Heart of the Appalachians Fire Learning Network

STRATEGIC PLAN

2021-2026



VISION

We envision a Network where diverse partners value a collaborative fire culture, innovation and burning across boundaries to restore and maintain healthy Appalachian landscapes.

MISSION

The Heart of the Appalachians Fire Learning Network will be coordinated by partners committed to an inclusive and collaborative fire culture. The HOA FLN will foster partnerships, provide training opportunities, practice adaptive management using science, and build support necessary for advancing these goals.







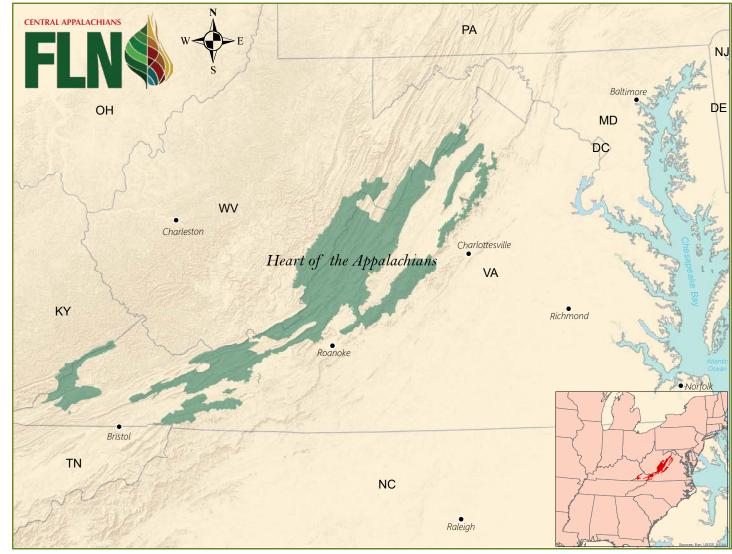








This plan outlines the strategies and actions identified by partners in the Heart of the Appalachians Fire Learning Network (HOA FLN) landscape. The HOA FLN works to promote ecosystem health and biodiversity by fostering restoration and maintenance of fire-adapted ecosystems while ensuring public safety; and improve the capacity to apply and manage fire by increasing collaboration and partnerships of interested agencies, organizations and communities. One of 31 landscape collaboratives across 20 states, the HOA FLN works closely with partners in the Central Appalachians and Southern Blue Ridge regional FLNs spanning Pennsylvania, Maryland, West Virginia, Kentucky, Tennessee, North Carolina, South Carolina, and Georgia. This plan for 2021-2026 refreshes and builds upon the 2009-2012 implementation plan developed by the Allegheny Highlands FLN landscape, the precursor to HOA FLN.



The Heart of the Appalachians network is nested within the Central Appalachians FLN and includes the George Washington & Jefferson and Monongahela National Forests, VA State owned lands, The Nature Conservancy, private lands and Shenandoah National Park. Map by John Moncure USFS

WORKING TOGETHER FOR GREATER IMPACT AT A NATIONAL SCALE

The HOA FLN is one of 31 landscape collaboratives in 14 regional networks that span 74.9 million acres in the national FLN. With over 300 partners, the FLN helps people work together and build the social capital needed to build ecosystem and community resilience. These landscapes share a commitment to an inclusive view of fire management, and to the idea that working collaboratively paves a path to sustainable success.

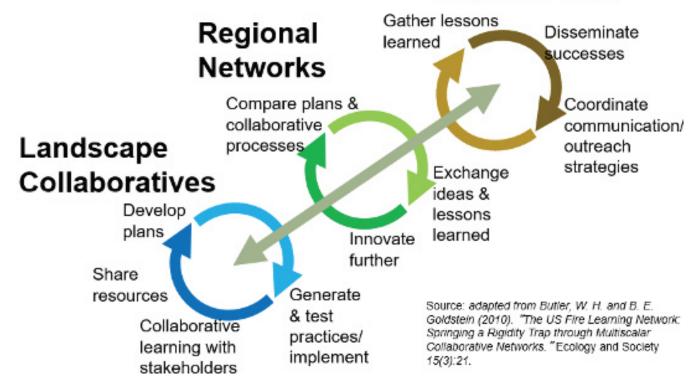
FLN landscape collaboratives engage in a range of multi-agency, community-based projects to restore landscapes that depend on—or are susceptible to fire. By sharing decision-making and responsibility among stakeholders, the ecological, economic, and social values provided by healthy landscapes are maintained, and the negative consequences of wildfire can be reduced.

