



United States Department of Agriculture

The National Cohesive Wildland Fire Management Strategy Northeast Regional Action Plan

An Updated Phase III Report by the
Northeast Regional Strategy Committee



Forest
Service

Northeastern Area
State and Private Forestry

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Cover Photo Credit

Firefighter at the Shotley Fire in Minnesota, 2012. (Photo: Danielle K. Martin, USFS NA S&PF)

Important Note

This plan reflects the Northeast regional perspective that is important in support of the National Cohesive Strategy and Action Plan. Sponsoring organizations are responsible for carrying out actions identified in this plan at their discretion.

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The National Cohesive Wildland Fire Management Strategy: Northeast Regional Action Plan

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The National Cohesive Wildland Fire Management Strategy: Northeast Regional Action Plan

Executive Summary

Wildland fire management in the Northeast Region is achieved through collaboration, partnerships, and cooperation among States; forest fire compacts; Federal fire management agencies (Forest Service, Bureau of Indian Affairs, National Park Service, and Fish and Wildlife Service, among others); tribal governments; and many local fire departments. Addressing wildland fire is not simply a fire management, fire operations, or wildland-urban interface problem—it is much larger and more complex. Each agency and organization represented by the Northeast Regional Strategy Committee has the authority, responsibility, and autonomy to develop and implement its own policies. However, long-term success can only be achieved through a unified, collaborative, and focused effort of all partners.

This Northeast Regional Action Plan details the goals, desired outcomes, management options, and priority implementation actions for the Northeast Cohesive Strategy Region. These actions, as identified by the Northeast Regional Strategy Committee, will help guide all wildland fire management partners in the Northeast Region to make progress in achieving the overarching goals of the National Cohesive Wildland Fire Management Strategy: Restore and Maintain Resilient Landscapes, Fire Adapted Communities, and Wildfire Response.

The National Cohesive Wildland Fire Management Strategy: Northeast Regional Action Plan

Introduction

The Northeast Regional Action Plan (the Action Plan) details the goals, desired outcomes, management options, outcome measures, and priority implementation tasks for the Northeast Cohesive Strategy Region. These actions, as identified by the Northeast Regional Strategy Committee (RSC), will enable the Northeast Region to make progress in achieving the overarching goals of the National Cohesive Wildland Fire Management Strategy: Restore and Maintain Resilient Landscapes, Fire Adapted Communities, and Wildfire Response.

Addressing wildland fire is not simply a fire management, fire operations, or wildland-urban interface problem—it is much larger and more complex. Each agency and organization represented by the Northeast RSC has the authority, responsibility, and autonomy to develop and implement its own policies. However, long-term success can only be achieved through a unified, collaborative, and focused effort of all partners.

The Three National Goals

The National Cohesive Wildland Fire Management Strategy (the National Strategy) identified three national goals as its primary focus areas that were adopted in Phase I:

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

The implementation actions and tasks presented in this Action Plan are consistent with the guiding principles of the National Strategy:

- 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 are used to evaluate risk versus gain.

- Local, State, tribal, and Federal agencies support one another with wildfire response, including engagement in collaborative planning and the decisionmaking 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 and 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.

Northeast Regional Action Plan

The Action Plan identifies who will do what, where, and by when. A Northeast Regional Risk Analysis identified a set of feasible alternative management options for addressing the National Strategy goals in the Northeast U.S. For each management option, we identified and addressed the key risks, barriers, and opportunities.

The Action Plan provides a record of the commitments made by the Northeast RSC, provides an immediate and tangible means to report regional successes to Congress and stakeholders, and ensures accountability in completing the actions. The implementation actions and tasks in the Action Plan document the initial efforts to carry out the National Strategy at the regional, tribal, State, and local level in an effort to make an immediate and positive difference on the ground.

There are a number of important considerations for Northeast Region leaders and managers to keep in mind while carrying out this Action Plan:

- The implementation actions expressed in this plan, while voluntary in nature, represent the collective work of the Northeast RSC and stakeholders to identify the most important actions needed to make progress toward achieving a more efficient, effective, and collaborative wildland fire management strategy for the Northeast.
- The Northeast RSC has identified leads and collaborators for each action and task under each goal and option. It is important to note that not every agency and organization in the Northeast Region partnership will have to work on every action and task.
- With each partner doing their share, we can make significant progress in advancing wildland fire management in the Northeast as outlined in this Action Plan.
- While more funding is not anticipated in the near term, the National Strategy is focused on making current investments more effective and working within current programs to get better results with available funding. Collaboration is especially important during times of economic stress.
- A commitment to addressing the greatest needs and achieving our common goals with the National Strategy is essential. Diversity of organizational and agency missions does not preclude, but rather can strengthen, achievement toward these collaboratively developed goals.

- We strongly encourage agencies, organizations, and stakeholders represented on the Northeast RSC to take timely, decisive, and effective steps to follow the National Strategy’s goals and guiding principles as they implement the actions and tasks in this Action Plan.
- Success in achieving the three broad goals of the National Strategy is a long-term proposition—no single decision by policymakers or management actions by land managers will solve our Nation’s complex wildland fire issues.
- The strength and success of this Action Plan will lie in its ability to motivate collaborative actions to reduce wildland fire risk by the diverse agencies, organizations, and partners involved in the wildland fire issue. Regular communications among Northeast Region partners will be essential for success.

Management Options from the National Strategy

The purpose of the National Strategy is to help decisionmakers understand the risks and consequences of decisions and how these decisions fit into the broader goals of the National Strategy—Restore and Maintain Resilient Landscapes, Fire Adapted Communities, and Wildfire Response. The National Strategy sets broad, strategic, and national-level direction as a foundation for implementing actions across the Nation. The National Strategy is informed by regional and national analyses, including indepth, risk-based analysis that delves into the specifics of national challenges; their underlying causes; and the management opportunities available to address them (table 1). The National Strategy explicitly links potential actions or opportunities to locations, a key element not found in prior documents.

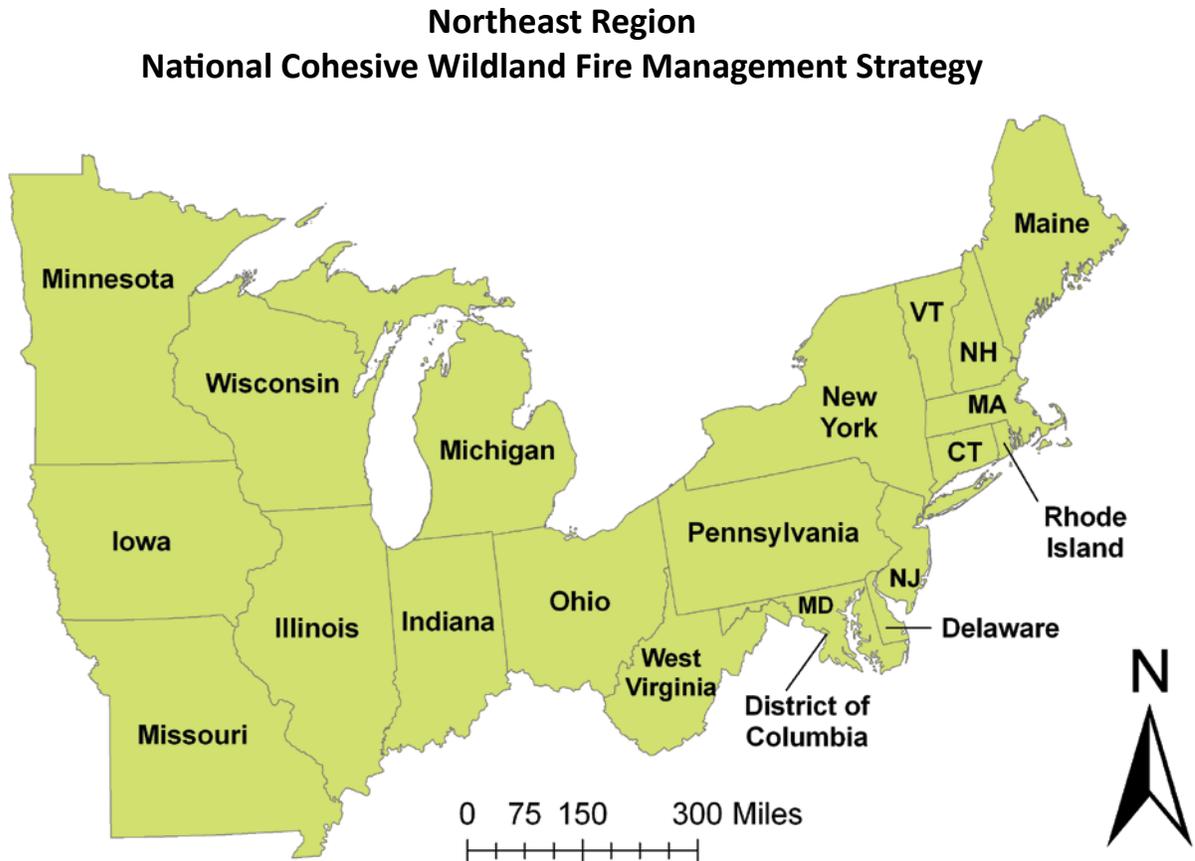
Table 1. National goals, national challenges, and management options from the National Strategy.

National Goals	National Challenges	Management Options
<p>Restore and Maintain Resilient Landscapes</p>	<p>Vegetation and Fuels</p>	<p>Prescribed fire:</p> <ul style="list-style-type: none"> • Expand or maintain in areas of current use • Expand into areas of limited current use • Use on a limited basis <p>Manage wildfires for resource objectives:</p> <ul style="list-style-type: none"> • In forested systems • In nonforested systems • In areas where increased awareness of community risk is necessary <p>Nonfire Treatments:</p> <ul style="list-style-type: none"> • Supported by forest products industry • In nonforest areas • In areas with limited economic markets <p>Fuels treatments as a precursor to prescribed fire or managed wildfire</p>
<p>Fire Adapted Communities</p>	<p>Homes, Communities, and Values At Risk</p> <p>Human-caused Ignitions</p>	<p>Focus on:</p> <ul style="list-style-type: none"> • Home defensive actions • Combination of home and community actions <p>Adjust building and construction codes:</p> <ul style="list-style-type: none"> • Municipal areas • Nonmunicipal areas <p>Reduce accidental human-caused ignitions</p> <p>Reduce human-caused incendiary ignitions (e.g., arson)</p>
<p>Wildfire Response</p>	<p>Effective and Efficient Wildfire Response</p>	<p>Prepare for large, long-duration wildfires</p> <p>Protect structures:</p> <ul style="list-style-type: none"> • Target landscape fuels • Target prevention of ignitions

Regional Context

The Northeast Regional Landscape

The Northeast Region encompasses 20 Midwestern and Northeastern States and the District of Columbia (figure 1). The 20 States comprise the most densely populated region of the Nation and are home to more than 41 percent of its citizens. The Northeast Region is distinguished from the West by its land ownership and management, weather event-created fuels, high wildfire occurrence numbers, and extensive wildland-urban interface (WUI). The Northeast, however, has similarities to the Southeast.

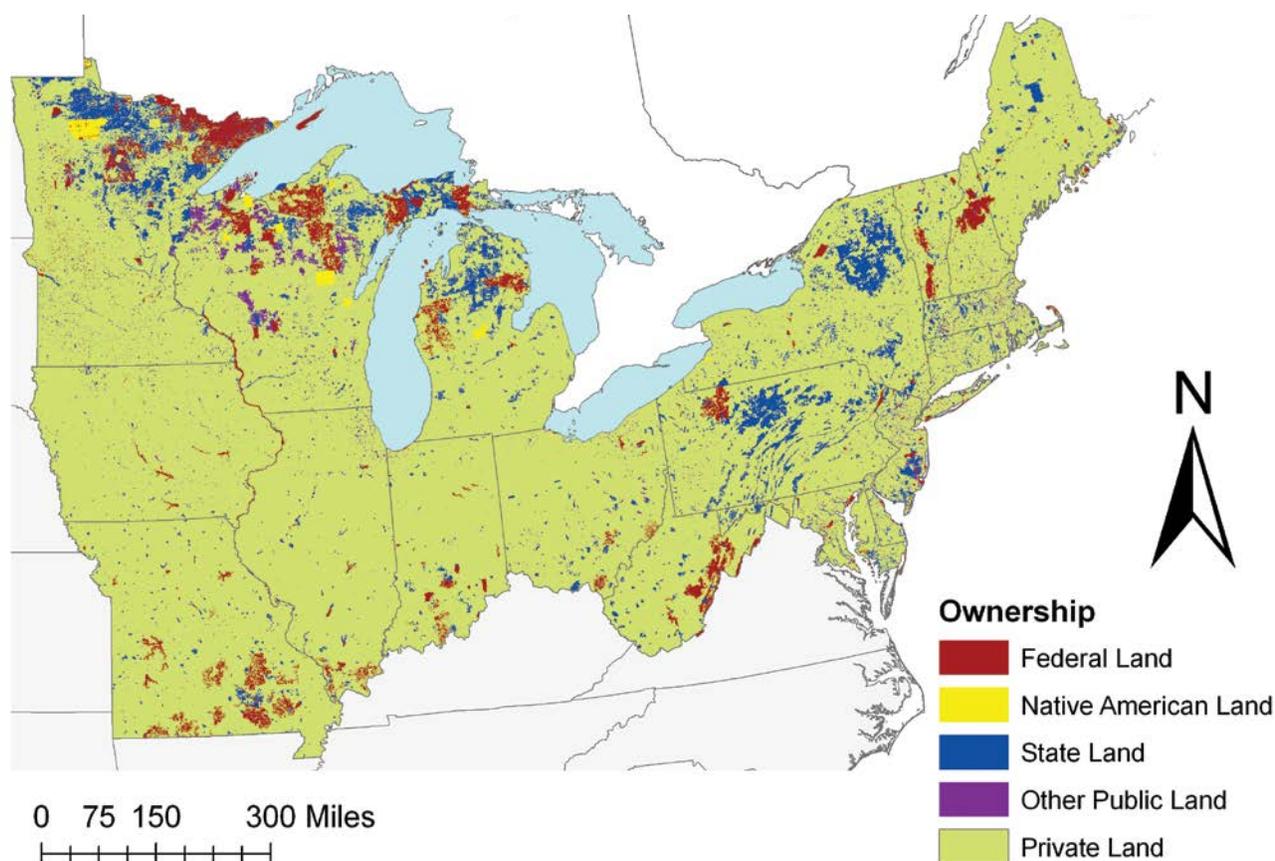


Produced by the U.S. Forest Service, Northeastern Area State and Private Forestry, MDH 9/15/11

Figure 1. Northeast Region of the National Cohesive Wildland Fire Management Strategy.

More than 40 percent (172 million acres) of the 413 million acres of land in the Northeast Region is forested. Most of the forest land is privately owned (74 percent); 26 percent is publicly owned (figure 2). Lands are owned and held in stewardship by a diversity of individuals; tribes; industry; organizations; and local, county, State, and Federal agencies. Land uses and ownership patterns are complex, with many small holdings that represent a diverse range of owner objectives.

Land Ownership in the Northeast Region



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

Figure 2. Land ownership in the Northeast Region.

Fires occur throughout the year but are concentrated during the spring and fall, and over the summer months on dry soils. Due to variation in climate and growing season characteristics, the fire season generally migrates across the region from south and west to north and east in the spring. A fall fire season generally occurs after leaf fall. Episodes of ignitions during dry periods can overwhelm the capacity of local fire organizations. Large wildfires can move fast and are often contained within a single burning period (one day). Although not all fires are reported, available data shows that over 150,000 fires burned more than 600,000 acres from 2002–2012. Humans cause most wildfires; debris burning, miscellaneous origins, and arson are the primary causes of fires in the Northeast Region.

The Northeast Regional Wildland Fire Management Context

The Northeast Region is a patchwork of jurisdictions and ownership; more than one agency is often involved in managing wildland fire. Every agency has a different set of policies guiding its response to wildland fire. States are mandated to suppress all wildfires, while Federal agencies have some flexibility in managing natural ignitions to benefit resources. Land ownership juxtaposition creates challenges when responding to a wildfire incident. Suppression options, cost share, and policy differences are a few examples of what is considered on each initial wildland fire attack.

Wildland fire management in the Northeast Region is achieved through collaboration, partnerships, and cooperation among States; forest fire compacts; Federal fire management agencies (Forest Service, Bureau of Indian Affairs, National Park Service, and Fish and Wildlife Service, among others); tribal governments; and many local fire departments. The coordination and integration of wildfire management across jurisdictions vary by State. In contrast with Federal agencies, State forestry agencies are typically the lead agency in wildfire suppression and have been mandated to suppress all wildfires. Many entities—from local fire chiefs and law enforcement officials to land managers and fire managers—have roles and responsibilities that affect coordination for fire and fuels management and the use of fire to manage resources and protect values at risk. Alignment of wildland fire management priorities poses challenges within States as well as across broader agency and organizational jurisdictions.

The Northeast can be described in risk management terms as having a large number of small, mostly human-caused wildfires with a low occurrence of large wildfires; however, all fires present a high risk to life and property when they do occur. Wildfire response is swift and aggressive with a reliance on equipment. Thousands of miles of roads provide vehicle access for emergency response; aircraft are more often used in those few areas where vehicle access is limited.



Aerial shot of a Missouri wildfire in July 2012. (Photo: Missouri Dept. of Conservation, September 2012)

Early detection contributes to keeping most wildfires small. States have to rely on a variety of detection methods—from aerial and ground patrols to fire tower systems—given the varied urban, rural, and forested landscapes and the concentrations of people across the region. The general public also plays an important role in reporting wildfires, which results in quick response by local fire departments.

Although large, destructive wildfires occur infrequently in the Northeast Region when compared to other areas of the country, homes and infrastructure can still be lost or damaged in small fires in forest, nonforest, and urban areas. With longer intervals between large wildfire events, investments in preparedness (at least across some parts of the region) are challenged because wildfire management is expensive. Wildfire preparedness at the local fire department level can be overshadowed because of the responsibility of these departments to respond to all-hazard and emergency medical situations.

Using Science Information to Help Determine Management Priorities

We added science-based information to this plan to help people who strategically set priorities and budget allocations—regional line officers and executives, natural resource and fire management program leaders and managers, and local government officials, among others—work with each other on the areas with the greatest risk or need in the Northeast. To make real progress on the three National Strategy goals, a regionwide collaborative effort is needed to work on the areas with the greatest collective risk, need, and opportunity.

As outlined in the National Cohesive Strategy Report (April 2014), the ideal solution to managing wildland fire is to create a strategy that begins paying long-term benefits relatively quickly and keeps risk at manageable levels. Three key assumptions or premises have been identified that underlie meaningful reductions in risk:

1. **Prioritization of investment and use of resources.** Reducing risk significantly will require that we use existing resources more efficiently. From a national perspective, this may require reallocation of resources across agencies, geographical areas, or program areas.
2. **Acceptance of increased short-term risk.** Significantly reducing fuels across broad landscapes will require us to expand use of wildland fire to achieve management objectives. Using fire as a tool carries inherent risks that must be accepted in the short term to achieve longer term benefits.

- 3. Greater collective investment.** Even with greater efficiency and acceptance of short-term risks, current levels of investment may be inadequate to achieve the levels of risk reduction desired. All who have a stake in the outcome, from property owners to the Federal government, must share the financial burden.

This update of the Northeast Regional Action Plan includes a set of maps and graphics for each goal and management option. These are designed to facilitate a dialogue among Northeast Region partners and stakeholders, help them identify priority areas for collaborative efforts on important landscapes, and help protect communities at risk from unwanted wildfires. Management options for each goal are summarized below.

