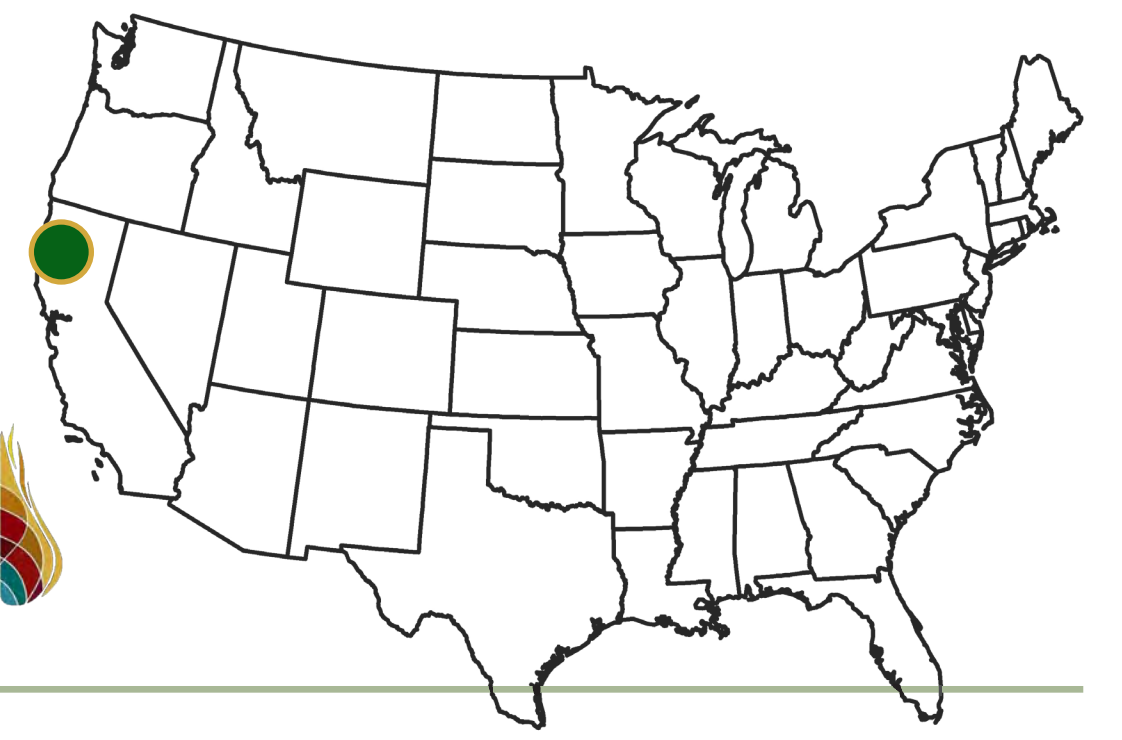


California Klamath-Siskiyou Fire Learning Network

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Partners in the Trinity Mountains are focusing on the synergy created between the Fire Learning Network (FLN) and the Trinity Integrated Fire Management Partnership's implementation work. In addition to having local prescribed burning to ground our learning, we have a formal collaborative group that acts in an advisory capacity to the county board of supervisors and federal land management agencies. With this forum, and the Trinity County Fire Safe Council, we are able to link learning about fire to the planning, implementation and monitoring processes. Being able to tie together all of the parts of the adaptive management cycle is critical if we want to impact systems and achieve necessary shifts in our management approach.

Regional partnerships that we've invested in over the years continue to be a focus of the CKS FLN. Through support of the Northern California Prescribed Fire Council, the network directly reaches over 200 people every year, bringing together practitioners and scientists and facilitating important movement in the policies and practice of prescribed fire in the region.

Another regional effort, co-hosting events with the Joint Fire Science Program, allows us to bring a science-based approach to regional management and the dialogue at the events helps inform our landscape level work, as well as bringing a management perspective to the scientists involved.

Prescribed fire training exchanges (TREX) bring together many aspects of work in this landscape. They enable participants to experience fire interacting with a variety of communities and ecosystem types, and help build local capacity to manage fire. And the treatments conducted during a TREX help make both the forests and human communities more resilient to wildfire.

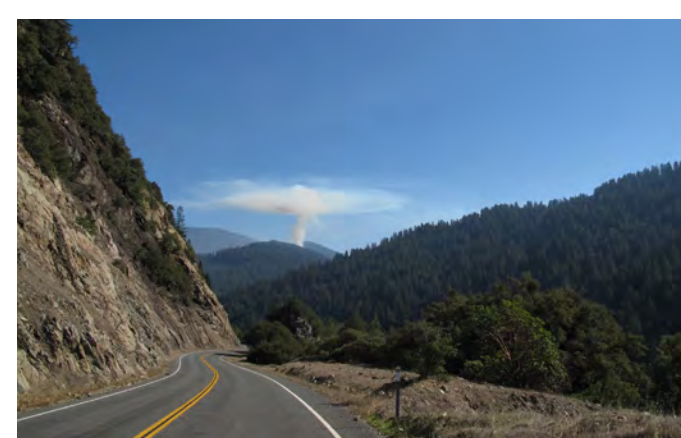


Reaching out to keep the community in the loop about prescribed fire is key. At the fall 2013 TREX, a local TV reporter interviewed a National Park Service employee about the burning being done at Redwood National Park.

Photo: NCPFC/Lenya Quinn-Davidson



Hayfork *Photo: WRTC*



A smoke plume rises from a prescribed fire training exchange (TREX) operation. Communities in Trinity County are tucked among the mountains, separated by narrow winding roads. This isolation makes investing in local fire management capacity particularly important. *Photo: NCPFC/Lenya Quinn-Davidson*



Northern California Prescribed Fire Training Exchange



2014 marked the second year of the NorCal TREX, which brings fire practitioners from across the country to burn together in the unique fire-adapted landscapes of northern California. The TREX starts in coastal oak woodlands before heading inland to pine-oak savannas, mixed-conifer forests, and chaparral. Participants burn with a wide range of hosts, including the National Park Service, US Forest Service, Bureau of Land Management, and on private lands through the Watershed Research and Training Center.



Planning for the 2015 NorCal TREX is currently underway.



From top: A burn boss trainee oversees operations along a recreational trail near Shasta Lake. A reporter from a regional newspaper interviews a TREX participant (and University of California, Berkeley graduate student) about the use of prescribed fire and the value of TREX. The 2014 NorCal TREX team at their first Incident Command Post, in Orick.

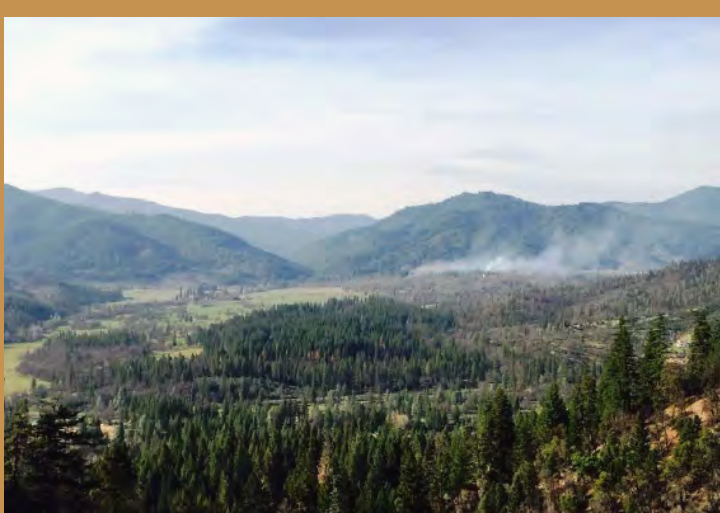
Photos: Northern California Prescribed Fire Council/Lenya Quinn-Davidson

Network Partners

- Bureau of Land Management—Redding Field Office
- CAL FIRE
- Humboldt State University
- Hyampom Volunteer Fire
- Department and Fire Safe Council
- Local landowners and residents
- Northern California Prescribed Fire Council
- Trinity County Collaborative
- Trinity County Fire Safe Council
- Trinity County RCD
- University of California Extension
- USDA Forest Service—Pacific Southwest Research Station
- USDA Forest Service—Province Ecologist
- USDA Forest Service—Shasta-Trinity National Forest (Forest Supervisor's Office, Weaverville Ranger District, Hayfork Ranger District)
- USDA Forest Service—Six Rivers National Forest
- USDA Natural Resources Conservation Service
- Weaverville Volunteer Fire Department

Scaling-up to Promote Ecosystem Resiliency

Working as the Trinity Integrated Fire Management Partnership, partners in this landscape have been planning and implementing prescribed burns under SPER since 2011. The treatments they are conducting are supporting both forest resiliency and community wildfire readiness.



In April 2015, partners completed a 70-acre of prescribed burning in the Big Creek Watershed in Hayfork. The burn was part of the Big Creek Burn Plan, a community wildfire plan with an all-lands focus that spans 1,237 acres.

The Plan's vision is an integrated approach that provides a cohesive prescribed burning effort, maximizing benefit to the community while building local partnerships and promoting a culture of prescribed fire. This project has been a success for fire adaptation and preparedness in the community because it involves burn programs on private and public lands.

The Trinity Integrated Fire Management Partnership also implemented a 20-acre prescribed burn in Hayfork in early March. One of the objectives of the burn was to help revitalize this oak woodland. These woodlands provide rich and diverse habitat, but this forest type has been significantly impacted by encroaching conifers and past management practices. The burn also helped build trust and strengthen relationships with landowners.



Photo: WRTC

The Fire Learning Network is supported by Promoting Ecosystem Resilience and Fire Adapted Communities Together (PERFACT), a cooperative agreement between The Nature Conservancy, the USDA Forest Service and agencies of the Department of the Interior. For more information, contact Lynn Decker (ldecker@tnc.org).

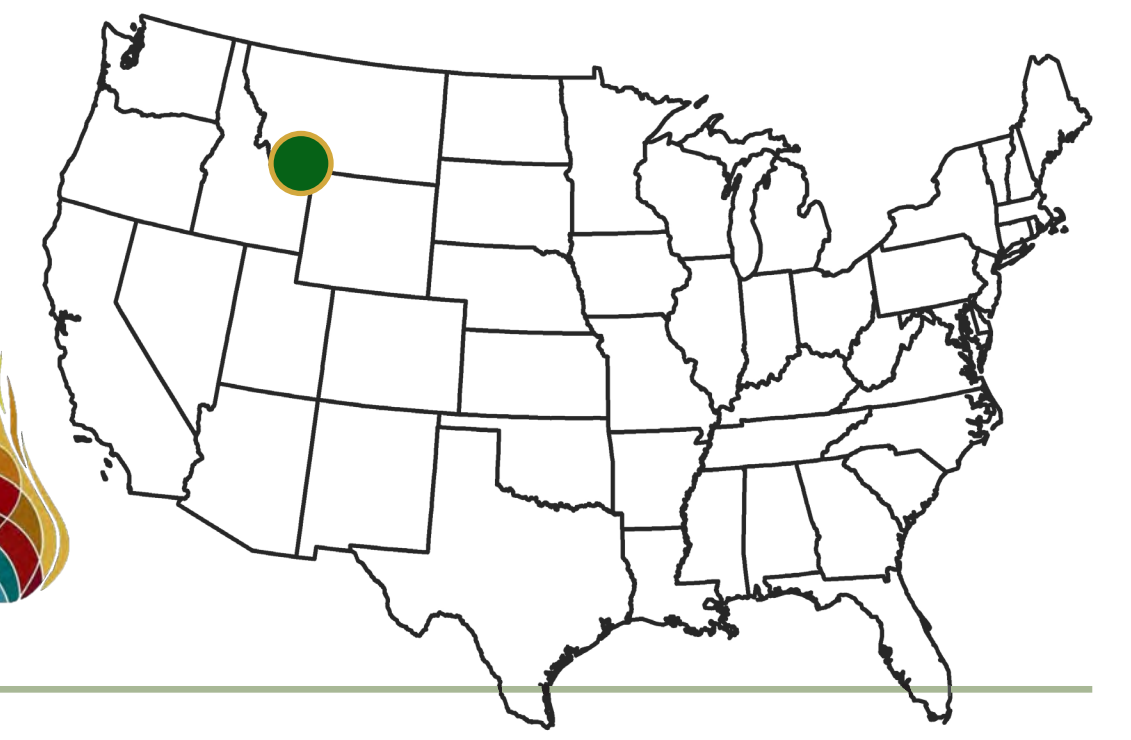


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Centennial Fire Learning Network

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A key goal of the Centennial FLN is to prepare the landscape—both natural and human—so that fire can once again roam and fill its ecological role. To this end, the Lakeview Community Protection Project has completed thinning in nearly all the private forests in the area, and the BLM and U.S. Fish & Wildlife Service are developing complementary projects on lands around the town. This will allow managers to let natural fires in the nearby wilderness to burn safely, and will lower the risk to fire workers if extreme fire conditions warrant fire suppression.

The FLN is also working with the Fire Adapted Communities Learning Network hub on the other side of the Centennial Mountains, in Island Park, Idaho. The groups have a mutual interest in developing coordinated plans to manage fire safely, cost-effectively, efficiently, wisely, and for the greatest benefit.

Protecting threatened species. To improve critical sage grouse habitat, a half dozen FLN partners are implementing a coordinated multi-year grazing plan across over 45,000 acres; the plan will improve the health of the rangeland for livestock as well as wildlife, so partners hope to spark the interest of other landowners in the Sage Grouse Initiative. With researchers from Montana State University, the effects of management and grazing on sage grouse are also being measured, and this study will help to guide land management decisions for sage grouse habitat. In the sandhills, open sand blowouts are being conserved for rare plants and tiger beetles, and monitoring of vegetation and bird communities, as well as the effects of a 2008 prescribed burn, is ongoing. Managers are also experimenting with using hand tools and volunteer labor to remove sagebrush and grasses to restore blowout habitat with fewer negative consequences than burning.

Planning for climate change. Through monitoring and adaptive management, partners are preparing for unexpected consequences of a changing climate. A novel water vulnerability assessment conducted by Conservancy scientists and a University of New Mexico graduate student is illuminating the effects of climate change on headwater streams in the Centennial and other valleys in southwest Montana. Preliminary results indicate that flows from north-aspect basins are more resilient to climate changes, which has important ramifications for where limited restoration and land protection resources should be invested; the results are being incorporated into state and federal fisheries planning.

Building connectivity. FLN partners are working to restore wetland connectivity and riparian areas by changing grazing, replacing culverts and planting willows. These changes create habitat for beaver, and recent studies have shown that beavers improve late-season flows and thus will likely protect watersheds under predicted climate change scenarios.

Providing leadership. The FLN provides leadership locally and regionally on forest management priorities, for example, partnering with the Greater Yellowstone Coalition and the Wildlife Conservation Society to guide management of 450,000 acres in the Gravelly. And, looking to the future, for the last several years, high school student volunteers have assisted with forestry and fencing projects, putting in hundreds of hours each summer, and Conservancy interns from urban high schools have worked on stream monitoring and other projects. These programs are engaging a new generation of scientists and citizen naturalists in on-the-ground conservation work, and providing them with experience to embark on science careers of their own.



Monitoring a test fire for the Patchtop burn in May 2013. Fire effects were not suitable, due to early green-up, so the burn—part of a Scaling-up to Promote Ecosystem Resiliency (SPER)—was postponed. Photo: TNC/Jeremy Bailey

Network Landscapes

Centennial Valley
Gravelly Landscape
Henry's Lake / Island Park



Network Partners

Bureau of Land Management—Dillon Field Office
Greater Yellowstone Coalition
Montana Department of Natural Resources and Conservation—Dillon Resource Area
Montana Fish, Wildlife and Parks—Region 3
Trout Unlimited
U.S. Fish & Wildlife Service—Red Rock Lakes NWR
University of Montana Western
USDA Forest Service—Beaverhead-Deerlodge NF (Madison RD)
USDA Natural Resources Conservation Service—Dillon Office
Wildlife Conservation Society
and private ranch operations



Photos: TNC/Liz Rank

Recent Highlight: Sage-Grouse in the Valley



Photo: USFWS

The Nature Conservancy has been invited to take part in Candidate Conservation Agreements with Assurances (CCAAs) for sage-grouse and for arctic grayling. CCAAs are voluntary agreements between the U.S. Fish & Wildlife Service and public or private parties to identify and counteract threats to species that are candidates for listing under the Endangered Species Act (ESA). A similar project in the Big Hole valley proved so successful that the FWS deemed that area's arctic grayling population no longer ESA candidates.

