Landscape Scale Conservation in the Northeast and Midwest

The Foundations of Collaboration for the USDA Forest Service (Eastern Region, Northeastern Area, Northern Research Station, Forest Products Laboratory)[1] and the Northeastern Area Association of State Foresters.

Foreword

The Nation's forests are a fundamental part of our landscape, American identity, and the legacy we keep in trust for future generations. They provide clean air and water, recreational opportunities, jobs, and a host of forest products. With one-quarter of the Nation's forests, and nearly half (43 percent) of the Nation's population in the Northeast and Midwest 20-state region, "...conserving our forests is not a luxury, it is a necessity."[2] State Forestry Agencies and the USDA Forest Service cooperatively play critical roles in protecting and restoring America's forests across landscapes throughout a complex rural to urban land gradient. This cooperation lays the foundation for relationships with partners and private landowners, whose collaboration is critical for sustained stewardship of our forests on a landscape scale.

Landscape scale conservation requires that we all seek to understand how our distinctive roles, authorities, and collective responsibilities contribute to greater landscape goals. The USDA Forest Service, working with the National Association of State Foresters (NASF), identified three strategic themes to focus state and private forestry actions: *Conserve Working Forest Landscapes*, *Protect Forests from Harm*, and *Enhance Public Benefits from Trees and Forests*.[3] The signatory organizations of this position paper agree to focus their collaborative work by treating these themes as shared goals. Successful actions within these themes will address threats we all share, including a changing climate, excessive urbanization, uncontrolled fire, and destructive pests. Each organization has unique and shared capabilities in research, adaptive management, regional and local inventories and assessments, monitoring, planning, partnership development and private landowner assistance.

Landscape[4] may be defined by a combination of geography and resource issues or opportunities, and may be of varying scale and scope. They give rise to communities of interest and a family of local, state and federal resource agencies, tribes, and other landowners bound together by a mutual interest in the outcomes within the landscape.
Landscape Scale Conservation[5] is a framework to conceive, plan, finance, and manage projects with significant conservation value – ecological, economic and social. The broad concept of Landscape Scale Conservation includes three basic features:

1. There is a *regional* system of interconnected properties (lands) along a complex rural to urban gradient.
2. Actions are organized to achieve one or several specific *conservation objectives*.
3. Landowners and managers within a given conservation region *cooperate or collaborate* in some concrete fashion to achieve those objectives.

NASF articulated an *All Lands* vision for forests that recognizes the value of all forests and trees—rural and urban, public and private—in all states and U.S. territories.[6] A primary mechanism for enabling this *All Lands* vision across the landscape is each state's Forest Action Plan, which identify shared management priorities and meaningful outcomes. Secretary Vilsack's visionary statement holds that the USDA Forest Service shall not be viewed solely as an agency concerned with the fate of our National Forests, which encompass 7 percent of the Northeast and Midwest's forested lands, but must use its direct and indirect role to help steward all of America's forests, including state, tribal, private, and urban lands. The USDA Forest Service and the Northeastern Area Association of State Foresters (NAASF) recognize that public benefits as well as forest threats cross boundaries and are best addressed through integrated partnerships and infrastructure.

USDA Forest Service and NAASF Vision

The work of the USDA Forest Service and state forestry agencies is focused on maximizing the public benefits derived from trees and forests. The USDA Forest Service and state forestry agencies are positioned to serve people in this region through a cohesive, comprehensive Landscape Scale Conservation (LSC) approach to land management, protection, and wise use. We look forward to working with a wide range of willing partners in a process to design collaboration in pursuit of LSC. Using the concept of LSC, we seek to work seamlessly within the USDA Forest Service, state forestry agencies, and a broad array of partners at a landscape level to achieve conservation objectives consistent with the issues and priorities that define and identify those landscapes. **LSC shall be a foundational concept of USDA Forest Service and state forestry agency behavior and stewardship actions across the Northeast and Midwest.**

Foundations of Collaboration

The successful pursuit of LSC requires exceptional collaboration, openness to multiple goals and approaches, and shared purpose and responsibility. A driving principle of the LSC approach is to take advantage of existing programs and efforts, while lending focus to the efforts of willing partners to address issues on landscapes. The State Forest Action Plans, National Forest Land and Resource Management Plans, and outputs from the Northern Forest Futures Project are integral examples to emerging LSC opportunities. Five key aspects of successful collaboration, referred to here as Foundations of Collaboration, include Information; Shared Landscapes, Issues, and Investments; Risk Management; Communication; and Implementation.