From its inception in 2002, the FLN has taken an integrated approach to fire management, drawing on a broad—and growing —range of stakeholders and disciplines. This approach is now encompassed in the National Cohesive Wildland Fire Management Strategy, and the FLN leads on the strategy's three intertwined goals: resilient landscapes, fire adapted human communities, and safe and effective wildfire response.

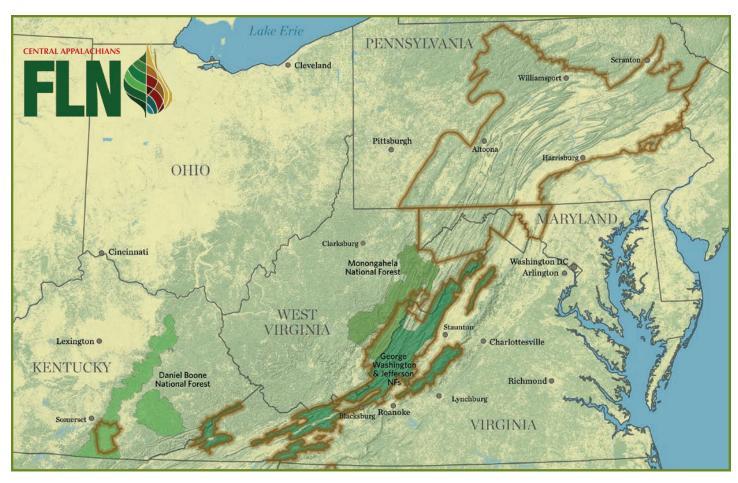


Simtable uses interactive software and a sand table to bring training exercises to life. Region 8 of the Forest Service made the table available in 2019 for many collaborative skill building sessions in the HOA FLN landscape. Credit: Nikole Simmons TNC

National Staff



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The Central Appalachians Regional Fire Learning Network engages federal, state, and private land managers in a collaborative effort to enhance capacity to implement ecological fire management in the biologically diverse Central Appalachians. This landscape includes rolling and mountainous terrain, hardwood and mixed–pine hardwood forests, pine-oakheath woodlands, wetlands, and a variety of grasslands in PA, MD, WV, VA, and KY.

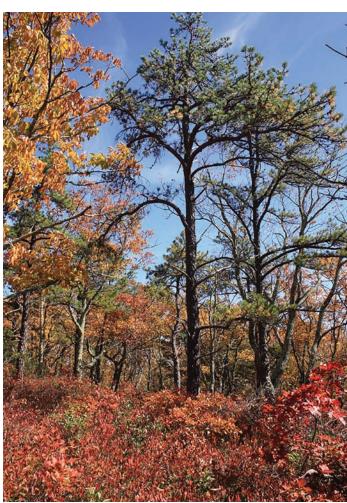
Within this ecologically important region, the FLN seeks to:

Strengthen the scientific understanding of landscape-scale fire ecology in order to encourage data-driven management, and inform restoration goals and objectives;

Transfer knowledge and lessons learned to engage and support fire managers and restoration practitioners;

Facilitate informed and innovative research in support of improved understanding of landscape fire ecology and more effective means of fire management;

Identify critical barriers to implementing restoration of fire adapted ecosystems, and develop strategies to overcome these barriers.



Heart of the Appalachians Fire Learning Network Strategies, Goals and Values

How We Work

Centering People & Collaborative Process

Building strong relationships that elevate our capacity to learn, adapt and innovate together

Collaborative processes for setting priorities, goals and shared vision

Strategies to address barriers and

to address barriers and build enabling conditions

Collaborative Fire Management:

Continually increasing scope and scale of implementation

Capacity building: Cultivate a sustained workforce by increasing skills, trust and volume

Adaptive Management: Decisions are shaped by science for better outcomes

Broaden Support: Build acceptance and understanding of the benefits of fire Leverage collaborative efforts: Share learning and cross-pollinate

ideas for greater impacts at different scles





partner agencies represented on the steering committee: The Nature Conservancy (TNC), Department of Conservation and Recreation (DCR), Department of Wildlife Resources (DWR), George Washington and Jefferson National Forest (USFS, GWJNF) and Department of Forestry (DOF).

partners engaged in the landscape including agencies, organizations, colleges and universities, community members and other interest groups.