A Montana State University research project focusing on sage-grouse is entering its second year. Radio-collared hens are being monitored to evaluate the effects of grazing and aspects of habitat on breeding, nesting and brood-rearing.

The eight-person team is based at the Conservancy's Murphy Creek headquarters, making it the hub of activity in the valley. By mid-April, researchers had collared more than 90 hens, making this the one of the largest studies of its kind ever conducted in Montana. This research will provide important information for land stewardship decisions related to sage grouse.

The Fish & Wildlife Service must complete a status review for greater sage-grouse by September 30, 2015. (For more, see <http://www.fws.gov/greatersagegrouse/>)

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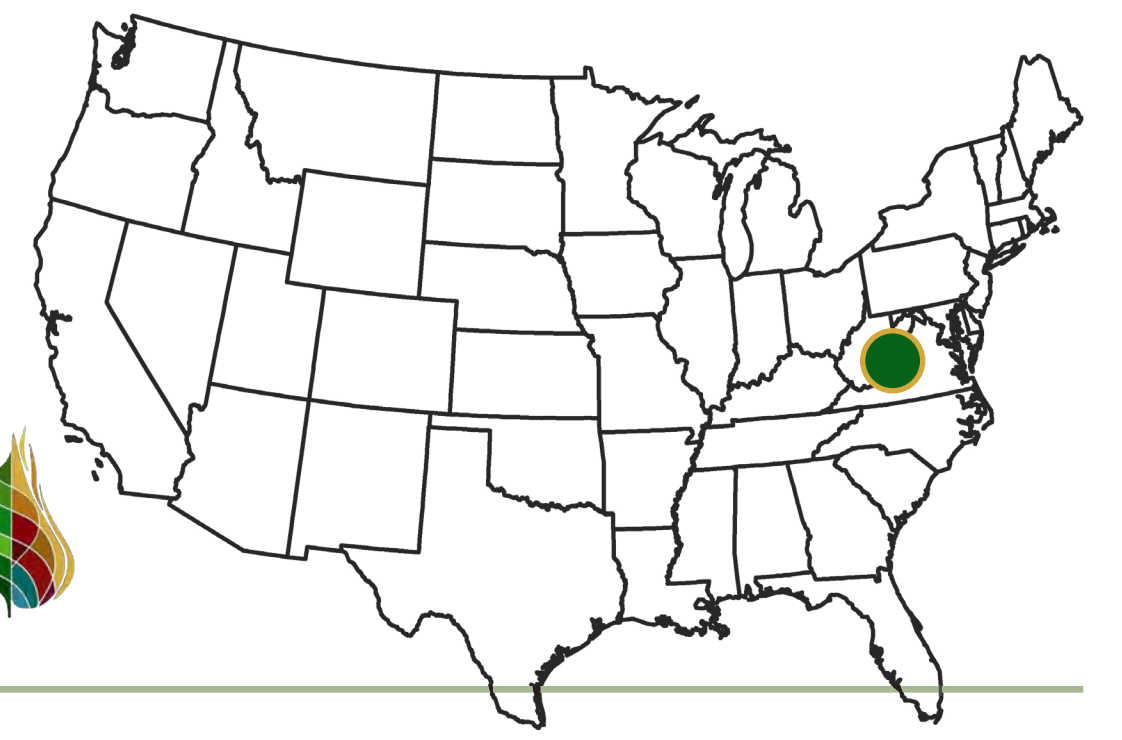
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Central Appalachians Fire Learning Network

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The Central Appalachians FLN engages federal, state and private land managers, academic institutions and non-profit organizations in a collaborative effort to enhance capacity to implement ecological fire management in the Central Appalachian Forest, Western Allegheny Plateau, and Cumberlands and Southern Ridge and Valley ecoregions. These landscapes include rolling and mountainous terrain, Appalachian pine-oak forests and woodlands, pine-oak-heath shrublands and barrens, small-patch grasslands including high elevation balds, wet prairies and cedar glades and high levels of species endemism.

Over this FLN's eight year history, increases in partnership diversity, communication and coordination has been key to restoring the role of fire at an ecologically meaningful scale. In 2014, Central Appalachians FLN partners conducted controlled burns on over 36,000 acres in Virginia, West Virginia, Kentucky and Pennsylvania.

Key network accomplishments include:

- Development of robust fire effects monitoring programs, including avian community, forest structure & composition and burn severity
- Mapping of ecological zones across 10.2 million acres in Kentucky, Virginia and West Virginia
- Development of spatial analysis tools for prioritizing fire restoration and assessing fire effects
- Implementation of MOUs and cooperative agreements to facilitate cross-agency, all-lands approach to restoration
- Development of interpretive signs, brochures and other education materials on prescribed fire
- Facilitation of interagency training opportunities
- Poster and oral presentations at national conferences to disseminate network products and success stories
- Facilitation of dendrochronology, soil charcoal and other fire history research throughout the region
- Use of Scaling-up to Promote Ecosystem Resiliency (SPER I and II) funding to fully integrate non-native invasive species control with prescribed fire management activities



Network Landscapes

Heart of the Appalachians
Cumberland River
Keystone Appalachians



Network Partners

Arcadia University
Consortium of Appalachian Fire Managers and Scientists
Kentucky Department of Fish & Wildlife Resources
Kentucky Division of Forestry
National Park Service—
Shenandoah NP, New River Gorge National Recreation Area
National Weather Service
National Wild Turkey Federation
Pennsylvania Department of Military and Veterans Affairs at Fort Indiantown Gap
Pennsylvania Game Commission
Radford University
The Nature Conservancy—
Kentucky, Maryland, Pennsylvania, Virginia, West Virginia
University of Kentucky—Forestry
University of Maryland
University of Tennessee

U.S. Geological Survey—Virginia Cooperative Fish and Wildlife Research Unit
USDA Forest Service—Daniel Boone NF, George Washington and Jefferson NFs, Monongahela NF; Northern Research Station
USDA Natural Resources Conservation Service
Virginia Department of Conservation and Recreation—
Natural Heritage, State Parks
Virginia Department of Forestry
Virginia Department of Game and Inland Fisheries
Virginia Tech
Virginia Forestry and Wildlife Group
West Virginia Division of Forestry
West Virginia Division of Natural Resources
West Virginia University

Highlight: Coordinated Fire Effects Monitoring

Significant progress has been made in all Central Appalachians FLN landscapes to implement programs that monitor treatment effectiveness. Members of the Monitoring Working Group in the Heart of the Appalachians landscape (in Virginia and West Virginia) have entered data into a Feat/Firemon Integrated (FFI) database for all 401 macroplots monitored by The Nature Conservancy and the George Washington and Jefferson National Forests. The Monitoring Working Group also teamed up with the USFS FFI lead, Duncan Lutes, to host two webinar trainings that provided users an in-depth look at the Data Analysis and Reports and Query Builder tools in the FFI program. Trainees who took part used real data in the exercises and produced several reports and graphs of vegetation data.



At one of the annual workshops held by the Monitoring Working Group, participants refresh plant identification skills, review monitoring protocols and share updates.
Photo: TNC/Marek Smith

Recently, more than 40 plots for vegetative monitoring have been installed across the landscape on the Daniel Boone National Forest, in the Stearns and London Ranger Districts. And in Pennsylvania, The Nature Conservancy and Pennsylvania Game Commission have contracted with Arcadia University to provide fire effects monitoring for their growing program.

Above, at left: USFS staff, part of a multi-agency crew, patrol the Blue Suck Burn at Douthat State Park in Virginia. Photo: TNC/Sam Lindblom
From top: A controlled burn of the Scotia oak barrens of State Game Lands 176 in Pennsylvania (TNC/Jennifer Case); Interns from the Conservancy's Leaders in Environmental Action for the Future (LEAF) program installed interpretive signs developed by FLN partners (TNC/Jen Dalke); TNC staff presented a poster on the FLN's avian monitoring program at a Partners in Flight conference in October 2014 (TNC/Nikole Swaney); A researcher from the University of Tennessee collects a fire scarred stump (Georgina DeWeese/UT-Knoxville)

Links to products of the Central Appalachians FLN, including reports, posters, brochure, interpretive signs and other materials can be found on the network's page at: www.conservationgateway.org



Highlight: Prescribed Fire Training Exchange

Increasing staff capacity and specialized qualifications have long been objectives of this FLN. To help address this, in March 2014 we hosted the first eastern U.S. prescribed fire training exchange (TRES). Participants from a wide range of organizations and states gained valuable experience while helping Virginia partners complete moderate complexity controlled burns in southeastern pine savannas and Appalachian pine-oak forests.



Briefing at the 2014 TRES.
Photo: TNC/Robert B. Clontz

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FireScape Mendocino

Fire Learning Network

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FireScape Mendocino is one of the newest landscapes in the FLN, having hosted its first workshop in November 2013. The group is working to develop a stakeholder-based approach to fire management of the Mendocino National Forest and the surrounding area.

The group is using the **Open Standards** for the Practice of Conservation for its foundational planning. This is supported by field trips, historical photos, GIS-based fire risk assessment, traditional ecological knowledge and other tools. The group has identified its geographic scope, landscape vision and a suite of enduring landscape values—ecological, cultural and economic—which form the basis for working together.

The group's shared values were identified in late 2014 as:

- Quality recreation opportunities
- Cultural heritage—past, present and future
- Fire adapted human communities
- Healthy terrestrial systems—structure, function and species
- Healthy riparian and aquatic systems—structure, function and species
- Diverse landscape-based economic opportunities

Moving forward, the group has formed several working groups, which are now busy asking lots of questions. Many of these are different ways of asking one key question:

“How do we balance apparently conflicting ecological, economic, and social needs?”



Top: A commercial forester, local resident and Forest Service staff officer use Google Earth to explore possible treatment approaches.



Bottom: Revising a situation diagram.
Photos: TNC/Mary Huffman



What about smoke? Lake County is very proud of having the cleanest air in the state. While the Lake County Air Quality Management District has been very cooperative with prescribed fire managers, smoke settling into the basin around Clear Lake is still an issue that constrains prescribed fire here.



Landscape Partners

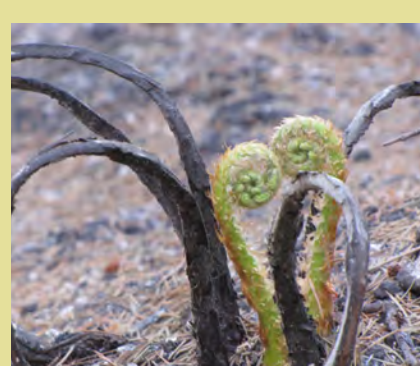
- Blue Ribbon Coalition
- Bureau of Land Management
- CAL FIRE
- California Wilderness Coalition
- Environment Now
- Environmental Protection Information Center (EPIC)
- Lake County Fire Safe Council
- Mendocino Redwood Company and Humboldt Redwood Company
- Office of Congressman Jared Huffman
- Round Valley Confederated Indian Tribes—Yuki Tribe
- Tehama County Resource Conservation District
- Tuleyome/Yolo Audubon Society
- USDA Forest Service—Mendocino National Forest
- USDA Natural Resources Conservation Service

How can we juggle the need to burn around our communities while protecting residents' health and tourism-based economies?

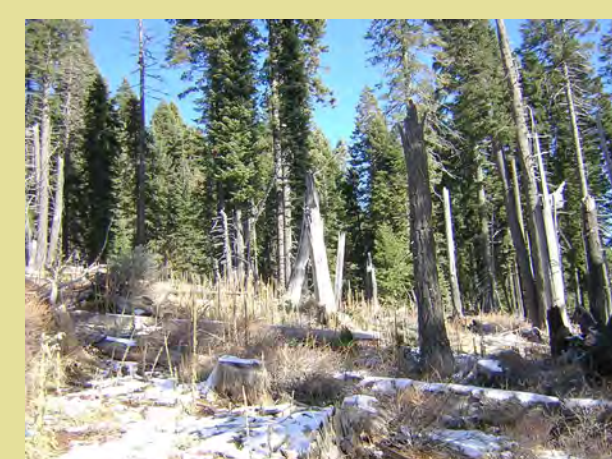


No recreationist wants to see a "Trail Closed" sign. Unfortunately, because high severity fires create such hazardous conditions, trails may be closed for months until they are safe again. It will be even longer before they provide appealing scenery.

Chaparral shrublands in California's inner coast ranges are highly productive and diverse communities, providing habitat for hundreds of plant and wildlife species. Fire is necessary to occasionally return patches of chaparral to an early-successional condition. **How can we protect ranchlands and rural homes while protecting this iconic ecosystem?**



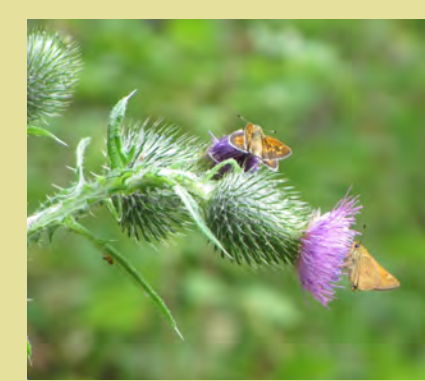
How can we re-establish frequent fire in over-dense forest without destroying too much of the mature forest overstory?



What do you see?

Is this a dangerous fuel load, a patch of weeds, or specialized habitat for birds and mammals?

Can we eradicate invasive species



without hurting pollinators?

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FireScape Monterey

Fire Learning Network

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FireScape Monterey completed its Open Standards planning process in 2012, and members emerged from the process re-energized, informed and ready to take action. Since then, the group's core team—made up of property owners and representatives from wilderness groups, federal and state agencies and the University of California—holds regular calls to update one another on the progress of various fire-related projects throughout Monterey County.

A project of particular focus is the U.S. Forest Service Strategic Community Fuelbreak Improvement Project, which concept was derived from the Open Standards process. This project is located on the northern portion of the Monterey Ranger District of the Los Padres National Forest. It is designed to enhance community protection from wildfire within the wildland-urban interface threat zone, and to prevent unnecessary and inadequate dozer cuts in wilderness. The project includes improving and maintaining strategic historically-used firelines to function as fuelbreaks. In total, the project proposes work on about 24 miles of fuelbreaks, as well as a key 64-acre unit, for a total of 544 acres. A variety of treatment types are proposed, including machine and hand thinning, piling and burning or chipping, and mastication. The notice of intent to prepare an environmental impact statement for the Strategic Community Fuelbreak Improvement Project was posted on December 28, 2012, and the Forest Service is currently undertaking the NEPA process.

The Fire Safe Council for Monterey has been working with local fire districts to increase local fire suppression capacity to meet community protection needs. Forest Service pass-through grants are being used for work such as on fuel-breaks and road improvement to facilitate suppression crew access.

Other work in this landscape includes research on sudden oak death. Related to this, some partners are working to remove symptomatic bay trees near healthy oak trees along a shared roadway; this will mitigate the effects of the disease, reduce fuels and widen the road for better firefighting vehicle access and improved safety.