Information is at the core of decision-making both at the ground and policy levels. High-quality information must be produced, gathered, synthesized, and shared to create the basis of informed decision-making. This information ranges from basic science and resource assessments, through adaptive management techniques and other applied science, to sharing information about management goals across ownerships and landscapes. Multiple scientific and management entities working together can better identify and fill knowledge gaps, and address public concerns and benefits.

Shared Landscapes, Issues, and Investments form focal points of intensive collaboration, integrating cutting edge science, assessment, adaptation, monitoring, and other appropriate

actions between the USDA Forest Service, State Foresters, and other partners. The intent is to bring shared expertise and resources to bear on existing priorities and efforts with ongoing investments in the short term, such as contributing to the development of statewide forest resource assessments and strategies that identify and address priority landscapes, and developing and applying new techniques in land management, and many others. In Shared Landscapes, the overarching goal would be to integrate these and other efforts where appropriate and possible, while fundamentally enhancing collaboration and public involvement and awareness throughout the region in the long term.

Risk Management involves the assessment and mitigation of various ecosystem stressors and effectively tests potential management responses at the landscape scale. Key tenets of adaptive management include accepting some risk for failure, monitoring and evaluating results, and learning from experiences. By focusing our collaborative efforts on specific portions of Shared Landscapes, we ensure that we efficiently test ideas and approaches, and thereby replicate wise use decisions through sound ecosystem management and protection.

Communication is a critical component of successful collaboration, allowing all parties to benefit from the synergy of working together: sharing lessons learned, supporting common priorities, and accommodating different management objectives. Documenting and effectively communicating the processes described above will better enable management recommendations and guides for decision making that have a documented basis in science, testing, collaboration, and future predictions. Outreach is crucial in educating the public about current and future ecosystem challenges, the options in meeting those challenges, and why it matters.

Implementation of activities on the ground is ultimately where success will be determined. The USDA Forest Service, States and other partners must identify and implement priority activities. Ultimately, success will be determined by how the elements work in concert to affect the provision of public benefits from forests in the Northeast and Midwest. Furthermore, the level of success will be correlated with the ability of the USDA Forest Service and States to do this work in a manner that builds on existing mechanisms and is done in concert with existing and new partners. The USDA Forest Service and state forestry agencies provide important resources, services, coordination, infrastructure, oversight, research, and professional expertise needed to manage and protect forests across all ownerships.

Context of USDA Forest Service Interest

The USDA Forest Service contributes to LSC as one of many interests in the intricate web of conservation. The USDA Forest Service is itself an internal community of interests and service. By creation of the USDA Forest Service more than a century ago, the agency is bound together by a fundamental mission of "*sustaining the health, diversity, and productivity of the Nation's forests and grasslands to meet the needs of current and future generations.*" The Eastern Region, Northeastern Area, Northern Research Station, and Forest Products Laboratory maintain complementary goals within unique roles in meeting the Agency mission across the 20 states of the Northeast and Midwest and the District of Columbia. Each has land stewardship at its core,

with authorities respectively focused on land management, landowner and community assistance, resource use, and basic and applied ecosystem science and technology development.

Context of State Forester Interest

The state forestry agencies are responsible for protecting and sustainably managing the forests of their respective states, including the District of Columbia. They accomplish this through direct action, guidance to other forest landowners, and through an array of partnerships.

In 2010, each state forestry agency nationwide completed a Forest Action Plan. These documents outline important issues, opportunities, and strategies for each State and meet the Cooperative Forestry Assistance Act (CFAA) (as amended by the 2008 Farm Bill) requirement for the States to be eligible for funds authorized by the CFFA. This Forest Action Plan process is intended to ensure that Federal and State programs target shared management priorities and achieve meaningful outcomes across the landscape.

As public servants, State Foresters are credible sources of information and provide leadership based on detailed knowledge of local economies, forest resources, partners, and landowners. State forestry agencies provide essential "boots on the ground" infrastructure that includes delivering technical and financial assistance to landowners, administering Best Management Practices (BMP) programs and forest practices regulations, implementing conservation tools such as easements, and providing wildland fire suppression and invasive species control. State Forests and state tree seedling nurseries supply essential elements for landscape-scale conservation. Most importantly, State Foresters foster partnerships with citizens and local, regional, and national stakeholders that multiply the efforts of all resource professionals and conservation experts. The infrastructure provided and supported by state forestry agencies is essential for maximizing public benefits from forests and meeting emerging challenges.

Statement of Intent

The USDA Forest Service and State Foresters in the Northeast and Midwest and the District of Columbia will cooperate in the pursuit of LSC with other federal, state, tribes, and local agencies, private landowners, and non-profit organizations to:

"...foster a greater appreciation in this country for our forests and that all Americans, regardless of where they live, see the quality of their lives and the quality of their forests as inseparable."[7]

Tom Vilsack, Secretary of Agriculture

The signatories and key leadership staff commit to an annual working session to review collaborative accomplishments for the past year, set collaborative priorities for the coming year, and reaffirm commitment to the LSC principles by re-signing this document.

