakeholders can work together to reduce risks of wildland fire to landscapes, 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, 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 draft 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.

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 agencies, firefighting organizations, tribes, counties, and cities (see Figure 1).

Figure 1. Organizational chart for Cohesive Strategy governance

The WFEC is supported by the Cohesive Strategy Sub-Committee (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 meet the needs to complete Phase III. The WFEC is responsible for promoting and facilitating the implementation for the Cohesive Strategy. The CSSCs and RSCs are chartered sub-groups of the WFEC. The CSSC was chartered at the beginning of Phase I and the RSCs and their working groups were chartered at the beginning of Phase II and will continue to function through Phase III and beyond.

The RSCs are 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 WFEC, CSSC and RSCs as the Phase III trade-off analyses are completed.

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.

In Phase II, the CSOC transitioned into the CSSC. The WFEC and CSSC guided Phase II through completion of the regional assessments and drafting of the national report. Phase II was directed by the Wildland Fire Executive Council (WFEC) and developed by the CSSC, which are composed of representatives of federal and state 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.

Phase II of the Cohesive Strategy provided a unique opportunity to the three regions of the country—Northeast, Southeast, and West (see Figure 2)—to chart their own course in landscape and wildland fire management to reduce the risks posed by wildland fire to multiple values. The RSCs came together, with the support of Working Groups, and broadened engagement of regional stakeholders, managers and analysts, non-governmental organizations and universities, to identify the challenges, values, and opportunities for improved land and fire management in their regions. This regional approach to Phase II of the Cohesive Strategy will result in a national strategy that is supported by local, regional, and national information, engagement and action. Regional assessments include obstacles, real and perceived, that stakeholders experience and identify strategies to address them.

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 used by the WFEC, CSSC, and the RSCs for their evaluation and determination of future risk reduction strategies.

Figure 2. Cohesive Strategy Regions: Northeast, Southeast, and West

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.

Comparative Risk Assessment within the Cohesive Strategy

A comparative risk assessment tool to evaluate the consequences of alternative wildland fire management strategies was proposed in Phase I of the Cohesive Strategy. The Phase I document 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 reasoning, one can view the Cohesive Strategy as a 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 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.

In conjunction with the NSAT, the RSCs embarked on this Phase II process, which included proposing regional objectives and designing initial alternatives. 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 framework for the work of the NSAT.

Regional Strategy Committees

The RSCs were supported in their efforts by the NSAT, which 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. 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 RSCs identified current successes, relationships, and opportunities for work that can be done before the completion of Phase III of the Cohesive Strategy. 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.

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. All of the states have federal, state, local and private land within them. Each unique ownership pattern presents challenges in fire management, and the regions are best able to articulate those challenges and to collaboratively develop solutions.

Phase II gave the RSCs an opportunity to take ownership of regional ideas and goals. 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 a variety of 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.

PHASE II – REGIONAL ASSESSMENTS AND STRATEGIES 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 E). 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 wildland fire and fire response in each region. They describe the values, both ecological and social, within the regions and the trends and uncertainties relating to wildland fire and risks to landscapes and communities. The RSCs developed initial objectives and initial alternatives and actions.

As a prelude to Phase III, the RSCs described initial alternatives to be considered for reducing risk to meet the national goals identified in Phase I. They are a broad set of alternatives that, with the help of analytical methods 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 enhancing opportunities for homeowners to proactively reduce hazards around their homes and property, 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." The assessment process and the resulting collaboration and identification of regional issues will continue as we move into Phase III and beyond.

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 the report.

REGIONAL COLLABORATION AND OUTREACH

RSCs are collaborative teams representing wildland fire agencies, tribes, industry, and non-governmental organizations. The RSCs undertook extensive outreach to contact stakeholders for input on the core questions relating to challenges, values, trends, and objectives. This unprecedented outreach strategy is the key to building a national cohesive strategy for wildland fire management.

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, and local agencies and organizations,

- Local natural resource and fire service agencies,

- Industry groups,

- Private landowners, 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 D for RSC and Working Group members.)

RSCs contacted over 4,500 stakeholders by telephone and email and through posts to outreach websites and in person at meetings. 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.

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

Phase II of the Cohesive Strategy identifies the unique legal, regulatory and jurisdictional environment in which wildland fire and resource management agencies operate nationally and regionally. Wildland fire and resource management decisions are guided and informed by a suite of laws, regulations and administrative policies that exist at the federal, state, tribal and local levels. The interpretation of the laws, policies and regulations ultimately determine management activities. Phase II regional assessments identify federal laws – such as the National Environmental Policy Act and the Endangered Species Act, which guide planning processes on federal lands and provide for the protection and conservation of rare, threatened, and endangered species – as significant laws impacting the accomplishment of wildland fire and resource management goals. Other key laws and regulations that impact the ability of managers to achieve natural resource and wildland fire management objectives identified across the regions are the National Forest Management Act, the Environmental Protection Agency's smoke management policies and the U.S. Forest Service's National Forest System Land Management Planning Rule, among others. Through regional objectives and actions, the RSCs propose constructive resolutions to ongoing policy conflicts and suggest ways to take advantage of the opportunities they present. Some viable opportunities to address policy barriers and gaps that prevent full coordination and collaboration and/or the most flexible use of existing authorities to plan and implement landscape-scale treatments have been examined in the regional assessment reports.

Ding Darling National Wildlife Refuge, June 2004. Credit: U.S. Fish and Wildlife Service

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 E) 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.

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,
- Maintenance and enhancement of economies,
- Restoration of healthy and resilient landscapes, and
- Protection of scenic viewsheds (visible natural environment).

Trends and Risks

Response, input, and observations also reveal 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 identify 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

Land Ownership in the Northeast Region

Ownership
- Federal Land
- Native American Land
- State Land
- Other Public Land
- Private Land

N

0 75 150 300 Miles

1 inch = 157.83 miles

Produced by the U.S. Forest Service, Northeastern Area State and Private Forestry, MDH 9/15/11

Figure 3. Map showing Northeast Region land ownership

Values

The Northeast RSC identifies a variety of unique values and groups 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. Prevention education can have a significant impact on reducing wildfires in this region, where greater than 95 percent of the fires are human-caused.

Trends and Risks

Lack of Fire: Lack of fire has created two primary issues in the Northeast. First, 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, all of which can increase fuel loading that may lead to more extreme fire behavior and negative impacts.

The second primary issue is complacency on several levels. The Northeast can be described in risk management terms as low occurrence but high risk. Unlike the West which has large, significant fires on an annual basis, or the Southeast which has a history and culture of fire (both wildfire and prescribed), the Northeast neither has large fires on a regular basis nor does prescribed fire play a significant role. With long intervals between large wildfire events, investments in preparedness, whether by governments or homeowners, is challenged and questioned. Wildfire preparedness at the local fire department level can be

overshadowed or downplayed because of the responsibility for more-frequent all hazard and medical emergency response.

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 will be 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.

Forest products industry: The forest products industry is integral to cost-effective landscape restoration, hazard mitigation, and fuels reduction. Industry infrastructure (skills and equipment) for using pulp, saw timber, and biomass is 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.

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 these issues.

Prescribed burn. Credit: Georgia Forestry Commission

Unique Southeast Region Values, Trends, and Risks

Figure 4. Southeast Region land ownership

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 categorizes these values into five overarching categories of values: ecosystem, infrastructure, societal, economic, and wildland fire management.

The ***Ecosystem*** includes values associated with biodiversity, wildlife habitat And healthy forest/ landscapes, as well as the air and water quality components, many of which are fire adapted and require periodic burning to maintain characteristic ecosystem structure and diversity.

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 wildland fire and prescribed burns) has a significant place in the history and culture of the Southeast. Historically, individual landowners played a large role in prescribed burning, and 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. Wildfire can cause economic devastation in the region, damaging or destroying marketable timber, biomass and other forest products and can also create costs associated with restoration activities. Failing to implement the full range of wildland fire management options can also have negative effects on local economies where natural systems rely on active land management practices such as prescribed fire to maintain landscape resiliency.

The *Fire Management System* includes values related to wildland fire 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 wildland fire 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 RFDs to provide initial wildland fire 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.

Tractors working a fire break. Credit: Florida Department of Forestry

Unique West Region Values, Trends, and Risks

Figure 5. The West is dominated by large blocks of public land

Values

The Western RSC identifies many values similar to those of the other two regions; however, the following values are 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, cultural resources, and dynamic and diverse habitats. The appearance of the

landscape is important and aesthetics vary by individual, 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 maintaining public access to the lands 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

Alaskan forest. Credit: Dana Coelho, Region 2

preserve the watersheds, critical habitats, and other western values to be protected from uncharacteristic wildfire. The growing numbers of large landscape-scale community wildland fire 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 addresses 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 Western RSC seeks to build upon in developing its assessment and strategy.

OBJECTIVES AND ACTIONS

The aim of the Cohesive Strategy is to produce a strategy for achieving the national goals and reducing risks posed by wildland fire that incorporates objectives and actions at the national, regional, and local level. Phase II does 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. While no two regions identify objectives in exactly the same language, there are significant elements held in common among all three regions. The following sections outline the initial objectives and actions developed by the RSCs, proposing objectives and actions that are held in common across the regions and/or across the national goals. The common concepts are synthesized from the regional initial objectives and actions, which are quoted from the regional assessments in the next sections. Proposed objectives and actions are not presented in order of priority. Additional similarities exist at the sub-objective and action level, but this summary focuses primarily on regional initial objectives. More information on these proposed objectives and actions can be found in the regional assessment reports.

Actions Common to the Three National Goals

Each of the RSCs identify concepts that contribute to success in each of the three national goals. In reviewing these proposed actions, all three RSCs emphasize 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 and wildlands, local economies and jobs, and diverse products and markets.

Restore and Maintain Resilient Landscapes

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

- 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 express their vision of creating fire-adapted communities quite differently, but these elements that contribute to creating fire-adapted communities are held in common:

- Reduce unwanted human-caused wildland fire ignitions in and near communities.

- Support community wildland fire protection planning.

Wildland Fire Response

Given the very different wildland fire environments in the Northeast, Southeast, and West, approaches to improving wildland fire response differ. Three common, overarching elements are:

Providing for firefighter and public safety.

- Maintaining capacity.

- Improving effectiveness and efficiency of the wildland fire management organization.

Fire-adapted community showing wildland-urban interface.
Credit: West Region

Regional Actions Common to the Three National Goals

The focus of Phase II is 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.

Based on unique regional conditions and stakeholder engagement, the Northeast, Southeast, and West identify, individually, 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 are 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 identifies several actions and activities common across the national goals and regional objectives. These actions 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 agrees 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 as well as individual objectives under each goal.

- 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 wildland fire 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.

West 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 firefighters 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 wildland fire planning using the best available science.

Blowdown prescribed burn in Minnesota.
Credit: Northeast Region

- 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

Response to this goal in the Southeast acknowledges the challenge of maintaining or restoring landscapes in a complex environment of many small landowners; the objectives focus on a need for locally-calibrated, proactive treatment to restore and maintain landscapes. Resilient landscapes are resilient to fire and balance the need to reduce catastrophic wildfire risk to WUI communities throughout the Southeast. Healthy working forests are part of the Southeast's cultural heritage, as well as a critical part of the regional economy. The region's diversity and uniqueness means that restoring and maintaining landscapes is a critical goal. The wildland fire management community agrees that flexibility to select locally-appropriate management techniques must be retained and encouraged so that prescribed burns can be implemented where appropriate and feasible, while in other areas mechanical treatments may be the only option. One key objective is identifying and focusing on the areas in which limited resources can be leveraged or combined to create the most significant impact on restoring landscapes and reducing the risk of catastrophic wildfires. However, rapid urbanization and soaring population within the Southeast may necessitate a greater focus on communities and the WUI rather than landscapes; therefore although Restore and Maintain Landscapes is a priority goal in the Southeast, management directives must be written with the understanding that restoration efforts may not be feasible in certain areas of the Southeast where human structures mingle with fire adapted landscapes in the WUI.

USFWS using aerial ignition for prescribed burn.
Credit: Rick S.

- 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 wildland fire (i.e., storm damage, insects, ice storms, hurricanes, insects and disease) that reduce ecosystem vitality and increase susceptibility to wildfire.

West 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 at the center of coordinated cross-jurisdictional wildland fire 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 wildland fire hazards.

- Reduce unwanted human ignitions in and near communities.