Landscape Partners

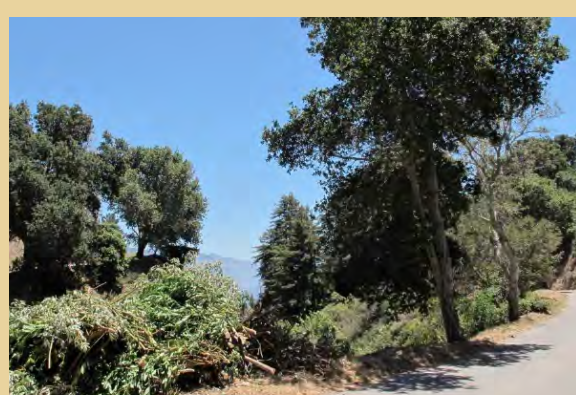
- Big Sur Land Trust
- Bishop Grading and Forestry Services
- Bureau of Land Management
- Cachagua Fire Prevention District
- CAL FIRE
- California Native Plant Society
- California State Parks
- California State University at Monterey Bay
- California Wilderness Project
- Carmel Highland Fire Protection District
- Coast Property Owners Association
- El Sur Ranch
- Esselen Tribe of Monterey County
- Fire Safe Council for Monterey County
- Galante Vineyards
- Jamesburg-Cachagua Neighbors United
- Los Padres Forest Watch
- Mal Paso Creek Property Association
- Mid-Coast Fire Brigade
- Monterey Bay National Marine Sanctuary
- Monterey County Water Resources Agency
- Monterey FireSafe Council
- Monterey Institute of Research & Astronomy
- Monterey San Benito Range Improvement Association
- USDA Forest Service—Los Padres National Forest
- USDA Natural Resources Conservation Service
- Resource Conservation District of Monterey County
- Santa Lucia Conservancy
- Sierra Club—Ventana Chapter
- Tassajara Zen Mountain Center
- University of California, Davis—Plant Pathology
- University of California, Santa Cruz—Big Creek Preserve
- U.S. Fish & Wildlife Service
- U.S. House of Representatives—Office of Sam Farr (Congressional District 20)

Spotlight: Working Together on Sudden Oak Death

Sudden oak death (SOD) has killed over a million trees in coastal California. The additional fuels across the landscape have firefighters, land managers and citizens concerned about the potential for uncontrollable and devastating fires. Research plots set up by UC Davis in Big Sur before a fire in 2008 showed that depending on the stage of the disease, additional fuels can contribute to more severe wildfires. Surprisingly, some size class of the fire-tolerant and disease-resistant coast redwood trees were twice as likely to die in wildfires that burned in Big Sur areas affected by SOD.

Participants in FireScape Monterey have joined forces to come up with a variety of solutions to prevent SOD from killing more trees, and to manage forests that are heavily impacted by SOD.

- The Forest Service and the University of California Davis have identified three rustic campgrounds on the Monterey Ranger District of the Los Padres National Forest where SOD management activities can meet multiple objectives. By reducing fuels in the understory and selectively removing tanoak and bay trees—which are efficient hosts to the pathogen responsible for SOD—campgrounds can be made more SOD tolerant and more fire safe simultaneously.
- Pfeiffer Big Sur State Park has removed understory bay trees along part of a trail right in the heart of a popular campground. Since the pathogen responsible for SOD is an introduced species, they are removing understory bay trees under the auspice of invasive species removal and are protecting high value oak trees along a scenic trail.
- Private land owners in the Coastlands neighborhood of Big Sur and a road association have joined forces to clear bay trees along the roadway. This makes ingress and egress safer for residents and firefighters, and at the same time provides their remaining oak trees a fighting chance against the disease.
- The Landels-Hill Big Creek Reserve (operated by the University of California Natural Reserve System and UC Santa Cruz) has teamed up with SOD researchers at UC Davis and college students to test the efficacy of bay removal on a larger scale. Two management sites have been cleared of understory bay trees in an effort to preserve a

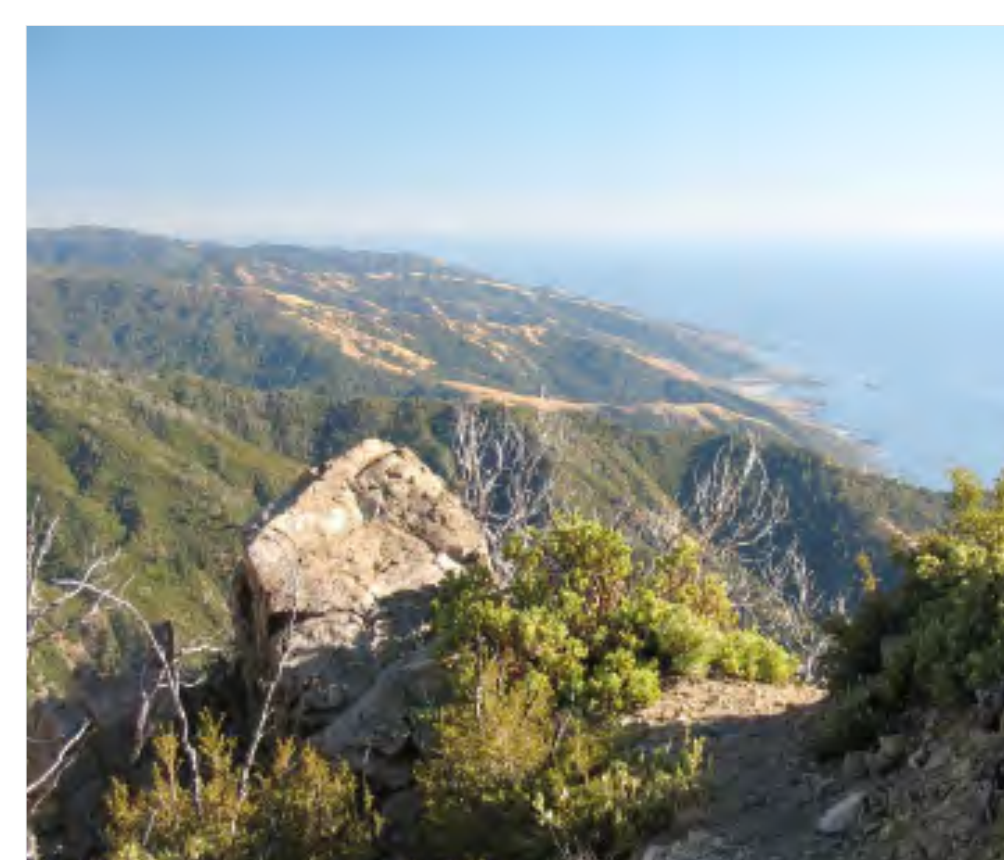


Top: Protected oaks in Pfeiffer Big Sur State Park.
 Bottom: Coastlands neighborhood joint bay removal and road clearance project.



Before and after bay removal at the Landels-Hill Big Creek Reserve.
 All oak photos: Kerri Frangioso/UC Davis

habitat disappearing from central California. Students learn about SOD, field work, forest ecology and management; the reserve gets protection of oak trees; and researchers get to test a potentially useful and important land management tool.



Above: View from Cone Peak Trail.
 Photo: Kerri Frangioso, University of California Davis



Right: Partners discuss landscape issues at Botcher's Gap during the field tour at a 2012 workshop.
 Photo: Jeff Kwasny/USFS

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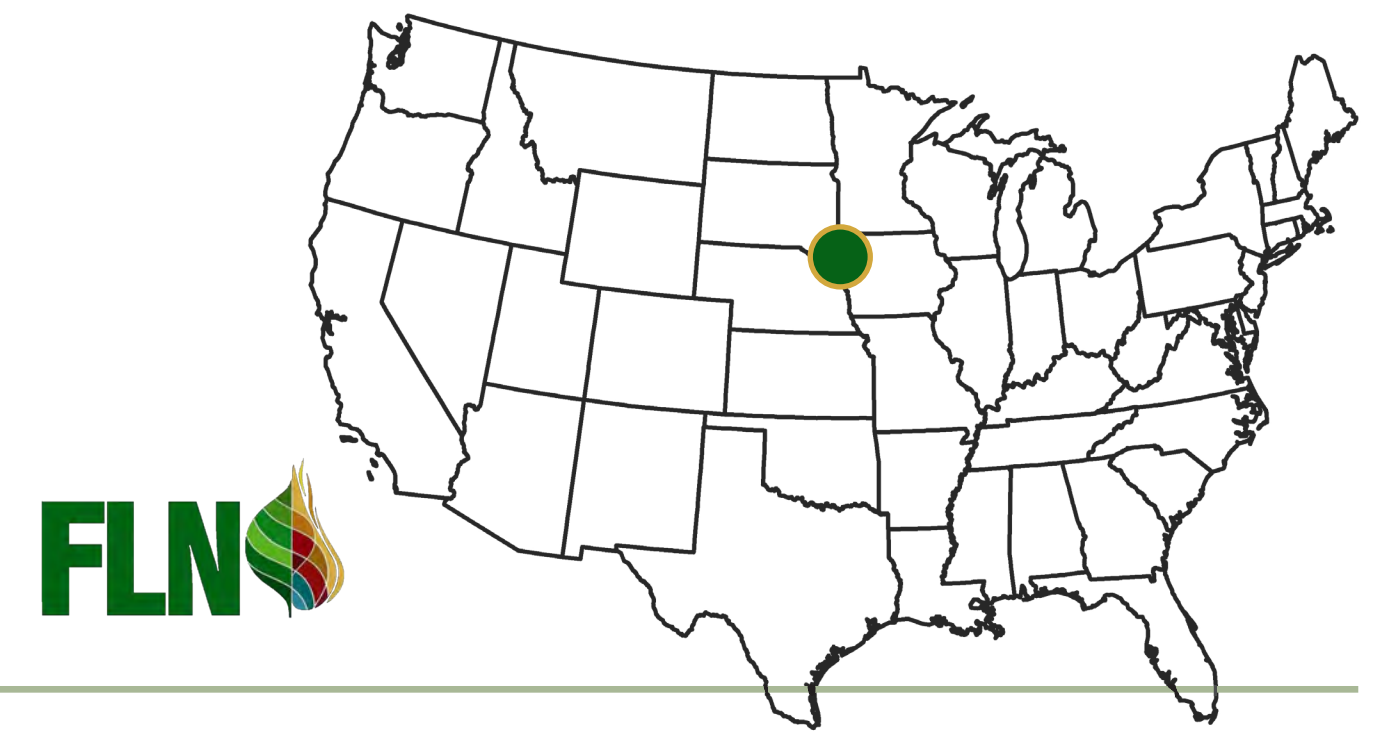


Great Plains Fire Learning Network

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The Great Plains Fire Learning Network is focused on building and supporting a strong network of fire practitioners in the region, sharing lessons learned and making connections outside the region with fire practitioners that need hands-on fire training. One of our biggest accomplishments to date in the Great Plains has been the successful training exchanges that are held primarily in Nebraska along the Niobrara River and in the grasslands surrounding the Loup Rivers. These exchanges have hosted more than 300 participants over the last four years, prioritizing Student Association for Fire Ecology participation. In addition, cooperative training burns have enabled the Loess Hills landscape partners in Iowa to accomplish larger burns and share techniques and equipment ideas. Building on the successful training exchanges and the age-old spirit of “neighbors helping neighbors,” our approach for the next several years is to expand and enhance the network of training exchanges and cooperative burning in the region by engaging new partners and supporting partners in hosting training exchanges on their own.

With much of the land in private ownership we need to continue to emphasize strategies that can be transferred to private landowners, but we also need to ensure that local, state and federal agencies and NGOs have the capacity to get fire management accomplished. In Nebraska, landowner burn associations have offered a positive means for landowners to share equipment and labor, and these models are being adopted in other parts of the region. Volunteer fire departments also play a role in supporting fire management, both by offering prescribed fire services to community members, as is occurring in parts of the Loess Hills, and as permitting agencies and support to prescribed fire operations in Nebraska.

To achieve success we will expand our capacity through training exchanges and cooperative burning to overcome the barriers associated with fire qualifications and standards that differ among groups. And by working closely with the Great Plains Fire Science Exchange, we will have an opportunity to reach an audience beyond our landscapes; this also provides a means for the Science Exchange to transfer knowledge to land managers at the local level.

Network Landscapes

Loess Hills
Lower Loup Rivers
Middle Niobrara River Valley
U.S. Fish & Wildlife Service Refuges of Nebraska and South Dakota



Network Partners

Great Plains Fire Science Exchange
Pheasants Forever
Student Association for Fire Ecology (SAFE)
The Nature Conservancy—Arkansas, Colorado, Iowa, Minnesota / North Dakota / South Dakota, Nebraska
U.S. Fish & Wildlife Service
and private landowners



Broken Kettle grasslands, in the northern Loess Hills
Photo: TNC/Susanne Hickey

Recent Highlight: Niobrara Valley Prescribed Fire Training Exchange



In 2008 the Niobrara Valley hosted one of the first TREX, and this year's event brings the landscape's total to seven. Grasslands, bison, local fire capacity and university students have all reaped the benefits.
Photos: Jose Luis Duce



During this TREX, the Great Plains Fire Science Exchange sponsored a three-day ignitions training for volunteer fire departments. TNC-Iowa staff developed a curriculum to help the VFDs increase their skills in using fire as a wildfire suppression strategy. Participants learned about ignitions planning and firing operations in the classroom, and followed up with practice walk-throughs and live fire. Several people worked on position task books and at least one was signed off as a firing boss. Organizers also gained insights useful in efforts to better engage VFDs in the Great Plains. Photos: TNC/Jeremy Bailey

More than 60 people—firefighters and fire practitioners, college students and professors, and local farmers and ranchers—from 20 agencies and organizations took part in the spring 2015 Niobrara Valley Prescribed Fire Training Exchange (known to some as the “Spring Break TREX”).

On the first day, while high winds and low humidity led to Red Flag warnings, participants got interesting introductions to grassland ecosystems, the Firewise program in the community of Valentine, fire-related smart-phone technology, the FLN, and the basics of black-lining, one of the most effective ways to create a safe control line in the local fuels. As the weather became conducive to burning, resources and equipment were ready to burn on day two. Then over 12 very full operational periods, the team worked together to burn seven burn units (3,691 acres) in seven burn days. The burns met the expectations of preserve staff, who had planned and prepped the units in the months leading up to the event, facilitating the burning.

“Downtime” during red flag weather and whenever else burning wasn't possible was packed with classroom sessions, unit scouting and preparation, and mop-up and patrol assignments. The professional, flexible and always-fire-ready attitude that characterized the TREX—along with a good dose of hard work—resulted in participants leaving with valuable new skills and a well-justified sense of accomplishment.

What They Said about TREX:

“This was a great opportunity to learn and grow in a short amount of time. I really appreciated how many training opportunities I had, and their diversity.”

“I enjoyed the presentations very much. As a prescribed burner, I found them very helpful for my job.”

“I valued the training and experience I received while I was here. And I valued the camaraderie.”

“My family has burned a small unit for 10 years, and the local fire department has been called out twice to fix our mistakes. With my newfound knowledge of fire behavior, I can help my parents safely implement future controlled burns.”

“It was good to learn from people in my field in an environment that is open to learning.”

The Fire Learning Network is supported by Promoting Ecosystem Resilience and Fire Adapted Communities Together (PERFACT), a cooperative agreement between The Nature Conservancy, the USDA Forest Service and agencies of the Department of the Interior. For more information, contact Lynn Decker (ldecker@tnc.org).