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Regional Forester, Eastern Region

7/15/14
Date

Tony L. Ferguson
Director, Northeastern Area

7/15/14
Date

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Paul Tauke
President, Northeastern Area Association of State Foresters

7/15/14
Date

[1] Eastern Region – National Forest System: Protection and management of natural resources on National Forest System lands; Northeastern Area – State and Private Forestry: Community assistance and cooperation with State and local governments, forest industries, and Indian tribes, and private landowners to help protect and manage non-Federal forest and associated range and watershed lands to improve conditions in rural and urban areas.); Northern

Research Station – Research and Development: Working at the forefront of science on all aspects of forestry, rangeland management and forest resource utilization; Forest Products Laboratory – Research and Development: Promoting healthy, resilient forests and forest-based economies through the efficient, sustainable use of wood resources [Source: http://www.fs.fed.us/aboutus/meetfs.shtml].

[2] Vilsack, Tom. USDA Secretary. Speech in Seattle, Washington, "National Vision for America's Forests." August 14, 2009.

[3] USDA Forest Service and National Association of State Foresters. "Redesign Components: National Themes." September 10, 2007. [Source: http://www.fs.fed.us/spf/redesign/redesign-themes.pdf].

[4] Levitt, James N. Grappling with the Green Matrix. Land Lines: January 2004, Volume 16, Number 1.

[5] Ericson, Peter. Conservation on the Edge: Landscape Scale Conservation at Colorado's Urban-Rural Interface. Massachusetts Institute of Technology, Department of Urban Studies and Planning. 2004.

[6] National Association of State Foresters. "All-Lands Policy Platform: A Seven-Point Plan for America's Forests." [Source: http://www.stateforesters.org/all_lands_policy_platform].

[7] Vilsack, Tom. USDA Secretary. Speech in Seattle, Washington, "National Vision for America's Forests." August 14, 2009.

Appendix A: Partnerships in Landscape Scale Conservation in the Northeast and Midwest

This appendix documents the commitment of partners in Landscape Scale Conservation efforts in the Northeast and Midwest. The signatories of Landscape Scale Conservation in the Northeast and Midwest[8] eagerly anticipate expanding collaboration in pursuit of landscape scale conservation, consistent with the issues and priorities that define and identify those landscapes. Numerous mechanisms exist to formalize partnerships, such as memoranda of understanding, interagency agreements, research joint venture agreements, participating agreements, cooperative agreements, and others. These may broadly establish intention to work together collaboratively to meet jointly held landscape goals, or more specifically identify multiparty projects with explicit conservation objectives, roles, landscapes, and support.

[Partner Name(s)]
[One paragraph description of partnership activities]

Geographic Area of Focus: [locations]

Partnership Mechanism: [MOU, etc.]

[Partner Name(s)]
[One paragraph description of partnership activities]

Geographic Area of Focus: [locations]

Partnership Mechanism: [MOU, etc.]

[8] USDA Forest Service: Eastern Region, Northeastern Area, Northern Research Station, Forest Products Laboratory; and the Northeastern Area Association of State Foresters (NAASF).

Appendix B: Contributions to Landscape Scale Conservation in the Northeast and Midwest

The USDA Forest Service and NAASF work closely together on several landscape scale conservation projects. The three strategic themes identified by the USDA Forest Service and the National Association of State Foresters - *Conserve Working Forest Landscapes*, *Protect Forests from Harm*, and *Enhance Public Benefits from Trees and Forests*[9] – serve as broad goals for these collaborative projects. This appendix describes these three goals and outlines each signatory's unique contributions to LSC through the framework of the Foundations of Collaboration.

Landscape Scale Conservation Goals

From the USDA Forest Service and National Association of State Foresters' "Redesign Components: National Themes":

Conserve Working Forest Landscapes

Actions under this theme are directed at: 1) reducing the rate of conversion of forested landscapes to other uses; and 2) informing decisions about which landscapes should be conserved as working forests to optimize public benefits for current and future generations.

Key strategies under this theme include: 1) forest products, woody biomass, and environmental services market development; 2) tax policies, conservation easements, and county planning tools; and 3) facilitating other social and economic incentives to encourage retention of important forested landscapes.

Protect Forests from Harm

Actions under this theme are directed at reducing threats to and restoring forest health and productivity associated with: 1) uncharacteristic wildfire; 2) insects and disease; and 3) invasive species.