- 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

This goal is particularly important in the Southeast, where human communities are adjacent to or located within wildland fire prone landscapes. Communities can survive wildfire without loss of life or significant damage to infrastructure and recover and thrive economically. However, this requires human populations directly engage in wildland fire planning to assess the level of wildfire risk to themselves and their communities, sharing responsibility and participating in actively mitigating the threat. In order for this to be successful, communities must take responsibility for the consequence of their actions. At the same time, the wildland fire management community must catalyze this process through education, engagement, outreach, and support to communities in preparation and planning. In addition to engaging with existing communities, a vital part of the engagement process must be raising awareness of incorporating wildfire risk into the design process for future homes and communities. In the Southeast, there may be as much potential for change through engaging in the process of creating fire adapted human communities as through effective fuels management.

Smoke from a fire near a South Carolina Community.

- 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.

West Region

Preventing or minimizing the loss of life and property due to wildland fire 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.

Wildland Fire Response

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

Northeast Region

Throughout the Northeast, 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. Focused on firefighter safety, wildland fire management, and flexibility for locally-appropriate response to unplanned ignitions, two main objectives are identified below. Of particular concern in the Southeast is the need for specialized equipment such as tractor plows that are not in widespread use outside of the region. A second major concern is ensuring appropriate and consistent training for partners and cooperators, particularly RFDs, whose membership changes frequently. Finally, promoting indirect attack where appropriate has proven an effective way to minimize risk to firefighters and maximize resource benefit. The wildland fire management community

agrees a need exists for agencies and organizations to retain the ability to select and apply techniques and tactics based on local conditions and needs.

- Increase firefighter safety by using risk management.

- Increase and leverage resource capability and capacity. Streamline and support training across all areas to maximize effectiveness.

West 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.

Fire crew working the Clearwater Fire in Idaho. Credit: West Region

DEVELOPING INITIAL ALTERNATIVES

Management Scenarios and Areas to Explore for Reducing Risk

Phase II of the Cohesive Strategy had two main components: (1) to bring together the stakeholders and communities to 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 built on an understanding of the national goals and regional needs and constraints. 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 management constraints 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. Analytical methods will be used to test initial alternatives developed by the RSCs. The initial 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. Management options to be considered will be evaluated not only for potential cost effectiveness, but also from a perspective of social acceptability and consistency with prevailing policies. 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.

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 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, the RSCs worked 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"

To develop "alternative management scenarios," the Northeast RSC spent much of their time identifying objectives and activities that would significantly increase, decrease, or change their ability to meet the national goals. They developed a list of activities that they want the NSAT to explore to determine how much change would occur if the activity is increased, decreased, or eliminated. The activities listed are not proposed "alternatives." They are simply a list of areas to explore to determine if efficiencies can be gained by reallocating resources. The Northeast RSC feels they need more data to develop alternative management scenarios. The Northeast articulates 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 preventing 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 in building 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 in protecting values at risk," some of the options are: to treat fire-dependent ecosystems with prescribed fire, invest in fire-proofing homes, and modify codes for structure protection.

**House sprinkler system in Minnesota.
Credit: Northeast Region**

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 sees 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, focusing on the national goals. Each scenario emphasizes a subset of the regional objectives and actions while assuming no significant increase or decrease 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 fuels 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.

Active vegetation management, Deschutes County, OR. Credit: West Region

- 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.

National Science and Analysis Team 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.

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.

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. This process has highlighted the importance of data standards and data accessibility across federal, state, tribal, local and non-governmental organizations.

Fine-scale processes tend to be better understood than broad-scale processes or strategic issues. For example, there is 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.

Each subteam 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.

Team analyzing wildland fire management options. Credit: West Region

PHASE III PROCESS AND TIMELINE

Phase II of the National Cohesive Wildland Fire Management Strategy has drawn to a close and transition to Phase III under way. Groups involved in Phase III include the WFLC, WFEC, CSSC, NSAT, RSCs, Working Groups, and many other stakeholders. The objectives, outcomes, and timeline for completing Phase III and moving toward implementation and revision of the Cohesive Strategy are detailed in this section. It is important to understand that the completion of each phase Cohesive Strategy is a separate milestone and that the Cohesive Strategy is a national, iterative process that will continue into the future.

A national trade-off analysis will be completed in Phase III. The analysis will be a science-based risk assessment that identifies a range of alternatives that:

- Point toward an effective path to achieving the national goals and regional objectives and reducing risk,

- Leverage regional values and investments,

- Explore the full decision space available to national and regional stakeholders, and

- Articulate national trade-offs among alternative activities and priorities associated with alternatives.

The Phase III report will summarize the national trade-off analysis and identify steps necessary to move toward the national goals identified in Phase I.

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 set the stage for future work, but it is anticipated that work on the regional activities will begin before the end of Phase III, as will work to set up for the next iteration of the Cohesive Strategy. 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 that can 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.

(12) Establishes 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.

(13) Fully articulates the Cohesive Strategy as an ongoing, iterative process to develop and explore alternatives.

Timeline

The WFEC will work with the CSSC, NSAT, RSCs, and other 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 1.

Table 1. Phase III milestones and deliverables

Actions	Tentative Dates
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
National and Regional Implementation Plans	2013

Table 2. Phase III milestones and Deliverables OPTION 2 (After Election Cycle)

<u>Actions</u>	<u>Tentative Dates</u>
CSSC quarterly meetings	Jan, April, July, Sept 2012
Final draft report of Phase III is complete	November 2012
WFEC approves draft report of Phase III	January 2013
WFLC approves draft report of Phase III	February 2013
National and Regional Implementation Plans	2013-2014

COMMUNICATION AND OUTREACH

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

The WFEC created the Cohesive Strategy Communication Workgroup on September 2, 2011. The WFLC and the WFEC recognized the importance of communication during the Cohesive Strategy process and committed resources and support to ensure that all interested stakeholders are able to access timely information, engage in the process, and affect the final outcome.

Overarching communication outcomes were agreed upon: Information Dissemination, Organizational Communication and Collaboration, and Implementation. This is to ensure that stakeholders, interested parties, and the public are informed of progress in the development of the Cohesive Strategy, that communication processes are used to enhance and sustain collaboration among stakeholders toward development and implementation of the Cohesive Strategy, and that management and oversight options are available to move forward on the Cohesive Strategy in a collaborative manner.

Idaho wildland fire management planning. Credit: West Region

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. Successful implementation of the Cohesive 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. This collaborative process is ongoing and will continue into Phase III and beyond.

Phase II has shown the value of a decision-making structure that operates from the top-down and from the bottom-up. 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 WFEC, CSSC, the RSCs, and 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 healthy and resilient landscapes to fire-adapted communities, and wildland fire 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.

Thinned trees. Credit: Jen Chase

40

APPENDIX A: GLOSSARY

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). 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.

Affected party
A person or group of people who are affected by the outcome of a decision or action.

Biomass
Any organic matter that is available on a renewable or recurring basis. Under the Farm Security and Rural Investment Act of 2002 (Title IX, Sec. 9001), biomass includes agricultural crops, trees grown for energy production, wood waste and wood residues, plants (including aquatic plants and grasses), residues, fibers, animals wastes and other waste materials, and fats, oils, and greases (including recycled fats, oils, and greases), but not recycled paper or unsegregated solid waste. (From Farm Bill Glossary on the National Agricultural Law Center website http://nationalaglawcenter.org/#.)

Fire-adapted community
Human communities consisting of informed and prepared citizens collaboratively planning and taking action to safely coexist with wildland fire.

Fire-adapted ecosystem
An ecosystem is "an interacting, natural system, including all the component organisms, together with the abiotic environment and processes affecting them" (NWCG Glossary). A fire-adapted ecosystem is one that collectively has the ability to survive or regenerate (including natural successional processes) in an environment in which fire is a natural process.

Fire community
Collectively refers to all those who are engaged in any aspect of wildland fire-related activities.

Fire exclusion
Land management activity of keeping vegetation or ecosystems from burning in a wildland fire.

Fire management community
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.

Fire science community
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.

Landscape Resilience   The ability of a landscape to absorb the effects of fire by regaining or maintaining its characteristic structural, compositional and functional attributes. The amount of resilience a landscape possesses a landscape possesses is proportional to the magnitude of fire effects required to fundamentally change the system.

Silviculture   "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.

Stakeholder   A person or group of people who has an interest and involvement in the process and outcome of a land management, fire management, or policy decision.

Viewshed   An area of land, water, or other environmental element that is visible to the human eye from a fixed vantage point.

Southwest riparian forest. Credit: Dana Corelho

APPENDIX B: ACRONYMS

AD	Administratively Determined
BAER	Burned Area Emergency Rehabilitation
BAR	Burned Area Rehabilitation
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
CAR	Community at Risk
CE	Categorical Exclusion
CEQ	Council of Environmental Quality
CRAFT	Comparative Risk Assessment Framework and Tools
CS	Cohesive Strategy
CSOC	Cohesive Strategy Oversight Committee
CSSC	Cohesive Strategy Sub-Committee
CWPP	Community Wildfire Protection Plan
DHS	Department of Homeland Security
DOD	Department of Defense
DOI	Department of the Interior
EACG	Eastern Area Coordinating Group
EAJA	Equal Access to Justice Act
EMAC	Emergency Management Assistance Compact
EMDS	Ecosystem Management Decision Support system
ESA	Endangered Species Act
FACA	Federal Advisory Committee Act
FEMA	Federal Emergency Management Agency
FEPP	Federal Excess Property Program
FFT2	Firefighter 2
FLAME Act	Federal Land Assistance, Management, and Enhancement Act
FLN	Fire Learning Network
4FRI	Four Forest Restoration Initiative (in Arizona)
FPA	Fire Program Analysis
FPU	Fire Planning Unit
FWS	U.S. Fish and Wildlife Service

GACC	Geographic Area Coordinating Center
GAO	General Accounting Office
HB	House Bill
HFRA	Healthy Forest Restoration Act
HVR	Highly Valued Resource
IAFC	International Association of Fire Chiefs
ICS	Incident Command System
ID	Idaho
IMT	Incident Management Team
IQCS	Incident Qualification and Certification System
ITC	Intertribal Timber Council
JFSP	Joint Fire Science Project
LMPs	Land Management Plans
LRMPs	Land and Resource Management Plans
MAC	Multi-Agency Coordination
METI	Management and Engineering Technologies International, Inc
MNICS	Minnesota Incident Command System
MOU	Memorandum of Understanding
MT	Montana
NACo	National Association of Counties
NASA	National Aeronautics and Space Administration
NASF	National Association of State Foresters
NEMAC	National Environmental Modeling and Analysis Center (UNC Asheville)
NEPA	National Environmental Protection Act
NFPA	National Fire Protection Association
NGA	National Governors' Association
NGO	Non-government Organization (e.g., non profit)
NICC	National Interagency Coordination Center
NIFC	National Interagency Fire Center
NLC	National League of Cities
NMAC	National Multi-Agency Coordinating Group
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service
NSAT	National Science and Analysis Team

PDSI	Palmer Drought Severity Index
NWCG	National Wildfire Coordinating Group
OMB	Office of Management and Budget
OR	Oregon
OWFC	Office of Wildland Fire Coordination
PPE	personal protective equipment
QFR	Quadrennial Fire Review
RFA	Rural Fire Assistance
RFD	Rural Fire Department
ROSS	Resource Ordering and Status System
RPL	Recognition of Prior Learning
RSC	Regional Strategy Committee
SAF	Society of American Foresters
SERPPAS	Southern Regional Partnership for Planning and Sustainability
SFA	State Fire Assistance
SGA	Southern Governors' Association
SGSF	Southern Group of State Foresters
SWRA	Southern Wildfire Risk Assessment
TNC	The Nature Conservancy
USDA	U.S. Department of Agriculture
USFA	U.S. Fire Administration
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VFA	Volunteer Fire Assistance
VFD	Volunteer Fire Department
WFDSS	Wildfire Decision Support System
WFEC	Wildland Fire Executive Council
WFLC	Wildland Fire Leadership Council
WG	Western Regional Working Group
WGA	Western Governors' Association
WRSC	Western Regional Strategy Committee
WUI	Wildland-urban Interface

Cohesive Wildland Fire Management Strategy Foundational Documents

2009 Quadrennial Fire Review (QFR), 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

- 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

A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment: A 10-Year Strategy Implementation Plan. Western Governors Association, 2006, http:// forestsandrangelands.gov/resources/plan/documents/10-yearstrategyfinal_dec2006.pdf,

References and Documents

A National Cohesive Wildland Fire Management Strategy, 2010 http://forestsandrangelands.gov/strategy/ documents/reports/1_CohesiveStrategy03172011.pdf

Federal Land Assistance, Management and Enhancement Act of 2009 Report to Congress, 2010, http:// forestsandrangelands.gov/strategy/documents/reports/2_ReportToCongress03172011.pdf

Jakes, P, et al, Improving Wildfire Preparedness: Lessons from Communities across the U.S., Human Ecology Review, Vol 14, No 2, 2007, Society of Human Ecology, http://www.sfrc.ufl.edu/faculty/monroe/ jakesetal.pdf

Northeastern Regional Strategy Committee. 2011. *A National Cohesive Wildland Fire Strategy: Northeastern Regional Assessment*. September 30, 2011. 56 p

O'Laughlin, Jay. 2011. "Federal Land as a Percentage of Total State Land Area," Fact Sheet #8, Policy Analysis Group, College of Natural Resources, University of Idaho, Moscow. Available online at http:// www.cnrhome.uidaho.edu/default.aspx?pid=120573

Southeastern Regional Strategy Committee. 2011. *A National Cohesive Wildland Fire Strategy: Southeastern Regional Assessment*. September 30, 2011. 79 p.