Goal 1: Restore and Maintain Resilient Landscapes

In the Northeast, larger contiguous landscapes are in the more remote sectors of the region and generally involve public land management units. Using prescribed fire and/or achieving ecological benefits with wildfire is authorized, planned, and used in these areas. State Action Plans and similar plans, land management plans, or conservation plans have identified many of these areas.

Collaborative management options could focus on identifying priority areas for restoring ecosystems; protecting the habitat of Federal and State threatened, endangered, and sensitive species; and controlling invasive plants through expanding and maintaining the use of prescribed fire. Private lands adjacent to public lands should also be considered within the larger landscape.

Another aspect of creating resilient landscapes relates to natural events that increase the risk of wildfire. Windstorms, ice, disease, and insects can create large areas of damaged, dead, or downed trees and increase fuels, leading to exacerbated wildfire conditions. All ecosystems can experience short- and long-term wildfire hazards if these event fuels remain in place.

Management options for Goal 1 include a focus on:

- Expanding the use of prescribed fire and managing wildfire for ecological purposes.
- Using nonfire treatments that involve mechanical, biological, or chemical methods.
- Removing event fuels before a wildfire occurs is crucial as human populations continue to grow in forested areas with homes and infrastructure near wildland fuels. These event fuels may also represent an economic opportunity to supply forest product needs ranging from biomass to higher valued products.

Goal 2: Fire Adapted Communities

There is recognition that wildfire risk to communities arises from the intersection of multiple factors, including the frequency and extent of wildfires, the distribution and density of homes within and adjacent to wildlands, and components of social vulnerability. These factors must be considered in total when identifying opportunities and designing management options for reducing risk to homes, communities, and other important values.

Management options for Goal 2 include a focus on:

- Home and community actions: Due to the number of structures lost to wildfire, some communities would benefit by focusing on protecting individual homes and providing assistance to property owners. In addition, communities can lose fewer structures to wildfire by accepting building codes that focus on building materials and construction standards that make buildings more resistant to ignition from wildfire. This could be successful, especially when targeted at areas of new construction in high-hazards locations and in counties with increasing development in fire-prone areas.
- Reduce both accidental and intentional ignitions: The National Science and Analysis Team assembled data sets that include a broad set of community metrics and more detailed causal information that can be explored to target specific causal factors within various community contexts. For example, debris burning is one of the principal causes of accidental fires; its occurrence varies considerably among community types.

Goal 3: Wildfire Response

The Northeast Region experiences a very high number of wildfire ignitions, even though most are suppressed quickly and remain small. Of these ignitions, a high percentage threaten homes and infrastructure. With the greater population density and large proportion of communities and homes in fire-prone landscapes, even small wildfires threaten structures and increase the risk and complexity for firefighters. A proactive, collaborative approach to identifying risks in the wildland-urban interface combined with other efforts—developing Community Wildfire Protection Plans; reducing hazardous fuels; treating event fuels; and educating the public in the context of managing fuels across a multijurisdictional, fragmented landscape—will prepare communities for wildfire. Management options for Goal 3 include:

- **Prepare for large, long-duration wildfires:** Information on large wildfire history and other risk factors suggests areas within the region where a collaborative effort is warranted to ensure that adequate resources are available. Due to the long interval between significant fires in any given area, many jurisdictions may not have the means necessary for the uncommon, but possible, long-duration wildfire event.
- **Protect structures and target landscape fuels:** A second opportunity focuses on the relationship between area burned and structures lost. The combination of high rates of structure loss with low area burned is dominant in the Central Plains and Eastern Regions. Prioritizing response resources towards protecting structures in these areas seems prudent.
- **Protect structures and target ignition prevention:** The final response opportunity is most relevant to initial attack, which is often the responsibility of the local fire department. We examined data and computed indices of the number of buildings involved per wildfire incident and the relative frequency of reported accidental human-caused ignitions. The intersection of these two variables has an interesting pattern that illustrates the widespread extent of the challenges in managing wildfire risk and offers a guide to matching structure protection with prevention efforts.

The ultimate success of the National Strategy effort in the Northeast Region depends on how regional strategic direction and national priorities can be translated into collaborative, on-the-ground, local actions of agencies, organizations, governments, and individuals that can produce meaningful cumulative effects.

For more information, go to *The Science Analysis of The National Cohesive Wildland Fire Management Strategy* Web site located at <http://cohesivefire.nemac.org>.

Regional Management Options Summary

The following regional management options have been identified as the preferred regional feasible approaches to addressing the National Strategy goals in the Northeast Region.

NATIONAL STRATEGY GOAL 1: Restore and Maintain Resilient Landscapes – *Landscapes across all jurisdictions are resilient to fire-related disturbances in accordance with management objectives.*

Regional Option 1A: Expand the use of prescribed fire as an integral tool to meet management objectives in the Northeast.

Regional Option 1B: Actively manage and increase the extent of fire-dependent ecosystems.

Regional Option 1C: Focus on mitigating “event” fuels through mechanical treatments and utilizing markets for biomass products to clean up and reduce the potential fire hazard from blowdowns, ice storms, and other forest-damaging events.

NATIONAL STRATEGY GOAL 2: Fire Adapted Communities – *Human populations and infrastructure can withstand a wildfire without loss of life and property.*

Regional Option 2A: Focus on promoting and supporting local adaptation activities to be taken by communities such as increasing capacity of volunteer fire departments, passing ordinances, developing Community Wildfire Protection Plans, and joining Firewise Communities/USA® or other similar programs.

Regional Option 2B: Focus on directing hazardous fuel treatments in the wildland-urban interface (WUI). Treatments of WUI lands should provide a broader area of effective protection and reduced risk.

Regional Option 2C: Focus on promoting and supporting prevention programs and activities (targeting them toward reducing when and where fires occur).

NATIONAL STRATEGY GOAL 3: Wildfire Response – *All jurisdictions participate in making and implementing safe, effective, efficient risk-based wildfire management decisions.*

Regional Option 3A: Improve the organizational efficiency and effectiveness of the wildland fire community (presuppression and preplanning, administration). Areas to address include:

- Developing Memorandums of Understanding (MOUs) and Memorandums of Agreement (MOAs)
- Standardizing and streamlining training
- Radio compatibility and interoperability
- Appropriate suppression and detection responsibilities regardless of landownership through agreements or contracts
- Sharing of personnel (cofunding or contracting)

Regional Option 3B: Increase the local response capacity for initial attack of wildfires.

Regional Option 3C: Further develop shared response capacity for extended attack and managing wildfire incidents with long-duration fire potential.



Smokey Bear fire danger display at the Black River Falls Service Center, Wisconsin. (Photo: Jolene Ackerman, Wisconsin Dept. of Natural Resources, June 2006)

Regional Coordination

The Northeast Regional Strategy Committee will continue to oversee, guide, and coordinate implementation of this Action Plan by all Northeast Region partners. The committee is comprised of representatives from the following agencies and organizations (see appendix 6 for specific partner contact information):

- Department of the Interior
 - Bureau of Indian Affairs
 - National Park Service
 - U.S. Fish and Wildlife Service
 - U.S. Geological Survey
- Department of Agriculture
 - U.S. Forest Service
- Fond du Lac Indian Reservation
- Intertribal Timber Council
- Northeastern Area Association of State Foresters (20 Northeast and Midwest States, and District of Columbia)
- International Association of Fire Chiefs
- National Association of Counties (Lake County, MN)

It is anticipated that in the near future, a permanent regional coordinating entity will be established comprised of the leaders from the partners in the Northeast Region, or their designated representatives. This group will oversee the continued coordination, implementation, monitoring, and accountability responsibilities committed to in the National Strategy for the Northeast Region.



Briefing before the Fork Ridge Burn in the Hoosier National Forest, November 2012.

Implementation Actions for National Strategy Goals

How the Northeast Regional Action Plan is Organized

This section begins with overarching actions—regional actions, some with national implications, that apply to more than one of the National Strategy goals. The next section lists each national goal and regional option and its set of actions, some of which have associated implementation tasks. Each action and task presented here includes the following parameters that outline the details for implementation:

Regional Actions: Describes each regional action. For each action listed, the following key components are addressed:

- **Scope:** Regional, local, etc.
- **Lead:** Agency or organization
- **Collaborators:** Agencies and/or organizations involved
- **Implementation Timeframe:** Short term (0–2 years), midterm (2–4 years), or long term (>4 years)
- **Tasks:** This optional section lists specific steps that may be needed to complete the action; not all actions will require implementation tasks.
- **Supplemental Information:** Any other information the region feels is important to the action (i.e., additional detail about the action or activity tracking).



Red Lake (MN) Air Tanker. (Photo: C. Wiggins, BIA)

Overarching Actions

The following are regional actions, some with national implications, that apply to more than one of the National Strategy goals.

O1: Maintain a permanent Northeast Regional Strategy Committee for wildland fire management strategy and policy coordination in the Northeast.

Current Situation and Critical Success Factor: Currently in the Northeast Cohesive Strategy Region, there is no single entity in place that is responsible for collaborating with all the wildland fire management organizations, policy direction, and operational activities envisioned under the National Cohesive Wildland Fire Management Strategy. There are thousands of organizations with some wildland fire management and response responsibilities at the Federal, State, tribal, and local level, including volunteer fire departments and some nongovernmental organizations. There are coordinating entities such as the Eastern Area Coordinating Group (EACG) and the four forest fire compacts present in the Northeast whose primary responsibilities are related to response and training needs. However, no single wildland fire management oversight or coordination entity exists that includes all aspects of the National Strategy goals. For the National Strategy to be successful, there must be active participation and coordination among all entities that are involved in delivering and affected by wildland fire management implementation activities in the Northeast Region.

Supplemental Information: This action involves the formation of a wildland fire leadership entity to collaborate, coordinate, and monitor the implementation of the National Strategy across the 20 States of the Northeast and Midwest U.S.

This regional collaborative body will be, at a minimum, comprised of all the current participating entities in the Northeast Region. The Northeast Regional Action Plan will guide the development of an agreement, provide the basis for developing a collective annual recommended program of work, and serve as the foundation for monitoring progress and ensuring accountability for carrying out the Action Plan.

Scope: All Northeast Regional Cohesive Strategy partners

Lead(s): NE RSC to develop draft agreement or charter; Northeastern Area Association of State Foresters (NAASF) to sponsor the NE RSC through support of the RSC Chair and Coordinator

Collaborators: Regional leaders of Federal (USFS, FWS, NPS, BIA, USGS, FEMA, EPA) and tribal agencies; NAASF; National Association of Counties (NACO); International Association of Fire Chiefs (IAFC) regional leaders; regional nongovernmental leaders (The Nature Conservancy (TNC), Dovetail Partners, Inc., etc.)

Implementation Timeframe: Short term: prepare and sign guidance agreement or charter

O2: Form a Northeast LANDFIRE Coordinating Group.

Current Situation and Critical Success Factor: LANDFIRE data is being used across ownerships and at national scales to depict many characteristics of ecological health, potential risks, and land condition; it is also being used nationally to estimate hazards and risks. For the Northeast Region, LANDFIRE data and the inaccuracies created at a national view are barriers to making accurate assessments of regional conditions. Many Northeast State wildland fire management agencies have weighed in on the need to improve the accuracy of LANDFIRE.

In the Northeast, there is no single entity in place that is responsible for coordinating review, development, revision, updating, and collection of data that is used to develop LANDFIRE products. There are organizations with some review, revision, and management capability at the Federal, State, tribal, and local levels. Given that the USFS and DOI are lead agencies for LANDFIRE, the fact that Federal lands in the Northeast are not connected with each other, and only connected to broader State public lands in some areas, increases the complexity and time needed to have a coordinated review and updates.

For the National Strategy to be successful and have credibility among partners, there must be active participation and coordination among all entities who are involved in the use, revision, and development of LANDFIRE products for cross-boundary management, research, and projects in the Northeast.

Supplemental Information: This action involves the formation of a multijurisdictional LANDFIRE leadership body to oversee, coordinate, and monitor LANDFIRE products and processes that cover the 20 States of the Northeast and Midwest U.S.

Recommended Approach: The Northeast Regional Strategy Committee strongly recommends that this Northeast LANDFIRE group be an analysis group that can represent the stakeholders of the Northeast, including States, tribes, and Federal agencies as well as other nongovernmental land management organizations (TNC).

Scope: Regional; includes all Northeast Regional Cohesive Strategy partners

Lead: NE RSC

Collaborators: LANDFIRE business leads (USFS, DOI); regional ecology or fire leaders of Federal (USFS, FWS, NPS, BIA, USGS, FEMA, EPA) and tribal agencies; Northeast State foresters; Northeast State fire supervisors; regional nongovernmental leaders (TNC, etc.)

Implementation Timeframe: Prepare and sign MOU/MOA by end of Calendar Year 2014

O3: The Northeast regional partners should integrate applicable actions from this Regional Action Plan into future revisions of their Federal land and resource management plans, State Forest Action Plans, and other applicable landscape-level management plans.

Supplemental Information: By their very nature, Federal Land and Resource Management Plans (LRMPs) and State Forest Action Plans (FAPs) are meant to include all partners and consider all land ownerships. The National Strategy should be integrated into Federal LRMPs and State FAPs, particularly since Federal cooperative grants must include a tie to a State's FAP in order to receive funding for all programs, including those that support wildland fire management activities.

Scope: Regional

Lead(s): State and Federal agency leaders, NE RSC

Collaborators: May include regional leaders of Federal agencies (USFS, FWS, NPS, BIA, USGS, FEMA, EPA) and tribes; NAASF; NACO; IAFC regional leaders; regional nongovernmental leaders (TNC, etc.)

Implementation Timeframe: As each Federal LRMP and State FAP comes up for renewal/revision

O4: Help local communities implement the National Strategy.

Provide resources to support local government officials, such as city and county councils and managers as well as fire chiefs, in the integration of the National Strategy into their communities and operations—specifically in the promotion of Fire Adapted Communities, implementation of Ready, Set, Go!, and the expansion and support of the Fire Adapted Communities (FAC) Learning Network.

Scope: All Northeast Regional Cohesive Strategy partners

Lead(s): IAFC

Collaborators: All Northeast Regional Cohesive Strategy partners

Implementation Timeframe: Short term

O5: Set up communications infrastructure to inform and educate the public and relevant policymakers on the role of wildland fire on the landscape, and to mobilize people for action.

Supplemental information: The public obtains information about fire from a wide variety of sources; however, findings consistently show that interactive information sources are both generally preferred and more effective than unidirectional sources. Fire managers and social scientists have learned that in-person and interactive forms of communication are more effective than simple one-way education or blanket marketing campaigns. One effort underway to increase communication is the USFS Fire Adapted Communities (FAC) program, which is working with The Nature Conservancy’s Fire Learning Network and the Watershed Research and Training Center to establish a nationwide hub-and-spoke FAC Learning Network. These partners will use technical support, communications facilitation, documentation of learning, and workshop assistance to cultivate “hubs” (subregional network leaders). The “spokes” will be the interactions between the hubs and local community-based institutions. Goals for this effort include 1) share learning and innovation across the three goals of the National Strategy; 2) accelerate adoption, innovation, and diffusion of best FAC practices; and 3) provide a feedback loop to FAC to more efficiently and effectively support fire-adapted communities.

Task:

A. Establish, promote, and maintain FAC Learning Networks in the Northeast

Scope: National and Regional

Lead(s): USFS Fire Adapted Communities Program, TNC

Collaborators: FAC Coalition; NACO; State and County Foresters; local, State, and Federal fire and land management agencies; Forest Service Research Stations; NGOs; community practitioners; tribes; WFLC; NRCS; Society of American Foresters; NASF

Implementation Timeframe: Short term, midterm, long term

O6: Support the use of a full range of natural resource management tools to reduce hazardous fuels, encourage the sustainable use of biomass, and accomplish other landowner management objectives.

Supplemental Information: To achieve a landscape that is more resilient to disturbance events, including wildfire, we need to use the complete natural resource management toolbox (including timber harvests, thinning, mowing, and brush cutting options) to meet landowner objectives and reduce the risk from hazardous fuels. Achieving the goals of the National Strategy using prescribed fire is extremely challenging in many areas in the Northeast due to limited burning opportunities, limited resources for conducting burns, smoke impact concerns, high fuel loads, and extensive amount of WUI.

Natural resource management activities that produce usable biomass provide a range of benefits for carrying out the National Strategy. Utilizing biomass can reduce fuel loads before prescribed fire is used, can be an economically viable option in some areas, and can contribute to renewable energy development and greenhouse gas reduction strategies. An exciting new pathway for reducing hazardous fuels is wood-based nanotechnology, which uses forest biomass to produce cellulose nanomaterials. Such materials have unique properties with wide-ranging applications and potential commercial uses in consumer products, electronics, energy, and defense. New markets for biomass will create new ways to reduce fuel loads and accelerate forest restoration. Hazardous fuels, forests that are too dense, and event driven fuels such as those created by recent superstorms can be treated at an accelerated pace because the demand for biomass will be considerably greater.

This action and set of tasks contribute to the desired outcomes of all three National Strategy goals by treating the landscape to reduce hazardous fuels and promoting resilient ecosystems, reducing risk from the presence of excessive hazardous fuels to citizens and property in local communities, and reducing the risk to firefighters responding to wildfire incidents.

Tasks:

A. Identify, Analyze, and Develop Opportunities for the Sustainable Use of Biomass to Reduce Fuel Hazards In or Adjacent to the Wildland-Urban Interface

Supplemental Information

- Identify biomass markets; assess workforce capacity; and communicate to agencies, tribes, and local communities the availability of biomass utilization options that can help reduce hazardous and event-created fuels.
- Identify workforce capacity gaps that could be opportunities for job creation and sustainability.
- Work with the forest products, energy providers, and insurance industries to develop incentives and markets for the sustainable use of biomass while reducing the risk to communities from wildfire in hazardous fuels.
- Encourage funding of pilot projects; for example, work with cities, schools, hospitals, energy providers, and other businesses to demonstrate the use of woody biomass for energy (heating, cooling, electric power) and other value-added uses.
- Develop public/private partnerships that support forest restoration using commercially viable wood-based nanotechnology.

Scope: Regional

Lead: WERC, USFS Northern Research Station and Forest Products Lab, NE RSC, USFS NA S&PF

Collaborators: All CS partners, forest products industry, energy providers, NGOs, research universities, local communities

Implementation Timeframe: Short term, midterm

B. Transfer Information and Technology

Supplemental Information: Identify success stories and gather information that supports the sustainable use of biomass. Develop and disseminate training and guidelines for the sustainable use of biomass.

Scope: Regional

Lead: NE RSC, USFS Forest Products Lab, NA S&PF WERC

Collaborators: All CS partners, forest products industry, energy providers, NGOs, local communities

Implementation Timeframe: Midterm

C. Expand Biomass Availability and Treat Hazardous Fuels in the WUI

Supplemental Information: Increase biomass availability through State Forest Action Plans, CWPPs, and other planning tools that identify hazardous fuel reduction opportunities and benefits; promote the use of low-impact harvesting technology; and identify other practices that contribute to the economically viable use of woody or other biomass residues.

Scope: Regional

Lead: NE RSC, State Foresters

Collaborators: All CS partners, forest products industry, energy providers, NGOs, local communities

Implementation Timeframe: Long term

D. Encourage Forest Products Industry Involvement in the Development of Community Wildfire Protection Plans (CWPPs)

Supplemental Information: Increased involvement of the harvesting and forest products industry in the development of CWPPs will help identify economic options for the use of materials produced by CWPP implementation. Industry representatives may also suggest alterations in plan implementation strategies that reduce costs and make the CWPP more effective.