Key strategies under this theme include: 1) restoration of fire adapted forests; 2) monitoring, assessment, and treatment of forest insect and disease pathogens; and 3) prevention, early detection, and rapid response to eradicate or control invasive species.

Enhance Public Benefits from Trees and Forests

Actions under this theme are directed at: 1) enhancing the suite of public benefits associated with trees and forests such as: clean air and water, fish and wildlife habitat, open space, outdoor recreation opportunities, renewable materials (e.g., building materials, paper products, bio-energy, medicinal products), economic attributes (e.g., employment, reduced heating/cooling costs, enhanced property values, reduced water storage and treatment costs, reduced flood risk and impacts, reduced fire suppression costs and impacts), and climate change buffering; and 2) reducing the risk to communities from uncharacteristic wildfire.

Key strategies under this theme include: 1) strategic use of trees and forests in urban environments; 2) watershed planning; 3) enhancing community fire protection capabilities; and 4) linking environmental health with community well-being.

Mission Area Contributions through Collaborative Foundations

Each of the USDA Forest Service units (Eastern Region, Northeastern Area, Northern Research Station, and Forest Products Laboratory) and the Northeastern Area Association of State Foresters (NAASF) is able to address and contribute differently to LSC through the five Foundations of Collaboration based on mission, authorities, and individual strengths. This increases the value of the collaboration, providing opportunities for synergy and innovation. Listed below are the contributions each entity is best able and suited to share. Through time, the collaboration will result in new processes, opportunities, and accomplishments to be monitored, captured, and replicated as appropriate.

Eastern Region – National Forest System (NFS)

The Eastern Region is tasked with directly managing the nearly twelve million acres of NFS lands in the Northeast and Midwest on behalf of the American people. The NFS mission area has traditionally focused on the lands it manages; however, more recent leadership has provided authorities, tools, and direction to reach beyond National Forest boundaries to recognize, understand, and act to meet the needs of local communities and to share in the restoration of landscapes with states, partners, and neighbors. The Eastern Region has innumerable capabilities to establish working agreements with states, organizations, and individuals to meet overlapping goals. This has resulted in National Forests working to eliminate invasive species, restore watersheds, create visions for recreation and tourism, and share in recovery of threatened and endangered species. Contributions to LSC through the Foundations of Collaboration include:

Information: We will continue to improve our corporate information systems to facilitate assessments at multiple scales and across multiple ownerships. We look to other deputy areas and states to provide information that is useable to conduct landscape assessments needed for national forest planning beyond our boundaries. Results of landscape analyses that affect other deputy areas and states are shared as appropriate and applicable.

Shared Landscapes, Issues, and Investments: We manage for public benefits and ecosystem services at the larger landscape level, using both traditional approaches of managing public lands for the greatest good and new approaches, such as providing technical and financial support through interest-based public, tribal, and private collaboration.

Risk Management: Using the best available sciences, the Eastern Region works with federal, state and academic researchers to create Living Laboratories in which adaptive management is aggressively pursued at multiple spatial scales and at all levels of management. These Living Laboratories contribute to ecological, social, and economic benefits identified through assessment, planning, and collaboration. We also work with NRS to establish and test monitoring protocols for long-term, broad-scale ecosystem restoration.

Communication: Connecting citizens to the land involves building greater capacity to engage citizens in our work by using partnerships, agreements, budgets, training, and management to get work done. We link potential partners and volunteers to high priority programs. We will continue to increase communication, education, and outreach efforts to make National Forest users more informed about LSC.

Implementation: The Eastern Region strategically invests in the most critical landscape scale conservation actions at our National Forests. In addition to directly managing NFS lands, the National Forests conduct assessments beyond boundaries to identify their distinctive role and niche across the landscape. Collaboration with many other owners and interests take place to meet desired ecological outcomes shared by State Foresters and other interested and affected parties.

Northeastern Area (NA) – State and Private Forestry (S&PF)

The Northeastern Area works with state forestry agencies and others to address one of the largest concentrations of privately-owned forests in the world: more than three-quarters of the 170 million acres of forestland in the Northeast and Midwest are privately owned. NA's suite of programs provides technical and financial assistance and forest protection from pests and fire to non-federal forest landowners. A boundary-less approach is critical to sustain these forestlands and their benefits enjoyed by all Americans, particularly the forty-three percent of the Nation's population who call this region home. Several components of S&PF's Redesign are intended to shape and influence forest land use on a scale and in a way that optimizes public benefits from trees and forests for current and future generations. Contributions to LSC through the Foundations of Collaboration include:

Information: The sharing of knowledge, tools, and innovations for practical application in forest management is a key priority for the Northeastern Area. NA works with states and other partners to share information and provide technical assistance and support through the suite of S&PF programs, including Forest Stewardship, Forest Legacy, Urban and Community Forestry, Forest Health Protection, State Fire Assistance, and others.