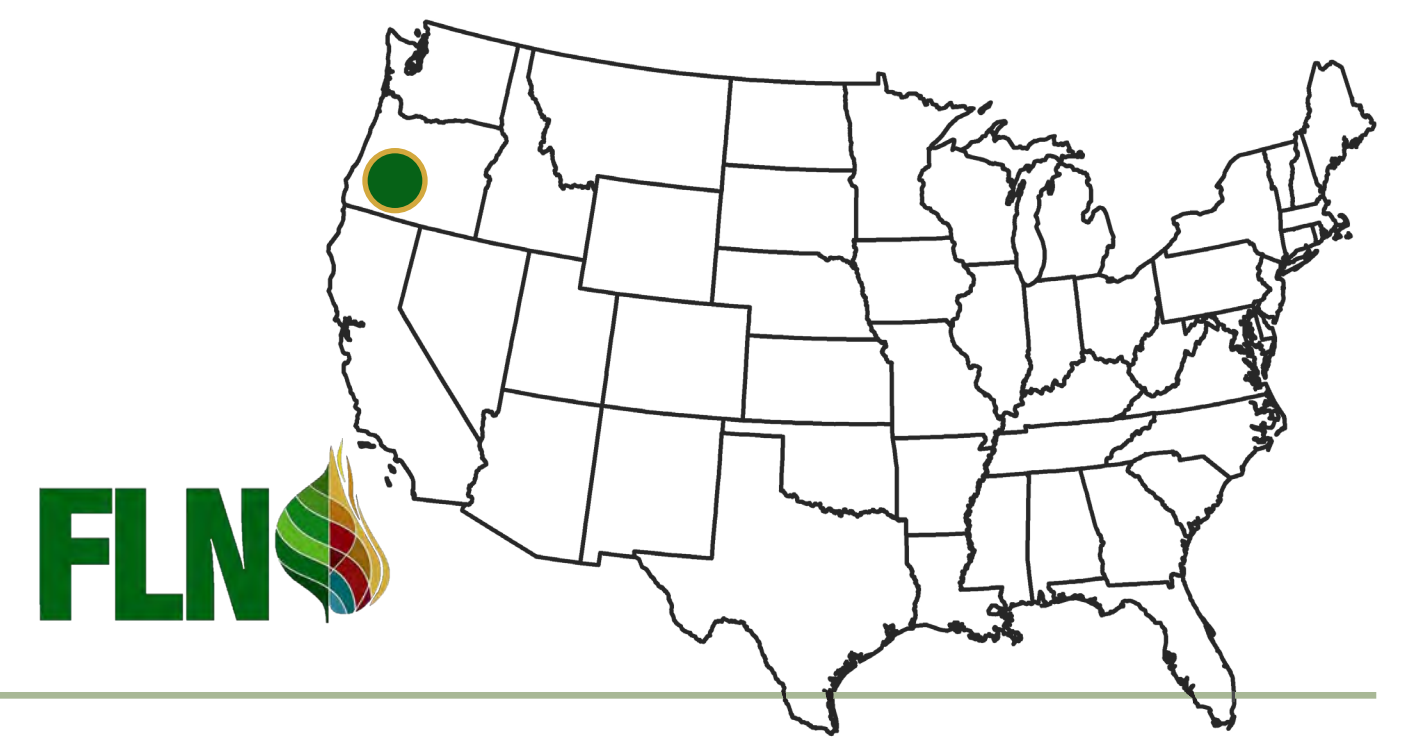
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Northwest Fire Learning Network

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Across the three landscapes of the Northwest FLN we are working to integrate ecological, economic and social values into collaborative dry forest restoration. This is only possible by engaging diverse partners with an interest in Oregon's dry forests and all the community benefits they provide. We are working with federal, state and local organizations to develop a shared vision of restored dry, frequent-fire forests across the region and the benefits a more resilient forest landscape can provide. We are using innovative collaborative approaches and cutting-edge research and analysis to reach a broader segment of the community, reconnect people with the forest, and facilitate a science-based conversation about fire-adapted forests and the implications of living in and around these dynamic, fire-prone landscapes.

Recent examples of this work include a statewide analysis of restoration need in dry, frequent-fire forest systems; the community learning exchanges; the Ashland Forest Resiliency "Fire for Water" video; and the publication of *Restoration of Dry Forests in Eastern Oregon: A Field Guide*, developed in partnership with Dr. Jerry Franklin and Dr. Norm Johnson.

As a trusted partner to a diverse range of interests, we use tools like these to foster dialogue, stronger relationships and trust within the communities where we work. By pairing this with a strong scientific rationale, we are helping forge a path through decades of conflict, bringing together local community interests and federal land managers to implement this shared vision on the ground, at a pace and scale commensurate with the ecological need.

Network Landscapes

Rogue Basin
Upper Deschutes Basin
Lakeview Stewardship Unit/
Fremont-Winema NF



Members of the public and agency staff tour the site of the Pole Creek Fire together during a 2013 learning exchange.
Photo: Marika Yuma

Highlight: Central Oregon Prescribed Fire Training Exchange



Returning fire to the ponderosa forests of central Oregon

In May 2015, firefighters, conservation stewards and managers from the U.S. Forest Service, Bureau of Land Management, Oregon Department of Forestry, Grayback Forestry, Lomakatsi Restoration Project and The Nature Conservancy gathered to learn about the social and ecological challenges and opportunities for the use of prescribed fire in the forests, shrublands and grasslands of Oregon. Hosted by the Central Oregon Fire Management Service—a joint BLM-USFS program—and TNC, and with participation from the Oregon Prescribed Fire Council and the University of Idaho, this was the first prescribed fire training exchange in Oregon.



It wasn't all ponderosa: participants discussed the ecology of sage-steppe ecosystems on a field tour.
Photos: TNC/Pete Caligiuri

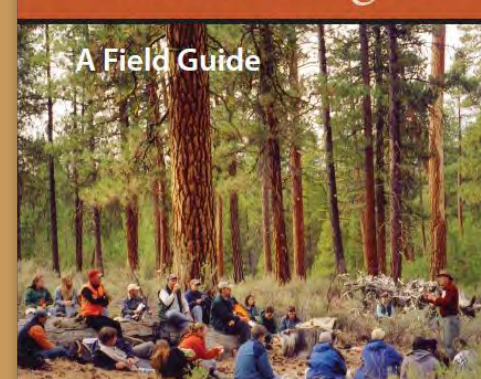
Despite a rainy start, the team remained patient and focused. Participants spent time in the classroom, as planned, and went on field trips. And in spite of the forecast, they were able to find weather windows and burn units where fire could be used to meet ecological and training objectives, as well as opportunities for local community engagement and outreach. A few days in, participants implemented a controlled burn on the Deschutes National Forest, and two more days of burning followed.

Over the course of the event, participants learned and practiced a variety of skills—including interviewing with the media, speaking with the public about beneficial fire and monitoring the effects of fire on vegetation, as well as implementing controlled burns. Diverse teams were tasked with igniting and holding prescribed fires, and monitoring and documenting fire effects. They also worked with local community members to promote the use of fire in and around communities—helping pave the way for safer communities and fire-adapted ecosystems restored to a more healthy and resilient condition.



Participants conducted a morning briefing before burning operations in the Sisters Area Fuels Reduction (SAFR) project on the Deschutes National Forest

Restoration of Dry Forests in Eastern Oregon A Field Guide



Guiding a Path to Restoration

The "Restoration of Dry Forests in Eastern Oregon" field guide is the product of a collaboration among numerous partners, including the Northwest FLN. The methods described in the field guide are being incorporated into the prescriptions of forest restoration projects on the Fremont/Winema National Forest.

The guide is available electronically at <http://nature.ly/dryforests>

Network Partners

- American Forest Resource Council
- Applegate Partnership
- Black Oak Forest Restoration
- Bureau of Land Management—Medford District
- Central Oregon Intergovernmental Council
- Central Oregon Fire Management Service
- City of Ashland
- City of Bend
- City of Sisters
- Deschutes County
- Josephine County Stewardship Group
- Klamath Tribes
- Klamath-Siskiyou Wildlands Center
- Lake County Resource Initiative and its members
- Lomakatsi Restoration Project
- Northern Arizona University—Ecological Restoration Institute
- Oregon Department of Fish and Wildlife
- Oregon Department of Forestry
- Oregon State University Extension
- Oregon Wild
- Project Wildfire
- Sierra Club
- Southern Oregon Forest Restoration Collaborative
- Southern Oregon University
- The Nature Conservancy—Oregon
- The Wilderness Society
- U.S. Fish & Wildlife Service
- Upper Deschutes River Coalition
- USDA Forest Service—Deschutes, Fremont-Winema and Rogue River-Siskiyou NFs
- USDA Forest Service—Forest Health Protection
- USDA Forest Service—Pacific Southwest Research Station
- USDA Forest Service—Region 6
- Warm Springs Confederated Tribes

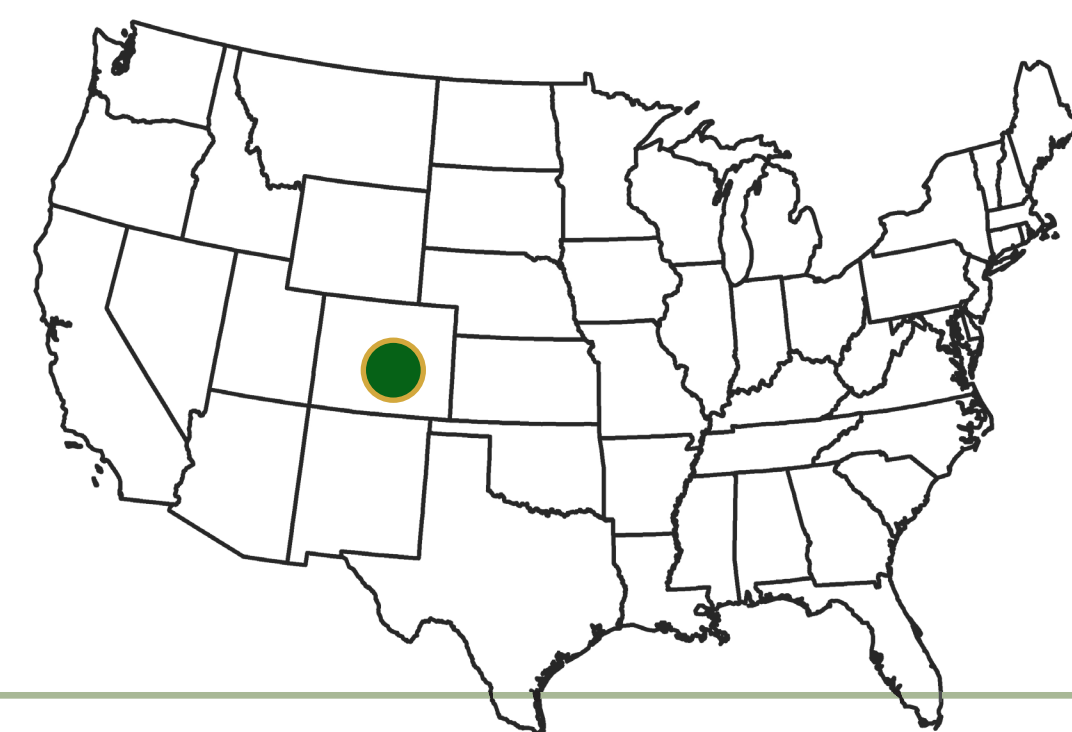
The Fire Learning Network is supported by Promoting Ecosystem Resilience and Fire Adapted Communities Together (PERFACT), a cooperative agreement between The Nature Conservancy, the USDA Forest Service and agencies of the Department of the Interior.

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Pike's Peak Fire Learning Network

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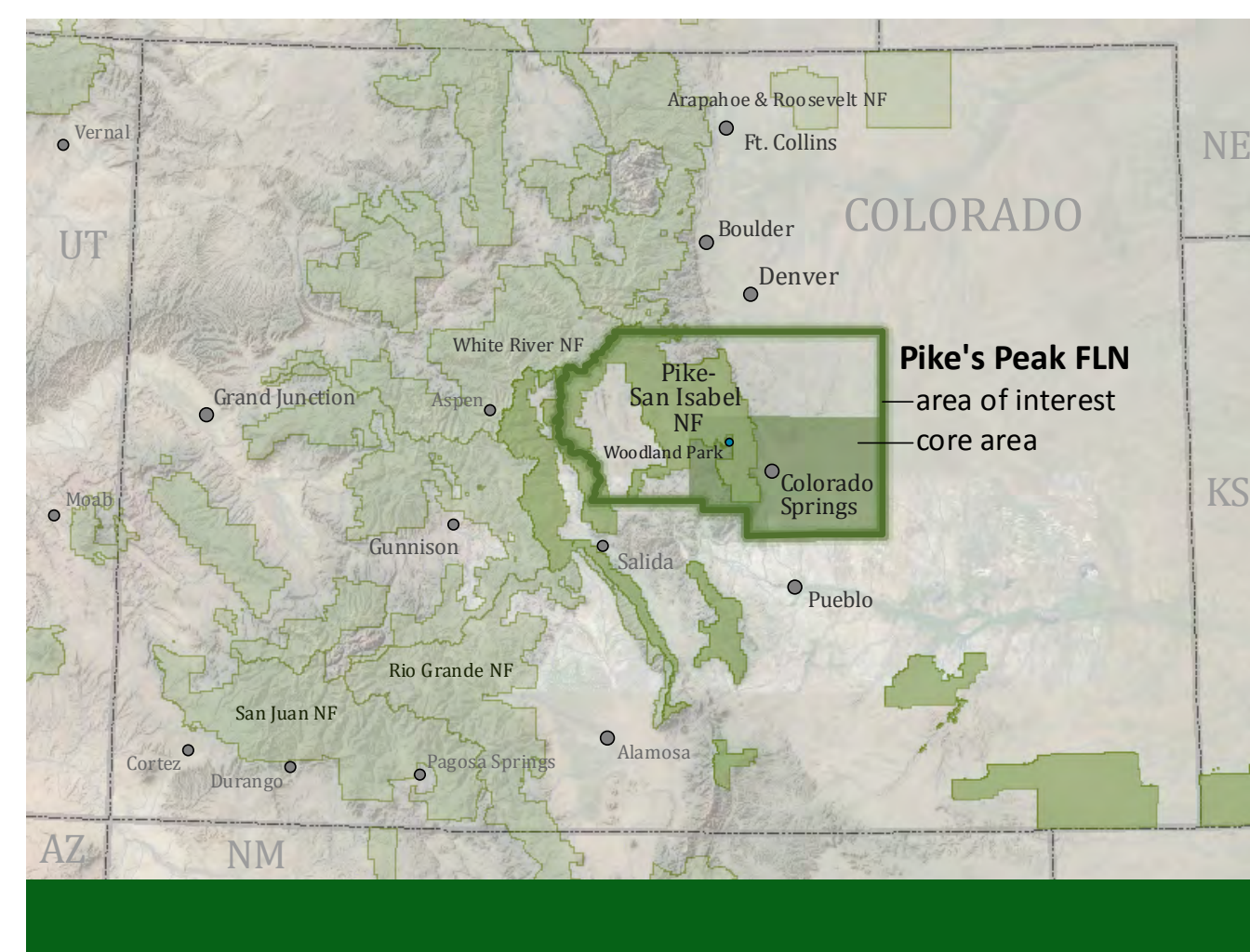


The Pike's Peak FLN is a new collaborative initiative focused on increasing public understanding of and support for the use of fire in forest management, expanding local forest and fire management capacity, and demonstrating the safe and effective use of fire in high priority landscapes.

Pike's Peak area partners are using the FLN to leverage and expand on the great work already being implemented by other local organizations, including the Woodland Park Fire Adapted Communities Learning Network hub. FLN activities will include building an effective stakeholder network, hosting public workshops on fire ecology and the use of fire for management, facilitating training opportunities for fire practitioners, and implementing at least one prescribed burn in the coming year. The FLN's work will build on the accomplishments of the Upper Fountain Creek Watershed Restoration Initiative—which was supported by Scaling-up to Promote Ecosystem Resilience (SPER)—and will contribute to the goals of the Front Range Collaborative Forest Landscape Restoration Program (CFLRP) project, Colorado Prescribed Fire Council and Southern Rockies Fire Science Network.