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BUILD CAPACITY

- 4 collaborative landscape-scale restoration management projects
- 2.75 million dollars leveraged through share agreements
- 6 burn crews contracted boost capacity on all lands



LEARN & ADAPT

- 11 years monitoring avian response to fire
- 400+ forest structure and composition monitoring plots with over 2500 data collection visits
- 8 conferences and many more webinars disseminating findings and lessons learned
- 10.2 million acres mapped for ecological zones
- 4 ecological departure analyses completed



ENGAGE

- Hosted 7 annual workshops with 60-90 participants
- 17 interpretive panels installed tell the story of good fire
- 2 brochures designed

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STRATEGIC PLAN FIRE IN THE APPALACHIANS

Fire is a natural disturbance, which at the appropriate frequency and intensity is beneficial to biodiversity and ecological functions in multiple ecosystems and native plant communities throughout the Central Appalachians. Through direct and indirect effects of fire, prescribed burning also increases the resiliency of fire-adapted ecosystems. Fire has been an essential natural process in the Appalachians for thousands of years. Research studying fire-scarred trees have found that fire occurred periodically, often every 3-9 years in oak-pine forests in the Central Appalachians. A century of fire exclusion has resulted in a decrease of biodiversity. This change to our forests, with accompanying concerns of climate change and increased wildfire risk, presents a major threat to forest health and the benefits of nature for people. Fire management is the only tool that can get restoration to scale in one of the most biodiverse regions in the world. With strong partnerships, collaborative planning, and shared resources we aim to bring fire back to this landscape by working together across our jurisdictional boundaries.

STRATEGIC PLAN BUILDING RESILIENCE & TRUST

When we work at the scale of landscapes, we inevitably have many diverse stakeholders and partners at the table who all have an interest in the land and its natural resources. The FLN recognizes that working together makes us stronger and more effective in our restoration work and that our capacity to learn, adapt and innovate together is contingent on our relationships. HOA FLN partners invest in these relationships regularly to build trust which allows us to address complex issues and work together in inherently risky operations. While our focus is on shared values, ongoing team building affords us a high level of trust to deftly navigate competing interests and other challenges when they arise. These investments come in many forms including: social interaction, transparency, and learning together across differences. In addition to fire management skill-building, the FLN prioritizes training in skills of facilitative leadership, 'trust ecology,' diversity and inclusion and other leadership development.

MODELS OF COLLABORATION

Collaborative partnerships have become standard practice in the landscape. Major achievements made possible through this model of working together include:

2010: George Washington National Forest Stakeholder Collaborative Forms

This diverse group of stakeholders, representing forest products, recreation, game management, wilderness, and wildlife conservation came together to jointly review and make "one voice" recommendations to our public lands agencies, with the goal of finding common ground during project development rather than in litigation etc. This group remains active today, and has helped move good restoration projects forward with a diverse set of perspectives. It also contributes to a shared vision for outcomes, dramatically reducing communication breakdowns and stakeholder frustrations.

2013: Lower Cowpasture Restoration and Management Project Planning Begins

This was the first landscape-scale integrated resource project to be developed on GWJNF to be followed by North Shenandoah and Eastern Divide. Funding from the Joint-Chiefs program was critical to this collaborative plan, which had substantial involvement from the Stakeholders Collaborative.

2016: George Washington National Forest Plan Finalized

With significant input and recommendations from the Stakeholder Collaborative, this revised land and resource management plan was signed and put into action. It often forms the basis for discussions about restoration projects, both within USFS lands and beyond. The FLN views this plan as a tremendous example of collaboration and teamwork across many agencies and organizations.



"Fire is a biophysical process, but fire management is a social process."

Nearly two decades of success hinge on relationships built among FLN partners at multiple levels of leadership and a commitment to maintain a resilient network over time and in the face of personnel changes. Partners join together at an annual workshop field trip outside of Blacksburg, VA in 2018 to discuss lessons learned and observe fire effects. Photo credit: Laurel Schablein TNC

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A History of the Heart of the Appalachians Fire Learning Network