Western Regional Strategy Committee. 2011. *A National Cohesive Wildland Fire Strategy: Western Regional Assessment*. September 30, 2011. 61 p.

References from A National Cohesive Wildland Fire Strategy: Northeastern Regional Assessment. September 30, 2011.

Cardille, Jeffrey A., S. J. Ventura, and M. G. Turner. 2001. Environmental and Social Factors Influencing Wildfires in the Upper Midwest, United States. *Ecological Applications* 11:111–127.

McCaffrey, Sarah. Personal communication.

Mangan, Richard. 2007. Wildland firefighter fatalities in the United States: 1990–2006. Boise, ID: National Wildfire Coordinating Group, Safety and Health Working Team, National Interagency Fire Center 841: 28.

Noss, Reed F., E.T LaRoe III, and J.M. Scott, 1995. Endangered Ecosystems of the United States: A Preliminary Assessment of Loss and Degradation. U.S Dept. of the Interior, National Biological Service, Washington DC. (http://biology.usgs.gov/pubs/ecosys.htm)

Nowacki, Gregory J., and M. D. Abrams. 2008. The demise of fire and "mesophication" of forests in the eastern United States. *BioScience* 58:123–138.

Nowak, D., and J. Walton. 2005. Projected urban growth (2000-2050) and its estimated impact on the U.S. forest resource. *Journal of Forestry* 103(8): 383-389.Nowak, D., J. Walton, J. Dwyer, L. Kaya, and S. Myeong. 2005. The increasing influence of urban environments on U.S. forest management. *Journal of Forestry* 103(8): 377-382.

Radeloff, V. C., R. B. Hammer, S. I. Stewart, J. S. Fried, S. S. Holcomb, and J. F. McKeefry. 2005. The Wildland-Urban Interface in the United States. *Ecological Applications* 15:799–805.

Smith, B., P. Miles, C. Perry, and S. Pugh. 2009. Forest resources of the United States, 2007. Gen. Tech. Rep. Washington, DC: U.S. Department of Agriculture, Forest Service, Washington Office: 336.

Stein, S., R. McRoberts, R. Alig, M. Nelson, D. Theobald, M. Eley, M. Dechter, and M. Carr. 2005. Forests on the edge: housing development on America's private forests. Gen. Tech. Rep. PNW-GTR-636. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station: 16.

Swanston, C., M. Janowiak, L. Iverson, L. Parker, D. Mladenoff, L. Brandt, P. Butler, M. St. Pierre, A. Prasad, S. Matthews, M. Peters, D. Higgins, and A. Dorland. 2011. Ecosystem vulnerability assessment and synthesis: a report from the Climate Change Response Framework Project in northern Wisconsin. Gen. Tech. Rep. NRS-82. Newtown Square, PA: U.S Department of Agriculture, Forest Service, Northern Research Station: 142.

USDA Forest Service, Fire and Aviation Management. 2006. Annual Wildland Fire Summary Report. [On) line database]. http://famweb.nwcg.gov. [Date accessed unknown].

USDA Forest Service, Northeastern Area. 2007. Northeastern Area State and Private Forestry Strategic Plan Update for Fiscal Years 2008-2012. Newtown PA. (http://na.fs.fed.us/pubs/strat_plan/ na_strategic_plan_2008-2012_lr.pdf)

USDA Forest Service, Northeastern Area State and Private Forestry, Cooperative Fire Management. 2007. Combined Summaries of Community Wildfire Protection Data, March. Newtown Square, PA.

References from A National Cohesive Wildland Fire Strategy: Southeastern Regional Assessment. September 30, 2011.

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

Andreu, A. and L. A. Hermansen-Baez. 2008. Southern Group of State Foresters. Fire in the South 2. The Southern Wildfire Risk Assessment.

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

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

Brown, D.G., K. M. Johnson, T. R. Loveland, and D. M. Theobald. 2005. Rural Land-Use Trends in the Conterminous United States, 1950–2000. Ecological Applications, 15(6) 2005. pp. 1851-1863.

Buckley, D., D. Carlton, D. Krieter, and K. Sabourin. 2006. Southern Wildfire Risk Assessment Final Report. http://www.southernwildfirerisk.com/reports/projectreports.html

Butler, B. J. and D. N. Wear. 2011. Chapter 5. Forest Ownership Dynamics of Southern Forests. In: Forest Futures Technical Report. D. N. Wear and J. G. Greis. http://www.srs.fs.fed.usda.gov/futures/

Hermansen-Baez, L.A., Prestemon, J.P., Butry, D.T., Abt, K.L., Sutphen, R. The Economic Benefits of Wildfire Prevention Education. 2011. http://www.interfaceSoutheast.org/products/fact_sheets_the-economic-benefits-of-wildfire-prevention-education/ or www.srs.fs.usda.gov/pubs/ja/ja_hermansen002.pdf

Lippincott, C.L. 2000. Effects of *Imperata cylindrica* (L.) Beauv. Cogon grass invasion on fire regime in Florida sandhill (USA). *Natural Areas Journal* 20:140-149.

Managing the Impacts of Wildfire on Communities and the Environment – A Report to the President in Response to the Wildfires of 2000. Fire and Aviation Management, USDA Forest Service.

Miller, J. H. D. and J. Coulson Lemke. Chapter 15. The Invasion of Southern Forests by Nonnative Plants: Current and Future Occupation with Impacts, Management Strategies, and Mitigation Approaches. In: Forest Futures Technical Report. D. N. Wear and J. G. Greis. http://www.srs.fs.fed.usda.gov/futures/

Mutual Expectations for Preparedness and Suppression in the Interface, *http://www.forestsandrangelands.gov/strategy/documents/mutual_expectations_2010.pdf*

Nowacki, G.J. and M.D. Abrams. 2008. The demise of fire and ''mesophication'' of the eastern united states. *BioScience*, 58, 123–128.

Poulter, B., R.L. Feldman, M. M. Brinson, B. P. Horton, M. K. Orbach, S. H. Pearsall, E. Reyes, S. R. Riggs, and J. C. Whitehead. 2009. Sea-level rise research and dialogue in North Carolina: Creating windows for policy change. *Ocean and Coastal Management.* 52(3-4):147-153.

Prestemon, J.P., Butry, D.T., Abt, K.L., and R. Sutphen. 2010. Net benefits of wildfire prevention education efforts. Forest Science 56 (2): 181-192.

Smeins, F.E. and L.B. Merrill. 1988. Long-term Change in a Semi-arid Grassland. In. Edwards Plateau Vegetation – Plant Ecological Studies in Central Texas. Edited by B.B. Amos and F.R. Gehlbach. Baylor Univ. Press, Waco. 144 p.

Southern Group of State Foresters 2007. Issue Paper Wildland Fire and Forest Fuels on Private and State Lands. http://www.forestry.ok.gov/websites/forestry/images/3.5_3000_CF_Wildland%20Fire%20And%20Fuels%20Priority%20Issue%20Paper.pdf

Stanturf, J. A. and S. L. Goodrick. 2011. Chapter 17: Fire. In: Forest Futures Technical Report. D. N. Wear and J. G. Greis. http://www.srs.fs.fed.usda.gov/futures/

Stephens, S.L. 2005. Forest fire causes and extent on United States Forest Service lands. International *Journal of Wildland Fire*, 2005. 14, 213-222.

U.S. Forest Service. United States Global Change Research Program. 2011. Southeast Region. In. USGCRP Global Climate Change Impacts in the U.S. Accessed July 30, 2011. http://www.globalchange.gov/publications/reports/scientific-assessments/us-impacts/full-report/regional-climate-change-impacts/southeast

Wear, D. N. and J. G. Greis. 2011. The Southern Forest Futures Project Summary Report (Draft). U.S. Forest Service.

Western National Forests: A Cohesive Strategy is needed to address Catastrophic Wildland Fire Threats. 1999. U.S. General Accounting Office.

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

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

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

References from A National Cohesive Wildland Fire Strategy: Western Regional Assessment. September 30, 2011.

Public Land Ownership by States. http://www.nrcm.org/documents/publiclandownership.pdf

National Fire Protection Association (NFPA) Third Needs Assessment of the U.S. Fire Service; Conducted in 2010 and Including Comparisons to the 2001 and 2005 Needs Assessment Surveys.

Northeast Region

Northeast Regional Strategy Committee

Name	Agency / Organization
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

Name	Agency / Organization
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

Northeast RSC Support Staff

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

Southeast Region

Southeast Regional Strategy Committee

Name	Agency / Organization
Mike Zupko (Chair)	SGA / SGSF
Kevin Fitzgerald (Vice Chair)	NPS
Liz Struhar	NPS (alternate)
Liz Agpaoa	USFS Southern Region
Dan Olsen	USFS (alternate)
Tom 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
Kier Klepzig	SRS

Southeast Working Group

Name	Agency / Organization
David Frederick (Chair)	SGSF
Darryl Jones (Vice Chair)	South 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

Name	Agency / Organization
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

Western Region

Western Regional Strategy Committee

Name	Agency / Organization
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

Name	Agency / Organization
Bill Avey	USFS
Bill Tripp	Karuk Tribe
Carol Daly	Flathead Economic Policy - WGA
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 Rocky Mountain Experimental Station
Laura McCarthy	TNC
Sue Stewart	USFS
Travis Medema	Oregon Department of Forestry

Cohesive Strategy Sub-Committee

Name	Agency / Organization
Lew Southard	USFS
Jenna Sloan/Gus Smith	DOI
Dan Smith	NASF
Caitlyn Pollihan	NASF/CWSF
Bob Roper/Douglas MacDonald	IAFC
Ann Walker	WGA
Ryan Yates	NACo
Patti Blankenship	USFA
Jim Erickson	ITC

Wildland Fire Executive Council

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

Wildland Fire Leadership Council Membership

Name	Agency / Organization
Rhea Suh, Assistant Secretary for Policy, Management and Budget, WFLC Chair	DOI
Butch Blazer, USDA Deputy Undersecretary for Natural Resources and the Environment	USDA
Tom Tidwell, Chief	USFS
Johnathan 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
John Kitzhaber, Governor, State of Oregon	Governor, Western States Representative
Bev Perdue, Governor, State of North Carolina	Governor, National Governors' Association
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

COHESIVE STRATEGY

OBJECTIVES

Situation and Context

1. What is the National Wildland Fire Management Cohesive Strategy (Cohesive Strategy)?
2. What are the primary overarching goals of the Cohesive Strategy?
3. What is the specific role of regional efforts in the Cohesive Strategy?
4. What do you hope to accomplish with this specific workshop?

Guidelines

5. What general policies, regulations or laws govern wildland fire management in your area, agency or organization?
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.

Values

7. What broad societal and environmental values have been associated with fire in this region?
8. Briefly characterize how each broad value relates to or is affected by fire.
9. What are the dominant common values or perspectives among agencies? What are the dominant conflicts among values or perspectives?
10. Which of these conflicts are exceptionally difficult to address and why?

Uncertainties

11. What challenges in wildland fire management are created or compounded by lack of knowledge or understanding?
12. What societal or environmental changes or trends could affect wildland fire?
13. Briefly describe the uncertainties associated with these changes or trends that make them difficult to predict.