Scope: Regional

Lead: NE RSC, State Foresters

Collaborators: All CS partners, forest products industry, energy providers, NGOs, local communities

Implementation Timeframe: Long term

NATIONAL STRATEGY GOAL 1: Restore and Maintain Resilient Landscapes—*Landscapes across all jurisdictions are resilient to fire-related disturbances in accordance with management objectives.*

Science Context for Options 1A and 1B

Examining historic ecological patterns can guide current and future management. By looking at past fire regimes, we can infer which areas may benefit the most from ecological fire management. (NOTE: Areas that represent the most critical fire-dependent ecosystems would be a subset of the areas show on these maps and can be identified from more detailed sources such as Federal Land and Resource Management Plans and State Action Plans).

Figure 3 depicts historic fire regimes on all lands in the Northeast and Midwest U.S. that have natural vegetation, excluding agricultural, urban, or developed lands. Figure 4 depicts historic fire regimes on natural lands in public jurisdictions only.

Historic Fire Regimes: All Lands

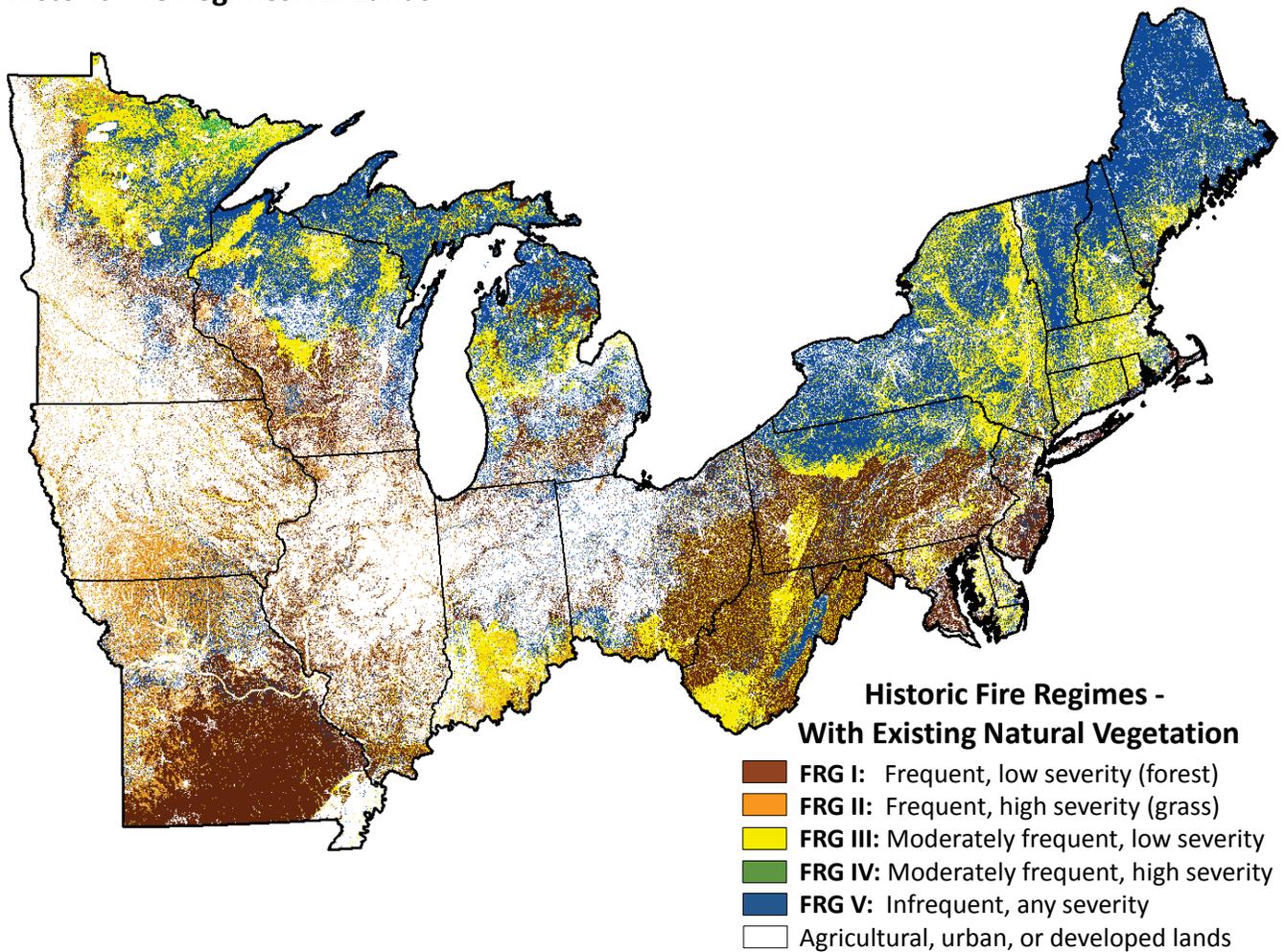


Figure 3. LANDFIRE’s Fire Regime Group data was used to illustrate historic fire frequency and severity. This data comes from LANDFIRE’s ecological systems descriptions (known as “Biophysical Settings”). The descriptions are based on peer-reviewed science articles, expert knowledge, and field data (e.g., tree-ring analysis). In the Northeast especially, these fire regimes reflect the contribution of human ignitions over centuries as well as lightning. Note: Areas in white represent agricultural, urban, and other developed areas.

Historic Fire Regimes: Public Lands Only

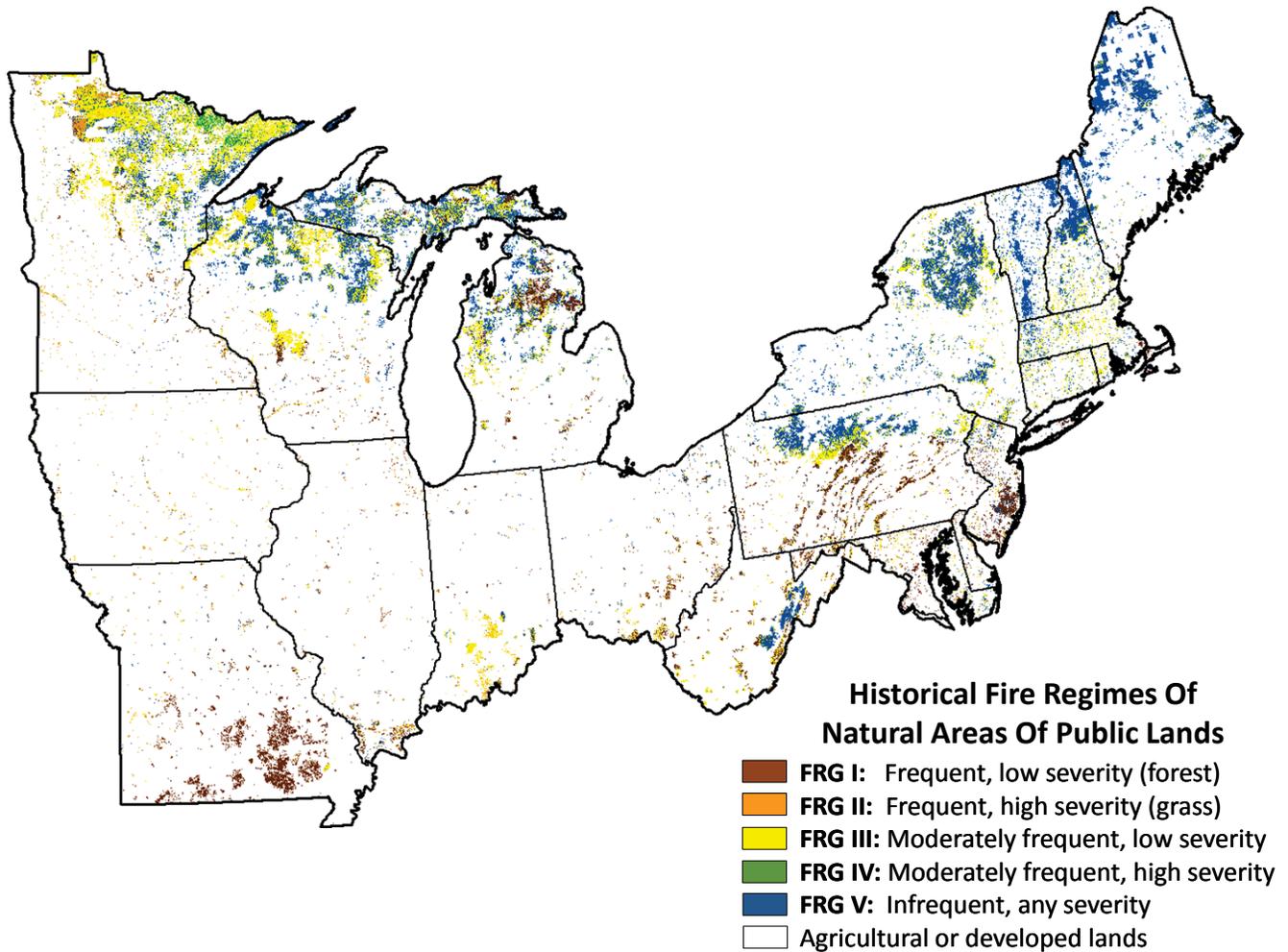


Figure 4. This map shows historic fire regimes on natural lands in public jurisdictions only.

Observations

These datasets point to places that may be ecologically receptive to fire management on many scales. Fire-adapted ecosystems can change rapidly without fire or other disturbances. For example, oak ecosystems can fill in with red maple so thickly that the ecosystem loses oaks and associated species.

The Historic Fire Regimes are linked to ecosystems. For example, as noted in the legend, “FRG I” comes from areas that were historically dominated by oak or pine barrens, savannas, and woodlands. In contrast to the fire-adapted ecosystems are the FRG V ecosystems, such as the northern hardwoods, which may have a fire return interval of more than 500 years.

Regional Option 1A: *Expand the use of prescribed fire as an integral tool to meet management objectives in the Northeast.*

Option 1A Description

Prescribed burning is used to meet a wide range of objectives, such as improving wildlife habitat, controlling invasive species, restoring native plant communities, and reducing fuels. Prescribed burning can accomplish more than one objective under many scenarios. Burning is a management tool that often requires intervals of burning to create or maintain desired conditions. Burning is also sometimes combined with other management options to create or maintain desired conditions. Table 2 presents categories of impediments to prescribed burning.

Table 2. Prescribed burning impediment categories (NASF Prescribed Fire Survey 2012).

Impediment Category	Description
Capacity Concerns	Limited personnel, training, private contractors, partnerships, equipment
Weather Concerns	Narrow burn windows, drought, available burn days
Air Quality/Smoke Management Concerns	Visibility, nuisance, emission impacts
Resource Concerns	Limited funding, high implementation costs
Public Perception Concerns	Lack of public understanding/acceptance
Liability/Insurance Concerns	Landowner liability, insurance availability and/or cost
Permitting/Legal Concerns	State law, burn bans, local restrictions, NEPA process
WUI/Population Growth Concerns	Urbanization, influx of new residents
Low Priority	Agency or landowner priority, too difficult

Regional Actions for Option 1A

- 1. Develop and adopt prioritized prescribed burning strategies.** Adopt a prioritized implementation and coordination strategy among partners through which prescribed burning needs can be met and opportunities maximized.

Scope: Subregional or multistate and/or statewide

Lead: Northeast RSC, EACG

Collaborators: All CS partners

Implementation Timeframe: Short term

Supplemental Information: Priority setting among local organizations and agencies could partially resolve availability and capacity issues, such as the conflict that could arise when using the same workforce for burning and wildfire response. Opportunities can be maximized and costs reduced when resources are combined, thus gaining efficiencies and increasing cost effectiveness. Success would be measured in terms of trends in coordination and collaborative efforts.

2. Increase the number of people qualified to conduct prescribed burning, including contractors, private citizens, and landowners.

Scope: Regional

Lead: Northeast RSC and EACG

Collaborators: Forest fire compacts, tribes, agencies, Eastern Area Training Working Team

Implementation Timeframe: Long term

Supplemental Information: To increase prescribed burning in the Northeast Region, the number of people trained to plan and implement controlled burning needs to increase.

Tasks:

A. Increase prescribed burning and smoke management training opportunities.

Scope: Local, State

Lead: Fire Exchange Network

Collaborators: Forest fire compacts, fire academies, State agencies, Federal agencies (all partners with a role in prescribed fire management)

Implementation Timeframe: Short term

Supplemental Information: Training opportunities include both formal classroom training and practical field training. Both will need to be more frequent to build an available burning workforce. The focus could be businesses and potential contractors, organizations, and volunteer fire departments. Private citizens and landowners would likely get practical field experience through State and NGO programs and as opportunities allow. Smoke management and best management practices will be an important component of training.

B. Ensure that all prescribed burners are trained in smoke best management practices.

Scope: Regional

Lead: Smoke management experts (State, Federal, tribal, EPA) – initiated by Northeast RSC

Collaborators: Prescribed fire councils

Implementation Timeframe: Short term

Supplemental Information: The NASF Prescribed Fire Survey (2012) identifies smoke as a barrier to using more controlled burning in the Northeast Region. Smoke best management practices need to be part of training, widely distributed to current burners, and included as part of the professional assistance provided within private land management programs.

3. Adopt liability laws for prescribed burners (similar to existing State laws in Florida).

Scope: State

Lead: State agencies that manage fuels and prescribed burning, Prescribed Fire Councils

Collaborators: All partners with a role in prescribed fire management

Implementation Timeframe: Long term

- 4. Increase the number of Prescribed Fire Councils.** Increase the number of Prescribed Fire Councils to help public and private burners, and provide a communication and coordination network among burners statewide.

Scope: States that need, but have not established, a Prescribed Fire Council

Lead: State agencies or other organizations that manage fuels and prescribed burning

Collaborators: All partners with a role in prescribed fire management

Implementation Timeframe: Short term

Supplemental Information: Prescribed Fire Councils have successfully supported and actively resolved issues in States, such as getting burner certification programs started, liability legislation for certified burners, and training. A Prescribed Fire Council would ideally be identified for each State in the Northeast Region. Depending on need, a council could be formed for more than one State.

- 5. Increase prescribed burning on private land by:**

Tasks:

- A. Integrating fuels reduction, defensible space principles, and prescribed burning to achieve management objectives within private land management plans.**

Scope: National, regional, subregional, and local

Lead: State and local land managers

Collaborators: WUI and fire prevention coordinators, private land management assistance program leads, adjacent public land agencies, landowners, fire protection leads

Implementation Timeframe: Short term

Supplemental Information: Much of the rural private land in the Northeast is not associated with a community or development, so it may not be included in CWPP-type planning efforts, Firewise Communities/USA®, or Fire Adapted Communities. Yet rural private land is included in wildfire risk assessments made at local or State scales. Fuel reduction, including burning, should be considered in management activities under private land management programs in those areas identified as being at risk from wildfire. This task also supports National Strategy Goal 2 actions to reduce wildfire threats.

- B. Including prescribed fire in Federal land management assistance programs.** Ensure that Federal incentive and assistance programs include prescribed burning as a management tool and provide professional-level assistance related to prescribed fire planning and implementation.

Scope: National, regional/State level (NRCS works at State, county, and multicounty levels)

Lead: USDA, DOI

Collaborators: Federal assistance program leads

Implementation Timeframe: Midterm

Supplemental information: There are many Federal land management assistance programs and incentives for private landowners to achieve a variety of owner objectives. To increase the use of prescribed burning, advice and assistance should include burning as a viable tool and provide the necessary assistance and support, including funding for burning to achieve objectives. There is also a need to ensure program coordination in development of criteria and that actions that are not in conflict with each other.



Lighting warm season grass on the Hoosier National Forest, November 2012.

- C. Expanding current program incentives for landowners** (e.g., tax credits, free disposal of material, and increased use of finance or cost-share authorities).

Scope: National, regional

Lead: Northeast RSC, especially NASF, NRCS, USFS, DOI

Collaborators: State DNR divisions (private landowner assistance program leads, etc.); local NRCS; national forests, wildlife refuges, and parks; tribes

Implementation Timeframe: Short term: focus in those areas where programs are being implemented

6. Increase prescribed burning in landscapes farther away from heavily populated areas.

Tasks:

- A. Identify areas for prescribed fire opportunities.** Identify landscapes where multiple conservation partners are either currently using prescribed fire or desire to use fire (public or private). Assess and prioritize opportunities for using more prescribed fire.

Scope: Regional, State

Lead: Northeast RSC

Collaborators: All partners with a role in prescribed fire management

Implementation Timeframe: Short term

Supplemental Information: This action addresses one of the barriers to burning: air quality and smoke. Larger contiguous landscapes where prescribed fire is authorized are in more remote sectors of the region and generally involve public land management units. State Action Plans and similar plans, land management plans, or conservation plans may have identified many of these areas. This action could incorporate controlled burning in priority areas for protecting Federal and State threatened, endangered, and sensitive species habitat and invasive plants (and other objectives). Private lands adjacent to public lands should also be considered within the larger landscape.

B. Ensure agreements allow for fuels reduction and prescribed burning across boundaries.

Scope: State level

Lead: USFS NA S&PF, NAASF

Collaborators: State fire agencies, tribes, Federal land management agencies

Implementation Timeframe: Midterm

Supplemental information: Good Neighbor agreements are an example of how hazard fuels and restoration activities, including prescribed burning, can be carried out by either party where lands are intermingled. Project plans are developed and decisions made that describe activities and desired outcomes. For the Northeast Region, the Master Cooperative All-Hazard & Fire Agreement may provide a similar framework to engage cross-boundary restoration, fuels reduction, and prescribed burning. These agreements should be developed in each State.

C. Organize and fund mobile prescribed burning crews and modules.

Scope: Regional, subregional (on all lands)

Lead: EACG, NE RSC

Collaborators: Federal agencies, tribes, TNC, State agencies, local jurisdictions

Implementation Timeframe: Midterm

Supplemental information: This action partially addresses the capacity issue when not enough resources are available for burning. In the South, many out-of-region resources are mobilized to conduct burning on Federal lands. TNC burning crews are an example of a mobile workforce. Wildfire Management Modules are another organized and trained group that plans, implements, and monitors prescribed burns.

7. Increase prescribed fire outreach and education efforts. Create opportunities for increased levels of prescribed fire outreach and education that can be tailored to local conditions using public and privately managed areas.

Tasks:

A. Share and disseminate prescribed fire science and monitoring results with others. This supports adaptive learning or learning from other people's mistakes and successes. Utilize partner Web sites and newsletters.

Scope: Regional

Lead: Initiated by Northeast RSC, USFS, TNC, Fire Exchange Networks

Collaborators: All Northeast Regional Cohesive Strategy partners

Implementation Timeframe: Short term

B. Create self-guided or hosted wildland fire management demonstration areas in a variety of ecosystems and geographic locations to display various management objectives and outcomes where they are lacking. For example, advertise prescribed burning demonstrations that are open to visitors.

Scope: Regional to local

Lead: States, Prescribed Fire Councils, TNC

Collaborators: All partners involved in prescribed fire management activities

Implementation Timeframe: Short term

C. Utilize, support, and expand The Nature Conservancy's (TNC) Fire Learning Networks (FLN) for education and fire use.

Scope: Subregional or ecological breaks

Lead: TNC

Collaborators: All partners involved in prescribed fire management activities

Implementation Timeframe: Short term

Supplemental Information: Currently there are two FLNs that cover a small part of the Northeast Region and one in development (MI). Part of the mission of the FLN is peer learning and learning exchanges to overcome barriers to sustainable and integrated ecological, economic, and social solutions.