Heart of the Apps FLN averages 11,000 acres of prescribed burning per year (2008-2021) BURN (2014) 5 MOUs in place and 4-5 (2007) First partner agencies on most burns (2020) Record breaking Memorandums (2012) Largest burn ever 35k acres burned of Understanding (2012)conducted between TNC and (MOUs) signed (2015) First collaborative burn at **Burn Unit** (2020) DOF manages **USFS** east of the Mississippi **Highland Wildlife Management Prioritization** wildfire for resource benefit River, 5,000+ acres (2007) Environmental Area (DWR) **Tool Criteria** with DWR in 1,700 acres Assessment for **Development WSMRP** Completed (2008) First TNC/GWNF Workshop (2020) Largest ever DWR (2014) 22k acres burned collaborative burns burn in mountain region BUILD (2012) DWR (2014) Partners (2019)(2020) Unmanned Aircraft drafts and adopts **Host Prescribed Fire** Partners host **Vehicle Program begins** (2006) Central (2008) FLN landscape Partners **Prescribed Fire** drone used to burn approx. **Training Exchange** skill session **Appalachians** begin 4-Workshop Series (CAP) 3,000 acres **Policy** (TREX) two-week training series **Regional FLN forms** Identifies KEAs, Indicators, Strategies event (2021) Heart of the Apps Southern Blue Ridge FLN (2012) S130-S190 **FLN** complete revised splits off to form "sister" (2009) First FLN strategic plan Training for 30+ strategic plan regional network completed for the landscape **DWR** staff 2007 2013 2015 2017 2019 2021 2009 2011 LEARN (2011-2013) Ecological Zones (2015) Monitoring Working Group (2021) Identifying courseand fine scale drivers of Mapping on the George produces summaries for Forest **Washington & Jefferson Structure and Composition data** avian abundance following collected from 2009-2015 and are **National Forest (tool)** prescribed fires. Journal of used in NEPA. DCR & DWR join Forest Ecology & Management and install FSC plots (Publication) (2009) Forest Structure and (2012)(2018) Characterizing the Effects of (2016) Fire History of **Prescribed Fire on Forest Canopy Composition Monitoring** Monitoring the Appalachian Region **Protocol adopted across** Working **Cover in the GWJNF GTR is General Technical GWINF and TNC.** Group is published (Canopy Gap Analysis) Report SRS-219 (Publication & Remote Sensing Tool) **ENGAGE & LEVERAGE** (2013) Wildland Fire in the Apps (2015) Fire History in the (2020) **Burning** (2019) Partners Conference co-hosted by FLN. CAFMS Apps Workshop participate in **Big Workshop** and Association for Fire Ecology **GWINF** regional review

> (2013) Under Secretary of Natural Resources visits FLN demo burn site

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Strategy 1: Planning and implementation are done collaboratively to maximize efficiency of planning and increase pace and scale of fire management.

Narrative: The HOA FLN has a history of successfully establishing enabling conditions required to share resources and burn across boundaries at larger scales. Over the last 15 years, that meant creating agreements and Memorandums of Understanding and setting priorities together. The FLN continues to plan and burn together, but now with more partners at the table collectively influencing and contributing to large scale planning and implementation of burns. Continued increases in the scope and scale of our fire program will require creative and efficient planning, adept coordination of our resources, and managing wildfire for resource benefit where appropriate.

ACTIONS

1a. Collaborate at all levels of planning to increase potential for acres burned.

- Develop annual priorities considering scale, ecological condition (fire-adapted), landscape context (adjacent burn units), management history, community values and
- Create plans to burn outside typical spring season and explore barriers to year-round burning. Share learning to create a culture of growing season burning.
- Plan for a diversity of burn units and prescriptions that allow optimal flexibility for ignition, control lines, personnel, equipment, and time of year. Develop meeting agendas to include a burn unit selection criteria discussion point until it becomes standard.

1b. Facilitate collaborative implementation by coordinating resources across HOA region.

- Hold weekly calls during burn seasons to determine priorities and allocate fire resources to maximize participation. Share success of call model beyond current participation.
- Routinely update and maintain fire management MOUs between all partners.

1c. Pilot wildfire response plans to demonstrate successful management of wildfire for resource benefit.

• Create wildfire response plans in lower complexity* situations to build trust for high complexity situations



Tyler Urgo of the Department of Conservation and Recreation Natural Heritage program igniting fire across the Meadow Ground burn unit owned by Dept of Wildlife Resources in the Goshen Wildlife Management Area. Partners joined in November 2020 to kick off the burn season. Photo: Jason Hallacher DWR

(wilderness, wildland urban interface). *socially and administratively complex rather than operationally or strategically

- Create inventory of places where wildfire response plans would be useful (Candidates: St. Mary's Pilot Project, James River Face, Rich Hole, Barbours Creek).
- Explore barriers to managed wildfire on State lands (Candidate examples: Goshen WMA and Poor Mtn).

Outcomes: Strengthen the enabling conditions for implementation by maintaining MOUs and resource coordination, expanding operations into multiple seasons, and an increasingly coordinated approach to fire management for resource benefit for a sustained increase in scale and pace of restoration.