Photo: TNC/Jeff Crandall



Network Partners

Cheyenne Mountain A.F.S. Fire Department
City of Colorado Springs
Coalition for the Upper South Platte
Colorado Division of Fire Prevention and Control
Colorado Parks and Wildlife
Colorado Prescribed Fire Council
Colorado Springs Utilities
Colorado State Forest Service
El Paso County
Larkspur Fire Protection District
Northeast Teller County Fire District
Pike's Peak Wildfire Prevention Partners
Rocky Mountain Tree Ring Research
Southern Rockies Fire Science Network
Teller-Park Conservation District
The Nature Conservancy—Colorado
U.S. Air Force Academy
U.S. Geological Survey
USDA Forest Service
USDA Natural Resources Conservation Service
Wescott Fire Protection District
Wildland Urban Interface Center

The Pike's Peak FLN collaborative is focused on

- increasing public understanding of and support for the use of fire in forest management,
- expanding local forest and fire management capacity, and
- demonstrating the safe and effective use of fire in high priority landscapes.



Module crew member thinning.
Photo: TNC/Mike Babler

Recent Highlight: What it Means to Live in a Fire-Adapted Landscape

Members of the Pike's Peak FLN recently hosted two workshops designed to engage a wide range of local organizations and community members in discussions around what it means to live in a fire-adapted landscape—including the use of prescribed fire as a management tool to reduce wildfire risks in the wildland-urban interface (WUI).

The first workshop, hosted by the Colorado Springs Fire Department, honored Wildfire Mitigation Champions from local homeowners' associations and communities and served as a kick-off for wildfire mitigation activities for the upcoming spring and summer season. Members of the Colorado Springs Fire Department, who recently received a national 2015 Wildfire Mitigation Award, shared a number of successes from the previous year's mitigation work. They also recognized several community champions for their leadership in neighborhood education and mitigation activities. Rob Addington, a landscape ecologist with The Nature Conservancy, spoke on behalf of the Pike's Peak FLN about the ecological

role of fire on Colorado's Front Range and the importance of using prescribed fire to reduce surface fuels, restore forest structure and enhance understory vegetation and wildlife habitats.

The second workshop was hosted by the Pike's Peak Wildfire Prevention Partners, a diverse group of wildfire professionals, wildfire mitigation contractors, agency representatives and homeowners that has been working together for several years to reduce the threat of wildfire to life and property in the Pike's Peak region. The 2015 Spring Workshop was coordinated by FLN member and NE Teller County Fire Marshall Vernon Champlin and provided participants with a fast-paced and interactive day focused on reducing wildfire risks in the WUI. Rob Addington also hosted a session on the role of prescribed fire in the WUI, and engaged workshop participants in thinking about how we can expand this use of this important management tool even in areas with significant human populations.



Mitigation champions were honored at a workshop hosted by the Colorado Springs Fire Dept.



The Conservancy's Southern Rockies Wildland Fire Module at the 2013 Phantom Canyon Burn.



Pike National Forest: a field tour (left) for partners in the Collaborative Forest Landscape Restoration Program (CFLRP) project on the forest, and a treated area (left).

Photos: TNC/Paige Lewis

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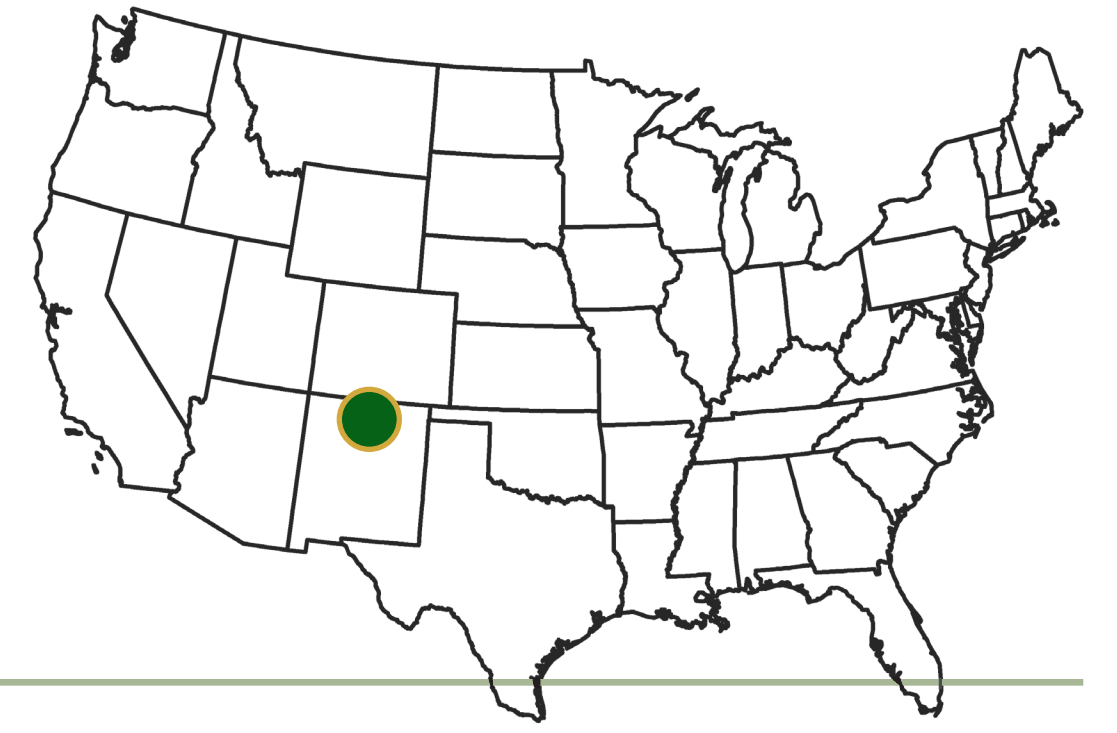
Rio Grande Water Fund **FLN**

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In New Mexico, the FLN is now a key part of a water source protection fund program for the northern Rio Grande. Our vision is to provide a reliable supply of high-quality Rio Grande water and healthy forests for the benefit of New Mexico's communities. Our goal is to scale up forest thinning and prescribed fire treatments from about 6,000 acres per year to 30,000 acres per year in northern New Mexico. We will do this by developing a sustainable source of funding from a wide variety of investors and donors, facilitating payments to upstream land managers to help them reduce wildfire and debris flow risk in high priority areas and build forest resilience and revitalize forest-based businesses.

The seven-million-acre Rio Grande landscape includes 1.7 million acres of forest, of which 600,000 acres are treatable. FLN supported activities include engaging with the Fire Adapted Communities Learning Network, developing a collaborative governance structure for the many water fund partners, and conducting restoration treatments. The FLN is also addressing the post-fire impacts where uncharacteristically large and severe fires have damaged watersheds.

Improving the health of head-water forests is a critical climate change adaptation strategy in a warming Southwest, where fire seasons have become longer and more severe, and water security is a primary concern for all communities.



Rio Grande Water Fund Advisory Board Member Affiliations

- | | | |
|---|--|---|
| Acequia del Monte del Rio Chiquito Taos | Middle Rio Grande Conservancy District | New Mexico Water Business Task Force |
| Albuquerque Bernalillo County Water Authority | New Mexico Acequia Association | New Mexico Watershed and Dam Owners Coalition |
| Albuquerque Metropolitan Arroyo Flood Control Authority | New Mexico Association of Commerce and Industry | Racher Restoration |
| Bernalillo County | New Mexico Association of Counties | Sandia National Laboratory |
| Bohannon Huston Civil Engineering | New Mexico Department of Insurance | SAYAK Natural Resource Consulting |
| Bosque Environmental Management Program | New Mexico Environment Department | Sierra Club—Northern New Mexico Group |
| Bureau of Indian Affairs | New Mexico Forest Industry Association | The Land and Water Clinic |
| Bureau of Land Management | New Mexico Interstate Stream Commission | The Nature Conservancy |
| Chama Peak Land Alliance | New Mexico Land Grant Council | Trout Unlimited |
| City of Santa Fe | New Mexico Minerals, Energy and Natural Resources Department | U.S. Army Corps of Engineers |
| Ciudad Soil and Water Conservation District | New Mexico Museum of Science and Natural History | U.S. Geological Survey—Water Science Center |
| Dekker/Perich/Sabatini Architects | New Mexico Office of the State Engineer | University of New Mexico |
| Forest Guild | New Mexico State Land Office | USDA Forest Service—Carson NF; Cibola NF |
| Greater Albuquerque Chamber of Commerce | | USDA Forest Service—Southwest Region |
| Intel Corporation | | Valles Caldera National Preserve |
| Lautman Economic Architecture | | Watershed Dynamics, LCC |
| Lowe's Home Improvement | | Western Land Alliance |

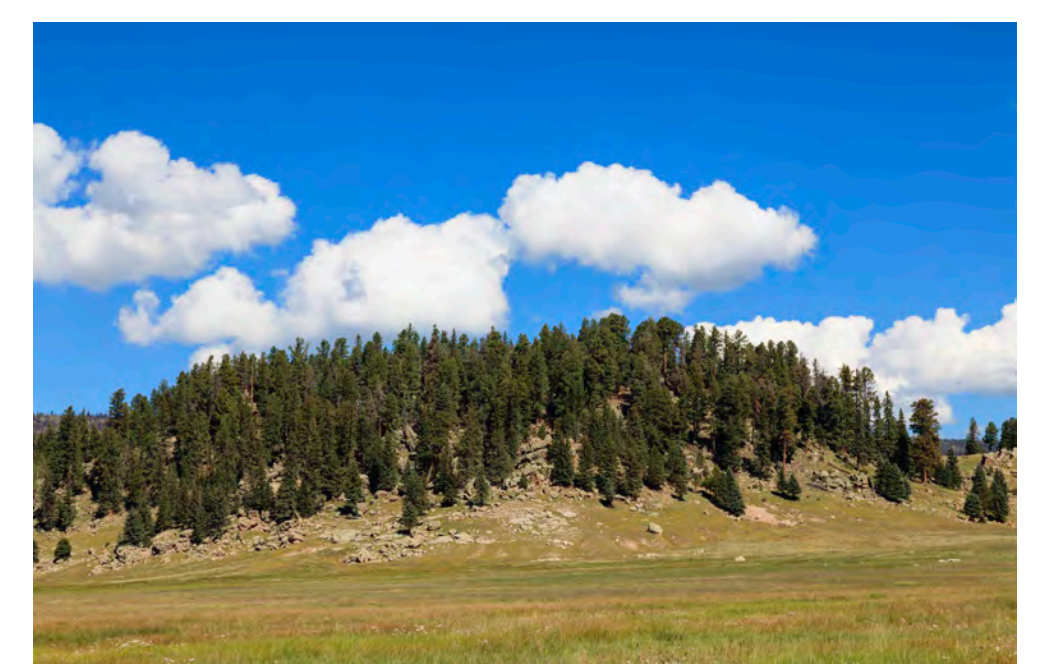
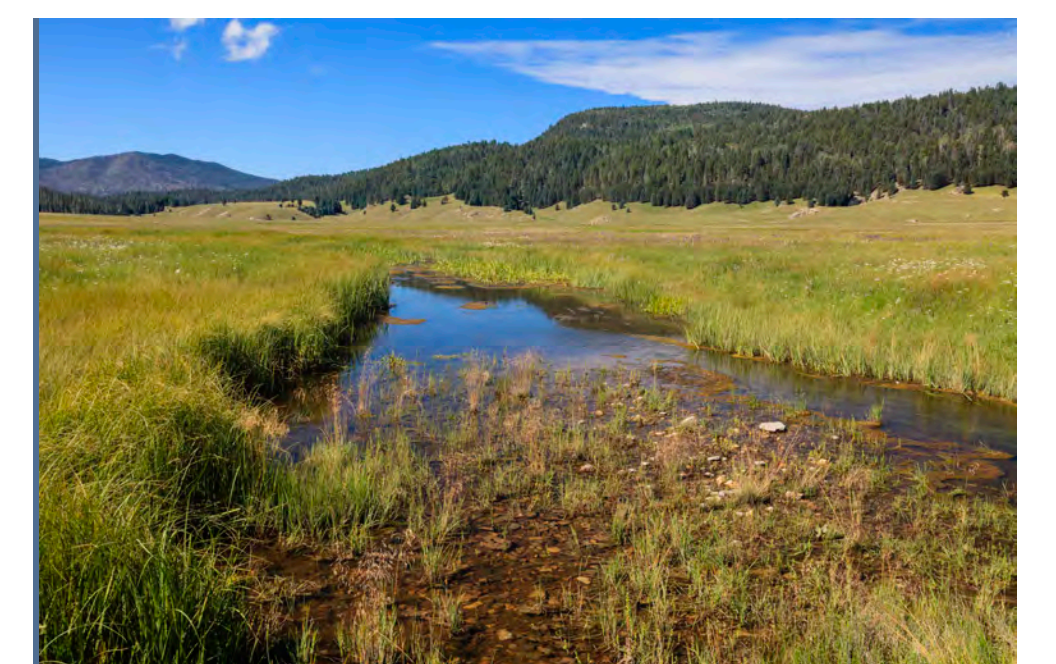
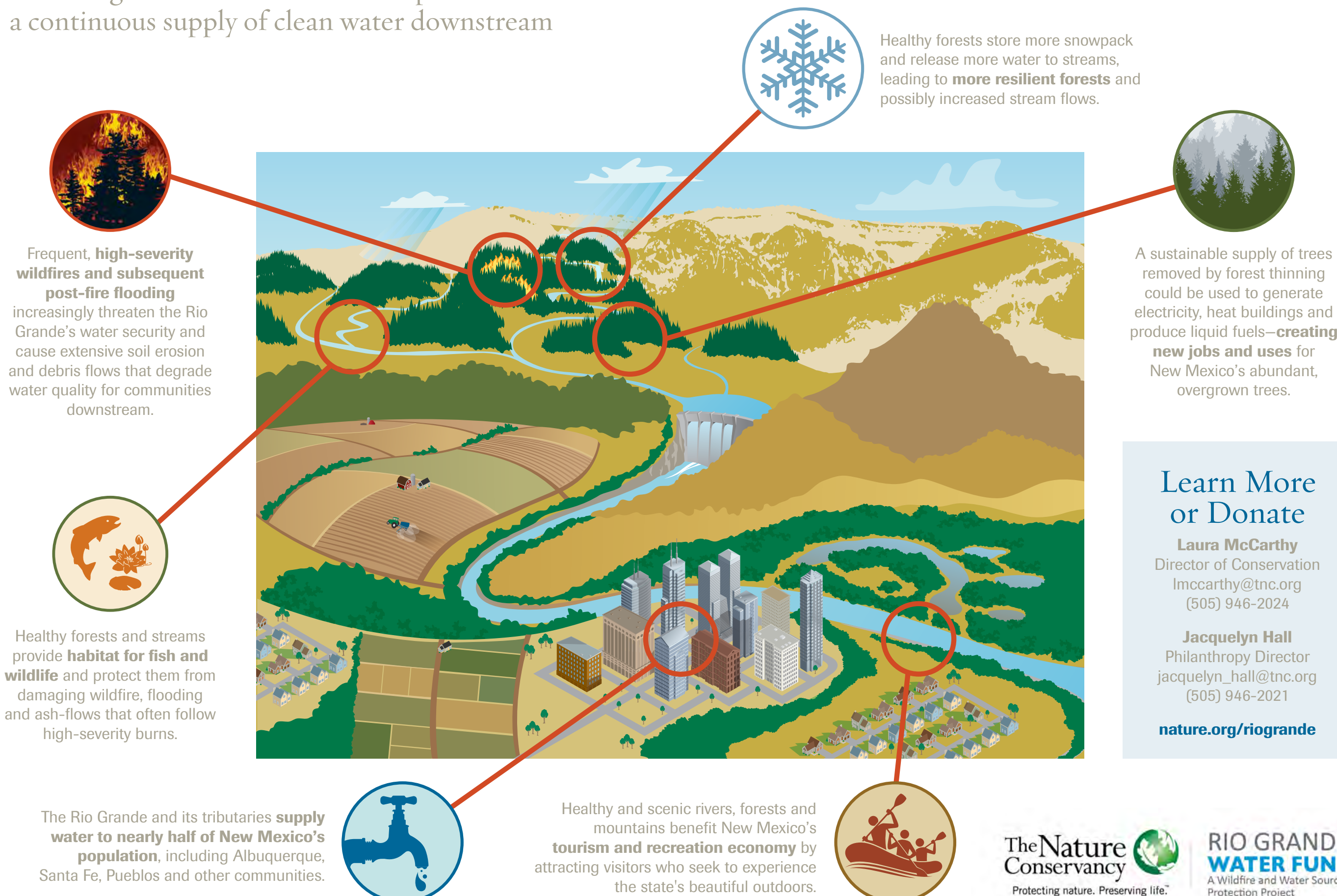
The Comprehensive Plan for Wildfire and Water Source Protection is available at:
<http://nmconservation.org/RGWF/plan.html>



A properly-thinned stand of ponderosa pine is more resilient to wildfire
 © 2013 Alan W. Eckert for The Nature Conservancy

New Mexico | Rio Grande Water Fund

Restoring essential forested lands upstream will ensure a continuous supply of clean water downstream



Wetlands (top) and hilllock (bottom) at Valles Caldera National Preserve in the heart of the Water Fund landscape.