Goals and Objectives

14. What broad management goals or priorities exist for this area that relate to wildland fire?
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)?
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?
    1. Restoring and maintaining resilient landscapes
        1.1
        1.2
    2. Creating fire-adapted communities
        2.1
        2.2
    3. Wildfire Response
17. Which of the above are the highest priorities for completing this assessment and analysis?
18. For each priority goal, identify contributing objectives, and a range of actions and activities that could meet each objective.
19. Now finalize into an objectives hierarchy.

Measures for Success (Endpoints)

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).
21. What is the level of acceptability of these endpoints given the range of perspectives and values?

ALTERNATIVES

Actions

22. List the possible broad actions and activities from the objectives section (#).

Alternatives

23. Identify the combination of actions and activities that best reflects the continuation of current policies and practices.
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.
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.
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.

FOREST HEALTH PROTECTION
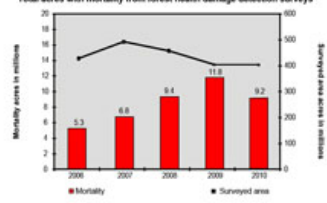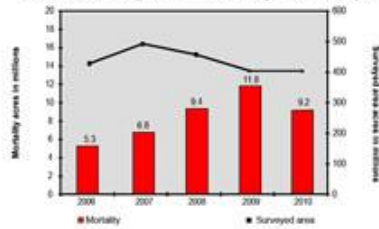
2010 Acres with Tree Mortality
Approximate Footprint Acres with Mortality: 9.2 million*

Tree mortality in the United States in 2010

COHESIVE STRATEGY

NATIONAL INSECT and DISEASE RISK MAP

National 2006 Composite Insect and Disease Risk* Map

Acres at risk: Approximately 58 million

National insect and disease risk map

Total Roundwood Harvest Volume thousand cubic feet

- 0
- 1 – 50000
- 50001 – 125000
- 125001 – 425000
- 425001 – 750000
- 750001 – 1250000

Alaska: 62,011
Hawaii: 0

United States total roundwood harvest map. Smith, W. Brad, tech. coord.; Miles, Patrick D., data coord.; Pugh, Scott A., Data CD coord U.S. Department of Agriculture, Forest Service, Washington Office.

APPENDIX G: COMMUNICATIONS FRAMEWORK

Communication Framework for a National Cohesive Wildland Fire Management Strategy

Scenarios for Implementation

Background: At the Wildland Fire Executive Council (WFEC) meeting in October the Cohesive Strategy Communication Workgroup (CS-CW) was tasked with providing scenarios for implementation to be provided to the Wildlland Fire Leadership Council (WFLC) at their November meeting. These scenarios for implementation are being provided as an addendum to the Communication Framework for a National Cohesive Wildland Fire Management Strategy.

Regardless of the scenario selected, or if a new scenario is established from selecting options within the proposed scenarios listed, the CS-CW recommends that a *Cohesive Wildland Fire Management Communication Steering Group* (CSG) be established similar to the group tasked by the WFEC in September 2011.

The core positions for the CSG would remain the same, this being:
- WFEC Liaison
- Lead Coordinator (to be designated)
- One representative from the following:
  - Department of the Interior (BIA, BLM, FWS, NPS)
  - US Forest Service (FS)
  - National Association of State Foresters (NASF)
  - International Association of Fire Chiefs (IAFC)

Additionally one individual from each of the following groups would be designated to serve as a liaison to the *Cohesive Wildland Fire Management Communication Steering Group:*
- Cohesive Strategy Sub-Committee (1)
  - National Science Team (1)
- Regional Strategy Committee (Northeast) (1)
- Regional Strategy Committee (Southeast) (1)
- Regional Strategy Committee (West) (1)

Implementation Scenarios

The coordination of communication and collaboration activities, from the development of collateral materials to advice and direction to different agencies on how information should be shared within their organizations, can be approached in several ways. The broadest and most comprehensive focus requires a higher level of resources to be assigned.

For sustainability of the Cohesive Strategy over time, current communication operating procedures in place within all agencies and organizations will be utilized to provide information to employees and members. Federal and state agencies and other collaborators are expected to create and implement their own communication and collaboration plans to disseminate Cohesive Strategy information and engage stakeholders. To the extent possible, communication with stakeholders will be through established stakeholder organizations' sources and channels.

The following options for implementation and oversight of the communications framework are offered for consideration by the WFLC:

Scenario One:

Retain Outside Professional Communications Firm or Utilize Specialized Agency Resource Group. Top notch communications firms/groups typically consist of a broad range of professionals who specialize in different areas. Graphics experts, writers, strategists and others could take the lead in developing the collateral materials identified within the communications framework, identifying groups and agencies that need to be included in the outreach plan, and making personal contact with information officers and agency/organization leadership in helping to pave the way for short and long term sustained communications on the Cohesive Strategy. The contracted firm could liaison with the existing Communications Workgroup, or similar group as identified by WFEC. Estimated cost: $300-500,000.

Scenario Two:

Dedication of 60-80 Hours per Week of Agency/Organization Staff Time at the Communications Professional Level for Full Year or More. Participating agencies and organizations in the Cohesive Strategy have a vested interest in insuring that the process is successful. Most have access to, or retain on staff, quality communications professionals who have experience in virtually all aspects of tasks identified in the communications framework. Success of the outreach effort will hinge upon having the hours necessary to develop materials, make contacts, identify other individuals and organizations who need to be pulled into the process, and monitoring how the word is getting out the Cohesive Strategy. The work done to date has been developed with such professionals, but continued dedication of theirs, or any other staff time, must be evaluated against other agency/organization priorities.

Scenario Three:

Continue to Use Limited Time of Staff Assigned to Communications Workgroup to Oversee Implementation. Since mid August, communications professionals from the Forest Service, DOI, NASF and IAFC have worked cooperatively to develop the Communications Framework within their time allowed, with a liaison from the WFEC. The quality of the group is excellent, but without dedicated resources, the implementation of the framework is likely to take longer with less robust results.

A National Cohesive Wildland Fire Management Strategy

Communication Framework

for
A National Cohesive Wildland Fire Management Strategy

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."*

Table of Contents

References

- Wildland Fire Leadership Council (Refer to the Memorandum of Understanding)
- Wildland Fire Executive Council (Refer to the charter)
- Federal Land Assistance, Management and Enhancement Act of 2009
- A National Cohesive Wildland Fire Management Strategy
- The Federal Land Assistance, Management and Enhancement Act of 2009, Report to Congress
- The 1995 Federal Wildland Fire Policy and Program Review
- A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment: A 10-Year Strategy
- Quadrennial Fire and Fuel Report (2006)
- Quadrennial Fire Review (2009)
- Mutual Expectations for Preparedness and Suppression in the Interface; A Call to Action; and Wildland Fire Protection and Response in the United States, The Responsibilities, Authorities, and Roles of Federal, State, Local and Tribal Governments.

Regrowth on the Cascade Complex, Idaho, 2007. Credit: NIFC, Kari Greer.

Purpose and Intent of this Document

The purpose of this document is to address the Tasking Memorandum (reference Appendix A) for the Cohesive Strategy Communication Workgroup (CS-CW) approved by the Wildland Fire Executive Council (WFEC) on September 2, 2011 which stated that:

> *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 for A National Cohesive Wildland Fire Management Strategy is targeted for use by individuals, agencies, organizations, governmental bodies, and interested stakeholders to use as a roadmap for effective communication and collaboration activities related to the Cohesive Strategy. The intent is to provide timely information, implementation updates and feedback opportunities to enable all stakeholders to understand and support the vision the Cohesive Strategy.

The National Cohesive Wildland Fire Management Strategy is an all-lands policy that reaches across jurisdictional lines. Traditionally, organizations involved in wildland and structural fire work together as cohesive and collaborative partners, focused on the objectives at hand regardless of their home unit or organization. This guidance is intended to support, simplify and facilitate communication efforts while recognizing and respecting that each organization has its own unique protocol, information distribution methods and communication systems.

Communications among the many organizations involved in the Cohesive Strategy must be consistent, clear, continual, and encourage discussion and an exchange of ideas. This Communication Framework highlights goals, objectives, core principles, provides overarching messages, suggests a number of actions and products, and concludes with potential methods to evaluate success.

Effective communication is an on-going process. It is anticipated that while the Framework will endure, updates on the messages will be adapted to meet the current situation.

Elements of a National Cohesive Wildland Fire Management Strategy

Methodology

The WFEC Tasking designated an interagency communications group, with members from the Department of the Interior, USDA Forest Service, the National Association of State Foresters and the International Association of Fire Chiefs to serve as the Cohesive Strategy Communications Workgroup. A WFEC member served as a liaison to the group providing guidance and assistance.

Initial group discussions focused on the best practices and procedures in communications and defined strategic and tactical outcomes. Subsequently, the group researched volumes of background material, reached out to WFEC members and the various committees involved in the Cohesive Strategy simulating mini listening sessions, gleaned lessons learned from documents addressing public perception and from existing national level communication plans which facilitated interagency and intergovernmental communications efforts.

Background information about the Cohesive Strategy is provided in Appendix B.

> A National Cohesive Wildfire Management Strategy discusses the importance of engaging the public.

Community meeting for the Castle Rock Fire, Ketchum, ID, 2007. Credit: NIFC, Kari Greer.

Goals, Objectives and Principles for the Communication Framework

Goals

As defined in the tasking, the Framework is designed to meet three overarching communication goals: Information, Organizational Communication and Collaboration, and Implementation. The intent of these goals is briefly outlined below.

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

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

- **Implementation:** Provide management and oversight options for communication efforts during implementation of the Cohesive Strategy.

Objectives

The strategic communication objectives are focused on:

- Creating a climate where key audiences are thoroughly informed about the basic tenants of the Cohesive Strategy in order to be aware of the benefits and relevance to their program and;

- Providing stakeholders the opportunity to engage in ongoing dialogue in order to be included in the process to the maximum extent possible.

Principles

Such a climate will be created through commitment to the following core principles:

- Leaders at all levels will participate in communications efforts during all phases of the Cohesive Strategy.

- Participating individuals and organizations will utilize recommended best practices for communication and collaboration.

- Process transparency will serve as the "golden rule."

- Aggressive distribution of information will be on-going.

- Meaningful and timely opportunities for stakeholder involvement will occur during all phases in order to sustain collaboration among individuals and organizations.

- Decision-making will be empowered by active participation of the diverse communities across the landscape of fire management.

Full success of this effort will only be accomplished through the combined efforts of leaders, subject-matter experts, and stakeholders. While the process must respect established roles and responsibilities for decision-making, it is imperative that the entire community of stakeholders be given a voice in the process.

To maintain consistent messaging and to ensure that stakeholders have equal opportunity to participate, communicators will be provided with the core principles of communication, overarching messages and a number of suggested actions and products that can be easily adapted to their unique communication environments. Long-term tactics are discussed under Implementation of the Communication Framework below.

Protecting stuctures in the Wildland Urban Interface. Castle Rock Fire, Ketchum, ID, 2007. Credit: NIFC, Kari Greer.

Roles and Responsibilities

Communication is the responsibility of every employee or individual involved. This responsibility extends beyond senior managers and officials, those designated to serve as official spokespeople, or subject matter experts who have been recognized as effective communicators. By virtue of association with the Cohesive Strategy, individuals will serve as ambassadors for the overall goals.

The following positions have critical roles and responsibilities:

- **WFLC Representatives and / or their designees:** Serve as key contacts for agency leadership, overseeing and coordinating communication, collaboration, and stakeholder activities within their respective agencies. WFLC members also serve as the decision-making body.

- **WFEC Representatives:** Provide advice for coordinated national-level wildland fire leadership, direction, and program oversight in support of the Wildland Fire Leadership Council.

- **Agency or Organization Communication Points of Contact:** Typically, this will be an individual(s) in External Affairs, Public Affairs or a group's Communication Director. It is critical that there be designated point(s) of contact to facilitate organizational specific communications, serve as communication consultants for designated spokespersons for the Cohesive Strategy, and to coordinate with senior level officials within the home organization about progress in the communications and collaboration arena. (For example: tracking presentations and delivery to key audiences.) Organizational Point of Contacts, in accordance with their specific guidelines will assist and facilitate designates spokesperson along with informing key audiences, including media and elected officials as appropriate.