D. Develop a marketing campaign about the benefits of managed wildland fire. This campaign should be tailored to the public's values for open spaces and serve as a learning platform for educating the public and increasing tolerance for or acceptance of using fire to conserve and preserve what they value (i.e., wildlife species, plant diversity, and open woodlands and forests, among others).

Scope: Regional, subregional

Lead: Federal and State forestry and public affairs agencies, Fire Exchange Networks

Collaborators: State, Federal, tribal, and county public land managers and fire agencies; TNC and other NGOs with common interests

Implementation Timeframe: Midterm

Supplemental Information: See examples such as Visitmyforest.org where more information and links are provided of examples of desirable and unwanted fires.

E. Support the formation of a fire science exchange in New England.¹

Scope: Subregional, New England

Lead: Federal and State agencies

Collaborators: Joint Fire Science Program, USFS Northern Research Station, interested universities, all wildland fire management organizations

Implementation Timeframe: Short term

¹ Completed. The North Atlantic Fire Science Consortium was formed in April 2014.

Regional Option 1B: *Actively manage and increase the extent of fire-dependent ecosystems.*

Option 1B Description

Wildland fire has played a key role in shaping the ecosystems of the Northeast. Fires caused by both lightning and humans once burned across landscapes, creating a mosaic of conditions and habitats. Land uses, values, and fire suppression have changed the distribution, function, and sustainability of fire-adapted ecosystems. Some ecosystems that depend on fire, such as prairies, were converted for mostly agricultural purposes, while other fire-maintained ecosystems converted to more closed-canopied forests. Expanding development, such as residential housing and commercial developments, also increases costs for treatments and limits managers' ability to use beneficial fire on the land as a management tool. Smoke from prescribed burning or from wildfire can have negative impacts on public health and safety, which can restrict using fire near human developments.

In the last decade we have seen the development of large-scale collaborative planning and implementation efforts, such as the Fire Learning Network and the Collaborative Forest Landscape Restoration Act, that emphasize fire-adapted ecosystems. While there are eastern landscapes participating in these initiatives, Option 1B aims to elevate these approaches for the Northeast Region, bearing in mind the fragmentation and smaller acreage ownerships of the region. Ecosystems cross all political and ownership boundaries, so it follows that ecosystem-based restoration efforts will be successful through collaboration and partnerships that emphasize inclusiveness. Option 1B aims to encourage cross-boundary restoration work through increased collaboration, communication, and cooperation. Option 1B also recognizes that restoration in the Northeast, a relatively densely populated area, must consider and communicate benefits to people in terms that are important to those populations.

Overarching Principles for Option 1B include:

- Restore and maintain function of fire-adapted communities within the historic range of variability of structure and composition to the extent possible.
- The role of fire needs to be acknowledged within all fire-dependent ecosystems but may need to be modified based on local conditions, issues, and tolerances.
- Efficiencies and effectiveness are sought through collaboration and coordination in planning, implementation, and monitoring.
- Employ mechanical or other nonfire treatments to reduce risk before reintroducing fire to the ecosystem.

Regional Actions for Option 1B

1. Develop collaborative partnerships to facilitate ecosystem-based, multijurisdictional planning and implementation.

Scope: Subregional, multistate

Lead: Northeast RSC, TNC or some other organization that is not one of the large landowners within the partnership

Collaborators: All landowners, tribes, land managers, economic cooperators (forest products industry, grazers, etc.), policy makers

Implementation Timeframe: Long term

Supplemental Information: The vision of these collaborative partnerships is that they are applied conservation science partnerships with two main functions. The first is to provide the science and technical expertise needed to support conservation planning at landscape scales—beyond the reach or resources of any one organization. The second function is to promote collaboration among their members in defining

shared conservation goals and focus on promoting the benefits of restoring fire-dependent ecosystems to people, property, and landscapes. With these functions in mind, partners can identify where and how they will take action, within their own authorities and organizational priorities, to best contribute to the larger conservation effort. The partnership does not place limits on partners; rather, it helps partners see how their activities can “fit” with those of other partners to achieve a bigger and more lasting impact.

Planning and carrying out management actions on the landscape scale will almost certainly require crossing jurisdictional boundaries. There must be multijurisdictional coordination to make the process truly cohesive, inclusive, and strategically effective. An important element of success for this action is to include a diversity of fire and nonfire management partners because restoration and maintenance of fire-adapted ecosystems involve a wide array of resources and have many benefits.

Successes in conservation partnering include the Fish and Wildlife Service Landscape Conservation Cooperatives, USFS Collaborative Forest Landscape Restoration Program, and TNC’s Fire Learning Networks, which utilize and leverage existing planning efforts and collaborative opportunities. Additionally, State Forest Action plans and other plans may already have some of the frameworks in place.

Tasks:

A. Identify focal areas to serve as opportunities for expansion of fire-adapted ecosystems.

Scope: State, multistate

Lead: Land managers and prescribed fire planners within each State (multistate in New England)

Collaborators: Owners of those properties and their partners

Implementation Timeframe: Planning short term; projects will be opportunistic

B. Increase tribal and private landowner participation in landscape-scale projects.

Scope: Regional

Lead: USFS NA S&PF

Collaborators: NRCS, States, TNC, tribes

Implementation Timeframe: Short term

Supplemental information: Private landowner assistance programs, such as the NA S&PF Forest Stewardship Program and NRCS conservation programs, as well as State-level landowner programs, would be the mechanisms to offer advice and funding opportunities to engage private landowners in larger landscape-scale projects and conservation areas.

C. Identify opportunities to manage natural ignitions for resource benefits.

Scope: Federal and State public lands

Lead: State leads for natural area management

Collaborators: Federal agencies, tribes, State fire supervisors

Implementation Timeframe: Midterm

Supplemental Information: Some areas may have more opportunities than others to assess and define the role that natural ignitions can play to meet land management objectives. It is recognized there are many variables to consider and that prescriptive guidance must be developed.

- D. Develop restoration guidance to address wildland-urban interface (WUI) fire issues to help manage potential risk within fire-adapted ecosystems.** This guidance should include information on the use of all natural resource management tools such as prescribed fire, mechanical treatments, and other nonfire treatments.

Scope: Local

Lead: States, local

Collaborators: State-level WUI coordinators, fire ecologists, land management agencies, tribes

Implementation Timeframe: Short term

Supplemental information: The WUI will always be a focus, so local choices for specific burns or other management actions provide room for that decision. Ecosystem composition and structure can be used strategically to reduce threats to communities, developments, homes, private land, and infrastructure. For example, openings may be used adjacent to developments where they can be mowed periodically yet provide ecosystem value when viewed within the larger landscape.



Harvester working in a red pine stand. (Photo: Eli Sagor, Univ. of Minnesota, 2007)

Regional Option 1C: Focus on mitigating “event” fuels through mechanical treatments and utilizing markets for biomass products to clean up and reduce the potential fire hazard from blowdowns, ice storms, and other forest-damaging events.

Science Context for Option 1C

There are areas all across the Northeast that have experienced significant fuel-creating events over the last 20 years such as tornadoes, hurricanes, “super storms”, derechos, and ice storms, among others. These events can and have created hazardous fuels conditions over a wide range of landscapes in all forest types and locations, some quite close to heavily populated areas. Figures 5 and 6 represent the range of opportunities that exist in the Northeast to address hazardous fuels conditions created by one or more of these disturbance events. All State and local government officials and community leaders need to be more aware of these potential opportunities.

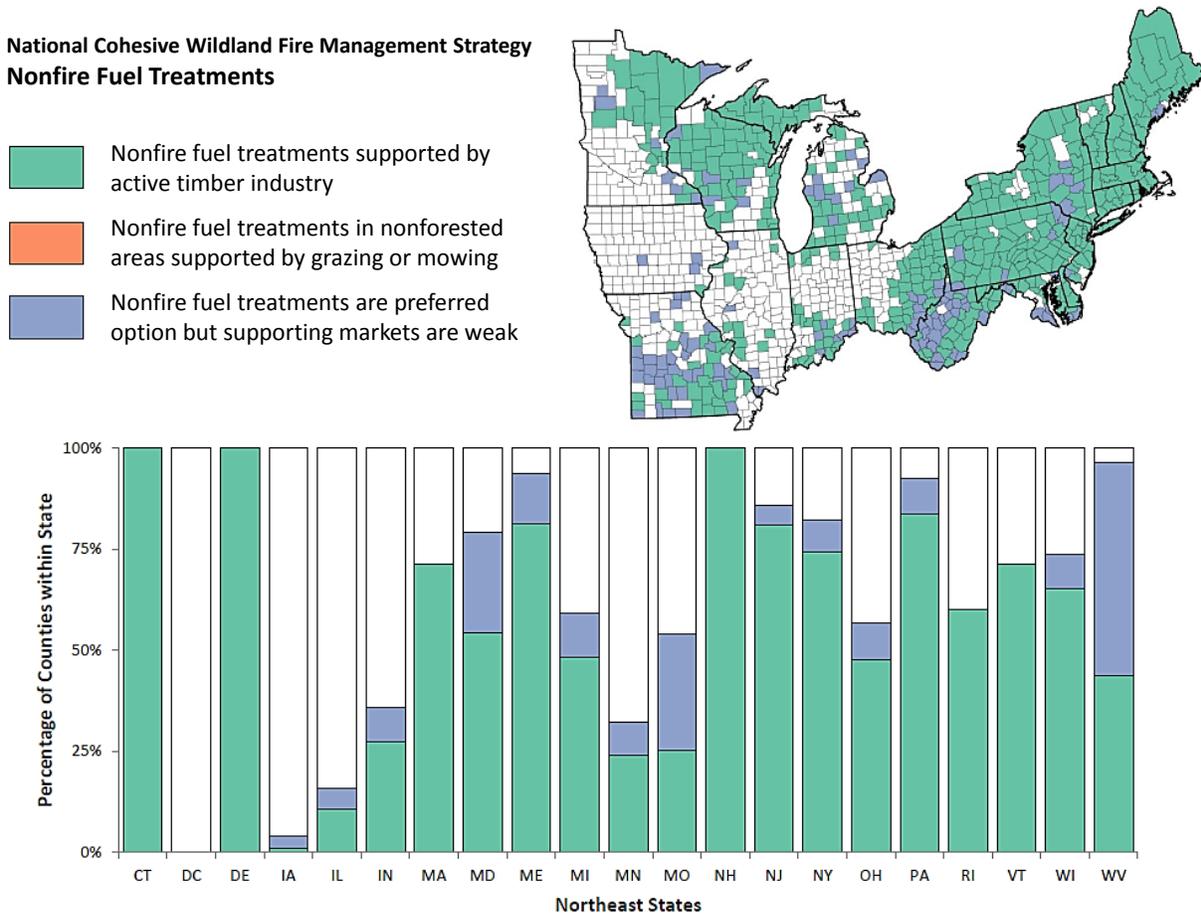


Figure 5. Map and graph of potential nonfire treatment (mechanical, grazing, etc.) capacity to address hazardous fuels conditions by State. In nonforested areas, nonfire fuel treatment opportunities (salmon color) are not significant in the Northeast.

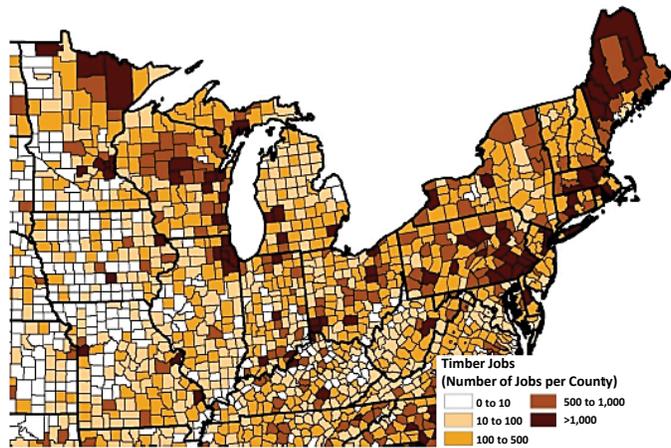
**National Cohesive Wildland Fire Management Strategy
Nonfire Fuel Treatments**

Short Explanation:

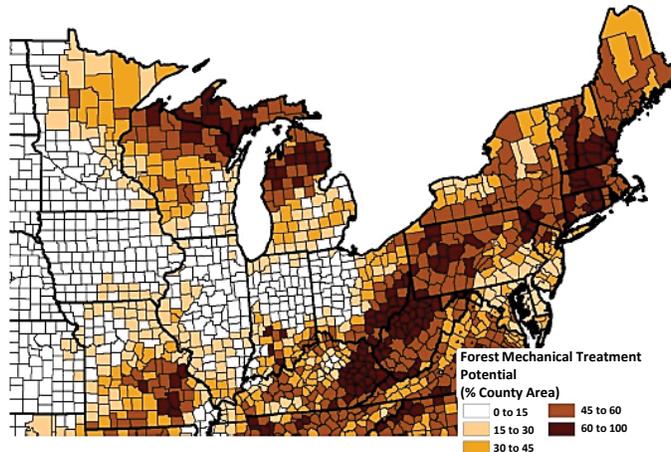
A variety of treatment methods that do not directly involve fire are often used to change vegetation composition and structure and alter fuels to reduce hazard. These include product utilization along with various mechanical thinning and debris disposal techniques. Nonmechanical methods can involve livestock grazing to reduce fine fuels in rangeland systems or using herbicides to eradicate or suppress unwanted vegetation.

A: Nonfire fuel treatments supported by active timber industry. Opportunities for using active timber markets to offset costs of mechanical fuels treatments in forests were identified by using data about timber jobs (top right), mill production, and forested area available for mechanical treatment (bottom right). These counties occur throughout the Northeast.

C: Nonfire fuel treatments are preferred option but supporting markets are weak. This opportunity includes counties where mechanical treatment in forests offers considerable benefit, but where evidence of economic value or markets to support such activities is weak. These include scattered counties throughout the Northeast.



Source: FPA



Source: NSAT

Figure 6. These maps describe some background details about possible opportunities to consider and explain the potential capacities illustrated in figure 5.

Option 1C Description

Most fuel hazards arise from natural events. Wind, heavy snow, ice, disease, and insects can create large areas of very high fuel loading in forested areas. All ecosystems can experience short- and long-term altered fire behavior characteristics if event fuels are left untreated. Removal of event fuels is more crucial when proximity to homes and other infrastructure could lead to significant economic loss if a wildfire occurs. Event fuels may also represent an economic opportunity to supply forest product needs ranging from biomass to higher valued products.

Regional Actions for Option 1C

1. **Develop multijurisdictional fuel hazard response plans** to effectively coordinate efforts to address event-created hazardous fuels across ownerships.

Supplemental Information: Common principles that would be incorporated into fuel hazard response plans include:

- Fuels are removed in spatial patterns that meet objectives for mitigating intense fire potential.
- Mitigation efforts include defensible zones created in the WUI or around other values at risk; efforts include private lands.
- The affected local communities’ economic sustainability is considered.



Debris piled up from Super Storm Sandy in West Virginia. (Photo: Tom Schuler, U.S. Forest Service Northern Research Station, October 2012)

Tasks:

A. Identify existing authorities and barriers at all jurisdictional levels to developing response plans.

Scope: Regional

Lead: States

Collaborators: All CS partners with land management responsibilities

Implementation Timeframe: Short term

Supplemental Information: Many authorities exist for Federal and State agencies to expedite planning and treatment of event-created fuels. Additional education and awareness of these authorities, and how and when to use them, is needed for responding to events.

B. Identify current risk areas to prepare prewildfire planning and response operations. This action could include developing a planning aid or checklist to help land managers deal with large events.

Scope: State, local

Lead: Northeast RSC, Interagency team of Federal/State incentive program leads

Collaborators: Landowners, foresters, forest industry, State and local policy makers

Implementation Timeframe: Short term with periodic review and input as technology or uses for event fuels emerge.

- C. Work with foresters, loggers, arborists, and other land care specialists to incorporate fuels reduction activities into management planning and land treatment activities to reduce treatment costs.**

Scope: Regional

Lead: Northeast RSC, Interagency team of Federal/State incentive program leads

Collaborators: Regional governments, economic development organizations, landowners, foresters, forest industry, tribes, State and local policy makers

Implementation Timeframe: Short term

- D. Work with FEMA and other agencies to ensure they understand and recognize tribal values.** By increasing FEMA's awareness of tribal values, FEMA can help treat fuels and storm debris while maintaining or restoring important sacred and medicinal plants.

Scope: Regional

Lead: Northeast RSC, Tribal Natural Resource Commissioner

Collaborators: FEMA, States, tribes, NGOs, other Federal agencies

Implementation Timeframe: Midterm

- 2. Increase the use of program incentives for tribes, communities, and private landowners to reduce the hazards from event fuels.**

Supplemental Information: Some programs sponsored by Federal and State agencies and other foundations/organizations offer these incentives. Some examples include the Federal Forest Stewardship Program and the Forest Land Enhancement Program. Coordination among State and Federal agencies to improve assistance and incentives for landowners is needed to help mitigate event fuels.

Tasks:

- A. Conduct a more complete assessment of available forest landowner assistance programs and how to best apply these programs to address event fuel mitigation needs.**

Scope: State, local

Lead: Northeast RSC, Interagency team of Federal/State incentive program leads

Collaborators: Landowners, foresters, forest industry, State and local policy makers

Implementation Timeframe: Short term

- B. Promote awareness of forest landowner assistance programs and incentives among private landowners and remove barriers to expedite their delivery.**

Scope: Regional

Lead: State and Federal agencies

Collaborators: Forest products industry, collaborative networks/partnerships

Implementation Timeframe: Short term

- C. Ensure landowner access to professional assistance before and immediately following fuel-creating events that includes, but is not limited to, forest/land management advice and economic assistance.**

Scope: State, local

Lead: State Foresters

Collaborators: Federal agencies, forestry consultants, collaborative networks/partnerships

Implementation Timeframe: Short term

- D. Work with communities, tribes, and forest products industries to identify opportunities for increased utilization of biomass** created as the result of fuels treatments prior to and/or as the result of catastrophic events.

Scope: Regional

Lead: State Foresters

Collaborators: Federal agencies, counties, forestry consultants, forest products industry, collaborative networks/partnerships

Implementation Timeframe: Short term

- E. Work with communities, tribes, and regional planning entities to develop markets for biomass** in order to develop biomass transportation and market networks to reduce fuel treatment costs.

Scope: Regional

Lead: State foresters, USFS NA S&PF WERC

Collaborators: Federal agencies, forestry consultants, counties, forest products industry, collaborative networks/partnerships

Implementation Timeframe: Short term

NATIONAL STRATEGY GOAL 2: Fire Adapted Communities—*Human populations and infrastructure can withstand a wildfire without loss of life and property.*

Regional Option 2A: *Focus on promoting and supporting local adaptation activities to be taken by communities such as increasing capacity of volunteer fire departments, passing ordinances, developing Community Wildfire Protection Plans, and joining Firewise Communities/USA® or other similar programs.*

Option 2A Description

This goal and management option focuses on creating Fire Adapted Communities that protect homes and infrastructure by promoting fire resistance within those communities. Becoming a Fire Adapted Community reduces the chance of life, property, and natural resource losses through wildfires as well as the resulting economic and emotional stress on a community. Creating Fire Adapted Communities is an investment of relatively few dollars that can effectively prevent large losses due to structure fires, increase public awareness of wildfires, reduce wildfire ignitions, make wildfires easier to extinguish, and reduce resource losses.