MEASURES: Increase # acres treated

- ▶ Increase # of partners at planning meetings and burns
- Solution Increase # of units crossing jurisdictional boundaries, including necessary agreements (Wyden, Stevens, MOUs)
- ▶ Increase # of wildfire response plans in place



Strategy 2: Build capacity for fire management by building skills, qualifications and cohesion among fire team, and by planning for and addressing current and anticipated staffing needs.

Narrative: The need for controlled burning far exceeds our current collective capacity. When done collaboratively, training opportunities build capacity as well as trust among partners. Planning for future gaps in capacity and providing targeted training ensures a resilient fire team building its quality and diversity of skills in addition to quantity of qualified practitioners. In addition to building a wealth of skills, we aim to increase confidence that allows us to innovate and take calculated risk. Encouraging out-of-thebox thinking and willingness to experiment is the key to creatively addressing challenges. For example, by testing and adopting practices of blacklining operations and multiday operations, we have lowered complexity and increased feasibility of larger units while maximizing burn days.

ACTIONS

2a. Build capacity for fire management by increasing skills and trust among fire team.

- Interagency module available to work in FLN project area for all phases of fire management (prep, burning, fuels, monitoring).
- Advocate for fire leadership within state agencies (ex. statewide fire program managers).
- Design creative and inclusive skill building opportunities.
- Effectively share information about trainings across all partners and establish a central location for communicating trainings (Rx fire council website, FLN email updates, work with training specialist).
- Host an integrated fire refresher and other preparedness trainings with all partners and agencies to build team cohesion.

2b. Plan for and address current and anticipated staffing and qualification needs.

- Increase number of personnel qualified in specialized positions including, but not limited to, fireline leadership, aviation, planning and fire science.
- Develop a gap analysis of positions to build capacity in the right places and plan for attrition.
- Increase aerial firing capacity with formal qualifications and non-qualification skill building.
- Maximize training opportunities by tracking training



Engine-632 interagency crew made up of all women in 2020. The FLN is committed to building a diverse and inclusive workforce.

assignment needs for all partners and using to inform assignments.

2c. Create an inclusive and diverse workforce.

• Host and participate in DEI trainings including Active bystander and WTREX participation.

Outcomes: Greater capacity for fire management maximizes resources to prep units efficiently, utilize all available burn windows and burn more acres (larger or multiple units). Capacity is maximized annually but also sustainably. Increased level of trust enables innovation and excellent teamwork and risk management.

MEASURES:

- ➢ Increase # of interagency training
- Decrease % vacancy on position gap analysis
- ≥ Increase # of fire staff in state agencies



Strategy 3: Practice adaptive management by 1) using science developed by the HOA monitoring working group, 2) Work with researchers to fill knowledge gaps and 3) Synthesize and share information, tools and data for managers to use in planning and implementation.

Narrative: The HOA monitoring working group has developed one of the strongest prescribed fire effects monitoring programs in the country including over 400 permanent monitoring plots, CBI and remote-sensing tools to measure restoration progress. Because our forests have undergone significant change throughout history and land use, it is imperative to use science and monitoring to guide our decisions. Building knowledge, setting desired conditions, and adjusting tactics to achieve our ecological goals is an ongoing and iterative process.

ACTIONS

3a. Lead the HOA Monitoring working group to generate questions, collect data and track the success of our burn program.

- Carry out FSC monitoring on 430 plots in the HOA
- Continue to build monitoring based on available remotesensing data, new technology and emerging questions and to meet needs of managers.
- Photo monitoring is available, consistent, and used where FSC plots are not feasible.

3b. Partner with researchers and universities to fill knowledge gaps that will inform the way we work.

- Maintain a centrally located record of ongoing and past relevant research.
- Annually update and prioritize HOA Research Wish List and elevate candidate projects as needed.
- Maintain and build relationships with academic partners and the Consortium of Appalachian Fire Managers and Scientists (CAFMS), and use research to guide management and support research contributing to the fire in the Appalachians knowledge base.

3c. Synthesize and disseminate information, tools and data in ways that managers and practitioners can use in planning and implementation.

- Facilitate strategic discussions every 5 years examining monitoring data results and use by managers.
- Monitoring data is accessible to advance adaptive management and research at a greater scale.



Partners on the Fire Effects Monitoring (FEMO) squad at a Prescribed Fire Training Exchange (TREX) weigh fuel sticks to determine 10-hour fuel moisture. Participants fill roles as trainee and trainer over two weeks of controlled burning and formal training. The HOA FLN has funded dozens of partners to participate across the country. Photo credit: Nikole Simmons TNC

- Develop framework for storage, analysis, and routine reporting of monitoring findings.
- HOA monitoring data is used to inform specific, measurable burn objectives.