- **Designated spokesperson(s):** Credible spokespersons will be chosen by respective agencies, organizations, and groups and these individuals should be well versed in the Cohesive Strategy, the principles of wildland and structural fire, communication strategies and techniques, and the overriding need for safety for firefighters, communities and the public at large.

- **Participants in the Cohesive Strategy Process:** Regardless of their individual or group role, all participants in the CS process are established leaders known for their expertise and commitment to the CS.   As such, participants are requested to assist in the cohesive communications effort by recognizing and supporting that communications is the responsibility of all individuals locally, regionally and nationally.

As the Cohesive Strategy continues to evolve it is anticipated that the will become a part of our daily conversations.

Messages

The cornerstone of any communication effort is a set of consistent, compelling messages for use in all proactive and reactive communication. Following are the overarching messages for the Cohesive Strategy. These messages are designed to meet the following criteria:

- **Coincide with and not contradict agency, interagency, intergovernmental, or organization's messages.** It is critical that the communities involved in the Cohesive Strategy speak with one voice. The CS messages are designed to complement existing messages.

- **Allow for customization.** These messages are a guide, not a script. Users are encouraged to provide additional, local detail to ensure the messages touch audiences in a relevant, credible way.

> **Messages** are not intended to be a script, but are to serve as a guide for communicators to focus on the key themes of the Cohesive Strategy. Message are general concepts that can be incorporated into discussions, print materials, and other resources used in communication, education, information and collaborative discussions.
>
> **Supporting points** provide detail for the messages and enable individuals to further explain the identified topic and reach audiences on a personal level.

- **Include a call to action.** In addition to educating, messages should motivate the audiences to act on what they have learned.

- **Answer the questions what, why, and how.** Categorizing messages in this way will help users recall the messages during appropriate situations. The messages below are presented in the traditional format of a Key Message followed by Supporting Points.

  o Spokespeople are reminded to use clear text and language and to explain the Cohesive Strategy using the "five w's and the h" of journalism (who, what, when, where, why and how), with particular emphasis on the "why" and the "how" for this project. Tell the story of the Cohesive Strategy, of what's happening. We do not need to define everything that is going on.

> Firefighters talk to a home owner in the wildland urban interface on the Cascade Complex, Idaho, 2007. Credit: NIFC, Kari Greer.

Messages for the National Cohesive Wildland Fire Management Strategy

What is the Cohesive Strategy?

The National Cohesive Wildland Fire Management Strategy is an ongoing effort by federal, tribal, state and local governments and non-government organizations to address growing wildfire challenges in the United States.

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

Wildland fire is a dynamic process.

Fire seasons, in general, are becoming longer, with larger wildfires that are more difficult to put out. The Cohesive Strategy represents the kind of creative thinking and cooperation that will be needed to meet the challenges of a new kind of fire season. The Strategy promotes safely and effectively extinguishing fire, when needed; using fire where allowable; managing natural resources; and as a nation, living with wildland fire. Wildland fire must be managed across appropriate fire landscapes, which are often fragmented into many land ownerships and political jurisdictions. An "all-lands" approach is needed and the Cohesive Strategy addresses wildland fire challenges by restoring fire-resilient landscapes.

The Cohesive Strategy is about more than fire suppression.

Wildland fire is more than a fire management and operations problem, it is a larger land management and societal issue. To achieve workable solutions, a cohesive strategy must ensure the human dimension is accorded equal weight with the physical and ecological science dimensions of fire. The Cohesive Strategy emphasizes restoring resilient landscapes and promoting fire-adapted communities and encourages private landowners and communities to assume responsibilities for making their properties fire-resistant.

No one strategy can solve all the problems faced by the nation's fire community.

The Cohesive Strategy will provide a common basis for thoughtfully approaching the complexities of wildland fire in the United States and determining the best course of action. A key to a cohesive strategy is its inclusiveness – its ability to accommodate the wide diversity of the United States, recognizing a 'one-size-fits-all' approach does not work across the Nation. It is better to have one cohesive strategy developed with the participation of state and local fire organizations, tribes and the federal fire agencies rather than different strategies from different organizations. The Cohesive Strategy will build on past efforts to direct wildland fire management in the United States.

The Cohesive Strategy relies on people working together.

A workable strategy must include and define the varying roles and responsibilities of fire managers at all levels and determine how those levels blend and work together. Wildland fighting agencies need to cooperate and be respectful of each others' process to work collaboratively for the good of all. A national Cohesive Strategy must recognize the differences and tensions that exist among partners and stake-holders and why those differences exist. Success depends on stronger relationships. An effective cohesive strategy must guide all organizations to recognize and accept each others' management differences and promote a cohesive response to the wildland fire management challenges across all jurisdictions.

The Cohesive Strategy seeks to reflect the values and concerns of the public and all governments.

The problems created by wildland fires affect all lands and all levels of govern¬ment. Therefore, the solutions must be a collective, shared and strategic. The Cohesive Strategy must engage the public, a 'from-the-ground-up' effort. Wildland fire management officials, the public and all levels of government will be actively involved. Solutions will come from all stakeholders, including the legisla¬tive branch of the United States government. The strategy is designed to better align national level decision-making with regional and local interests.

> **Effective communication** is an on-going process. It is anticipated that as Phase II and Phase III unfold the Communication Framework is expected to adapt and expand to accommodate new or revised messages, themes and tactics.

Audiences

The overriding need for safety—for firefighters, communities and the public at large—results in a vast potential stakeholder audience. With regard to this project, the traditional breakdown between internal and external audiences is marginal.

The internal audiences (as defined by the respective groups) are critical, as the internal participants will serve as primary messengers. Most stakeholders for this project consist of organizations, whether they are non-government or representing local, state, tribal, or federal government agencies. These internal stakeholders often have widely different organizational focus and individual professional roles and responsibilities. The size of this stakeholder population means that the intensity of participation will vary considerably based on roles in their respective formal organizations.

While media and elected officials may rightly be considered external audiences, members of the public are identified as important stakeholders. Consequently, interested citizens or citizen groups will be provided an appropriate opportunity to participate. Participating agencies and organizations are encouraged to manage media contacts and to inform elected officials in accordance with individual agency protocol and procedures.

Audiences are those people, groups, organizations, agencies or other levels of government who affect, are affected by, or have a relationship to the issue at hand. Knowing and understanding that relationship will help in customizing messages and strategies for reaching each audience.

Information Officers and fire managers conduct a community information session in northern California, 2008.
Credit: NIFC, Kari Greer.

This initiative considers both internal and external audiences, as well as the people who influence those audiences. Audiences for the Cohesive Strategy are defined as follows:

- Local, state, tribal, and federal government agencies.

  Examples: Other cabinet agencies, State and municipal governments

- Nongovernmental organizations and constituent groups.

  Examples: Associations, conservation groups, professional forestry and natural resources organizations, landowner organizations and news media (national, state, local, trade, etc)

- Elected officials.

  Examples: Congressional, State and Municipal

- Citizens from communities across the nation.

- Academia

  Examples: Resource Centers, Universities and Colleges

For the partners involved in the crafting of the Cohesive Strategy it is critical that messaging to their members and employees is direct and effective because to have consistent communication with external audiences, those involved in the Cohesive Strategy must be sure to communicate effectively with the internal audiences. At the same time it must be recognized that several of the internal groups have peers that are external and should not be overlooked – the external distribution of information should not be limited to the elective officials and the citizens but to others we work with.

Lighting a prescribed burn at dusk at Wind Cave National Monument, South Dakota, 2009. Credit: NPS, Mike Johnson.

Collaboration Tips and Resources

Collaborative participation must be as inclusive and equitable as possible. In addition to resources from the participating agencies, organizations and groups, there are multiple resources about effectively collaborating with partners.

The International Association for Public Participation (IAP2, http://www.iap2.org/ see practitioner tools) offers a wealth of suggestions for effective collaboration with stakeholders. One way to view collaboration may be to view the following participatory steps:

- **Inform:** Receives objective information to assist in understanding the problem and alternatives.

- **Consult:** Contributes ideas and comments.

- **Involve:** Participates at key times throughout the process to ensure concerns and aspirations are consistently heard and understood.

- **Collaborate:** Participation in every aspect of the process, including development of alternatives and identification of the preferred alternative.

- **Empower:** Participation in the final decision

The steps noted above are further defined as "Spectrum of Public Participation" and is a suggested method to organize a strategy to accommodate the diverse stakeholders interested in this project.

"Branding" the Cohesive Strategy

The Cohesive Strategy will benefit from communications efforts that exhibit a unifying set of messages, symbols, and overall "look and feel." This will allow the diverse Cohesive Strategy messengers and stakeholders (particularly agencies and organizations) to speak with a unified voice, supported by consistent products and materials (templates, logo, color scheme, slogan, etc.) The Cohesive Strategy is a concept and as such it is suggested that graphic branding be considered and samples provided in a communications toolbox.

Tactical Tools

Recognizing and respecting that each organization has its own unique protocol and information distribution methods, the Communication Framework can serve as a model for integrating Cohesive Strategy messages and priorities within existing communications systems

The following tactical tools are recommended for any communications professional, public affairs officer, organizations as a whole or any appropriate messenger to use when communicating about wildland fire in their daily work. They are divided into "internal" and "external" categories, but many of the tools may be appropriate for both. While some items are merely recommended tactics, a number of these items will be produced and compiled into a Cohesive Strategy Communications Toolkit to offer template materials and tools that are easy to use and customize while providing a consistent national messaging platform.

INTERNAL AUDIENCES

Resources and Collaterals
- Briefing papers
- Fact sheets
- Frequently Asked Questions
- Key messages and Message Map
- Key congressional contacts
- "Elevator speech"
- PowerPoint presentation template/slides
- Detailed list of stakeholders by organization
- Sample tweets (Twitter)
- Sample Facebook posts

Outreach
- E-mail blasts
- Podcasts
- Webcast for communicators to introduce collateral tools
- Legislative Outreach
- Local elected official outreach
- Chief's Chat – Forest Service Chief video
- Establish a "My Fire Community Cohesive Strategy" working group neighborhood.
- Articles & reports submitted to agency publications (internal/external; federal, state, tribal, local)
- Articles/blurbs written for field-level awareness published in applicable publications and electronic mediums.

EXTERNAL AUDIENCES

Media Relations, Resources and Events

- Webcast press conference
- Face-to-face briefings of key officials
- News releases
- Podcasts
- One-pager on key points of Cohesive Strategy
- Presentations based on template

Social Media and Public Relations

- Regular (weekly) Twitter/Facebook posts around stakeholder channels
- Coordination with fire prevention/awareness weeks/months throughout calendar year

Smoke billows on the horizon, 2010.
Credit: USDA Forest Service, Manti LaSalle.

Implementation Strategy

For sustainability of the Cohesive Strategy over time, current communication operating procedures in place within all agencies and organizations will be utilized to provide information to employees and members. Federal and state agencies and other collaborators are expected to create and implement their own communication plans to disseminate Cohesive Strategy information (see Roles and Responsibilities section). To the extent possible, communication with stakeholders will be through established stakeholder organizations' sources and channels.

Appendix E offers a list of identified communications contacts at various agencies and organizations that are in a position to effectively broadcast meaningful Cohesive Strategy conversations. While this list is not exhaustive, it is meant to serve as a foundational network of messengers that can reach out through various groups and channels, creating a ripple effect and extending the reach of this framework.

A more formal group of communication professionals (from a cross-section of appropriate agencies, organizations and groups) is needed to work on communications during Phase II and Phase III of the Cohesive Strategy. Key messages from Phase II and Phase III products will need to be developed and disseminated. The group will support and facilitate communication originated by stakeholders with communication tools, information, and technical assistance. It will work with the three regional committees who will be responsible for their own outreach to their stakeholders within their regions. This level of technical assistance will be important to support stakeholder organization communication efforts.

A range of implementation scenarios will be presented to the Wildland Fire Leadership Council for discussion and decision, and follow-up actions at the WFLC meeting November 9-10, 2011.

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

Conclusion

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

> *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.*

With that direction this framework was created to support the Cohesive Strategy process with a focus on the conclusion of Phase II and the implementation of Phase III. The framework acts as a guide, to support three overarching communication outcomes: Information dissemination, Organizational Communication and Collaboration, and Implementation. The guiding principle of the communication framework approach is that different stakeholder groups can best communicate about the Cohesive Strategy to their own constituents using their own established communication systems. Leveraging this is key to successfully communicating the Cohesive Strategy to the impacted stakeholders, both external and internal.