Shared Landscapes, Issues, and Investments: The State Forest Action Plans are focused on priority issues and places along a rural to urban continuum, regardless of jurisdictional and ownership boundaries. They serve as the foundational drivers for S&PF program delivery and organizational integration among all land management entities. NA works with NAASF to invest strategically and optimize return on investment, with full disclosure and opportunities to economize and share resources.

Risk Management: NA's Forest Stewardship Program ties individual landowners to the larger landscape. Working collaboratively across private ownerships to address forest health, hazard mitigation, water quality, and other ecosystem stressors identified as priority issues in State Forest Action Plans provides effective landscape scale forest planning and management and strengthens the public benefits derived from healthy, productive forestland.

Communication: The NA Director works in true partnership and collaboration with State Foresters of the Northeast and Midwest to share in decisions affecting the state forestry

agencies. The State Foresters are integrally involved in the Northeastern Area decisions that affect them directly and indirectly, including funding allocation formulas, changes in funding levels, competitive grant project selection, and program direction and emphases.

Implementation: NA provides coordination in shared landscape planning and implementation with state forestry agencies, NRS, and the Eastern Region, focusing on non-federal forest lands for program delivery oversight. In addition to core programs, competitive project proposals from state forestry agencies are solicited by NA. The competitive process encourages collaboration and innovation in landscape approaches to achieve meaningful outcomes on priority issues and threats.

Northern Research Station (NRS) – Research and Development (R&D)

By the nature of the work in the R&D mission area, discovery and technology transfer reaches across all lands and all ownerships – from the natural to the rural to the urban environment. NRS is one of the largest forest science organizations in the world, with active research in all major components of forest ecology. Contributions to LSC through the Foundations of Collaboration include:

Information: NRS produces, synthesizes and shares high-quality information from numerous sources to create the basis of informed decision-making and effective land stewardship. Findings from NRS's science and technology development actions enable other landscapes and partnerships to contribute to community health and wealth. Management recommendations and guides for decision making will continue to have a documented basis in science, testing, collaboration, reasoning, and predictions.

Shared Landscapes, Issues, and Investments: NRS will focus science and technology development efforts on landscapes, targeting place-based conservation. The landscapes shall be delineated from a set of agreed to criteria and be focal points for addressing issues through a concentration of available resources that integrate leading-edge science, including assessments, adaptation tactics, monitoring, prediction models, and other appropriate actions. Science and technology development in these landscapes will be collaborative in nature and utilize past and current work. Using landscapes enables the investments in science and technology development to be more focused to better meet the needs of land managers and others being served. Effective and efficient solutions will be replicated to other landscapes.

Risk Management: Focusing on different landscapes with varied conservation issues enables R&D to more effectively test potential management responses, more efficiently focus work, and develop new alliances. NRS works with partners to develop appropriate monitoring protocols and systems designed to provide rapid feedback supporting adaptive management. Fully understanding shortfalls ensures that we replicate good forest stewardship decisions.

Communication: NRS is committed to effective science delivery through multiple platforms. Traditional outlets include publication of scientific results and recommendations in general technical reports, manager's guidebooks, and peer-reviewed scientific journals. General information is released through pamphlets, brochures, and circulars. NRS also supports technology transfer through websites, webinars, videoconferences, and same-time-same-

place conferences, workshops, and seminars.

Implementation: NRS provides more than just decision support tools – it provides people. NRS creates information necessary for science-based management, and then seeks to work with land managers in the conversion of science to management. This outreach takes place by individual scientists and through specific groups within NRS created for that purpose.

Forest Products Laboratory (FPL) – Research and Development (R&D)
A critical aspect of the FPL's work is helping create healthy, sustainable forests that are more resilient to disturbances through science and technology development in biomass uses along the rural to urban land gradient. Cost-effective biomass uses improve the economy, creating jobs and contributing toward higher value, high volume markets for wood products.

Information: FPL produces, synthesizes, and shares high-quality information from numerous sources to create the basis of informed decision-making and effective land stewardship through improved resource utilization. Findings from FPL's science and technology development actions enable other landscapes and partnerships to contribute to environmental health and community stability. Improved resource use recommendations and guides for decision-making will continue to have a documented basis in science, testing, collaboration, reasoning, and predictions.