© 2013 Alan W. Eckert for The Nature Conservancy

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South Central Fire Learning Network

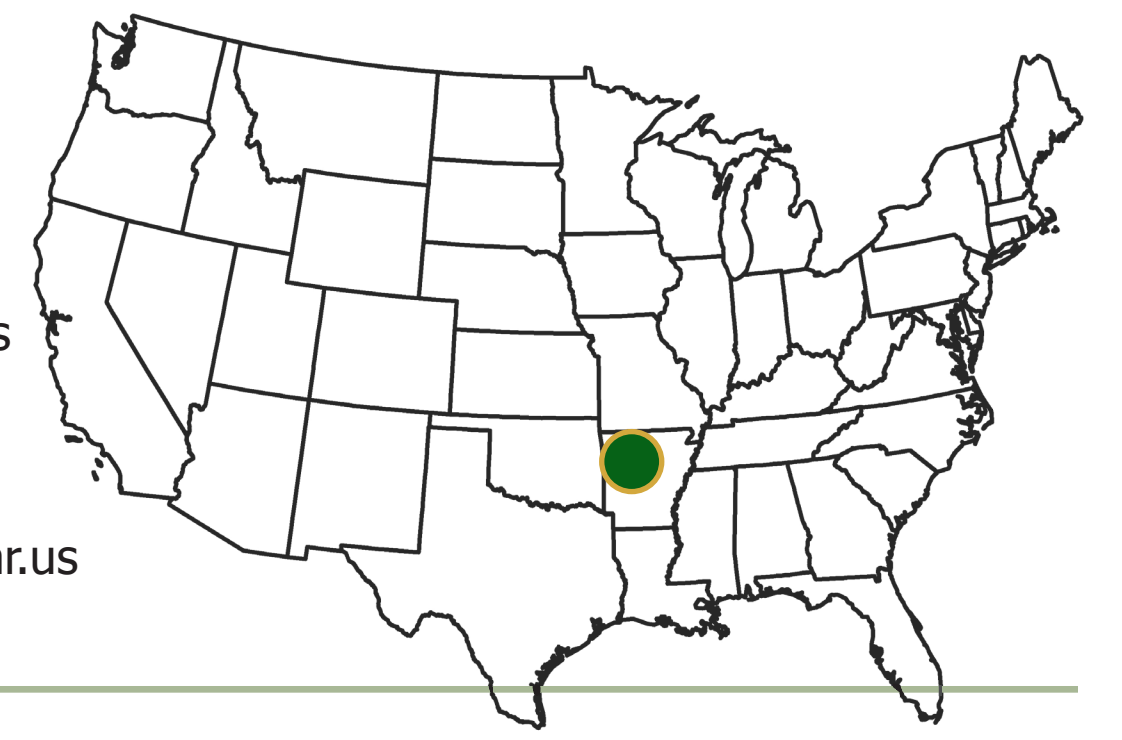


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The South Central Regional Fire Learning Network has long been a catalyst for restoration, supporting scientific knowledge exchanges and developing monitoring protocols and definitions of current and desired ecological conditions across the region. This network is a long-term, diverse coalition functioning as a robust community of practice of restoration practitioners, scientists, policy makers and on-the-ground managers. Together, they are restoring and managing lands with



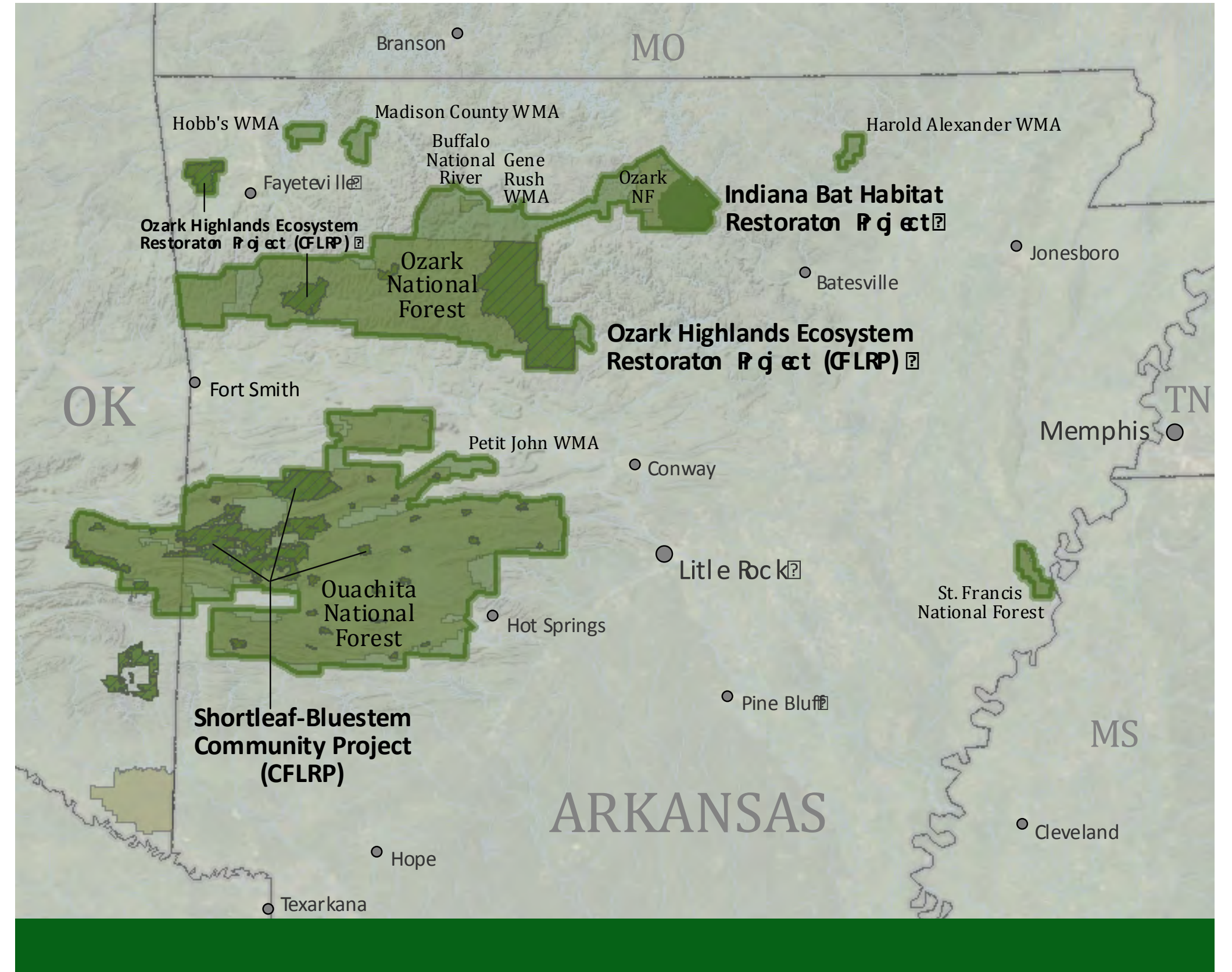
Photo: USFS/Steve Duzan

prescribed fire and timber management techniques for the long-term health of the lands for wildlife and water quality benefits. The South Central FLN has secured implementation funding from state wildlife grants, non-profits, private foundations, and state and federal institutions for restoration and management on a portfolio of multi-ownership (federal, state and private) lands throughout the region.

Since 2001, over \$8.5 million in federal funding has been awarded to this collaborative partnership for ecosystem management across the Interior Highlands, starting with the 60,000-acre Woodland Ecosystem Project, which continues to be a model for landscape-scale restoration. Both funding and the scale of work have grown since then, with partners now working on two CFLRP projects (over 1 million acres) and the 80,000-acre Happy Bat Project on the Sylamore Ranger District of the Ozark-St. Francis National Forest.

In addition to this on-the-ground work, the region is the epicenter of the shortleaf pine (*Pinus echinata*) range, and the FLN has been chosen to lead a new Shortleaf Pine Initiative to address the steep decline of this species and its associated fire-adapted communities. This initiative is developing a range-wide conservation plan covering the 23 states where shortleaf pine is found.

This FLN also continues to bring partners together for field trips, workshops and project proposal development for large, collaboratively-based woodland and glade restoration projects, such as those being done under Scaling-up to Promote Ecosystem Resiliency (SPER). Finally, the FLN assists partners with institutionalizing restoration programs and developing public demonstration areas throughout the region.



Current Projects

- Indiana Bat Habitat Restoration Project
- Ozark Highlands Ecosystem Project (CFLRP*)
- Shortleaf-Bluestem Community Project (CFLRP*)

* Forest Service Collaborative Forest Landscape Restoration Program

Network Partners

- Arkansas Audubon Society
- Arkansas Forestry Commission
- Arkansas Game and Fish Commission Wildlife Management Areas
- Arkansas Natural Heritage Commission
- Arkansas Wildlife Federation
- National Forest Foundation
- National Park Service—Buffalo National River
- National Wild Turkey Federation
- Ouachita Timber Purchasers Group
- The Nature Conservancy—Arkansas
- U.S. Fish & Wildlife Service—Arkansas Field Office
- University of Missouri, Columbia
- USDA Forest Service—Ouachita NF, Ozark-St. Francis NF (Big Piney Ranger District), Mark Twain NF; Southern Research Station



Restoration of several glades was part of Scaling-up to Promote Ecosystem Resiliency (SPER) work guided by this FLN. Key to that restoration was the removal of encroaching eastern redcedars.

Photo: TNC/McRee Anderson



Workshops that bring together practitioners from numerous agencies and departments across the state of Arkansas, and the region, are an important aspect of the SC FLN. Some workshops rely heavily on presentations and their discussions, but many take place in the field, where people examine and learn together from work in progress.

Left: Woodland and glade restoration workshop, September 2012

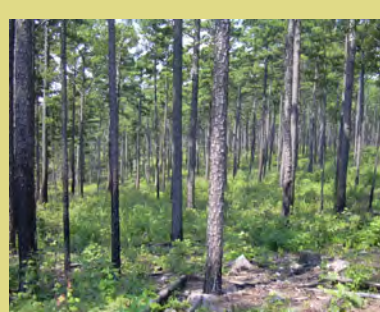


Right: Field tour of Ozark National Forest CFLRP project

Spotlight: Shortleaf Pine Conservation

Shortleaf pine forests and associated habitats once covered a vast area of the continent stretching from eastern Texas and Oklahoma to the eastern seaboard from New Jersey down to Florida. Early settlers and Government Land Office surveys describe these pine dominated and mixed pine-oak forests as open woodlands where sunlight reached the ground and diverse native wild-life flourished.

In the last 30 years, this extensive ecosystem has lost more than 50 percent of its acreage,



with most of the significant declines occurring east of the Mississippi River. Massive pine beetle outbreaks in poorly managed stands, changes in timber management practices, disease, altered fire regimes, and land use changes have contributed to this rapid decline.

These forested landscapes represent an extraordinary diversity of cultural, ecological and economic values centered on recreation and wild-life, water quality, and a high-value wood products industry. With millions of people depending on the values and benefits of this ecosystem, the need to develop a range-wide conservation strategy is more compelling than ever.

The Shortleaf Pine Initiative

In 2010, a diverse group of the region's resource management leaders formed the Shortleaf Working Group. This group began to focus regional attention on the extensive and rapid loss of shortleaf pine habitats and the associated values. As a result of the Working Group's efforts, the 2011 Shortleaf Pine Conference drew more than 120 of the region's resource managers together and galvanized efforts for a more extensive range-wide conservation effort in shortleaf pine habitats. In 2013, the Shortleaf Pine Initiative was formed to address the multiple threats facing this imperiled ecosystem.

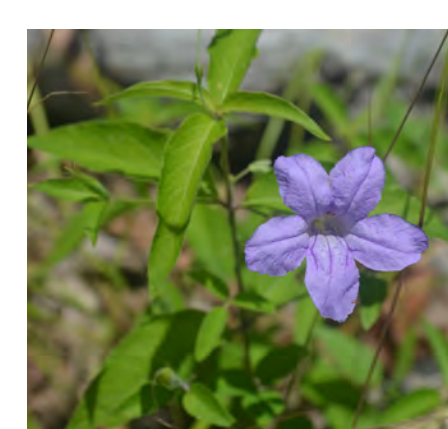
The Shortleaf Pine Initiative

represents a broad range of public and private organizations, as well as state and federal agencies working in the shortleaf pine ecosystem. The Initiative is forming an Advisory Committee and Planning Team to lead efforts in developing a range-wide conservation plan for shortleaf pine and launching implementation of the plan's strategies and actions. The Advisory Committee represents an extensive group of conservation minded agencies and organizations with the common goal of restoring this imperiled ecosystem.

For more information, visit <http://www.shortleafpine.net/>



Left: USFS/Steve Duzan
Right: TNC/Chris Topik



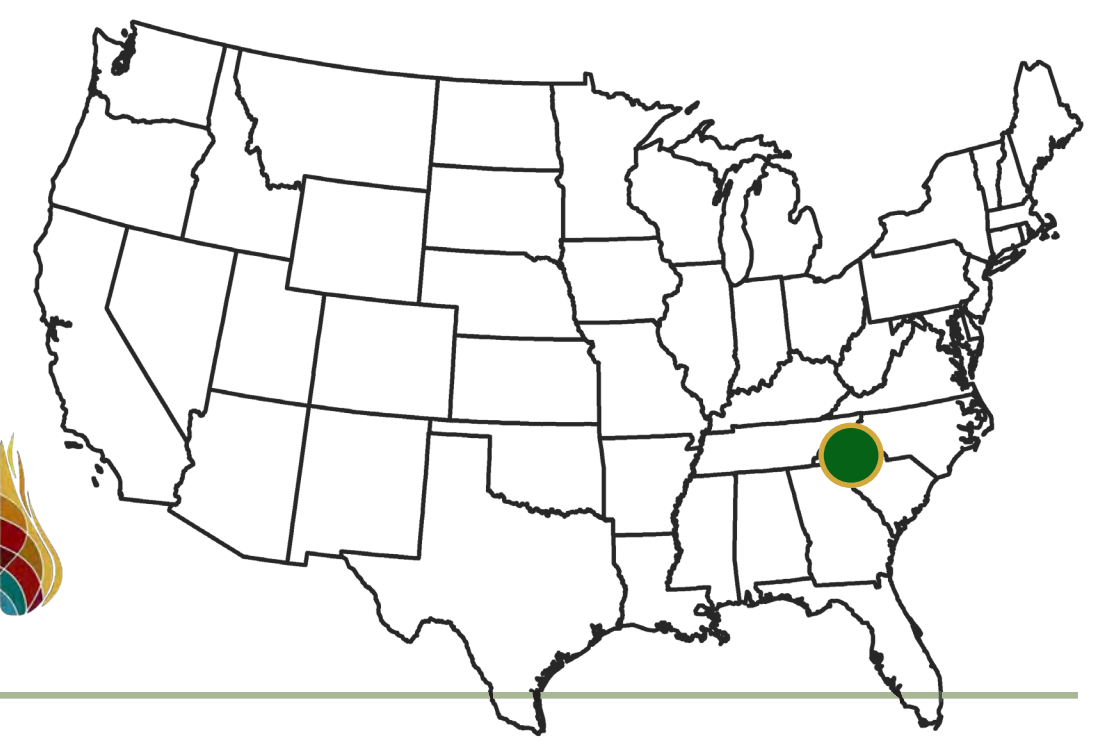
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Southern Blue Ridge Fire Learning Network

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Partners in the Southern Blue Ridge FLN (SBR FLN) collaborate to develop, share and apply the best available science to restore fire across a vast, diverse region. Partners and stakeholders work in teams in the network's eight landscapes to set and achieve restoration goals in their fire-adapted pine and oak forests.