Science Context for Option 2A

Figure 7 illustrates the wildland-urban interface in the Northeast Region in 2010.

Regional Actions for Option 2A

- 1. Develop and maintain a State-level list or map of all communities designated as being at risk from wildland fire.** In States where a risk assessment has already been completed, the assessment should be used to prioritize community planning, education, and fuel reduction efforts and be updated when new information becomes available.

Scope: State

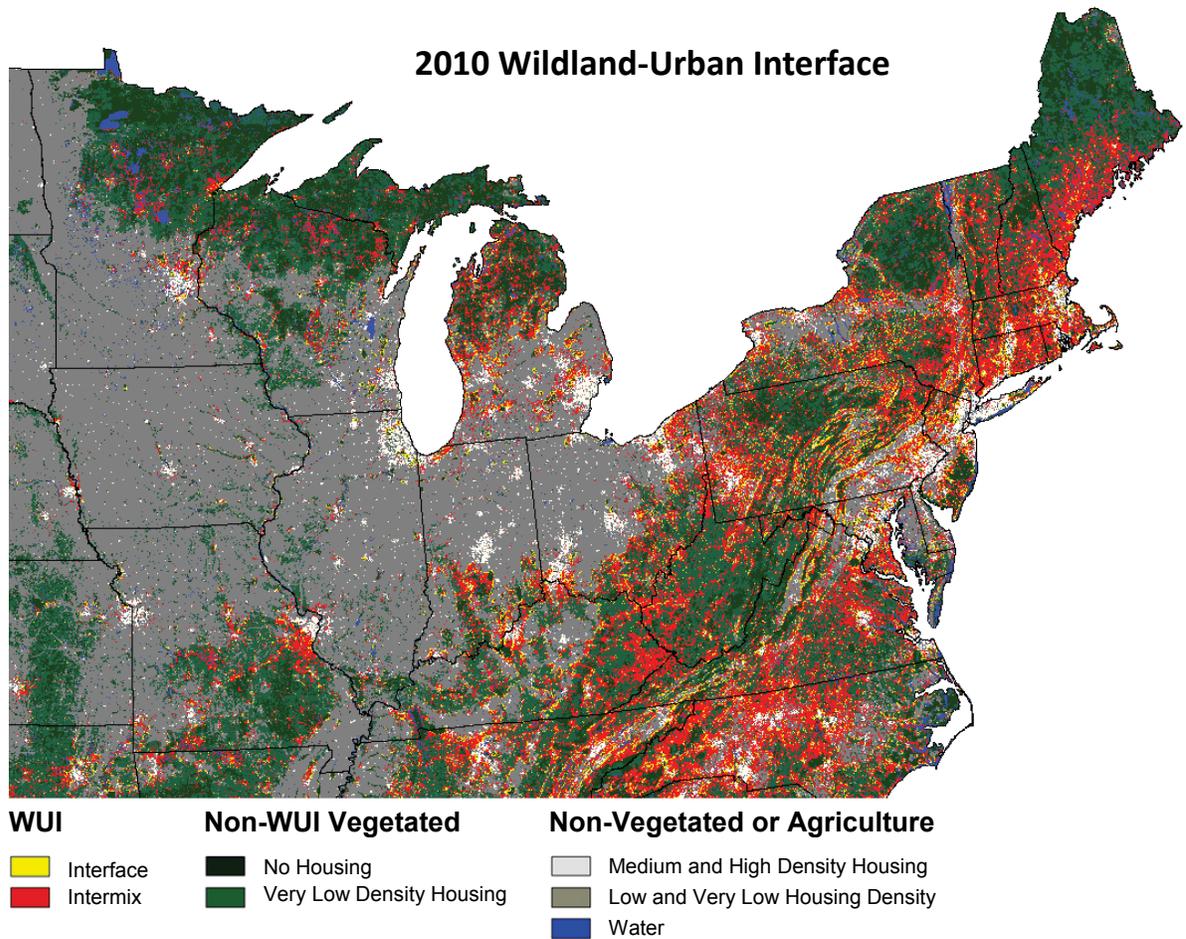
Lead: State agencies (NAASF)

Collaborators: CS partners and other agencies within the State conducting the assessment

Implementation Timeframe: Short term; continuous



Typical wildland-urban interface area in Pennsylvania. (Photo: Pennsylvania Dept. of Natural Resources)



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WUI 2010 based on the 2010 Census, 2006 National Land Cover Database (NLCD), and the Protected Areas Database version 1.1

Figure 7. This map illustrates where WUI exists (both interface and intermix) across the Northeast. It also shows which areas have vegetation but no (or very low) housing density as well as relative housing density in areas with no vegetation or that are in agriculture.

2. Provide targeted information on the benefits of becoming a Fire Adapted Community (FAC) to tribal and local governments (village, city, town, and county).

Scope: State, local, and tribal

Lead: State and Federal fire prevention and WUI specialists

Collaborators: Fire departments, local government, tribes, homeowner associations, land managers

Implementation Timeframe: Short term

Supplemental Information: Information could be provided by public and private organizations, which could include homeowner associations, tribes, volunteer fire departments, and other public service organizations. Promoting Firewise Communities/USA®, Community Wildfire Protection Plans, and Ready, Set, Go! will help advance the FAC initiative.

- 3. Use existing codes and standards for establishing and maintaining Fire Adapted Communities.** Coordinate with municipal agencies to incorporate WUI into their zoning codes that reflect regional and local wildland fire risks to communities, including landscape and structure components and related issues, to ensure national standards are met by all involved entities.

Scope: National, tribal, State, or local

Lead: State or local government unit

Collaborators: State and Federal fire prevention and WUI specialists, NFPA, fire departments

Implementation Timeframe: Midterm

Task:

- A. Explore the creation or revision of state- or local-level open burning regulations.**

Scope: State and local

Lead: State

Collaborators: Local communities and fire departments

Implementation Timeframe: Midterm

- 4. Continue to explore and expand use of Federal grant programs, (e.g., Wildfire Risk Reduction grants, FEMA Pre-Disaster Mitigation program, Volunteer Fire Assistance) to support community planning, hazardous fuels reduction, and education and outreach activities.**

Supplemental Information: Successful grant programs initiated during the National Fire Plan facilitated assistance for communities at risk of wildfire in the wildland-urban Interface (figure 7). For example, the Rural Fire Assistance program provided funding for fire departments that protect rural, wildland-urban interface communities that played a substantial cooperative role in the protection of Federal lands.

Tasks:

- A. Provide grant writing guidance to help Federal, tribal, State, and local governments** be more effective in providing, identifying, and obtaining grant opportunities earmarked for wildfire-related disaster prevention and preparation.

Scope: National, State

Lead: USFS NA S&PF, FEMA

Collaborators: Regional – Federal, State, tribal, and local agencies with disaster response authorities

Implementation Timeframe: Mid to long term

- B. Analyze, design, and accelerate the development of wood energy systems** that will create markets for fuels reduction material in high fire-risk communities that have an active wildfire mitigation program.

Scope: National and regional

Lead: Federal agencies, States, NA S&PF WERC

Collaborators: Counties, local communities, forest products industry

Implementation Timeframe: Midterm

5. Increase fire department involvement in FAC initiatives.

Scope: Regional

Lead: Federal agencies (USFS, DOI, FEMA, NVFC)

Collaborators: Regional/State agencies

Implementation Timeframe: Midterm

Supplemental Information: The Ready, Set, Go! program is an important component of the Fire Adapted Communities program. It is managed by the International Association of Fire Chiefs (IAFC) and seeks to develop and improve the dialogue between fire departments and the residents they serve. Launched nationally in March 2011, the program helps fire departments teach individuals who live in high-risk wildfire areas—and the wildland-urban interface—how to best prepare themselves and their properties against fire threats.

Regional Option 2B: Focus on directing hazardous fuel treatments in the wildland-urban interface (WUI). Treatments of WUI lands should provide a broader area of effective protection and reduced risk.

Science Context for Option 2B

Figure 8 depicts a composite index that is weighted towards counties with a high percentage of homes in the wildland-urban interface (WUI) zone. It does not include any consideration of the frequency or intensity of wildfires observed in these counties.

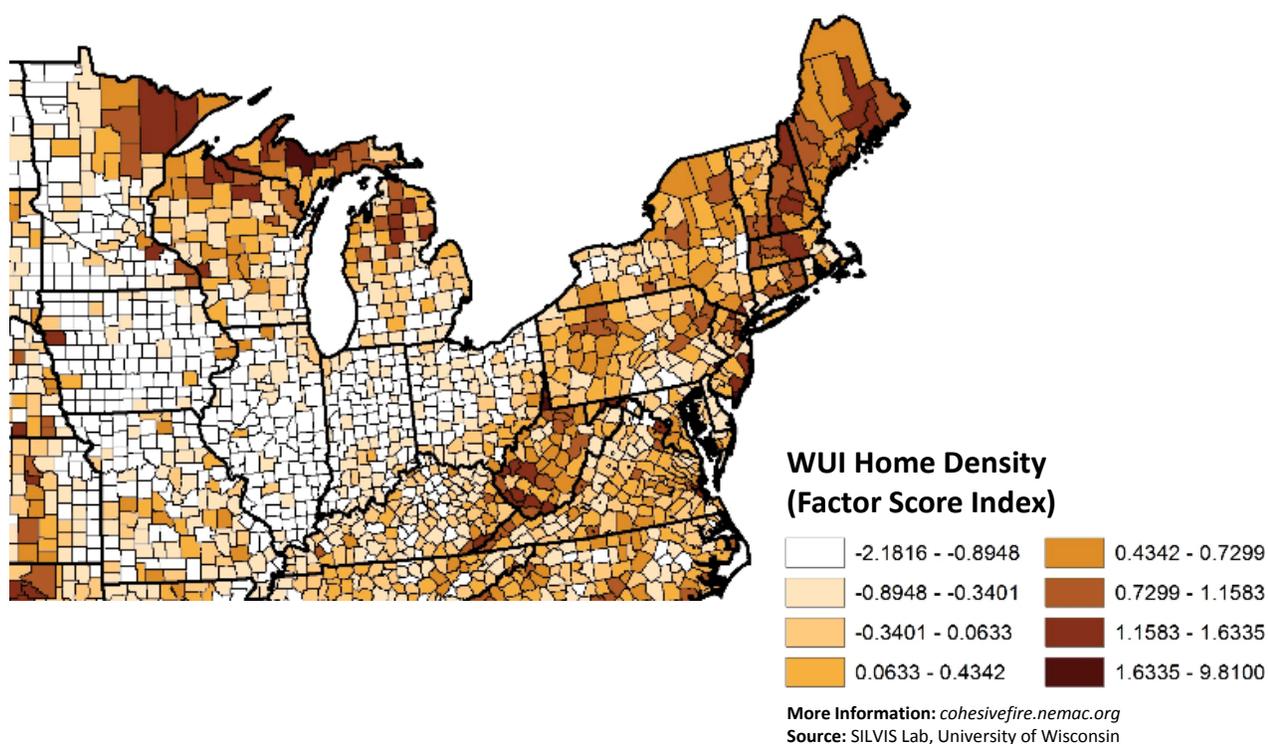


Figure 8. Community adaptation and fuel treatments in the WUI.

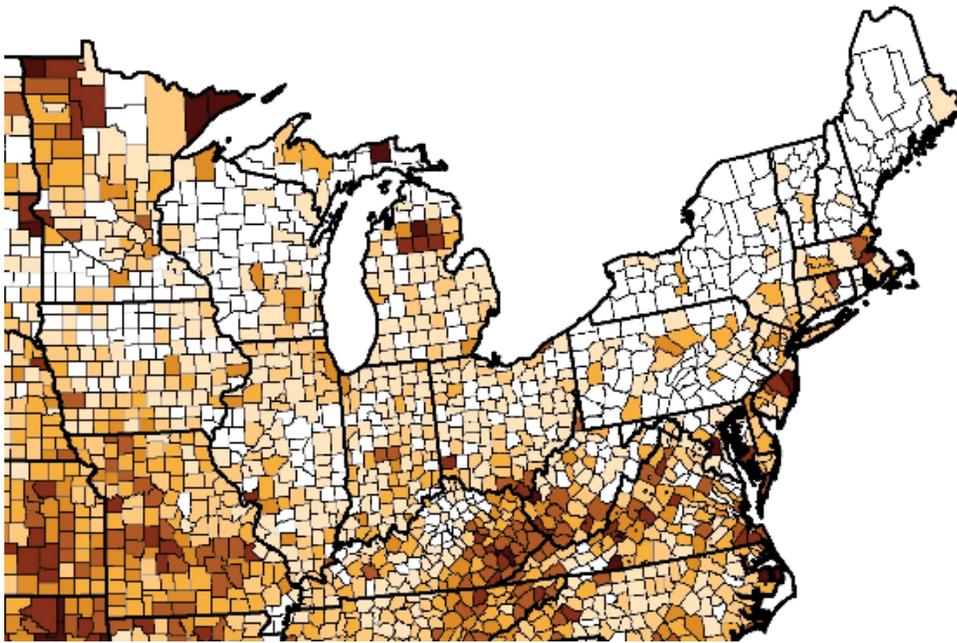
Observations

The intersection of WUI home density (figure 8) and maximum area burned (figure 9) suggests that areas with both high home exposure and high probability of burning are relatively infrequent, occurring primarily in the upper Midwest, Missouri, West Virginia, southern New England, and New Jersey. These areas could benefit from both local adaptation activities and focusing fuels treatments in the WUI.

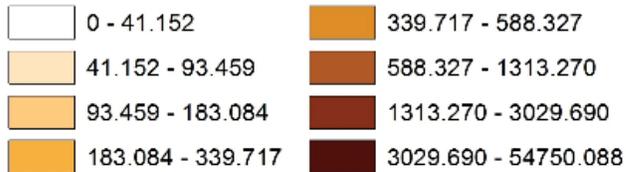
Option 2B Description

The WUI is the area where houses meet or intermingle with undeveloped wildland vegetation. This makes the WUI a focal area for human-environment conflicts such as wildland fires, habitat fragmentation, invasive species, and biodiversity decline. This option focuses on the challenge of reducing wildfire risk and increasing protection of the forests, homes, and communities within the WUI from the threat of wildland fire in the Northeast Region.

Approximately 40 percent of the U.S. population lives within the 20 Northeastern and Midwestern States served by the Northeast Region. Of that percentage, one-third of the population lives within WUI areas. Projections for the Northeast Region include increasing population along with expanding urbanization and increasing forest conversion and fragmentation. Most fires in the Northeast U.S. are started by humans and immediately place homes and property at risk.



**Area Burned
(Max Annual Acres/100 sq. miles)**



More Information: cohesivefire.nemac.org

Source: National Fire Incident Reporting System (NFIRS), National Association of State Foresters (NASF), Federal Fire Occurrence Dataset

Figure 9. Max area burned reflects the area burned in a single season and is indicative of places that have experienced larger wildfires from 2002–2011. Larger fire sizes can suggest wildfires that are more difficult to contain and potentially more destructive.

There are two primary WUI issues in the Northeast: 1) a public perception of low wildfire risk due to a low occurrence of large fires, and 2) the Northeast has an extensive area of WUI conditions. A spatial analysis of land cover and census block data performed by Radeloff and others (2005) found that the Eastern United States contains the greatest extent of WUI in the 48 contiguous States. When wildfires do occur, they often come with a high risk to life, property, and infrastructure if, or when, they escape initial attack.

The risk of wildfire can increase as a result of natural events. Wind, ice, disease, and insects can create large areas of downed timber and increased fuels (vegetation), leading to exacerbated wildfire conditions. All ecosystems can experience short- and long-term wildfire hazards if these conditions remain in place. Removing residual materials created by natural events that might lead to wildfire is more urgent given the current and expected population growth in forested areas.

To manage the wildfire risk encountered throughout the Northeast Region, we need a proactive, collaborative approach to identifying risks in the WUI. This needs to be combined with developing Community Wildfire Protection Plans; reducing hazardous fuels; treating event fuels; and educating the public in the context of managing fuels across a multijurisdictional, fragmented landscape.

Regional Actions for Option 2B

1. **Increase fuels management on public and private land** to mitigate undesired fire effects, reduce the probability of fire damage and property loss, and reduce wildfire suppression costs.

Scope: Regional

Lead: Land managers responsible for fuels mitigation (e.g., State Departments of Natural Resources, USFS, NPS, BIA, FWS, tribes, industrial forest owners, county forests, etc.)

Collaborators: Local communities, tribes, public and private landowners

Implementation Timeframe: Short term

Supplemental Information: Support community needs to manage fuels through financial incentives and education and training opportunities that teach land managers about appropriate treatment options. Provide them with Best Management Practices information when it becomes available.

2. **Use Community Wildfire Protection Plans (CWPPs) to identify and influence fuel treatment areas in and around the wildland-urban interface (WUI).**

Scope: Regional

Lead: States and tribes

Collaborators: Multiple, local-level collaborators depending on ownership and jurisdictions

Implementation Timeframe: Short term; continuous

Supplemental Information: Lands within CWPP communities provide a tremendous opportunity to influence where and how fuel reduction projects funds may be distributed. Among those benefits is the opportunity to establish a localized definition and boundary for the WUI at risk. CWPPs also help Federal agencies provide specific consideration to fuel-reduction projects. CWPPs help influence increased private land management assistance to complement and implement broader fuel reduction management objectives across fire-prone landscapes, and encourage the implementation of mitigation strategies identified in CWPPs.

3. **Provide incentives for local land managers to conduct education programs** familiarizing neighboring communities and tribes with the positive benefits of hazardous fuels reduction treatments. These include benefits to the ecosystem, local economy, and public health and safety. Knowledge about specific fuel treatments positively influences support for fuels reduction treatments.

Scope: Local communities, tribes

Lead: Federal, State, and county land managers

Collaborators: Grant opportunity providers

Implementation Timeframe: Short term

4. **Provide hazardous fuel reduction assistance to tribes, communities, and counties.** State and Federal fire prevention and WUI coordinators are specialists who are trained, understand what is needed, can assist with and coordinate the design and implementation of fuels reduction efforts, and are linked with sources of available funding such as grants.

Scope: Regional, tribal, State

Lead: State and Federal fire prevention and WUI coordinators

Collaborators: Tribal and local communities and counties; all affected jurisdictions and owners

Implementation Timeframe: Short term in locations with fire prevention/WUI coordinators and established WUI programs, long term elsewhere

5. **Promote the development of agreements and memorandums of understanding (MOU)** that ease jurisdictional barriers for efficient and effective treatment and maintenance of fuel-treated areas (for example, neighborhood agreements).

Scope: Regional

Lead: States

Collaborators: State, tribal, local, IAFC, nonprofit partners

Implementation Timeframe: Midterm

6. **Evaluate the effectiveness of various fuels reduction and modification techniques** and create recommendations (e.g., Best Management Practices) for reducing fuels. Support research that examines the effectiveness of various treatment options (for example, the degree and longevity of treatment, firebreak width recommendations, and success stories).

Scope: Regional

Lead: Regional Joint Fire Science Consortiums, NRS

Collaborators: USFS Region 9, NA S&PF, State fire agencies, NPS, BIA, DOI

Implementation Timeframe: Short term; midterm: full implementation in 4 years



Firewise Community chipping day with assistance from local fire department members. (Photo: Jolene Ackerman, Wisconsin Dept. of Natural Resources, May 2004)

Regional Option 2C: *Focus on promoting and supporting prevention programs and activities (targeting them toward reducing when and where fires occur).*

Science Context for Option 2C

Observations

Given that natural ignition causes a relatively small percentage of wildland fires in the Northeast, the reported ignitions shown in figure 10 are predominately caused by humans. The highest density of ignitions tends to be in the most urbanized counties, which poses the greatest potential threat to life and property, regardless of fire size. Some counties appear to be underreported, perhaps because of a low rate of participation in the National Fire Incident Reporting System. Nevertheless, this map provides managers with some insight into where prevention programs and activities might be prioritized to have the greatest potential impacts.