Shared Landscapes, Issues, and Investments: Through focused investments on designated landscapes, the FPL emphasizes a wide-range of cost-effective biomass uses to accelerate forest restoration. In addition to hazardous fuels removal, the FPL encourages the development and expansion of high value markets and applications, such as wood-based nanotechnology, green building construction, and biomass for energy.

Risk Management: Focusing on different landscapes with varied conservation issues enables R&D to more effectively test potential management responses, more efficiently focus work, and develop new alliances. FPL works with partners to develop and expand markets for biomass uses, which will be fundamental to the success of reducing risks from disturbances on forestlands.

Communications: FPL encourages all parties to benefit from its work by sharing science and technology development efforts with partners, researchers, industry professionals, and the general public through a variety of platforms.

Implementation: FPL provides world-class scientific expertise across several themes addressing improved resource utilization. FPL creates information necessary for science-based management, and then works with a wide range of partners to deploy new technologies. This outreach takes place by individual scientists and through specific groups.

Northeastern Area Association of State Foresters
The State Foresters from the 20 Northeastern and Midwestern states and the District of Columbia collectively provide a direct link to 5 million family forest landowners and nearly 23 million acres of state forest land. They serve as the delivery mechanism for a suite of federal programs

aimed at protecting, conserving, and enhancing the forest resources across the region. Program delivery is guided by the State Forest Action Plans, which focus on-the-ground activities by states, partners, and the USDA Forest Service. Contributions to LSC through the Foundations of Collaboration include:

Information: Forest Action Plans provide State Foresters and partners with a powerful, collaboratively developed tool to assess the forest resources across all ownerships in each state. Forest Action Plans can help inform the management of public and private lands and identify data gaps that warrant further investment. These plans incorporate data and information from many sources and incorporate components of State Wildlife Action Plans, Community Wildfire Protection Plans, and other state and partner planning documents.

Shared Landscapes, Issues, and Investments: State Foresters work across a landscape from the largest metropolitan areas to some of the most rural forested areas in the country. Partners – whether NGOs, other state agencies, or others – are an integral part of successful program delivery and strategic thinking. State Foresters will continue to focus federal, state, and other resources in a strategic manner on landscapes identified as high priority.

Risk Management: State Foresters are front line in providing technical advice to landowners on the appropriate mitigation to any potential ecosystem stressors. A new set of comprehensive performance measures has been developed to monitor and evaluate the success of state forestry programs over time. These measures, along with information captured over time by a national assessment, provide states and others with valuable feedback on program delivery effectiveness and necessary adjustments.

Communication: Working through NAASF's committees, state forestry agency staff provides a valuable conduit of information with NA, NRS, and the Eastern Region, as well as with a wide range of partners and other state agencies. In addition, the NAASF Executive Committee serves as an executive-level forum for NAASF leadership to discuss priority investments and program direction with the USDA Forest Service. State Foresters and their staff also provide direct communication with private landowners.

Implementation: State forestry agencies have the primary role in implementing the broad suite of federally funded programs aimed at maximizing public benefits from private forests. State staffs serve as a direct connection to family forest owners, communities and non-governmental organizations. Additionally, state forestry or other state agencies implement regulatory programs to address water quality, forest practices, invasive species, and other key issues.

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[9] USDA Forest Service and National Association of State Foresters. "Redesign Components: National Themes." September 10, 2007. [Source: http://www.fs.fed.us/spf/redesign/redesign-themes.pdf].

Appendix C: Select Examples of Landscape Scale Conservation in the Northeast and Midwest

Outlined below are several key projects that illustrate how the partners are working together to further landscape scale conservation.

Central Appalachian Spruce Restoration Initiative

The Central Appalachian Spruce Restoration Initiative (CASRI) is a partnership of diverse interests who share the common goal of restoring the red spruce-northern hardwood ecosystem across the high-elevation landscapes of the Central Appalachians. CASRI is comprised of private, state, federal, and non-governmental organizations that recognize restoration of this ecosystem as imperative for maintaining the ecological integrity of the Central Appalachians. CASRI envisions a functioning red spruce-northern hardwood forest ecosystem restored across portions of its former range on both public and private lands, with the scale, connectivity, maturity and other features that provide habitat to sustain and enhance the viability of the many species and natural communities dependent on this ecosystem.

The CASRI partnership began as a small working group that was formed to conserve the endangered (and since de-listed) West Virginia northern flying squirrel (Glaucomys sabrinus fuscus), which depends on the red spruce-northern hardwood ecosystem. The red spruce-northern hardwood ecosystem, which supports many species that are rare in the region, was decimated by exploitative logging a century ago and is now making a slow recovery. The partnership grew to address endangered species needs and has since broadened into a multi-faceted ecosystem restoration effort that seeks to address such issues as plant diversity, wildlife diversity, climate change adaptation, spruce regeneration, recreation, aesthetics, pollinator recovery, public education and interpretation, soils, private land timber restoration, and connectivity between public and privately owned habitats.