Outcomes: Decision making is based on the most up-todate knowledge to achieve desired conditions on more acres. Operational tactics, data collection and the desired conditions themselves are continuously adapting.

MEASURE:

>> # of meetings, presentations, and site visits to discuss integration of monitoring results into management decisions



Strategy 4: Engage community members, stakeholders and policy makers to increase support for good fire.

Narrative: The Fire Learning Network is uniquely positioned to engage community members, stakeholders and policy makers around the benefits of fire to humans and nature. Interpretive materials, media stories and a social media presence cast a wide net for building understanding and support for fire among the public. Targeted engagement, such as site visits, showcases the success of the FLN and the important role of fire to influence policy makers and build enabling conditions for fire management.

ACTIONS

4a. Engage policy makers and influencers to garner support for fire management.

• Conduct site visits with elected officials (e.g., state delegates & local officials) to garner support for prescribed

4b. Build strategic relationships with media relations and public information staff to deliver our messages to key

- Cultivate relationships with reporters and journalists to tell the story of fire before, during and after controlled burning.
- Develop consistent messaging appropriate for all partners to use for media opportunities.

4c. Conduct targeted outreach events for key stakeholders to explore benefits of controlled burning and to provide input on management decisions.

- Work with various stakeholders to develop targeted messaging for interest groups that voice concerns.
- Conduct site visits with these stakeholders to showcase positive effects of fire, increase bidirectional understanding and find opportunities to collaborate.

4d. Produce high quality interpretive and digital outreach materials to build support in local communities and broader

- Expand the use of interpretive signs within high visibility projects, including consideration of a fire learning trail.
- Plan for high visibility burn units as demo sites (ex: Douthat State Park).
- Work with DWR media team on good fire messaging.



Memorandums of Understanding have been created between agencies which allows for resource and equipment sharing. Partners in the central part of the landscape convene on a weekly call during the burn season to coordinate resources. Photo: Meghan Marchetti DWR

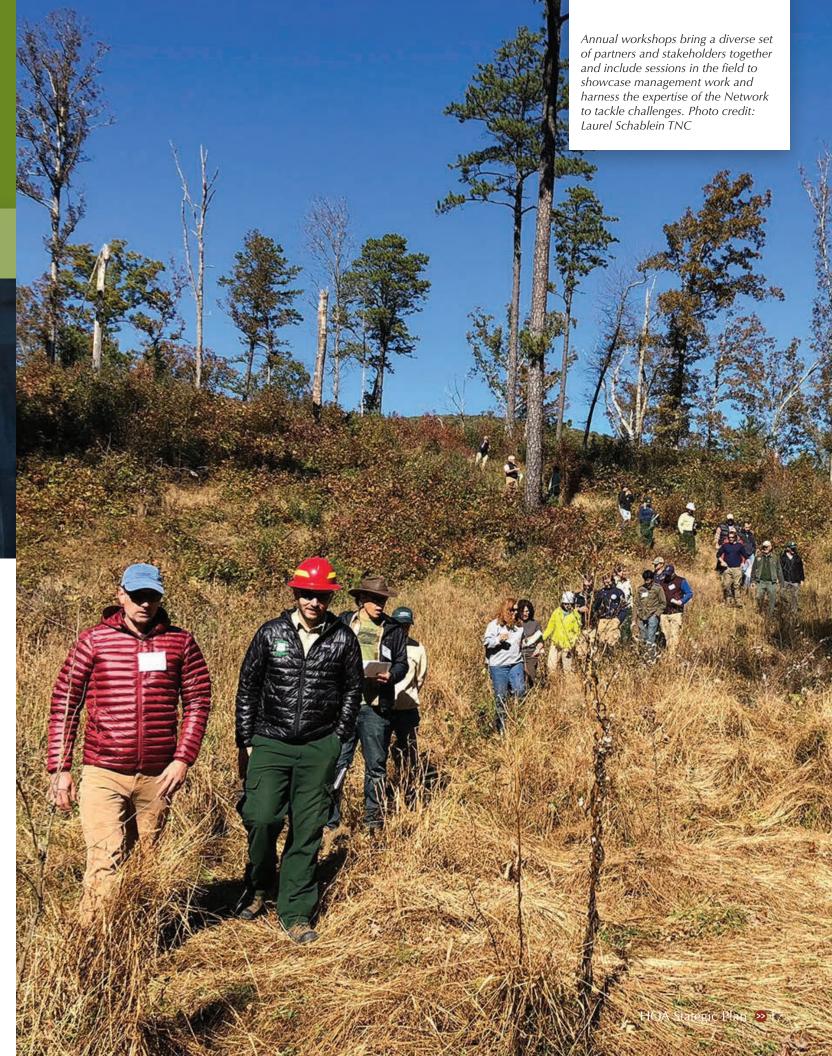
- Update 2016 brochure summarizing our current understanding of fire ecology and the role of prescribed burning within the Central Appalachians for public
- Utilize social media and web-based platforms to elevate FLN messaging when strategically indicated based on target audience accessibility.