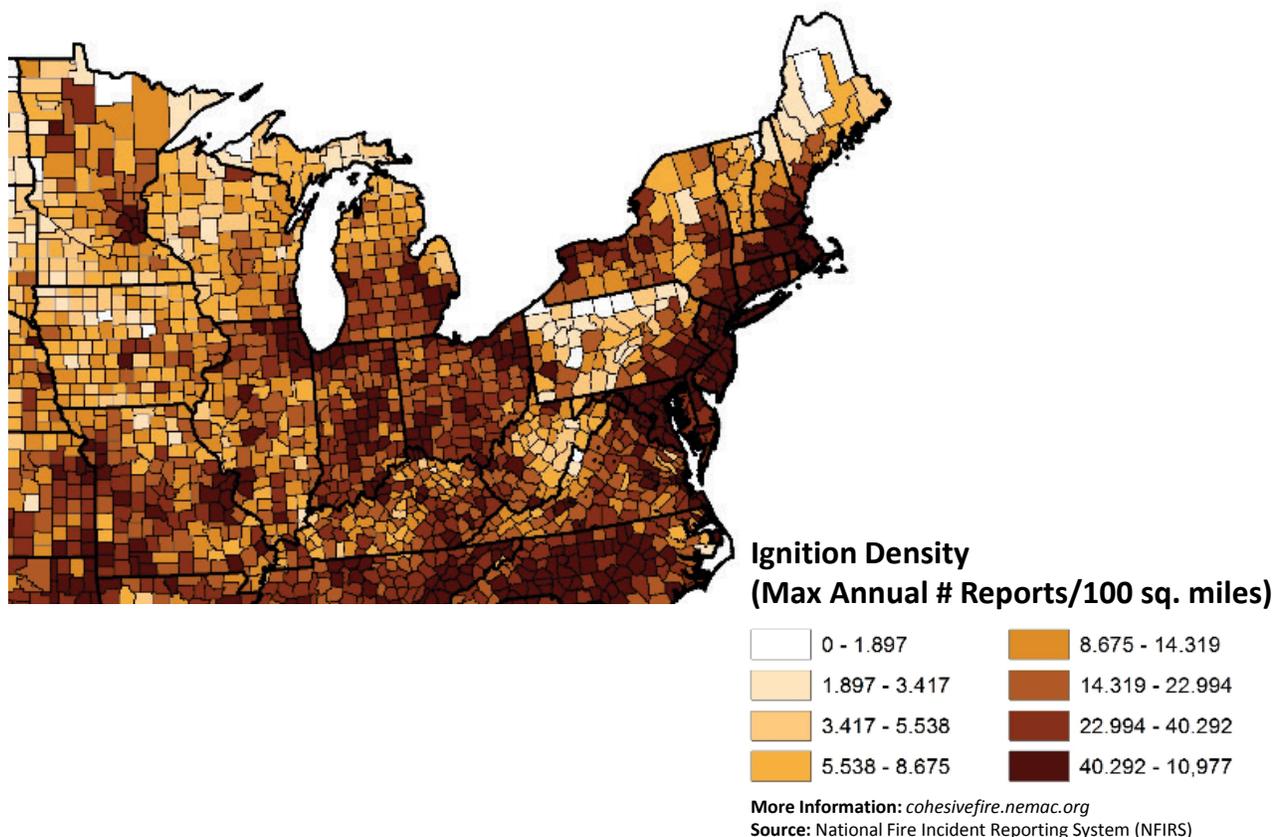


Figure 10. Targeting human-caused ignitions. This map shows the relative density of ignitions of all types.

Option 2C Description

Across the region, many wildland fires can move fast but are often contained within a single burning period (one day). Although not all fires are reported, available data shows that more than 150,000 fires burned over 600,000 acres from 2002–2012. Humans cause most of these wildfires; accidental ignition and arson are the primary causes of fires in the region. Although wildfires occur throughout the year across the region, they are more frequent during the spring and fall seasons.

Seasonal and extended drought conditions often increase wildfire hazards in the Northeast. Seasonal drought is anticipated on shallow and more coarsely textured soils, and is highly predictable. Prolonged droughts also occur and can affect a localized area or multiple States. Episodes of ignitions during dry periods can dominate the landscape and overwhelm the capacity of local fire organizations.

Homes and infrastructure are involved in a high percentage of wildfires in the Northeast Region. Due to the heavy population and large proportion of landscape in the WUI/intermix, even small wildfires can threaten structures, which increases risk and complexity for firefighters. *Preventing unwanted fires and increasing homeowner responsibility will reduce firefighter risk and decrease both the need for firefighting response and associated costs.*

Regional Actions for Option 2C

1. **Use fire reporting data to identify concentrated occurrences of arson and accidental human-caused wildfires.** This information can help direct prevention activities to areas that need them most at the most appropriate times of the year.

Scope: State, tribal, and local

Lead: NFPA, State and Federal fire prevention and WUI specialists

Collaborators: Media, State and Federal agencies, tribes, fire departments, homeowner associations

Implementation Timeframe: Short term; continuous

Supplemental Information: Emphasis is placed on the use of reliable fire occurrence data and support for improvements in fire reporting where needed.

2. **Develop a common regional communication strategy to help reduce unwanted human ignitions in and near communities.**

Scope: Regional

Lead: State agencies, forest fire compacts

Collaborators: Federal agencies (USFS, NPS, FWS, BIA, FEMA)

Implementation Timeframe: Short term; continuous

Supplemental Information: Communication planning includes identifying not only an overarching goal for a particular situation but its supporting objectives and key messages. The communication strategy will describe tactics along with their target audience, timeline, and budget. An evaluation component will help determine which tactics most effectively reach audiences and prevent wildfires.



Smokey made an appearance at a grade school program in Wisconsin. (Photo: Amy Luebke, Wisconsin Dept. of Natural Resources, March 2012)

Task:

A. Develop or expand a common wildland fire risk awareness communications toolbox.

Scope: National, tribal, State, local

Lead: USFS NA S&PF

Collaborators: Communities, tribes, counties, State fire agencies, Firewise Communities/USA®

Implementation Timeframe: Midterm

Supplemental Information: A communications toolbox could be an invaluable resource for fire prevention specialists, WUI coordinators, educators, and others. The toolbox would provide an opportunity to share examples of education and outreach strategies, lessons learned, and success stories that highlight effective communication strategies.

3. Institute fire investigation and coordination standard operating procedures between law enforcement and firefighting personnel in the event of human-caused fires.

Tasks:

A. Support the delivery of NWCG course FI-110: Wildland Fire Observations and Origin Scene Protection for First Responders. Offer the advanced course, FI-210, Origin and Cause Determination to achieve Qualifications. Offer incentives for Qualified Fire Investigators.

B. Strive to ensure all ignitions have an accurate cause determined and reported.

Scope: Region, tribal, State, local

Lead: NE RSC

Collaborators: All CS partners, fire departments, firefighters, law enforcement officers, and other first responders

Implementation Timeframe: Short term; continuous

Supplemental Information: Accurately identifying fire-cause trends is critical to the success of a fire prevention program. In cases that involve negligent acts, the responsible party may be pursued to recover suppression costs and property damages. In cases involving arson or other criminal acts, identifying and apprehending the perpetrator is of vital public interest.

4. Communicate local fire danger and coordinate the implementation of consistent fire restrictions between local enforcement authorities.

Scope: Local

Lead: States

Collaborators: Sheriff's offices, tribes, volunteer fire departments, and local authorities having jurisdiction (i.e., city, town, village), Federal partners and land managers

Implementation Timeframe: Long term

NATIONAL STRATEGY GOAL 3: Wildfire Response—All jurisdictions participate in making and implementing safe, effective, efficient risk-based wildfire management decisions.

Science Context for Option 3A

Observations

The jurisdictional maps shown in figures 11 and 12, along with maps illustrating the number of acres burned (figure 9) and the distribution of human-caused ignitions (figure 10), can help regional leaders and managers assess whether wildland fire management resources are adequate for a given locale. They can also help indicate if there may be opportunities to improve organizational efficiencies by establishing or expanding cooperative agreements to improve fire prevention and mutual aid response capacity.

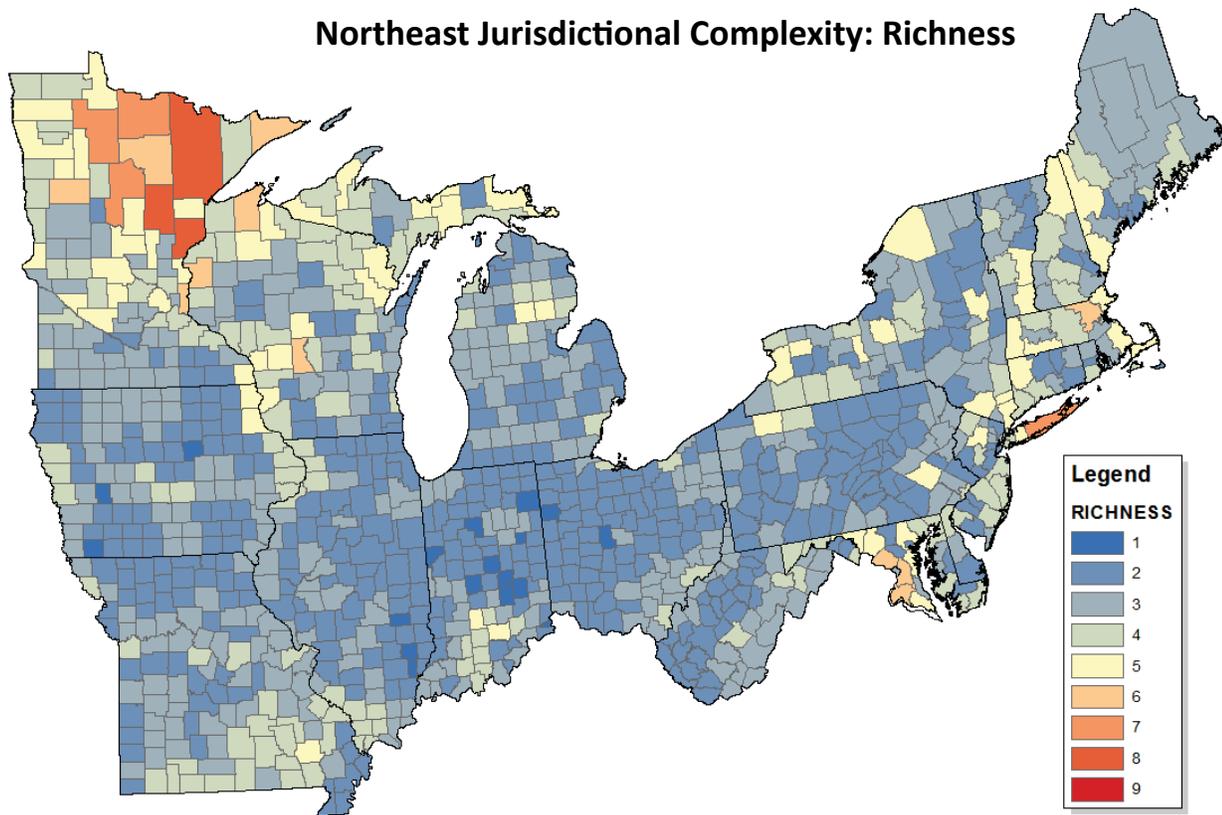


Figure 11. Jurisdictional complexity based on richness. This figure and figure 12 are based on the different patterns of land ownership within each county by various agencies. Richness is the count of jurisdictional types within a county from the following list, regardless of how much land is held: USFS, NPS, FWS, BLM, DOD, DOE, other Federal combined, BIA and tribal lands combined, all State agencies combined, and private-local government (assumed all counties have this last entity). The “redder” the county shading, the greater the number of agencies present. However, this map provides no indication of the relative amounts of responsibility within a given county. No minimum area threshold was applied.

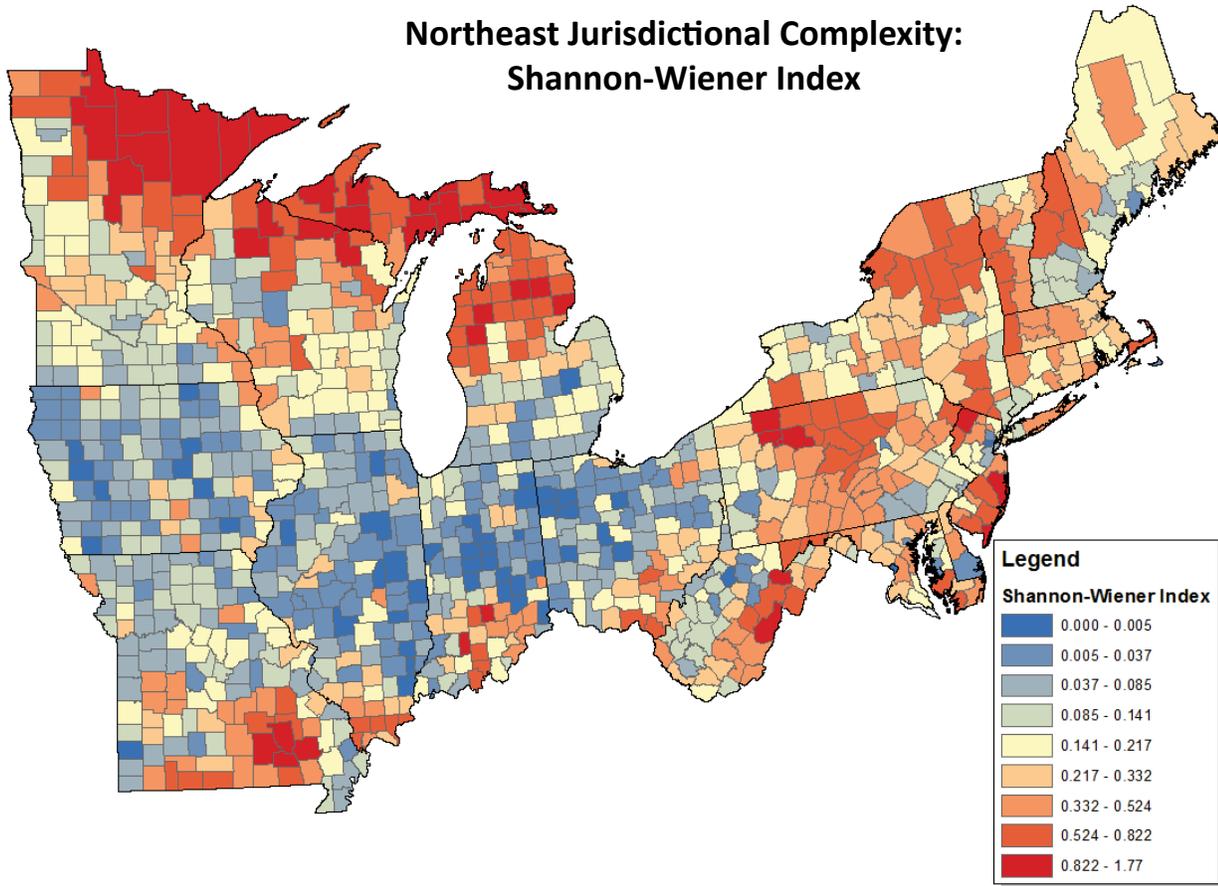


Figure 12. Jurisdictional complexity based on the Shannon-Wiener index. This index is weighted by proportional area in each of these nine categories so that richness (the number of agencies) and evenness (distribution of lands across agencies) are considered. The legend is based on quantiles as they occur across the CONUS, not just the Northeast. Shannon's is much more useful because it reflects State lands quite a bit better than can be seen on the richness map. Redder colors mean there are both more agencies and that each agency has a relatively more equal share of lands under management.

Regional Option 3A: Improve the organizational efficiency and effectiveness of the wildland fire community (presuppression and preplanning, administration).

Areas to Address

- Development of Memorandums of Understanding (MOU) and Memorandums of Agreement (MOA)
- Standardizing and streamlining training
- Radio compatibility and interoperability
- Appropriate suppression and detection responsibilities regardless of landownership through agreements or contracts
- Sharing of personnel (cofunding or contracting)

Option 3A Description

Much of the success and effectiveness of a wildland fire organization is determined well before a wildfire occurs. Preplanning and preparedness take many forms. This option seeks to improve efficiency and effectiveness at the broad policy level, which will lead to improvements at the operational level when a wildfire occurs.

Impacts from a lack of adequate investment affect all agencies and organizations with wildland fire responsibilities—local, State, and Federal. There is a need to develop an integrated wildland fire management program that focuses efforts on developing and maintaining a field-level workforce and leaders.

Regional Actions for Option 3A

1. **Strive to ensure appropriate representation for all affected stakeholders.** NWCG (or another entity that represents all interests) should represent all stakeholders with wildland fire responsibilities. The current NWCG charter requires national wildland fire management responsibilities. Re-examine the membership of the NWCG Executive Board to ensure all wildland fire management stakeholders, including State and local representatives, are adequately represented.²

Scope: National, regional

Lead: NWCG

Collaborators: EACG Working Team and some States

Implementation Timeframe: Short term to initiate action, midterm completion

2. **Increase support for forest fire compacts.** The Northeast Region is well organized subregionally with four forest fire compacts that cover all 20 States and portions of Canada. They need to be supported and enhanced through training, incident assignment opportunities, and funding.

Scope: National

Lead: USFS, NASF

Collaborators: Federal agencies, tribes, State wildland fire protection agencies

Implementation Timeframe: Short term and continuous

Supplemental Information: Federal agencies are often part of each compact organization as associate members or ad hoc participants. Where Federal cooperators are not continuously engaged, efforts need to be made so that routine Federal engagement is the norm. Forest fire compacts have greatly increased available resources for fire management in the Northeast Region by increasing initial response capacity via training of State and local firefighters and by providing coordination, regular training, and academies.

3. **Strengthen role of the EACG.** Maintain and enhance the role of the Eastern Area Coordinating Group (EACG) and its Working Teams.

Scope: Regional

Lead: EACG Chair

Collaborators: All EACG representatives

Implementation Timeframe: Short term

Supplemental Information: This can be attained through Executive Leadership commitment to the EACG mission and the consequent commitment and engagement of their regional staff. Suggest commissioning a task group to help address this need.

² Completed. NWCG executive board membership was expanded in November 2013 via its new charter.

4. Identify and resolve policy barriers that prevent the effective sharing of wildland fire management resources.

Scope: National and regional

Lead: EACG Incident Business Working Team (IBWT)

Collaborators: National Geographic Area Coordination Center (GACC), tribes, forest fire compacts, and States

Implementation Timeframe: Midterm

Supplemental Information: For Federal agencies, the EACG IBWT meets yearly and as needed through the year to meet objectives. They can identify barriers and recommend solutions to the National Multiagency Coordinating Group. Issues for States and forest fire compacts include liability, authorities to hire and pay firefighters, qualifications systems and training, and interagency use of compact Incident Management Team members from Canada on Federal fires.

Task:

A. Develop templates for Cooperative Agreements that work for the Eastern Area. The national template is West centric and does not fit for most Eastern Area State Cooperators, especially those that do not border National Forest System lands.