Geographic Area	Central Appalachia in WV, including the Monongahela National Forest
Partners	Appalachian Mountain Joint Venture, Appalachian Regional Reforestation Initiative, Appalachian Landscape Conservation Cooperative, Canaan Valley National Wildlife Refuge, Green Forest Works, Natural Resources Conservation Service, The Mountain Institute, The Nature Conservancy, Trout Unlimited, U.S. Fish and Wildlife Service, USDA Forest Service – Northern Research Station and Monongahela National Forest, West Virginia Division of Natural Resources, West Virginia Division of Forestry, West Virginia Highlands Conservancy, West Virginia State Parks, West Virginia University
Website	www.restoreredspruce.org

Primary Contact Kent Karriker, USDA Forest Service – Monongahela National Forest, kkarriker@fs.fed.us

Chesapeake Bay Program

The Chesapeake Bay Program demonstrates a long-standing intensive collaboration among federal agencies, tribes, six states, local governments and scores of land trusts, river organizations, and non-profit groups. Their shared, documented vision includes swimmable, fishable waters; healthy populations of land and aquatic wildlife; habitats that are resilient to development and climate change; abundant forests and thriving farms; conserved lands that protect natural and cultural heritage; ample access to outdoor resources; and widespread citizen stewardship of these exceptional resources.

The Bay Program's goal teams, workgroups, and committees facilitate partner collaboration, information sharing, and goal setting. These groups allow partners to share data and best practices, and report on progress toward restoration goals. Partners use their own resources to implement Bay restoration and protection activities; working together allows partners to use their limited resources more effectively. The seven Bay jurisdictions set and meet milestones every two years in order to put into place all restoration measures necessary for a restored Bay by 2025.

Forests are the dominant land cover in the Bay watershed, the largest estuary in North America, and they are the most protective of water quality. Since 1990, the USDA Forest Service has been coordinating forestry contributions toward Bay goals with a myriad of partners. With 90 percent of the land in private ownership, strong partnerships and collaboration are essential to demonstrating how forest protection, restoration, and stewardship contribute to Chesapeake Bay restoration. One accomplishment has been the addition of nearly 8,000 miles of riparian forest buffer.

Geographic Area Chesapeake Bay watershed, covering DC and parts of DE, MD, NY, PA, VA, WV

Partners ***Principals:*** Chesapeake Bay Commission, Commonwealth of Pennsylvania, Commonwealth of Virginia, District of Columbia, Pennsylvania Bureau of State Parks, State of Maryland, U.S. Environmental Protection Agency
Headwater states: Delaware Division of Parks and Recreation, State of Delaware, State of New York, State of West Virginia, West Virginia Department of Education
Federal agencies: Cooperative State Research Education and Extension Service, Farm Service Agency, National Arboretum, National Ocean Service, National Oceanic and Atmospheric Administration, National Park Service, National Weather Service, U.S. Coast Guard, U.S. Department of Agriculture (USDA), U.S. Department of Defense, U.S. Department of Education, U.S. Federal Highway Administration, U.S. Fish and Wildlife Service, USDA Forest Service, U.S. Geological Survey (USGS), USDA

Natural Resources Conservation Service, USGS Chesapeake Bay
Academic: Academy of Natural Sciences, Chesapeake Research Consortium, College of William and Mary, Cornell Cooperative Extension, Cornell University, Delaware Sea Grant, Dickinson College, Hood College, Maryland Sea Grant, Old Dominion University, Pennsylvania Sea Grant, Pennsylvania State University, Smithsonian Environmental Research Center, Smithsonian Institution, University of Delaware, University of Maryland, University of Maryland Center for Environmental Science (UMCES), UMCES Chesapeake Biological Laboratory, UMCES Horn Point Laboratory, University of Pennsylvania, University of Virginia, Virginia Cooperative Extension Office, Virginia Institute of Marine Science, Virginia Polytechnic Institute and State University, Virginia SeaGrant Program, West Virginia University
Non-profit: Alice Ferguson Foundation, Alliance for the Chesapeake Bay, American Forests, Anacostia Watershed Society, Arlington Echo Outdoor Education Center, Biohabitats, Cacapon Institute, Center for Chesapeake Communities, Center for Watershed Protection, Chesapeake Bay Foundation, Chesapeake Bay Trust, Chesapeake Conservancy, DC Environmental Education Consortium, Ducks Unlimited, Earth Conservation Corps, International City/County Management Association, Interstate Commission on the Potomac River Basin, Maryland Association for Environmental and Outdoor Education, Metropolitan Washington Council of Governments, National Fish and Wildlife Foundation, National Geographic Society, National Wildlife Federation, NatureServe, Parks & People Foundation, Pennsylvania Institute for Conservation Education, Potomac Conservancy, Rivanna River Basin Commission, Student Conservation Association, Upper Susquehanna Coalition, Watershed Stewardship Inc.
Other: Anne Arundel County Department of Public Works, Hampton Roads Sanitation District, Northern Virginia Regional Commission, Tetra Tech, Versar