Communications and the directions set by this document is a critical part of the Cohesive Strategy efforts – without it there will not be an understanding or buy in by the people who fund these efforts, support these efforts, implement these efforts or are the ultimate customer of these efforts, the citizens of the United State of America.

Fire managers and personnel collaborate to discuss the best strategies. Credit: NIFC

APPENDICES

Appendix A: Wildland Fire Executive Council Tasking Memorandum dated September 2, 2011, reference Cohesive Strategy Communication Workgroup

Appendix B: Background on A National Cohesive Wildland Fire Management Strategy

Appendix C: Message Map

Appendix D: Using the Message Map

Appendix E: Points of Contact

Appendix A: Tasking Memorandum - Cohesive Strategy Communication Working Group

WILDLAND FIRE EXECUTIVE COUNCIL

September 2, 2011

Subject: Cohesive Strategy Communication Workgroup (CS-CW)

Background:

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.

On July 15, 2011 the Wildland Fire Executive Council (WFEC) recognized this need and accepted a proposal to develop a cohesive communication document which will complement the overall Cohesive Strategy process. The Lead Coordinator and group members are listed below.

Tasking:

The WFEC is requesting that an interagency communications group, with members from the Department of the Interior, US Forest Service, and state and local government serve as the Cohesive Strategy Communications Workgroup. The group comes together and functions as a group of peers.

Cohesive Strategy Communication Workgroup (CS-CW) Members:

- Roberta D'Amico, Lead Coordinator, Department of the Interior (NPS)
- Judith Downing, US Forest Service (FS)
- Sarah McCreary, National Association of State Foresters (NASF)
- Shawn Stokes, International Association of Fire Chiefs (IAFC)
- WFEC Liaison: Mary Jacobs, Assistant City Manager, Sierra Vista, AZ National League of Cities.

Outcome / Deliverable:

The group is tasked with developing a communication framework which will serve as communication guidance and direction for agencies, organizations, individuals and interested stakeholders involved in the Cohesive Strategy communications effort. The document will address three critical communication goals.

1. Keeping stakeholders, interested parties, and the public informed of progress in the development of the Cohesive Strategy. (Information)

2. Developing and implementing organizational communication processes that enhance and sustain collaboration among stakeholders toward development and implementation of the Cohesive Strategy. (Organizational Communication and Collaboration)

3. Future Implementation, management and oversight options for communication efforts. (Implementation)

Information

- Establish the overarching message/themes for collective use.

- Determine various audiences, prioritize information needs for identified audiences, and establish a minimum level of success for outreach and engagement activities for each audience while seeking maximum contact.

- Provide various methods and mediums to effectively communicate the messages.

- Develop practices, policies and other key procedural aspects of the unified Cohesive Strategy communication effort.

- Identify a specific time table indicating milestones, due dates and action items and present to WFEC no later than 4 weeks after the initial meeting of the CS-CW.

- Recommend documentation and evaluation methods for all users.

Organizational Communication and Collaboration

- Create and maintain an active exchange of ideas and information among stakeholders leading to shared ideas and understandings contributing to the Cohesive Strategy.

- Disseminate the results of collaborative efforts back to stakeholders and other interested parties. For example, disseminate the themes resulting from content analysis of the focus groups and related processes used in Phase 2.

- Listen to stakeholder ideas through continuation of the focus groups used in Phase 2 or other improved processes as appropriate. Inform Cohesive Strategy Framers of the emerging ideas and issues identified by these processes.

- Encourage energetic and constructive conversations and exchanges about the Cohesive Strategy among stakeholders and improve the capacity of communication networks linking stakeholder groups and other interested parties. This will involve establishing bridges and liaisons between different stakeholder networks and motivating exchanges across boundaries among stakeholder groups and interests.

Implementation

- Recommend to the WFEC future implementation, management and oversight options for the final communications strategy for the duration of the plan, up to and including the initial five years following adoption of Phase 3 of the Cohesive Strategy to ensure continued input, involvement and relevance nationwide.

- Establish designated point of contacts that will facilitate knowledge and implementation practices established in the of the communication framework, i.e. guidance and direction.

Operating, Meeting and Reporting Procedures for the CS-CW

- The committee reports directly to WFEC and the Lead Coordinator will organize and facilitate response to WFEC.

- The Lead Coordinator or a designated member will represent the committee and provide a progress report at the bi-weekly WFEC meetings until the task is completed.

- The CS-CW shall meet as necessary to conduct business.

- Reports will be submitted to WFEC and will be public documents available to the public.

Roles and Responsibilities:

CS-CW Lead Coordinator:

- Ensures interagency and collaborative process.

- Ensures committee completes task on established timeline.

- Communicate progress and status to WFEC on a regular basis.

- Identify and troubleshoot emerging issues.

- Develop and implement interim methods of communicating with various committees and subcommittees in order to keep groups positively engaged in the process.

Team Members:

- Address tasking using their expertise and professional judgment.

- Participate in CS-CW telephonic meetings at a 90% participation rate.

- Complete or facilitate tasks as assigned.

- Communicate progress and status to Lead Coordinator on a regular basis.

Participants in the Cohesive Strategy Process:

- Regardless of their individual or group role, all participants in the CS process are established leaders known for their expertise and commitment to the CS process. As such, participants are requested to assist in the cohesive communications effort by recognizing and supporting that communications is the responsibility of all individuals locally, regionally and nationally.

- Recognize and respect diverse organizational missions, cultures, and opinions.

- Facilitate effective working relationships within and outside of the CS-CW in order to meet the defined task.

Timeline:

- Status reports will be provided to WFEC at their bi-weekly meetings.

- Final draft document will be shared with WFEC members prior to the presentation of the final document. A working draft will be ready for review and at the full WFLC meeting in November 2011, requiring a draft to WFEC at the October 2011 meeting.

- Final document is due on December 9, 2011.

Approval:

This tasking is in effect on the date of approval (noted above) by the Designated Federal Official. This task shall sunset by January 6, 2012.

Contact Information:

- Roberta D'Amico, Email: roberta_d'amico@nps.gov
- Judith Downing, Email: jldowning@fs.fed.us
- Sarah McCreary, Email: smccreary@stateforesters.org
- Shawn Stokes, Email: sstokes@iafc.org
- Mary Jacobs, Email: mary.jacobs@sierravistaaz.gov

Appendix B: Background on A National Cohesive Wildland Fire Management Strategy

In recognition of the variety of backgrounds and knowledge levels by the readers of this Framework, this section is intended to provide a basic overview of the Cohesive Strategy. Readers are encouraged to cross-reference the foundational documents listed via the Appendixes and web-based links referenced throughout this document along with supplemental materials and current project information prior to embarking on activities intended to reach a broader audience.

The Federal Land Assistance, Management, and Enhancement (FLAME) Act was passed on October 29, 2009. It required the Secretaries of the United States Department of Agriculture (USDA) and the Department of the Interior (DOI) to submit to Congress a report that contains a "cohesive wildfire management strategy" consistent with the recommendations described in recent reports of the Government Accountability Office (GAO) by November of 2010.

Several principles guided development of the Cohesive Strategy.

- The National Cohesive Wildland Fire Management Strategy will be based on the best available science and identify different ways to ensure resilient landscapes, promote fire-adapted communities, and more effectively respond to wildfires.

- Development of the National Cohesive Wildland Fire Management Strategy will build on existing analyses, strategies, and reports as well as incorporate new scientific information and perspectives.

- Representatives of local, state, regional, federal, and tribal governments with roles and responsibilities in wildland fire management will work together to develop the Cohesive Wildland Fire Management Strategy through the Wildland Fire Leadership Council. To succeed, the Cohesive Strategy must be a united, coordinated effort.

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

Phase I: National Cohesive Wildland Fire Management Strategy

Phase II: Development of Regional Strategies and Assessments

Phase III: National Trade-Off Analysis and Execution

Phase I: National Cohesive Wildland Fire Management Strategy

In response to the request from Congress, two separate complimentary documents were developed collaboratively in 2010. Together, these two reports respond to Phase I and were completed in 2010.

A National Cohesive Wildland Fire Management Strategy presents a collaborative approach to a national strategy and provides a foundation from which to build a local and regional actions and direction. This report outlines a path toward development of a national cohesive wildland fire management strategy that will provide a foundation from which to build local and regional actions and direction. Additionally, it notes that addressing wildfire is not simply a fire management, fire operations or wildland-urban interface problem — it is a larger, more complex land management and societal issue. The Strategy presents a vision for the next century, which 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 Federal Land Assistance, Management Act of 2009 Report to Congress, the companion document addresses the seven specific elements requested by Congress in the FLAME Act. The seven areas that were addressed are:

4. Identification of the most cost-effective means for allocating fire management budget resources
5. Reinvestment in non-fire programs by the two Secretaries
6. Employing appropriate management response to wildfires
7. Assessing the level of risk to communities
8. Allocation of hazardous fuels reduction funds
9. Assessing the impacts of climate change on the frequency and severity of wildfire, and,
10. Studying the effects of invasive species on wildfire risk

Both reports identify three primary factors which present the greatest challenges and opportunities for making a positive difference in addressing the wildland fire problems to achieve the vision noted above. They are:

Restoring and maintaining resilient landscapes. The strategy must recognize the current lack of ecosystem health and variability of this issue from geographic area to geographic area. Because landscape conditions and needs vary depending on local climate and fuel conditions, among other elements, the strategy will address landscapes on a regional and sub-regional scale.

Creating fire-adapted communities. The strategy will offer options and opportunities to engage communities and work with them to become more resistant to wildfire threats.

Responding to Wildfires. This element will consider the full spectrum of fire management activities and will recognize the differences in missions among local, state, tribal and federal agencies. The strategy will offer collaboratively developed methodologies to move forward.

Phase II: Development of Regional Strategies and Assessments

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

a. WFEC identifies the national science/analysis team;

b. WFEC adopts guidance for Regional Strategy Committees;

c. Regional Strategy Committees are identified and will develop an understanding of the governance/oversight roles.

d. Each Regional Strategy Committee will include representatives identified and selected by WFEC;

e. Regional analytical teams are identified.

f. Timeframes for the following four steps will be determined by the Regional Strategy Committees:

    i. Define the analysis process. This will include identifying the information available; the analytical tools that can be employed; and who is available to engage in the analysis.

    ii. Define and analyze initial alternatives. This will involve describing an initial set of broad alternatives, including understanding the goals of each alternative, the components that are needed for the analysis of each alternative and the bounds of the analysis and problem to be addressed. Analysis of these alternatives will help test the analytical methods, and ultimately provide information that will be needed by the regional technical and stakeholder groups to help refine specific regional alternatives.

    iii. Collaboratively identify the regional alternatives. Relying on local and regional knowledge and insights, describe a small set of regional alternatives. This exercise draws from the understanding gained from analysis of the initial alternatives. These alternatives would be shared with and shaped by regional stakeholders.

    iv. Analyze the regional alternatives and share the results with stakeholders. Update content based on regional feedback.

g. Submit results of the regional analyses for national analysis.

Phase III: National Trade-Off Analysis and Execution

During Phase III, the following steps will occur:

1. Conduct the national analysis. Develop a draft national summary of the regional alternatives. The summary will include a description of the decision space available, a description of the activities and priorities associated with the regional alternatives, and a description of the tradeoffs associated among the alternatives.

2. Share the results of the national results and summarization with stakeholders.

3. Update and conclude the analysis based on feedback from the stakeholders.

4. Establish a five-year review cycle to provide updates to Congress.

Overall Governance of the Cohesive Strategy

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

NATIONAL COHESIVE WILDLAND FIRE MANAGEMENT STRATEGY

THE COHESIVE STRATEGY RELIES ON PEOPLE WORKING TOGETHER.

Wildland firefighting agencies need to cooperate and be respectful of each others' process to work collaboratively for the good of all.

A national strategy must recognize the differences and tensions that exist among partners and stakeholders and why hose differences exist.

An effective strategy guides all organizations to recognize and accept each others' management differences and promote a cohesive response across all jurisdictions.

THE COHESIVE STRATEGY REFLECTS THE VALUES AND CONCERNS OF THE PUBLIC AND ALL GOVERNMENTS.

The problems created by wildland fire affect all lands and all levels of government.

An effective strategy must be a "ground-up" effort, with wildland fire management personnel, the public and all levels of government actively involved.

There is no "one-size-fits-all" approach. A national strategy provides a common basis for determining the best course of action.