Scope: National

Lead: NE RSC, NASF

Collaborators: NWCG, forest fire compacts, EACG

Implementation Timeframe: Midterm

5. Ensure radio communications for wildfire response agencies are effective, compatible, and stay current with the latest technologies. Resolve and simplify radio frequency use authorization and licensing processes for all agencies (local, State, Federal, and tribal); this issue needs recognition and action at the national level.

Scope: National, regional, State, tribal, local

Lead: National Radio Interoperability Work Group

Collaborators: Mostly USFS, DOI, FEMA communications representatives

Implementation Timeframe: Short term

Supplemental Information: State forestry agencies are being driven to convert to the 800 MHz system. The work around to fix this is going to require significant funding from States and Federal agencies. The EACG should address this interagency issue.

6. Improve preplanning for wildfire response. Ensure that wildfire response reflects the National Cohesive Wildland Fire Management Strategy by:

Tasks:

A. Initiating preseason meetings with partners to develop and/or update response plans, MOUs, MOAs, etc.

Scope: Regional, State, tribal, local

Lead: Regional, State, tribal, local fire agencies

Collaborators: NACO, local communities, etc.

Implementation Timeframe: Midterm

B. Develop prefire plans that consider the use of prescribed fire or mechanical treatments, where appropriate.

Scope: Local

Lead: Local fire agencies

Collaborators: Entities that carry out prescribed fire or hazard mitigation strategies

Implementation Timeframe: Midterm

C. Consider applicable land management objectives in prefire plans when deciding on appropriateness of suppression strategy and tactics.

Scope: Regional

Lead: Federal agencies, tribes, States

Collaborators: Fire managers, landowners, fire scientists

Implementation Timeframe: Long term

Supplemental Information: Consider private landowner values when responding to fires on private lands, tribal lands, or those in mixed ownership. Formulate prefire plans that identify specific needs with respect to archeological areas, sensitive cultural sites, environmentally sensitive areas such as eagle's nests, preservation areas, and landowner management plans.

7. Improve organizational efficiency and wildfire response effectiveness. Analyze areas for the appropriate level of response and wildland fire management needs, and determine the appropriate organizational structure to provide wildland fire response most efficiently and effectively regardless of ownership.

Scope: Regional

Lead: NE RSC

Collaborators: Entities with fire protection responsibilities

Implementation Timeframe: Midterm

Supplemental Information: Some approaches to implementing this action include:

- Addressing preparedness strategically for greater efficiency and cost effectiveness through better coordination and planning by multiple jurisdictions for primary protection responsibility. (For example: States protecting Federal land and Federal agencies protecting State land in some areas.)
- Developing a flexible and mobile response capacity, given changing fire seasons and fuel events.
- Conducting cost-benefit/efficiency analyses to determine the best level of protection for smaller parcels or land ownerships that have a low occurrence of wildfire.
- Using cooperative or reciprocal agreements/contracting/offsets or other instruments to provide the most cost-effective protection.
- Coordinating wildfire detection and response (i.e., interagency dispatch).
- Improving wildfire prediction capabilities at the State and local level.
- Coordinating fire danger ratings among agencies within a local area.
- Using technology and predictive tools to improve fire response.

8. Maintain and improve cost-share and grant programs that leverage local resources. Support local fire response organizations through programs such as Volunteer Fire Assistance as well as excess property programs and Federal grants.

Scope: National, regional

Lead: USFS Washington Office, NA S&PF, and Region 9

Collaborators: All CS partners

Implementation Timeframe: Long term

9. Improve and maintain access infrastructure (airports, roads, and bridges, etc.) that affect wildfire response to meet appropriate emergency response standards.

Scope: Regional

Lead: States, NE RSC

Collaborators: Counties, local communities

Implementation Timeframe: Midterm to long term

10. Streamline and enhance the interagency qualifications system for wildfire and all-hazard incidents to include cross training, crosswalk qualifications, and use of life experiences.

Scope: National

Lead: NWCG, DHS

Collaborators: All emergency response agencies

Implementation Timeframe: Midterm

11. Modify Federal and State legislation relating to wildfire and all-hazard incident response to:

- Clarify and enhance authorities
- Facilitate initial payment for movement of resources
- Simplify financial exchanges between agencies
- Minimize liability exposure when sharing resources

Scope: National

Lead: NASF

Collaborators: NWCG

Implementation Timeframe: Midterm

12. Obtain the latest information on climate change impacts in the Northeast to help wildfire response entities assess their response capacities.

Scope: Regional

Lead: NE RSC, USFS Research, EACG, GACC

Collaborators: All wildfire response agencies, local communities

Implementation Timeframe: Midterm

Supplemental Information: As identified in the Northeast Regional Risk Report (November 2012), some of the climate change impacts observed in the Northeast in the last decade include:

- Extended spring and fall fire seasons
- Increased likelihood of variable and extreme weather conditions
- Possible greater resistance to control at all levels; reliance on traditional barriers and techniques will be challenged
- Fires whose complexity and scope may accelerate more quickly



A weekend wildland fire training session with several partners. (Photo: Brad Simpkins, New Hampshire Division of Forests and Lands, September 2012)

Regional Option 3B: Increase the local response capacity for initial attack of wildfires.

Areas to Address

- Provide support to rural fire departments that includes wildland fire training, personal protective equipment, other equipment, and firefighter safety.
- Reduce redundant response and reallocate/increase resources to areas needing stronger initial attack.
- Use existing capacity—authorities, finances, liability, qualifications, and agreements or MOUs—more effectively.

Science Context for Option 3B

Figure 13 illustrates the various combinations of accidental wildland fire ignition density and relative number of buildings involved by county in the 20 States of the Northeast Region. Figure 14 provides background details that may be used to target efforts to protect structures and prevent wildland fire ignitions.

National Cohesive Wildland Fire Management Strategy Protect Structures and Target Ignition Prevention

- High Buildings Involved, High Accidental Ignitions
- High Buildings Involved, Low Accidental Ignitions
- Low Buildings Involved, High Accidental Ignitions
- Low Buildings Involved, Low Accidental Ignitions

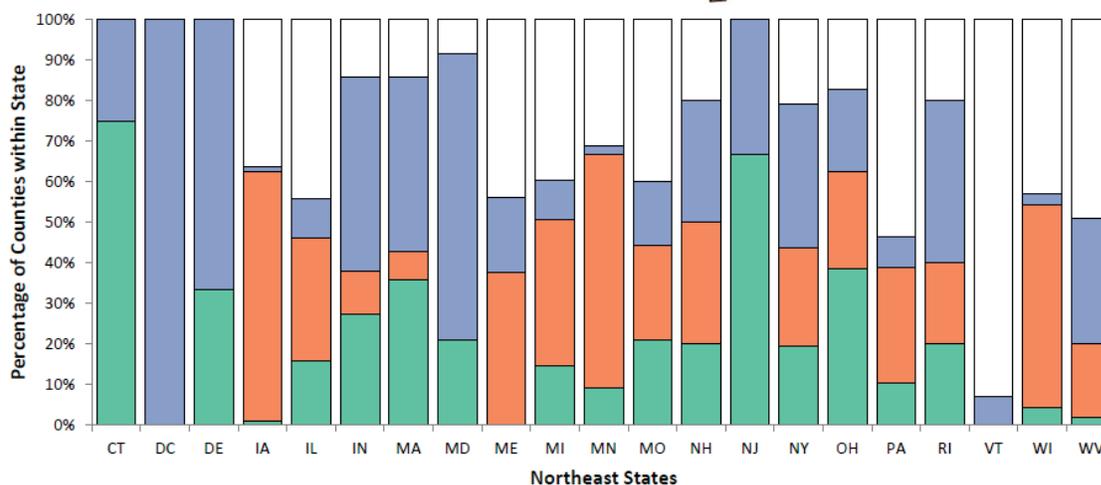
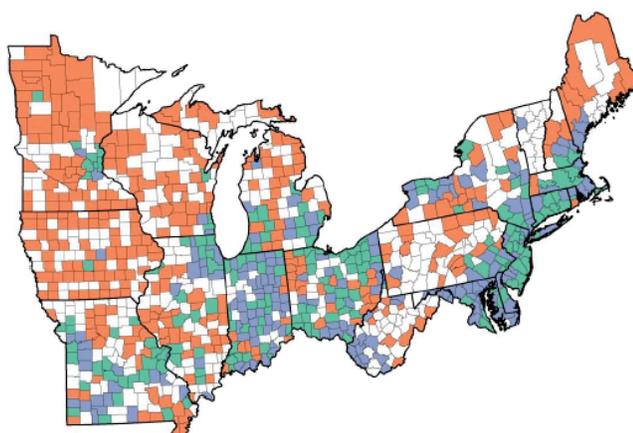


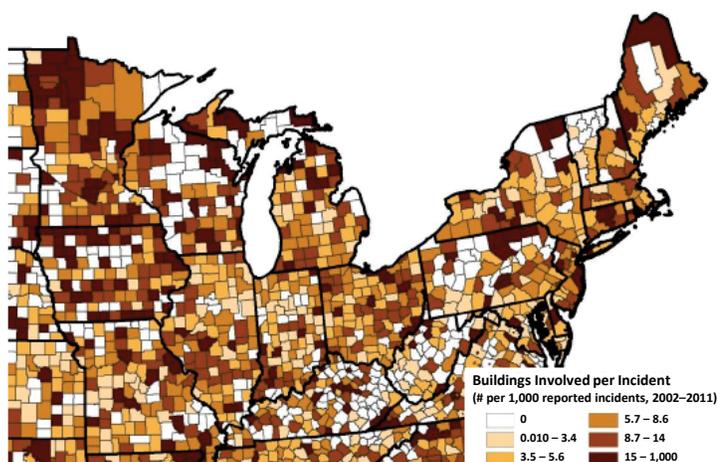
Figure 13. This map and graphic show the various combinations of ignition density and buildings involved by State in the Northeast. The green areas illustrate the areas of highest relative risk at the county level. A more detailed analysis of county-level data regarding specific causes, frequencies, and other factors would be needed before determining if, or what type of, response capacity or prevention actions might be needed.

**National Cohesive Wildland Fire Management Strategy
Protect Structures and Target Ignition Prevention**

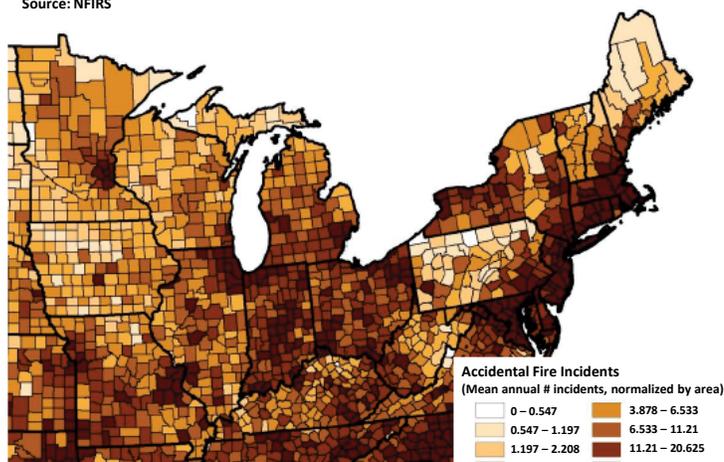
Short Explanation:

This response opportunity is most relevant to initial response, which is often the responsibility of a local fire department or agency. Data from NFIRS were examined and indices computed of the number of buildings involved per incident (map top right) and the relative frequency of reported accidental human-caused ignitions (map bottom right that shows mean annual accidental incidents).

The intersection of higher than normal values for these variables indicates that the number of buildings involved per reported incident is one of the few variables lacking a strong geographical pattern. In contrast, the relative frequency of accidental ignitions tends to be higher in the East. The intersection of these two variables has an interesting pattern that illustrates the widespread extent of the challenges in managing wildfire risk and offers a guide to matching structure protection with prevention efforts.



Source: NFIRS



Source: Combined Local, State, and Federal Reporting Systems

Figure 14. These maps explain the potential risks illustrated in figure 13 and describe some background details about possible opportunities to consider.

Option 3B Description

The Northeast Region has unique challenges in wildland fire management, particularly in initial attack response. Forest land in the Northeast is overwhelmingly in private ownership, with only 26 percent being publicly owned by Federal, State, or local governments. The majority of land is protected by local fire departments, not large land management agencies. These rural fire departments do not consistently have wildland fire training and adequate equipment. Additionally, where public and tribal lands do occur, land ownership is highly fragmented, resulting in many jurisdictions being responsible for initial and long-term fire suppression response.

Many of these jurisdictions go long periods without experiencing a significant wildland fire, even though they experience a high number of ignitions. These ignitions typically create the most damage within the first burning period, so often obtaining resources from outside the jurisdiction is less feasible. Maintaining or building capacity, particularly at the local level, is critical to the successful suppression of fires in the Northeast. Local fire departments play a key role in initial attack success in the Northeast. The better equipped and trained they are, the better chance the fire will be brought under control quickly and safely, thereby reducing the need and associated costs for State and Federal support for a larger fire.

Regional Actions for Option 3B

- 1. Assess local needs for initial attack capability and ensure local and tribal fire departments are prepared.**
There is a need to look closely at those local areas in the Northeast Region that have greater initial attack demands to assess the level of resources currently available for responding to probable wildfire events. Following this, an assessment is needed to determine how to best reallocate preparedness resources to those areas of additional need and advocate for increased investments to provide adequate initial attack capacity to those communities at greatest risk of wildfire.

Scope: Regional

Lead: Northeast RSC

Collaborators: All Northeast wildland fire agencies (Federal, State, tribal, local)

Implementation Timeframe: Short term

- 2. Increase participation of local fire departments in wildfire response.** Support local fire departments as integral to the suppression of wildfires across the Northeast by helping provide quality training, proper equipment and protective gear, and increased funding where needed.

Scope: Regional

Lead: USFS NA S&PF, States

Collaborators: All States, Federal and grant recipients

Implementation Timeframe: Midterm



Hayward, WI, tractor plow. (Photo: Wisconsin Dept. of Natural Resources, April 2007)

- 3. Improve the safety and capacity of local and tribal fire departments** to respond to wildfires through increased firefighter training, providing adequate personal protective equipment, and using NWCG-certified training to meet applicable regional or State standards.

Scope: Regional

Lead: USFS NA S&PF, States, BIA

Collaborators: All States, tribes, Federal and grant recipients

Implementation Timeframe: Short term: form team and educate VFDs; midterm: fully operational

Supplemental Information: Rural, tribal, and volunteer fire departments have received, and continue to receive, many fire grant funds from State and Federal entities. This action would establish an interagency team to assess and help rural FDs and VFDs with resource and training needs, efficiency in applying and meeting standards, and appropriateness of fund use.

- 4. Increase opportunities for firefighters to attain IMT qualifications.** Develop a work plan that includes planned experience opportunities to develop Incident Management Team (IMT) skills and to keep qualifications for established Federal, forest fire compact, and State IMTs current.

Scope: National and regional

Lead: NWCG

Collaborators: NWCG member agencies

Implementation Timeframe: Midterm; continuous

Regional Option 3C: *Further develop shared response capacity for extended attack and managing wildfire incidents with long-duration fire potential.*

Focus Areas

- Improve mobility of resources to respond to larger, longer fires; better utilize forest fire compacts.
- Additional resources can be used for backup to the initial response.

Science Context for Option 3C

Observations

Figures 15 and 16 provide some historical indications of where larger wildfires might occur in the future. Regional leaders and managers could use this information to assess whether resource capacity is adequate and optimally located to support an extended attack on a large, longer duration wildfire.

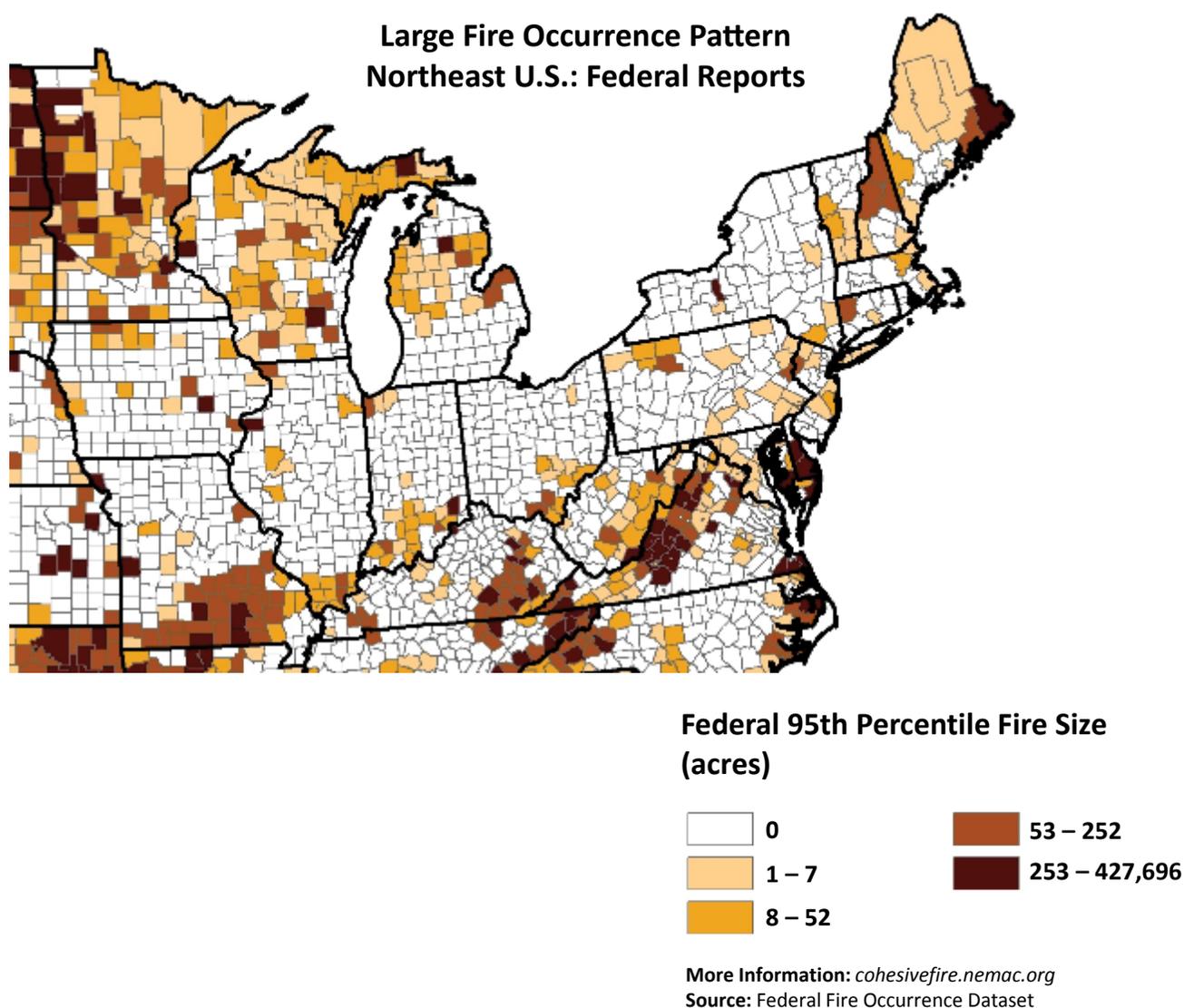
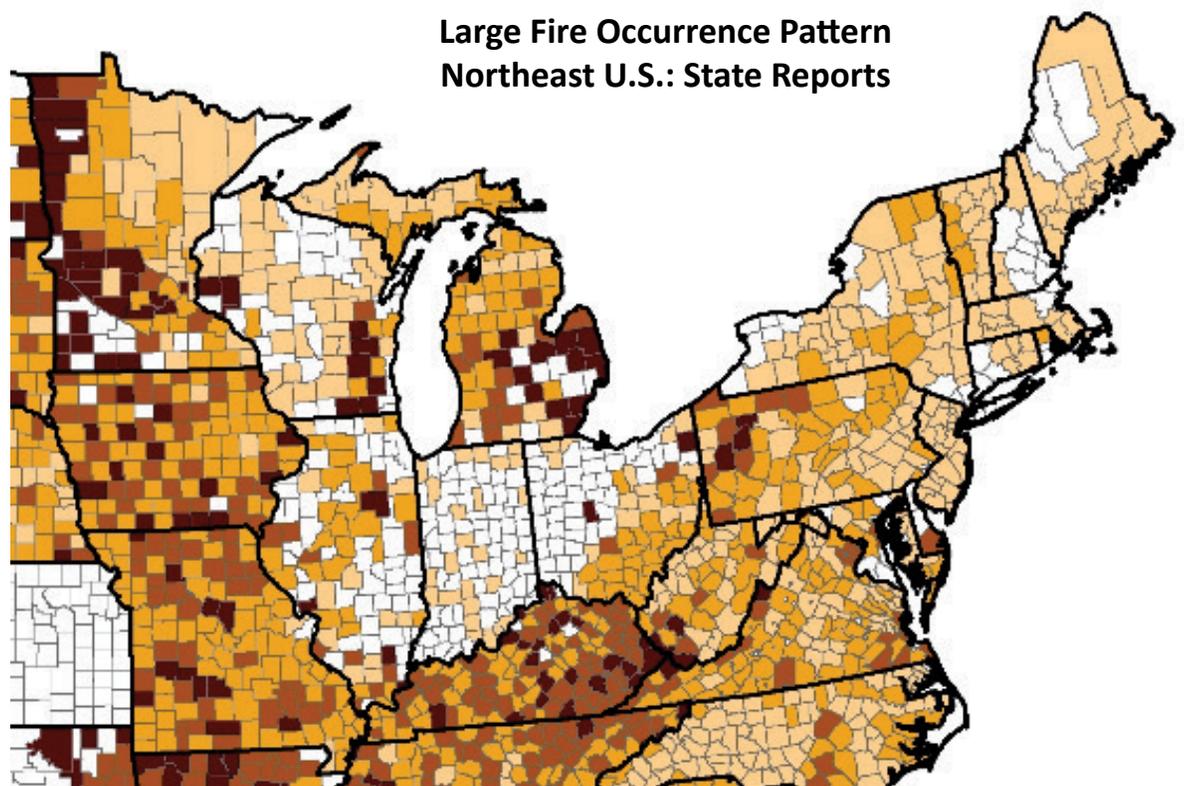