Website www.chesapeakebay.net/

Primary Contact Sally Claggett, USDA Forest Service – Northeastern Area
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Climate Change Response Framework

Two major challenges stand out among the many hurdles to successful climate adaptation in ecosystems: (1) overcoming uncertainty paralysis to move from concept to action, and (2) expanding from site-level focus to landscape application. The Climate Change Response Framework (www.forestadaptation.org) addresses these challenges by demystifying scientific information on climate change and helping forest management organizations and professionals identify and implement practical solutions for enhancing forest adaptation to changing conditions. It does this through training seminars and workshops for land managers, model

simulations tailored to forest management, wide-scale coordinated approaches to vulnerability assessment, publication of adaptation strategies and an adaption workbook, and establishment of real-world examples of adaptation planning and on-the-ground implementation.

The Framework community includes over 100 science and management groups, dozens of whom have worked together to complete six ecoregional vulnerability assessments covering nearly 135 million acres. More than 75 forest and urban forest adaptation strategies are being linked through the Adaptation Workbook process to on-the-ground adaptation tactics being planned and employed in more than 50 real-world adaptation "demonstrations." These diverse adaptation demonstrations range from tens to tens of thousands of acres. Common to all the demonstrations is a robust, structured approach to adaptation planning that carefully emphasizes solutions. Large landscape, coordinated, climate-informed management will most effectively emerge from a community of practitioners that has actively planned and implemented adaptation at smaller scales before applying those lessons and experience to working across boundaries at larger scales. The Framework is actively creating examples, fostering communication and trust, and working toward larger solutions.

Geographic Area Northeast and Midwest forests in MN, WI, MI, MO, IL, IN, OH, WV, MD, VT, NH, ME, MA, CT, RI, PA, DE, NJ, NY, and Chicago Metro

Partners

***Federal*:** USDA Forest Service – Northern Research Station, Northeastern Area State and Private Forestry, and Eastern Region (RO; Allegheny, Chequamegon-Nicolet, Chippewa, Green Mountain, Hiawatha, Hoosier, Huron-Manistee, Mark Twain, Monongahela, Ottawa, Shawnee, Superior, Wayne, and White Mountain National Forests); National Park Service; Bureau of Indian Affairs; Natural Resources Conservation Service; United States Geological Survey; US Fish and Wildlife Service; DOI Landscape Conservation Cooperatives; Northeast Climate Science Center
***State natural resource agencies*:** IL, MD, MI, MN, MO, OH, WI, WV
***Native American Tribes*:** Bad River Band of the Lake Superior Chippewa Indians; Fond du Lac Band of Lake Superior Chippewa; Keweenaw Bay Indian Community; Menominee Tribal Enterprises; Sault St. Marie Tribe of Lake Superior Chippewa; Stockbridge-Munsee Band of Mohican Indians)
***Academic*:** College of Menominee Nation; George Washington University; Michigan Technological University; Michigan State University; Portland State University; Universities of Michigan, Minnesota, Missouri-Columbia, Missouri-St. Louis, & Wisconsin-Madison; Western Illinois University; West Virginia University
***Institutes/Coops*:** Boreal Forest and Community Resilience Project; Central Hardwoods Joint Venture; CMN Center for First American Forestlands; Environmental Law & Policy Center; Illinois Natural History Survey; Great Lakes Forest Alliance; Michigan Climate Coalition; Minnesota Forest Resources Council; Minnesota Forest Resources Partnership; Natural Resources Research Institute; Sustainable Forests Education Cooperative; Wisconsin Initiative on Climate Change Impacts;

American Bird Conservancy
***Private/Non-profit*:** American Forest Foundation; Bayfield Regional Conservancy; Blandin Forestry; Cacapon Institute; Compass Land Consultants; Huron Pines; LAD Foundation; Missouri Botanical Garden; NatureServe; Rajala Companies; The Forestland Group; The Nature Conservancy; Trust for Public Land; Wolf River Forestry

Websites www.nrs.fs.fed.us/niacs/climate/framework/, www.forestadapation.org

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