Outcomes: Increase funding directed to, and policies in support of, fire management. Reduce opposition and/or elevate acceptance of and support for fire.

MEASURES:

Increase # of media stories

- Increase # of interpretive signs and brochures
- Increase # of engagements with elected officials
- and policy influencers





Strategy 5: Showcase local collaborative efforts to organization and agency leadership and the broader FLN for greater impact.

Narrative: The HOA FLN has a history of highly integrated buy-in, participation and support from the partners it serves. This participation of leadership and decision makers as well as the operational energy behind the strategies has been key in sustained momentum. The FLN is driven by relationships which require continuous investment. Additionally, we use these local efforts to leverage up through the greater FLN. Central to the FLN is a commitment to learn from and with others through regional and national levels. FLN partners bring knowledge to larger scales, cross pollinate ideas, adapt practices, and broaden their scope of impact.

ACTIONS

5a. Increase participation and sense of ownership in the Network at all levels.

- Communicate benefits of FLN collaboration to broader suite of agency leadership and potential partners.
- Formally onboard new positions into the HOA FLN.
- Plan for and increase participation of key decision makers in FLN meetings and activities.
- Provide decision makers summarizing documents describing the FLN to help them understand the why, what and how of the Network.
- Use site visits with partners as an opportunity to tell the story of collective success and to highlight ongoing benefits of the FLN. Capture and share successes from collaborative restoration projects.

5b. Leverage local work up through regional and National FLN.

- Participate in regional and National events to share learning and cross-pollinate ideas.
- Provide training in facilitative leadership, planning, or project management for Network leads and key partners to invest in the weavers and drivers for sustained Network leadership.

Outcomes: FLN priorities are backed by decisions makers and represented in each partner agency's plan. Learning occurs from local, regional and national levels to leverage the diversity of knowledge and expertise in the broader network.



Sam Lindblom explains how fire history researchers can count growth rings and fire scars in trees to determine the pattern of fire on the landscape. Studies in this landscape show that fire occurred every 3-9 years in these forests dating back to the mid-1600s. Photo credit: Daniel White TNC