Vegetation maps, models and tools developed by partners help build a cohesive vision and description of restoration needs. Landscape teams have adapted a regional treatment prioritization tool and applied it locally, with each learning from other landscapes' work. The SBR FLN has also collaborated with the Cherokee National Forest Landscape Restoration Initiative, Central Appalachians FLN and LANDFIRE to adapt LANDFIRE models to this region. The models, along with a LiDAR-based forest structure analysis and the vegetation maps, have been used to estimate the departure of current vegetation from historic conditions across the National Forests of North Carolina. This information is informing forest planning and National Environmental Policy Analysis (NEPA) projects in several landscapes.

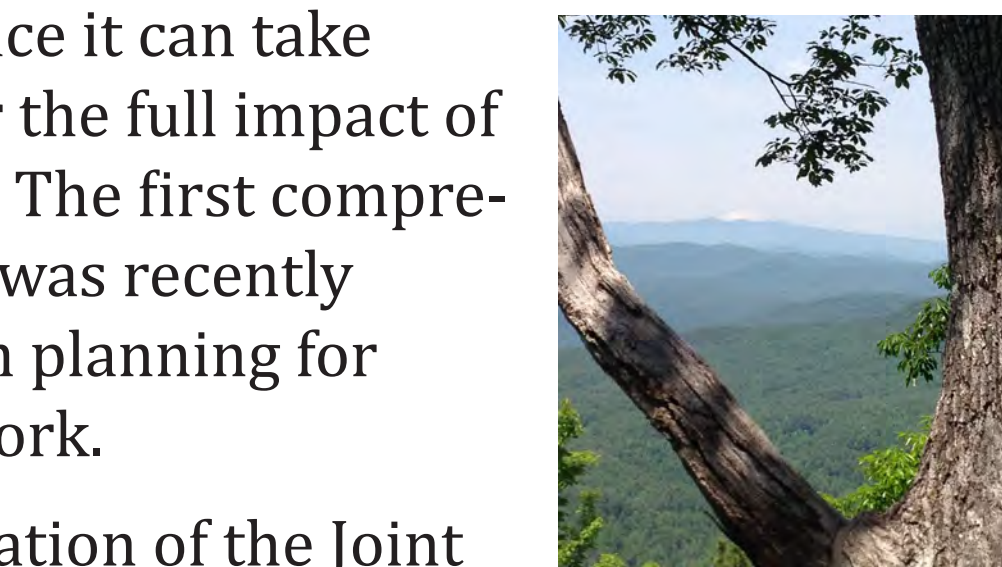
Fire history research on three SBR FLN landscapes is shaping prescribed fire regimes. Evidence that fire historically played a role in maintaining these forests—which are changing, due to almost a century of fire suppression—is also being used to build wider support for the use of controlled fire.

Partnership burns across multiple ownerships have become common in most landscapes, and more are planned for the coming year. Partly as a result of the last SBR regional workshop, state agencies in North and South Carolina are discussing collaborative burning across state lines for the first time.

A network of monitoring plots established by Forest Stewards enables partners to track the effectiveness of management actions. Consistent, long-term monitoring is essential, since it can take years—and multiple treatments—for the full impact of fire in hardwoods to become evident. The first comprehensive assessment using these data was recently completed, and will be used to inform planning for future burns and other restoration work.

This FLN has helped build the foundation of the Joint Fire Science Program's Consortium of Appalachian Fire Managers and Scientists, and continues to play a key role in providing opportunities for networking among scientists, managers and practitioners. This accelerates transfer of knowledge and feedback that supports adaptive management.

Well-attended workshops, collaborative projects, and tools shared by webinar and other means have helped the SBR FLN build strong working partnerships. These in turn support the steady growth of the network, most recently with the addition of the Georgia Blue Ridge Mountains landscape. This landscape brings a new dimension to the SBR FLN, as it includes Towns County, a member of the Fire Adapted Communities (FAC) Learning Network.



Network Landscapes

Central Blue Ridge Escarpment
Georgia Blue Ridge Mountains
Great Smoky & Unaka Mountains
Nantahala & Balsam Mountains
New River Headwaters
Northern Escarpment
South Mountains
Southern Blue Ridge Escarpment



Network Partners

Consortium of Appalachian Fire Managers and Scientists
Forest Stewards
Georgia Department of Natural Resources—State Parks; Wildlife Resources Division (Game, Nongame)
Georgia Forest Watch
Greenville Water
Land Trust for the Little Tennessee River
Mountain True
National Park Service—Blue Ridge Parkway; Great Smoky Mountains NP
North Carolina Division of Parks and Recreation
North Carolina Forest Service
North Carolina Wildlife Resources Commission
South Carolina Division of Natural Resources

South Carolina Forestry Commission
South Carolina State Parks
The Nature Conservancy—Georgia, North Carolina, South Carolina, Tennessee
Towns County (Fire Adapted Communities Learning Network)
USDA Forest Service—Chattahoochee-Oconee National Forest (Blue Ridge Ranger District, Chattooga River RD, Conasauga RD); Cherokee NF (Unaka RD); National Forests in North Carolina: Nantahala National Forest (Cheoah RD, Tusquittee RD, Nantahala RD); Pisgah National Forest (Grandfather RD)
USDA Forest Service—Region 8 Fire & Aviation
USDA Forest Service—Southern Research Station



Recent Highlight: Prescribed Fire Training Exchange



Photo: Nancy Lee Adamson



TREX participants taking part in a field tour with author and ecologist Bruce Sorrie. Photo: Nancy Lee Adamson



What can you burn with southern snow on the ground? Piles! When weather did not permit broadcast burning, pile-burning provided participants with experience in wildfire suppression techniques while reducing excess fuels. Photo: Katelynn Jenkins



Participants improved conditions for longleaf pine seedlings. Photo: TNC/Kara Karboski



A happy module takes a break post-fire. Photo: TNC/Margit Bucher

Neither rain nor snow nor ice could slow down the February 2014 North Carolina TREX. A hardy group of prescribed fire practitioners braved the elements to participate in a Prescribed Fire Training Exchange in the North Carolina Sandhills. Despite some of the coldest temperatures on record and precipitation in the form of rain, snow and ice, the 58 participants shared knowledge and techniques to enhance controlled burning skills.

As is typical of TREX, participants with a wide range of skill levels and from diverse geographies—in this case from 15 states and Spain—came together to teach and learn from one another. Thirty organizations were represented, along with one private landowner. Thirty-five of the participants were working on their position task books for NWCG qualifications.

The North Carolina TREX got off to a good start—on the second day, participants worked together to burn 163 acres of longleaf pine habitat on three tracts owned by The Nature Conservancy (TNC) and the North Carolina Wildlife Resources Commission (NC WRC). As the weather took a turn on the third day, with a rainy mix not conducive to burning, the training and knowledge exchange was just beginning. The next few days were spent learning about the need for fire in the longleaf ecosystem, local ecology, weather monitoring and forecasts, smoke modeling, medical planning, operation of pumps and engines, firing techniques, and other topics, with lessons both in and out of the classroom.

Four days later, the participants got back out to burn some more, treating 102 acres of longleaf pine on NC WRC and TNC land. They also conducted pile burning on private lands, which served as a training opportunity for participants to



Creative use of ice can brighten the outlook when you are trying to burn. Photo: Jose Luis Duce

work on skills to suppress a "wild-fire." The weather held the next day, allowing 258 acres of burning on three tracts owned by TNC and one on private lands.

The weather then went from bad to worse—but morale remained high, and the dedication to training did not end. Classroom and other non-burning field training continued. And on the last day of the TREX, participants were rewarded, when a small burn window allowed for one more acre of burning, and all of the participants had a chance to practice their skills at initial attack on several "wildfires."

During the TREX, about 525 acres of longleaf forest were burned on both private and public lands. But by many accounts the most valuable aspect of the TREX was the exposure to the techniques, approaches and cultures of fire programs from many different organizations and different states, and learning about experiences in different fuel types.

Photos in text:

Above, left: Landscape at Jocassee Gorges Wildlife Management Area, in the Southern Blue Ridge Escarpment landscape. Participants in the SBR FLN May 2014 workshop—including several new partners from South Carolina—explored and discussed this site.

Credit: TNC/Katherine Medlock

Above, right: A helicopter flies through smoke from a cooperative burn on the Lake James Unit conducted as part of the Grandfather CFLRP project in January 2015.

Credit: USFS/Lisa Jennings

Left: Landscape hosts give a presentation during a field tour at Tallulah Gorge State Park and Chattooga River Ranger District during the May 2013 regional workshop. Partners find these workshops so useful that available space in the 2015 workshop was filled weeks in advance of the event.

Credit: TNC/Evan Raskin

The Fire Learning Network is supported by Promoting Ecosystem Resilience and Fire Adapted Communities Together (PERFACT), a cooperative agreement between The Nature Conservancy, the USDA Forest Service and agencies of the Department of the Interior. For more information, contact Lynn Decker (ldecker@tnc.org).



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Washington Dry Forests Fire Learning Network

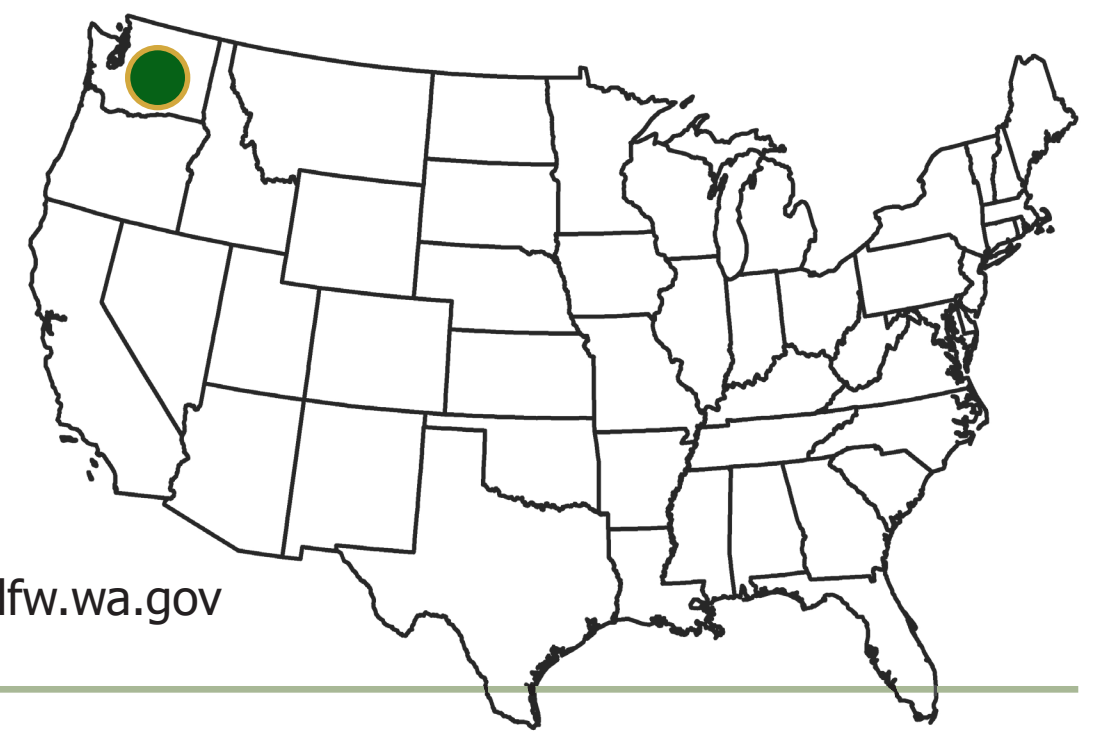


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More than three million acres of dry forests in central and eastern Washington need active restoration. Intensifying wildfires threaten wildlife habitat, clean water, recreation and local livelihoods. These fires also cost taxpayers increasingly large sums to suppress. Our network provides leadership in the North Central Washington Forest Collaborative, the Tapash Sustainable Forest Collaborative and the Washington Prescribed Fire Council, all of which work to identify and employ strategies that increase the pace and scale of active restoration and increase community resiliency.



Two complementary tools can be used to restore forests and reduce the social, ecological and economic costs of wildfires: mechanical thinning and controlled burning. The key barrier to the use of fire to meet economic, social and ecological restoration

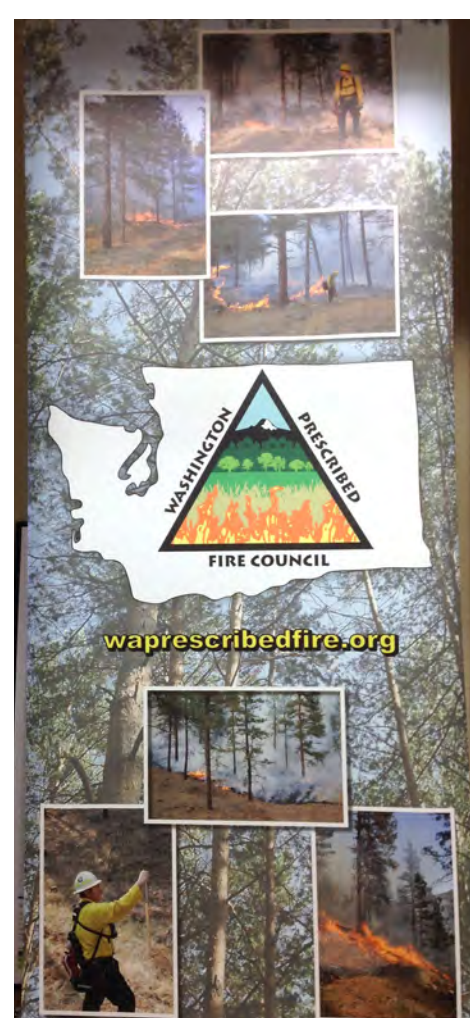
goals is cultural. There is a historically strong cultural bias against fire in the Evergreen State—birthplace of the “Big Burn” of 1910. Many see fire as being too risky or as bad for people, wildlife, air and water; others view fire as wasteful, using up resources that could otherwise be harvested. And since the 1970s, increasing concerns about air quality have led to regulations that originally only restricted the burning of logging slash in western Washington to be applied statewide.

Prescribed Fire Council

In 2010, to initiate a shift in this culture, this network took a lead role in expanding the efforts of the North Central Prescribed Fire Council to a statewide organization, developing its capacity to “protect, conserve, and expand the safe and responsible use of prescribed fire on the Washington landscape to meet both public and private management objectives.” The Council now brings together a diverse set of people from federal and state agencies, industry, and NGOs, representing clean air, homeowner, industry, policy and land management perspectives. The Council is now working to identify policy barriers and recommend changes to expand the safe use of controlled burning.