The Cohesive Strategy is designed to better align national level decision-making with regional and local interests.

THE COHESIVE STRATEGY IS ABOUT MORE THAN FIRE SUPPRESSION.

WILDLAND FIRE IS A DYNAMIC PROCESS.

Today's longer fire seasons produce larger wildfires that are more difficult to put out. The Cohesive Strategy represents the creative thinking and cooperation needed to meet the challenges of a new kind of fire season.

Fire-adapted landscapes can become out of balance and vulnerable to fire, insects, and climate change. The Cohesive Strategy addresses these challenges by restoring fire-resilient landscapes.

The Cohesive Strategy is based on the best available science.

· · · · · TRANSITIONS ·

Works because it is a ground-up, inclusive effort

Based on the best available science

Focused on resilient landscapes and fire-adapted communities

The most important part of any communications project is making sure every party to it is saying the same thing. With so many stakeholders and potential messengers in the wildland fire community, common messages are critical. The MESSAGE MAP is a message-structuring tool that recognizes the complexity of communication in our crowded communications environment. Rather than a one-sentence "message" that leaves you sounding and feeling like a broken record, a triangle sets up three consistent key message themes—lenses that focus attention on specific themes—and provides supporting points to build your case. Transitions bridge the themes and provide a quick way to get back on message when needed.

The three parts of the triangle essentially follow a progression; a description of our core message statement in the center, with a directed progression of the key message themes and their proof points. The map does not include every single statement that every single messenger is ever going to say. It does provide an exclusive list of the key message themes that every messenger needs to be using, and the key support points s/he needs to make on the themes' behalf. Finally, along the bottom are transition lines. These can help you get back on message when you get off track or when it is hard to get people's attention in the first place.

KEY MESSAGE THEME
The theme or idea we most want people to hear and remember.

CORE MESSAGE STATEMENT
The reason why we want to communicate.

PROOF POINTS
These are the key points that support the main message and help you make the case.

TRANSITIONS
Help you get back on the offense. "Well Dave, the Cohesive Strategy works because it is a ground-up effort…"

NATIONAL COHESIVE WILDFIRE MANAGEM

COHESIVE STRATEGY REFLECTS THE
...UE...ND CONCERNS OF THE PUBLIC
AND ALL GOVERNMENTS.

...oblems created by wildland fire affect all lands
...ll levels of government.

...ffective strategy must be a "ground-up" effort,
...wildland fire management officials, the public
...ll levels of government actively involved.

...e is no "one-size-fits-all" approach. A
...nal strategy provides a common basis
...etermining the best course of action.

...ohesive Strategy is designed to bet-
...ign national level decision-making
...gional and local interests.

THE COHE:
PEOPLE

Wildland firefighting
respectful of each o
for the good of all

A national strat
and tensions
holders

An effect
recogni
ment
resp

THE COHESIVE STRATEGY IS ABOUT MORE THAN FIRE SUPPRESSION.

WILDFIRE IS A DYNAMIC PROCESS.

Today's longer fire seasons produce larger wildfires that are more dif
to put out. The Cohesive Strategy represents the creative thinking ar
cooperation needed to meet the challenges of a new kind of fire sea

Fire-adapted landscapes can become out of balance and vulnerable
fire, insects, and climate change. The Cohesive Strategy addresses
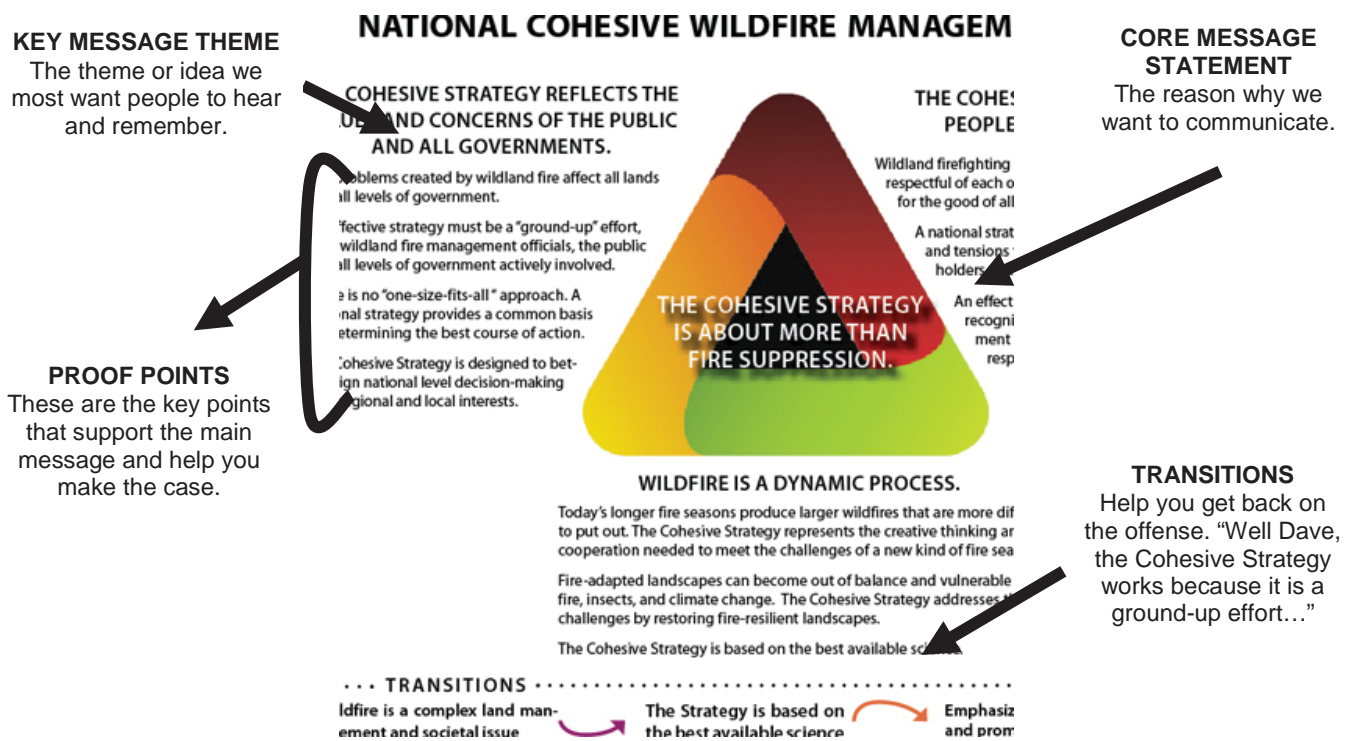challenges by restoring fire-resilient landscapes.

The Cohesive Strategy is based on the best available sc...

··· **TRANSITIONS** ·································
ldfire is a complex land man-   The Strategy is based on   Emphasiz
ement and societal issue   the best available science   and prom

Not every situation or question requires equal use of all the sides of the triangle, but it is important that you know and understand them all, and that as communicators we are saying the same messages with enough clarity and frequency. While some re-enforcing points of the message will change from audience to audience—based on the level of public policy knowledge, for example—the general themes and message points will stay the same, no matter what.

When you have a message opportunity—whether a speech, dinner party, or media interview—you need to decide on your communication goal and anticipate the best pro-active message and which proof points will best help establish the validity of your message.

Here are three important steps:

> **(1) Identify your audience** – Consider what message they are likely to respond best to and what they might have questions about or take issue with.
> **(2) Identify your purpose** – Think of why you are communicating in the first place. What do you want people to leave the room thinking or ready to do?
> **(3) Identify your Message** – Think of which statements on the map will be most persuasive to your audience.

Then anticipate some tough or tricky questions that might get you off track. Practice using transitions to help you steer the conversation back to your message backed up by the proof points.

This advance preparation with the map is even more necessary if you are going to appear on a broadcast medium like radio or television. In a format where the final edited version of what you say could be less that 30 seconds you must keep it simple and make a few key points over and over again. Even a 10-minute phone interview with a newspaper reporter might result in one quote showing up in print. We must fight the urge to cover the whole map in one sitting because the time available to make the point is so limited and targeting the message to the audience is so important.

Appendix E: Points of Contact

Wildland Fire Leadership Council Organization	Wildland Fire Executive Council (Connect to WFLC organization)	Point of Contact(s), Email and Phone Number
USDA: Undersecretary and Deputy Undersecretary for Natural Resources and Environment	USDA FS Director, Fire and Aviation Management	TBD
Chief, USFS	USDA FS Director, Fire and Aviation Management	TBD
DOI: Assistant Secretary for Policy Management and Budget	Director, DOI Office of Wildland Fire Coordination	TBD
DOI Bureau Director, BIA	Director, DOI Office of Wildland Fire Coordination	TBD
DOI Bureau Director, BLM	Director, DOI Office of Wildland Fire Coordination	TBD
DOI Bureau Director, FWS	Director, DOI Office of Wildland Fire Coordination	TBD
DOI Bureau Director, NPS	Director, DOI Office of Wildland Fire Coordination	TBD
DOI Bureau Director, USGS	Director, DOI Office of Wildland Fire Coordination	TBD
DHS – Administrator of the US Fire Administration	US Fire Administration	TBD
National Governors' Association	National Governors' Association	TBD
Western Governors' Association	National Governors' Association	TBD
Intertribal Timber Council	Intertribal Timber Council	TBD
National Association of Counties	National Association of Counties	TBD
National League of Cities	National League of Cities	TBD
I-Chiefs Wildland Fire Policy Committee	IAFC Liaison to the Wildland Fire Policy Committee	TBD
NASF Fire committee	NASF Forest Fire Protection Committee	TBD
	National Wildfire Coordinating Group	TBD

THIS PAGE LEFT INTENTIONALLY BLANK

October 28, 2011

Memorandum

To: Wildland Fire Leadership Council (WFLC)

From: Wildland Fire Executive Council (WFEC)

Subject: Implementation Scenarios for the Communication Framework

The Wildland Fire Executive Council designated a Cohesive Strategy Communication Workgroup via Tasking Memorandum on September 2, 2011. The tasking states: *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 Workgroup developed a Communication Framework which is targeted for use by individuals, agencies, organizations, governmental bodies, and interested stakeholders to use as a roadmap for effective communication and collaboration activities related to the Cohesive Strategy. The framework is attached for your reference.

Implementation of the Communication Framework will involve coordination of communication and collaboration activities, from the development of collateral materials to advice and direction to different agencies on how information should be shared within their organizations. Implementation can be approached in several ways depending on the outcome desired. The broadest and most comprehensive focus requires a higher level of resources to be assigned. The workgroup has developed *Implementation Scenarios for the Communication Framework* for discussion and consideration by the WFLC at the upcoming meeting.

We look forward to discussing the scenarios with you at the November meeting in Denver, Colorado.

Prepared by Mary Jacobs, WFEC Liaison to the Communication Workgroup

Status Report

Date: October 28, 2011 *(Submitted10/24/2011)*

Tasked Committee: Cohesive Strategy Communication Workgroup (CS-CW)

Accomplishments since Last Report:

- Participated in WFEC meeting October 11-13, 2011.
- Group met on Friday, October 14, 2011 to debrief from WFEC meeting and to outline next steps.
- Suggestions were received at the WFEC meeting noted above for the Communication Framework. With concurrence from the group, these suggestions were incorporated into the Communication Framework. Edits include:
  - Page ii, modify bullets.
  - Page 1, modify second paragraph to include: The intent is to provide timely information, implementation updates and feedback opportunities to enable all stakeholders to understand and support the vision the Cohesive Strategy.
  - Added the following on the cover of the document: *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."*
  - Word search document to check for proper use of Wildland Fire.
  - Page 14, added: *A range of implementation scenarios will be presented to the Wildland Fire Leadership Council for discussion and decision, and follow-up actions at the WFLC meeting November 9-10, 2011.*
  - Minor modification to symbol on the front page of the document.
  - Draft removed from the document, date updated to read November 2011.
  - Credits notes on pictures.
- The revised Communication Framework will be submitted as material for the WFLC notebook.
- Conference call on Thursday, October 20, 2011 the group discussed and developed Implementation Scenarios for the Communication Framework to be presented at the November 9-10 WFLC meeting in Denver, Colorado.

Planned Activities for Next Reporting Period:
- Prepare for WFLC meeting November 9-10, 2011.

Issues Identified:
- No issues during this reporting period.

WFEC Decisions/Approvals Needed:
- Concurrence on Implementation Scenarios to be presented to WFLC.