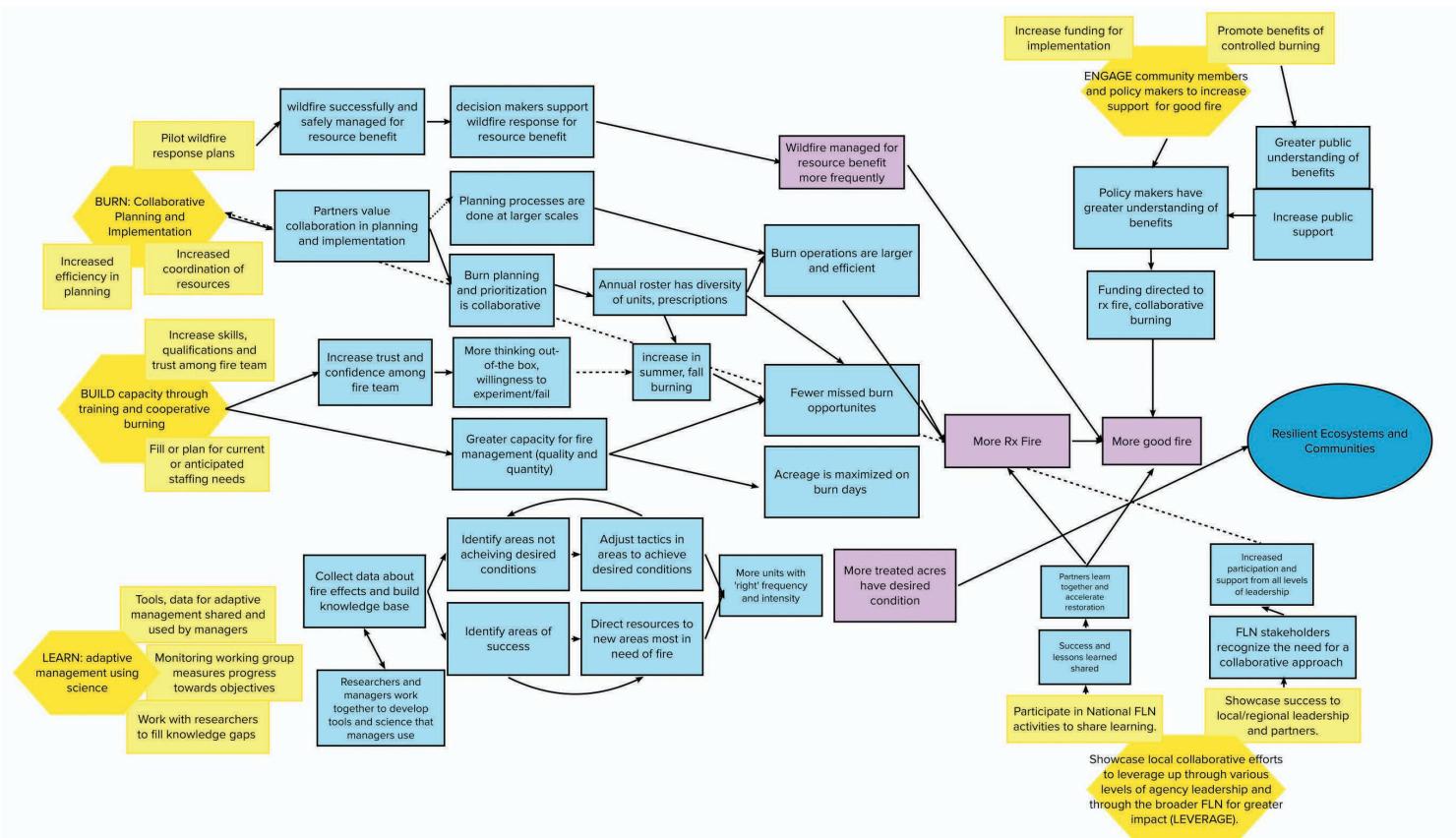
MEASURES:

- # of webinars, workshops
- >> # of summaries, white pagers, blogposts sharing lessons learned or success
 - # of leaders and decision makers attending FLN events
- ▶ Increased or diversified funding in support of FLN
- activities among partners



HOW DO HOA FLN STRATEGIES GET US TO OUR GOAL OF MORE FIRE FOR HEALTHY ECOSYSTEMS?

Simplified diagram shows selected strategies leading to short-term and long-term outcomes.



TRACKING MEASURES

BURN Measures	2020	2021	2022	2023	2024	2025	2026
Increase # acres treated							
Increase # of partners at planning meetings and burns							
Increase # of units crossing jurisdictional boundaries, including agreements & MOUs							
Increase # of wildfire response plans in place							
BUILD Measures	2020	2021	2022	2023	2024	2025	2026
Increase # of interagency training							
Decrease % vacancy on position of gap analysis							
Increase # of fire staff in state agencies							
LEARN Measures	2020	2021	2022	2023	2024	2025	2026
# of adaptive mgmt. focused meetings or site visits.							
ENGAGE Measures	2020	2021	2022	2023	2024	2025	2026
Increase # of media stories							
Increase # of interpretive signs and brochures							
Increase # of engagements with elected officials and policy influencers							
LEVERAGE Measures	2020	2021	2022	2023	2024	2025	2026
# of webinars and workshops							
# of summaries, white papers, blogposts sharing lessons learned and success							
# of leaders and decision makers attending FLN events							
Increased or diversified funding in support of FLN activities among partners							





The 680-acre Brushy Ridge burn unit in the Warm Springs Ranger District of the George Washington National Forest is part of a collaborative landscape restoration project including fire and timber treatments. Photo credit: Nikole Simmons TNC

By carrying out these strategies together, the HOA FLN strives to build enabling conditions to sustain a culture of fire management into a changing future where all communities and stakeholders with an interest in Appalachian forests recognize the critical importance of the role of fire on the landscape and recognize it as the only tool to achieve management at the scale of a globally significant forested region under a complex suite of unprecedented threats.

This plan is supported by Promoting Ecosystem Resilience and Fire Adapted Communities Together, a cooperative agreement between The Nature Conservancy, USDA Forest Service and agencies of the Department of the Interior.

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