Fire Adapted Communities

The FLN is also using a new approach, integrating social and ecological aspects of wildland fire by engaging a broad network of fire professionals and community members through the framework of Fire Adapted Communities (FAC)—working with those living with, and those responsible for management of, fire in the wildland-urban interface. We are working closely with the Leavenworth FAC Learning Network pilot community, just north of the Tapash landscape, as they test approaches for mobilizing community members in their various roles. The network is also helping to start a FAC pilot community in the Tapash landscape, where we have long worked on cross-ownership controlled burning and the Tapash Collaborative Forest Landscape Restoration Project. Two FAC workshops in early 2014 brought community members together to learn about FAC concepts and share ideas for taking action. We see FAC as a fruitful new approach to engaging community members, which provides a means to discuss land management options and make proactive choices that benefit the landscape and people living there.



Working together under the banner of the Washington Prescribed Fire Council, practitioners from numerous government agencies and private organizations set priorities (top) and explore treatments in the field (bottom) as they work to protect, conserve, and expand the safe use of prescribed fire on the Washington landscape.



Network Landscapes

- Tapash Sustainable Forest Collaborative & fire adapted community
- Sinlahekin & Methow Ecosystem Restoration Demonstration Landscape
- Yakima Valley Fire Adapted Community Coalition



Network Partners

- Bureau of Land Management
- Center for Natural Lands Management
- Chumstick Wildfire Stewardship Coalition
- Conservation Northwest
- Kittitas County Conservation District
- Mid Columbia Fisheries Enhancement Group
- South Central Washington Resource Conservation & Development Council
- The Nature Conservancy
- U.S. Fish & Wildlife Service
- USDA Forest Service—Okanogan-Wenatchee NF (Supervisors Office; Cle Elum RD, Naches RD)
- USDA Forest Service—Region 6
- Washington Department of Fish and Wildlife (L.T. Murray, Methow, Oak Creek and Sinlahekin Wildlife Areas)
- Washington Department of Fish and Wildlife (prescribed burn team)
- Yakama Nation
- Yakima Basin Fish and Wildlife Recovery Board
- Yakima County Fire Marshal

Recent Highlight: Washington Prescribed Fire Council to Address Training Needs

More than 25 people gathered in mid-February at the Tierra Learning Center in Leavenworth, Washington to identify training needs and opportunities and determine how the Council can facilitate collaboration among prescribed fire practitioners state-wide.

Day one covered successes and challenges in the 2014 fire season across the state and excellent discussions of training and expertise exchange models. People from state and federal agencies and non-governmental organizations discussed how they were able to employ prescribed burns on their lands by successfully addressing issues such as smoke management, resource sharing, public perception and fragmented landscapes.

Council members then broke out into small groups to have focused discussions on training needs, models, and opportunities. Some of the training needs highlighted in these discussion included burn and firing boss training, private contactor certification, smoke management and forecasting workshops, and a suppression skills workshop. Attendees also shared existing training models that can be modified or expanded

to fill some of the needs identified during the workshop.

The day wrapped up with a hike around the Tierra Learning Center property, including areas where fuels reduction techniques have been implemented recently, fostering discussions about prescribed fire on private lands. The group also toured the Tierra Forest Products biochar facility.

The second day's work focused on priorities for the Council and on next steps for increasing training opportunities across the state. Various council members committed to spearheading efforts to develop modified training exchanges, specialized training opportunities, and smoke management and suppression skills workshops, among other actions. The Council also agreed to create an online space to share training needs and opportunities.



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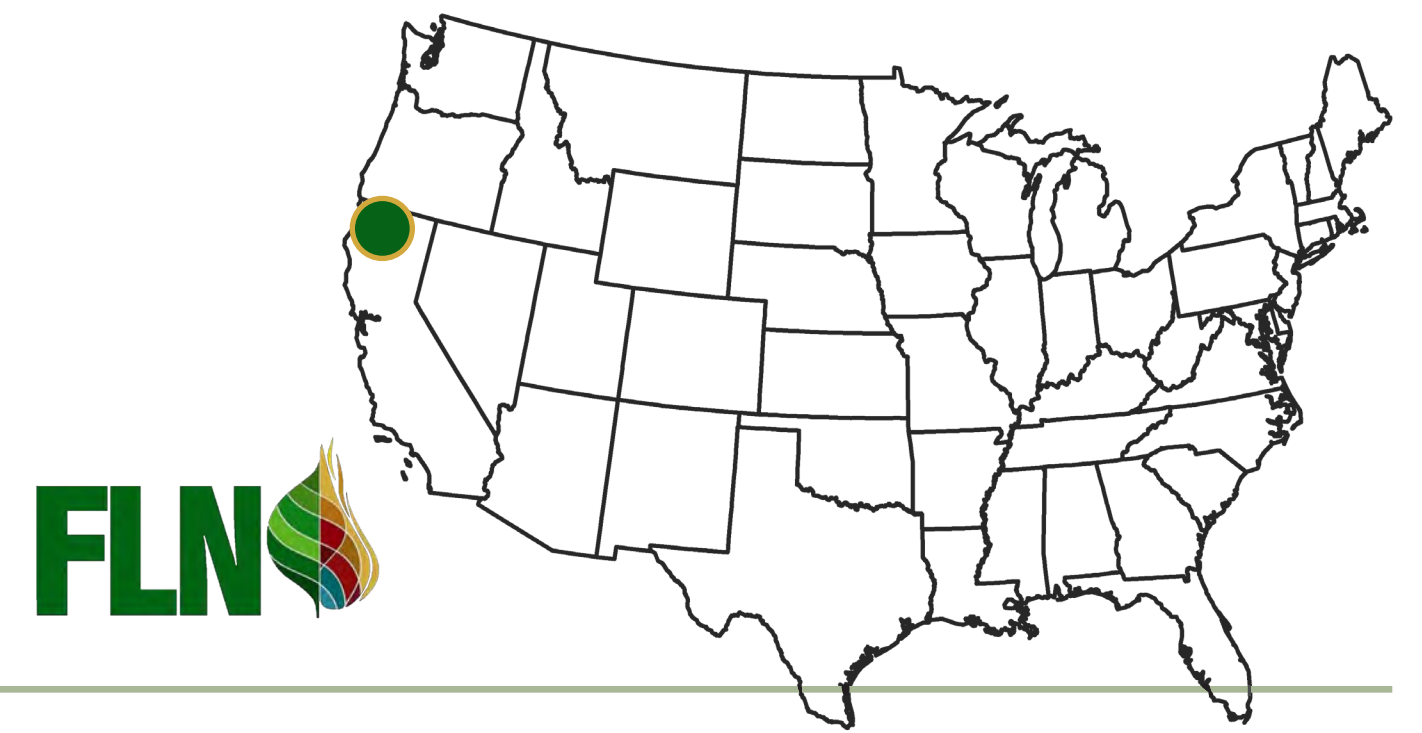


Western Klamath Mountains

Fire Learning Network

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The Western Klamath Restoration Partnership is a diverse working group representing nearly all major stakeholders in the region. This partnership has shown support for focused point resource protection that will allow greater use of wildfires on the edges of fire season to achieve landscape-scale fuels reduction and ecosystem restoration goals. Our network is currently focusing on bringing participants in the Western Klamath Restoration Partnership from agreement in principle on manual, mechanical and prescribed burning treatments to agreement in practice through collaboratively developed prescriptions.

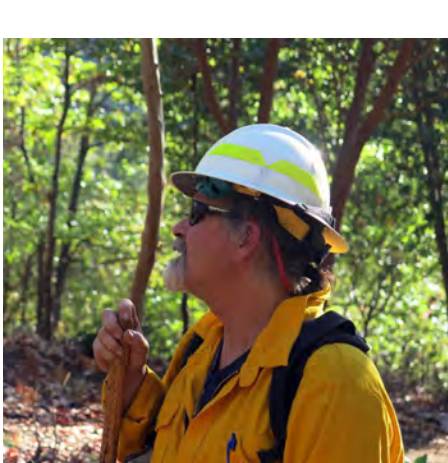
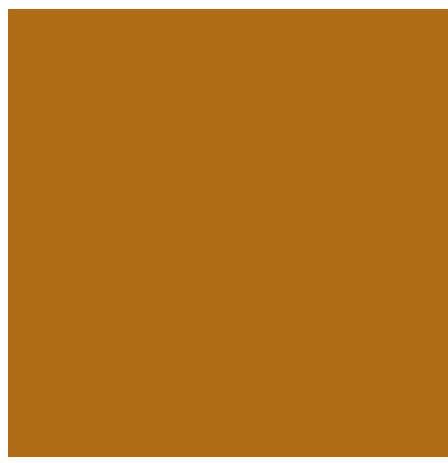
We are building local capacity to implement treatments that will affect fire management options at the landscape scale.

We are developing management strategies that rely on the large-scale use of prescribed fire to protect rural communities, restore cultural resources, and rejuvenate habitats for plants and animal species that have been negatively impacted by over a century of effective fire suppression.

We are implementing prescribed fire training exchanges with a diverse array of tribal, local, state and federal partners, and building mechanisms for local and tribal community members to participate in implementing prescribed burns for community protection and resource benefits.

We are educating at the local, regional and national levels through videos, articles and presentations that highlight innovative ways of managing fire in the Mediterranean climates of the western United States.

FLN leaders are also on the steering committee for the California Fire Science Consortium, committed to reducing the gap between fire science and fire management across northern California; work with the Intertribal Timber Council; and have been involved in the development of the Western Region Strategy Committee's Phase II Report and Action Plan. This FLN also works closely with the Northern California Prescribed Fire Council.



Network Partners

- California Environmental Protection Agency—State Water Resources Control Board
- Deer Creek GIS
- Happy Camp Coordinating Committee
- Happy Camp Fire Safe Council
- Karuk Tribe—Department of Emergency Services; Department of Natural Resources
- Mid Klamath Watershed Council
- National Oceanic & Atmospheric Administration—Fisheries
- Northern California Prescribed Fire Council
- Orleans Volunteer Fire Department
- Orleans-Somes Bar Fire Safe Council
- Salmon River Fire Safe Council
- Salmon River Restoration Council
- Salmon River Volunteer Fire and Rescue
- University of California, Berkeley
- U.S. Environmental Protection Agency
- U.S. Fish & Wildlife Service
- USDA Forest Service—Klamath National Forest; Six Rivers National Forest
- USDA Forest Service—Pacific Southwest Research Station
- USDA Natural Resources Conservation Service—Fortuna Service Center; Yreka Service Center



Above: The Butler and Salmon River Complex Fires burned over 25,000 acres near the towns of Forks of Salmon and Sawyers Bar during the summer of 2013. The scope of high severity burns is visible as red patches where tree mortality was high in plantations following salvage logging after the 1977 Hog Fire. Photo © Thomas B. Dunklin

Left and below: Real-time social media coverage of the fall 2014 Klamath River Prescribed Fire Training Exchange highlighted the people of TREX—many of whom are members of local communities. Photos: Mid Klamath Watershed Council Facebook page

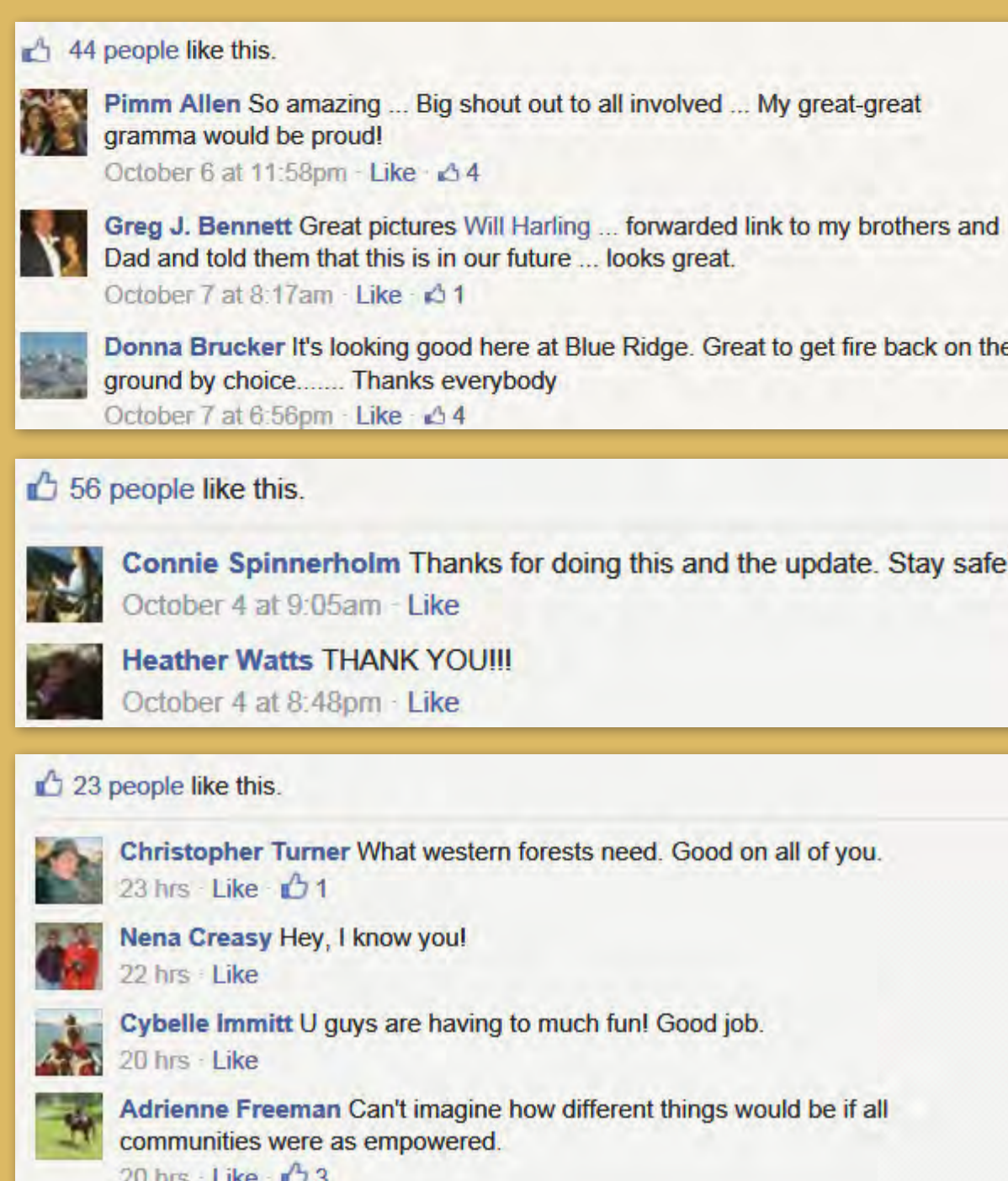


Highlight: Prescribed Fire Training Exchange on Social Media

The Klamath River Prescribed Fire Training Exchange that took place in October 2014 treated lands near and between communities along the Klamath River in northern California.

Throughout the TREX event, the Mid Klamath Watershed Council (MKWC) led the social media way with great daily (or nightly) updates about the burning—and got good community response from the residents of an area that spends much of each summer smelling the smoke of wildfires. The updates were posted to the MKWC's Facebook page, and most were also re-posted to the "Salmon River and Orleans Complexities" page. The latter page was started during the 2013 wildfire season and has continued as the go-to source for information about local fire, with over 1,400 members.

The posts, photos and comments are captured in an FLN Notes from the Field about the event, available at <https://www.conservationgateway.org/ConservationPractices/FireLandscapes/FireLearningNetwork/USFLNPublications/Pages/Notes-from-the-Field-Klamath-TREX-2014.aspx>



A landowner celebrates a burn on his property during a Prescribed Fire Training Exchange in the fall of 2013. Burns like this are helping communities become better adapted to fire in this landscape. Photo: TNC/Mary Huffman



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