References:
- Documents submitted for WLFC November meeting.

Contact Information:
- Mary Jacobs, Email: mary.jacobs@sierravistaaz.gov
- Roberta D'Amico, Email: roberta_d'amico@nps.gov

Wildland Fire Leadership Council

Meeting Agenda
Denver Marriott Gateway Airport Hotel
16455 E. 40th Circle Aurora, Colorado
November 9 - 10, 2011

Meeting Objectives:

- Approve Phase II National Report
- Agree on the timeline and process for Phase III
- Approve the LANDFIRE Charter

Time	Topic	Objective(s)	Lead
1:00 – 1:15	Welcome, introductions and meeting objectives	- Information	Butch Blazer, USDA Rhea Suh, DOI
1:15 – 1:30	CSSC – Phase I Commitments	- Information - Discussion	Jim Erickson
1:30 – 3:00	NE, SE, West RSC Discussions - Input from stakeholders from the region	- Information - Discussion/Q&A	Matt Rollins Mike Zupko Joe Stutler
3:00 – 3:30	BREAK		
3:30 – 4:00	Public Comment period		Sandy Cantler
4:00 – 4:30	Science and Analysis in Phase II	- Information - Discussion	Danny Lee Tom Quigley
4:30 – 5:00	CSSC – Phase II Reflections and thoughts on Phase III	- Information - Discussion	Caitlyn Pollihan Ryan Yates
5:00 – 5:30	Communication Framework – A Plan for Engaging Stakeholders	- Information - Discussion	Roberta D'Amico Judith Downing
5:30 – 5:45	Final Comments/Review of the day		Butch Blazer. USDA Rhea Suh, DOI
5:45	Adjourn		
5:45	Group dinner at Ted's Montana Grill (optional)		

Wildland Fire Leadership Council

Time	Topic	Objective(s)	Lead
8:00 – 9:30	Phase II Draft Report Review	- Information - Discussion - *Decision: Approve or Amend the Phase II Draft report*	Tom Harbour Kirk Rowdabaugh
9:30 -10:00	BREAK		
10:00 - 11:30	Phase III - Example of Trade-Off Analysis - Timeline - Commit Staff Resources	- Information - Discussion - Decision: *Approve or amend the Phase III process and timeline*	Tom Harbour Kirk Rowdabaugh Danny Lee Tom Quigley
11:30 – 11:45	LANDFIRE Charter Approval	- Discussion - Decision: *Approve or amend the LANDFIRE Charter*	Kirk Rowdabaugh
11:45 – 12:00	WFEC Update – Status of Action Items	- Information - Discussion	Tom Harbour
12:00 – 12:15	2012 Action Plan	- Information - Discussion - Decision: *Approve or amend the path forward*	Matt Rollins Joe Stutler Mike Zupko
12:15 – 12:45	Public Comments		Sandy Cantler
12:45 – 1:00	Closing Remarks		Butch Blazer, USDA Rhea Suh, DOI

Accomplishment Report
April 1, 2011 – November 10, 2011

The Wildland Fire Executive Council (WFEC) charter was signed by the Secretary of Agriculture on February 7, 2011 and the Secretary of the Interior on February 3, 2011. The formal establishment of the WFEC as a FACA Committee was published in the Federal Register on February 15, 2011.

WFEC Purpose:
The WFEC provides advice on the coordinated national level wildland fire policy leadership, direction, and program oversight in support to the Wildland Fire Leadership Council.

The duties of the WFEC are solely advisory, and include:
- Providing coordinating recommendations and advice to the Wildland Fire Leadership Council;
- Facilitating development and implementation of a National Cohesive Wildland Fire Management Strategy;
- Providing advice on wildland fire policy and program direction to the National Wildfire Coordinating Group;

WFEC Membership:
Members of the WFEC is composed of representatives from the Federal Government, and from among, but not limited to, the following interest groups.
- Director, Department of the Interior, Office of Wildland Fire Coordination (DOIOWFC)
- Director, United States Department of Agriculture, Forest Service, Fire and Aviation Management (USDA FS FAM)
- Assistant Administrator, U.S. Fire Administration (USFA)
- Representative, National Wildfire Coordinating Group (NWCG)
- Representative, National Association of State Foresters (NASF)
- Representative, International Association of Fire Chiefs (IAFC)
- Representative, Intertribal Timber Council CITC)
- Representative, National Association of Counties (NACO)
- Representative, National League of Cities (NLC)
- Representative, National Governors' Association (NGA)

WFEC Meetings:
The first WFEC meeting was convened on April 1, 2011. Each meeting has time set aside for public comment.

WILDLAND FIRE EXECUTIVE COUNCIL

WFEC meetings were held as follows:
- April 1 via teleconference (2 hours)
- May 6 via teleconference (2 hours)
- June 3 and 17 via teleconference (2 hours)
- July 1 and 15 via teleconference (2 hours)
- August 5 and 19 via teleconference (2 hours)
- September 2 and 16 via teleconference (2 hours)
- October 11-13 face to face meeting in Washington DC (3 days)
- October 28 via teleconference (2 hours)
- November 4 via teleconference (2 hours)

WFEC Subgroups:
The following Subcommittees and Working Groups have been established to support WFEC in the continued development of the Wildland Fire Cohesive Strategy:
- Regional Strategy Committees
  - West
  - Northeast
  - Southeast
- National Science and Analysis Team
- Cohesive Strategy Communications Group

WFEC Topics Addressed:
Cohesive Strategy – The focus of the majority of the work that the WFEC has done to date is related to providing guidance and oversight for the development of the Cohesive Strategy Phase 2 Report and identifying a way forward for Phase 3. Accomplishments include:
- Appointing membership to the above referenced WFEC Subgroups
- Established clear roles and responsibilities for subgroups and issuing document outline
- Established timelines for Phase 2 activities and products
- Approved templates for Phase 2 deliverables
- Approved development of the cohesive strategy communication framework
- Established expectations and general timeline for Phase 3
- Reviewed and approved the Cohesive Strategy Phase 2 Report
- Developed recommendations to present to WFLC and the Secretaries of Agriculture and Interior

Large Air Tankers
- Received briefing from USFS on current status and activities

Serious Accident Investigation

- Received presentation on Serious Accident Investigation Guidance that was developed by the National Wildland Fire Coordinating Group
- Reviewed a draft MOU related to SAI
- USFS has a new DASHO and Occupational Health and Safety Official who needs to weigh in on any further decisions related to SAI. Decisions are tabled until the new positions are filled and are able to participate.

Incident Management Organization Succession Planning
- Received briefing from NWCG on progress toward development of the succession planning report
- NWCG will hold a special meeting in December for finalizing the report
- Will return to WFEC after that and determine how to handle within the Wildland Fire Governance Structure

Governance
- Received request from WFLC to evaluate the membership of NWCG to ensure representation is consistent with WFLC
- Follow-up action include review and update of NWCG charter and the relationship to WFEC

WFEC Website:
All WFEC meeting agendas, notes and handouts are posted on
www.forestsandrangelands.gov

WFEC Contact Information:
Roy Johnson, Designated Federal Official (DFO)
(208)334-1550 (desk)
(202)503-8502 (cell)
Roy_Johnson@ios.doi.gov

Shari Eckhoff, Executive Secretary
(208)334-1552 (desk)
(202)527-0133 (cell)
Shari_Eckhoff@ios.doi.gov

Cohesive Strategy Subcommittee:

Phase II Report Out to WFEC

Cohesive Wildland Fire Management Strategy
National Goals; Collective Solutions

Response to Wildfire
Fire Adapted Communities
Resilient Landscapes
Supported by Science

Phase I – Key Messages

- CS Vision: "*Safely and effectively extinguish fire, when needed; use fire where allowable; manage our natural resources; and as a nation, live with wildland fire.*"

- The Cohesive Strategy builds on previous work and the Foundational Documents.

![Cohesive Wildland Fire Management Strategy — National Goals; Collective Solutions. Response to Wildfire, Fire Adapted Communities, Resilient Landscapes, Supported by Science]

Phase I – Key Messages

- WFLC defined three primary factors as presenting the greatest challenges and opportunities to make a positive difference:

  - Restoring and Maintaining Resilient Landscapes

  - Creating Fire-Adapted Communities

  - Responding to Wildfires

Phase I – Key Messages

- National Goals were established to address each of the primary factors

- Guiding Principles and Core Values of the Cohesive Strategy were developed

Cohesive Wildland Fire Management Strategy
National Goals; Collective Solutions

Response to Wildfire
Fire Adapted Communities
Resilient Landscapes
Supported by Science

Phase I Completion

- Developed CS foundational documents:
  - *A National Cohesive Wildfire Management Strategy*
  - *Report to Congress: The Federal Land Assistance, Management and Enhancement Act of 2009*

- Documents approved by WFLC, OMB and signed by Secretaries of Agriculture and Interior

Cohesive Wildland Fire Management Strategy
National Goals; Collective Solutions

Response to Wildfire
Fire Adapted Communities
Resilient Landscapes
Supported by Science

Phase II – Basic Principles

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

Cohesive Wildland Fire Management Strategy
National Goals; Collective Solutions

Response to Wildfire
Fire Adapted Communities
Resilient Landscapes
Supported by Science

Phase II - Expectations

- Define regional goals and objectives and portfolio of actions and activities

- Complete qualitative analysis of goals and objectives and portfolio of actions and activities

- Develop protocol and guidance to complete quantitative analysis in Phase III (National Tradeoff Analysis)
  - Conceptual models, analytical models
  - Local and national data

Phase II CSSC Actions

- Public Outreach and Communications
  - Established a Communications Team
  - Constituent Outreach by CSSC members
  - Forests and Rangelands.gov
  - Podcasts
- Developed RSC charters, standardized Regional Assessment templates, National Report template
- Drafted the National Report from the three Regional Assessments (writer/editor team)

- To be continued after the RSC presentations…

Cohesive Wildland Fire Management Strategy
National Goals; Collective Solutions

Response to Wildfire
Fire Adapted Communities
Resilient Landscapes
Supported by Science

Phase II Successes

- Outreach

- Strengthening and building new relationships

- Science support and diversity

- Tools to share information across groups

- Standardizing using templates

Cohesive Wildland Fire Management Strategy
National Goals; Collective Solutions

Response to Wildfire
Fire Adapted Communities
Resilient Landscapes
Supported by Science

Phase II

- Phase II National Report – developed from the three Regional Assessments

- Common themes among the regions

- Unique factors among the regions

![Cohesive Wildland Fire Management Strategy — National Goals; Collective Solutions. Response to Wildfire, Fire Adapted Communities, Resilient Landscapes, Supported by Science]

- **A path forward to complete Phase II**

    Oct 11 – 13 - WFEC meets

    Oct 14 – 21 - CSSC and RSCs, and NSAT modify report

    Oct 21 – 25 – Report goes back to WFEC for final review

    Oct 26 - WFEC sends final draft and briefing package to WFLC **Nov 9 – 10** - WFLC meets in Denver

    Nov14 - ? - DOI and USFS begin Department and OMB review   process of final version to be signed by the Secretaries.

Cohesive Wildland Fire Management Strategy
National Goals; Collective Solutions

Response to Wildfire
Fire Adapted Communities
Resilient Landscapes
Supported by Science

Phase III

- **CSSC thoughts on Phase III**
  - **Design**
  - **Barriers or changes from Phase I commitments**
  - **Outreach/Communications**
  - **RSCs/WG involvement and expectations**
  - **Timeline for completion**
  - **Developing an Implementation plan**
  - **Iterative process**

Cohesive Wildland Fire Management Strategy
National Goals; Collective Solutions

Response to Wildfire
Fire Adapted Communities
Resilient Landscapes
Supported by Science

CSSC Members

- Caitlyn Pollihan
- Ann Walker
- Dan Smith
- Patti Blankenship
- Jim Erickson
- Gus Smith/Jenna Sloan
- Lew Southard
- Ryan Yates
- Bob Roper/Doug MacDonald

Coordination and Logistical Support Team

- Gus Smith
- Jenna Sloan
- Alan Quan
- Sandy Cantler
- Danny Lee
- Tom Quigley
- Dana Coelho
- Cheryl Renner
- Pat Goude
- Judith Downing
- Roberta D'Amico
- Shawn Stokes

Cohesive Wildland Fire Management Strategy
National Goals; Collective Solutions

Response to Wildfire
Fire Adapted Communities
Resilient Landscapes
Supported by Science

QUESTIONS?