Figure 15. Distribution of larger, longer duration wildfires reported by Federal sources. This map shows the 95th percentile fire size reported in each county within the Federal fire occurrence data base. Given that Federal resources are generally dispatched to larger incidents, the map generally shows where larger fires have been reported.



**Large Fire Occurrence Pattern
Northeast U.S.: State Reports**

**State 95th Percentile Fire Size
(acres)**

	0.0 – 0.10		2.1 – 6.0
	0.11 – 0.75		6.1 – 46,000
	0.76 – 2.0		

More Information: cohesivefire.nemac.org
Source: National Association of State Foresters

Figure 16. Distribution of larger, longer duration wildfires reported by States from 2002–2011. Note that fire sizes indicated here are generally smaller than those from Federal records shown in Figure 15.

Option 3C Description

Sharing resources is standard operating procedure in the Northeast Region. It is an efficient and effective way to manage incidents while minimizing costs. Reductions in fire program budgets and fire staff, as well as the multijurisdictional nature of most incidents, have required an ongoing interagency response to incidents. Although the frequency of large incidents has been at historical lows over the last decade, incident size is overshadowed by smaller, very complex incidents and/or numerous incidents compressed into a short timeframe. These situations require the sharing of resources on a continual basis. In addition to the local sharing of resources among local, State, tribal, and Federal agencies within a State, the Northeast Region has well-established forest fire compacts that are used to share resources among States and Provinces. These governmental entities work well together to coordinate and dispatch resources over a broad geographic area and enhance resource sharing for efficient and effective response.

Regional Actions for Option 3C

- 1. Increase the use of forest fire compacts and mutual aid agreements for sharing qualified firefighter resources.** No single agency can afford to train and staff an adequate number of wildland firefighters to meet its needs during above-average wildland fire years. The most efficient way to achieve proper staffing is to rely on mutual aid from adjoining jurisdictions and cooperators. A more cost-effective way is needed to build partnerships, increase the use of forest fire compact authorities, and establish mutual aid organizations and agreements to manage wildland fire.

Scope: Regional

Lead: Northeast RSC, forest fire compacts, States

Collaborators: All regional wildland fire management agencies

Implementation Timeframe: Midterm

- 2. Improve the Federal response to extreme events (including wildfire) by performing rapid assessments of damage and working with affected communities to develop restoration scenarios.** Typically, an assessment project may involve many months of effort to prepare the data required by the analysis tools (models). Therefore, an important foundational activity is to organize the required data sets ahead of time for the whole Northeast Region (or a large area) so that the data can be readily used for damage assessment and projections. Besides forest inventory and biophysical data, it is important to prepare maps of existing values of ecosystem services. See the USFS Northern Research Station Strategic Foresight and Rapid Response Group Web page at http://www.nrs.fs.fed.us/units/foresight_response/.

Scope: Regional

Lead: USFS Northern Research Station

Collaborators: All regional wildland fire management agencies, FEMA

Implementation Timeframe: Midterm



Fall wildfire in West Virginia. (Photo: West Virginia Division of Forestry, September 2012)

Proposed Actions Needing National Solutions

1. **Work through nongovernmental organizations (NGOs) at the national level to develop a list of best practices and model zoning laws and development standards.**

Scope: National

Lead: FAC Coalition

Collaborators: Regions; NGOs that include the American Planners Association, builders associations, National Association of Counties, League of Cities, United States Conference of Mayors, and other organizations

Implementation Timeframe: Midterm

2. **Increase the capacity of our partners to assist or provide leadership in the Fire Adapted Communities initiative.**

Scope: National, tribal, State

Lead: National

Collaborators: States, local government, fire departments, homeowner associations

Implementation Timeframe: Short term

Supplemental Information: “Increase the capacity” refers to the concept of providing the necessary resources to partners for them to fully function in an assistance or leadership role in the Fire Adapted Communities initiative.

3. **Work with Congress and Federal agencies, such as FEMA and Housing and Urban Development, to encourage State and local governments to address hazardous fuel reduction and wildfire prevention needs in their housing development grant applications and awards.**

Scope: National

Lead: Federal agencies

Collaborators: Regional/State agencies

Implementation Timeframe: Midterm

Supplemental Information: Explore existing grant and funding opportunities. For example, FEMA predisaster mitigation programs could be enhanced to maximize fuels reduction across landscapes, emphasizing private lands. Federal grant information is available at <http://www.grants.gov>.

4. **Work with USDA Rural Development to target Community Facility loans to projects that help create markets for biomass in high-fire risk communities with a CWPP or that have Firewise Communities/USA® status.**

Scope: National

Lead: Federal agencies

Collaborators: State agencies

Implementation Timeframe: Midterm

5. **Develop a common system to characterize Fire Adapted Communities (FAC);** track individual community progress, prioritize investment, and facilitate the identification of trends across communities.

Scope: National

Lead: FAC Coalition

Collaborators: NWCG, Regional Strategy Committee Chairs, State fire agencies

Implementation Timeframe: Midterm

Supplemental Information: Considerations for characteristics of an FAC include existence of recognized Firewise Communities/USA® and Community Wildfire Protection Plan(s), involvement in Ready-Set-Go!, enactment of a mitigation/fire prevention ordinance, and/or implementation of a hazardous fuels reduction/mitigation project.

6. **Improve wildland fire reporting.** *Streamline and coordinate all wildland fire reporting procedures and systems to improve reporting accuracy for more effective decisionmaking and resource allocation.*

Supplemental Information: The view of most RSC partners is that the national reporting systems, such as the National Fire Incident Reporting System and the Fire and Aviation Management Web application site, have become too complex, burdensome, and time consuming for most wildland fire entities to maintain to expected entry standards. The result is that critical data is being lost or is inadequate for effective use by leaders and managers. There is a need for coordination at the national level to better integrate and simplify data entry processes to make it easier for local fire departments and others to provide important data needed for making policy and resource allocation decisions. The ongoing development of Integrated Reporting of Wildland Fire Information is expected to help address this issue.

Scope: National

Lead(s): NASF and NWCG

Collaborators: All National Strategy partners, esp. USFA, IAFC

Implementation Timeframe: Midterm

Monitoring and Accountability

Monitoring progress and accountability for accomplishing the actions in this Northeast Regional Action Plan is critical to its success. Monitoring provides an essential feedback loop that is the basis for continuous improvement. Monitoring also includes the opportunity to identify and incorporate new accomplishment data and scientific information as it becomes available.

Regularly reporting accomplishments maintains a continued focus on the three National Strategy goals, communicates progress nationally with other Cohesive Strategy Regions and among Northeast Region partners and stakeholders, and provides an opportunity to make course adjustments as work progresses.

The broad societal goals represented in this Action Plan are not simply met; they are a result of accomplishing many actions, activities, policies, investments, and priorities. It is important to track actions and tasks as they lead to intermediate outcomes and eventually long-term outcomes desired from the National Strategy.

Activities (represented by actions and tasks in this plan) are carried out through programs, projects, and collaborative agreements, and are tracked and assessed. They result in desired changes in the landscape, delivery of programs, and short-term progress in meeting wildland fire management objectives consistent with the three National Strategy goals.

Regional Communication Strategy

A Regional Communication Strategy has been developed to meet the following objectives:

- Identify and share Lessons Learned and examples of Success Stories related to the implementation of the National Strategy's three goals in the Northeast Region.
- Expand and maintain outreach to engage partners, stakeholders, and local communities in the development dialogue and collaborative solutions for making progress on the three goals.
- Improve understanding and maintain engagement within those organizations and agencies represented on the Northeast Regional Strategy Committee.
- Provide all partners and stakeholders with timely, accurate information on National Strategy progress in the Northeast Region.

In addition, a National Communication Framework was developed that focuses on communication to support National Strategy implementation. It is expected that, for the most part, implementation will be done by relatively small, local collaboratives within each Region. A major effort in the national and regional communication strategies must be to facilitate and support these local collaboratives by:

1. **Promoting and teaching effective collaboration.** Collaboration does not happen automatically. Even when a collaborative is made up of people who have good will, success depends on its members knowing how to effectively collaborate and communicate within a group and shared coordination. The communication strategies will provide resources to teach people relatively new to this process how to collaborate.
2. **Teaching people about fire in wildland environments.** Practiced wildland fire knowledge is rare among participants who seek to collaborate. Few know much about how fire behaves in wildland environments and how fire affects landscape resiliency and fire-adapted communities. Without basic wildland fire knowledge, it will be difficult for diverse groups of stakeholders to converge on shared perspectives and understanding needed to ultimately pool resources and take joint actions to carry out some part of the National Strategy. Regional and national communication strategies will educate stakeholders in the applied principles of fire behavior and fire effects in wildland environments.

3. **Informing the networks.** Stakeholder organizations, communities of place, and communities of interest are stitched together by informal webs of communication and influence. Virtually all significant decisions about collaboration will be strongly influenced by interpersonal relationships in those webs or networks. National and regional communication strategies will make provisions to a) monitor these networks to anticipate information needs, and b) deliver that information to be distributed and discussed by those stakeholder groups and communities.
4. **Informing interested parties.** Traditional media and social media will be used to provide up-to-date information about National Strategy implementation. Success stories and progress updates will be reported using stakeholder (including agencies) public affairs organizations. National and regional communication strategies will include provisions for frequent and regular updates through these media.
5. **Recording successes and evaluation.** National and regional communication strategies will make provisions for the collection of success stories and evaluation reports; store them in easily accessible databases; and market their availability to stakeholders, collaboratives, and interested parties.
6. **Using Web Sites.** The Web site serves as the library for communication material and as a portal to other information and education resources. The Web site will be marketed and regularly updated; social media such as Facebook and Twitter will be used to alert stakeholder additions to the Web site collections.

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Appendices

Appendix 1: Glossary

Barriers: Policy or administrative impediments that must be removed in order for the National Cohesive Wildland Fire Management Strategy to be successful.

Critical success factors: Policies, programs, agreements, partnerships, resources, and other factors that must be present for the National Cohesive Wildland Fire Management Strategy to be successful.

Fire community: A term that collectively refers to all those who are engaged in any aspect of wildland fire-related activities.

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

Fire management community: A subset of the fire community that has a role and responsibility for managing wildland fires and their effects on the environment.

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

Fire-adapted community: Communities of informed and prepared citizens that collaboratively plan and take 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.

Interface and Intermix: The wildland-urban interface (WUI) is composed of both interface and intermix communities. In both interface and intermix communities, housing must meet or exceed a minimum density of one structure per 40 acres (16 ha). Intermix communities are places where housing and vegetation intermingle. In intermix, wildland vegetation is continuous, more than 50 percent vegetation, in areas with more than 1 house per 16 ha. Interface communities are areas with housing in the vicinity of contiguous vegetation. Interface areas have more than 1 house per 40 acres, have less than 50 percent vegetation, and are within 1.5 mi of an area (made up of one or more contiguous Census blocks) over 1,325 acres (500 ha) that is more than 75 percent vegetated. The minimum size limit ensures that areas surrounding small urban parks are not classified as interface WUI. (Source: SILVIS Lab: http://silvis.forest.wisc.edu/maps/wui_main) (Accessed 20 May 2015)

Joint Fire Science Consortium: An organization that serves as a conduit between fire and resource managers of a geographic area with the Joint Fire Science Program (JFSP) Governing Board. They help identify research needs that can then be compiled and forwarded to the JFSP Governing Board for potential funding. The Lake States Fire Science Consortium is an example in the Northeast.

Joint Fire Science Program: This program funds scientific research on wildland fires and distributes results to help policymakers, fire managers, and practitioners make sound decisions.

Regime: A fire regime is the pattern, frequency, and intensity of wildland fire that prevails in an area.

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

Risk: A situation involving exposure to danger; the possibility that something unpleasant or unwelcome will happen.

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

Wildland-urban interface: The line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels. Describes an area within or adjacent to private and public property where mitigation actions can prevent damage or loss from wildfire. (NWCG Glossary of Wildland Fire Terminology: <http://www.nwcg.gov/pms/pubs/glossary/glossary.htm>) (Accessed 20 May 2015)

Appendix 2: Acronyms

BIA	Bureau of Indian Affairs
CONUS	Continental United States
CS	Cohesive Strategy (National Cohesive Wildland Fire Management Strategy)
CWPP	Community Wildfire Protection Plan
DHS	Department of Homeland Security
DOD	Department of Defense
DOI	Department of the Interior
EA	Eastern Area
EACG	Eastern Area Coordinating Group
EPA	Environmental Protection Agency
FAC	Fire Adapted Community
FAMWEB	Fire and Aviation Management Web Applications Web Site
FAP	Forest Action Plan
FD	fire department
FEMA	Federal Emergency Management Agency
FLN	Fire Learning Network
FLRMP	Federal Land and Resources Management Plan
FWS	U.S. Fish and Wildlife Service
GACC	Geographic Area Coordination Center
IAFC	International Association of Fire Chiefs
IBWT	Incident Business Working Team
IMT	Incident Management Team
ITC	Intertribal Timber Council
JFSP	Joint Fire Science Program
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
NA S&PF	Northeastern Area State and Private Forestry (USFS)
NACO	National Association of Counties
NAASF	Northeastern Area Association of State Foresters
NASF	National Association of State Foresters
NE	Northeast
NE RSC	Northeast Regional Strategy Committee
NEMAC	National Environmental Modeling and Analysis Center (UNC Asheville)
NF	National Forest
NFIRS	National Fire Incident Reporting System
NFPA	National Fire Protection Association
NGO	Nongovernmental organization
NIFC	National Interagency Fire Center

NMAC	National Multiagency Coordinating Group (a component of NIFC)
NPS	National Park Service
NRS	Northern Research Station (USFS)
NSAT	National Science and Analysis Team (for National Strategy)
NVFC	National Volunteer Fire Council
NWCG	National Wildfire Coordinating Group
RSC	Regional Strategy Committee
TNC	The Nature Conservancy
USGS	U.S. Geological Survey
USFA	U.S. Fire Administration
USFS	U.S. Forest Service
VFD	volunteer fire department
WERC	Wood Education and Resource Center (USFS NA S&PF)
WFEC	Wildland Fire Executive Council
WFLC	Wildland Fire Leadership Council
WRTC	Watershed Research and Training Center
WUI	wildland-urban interface/intermix

Appendix 3: References

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Appendix 4: Useful Links³

Fire Adapted Communities: <http://www.fireadapted.org>

Fire Learning Network: <http://www.conservationgateway.org/ConservationPractices/FireLandscapes/FireLearningNetwork/Pages/fire-learning-network.aspx>

Firewise Communities/USA® Recognition Program: <http://www.firewise.org>

Forests and Rangelands: <http://www.forestsandrangelands.gov> (**Note:** All key National Strategy documents are posted on this Web site)

International Association of Fire Chiefs: <http://www.iafc.org>

Intertribal Timber Council: <http://www.itcnet.org/>

National Association of Counties: <http://www.naco.org>

National Association of State Foresters, Wildfire Web page: <http://www.stateforesters.org/current-issues-and-policy/current-issues/wildfire>

National Fire Protection Association: <http://www.nfpa.org>

National Interagency Fire Center: <http://www.nifc.gov>

National Park Service: <http://www.nps.gov>

National Wildfire Coordinating Group: <http://www.nwcg.gov>

Northeast Regional Strategy Committee: http://www.forestsandrangelands.gov/strategy/Regional_Strategy_Committees/Northeast/index.shtml

Northeastern Area Association of State Foresters: <http://www.northeasternforests.org>

Ready, Set, Go!: <http://www.wildlandfirersg.org>

The Nature Conservancy: <http://www.nature.org>

U.S. Department of the Interior, Bureau of Indian Affairs: <http://www.bia.gov>

U.S. Department of the Interior, Office of Wildland Fire: <http://www.doi.gov/pmb/owf>

U.S. Fire Administration: <http://www.usfa.fema.gov>

U.S. Fish & Wildlife Service: <http://www.fws.gov>

U.S. Forest Service: <http://www.fs.fed.us>

U.S. Geological Survey: <http://www.usgs.gov>

³ All links accessed on 20 May 2015.

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Appendix 7: Acknowledgements

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National Fire Protection Association
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New Jersey Forest Fire Service
New York State Department of Environmental Conservation
Northeast Forest Fire Protection Compact
Northeast Forest Fire Supervisors
Northeastern Area Association of State Foresters
Ohio Department of Natural Resources
Pennsylvania Department of Conservation and Natural Resources
Rhode Island Department of Environmental Management
The Nature Conservancy
U.S. Department of Agriculture Forest Service

- Eastern Region
- Northeastern Area State and Private Forestry
 - Wood Education and Resource Center
- Northern Research Station

U.S. Fish and Wildlife Service
U.S. Geological Survey
U.S. National Park Service
Vermont Department of Forests, Parks and Recreation
West Virginia Division of Forestry
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